МИНИСТЕРСТВО ОБРАЗОВАНИЯ И НАУКИ
РОССИЙСКОЙ ФЕДЕРАЦИИ

ФЕДЕРАЛЬНОЕ ГОСУДАРСТВЕННОЕ БЮДЖЕТНОЕ
ОБРАЗОВАТЕЛЬНОЕ УЧРЕЖДЕНИЕ ВЫСШЕГО
ПРОФЕССИОНАЛЬНОГО ОБРАЗОВАНИЯ «САМАРСКИЙ
ГОСУДАРСТВЕННЫЙ АЭРОКОСМИЧЕСКИЙ УНИВЕРСИТЕТ ИМЕНИ
АКАДЕМИКА С.П. КОРОЛЕВА (НАЦИОНАЛЬНЫЙ
ИССЛЕДОВАТЕЛЬСКИЙ УНИВЕРСИТЕТ)» (СГАУ)

ПРОТИВОПОЖАРНАЯ СИСТЕМА САМОЛЕТА А 320.

СИСТЕМА КОНДИЦИОНИРОВАНИЯ ВОЗДУХА САМОЛЕТА А320

Комплект учебно-методической документации

Работа выполнена по мероприятию блока 1 «Совершенствование образовательной деятельности» Программы развития СГАУ на 2009-2018 годы по проекту «Разработка образовательных программ по образовательным направлениям факультета инженеров воздушного транспорта»

Соглашение №1/7 от 03.06.2013 г.

САМАРА 2013

УДК 629.7.02
П 384
Автор-составитель: Тихонов Алексей Николаевич

Противопожарная система самолета А 320. Система кондиционирования воздуха самолета А320: [Электронный ресурс] : комплект учебно-методической документации /М-во образования и науки РФ, Самар. гос. аэрокосм. ун-т. им. С.П. Королева (нац. исслед. ун-т); авт.- сост. А. Н. Тихонов.- Электорон. текстовые и граф. данные.(103,0 МбБ.) – Самара, 2013. – 1 эл. оптич. диск (CD – ROM)

В состав комплекта учебно-методической документации входят:

1.Программы обучения бакалавров техническому обслуживанию противопожарной и системы кондиционирования воздуха самолета Эрбас А320 на виртуальном тренажере фирмы Aerosim.

2. Инструкции по изучению противопожарной и системы кондиционирования воздуха самолета Эрбас Ф 320(на русском и английском языке)

3. Перечни контрольных вопросов по противопожарной и системе кондиционирования воздуха самолета А320.

Комплект учебно-методической документации предназначен для студентов факультета инженеров воздушного транспорта, обучающихся по направлению подготовки бакалавров 162300.62 « Техническая эксплуатация летательных аппаратов и двигателей», дисциплина « Конструкция и техническое обслуживание самолетов с газотурбинными двигателями (на примере конкретной авиационной технике), семестры 5,6.

Комплект разработан на кафедре эксплуатации авиационной техники.

Самарский государственный

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Самарский государственный

аэрокосмический университет, 2013

МИНИСТЕРСТВО ОБРАЗОВАНИЯ И НАУКИ РОССИЙСКОЙ ФЕДЕРАЦИИ

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«САМАРСКИЙ ГОСУДАРСТВЕННЫЙ АЭРОКОСМИЧЕСКИЙ
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(НАЦИОНАЛЬНЫЙ ИССЛЕДОВАТЕЛЬСКИЙ УНИВЕРСИТЕТ)»

А.И. ДАНИЛИН, А.Н.ТИХОНОВ

ПРОГРАММА

обучения бакалавров техническому обслуживанию противопожарной системы самолёта Эрбас А320 на виртуальном тренажёре фирмы Aerosim

САМАРА

2013

ПРОГРАММА
изучения противопожарной системы
самолёта Эрбас А320 на виртуальном
тренажёре фирмы Aerosim

№	Тема	Часы	Примечание
1	Общие сведения о составе и функциях системы.	1	16 слайдов
2	Обнаружение и индикация пожара основных двигателей.	1	13 слайдов
3	Тушение пожара основных двигателей.	2	27 слайдов
4	Тестирование системы пожаротушения основных двигателей.	0.5	7 слайдов
5	Обнаружение и индикация пожара вспомогательной силовой установки (ВСУ) в полёте и на земле.	1	9 слайдов
6	Тушение пожара вспомогательной силовой установки.	1	14 слайдов
7	Пожар ВСУ на земле.	0.5	7 слайдов
8	Тестирование системы пожаротушения ВСУ.	1	11 слайдов
9	Тушение пожара в грузовых отсеках. Общее описание системы.	0.5	5 слайдов
10	Обнаружение дыма и индикация пожарного состояния грузовых отсеков.	1	8 слайдов
11	Тушение пожара в грузовых отсеках.	1	8 слайдов
12	Тестирование системы пожаротушения в грузовых отсеках.	1	9 слайдов
13	Обнаружение и индикация наличия дыма в туалетах. Тушение пожара в туалетах.	1	10 слайдов
14	Обнаружение и индикация наличия дыма в приборном отсеке.	1	10 слайдов
15	Действия персонала при обнаружении дыма в приборном отсеке.	0.5	6 слайдов
16	Тесты проверки знаний	2	9 слайдов
	Итого часов:	**16**	169 слайдов

МЕТОДИКА И ТЕХНОЛОГИЯ
обучения техническому обслуживанию противопожарной системы
самолёта Эрбас А320 на виртуальном тренажёре фирмы Aerosim

Этап 1. (16 часов). Изучение состава и принципов функционирования противопожарной системы с использованием обучающей системы тренажёра, см. Приложение 1.

На этом этапе основное внимание уделяется двум равнозначным дидактическим моментам.

Во-первых, студенты должны освоить специфический английский язык (терминология плюс аббревиатуры) до уровня свободного распознавания аббревиатур и чёткого понимания сообщений системных дисплеев.

Во-вторых, студенты должны понять и надёжно запомнить строение, функционирование, состав и назначение отдельных устройств противопожарной системы. Особое внимание на этом шаге уделяется работе системы в нештатных, аварийных ситуациях.

Обучение на данном этапе строится по следующей схеме.

1. Студенты получают русско-англо-язычный бумажный экземпляр кадров обучающей системы и работают с обучающей системой, используя бумажный экземпляр в качестве справочника.
2. Затем преподаватель проводит опрос по каждой теме (см. Программу) обучающей системы без использования бумажного экземпляра. В качестве подсказки студент видит только английский текст. По результатам опроса студент допускается к тестированию.
3. Завершающим этапом является тестирование внутри обучающей системы. Признаком прохождения теста являются правильные ответы на ВСЕ вопросы. Любой неправильный ответ возвращает студента к пункту 1.

Этап 2. (6 часов). Изучение размещения на самолёте оборудования противопожарной системы.

Этот этап проводится с помощью виртуального тренажёра А320. Студент работает с Руководством пользователя виртуального тренажёра по технической эксплуатации А320.

Указав обозначение прибора и нажав кнопку Search (Поиск), студент получает изображение прибора на самолёте. Если прибор находится в отсеке за крышкой лючка или съёмной панелью, то щёлкнув левой кнопкой мыши по лючку или панели и выбрав пункт Remove (Снять), можно заглянуть внутрь отсека и увидеть прибор.

После обнаружения всех необходимых агрегатов студент готов к контрольному опросу, который проводит преподаватель.

Этап 3. (12 часов). Изучение регламента технического обслуживания противопожарной системы.

Проводится с помощью документа по техническому регламенту, входящему в базу данных тренажёра.

Здесь ключевыми знаниями являются знания периодичности технического обслуживания, маршрута осмотра, номенклатуры необходимого инструмента и размещения обслуживаемых агрегатов.

В конце этапа – контрольный опрос преподавателем.

<u>Этап 4. (16 часов)</u>. Поиск неисправностей в противопожарной системе.

Этот этап проводится с помощью виртуального тренажёра А320. Студент работает с Руководством пользователя виртуального тренажёра по технической эксплуатации А320, раздел 4.3.

Преподаватель задаёт отказ того или иного агрегата, тренажёр моделирует ситуацию в системе, а студент по сообщениям системных дисплеев кабины самолёта должен определить отказавший агрегат, найти его место на самолёте и выполнить виртуальную процедуру его замены.

Фактически данный этап является контрольным испытанием для студентов, на котором они должны показать свою компетенцию по техническому обслуживанию противопожарной системы.

Количество отказов, которые должен устранить студент, определяется преподавателем индивидуально, на основании знаний и компетенций, продемонстрированных на предыдущих этапах.

Успешное выполнение данного этапа завершает освоение противопожарной системы самолёта А320.

В случае неуспеха студент может быть возвращён на любой этап обучения, по усмотрению преподавателя.

Суммарный объём аудиторных занятий на тренажёре – 50 часов.

<u>Общие рекомендации.</u>

1. Руководство пользователя виртуального тренажёра по технической эксплуатации А320 подготовлено в двух вариантах, - на русском и на английском языке. Первые два занятия рекомендуется использовать оба варианта. Начиная с третьего занятия на тренажёре, рекомендуется пользоваться только англоязычным вариантом.
2. Рекомендуется на каждом учебном столе виртуального тренажёра иметь распечатку используемых аббревиатур на английском языке.
3. Поскольку языковая подготовка студентов неравномерна, рекомендуется НЕ запрещать студентам во время занятий на тренажёре пользоваться личными планшетами и нетбуками для англо-русского перевода. Предпочтительным является использование переводчика Multitran, поскольку он имеет наиболее широкий авиационно-технический словарный запас, включая аббревиатуры. Multitran имеет бесплатный on-line доступ в интернете по ссылке www.multitran.ru.
4. Во время проведения контрольных опросов пользование личными планшетами и нетбуками категорически НЕ разрешается. За время занятий студенты кроме технических знаний должны также пополнить свой словарный запас английского языка.
5. О правилах работы и оценки освоения отдельных учебных тем и в целом всей программы, студенты должны быть проинформированы до начала занятий.

МИНИСТЕРСТВО ОБРАЗОВАНИЯ И НАУКИ РОССИЙСКОЙ ФЕДЕРАЦИИ

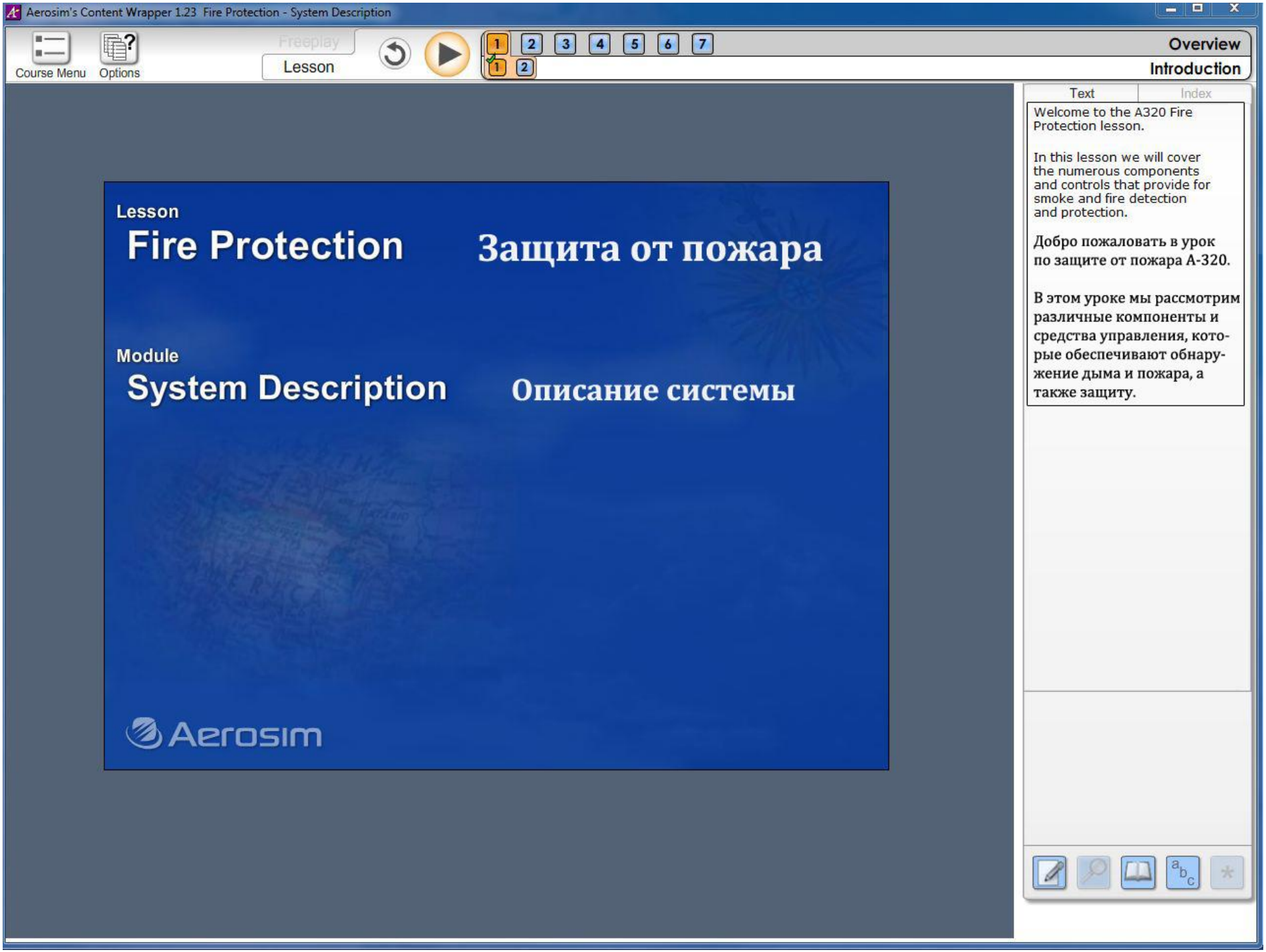
ФЕДЕРАЛЬНОЕ ГОСУДАРСТВЕННОЕ
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(НАЦИОНАЛЬНЫЙ ИССЛЕДОВАТЕЛЬСКИЙ УНИВЕРСИТЕТ)»

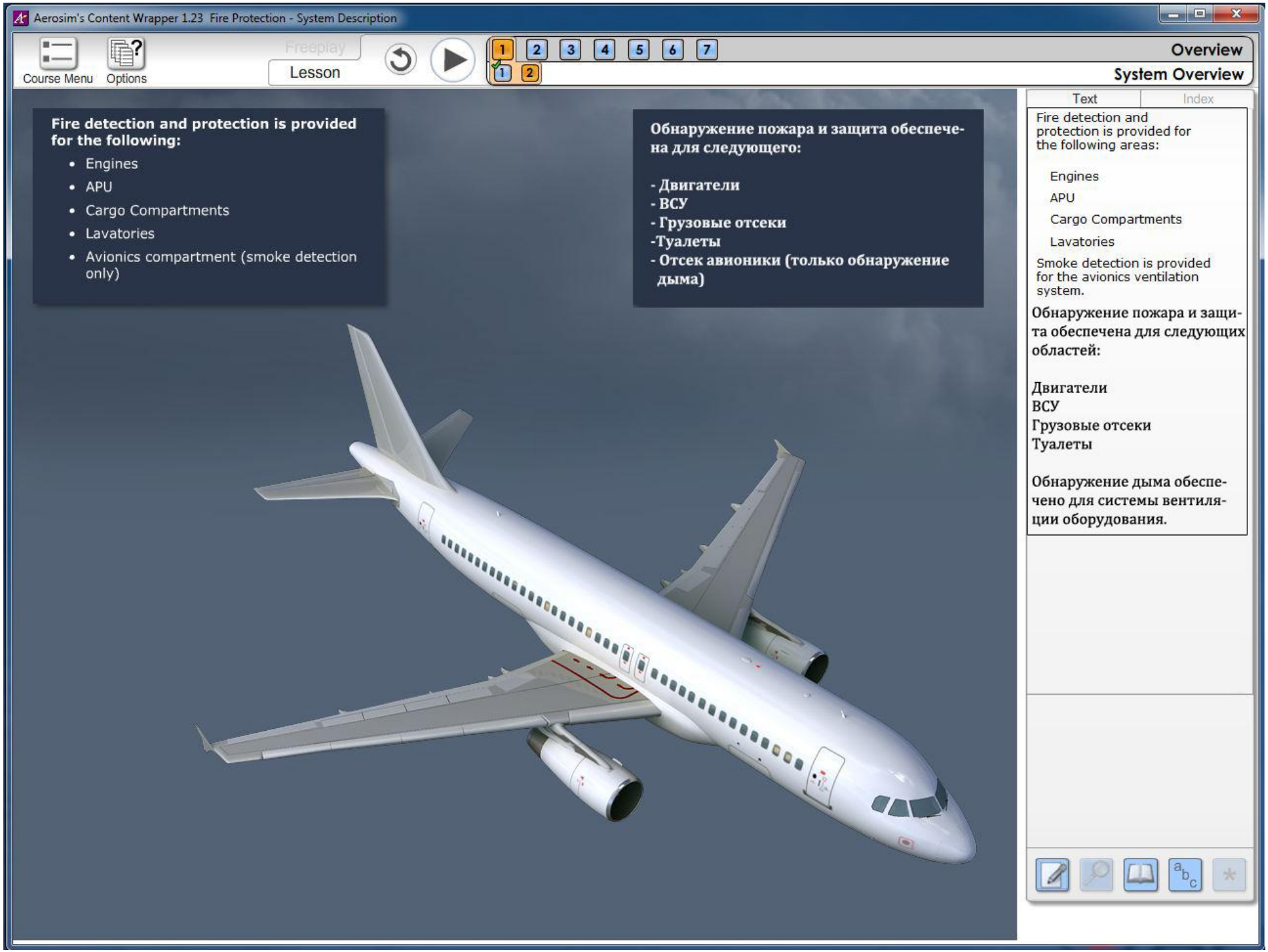
А.И. ДАНИЛИН, А.Н.ТИХОНОВ

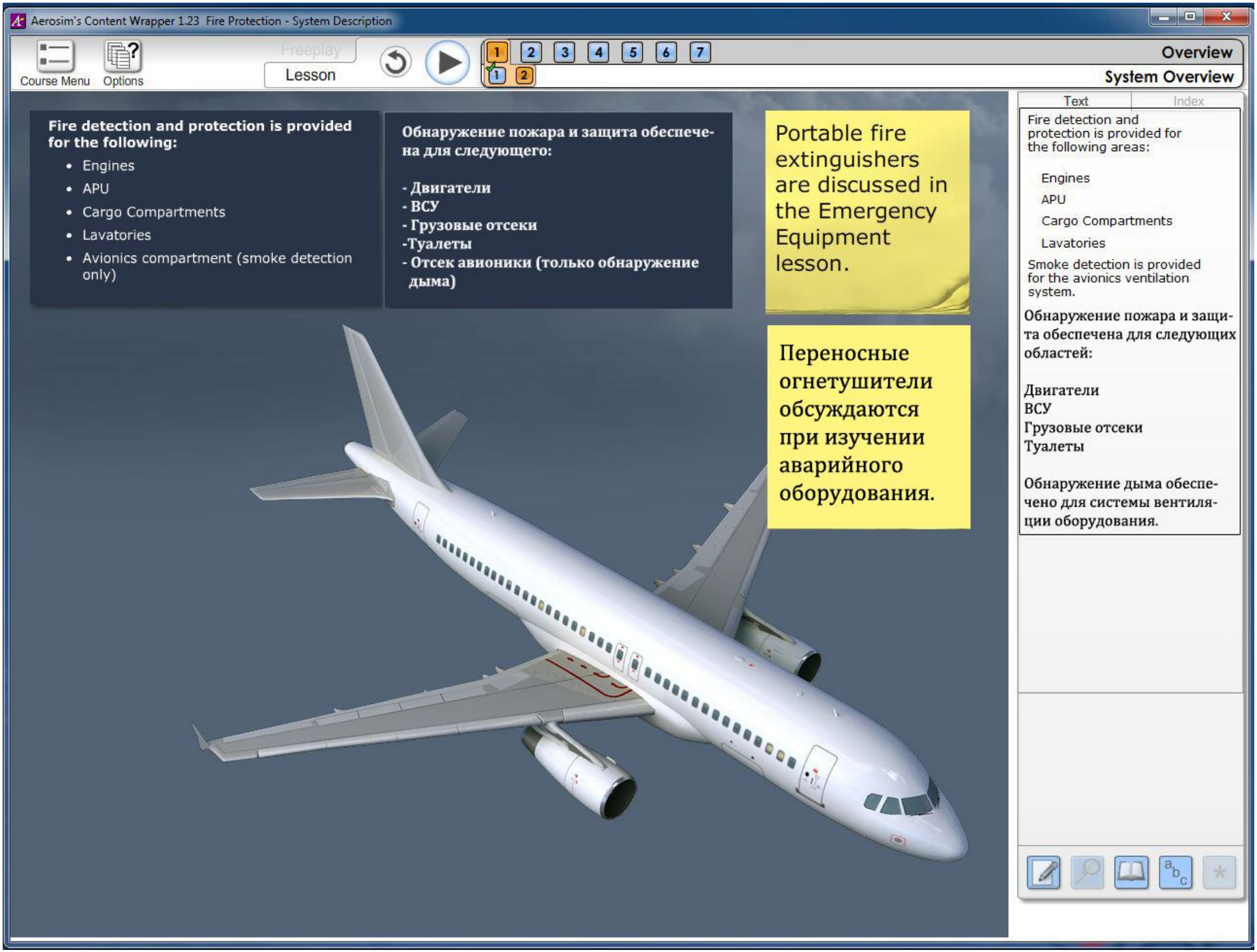
Инструкция по изучению противопожарной системы самолёта Эрбас А320 на тренажёре Aerosim

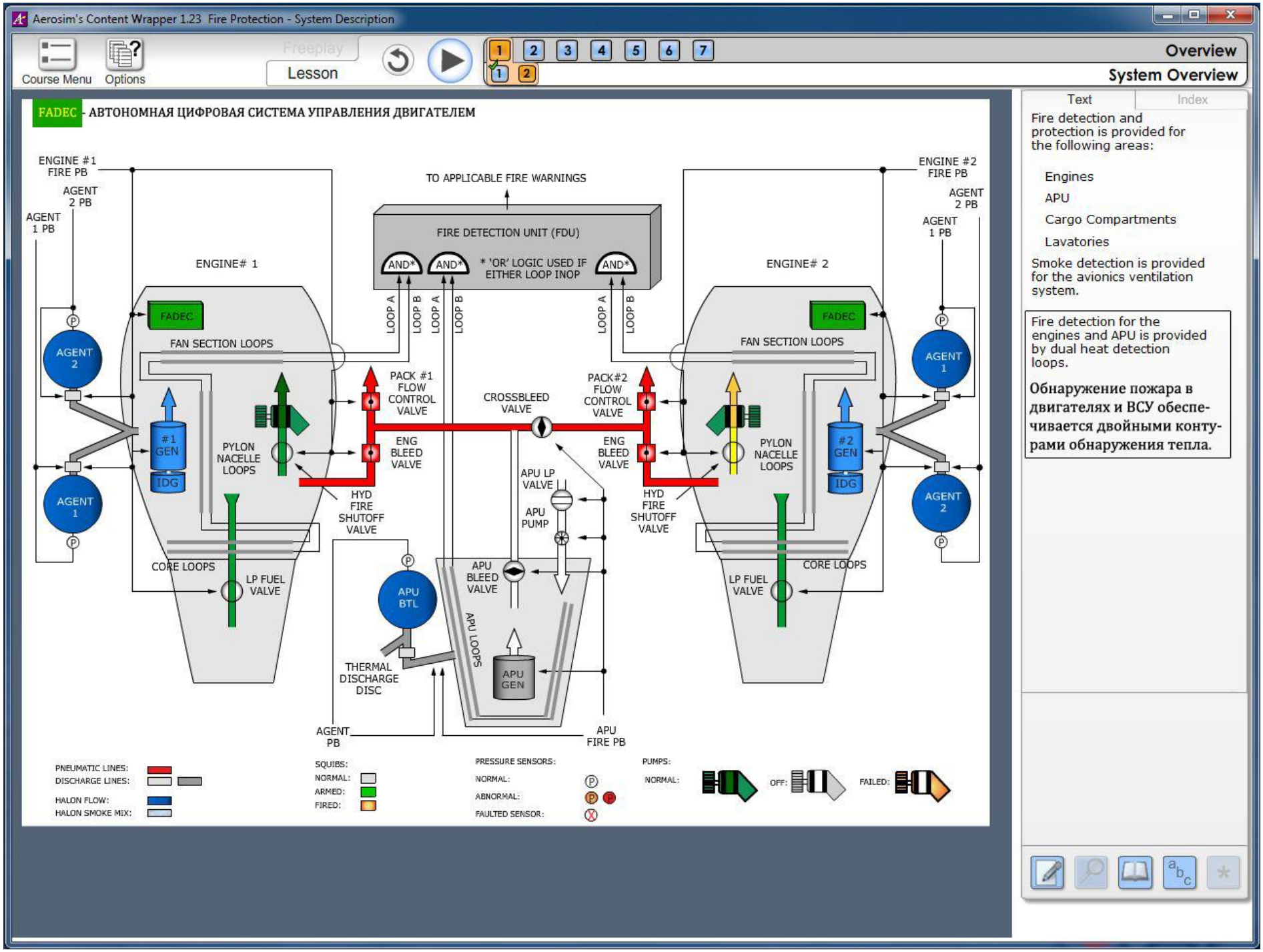
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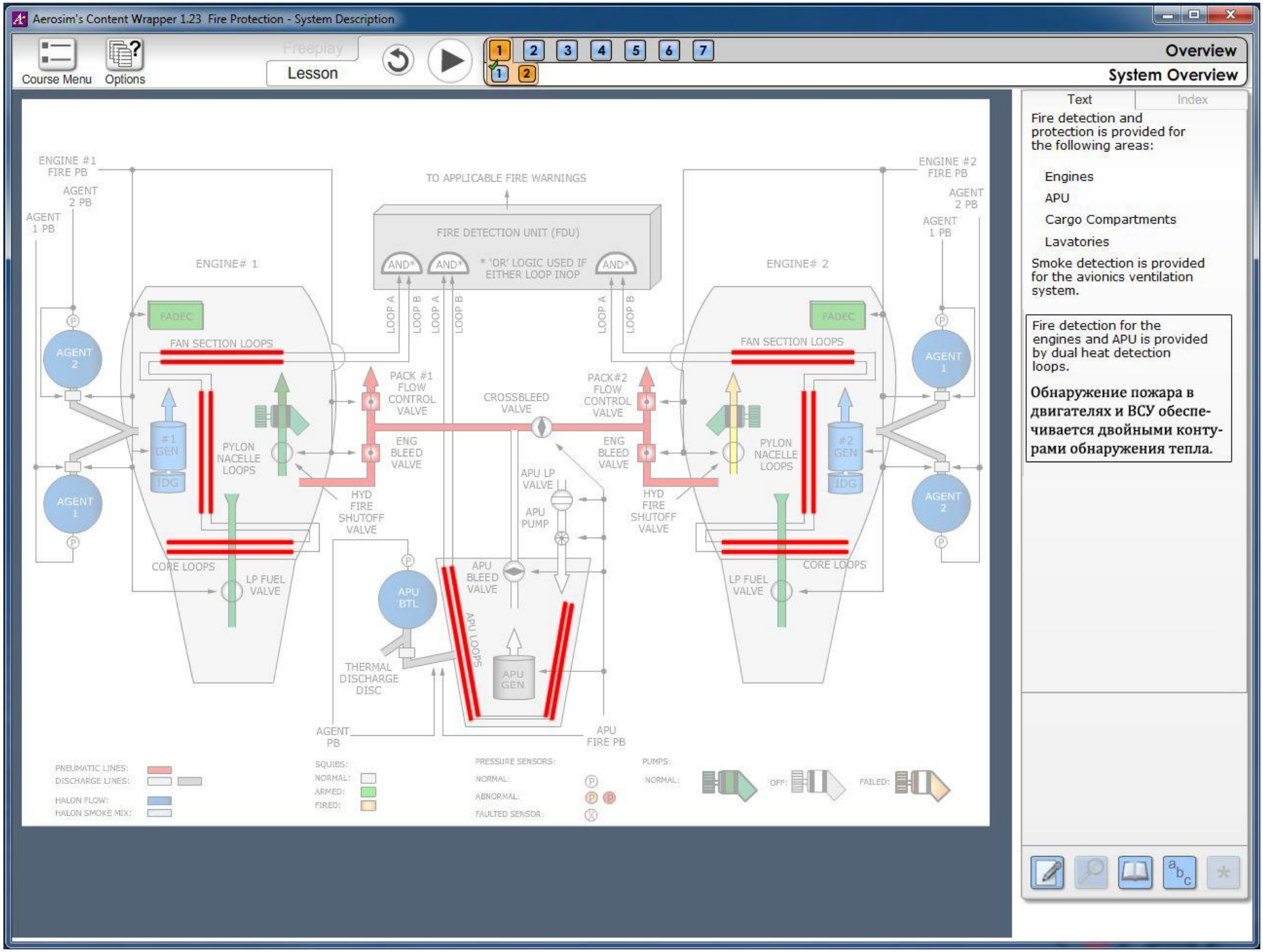
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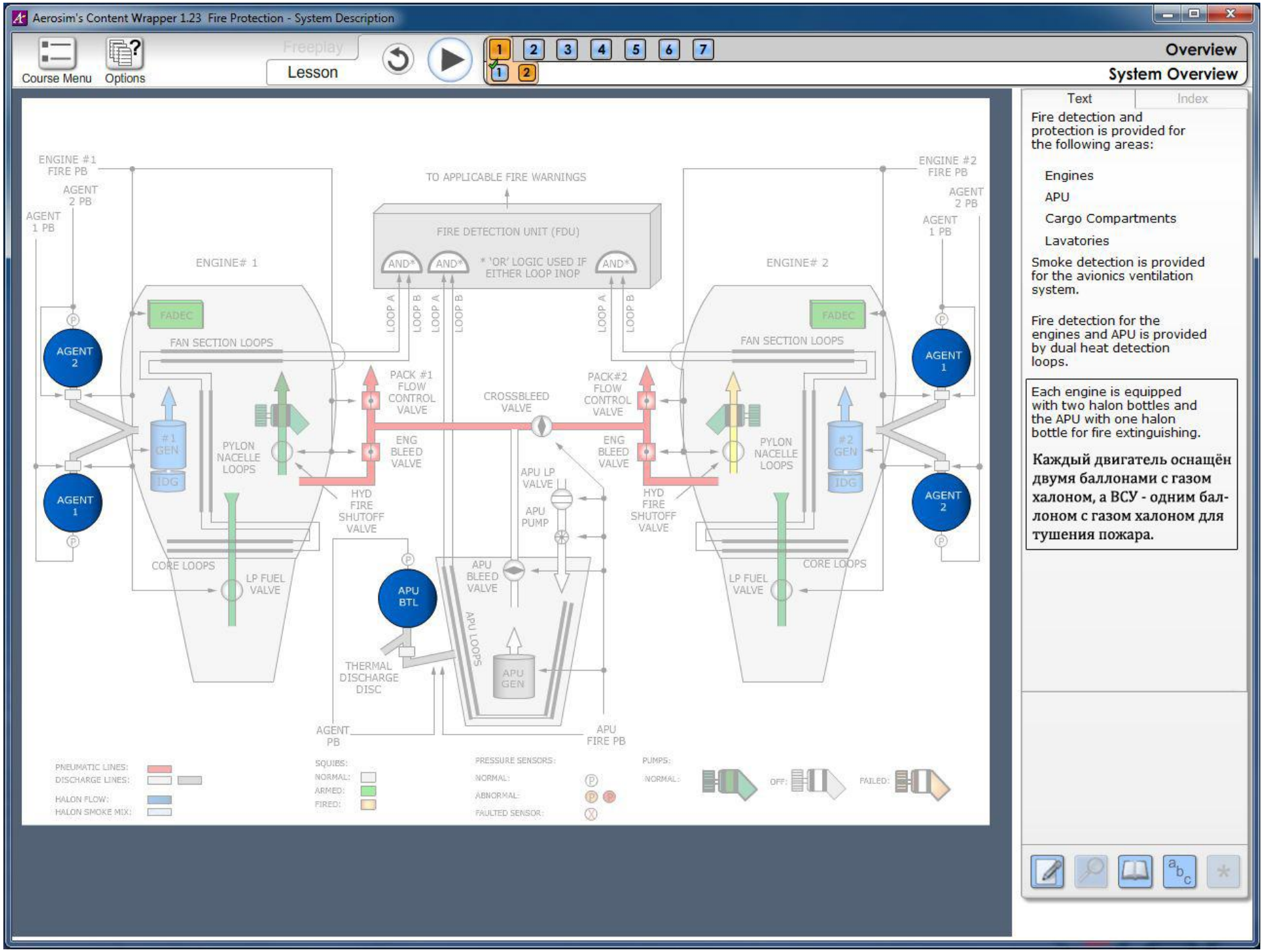

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
1 2 3 4 5 6 7
1 2
Overview
Introduction
Text
Index
Welcome to the A320 Fire Protection lesson.
In this lesson we will cover the numerous components and controls that provide for smoke and fire detection and protection.
Добро пожаловать в урок по защите от пожара А-320.
В этом уроке мы рассмотрим различные компоненты и средства управления, которые обеспечивают обнаружение дыма и пожара, а также защиту.
Lesson
Fire Protection
Защита от пожара
Module
System Description
Описание системы
Aerosim

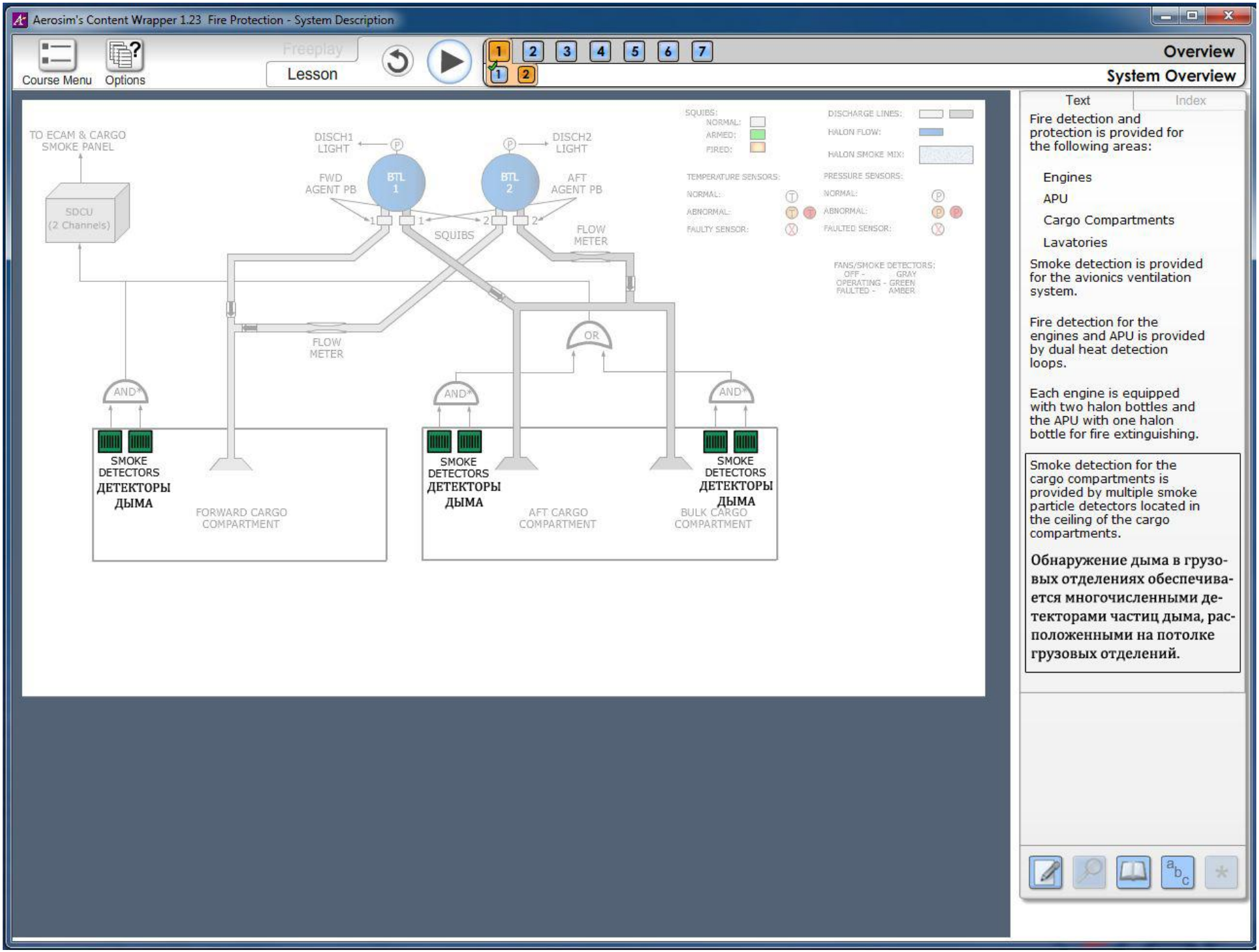

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
1 2 3 4 5 6 7
1 2
Overview
System Overview
Fire detection and protection is provided for the following:
Engines
APU
Cargo Compartments
Lavatories
Avionics compartment (smoke detection only)
Обнаружение пожара и защита обеспечена для следующего:
- Двигатели
- ВСУ
- Грузовые отсеки
-Туалеты
- Отсек авионики (только обнаружение дыма)
Text
Index
Fire detection and protection is provided for the following areas:
Engines
APU
Cargo Compartments
Lavatories
Smoke detection is provided for the avionics ventilation system.
Обнаружение пожара и защита обеспечена для следующих областей:
Двигатели
ВСУ
Грузовые отсеки
Туалеты
Обнаружение дыма обеспечено для системы вентиляции оборудования.

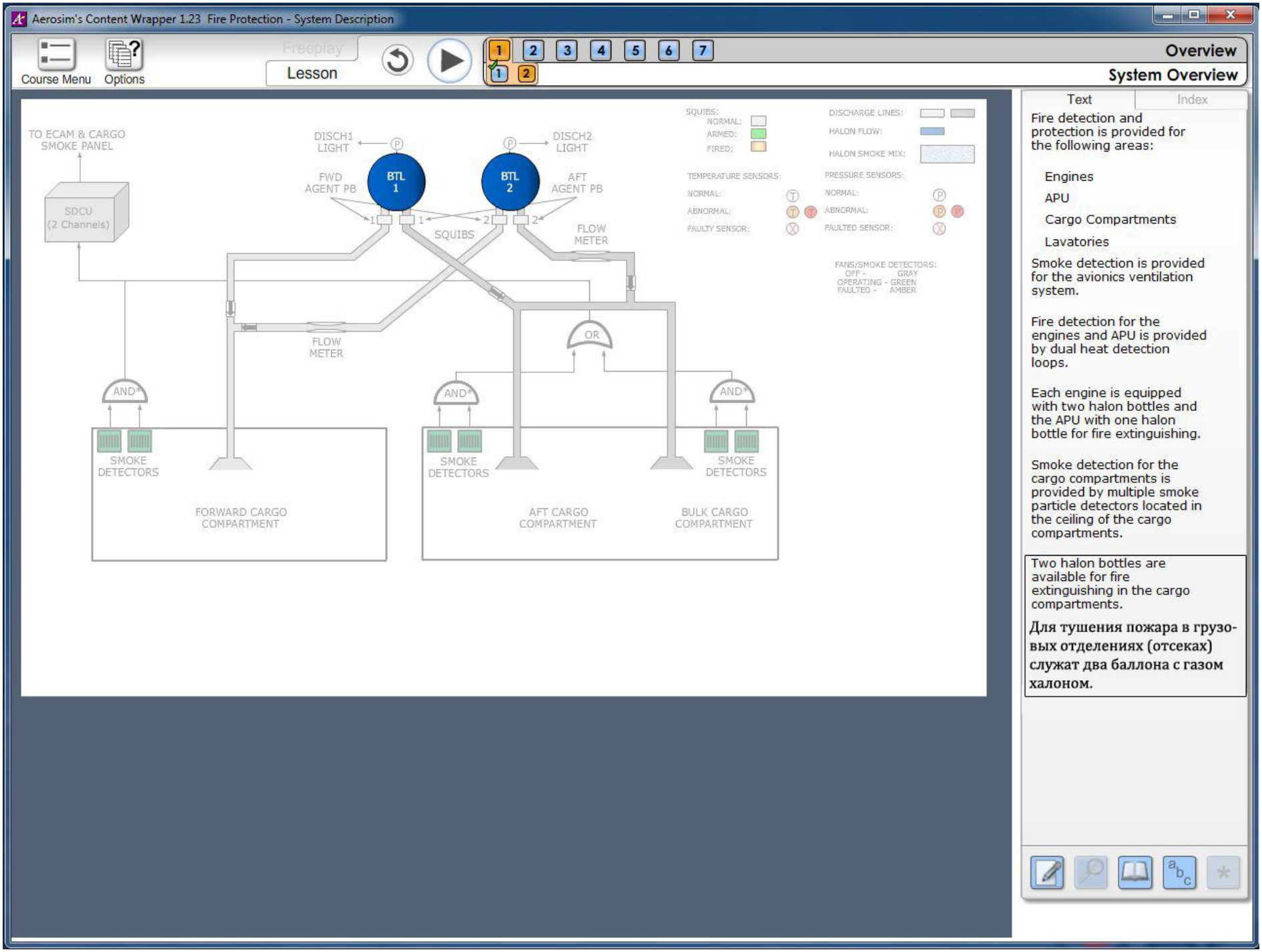

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
1 2 3 4 5 6 7
1 2
Overview
System Overview
Fire detection and protection is provided for the following:
Engines
APU
Cargo Compartments
Lavatories
Avionics compartment (smoke detection only)
Обнаружение пожара и защита обеспечена для следующего:
- Двигатели
- ВСУ
- Грузовые отсеки
-Туалеты
- Отсек авионики (только обнаружение дыма)
Portable fire extinguishers are discussed in the Emergency Equipment lesson.
Переносные огнетушители обсуждаются при изучении аварийного оборудования.
Text
Index
Fire detection and protection is provided for the following areas:
Engines
APU
Cargo Compartments
Lavatories
Smoke detection is provided for the avionics ventilation system.
Обнаружение пожара и защита обеспечена для следующих областей:
Двигатели
ВСУ
Грузовые отсеки
Туалеты
Обнаружение дыма обеспечено для системы вентиляции оборудования.

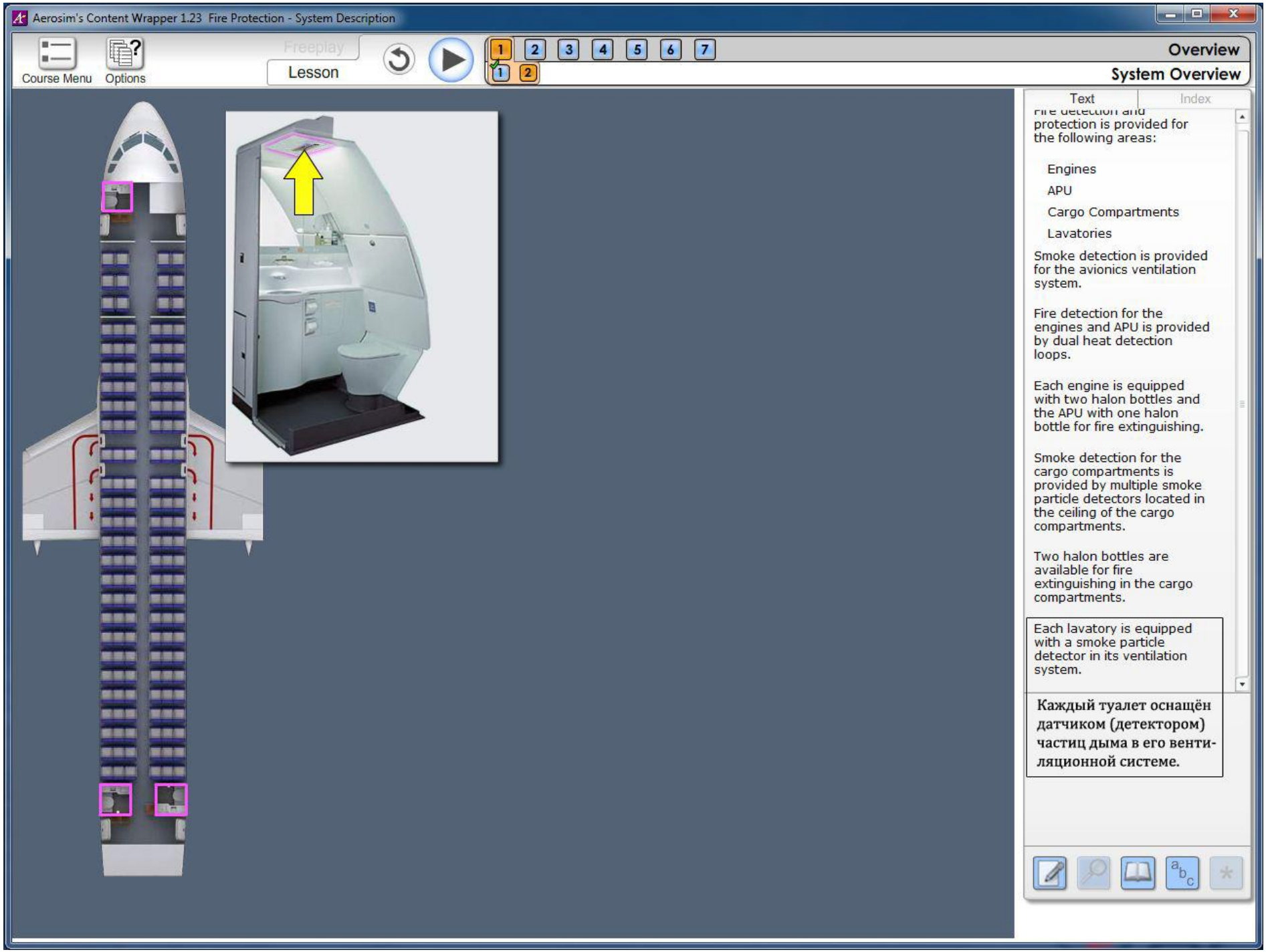

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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FADEC - АВТОНОМНАЯ ЦИФРОВАЯ СИСТЕМА УПРАВЛЕНИЯ ДВИГАТЕЛЕМ
ENGINE #1 FIRE PB
AGENT 2 PB
AGENT 1 PB
ENGINE# 1
TO APPLICABLE FIRE WARNINGS
FIRE DETECTION UNIT (FDU)
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
LOOP A
LOOP B
ENGINE# 2
ENGINE #2 FIRE PB
FADEC
FAN SECTION LOOPS
AGENT 2
AGENT 1
#1 GEN
#2 GEN
IDG
PACK #1 FLOW CONTROL VALVE
PACK#2 FLOW CONTROL VALVE
CROSSBLEED VALVE
ENG BLEED VALVE
PYLON NACELLE LOOPS
HYD FIRE SHUTOFF VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
CORE LOOPS
LP FUEL VALVE
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:
Text
Index
Fire detection and protection is provided for the following areas:
Engines
APU
Cargo Compartments
Lavatories
Smoke detection is provided for the avionics ventilation system.
Fire detection for the engines and APU is provided by dual heat detection loops.
Обнаружение пожара в двигателях и ВСУ обеспечивается двойными контурами обнаружения тепла.

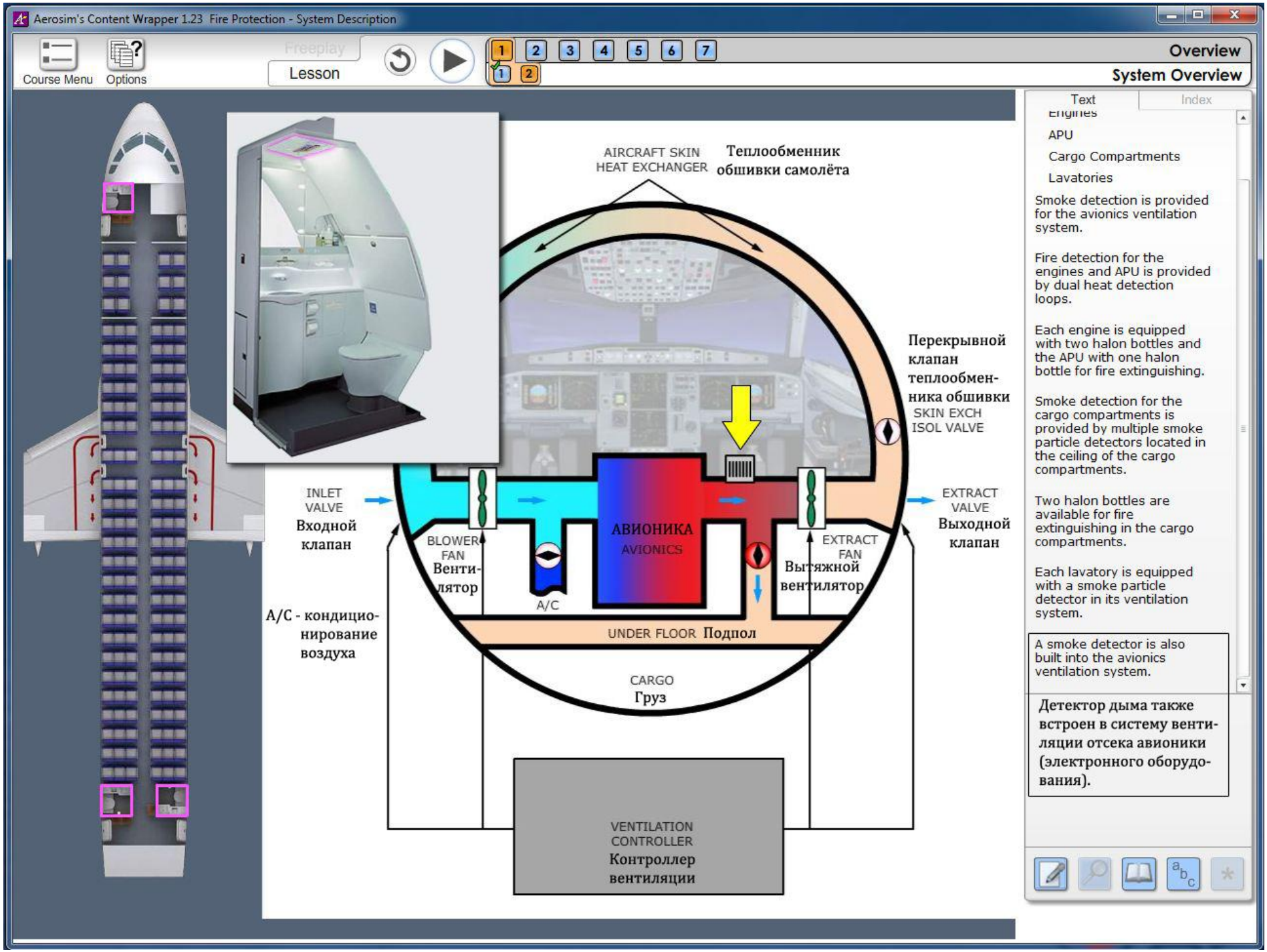

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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Fire detection and protection is provided for the following areas:
Engines
APU
Cargo Compartments
Lavatories
Smoke detection is provided for the avionics ventilation system.
Fire detection for the engines and APU is provided by dual heat detection loops.
Обнаружение пожара в двигателях и ВСУ обеспечивается двойными контурами обнаружения тепла.
ENGINE #1 FIRE PB
AGENT 2 PB
AGENT 1 PB
ENGINE# 1
TO APPLICABLE FIRE WARNINGS
FIRE DETECTION UNIT (FDU)
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
ENGINE #2 FIRE PB
ENGINE# 2
FADEC
FAN SECTION LOOPS
LOOP A
LOOP B
AGENT 2
AGENT 1
#1 GEN
#2 GEN
IDG
PYLON NACELLE LOOPS
PACK #1 FLOW CONTROL VALVE
PACK#2 FLOW CONTROL VALVE
CROSSBLEED VALVE
ENG BLEED VALVE
HYD FIRE SHUTOFF VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
CORE LOOPS
LP FUEL VALVE
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:

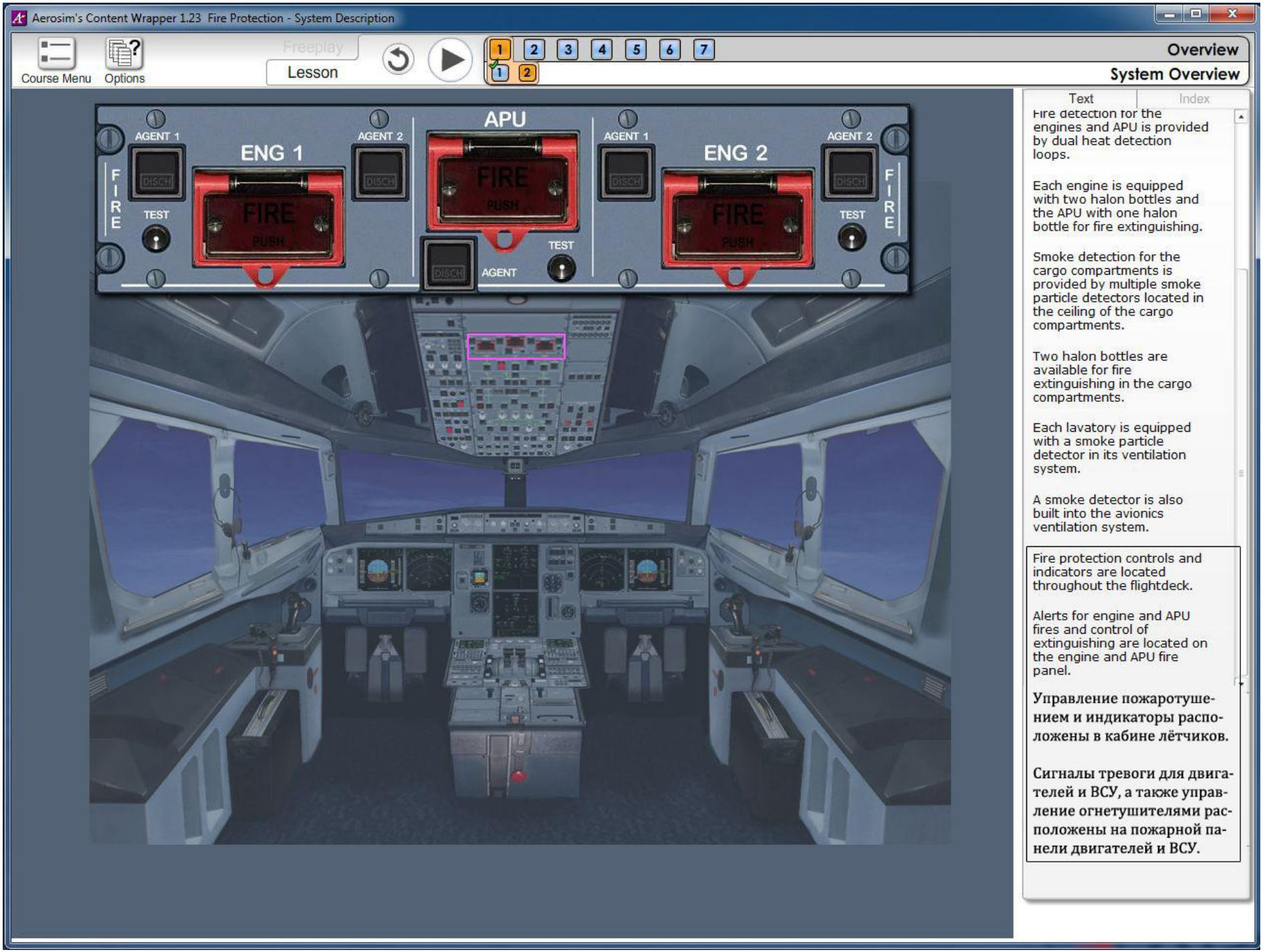

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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1 2
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System Overview
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Fire detection and protection is provided for the following areas:
Engines
APU
Cargo Compartments
Lavatories
Smoke detection is provided for the avionics ventilation system.
Fire detection for the engines and APU is provided by dual heat detection loops.
Each engine is equipped with two halon bottles and the APU with one halon bottle for fire extinguishing.
Каждый двигатель оснащён двумя баллонами с газом халоном, а ВСУ - одним баллоном с газом халоном для тушения пожара.
ENGINE #1 FIRE PB
AGENT 2 PB
AGENT 1 PB
ENGINE# 1
TO APPLICABLE FIRE WARNINGS
FIRE DETECTION UNIT (FDU)
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
LOOP A
LOOP B
ENGINE# 2
ENGINE #2 FIRE PB
FADEC
FAN SECTION LOOPS
AGENT 2
AGENT 1
#1 GEN
#2 GEN
IDG
PYLON NACELLE LOOPS
PACK #1 FLOW CONTROL VALVE
PACK#2 FLOW CONTROL VALVE
CROSSBLEED VALVE
ENG BLEED VALVE
HYD FIRE SHUTOFF VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
CORE LOOPS
LP FUEL VALVE
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:

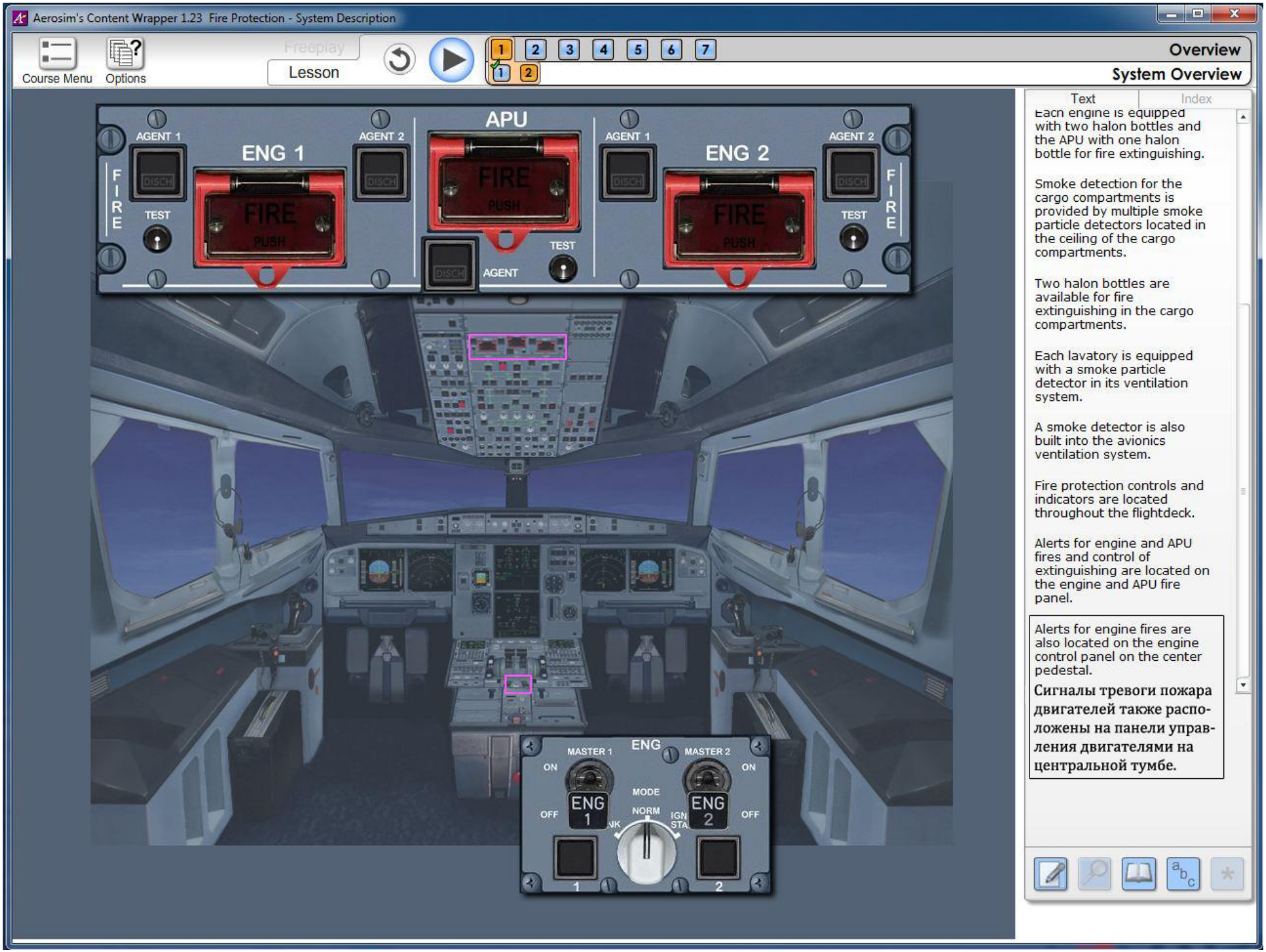

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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Lesson
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Overview
System Overview
Text
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Fire detection and protection is provided for the following areas:
Engines
APU
Cargo Compartments
Lavatories
Smoke detection is provided for the avionics ventilation system.
Fire detection for the engines and APU is provided by dual heat detection loops.
Each engine is equipped with two halon bottles and the APU with one halon bottle for fire extinguishing.
Smoke detection for the cargo compartments is provided by multiple smoke particle detectors located in the ceiling of the cargo compartments.
Обнаружение дыма в грузовых отделениях обеспечивается многочисленными детекторами частиц дыма, расположенными на потолке грузовых отделений.
TO ECAM & CARGO SMOKE PANEL
SDCU (2 Channels)
DISCH1 LIGHT
DISCH2 LIGHT
FWD AGENT PB
AFT AGENT PB
BTL 1
BTL 2
SQUIBS
FLOW METER
FLOW METER
OR
AND
SMOKE DETECTORS
ДЕТЕКТОРЫ ДЫМА
FORWARD CARGO COMPARTMENT
AFT CARGO COMPARTMENT
BULK CARGO COMPARTMENT
SQUIBS:
NORMAL:
ARMED:
FIRED:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
FANS/SMOKE DETECTORS:
OFF - GRAY
OPERATING - GREEN
FAULTED - AMBER

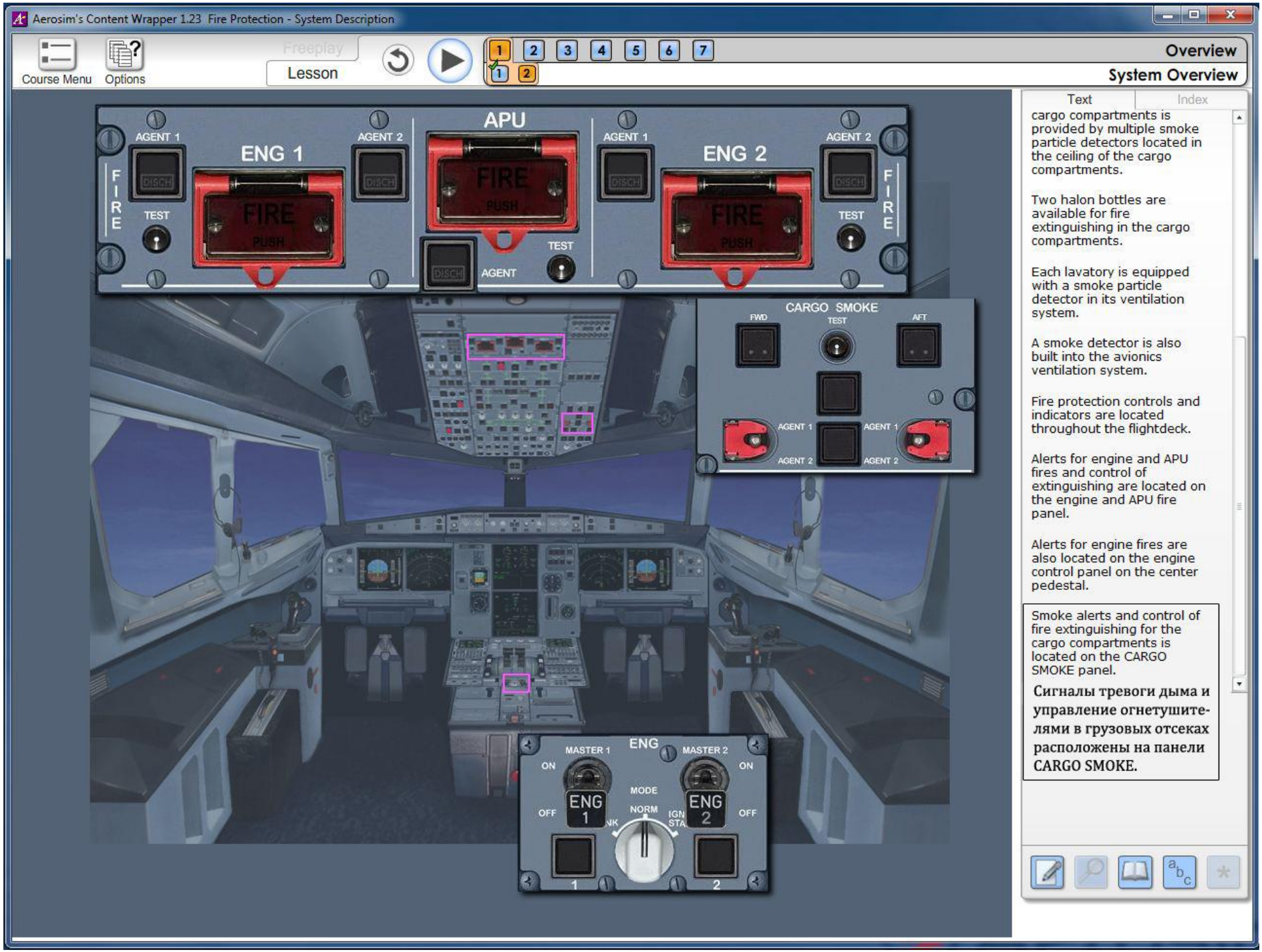

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Overview
System Overview
TO ECAM & CARGO SMOKE PANEL
SDCU (2 Channels)
DISCH1 LIGHT
DISCH2 LIGHT
FWD AGENT PB
AFT AGENT PB
BTL 1
BTL 2
SQUIBS
FLOW METER
FLOW METER
OR
AND*
AND*
AND*
SMOKE DETECTORS
SMOKE DETECTORS
SMOKE DETECTORS
FORWARD CARGO COMPARTMENT
AFT CARGO COMPARTMENT
BULK CARGO COMPARTMENT
SQUIBS:
NORMAL:
ARMED:
FIRED:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
FANS/SMOKE DETECTORS:
OFF - GRAY
OPERATING - GREEN
FAULTED - AMBER
Text
Index
Fire detection and protection is provided for the following areas:
Engines
APU
Cargo Compartments
Lavatories
Smoke detection is provided for the avionics ventilation system.
Fire detection for the engines and APU is provided by dual heat detection loops.
Each engine is equipped with two halon bottles and the APU with one halon bottle for fire extinguishing.
Smoke detection for the cargo compartments is provided by multiple smoke particle detectors located in the ceiling of the cargo compartments.
Two halon bottles are available for fire extinguishing in the cargo compartments.
Для тушения пожара в грузовых отделениях (отсеках) служат два баллона с газом халоном.

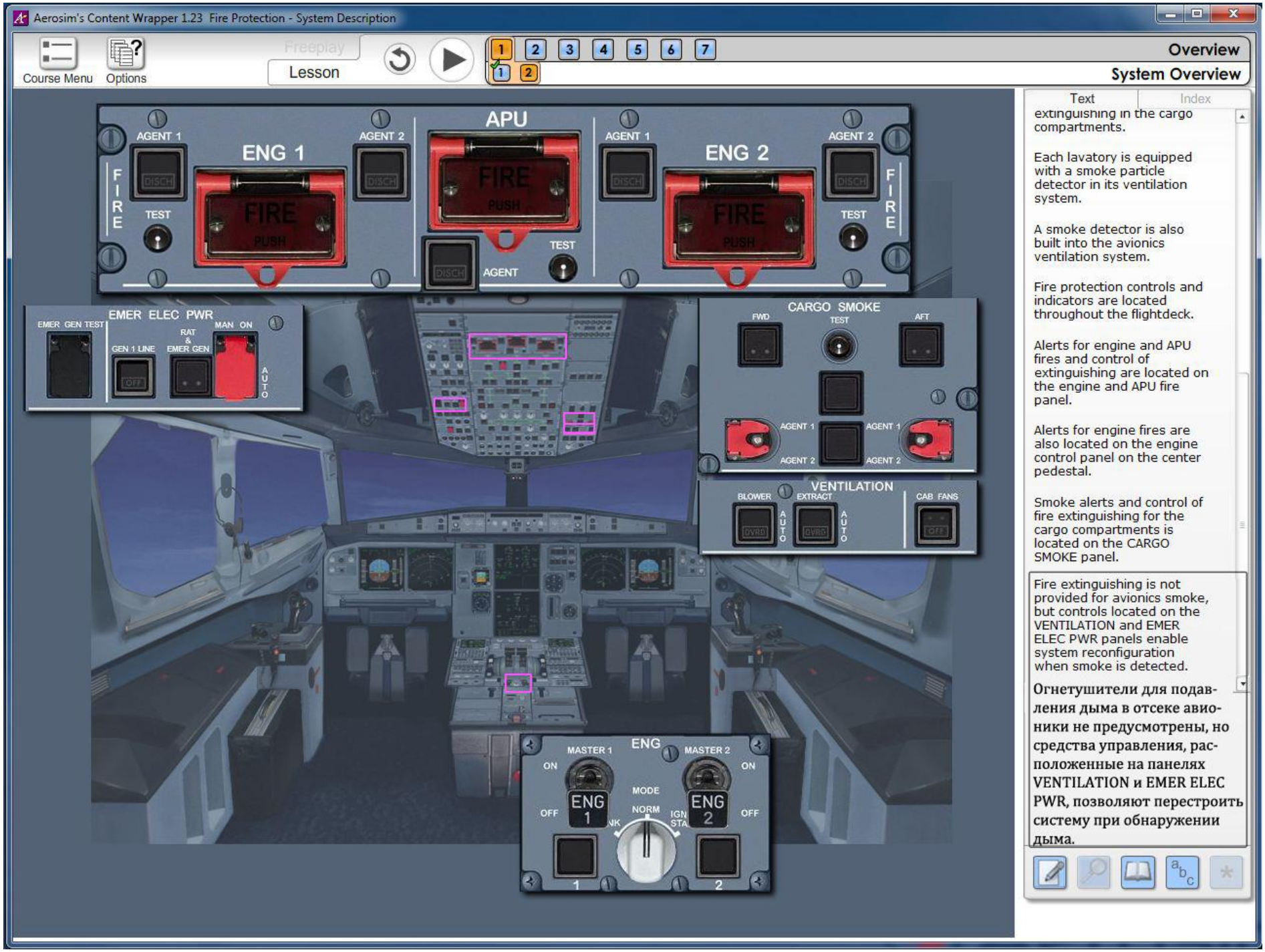

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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1 2
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protection is provided for the following areas:
Engines
APU
Cargo Compartments
Lavatories
Smoke detection is provided for the avionics ventilation system.
Fire detection for the engines and APU is provided by dual heat detection loops.
Each engine is equipped with two halon bottles and the APU with one halon bottle for fire extinguishing.
Smoke detection for the cargo compartments is provided by multiple smoke particle detectors located in the ceiling of the cargo compartments.
Two halon bottles are available for fire extinguishing in the cargo compartments.
Each lavatory is equipped with a smoke particle detector in its ventilation system.
Каждый туалет оснащён датчиком (детектором) частиц дыма в его вентиляционной системе.

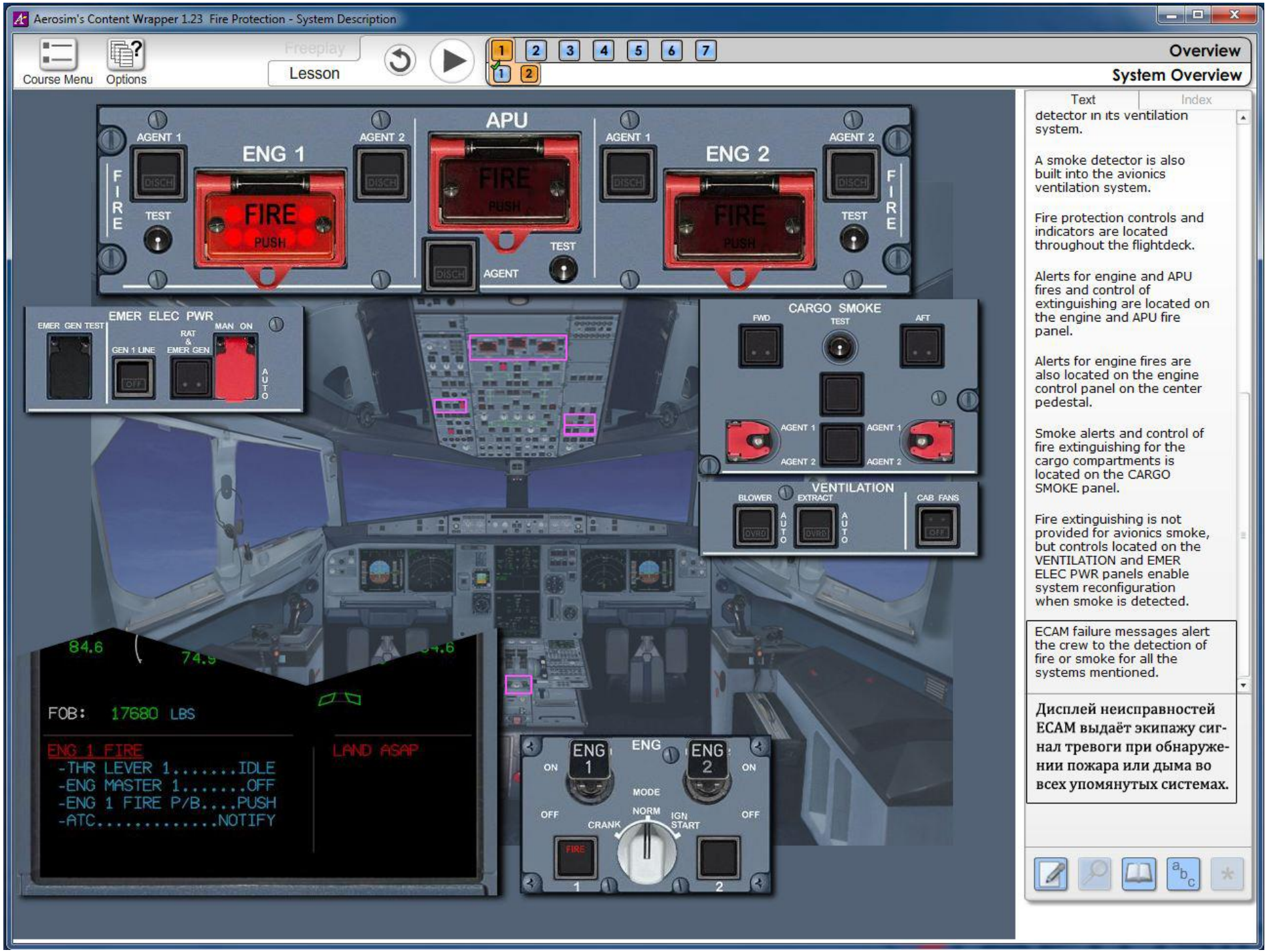

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Overview
System Overview
Text
Index
Engines
APU
Cargo Compartments
Lavatories
Smoke detection is provided for the avionics ventilation system.
Fire detection for the engines and APU is provided by dual heat detection loops.
Each engine is equipped with two halon bottles and the APU with one halon bottle for fire extinguishing.
Smoke detection for the cargo compartments is provided by multiple smoke particle detectors located in the ceiling of the cargo compartments.
Two halon bottles are available for fire extinguishing in the cargo compartments.
Each lavatory is equipped with a smoke particle detector in its ventilation system.
A smoke detector is also built into the avionics ventilation system.
Детектор дыма также встроен в систему вентиляции отсека авионики (электронного оборудования).
AIRCRAFT SKIN HEAT EXCHANGER
Теплообменник обшивки самолёта
Перекрывной клапан теплообменника обшивки
SKIN EXCH ISOL VALVE
INLET VALVE
Входной клапан
EXTRACT VALVE
Выходной клапан
BLOWER FAN
Вентилятор
АВИОНИКА
AVIONICS
EXTRACT FAN
Вытяжной вентилятор
A/C
A/C - кондиционирование воздуха
UNDER FLOOR Подпол
CARGO
Груз
VENTILATION CONTROLLER
Контроллер вентиляции

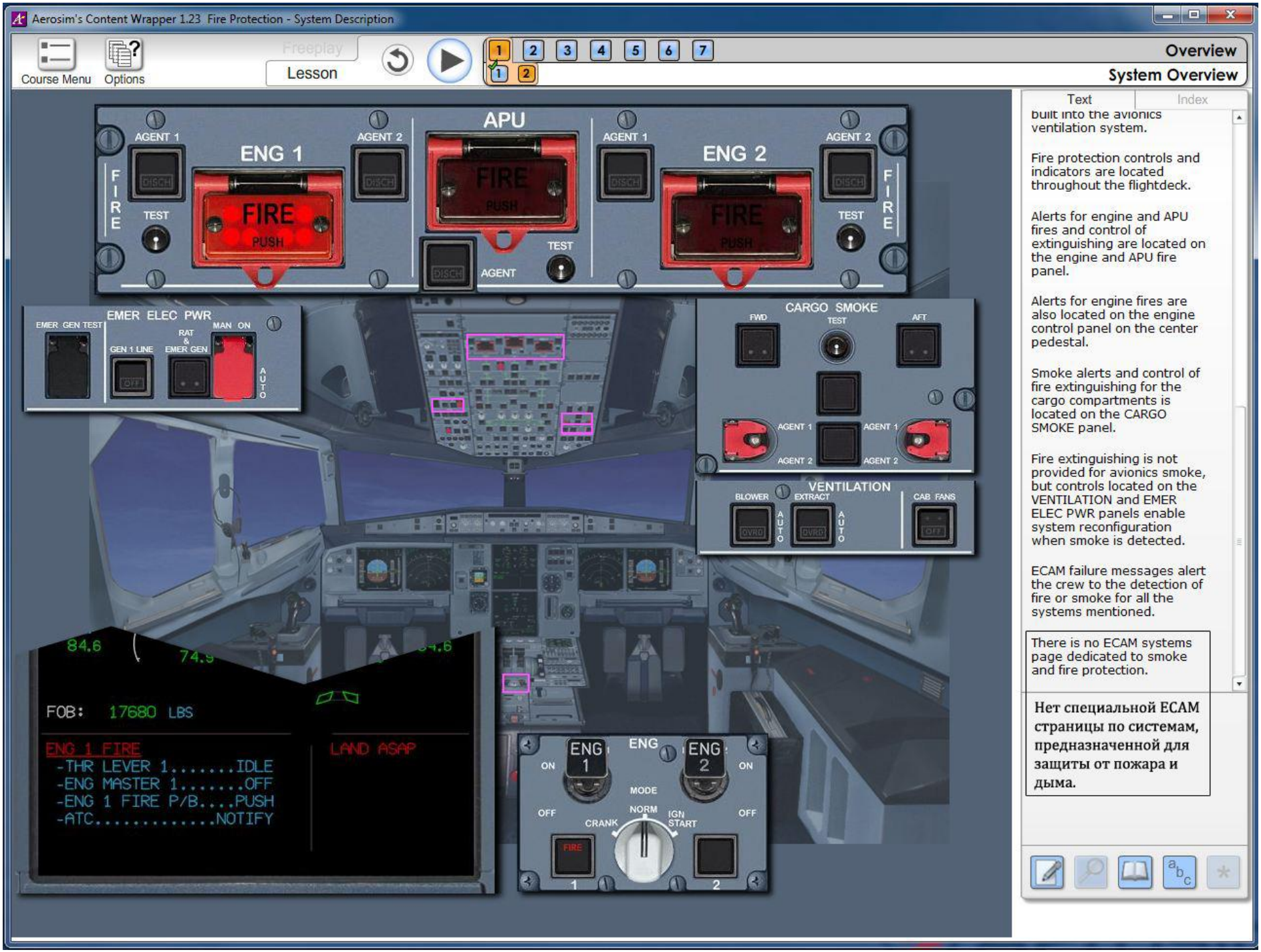

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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Freeplay
Lesson
1 2 3 4 5 6 7
1 2
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System Overview
Text
Index
AGENT 1
ENG 1
AGENT 2
APU
AGENT 1
ENG 2
AGENT 2
FIRE
DISCH
TEST
FIRE
PUSH
AGENT
Fire detection for the engines and APU is provided by dual heat detection loops.
Each engine is equipped with two halon bottles and the APU with one halon bottle for fire extinguishing.
Smoke detection for the cargo compartments is provided by multiple smoke particle detectors located in the ceiling of the cargo compartments.
Two halon bottles are available for fire extinguishing in the cargo compartments.
Each lavatory is equipped with a smoke particle detector in its ventilation system.
A smoke detector is also built into the avionics ventilation system.
Fire protection controls and indicators are located throughout the flightdeck.
Alerts for engine and APU fires and control of extinguishing are located on the engine and APU fire panel.
Управление пожаротушением и индикаторы расположены в кабине лётчиков.
Сигналы тревоги для двигателей и ВСУ, а также управление огнетушителями расположены на пожарной панели двигателей и ВСУ.

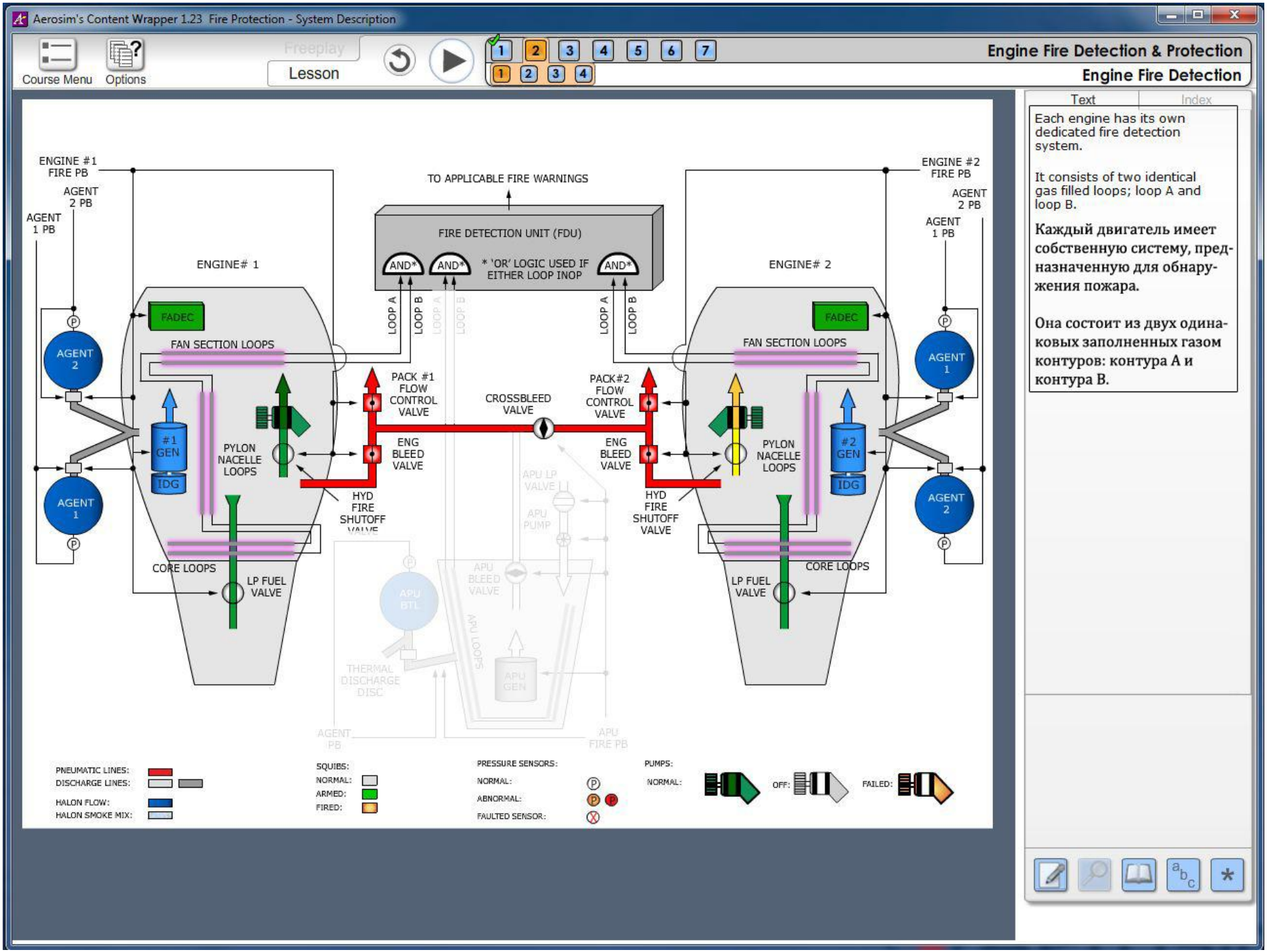

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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Freeplay
Lesson
Overview
System Overview
Text
Index
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
DISCH
AGENT
F I R E
Each engine is equipped with two halon bottles and the APU with one halon bottle for fire extinguishing.
Smoke detection for the cargo compartments is provided by multiple smoke particle detectors located in the ceiling of the cargo compartments.
Two halon bottles are available for fire extinguishing in the cargo compartments.
Each lavatory is equipped with a smoke particle detector in its ventilation system.
A smoke detector is also built into the avionics ventilation system.
Fire protection controls and indicators are located throughout the flightdeck.
Alerts for engine and APU fires and control of extinguishing are located on the engine and APU fire panel.
Alerts for engine fires are also located on the engine control panel on the center pedestal.
Сигналы тревоги пожара двигателей также расположены на панели управления двигателями на центральной тумбе.
ENG
MASTER 1
MASTER 2
ON
OFF
MODE
NORM
ENG 1
ENG 2

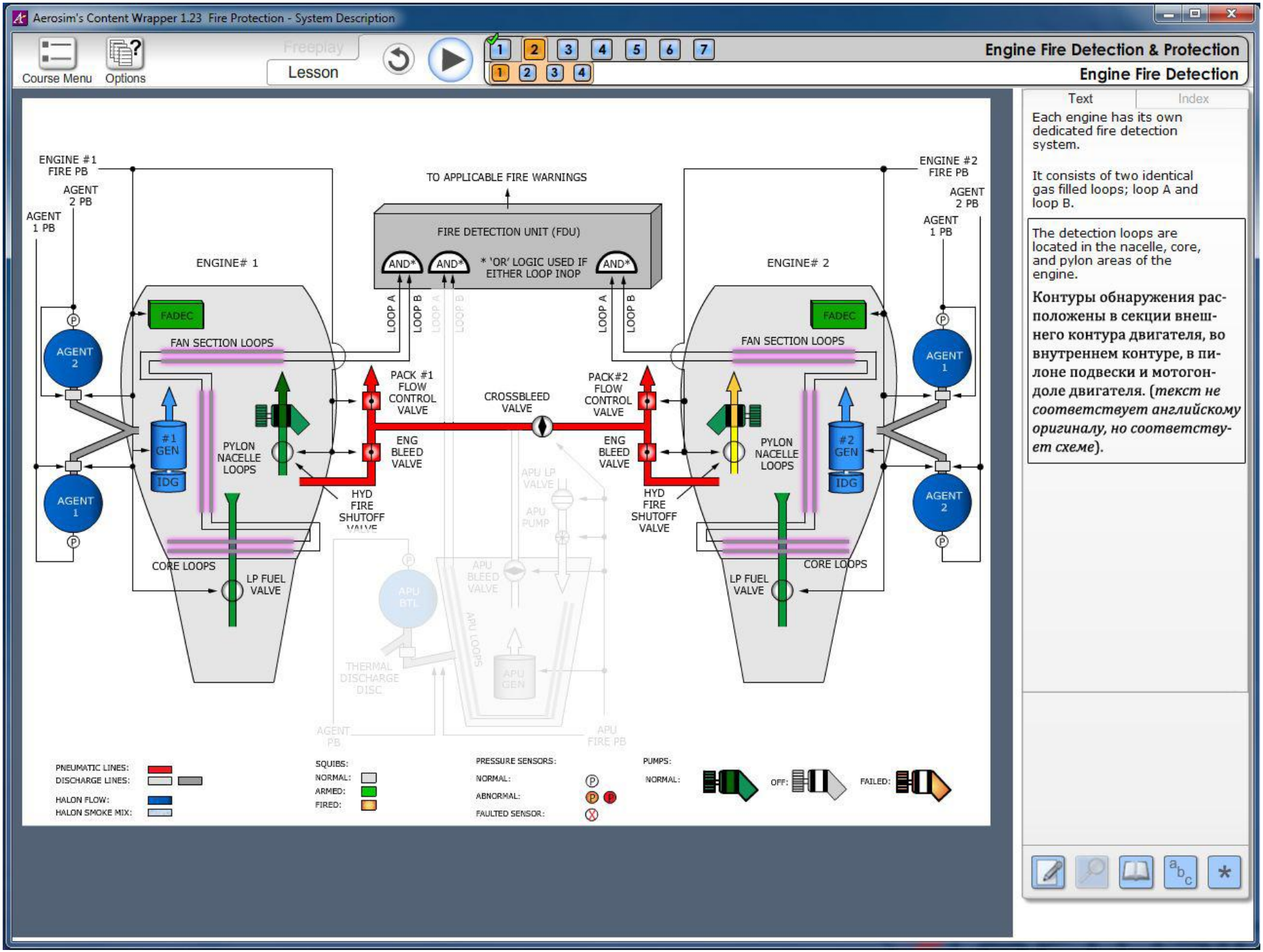

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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cargo compartments is provided by multiple smoke particle detectors located in the ceiling of the cargo compartments.
Two halon bottles are available for fire extinguishing in the cargo compartments.
Each lavatory is equipped with a smoke particle detector in its ventilation system.
A smoke detector is also built into the avionics ventilation system.
Fire protection controls and indicators are located throughout the flightdeck.
Alerts for engine and APU fires and control of extinguishing are located on the engine and APU fire panel.
Alerts for engine fires are also located on the engine control panel on the center pedestal.
Smoke alerts and control of fire extinguishing for the cargo compartments is located on the CARGO SMOKE panel.
Сигналы тревоги дыма и управление огнетушителями в грузовых отсеках расположены на панели CARGO SMOKE.
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
DISCH
AGENT
CARGO SMOKE
FWD
AFT
ENG
MASTER 1
MASTER 2
ON
OFF
MODE
NORM

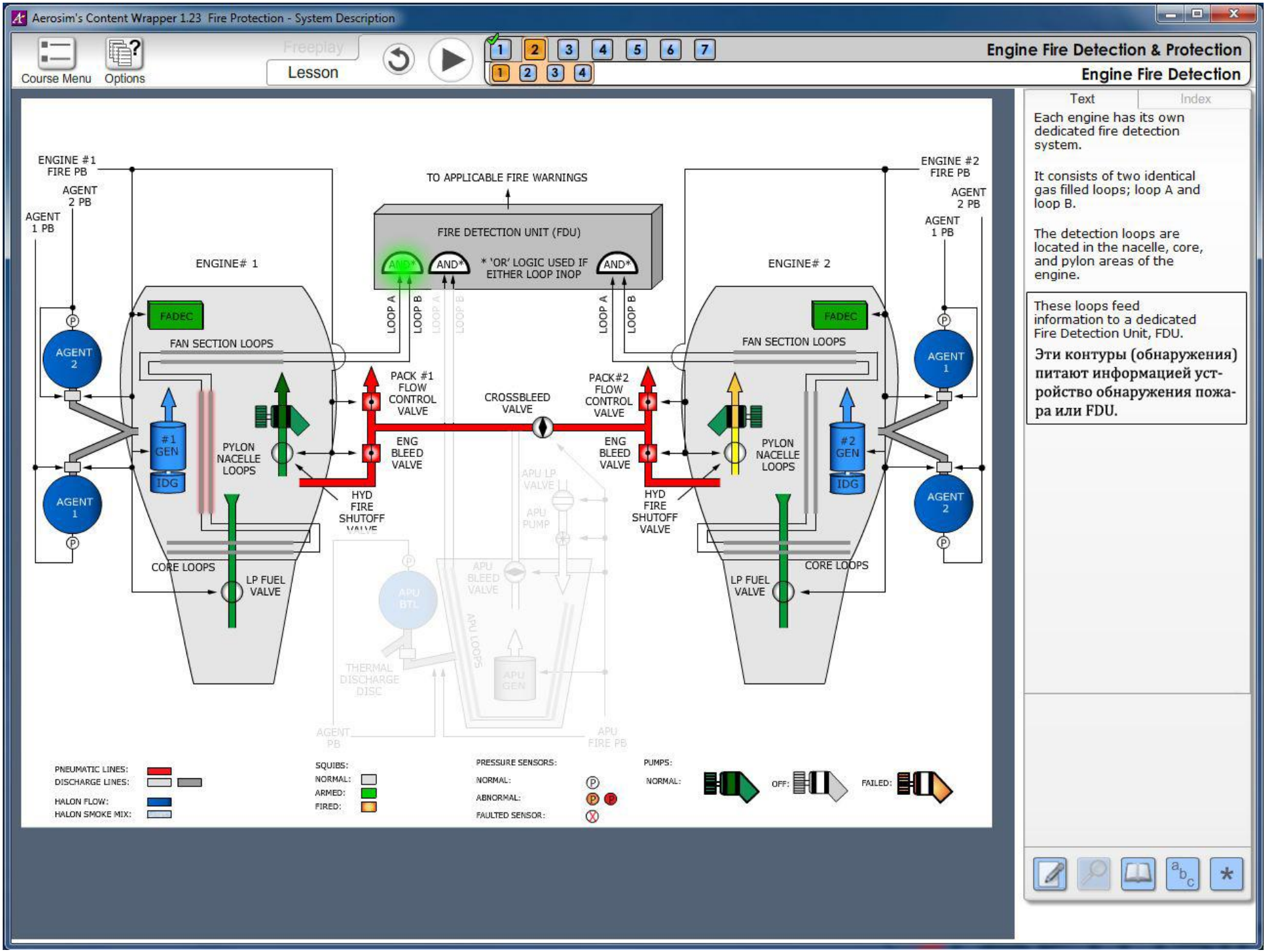

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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extinguishing in the cargo compartments.
Each lavatory is equipped with a smoke particle detector in its ventilation system.
A smoke detector is also built into the avionics ventilation system.
Fire protection controls and indicators are located throughout the flightdeck.
Alerts for engine and APU fires and control of extinguishing are located on the engine and APU fire panel.
Alerts for engine fires are also located on the engine control panel on the center pedestal.
Smoke alerts and control of fire extinguishing for the cargo compartments is located on the CARGO SMOKE panel.
Fire extinguishing is not provided for avionics smoke, but controls located on the VENTILATION and EMER ELEC PWR panels enable system reconfiguration when smoke is detected.
Огнетушители для подавления дыма в отсеке авионики не предусмотрены, но средства управления, расположенные на панелях VENTILATION и EMER ELEC PWR, позволяют перестроить систему при обнаружении дыма.
APU
ENG 1
ENG 2
AGENT 1
AGENT 2
FIRE
PUSH
TEST
DISCH
AGENT
EMER ELEC PWR
EMER GEN TEST
GEN 1 LINE
RAT & EMER GEN
MAN ON
AUTO
CARGO SMOKE
FWD
AFT
VENTILATION
BLOWER
EXTRACT
CAB FANS
ENG
MASTER 1
MASTER 2
ON
OFF
MODE
NORM
IGN STA

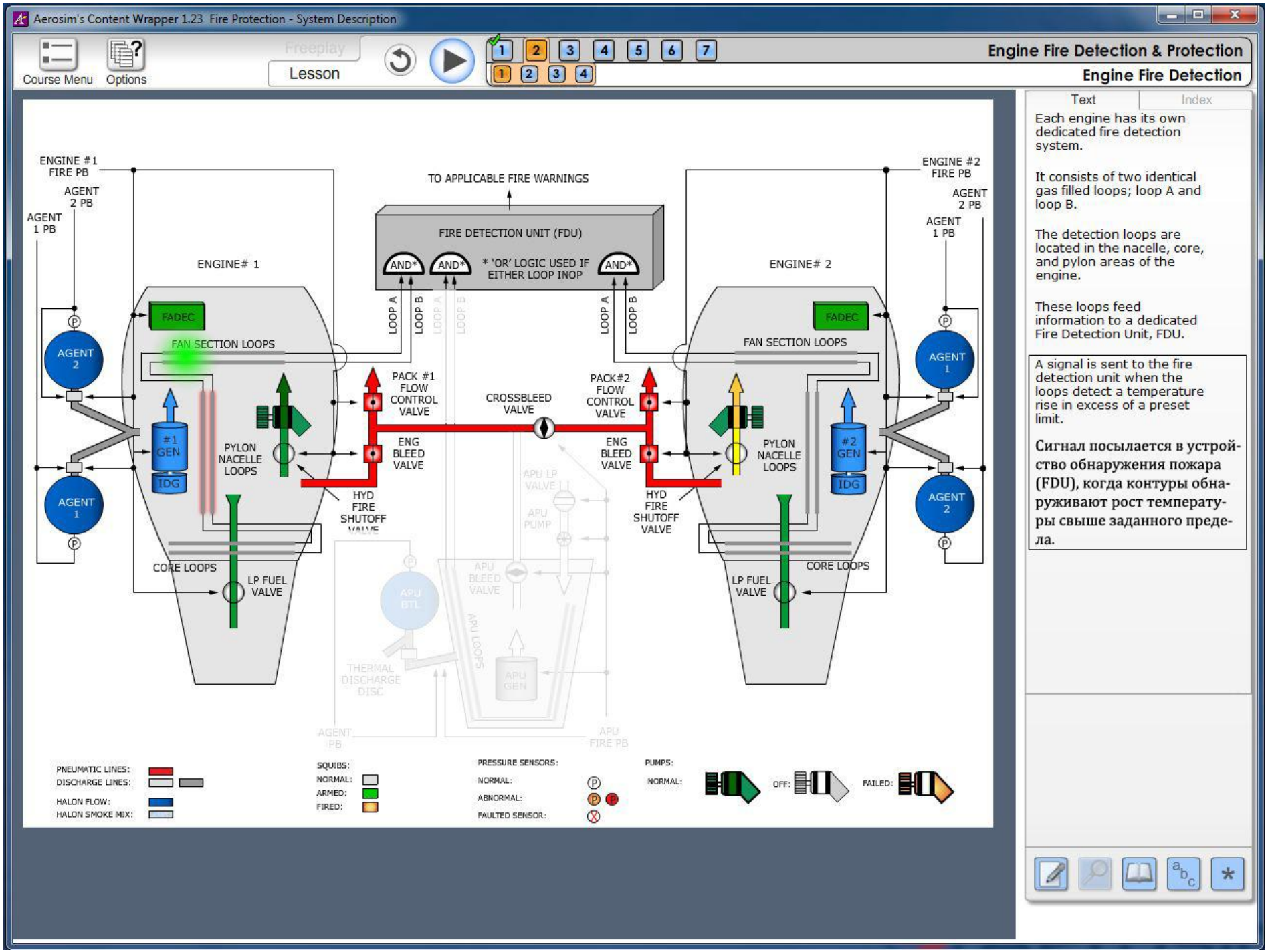

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detector in its ventilation system.
A smoke detector is also built into the avionics ventilation system.
Fire protection controls and indicators are located throughout the flightdeck.
Alerts for engine and APU fires and control of extinguishing are located on the engine and APU fire panel.
Alerts for engine fires are also located on the engine control panel on the center pedestal.
Smoke alerts and control of fire extinguishing for the cargo compartments is located on the CARGO SMOKE panel.
Fire extinguishing is not provided for avionics smoke, but controls located on the VENTILATION and EMER ELEC PWR panels enable system reconfiguration when smoke is detected.
ECAM failure messages alert the crew to the detection of fire or smoke for all the systems mentioned.
Дисплей неисправностей ECAM выдаёт экипажу сигнал тревоги при обнаружении пожара или дыма во всех упомянутых системах.
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
DISCH
AGENT
EMER ELEC PWR
EMER GEN TEST
GEN 1 LINE
RAT & EMER GEN
MAN ON
AUTO
CARGO SMOKE
FWD
AFT
VENTILATION
BLOWER
EXTRACT
CAB FANS
84.6
74.9
FOB: 17680 LBS
ENG 1 FIRE
-THR LEVER 1.....IDLE
-ENG MASTER 1.....OFF
-ENG 1 FIRE P/B....PUSH
-ATC.....NOTIFY
LAND ASAP
ENG
ON
OFF
MODE
CRANK
NORM
IGN START

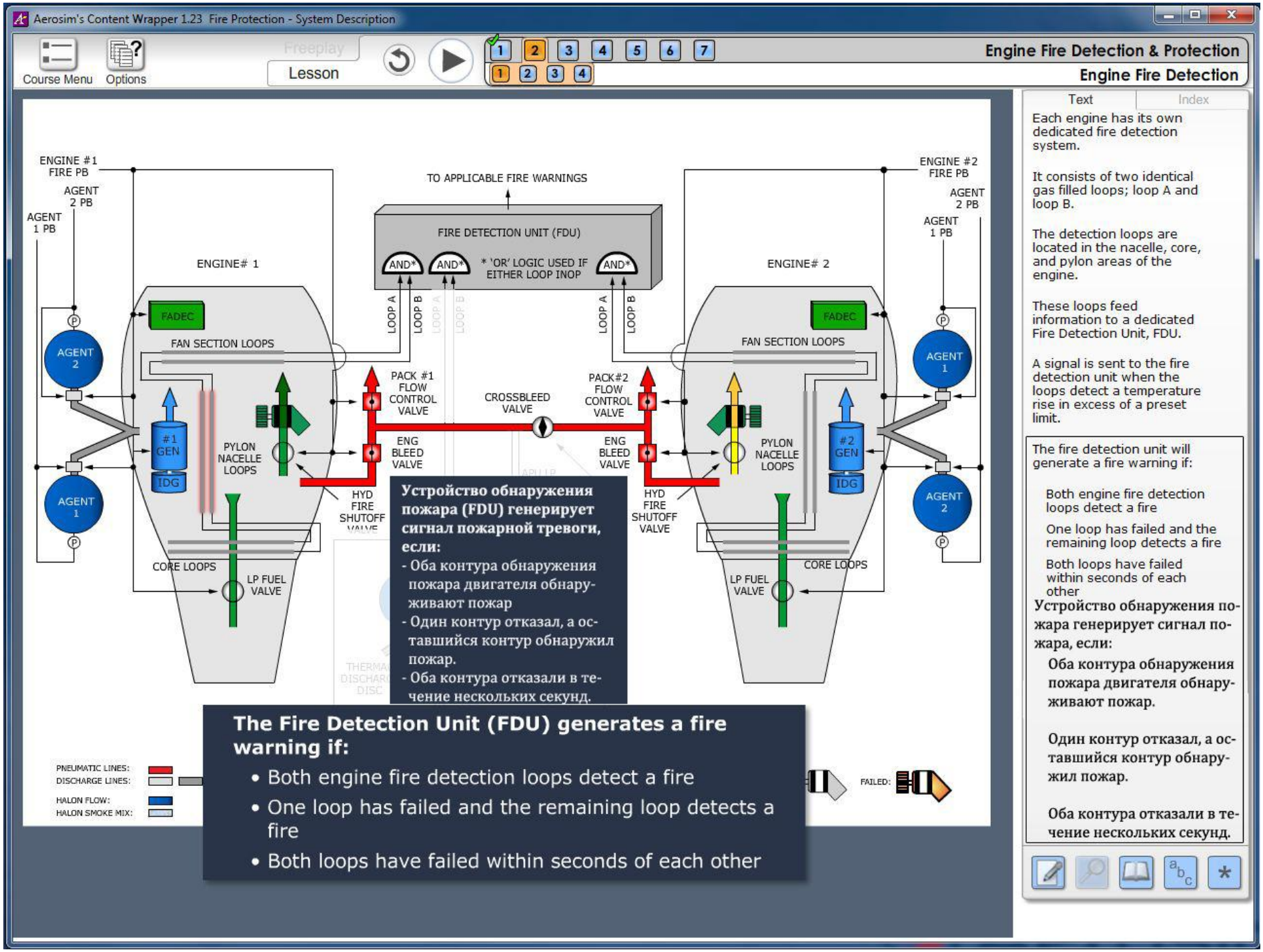

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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System Overview
Text
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built into the avionics ventilation system.
Fire protection controls and indicators are located throughout the flightdeck.
Alerts for engine and APU fires and control of extinguishing are located on the engine and APU fire panel.
Alerts for engine fires are also located on the engine control panel on the center pedestal.
Smoke alerts and control of fire extinguishing for the cargo compartments is located on the CARGO SMOKE panel.
Fire extinguishing is not provided for avionics smoke, but controls located on the VENTILATION and EMER ELEC PWR panels enable system reconfiguration when smoke is detected.
ECAM failure messages alert the crew to the detection of fire or smoke for all the systems mentioned.
There is no ECAM systems page dedicated to smoke and fire protection.
Нет специальной ECAM страницы по системам, предназначенной для защиты от пожара и дыма.
APU
ENG 1
ENG 2
AGENT 1
AGENT 2
FIRE
PUSH
TEST
DISCH
AGENT
EMER ELEC PWR
EMER GEN TEST
GEN 1 LINE
RAT & EMER GEN
MAN ON
CARGO SMOKE
FWD
AFT
VENTILATION
BLOWER
EXTRACT
CAB FANS
FOB: 17680 LBS
ENG 1 FIRE
-THR LEVER 1.....IDLE
-ENG MASTER 1.....OFF
-ENG 1 FIRE P/B....PUSH
-ATC.....NOTIFY
LAND ASAP
ENG
MODE
NORM
CRANK
IGN START
ON
OFF

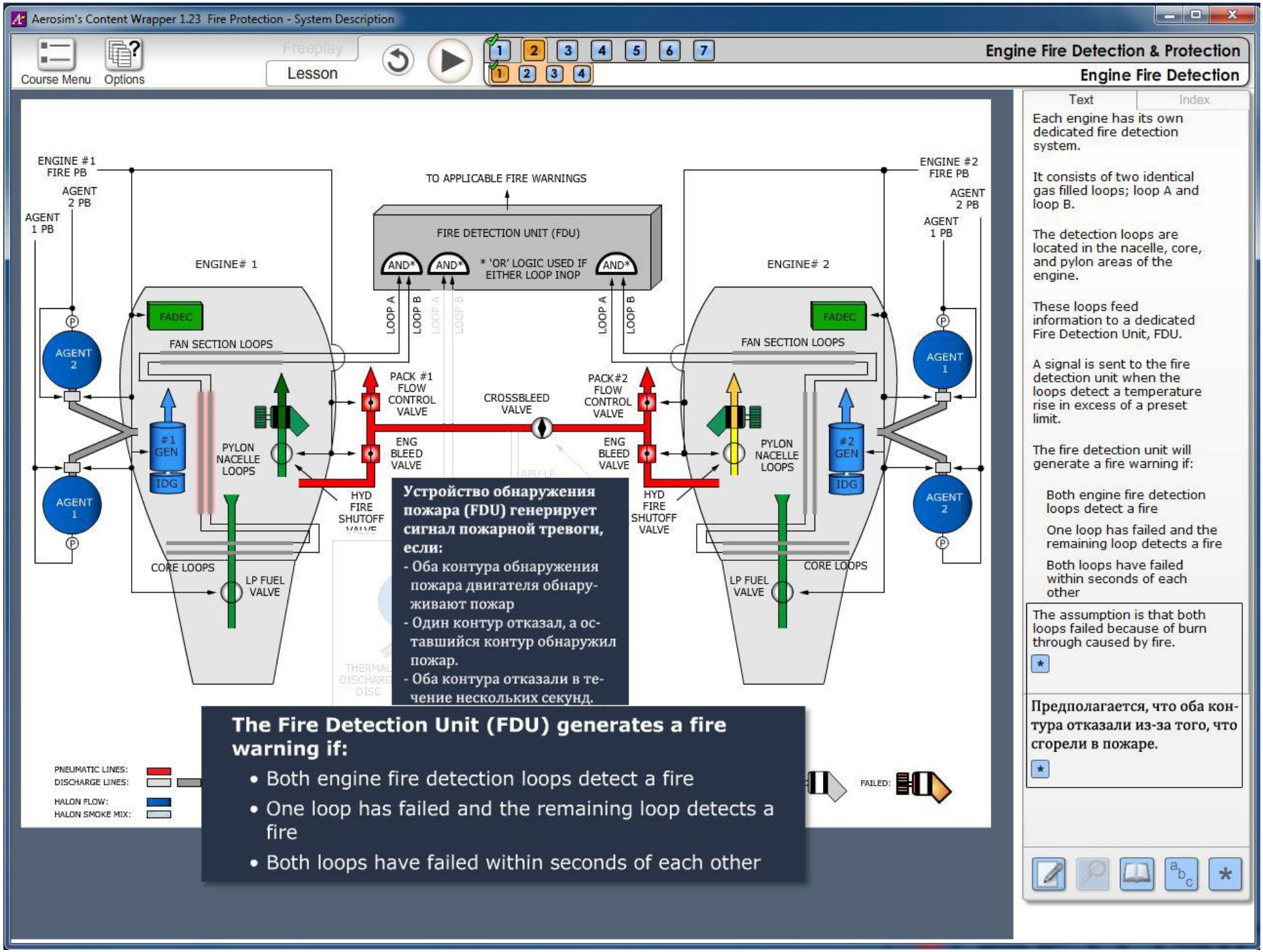

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
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Engine Fire Detection & Protection
Engine Fire Detection
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Each engine has its own dedicated fire detection system.
It consists of two identical gas filled loops; loop A and loop B.
Каждый двигатель имеет собственную систему, предназначенную для обнаружения пожара.
Она состоит из двух одинаковых заполненных газом контуров: контура А и контура В.
ENGINE #1 FIRE PB
AGENT 2 PB
AGENT 1 PB
ENGINE# 1
TO APPLICABLE FIRE WARNINGS
FIRE DETECTION UNIT (FDU)
AND*
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
AND*
ENGINE# 2
ENGINE #2 FIRE PB
AGENT 2 PB
AGENT 1 PB
LOOP A
LOOP B
FADEC
FAN SECTION LOOPS
AGENT 2
AGENT 1
#1 GEN
IDG
PYLON NACELLE LOOPS
PACK #1 FLOW CONTROL VALVE
ENG BLEED VALVE
HYD FIRE SHUTOFF VALVE
CROSSBLEED VALVE
PACK#2 FLOW CONTROL VALVE
#2 GEN
CORE LOOPS
LP FUEL VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:

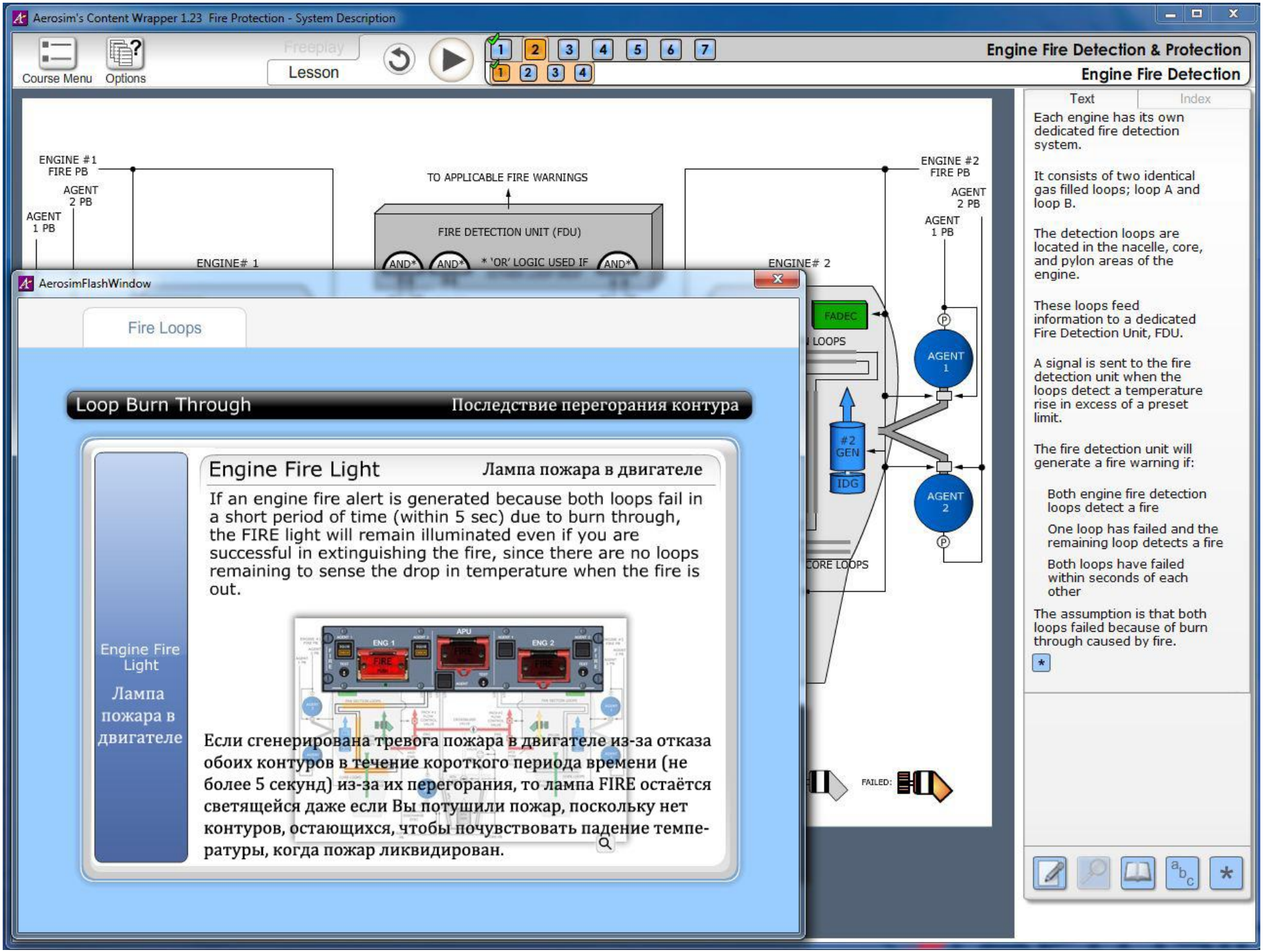

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Each engine has its own dedicated fire detection system.
It consists of two identical gas filled loops; loop A and loop B.
The detection loops are located in the nacelle, core, and pylon areas of the engine.
Контуры обнаружения расположены в секции внешнего контура двигателя, во внутреннем контуре, в пилоне подвески и мотогондоле двигателя. (текст не соответствует английскому оригиналу, но соответствует схеме).
ENGINE #1 FIRE PB
AGENT 2 PB
AGENT 1 PB
ENGINE# 1
TO APPLICABLE FIRE WARNINGS
FIRE DETECTION UNIT (FDU)
AND*
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
AND*
ENGINE# 2
ENGINE #2 FIRE PB
AGENT 2 PB
AGENT 1 PB
LOOP A
LOOP B
FADEC
FAN SECTION LOOPS
AGENT 2
AGENT 1
#1 GEN
IDG
PYLON NACELLE LOOPS
PACK #1 FLOW CONTROL VALVE
CROSSBLEED VALVE
PACK#2 FLOW CONTROL VALVE
ENG BLEED VALVE
HYD FIRE SHUTOFF VALVE
#2 GEN
CORE LOOPS
LP FUEL VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:

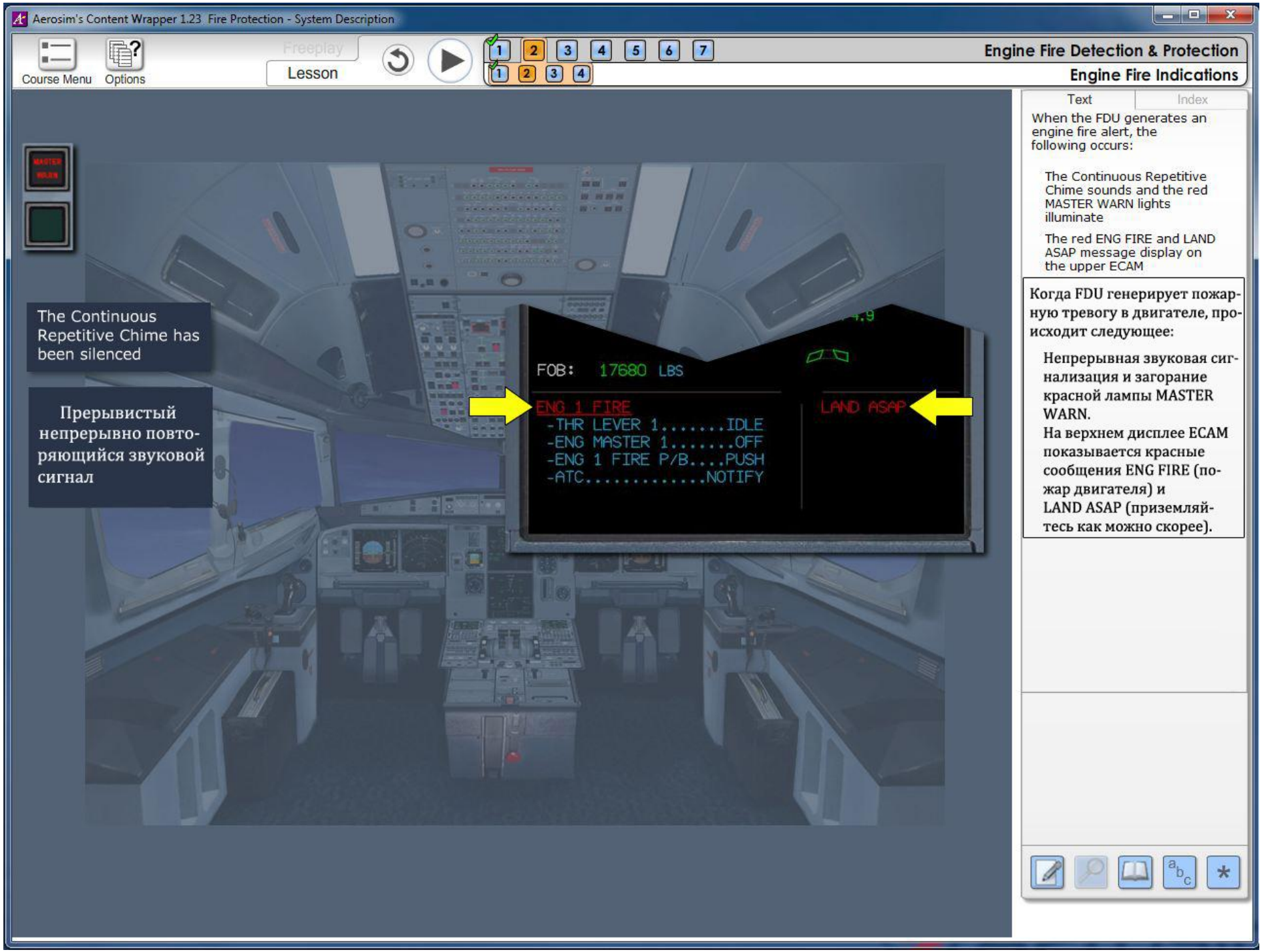

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Each engine has its own dedicated fire detection system.
It consists of two identical gas filled loops; loop A and loop B.
The detection loops are located in the nacelle, core, and pylon areas of the engine.
These loops feed information to a dedicated Fire Detection Unit, FDU.
Эти контуры (обнаружения) питают информацией устройство обнаружения пожара или FDU.
ENGINE #1 FIRE PB
AGENT 2 PB
AGENT 1 PB
ENGINE# 1
TO APPLICABLE FIRE WARNINGS
FIRE DETECTION UNIT (FDU)
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
ENGINE# 2
ENGINE #2 FIRE PB
FADEC
FAN SECTION LOOPS
LOOP A
LOOP B
AGENT 2
AGENT 1
#1 GEN
#2 GEN
IDG
PYLON NACELLE LOOPS
PACK #1 FLOW CONTROL VALVE
PACK#2 FLOW CONTROL VALVE
CROSSBLEED VALVE
ENG BLEED VALVE
HYD FIRE SHUTOFF VALVE
CORE LOOPS
LP FUEL VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:

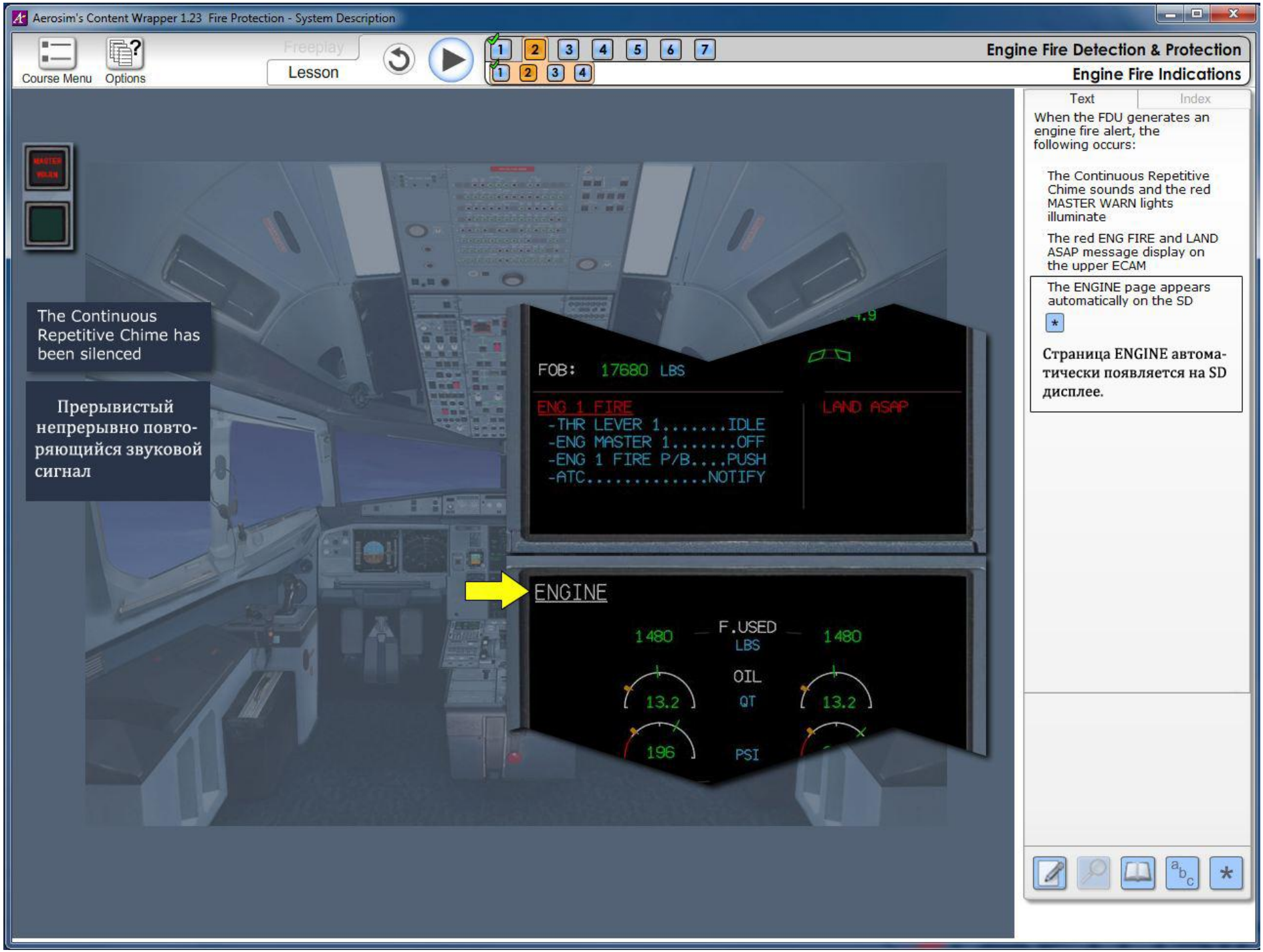

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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Each engine has its own dedicated fire detection system.
It consists of two identical gas filled loops; loop A and loop B.
The detection loops are located in the nacelle, core, and pylon areas of the engine.
These loops feed information to a dedicated Fire Detection Unit, FDU.
A signal is sent to the fire detection unit when the loops detect a temperature rise in excess of a preset limit.
Сигнал посылается в устройство обнаружения пожара (FDU), когда контуры обнаруживают рост температуры свыше заданного предела.
ENGINE #1 FIRE PB
AGENT 2 PB
AGENT 1 PB
TO APPLICABLE FIRE WARNINGS
FIRE DETECTION UNIT (FDU)
AND*
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
AND*
ENGINE# 1
ENGINE# 2
ENGINE #2 FIRE PB
AGENT 2 PB
AGENT 1 PB
LOOP A
LOOP B
FADEC
FAN SECTION LOOPS
AGENT 2
AGENT 1
#1 GEN
IDG
PYLON NACELLE LOOPS
PACK #1 FLOW CONTROL VALVE
CROSSBLEED VALVE
PACK#2 FLOW CONTROL VALVE
ENG BLEED VALVE
HYD FIRE SHUTOFF VALVE
CORE LOOPS
LP FUEL VALVE
#2 GEN
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:


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Each engine has its own dedicated fire detection system.
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The detection loops are located in the nacelle, core, and pylon areas of the engine.
These loops feed information to a dedicated Fire Detection Unit, FDU.
A signal is sent to the fire detection unit when the loops detect a temperature rise in excess of a preset limit.
The fire detection unit will generate a fire warning if:
Both engine fire detection loops detect a fire
One loop has failed and the remaining loop detects a fire
Both loops have failed within seconds of each other
Устройство обнаружения пожара генерирует сигнал пожара, если:
Оба контура обнаружения пожара двигателя обнаруживают пожар.
Один контур отказал, а оставшийся контур обнаружил пожар.
Оба контура отказали в течение нескольких секунд.
ENGINE #1 FIRE PB
AGENT 2 PB
AGENT 1 PB
ENGINE# 1
TO APPLICABLE FIRE WARNINGS
FIRE DETECTION UNIT (FDU)
AND*
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
AND*
ENGINE# 2
ENGINE #2 FIRE PB
AGENT 2 PB
AGENT 1 PB
LOOP A
LOOP B
FADEC
FAN SECTION LOOPS
AGENT 2
AGENT 1
#1 GEN
IDG
PYLON NACELLE LOOPS
PACK #1 FLOW CONTROL VALVE
CROSSBLEED VALVE
PACK#2 FLOW CONTROL VALVE
ENG BLEED VALVE
HYD FIRE SHUTOFF VALVE
#2 GEN
CORE LOOPS
LP FUEL VALVE
Устройство обнаружения пожара (FDU) генерирует сигнал пожарной тревоги, если:
- Оба контура обнаружения пожара двигателя обнаруживают пожар
- Один контур отказал, а оставшийся контур обнаружил пожар.
- Оба контура отказали в течение нескольких секунд.
The Fire Detection Unit (FDU) generates a fire warning if:
• Both engine fire detection loops detect a fire
• One loop has failed and the remaining loop detects a fire
• Both loops have failed within seconds of each other
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
FAILED:

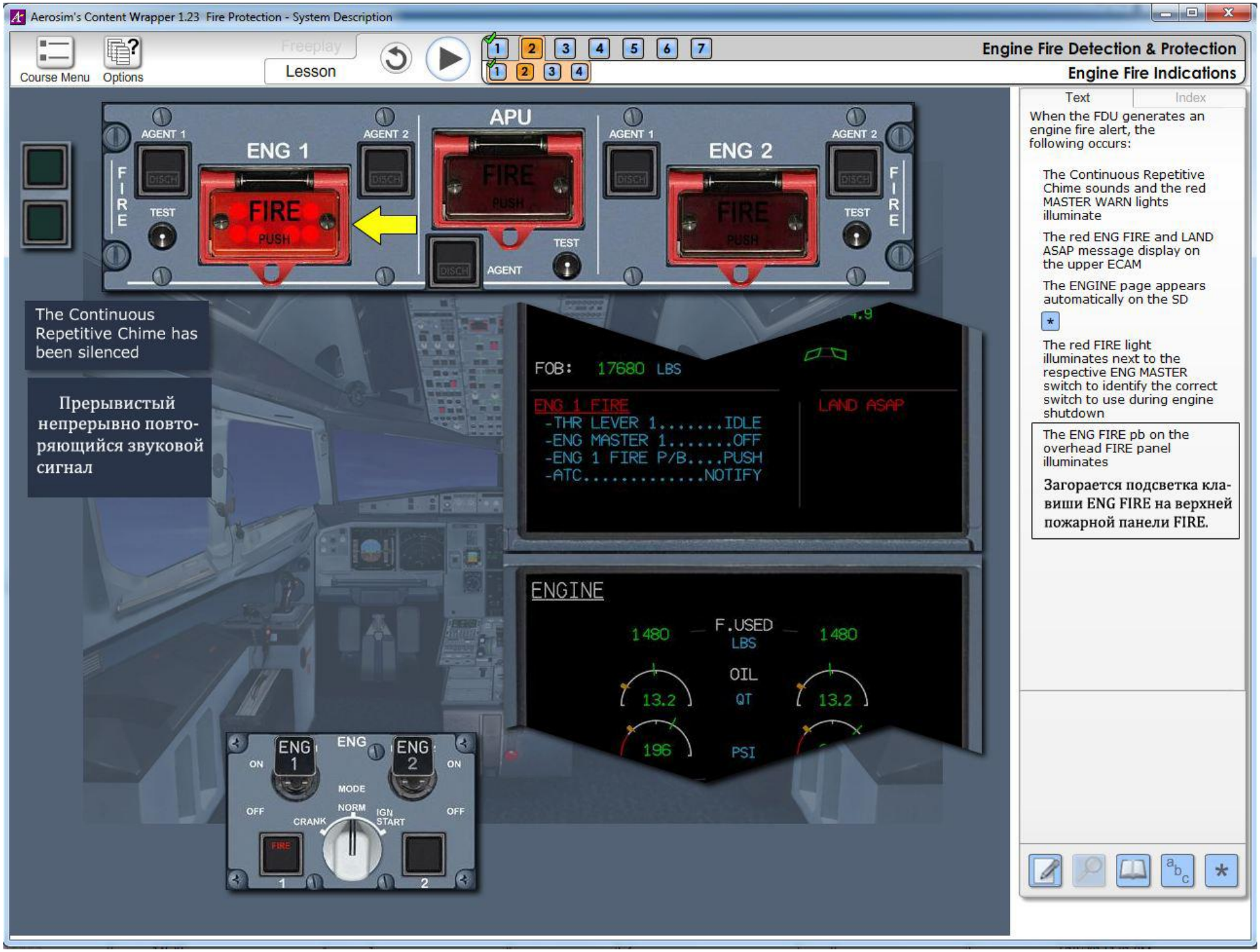

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Each engine has its own dedicated fire detection system.
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The detection loops are located in the nacelle, core, and pylon areas of the engine.
These loops feed information to a dedicated Fire Detection Unit, FDU.
A signal is sent to the fire detection unit when the loops detect a temperature rise in excess of a preset limit.
The fire detection unit will generate a fire warning if:
Both engine fire detection loops detect a fire
One loop has failed and the remaining loop detects a fire
Both loops have failed within seconds of each other
The assumption is that both loops failed because of burn through caused by fire.
Предполагается, что оба контура отказали из-за того, что сгорели в пожаре.
ENGINE #1 FIRE PB
AGENT 2 PB
AGENT 1 PB
ENGINE# 1
TO APPLICABLE FIRE WARNINGS
FIRE DETECTION UNIT (FDU)
AND*
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
AND*
ENGINE# 2
ENGINE #2 FIRE PB
AGENT 2 PB
AGENT 1 PB
LOOP A
LOOP B
FADEC
FAN SECTION LOOPS
AGENT 2
AGENT 1
PACK #1 FLOW CONTROL VALVE
CROSSBLEED VALVE
PACK#2 FLOW CONTROL VALVE
#1 GEN
IDG
PYLON NACELLE LOOPS
ENG BLEED VALVE
HYD FIRE SHUTOFF VALVE
CORE LOOPS
LP FUEL VALVE
#2 GEN
Устройство обнаружения пожара (FDU) генерирует сигнал пожарной тревоги, если:
- Оба контура обнаружения пожара двигателя обнаруживают пожар
- Один контур отказал, а оставшийся контур обнаружил пожар.
- Оба контура отказали в течение нескольких секунд.
The Fire Detection Unit (FDU) generates a fire warning if:
• Both engine fire detection loops detect a fire
• One loop has failed and the remaining loop detects a fire
• Both loops have failed within seconds of each other
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
FAILED:


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Each engine has its own dedicated fire detection system.
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The detection loops are located in the nacelle, core, and pylon areas of the engine.
These loops feed information to a dedicated Fire Detection Unit, FDU.
A signal is sent to the fire detection unit when the loops detect a temperature rise in excess of a preset limit.
The fire detection unit will generate a fire warning if:
Both engine fire detection loops detect a fire
One loop has failed and the remaining loop detects a fire
Both loops have failed within seconds of each other
The assumption is that both loops failed because of burn through caused by fire.
ENGINE #1 FIRE PB
AGENT 2 PB
AGENT 1 PB
ENGINE# 1
TO APPLICABLE FIRE WARNINGS
FIRE DETECTION UNIT (FDU)
AND*
AND*
* 'OR' LOGIC USED IF
AND*
ENGINE# 2
ENGINE #2 FIRE PB
AGENT 2 PB
AGENT 1 PB
FADEC
LOOPS
AGENT 1
#2 GEN
IDG
AGENT 2
CORE LOOPS
FAILED:
AerosimFlashWindow
Fire Loops
Loop Burn Through
Последствие перегорания контура
Engine Fire Light
Лампа пожара в двигателе
If an engine fire alert is generated because both loops fail in a short period of time (within 5 sec) due to burn through, the FIRE light will remain illuminated even if you are successful in extinguishing the fire, since there are no loops remaining to sense the drop in temperature when the fire is out.
Engine Fire Light
Лампа пожара в двигателе
APU
ENG 1
ENG 2
FIRE
Если сгенерирована тревога пожара в двигателе из-за отказа обоих контуров в течение короткого периода времени (не более 5 секунд) из-за их перегорания, то лампа FIRE остаётся светящейся даже если Вы потушили пожар, поскольку нет контуров, остающихся, чтобы почувствовать падение температуры, когда пожар ликвидирован.

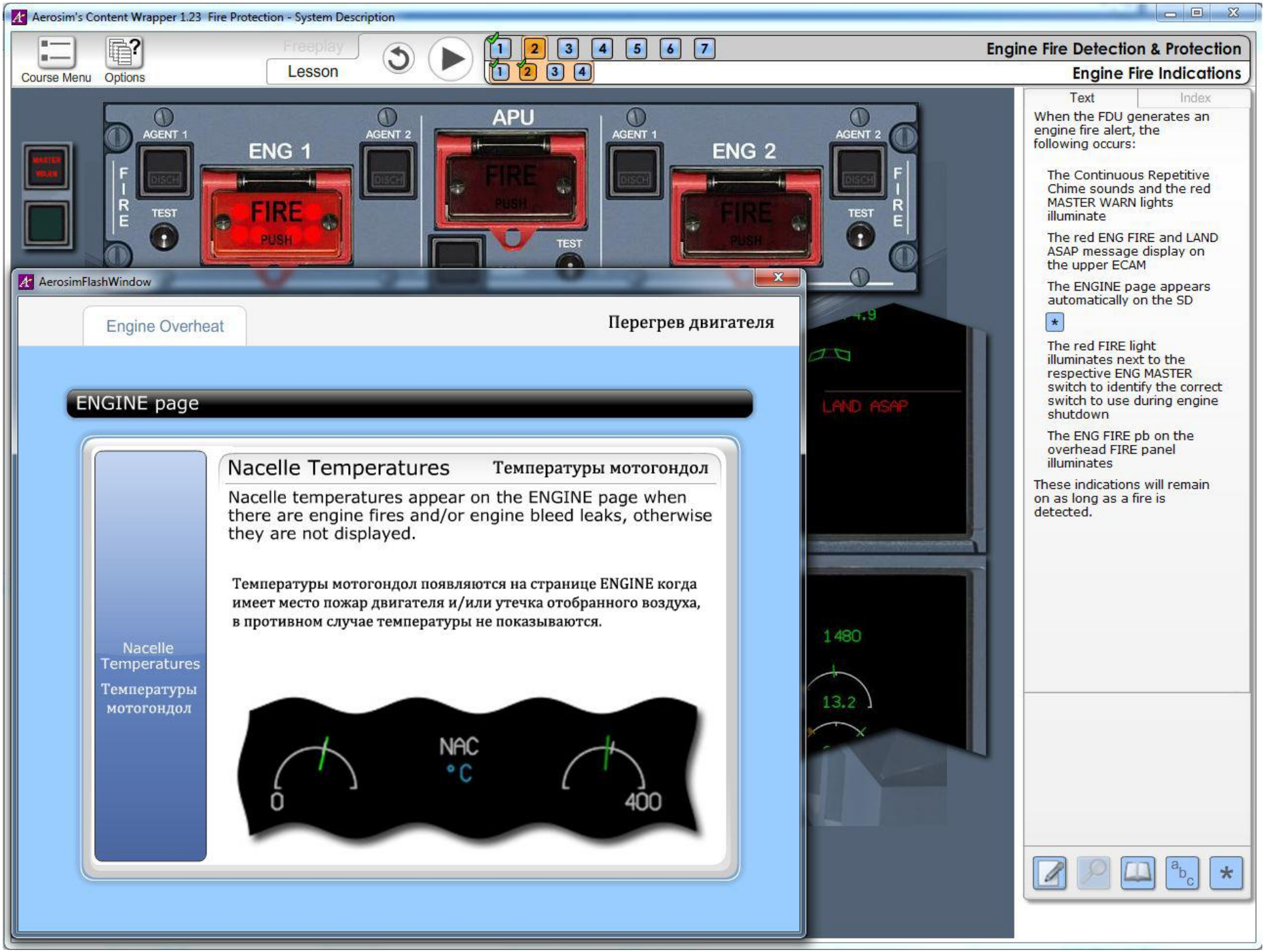

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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When the FDU generates an engine fire alert, the following occurs:
The Continuous Repetitive Chime sounds and the red MASTER WARN lights illuminate
The red ENG FIRE and LAND ASAP message display on the upper ECAM
Когда FDU генерирует пожарную тревогу в двигателе, происходит следующее:
Непрерывная звуковая сигнализация и загорание красной лампы MASTER WARN.
На верхнем дисплее ECAM показывается красные сообщения ENG FIRE (пожар двигателя) и LAND ASAP (приземляйтесь как можно скорее).
The Continuous Repetitive Chime has been silenced
Прерывистый непрерывно повторяющийся звуковой сигнал
FOB: 17680 LBS
ENG 1 FIRE
-THR LEVER 1.....IDLE
-ENG MASTER 1.....OFF
-ENG 1 FIRE P/B....PUSH
-ATC.....NOTIFY
LAND ASAP

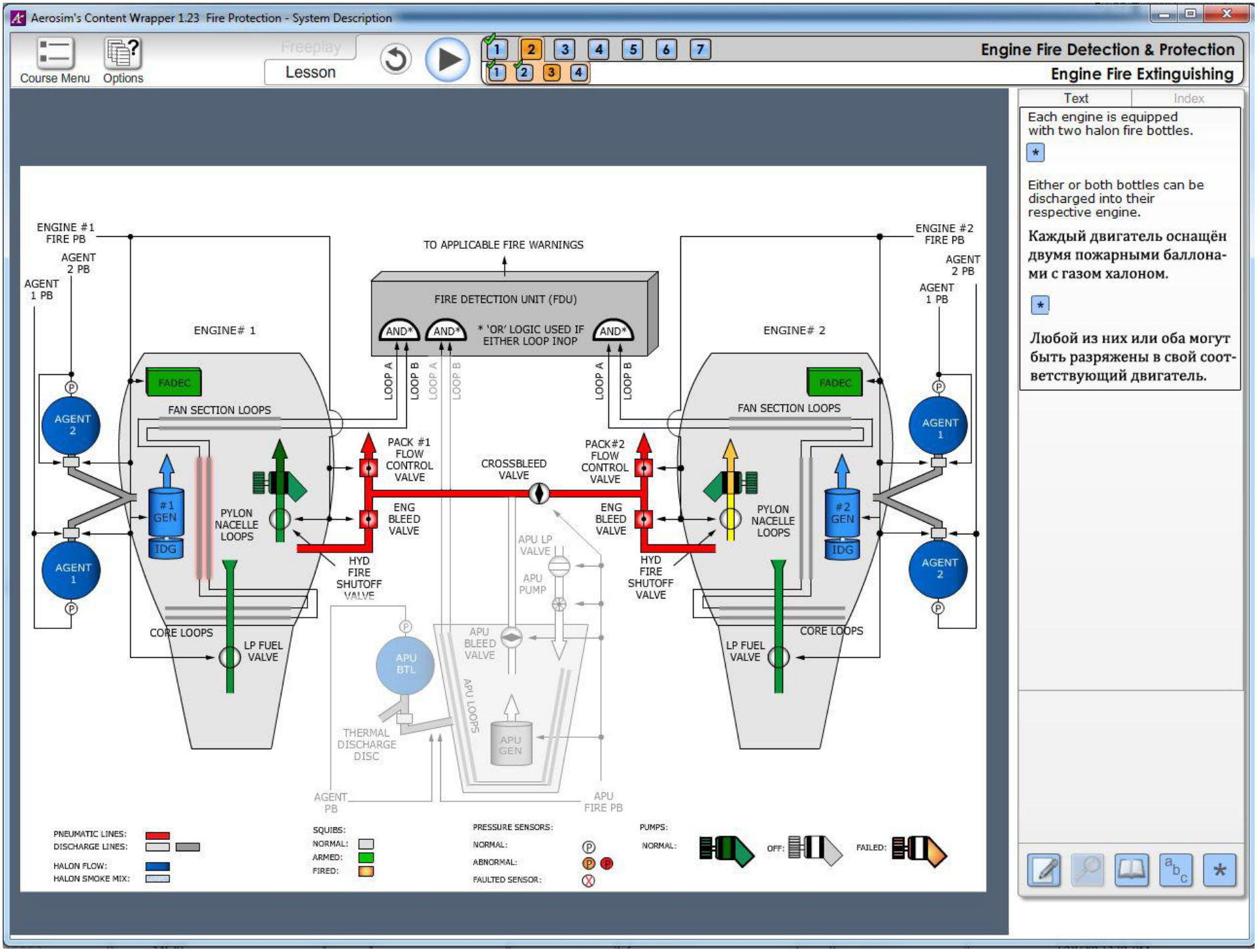

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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When the FDU generates an engine fire alert, the following occurs:
The Continuous Repetitive Chime sounds and the red MASTER WARN lights illuminate
The red ENG FIRE and LAND ASAP message display on the upper ECAM
The ENGINE page appears automatically on the SD
Страница ENGINE автоматически появляется на SD дисплее.
The Continuous Repetitive Chime has been silenced
Прерывистый непрерывно повторяющийся звуковой сигнал
FOB: 17680 LBS
ENG 1 FIRE
-THR LEVER 1.....IDLE
-ENG MASTER 1.....OFF
-ENG 1 FIRE P/B....PUSH
-ATC.....NOTIFY
LAND ASAP
ENGINE
1480
F.USED
LBS
1480
OIL
13.2
QT
13.2
196
PSI

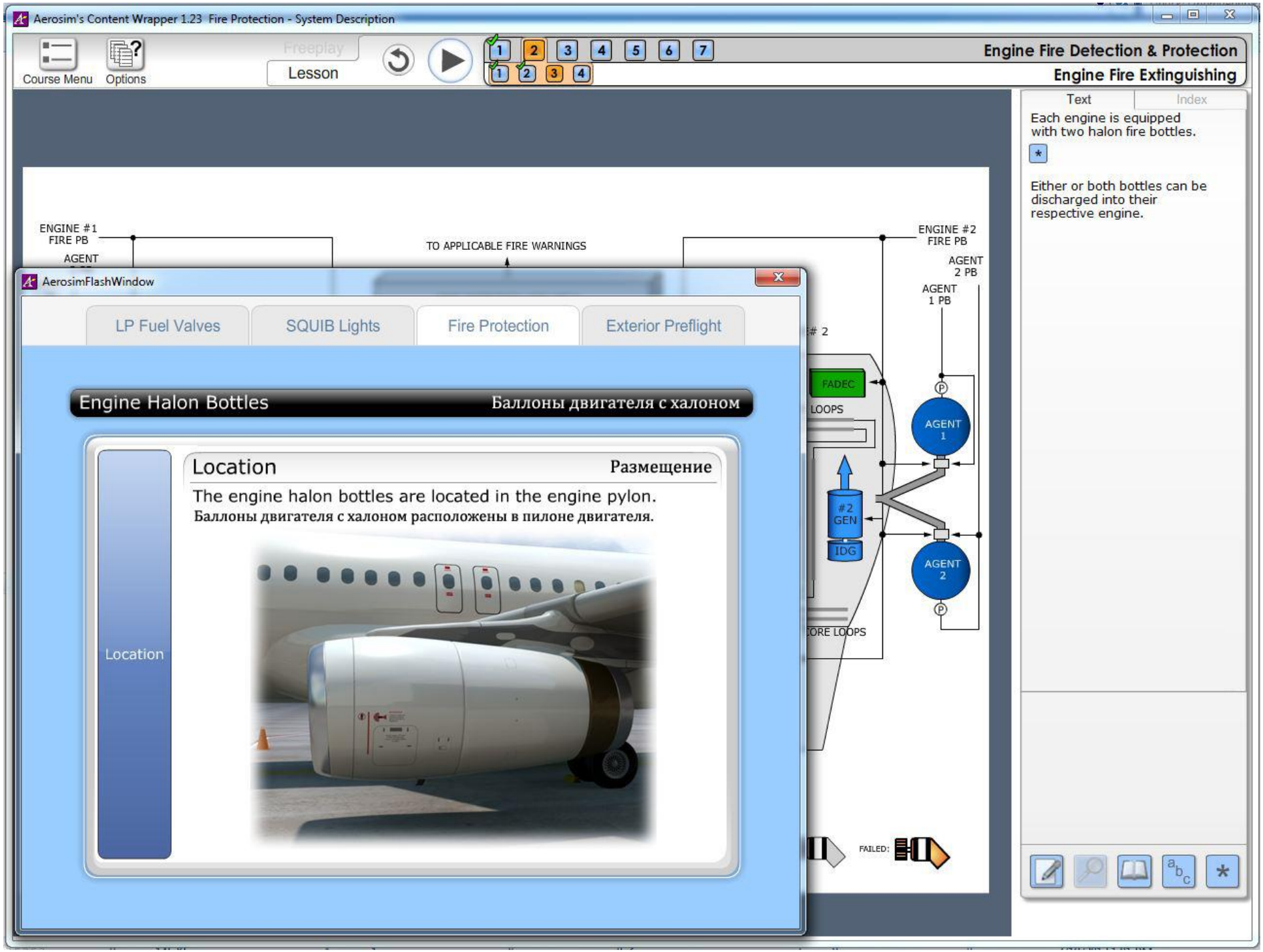

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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Engine Fire Detection & Protection
Engine Fire Indications
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When the FDU generates an engine fire alert, the following occurs:
The Continuous Repetitive Chime sounds and the red MASTER WARN lights illuminate
The red ENG FIRE and LAND ASAP message display on the upper ECAM
The ENGINE page appears automatically on the SD
*
The red FIRE light illuminates next to the respective ENG MASTER switch to identify the correct switch to use during engine shutdown
Следом загорается красная лампа FIRE на соответствующем выключателе ENG MASTER, чтобы идентифицировать правильный выключатель для остановки двигателя.
The Continuous Repetitive Chime has been silenced
Прерывистый непрерывно повторяющийся звуковой сигнал
FOB: 17680 LBS
ENG 1 FIRE
-THR LEVER 1.....IDLE
-ENG MASTER 1.....OFF
-ENG 1 FIRE P/B....PUSH
-ATC.....NOTIFY
LAND ASAP
ENGINE
1480
F.USED
LBS
1480
OIL
13.2
QT
13.2
196
PSI
ENG
ENG 1
ENG 2
ON
ON
MODE
OFF
NORM
IGN START
OFF
CRANK
FIRE
1
2

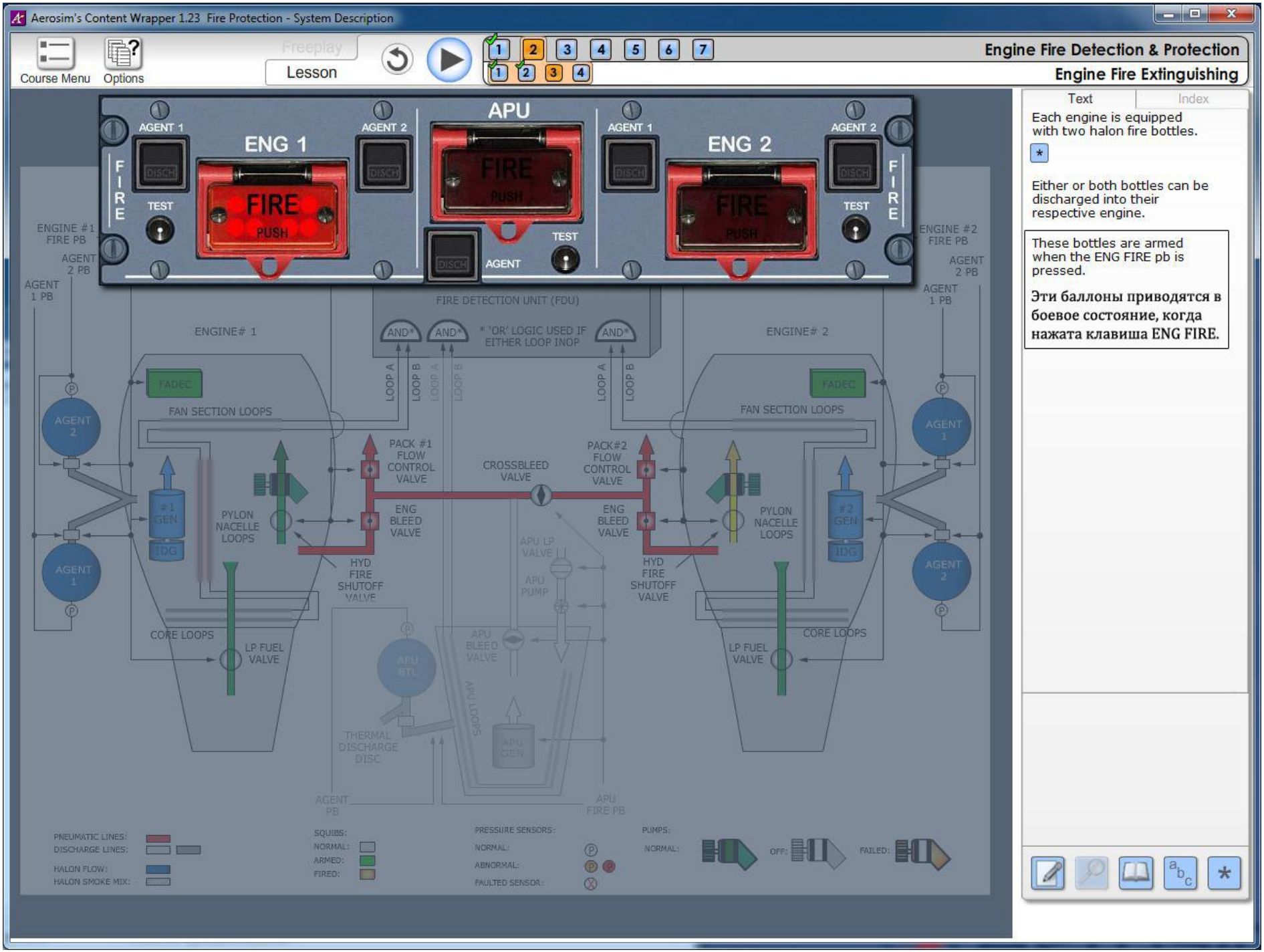

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When the FDU generates an engine fire alert, the following occurs:
The Continuous Repetitive Chime sounds and the red MASTER WARN lights illuminate
The red ENG FIRE and LAND ASAP message display on the upper ECAM
The ENGINE page appears automatically on the SD
*
The red FIRE light illuminates next to the respective ENG MASTER switch to identify the correct switch to use during engine shutdown
The ENG FIRE pb on the overhead FIRE panel illuminates
Загорается подсветка клавиши ENG FIRE на верхней пожарной панели FIRE.
The Continuous Repetitive Chime has been silenced
Прерывистый непрерывно повторяющийся звуковой сигнал
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
AGENT
DISCH
FOB: 17680 LBS
ENG 1 FIRE
-THR LEVER 1.....IDLE
-ENG MASTER 1.....OFF
-ENG 1 FIRE P/B....PUSH
-ATC.....NOTIFY
LAND ASAP
ENGINE
1480
F.USED
LBS
OIL
QT
13.2
196
PSI
ENG
MODE
NORM
CRANK
IGN START
ON
OFF

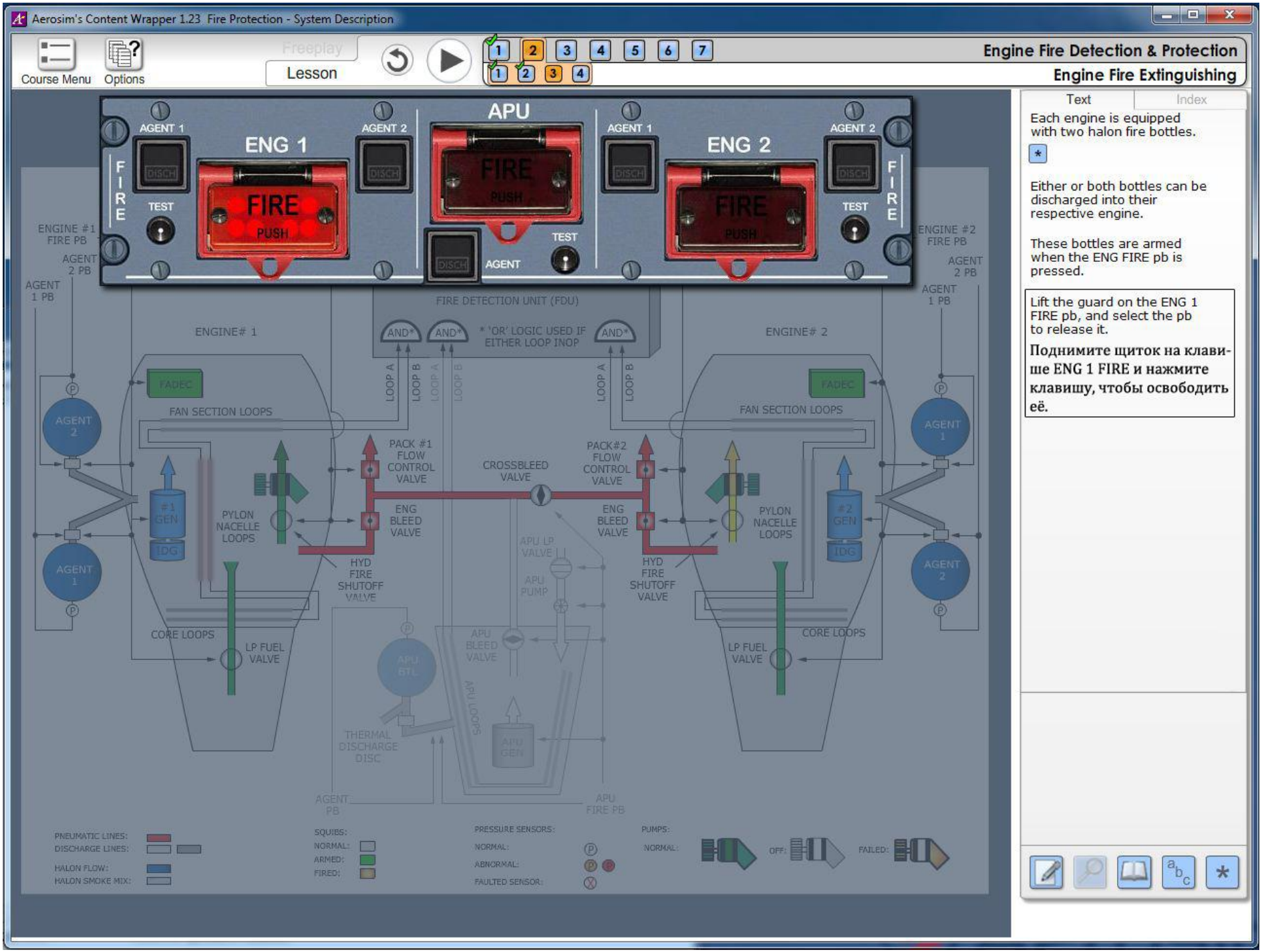

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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Options
Freeplay
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When the FDU generates an engine fire alert, the following occurs:
The Continuous Repetitive Chime sounds and the red MASTER WARN lights illuminate
The red ENG FIRE and LAND ASAP message display on the upper ECAM
The ENGINE page appears automatically on the SD
The red FIRE light illuminates next to the respective ENG MASTER switch to identify the correct switch to use during engine shutdown
The ENG FIRE pb on the overhead FIRE panel illuminates
These indications will remain on as long as a fire is detected.
Такие индикации остаются включёнными, пока обнаруживается пожар.
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
AGENT
The Continuous Repetitive Chime has been silenced
Прерывистый непрерывно повторяющийся звуковой сигнал
FOB: 17680 LBS
ENG 1 FIRE
-THR LEVER 1.....IDLE
-ENG MASTER 1.....OFF
-ENG 1 FIRE P/B....PUSH
-ATC.....NOTIFY
LAND ASAP
ENGINE
1480
F.USED
LBS
OIL
QT
13.2
196
PSI
ENG
MODE
NORM
IGN START
CRANK
ON
OFF

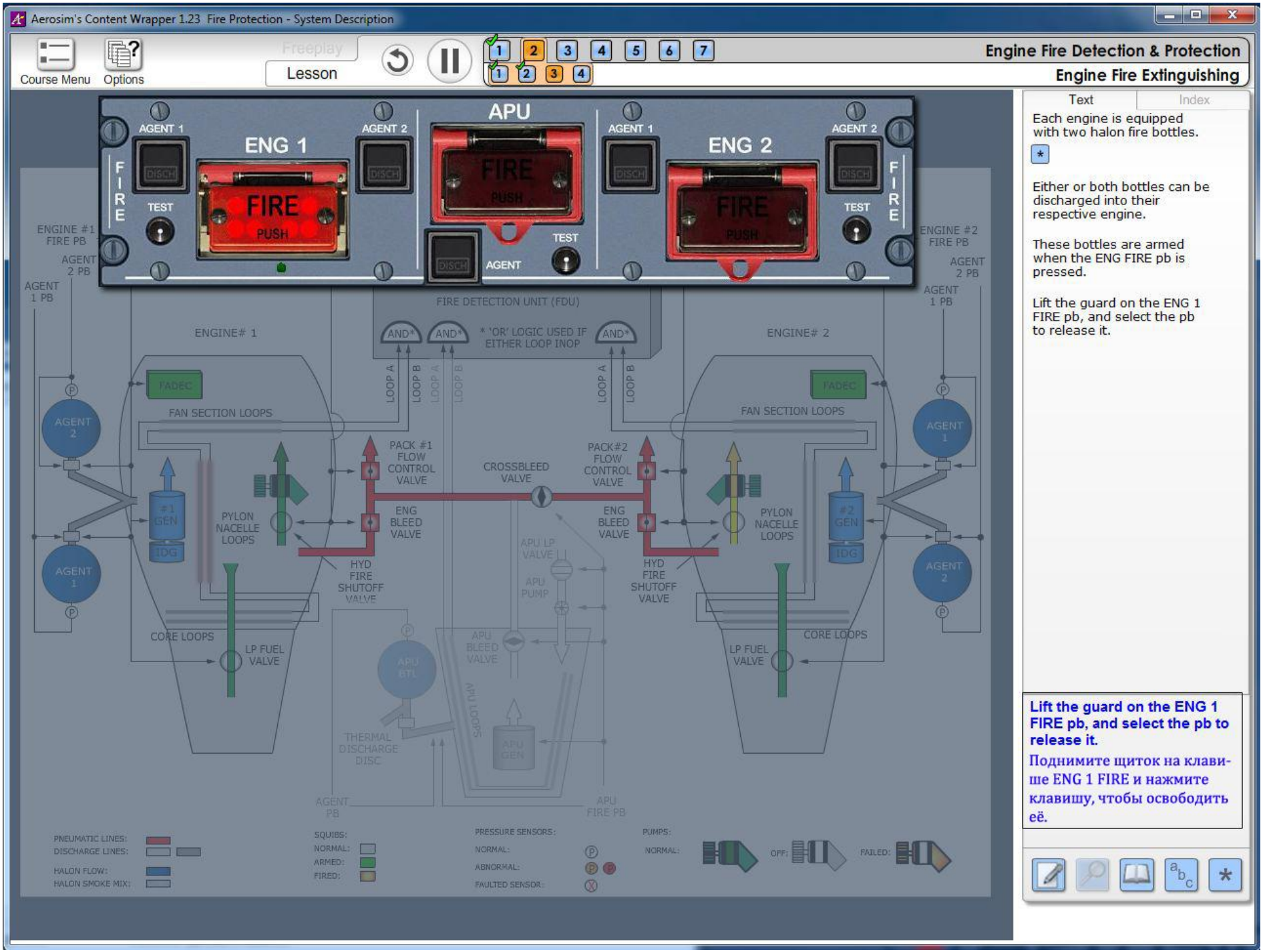

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Engine Fire Detection & Protection
Engine Fire Indications
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
AerosimFlashWindow
Engine Overheat
Перегрев двигателя
ENGINE page
Nacelle Temperatures
Температуры мотогондол
Nacelle temperatures appear on the ENGINE page when there are engine fires and/or engine bleed leaks, otherwise they are not displayed.
Температуры мотогондол появляются на странице ENGINE когда имеет место пожар двигателя и/или утечка отобранного воздуха, в противном случае температуры не показываются.
Nacelle Temperatures
Температуры мотогондол
NAC
°C
0
400
Text
Index
When the FDU generates an engine fire alert, the following occurs:
The Continuous Repetitive Chime sounds and the red MASTER WARN lights illuminate
The red ENG FIRE and LAND ASAP message display on the upper ECAM
The ENGINE page appears automatically on the SD
The red FIRE light illuminates next to the respective ENG MASTER switch to identify the correct switch to use during engine shutdown
The ENG FIRE pb on the overhead FIRE panel illuminates
These indications will remain on as long as a fire is detected.
LAND ASAP
1480
13.2

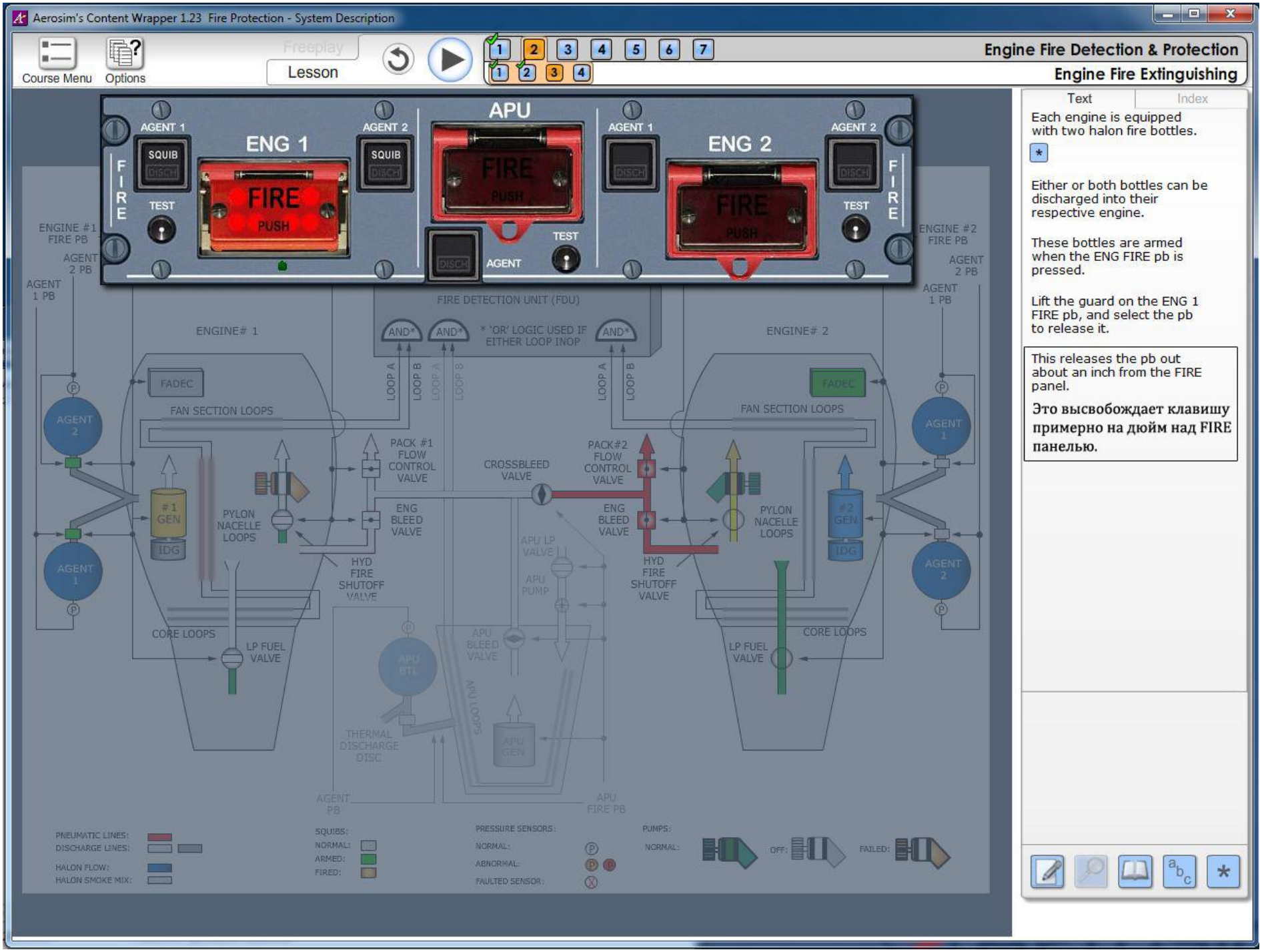

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Extinguishing
Text
Index
Each engine is equipped with two halon fire bottles.
Either or both bottles can be discharged into their respective engine.
Каждый двигатель оснащён двумя пожарными баллонами с газом халоном.
Любой из них или оба могут быть разряжены в свой соответствующий двигатель.
ENGINE #1 FIRE PB
AGENT 2 PB
AGENT 1 PB
ENGINE# 1
TO APPLICABLE FIRE WARNINGS
FIRE DETECTION UNIT (FDU)
AND*
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
AND*
ENGINE# 2
ENGINE #2 FIRE PB
AGENT 2 PB
AGENT 1 PB
LOOP A
LOOP B
LOOP A
LOOP B
LOOP A
LOOP B
FADEC
FADEC
FAN SECTION LOOPS
FAN SECTION LOOPS
AGENT 2
AGENT 1
AGENT 1
AGENT 2
PACK #1 FLOW CONTROL VALVE
CROSSBLEED VALVE
PACK#2 FLOW CONTROL VALVE
#1 GEN
IDG
PYLON NACELLE LOOPS
ENG BLEED VALVE
ENG BLEED VALVE
PYLON NACELLE LOOPS
#2 GEN
IDG
APU LP VALVE
APU PUMP
HYD FIRE SHUTOFF VALVE
HYD FIRE SHUTOFF VALVE
CORE LOOPS
LP FUEL VALVE
APU BTL
APU BLEED VALVE
APU LOOPS
CORE LOOPS
LP FUEL VALVE
THERMAL DISCHARGE DISC
APU GEN
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:

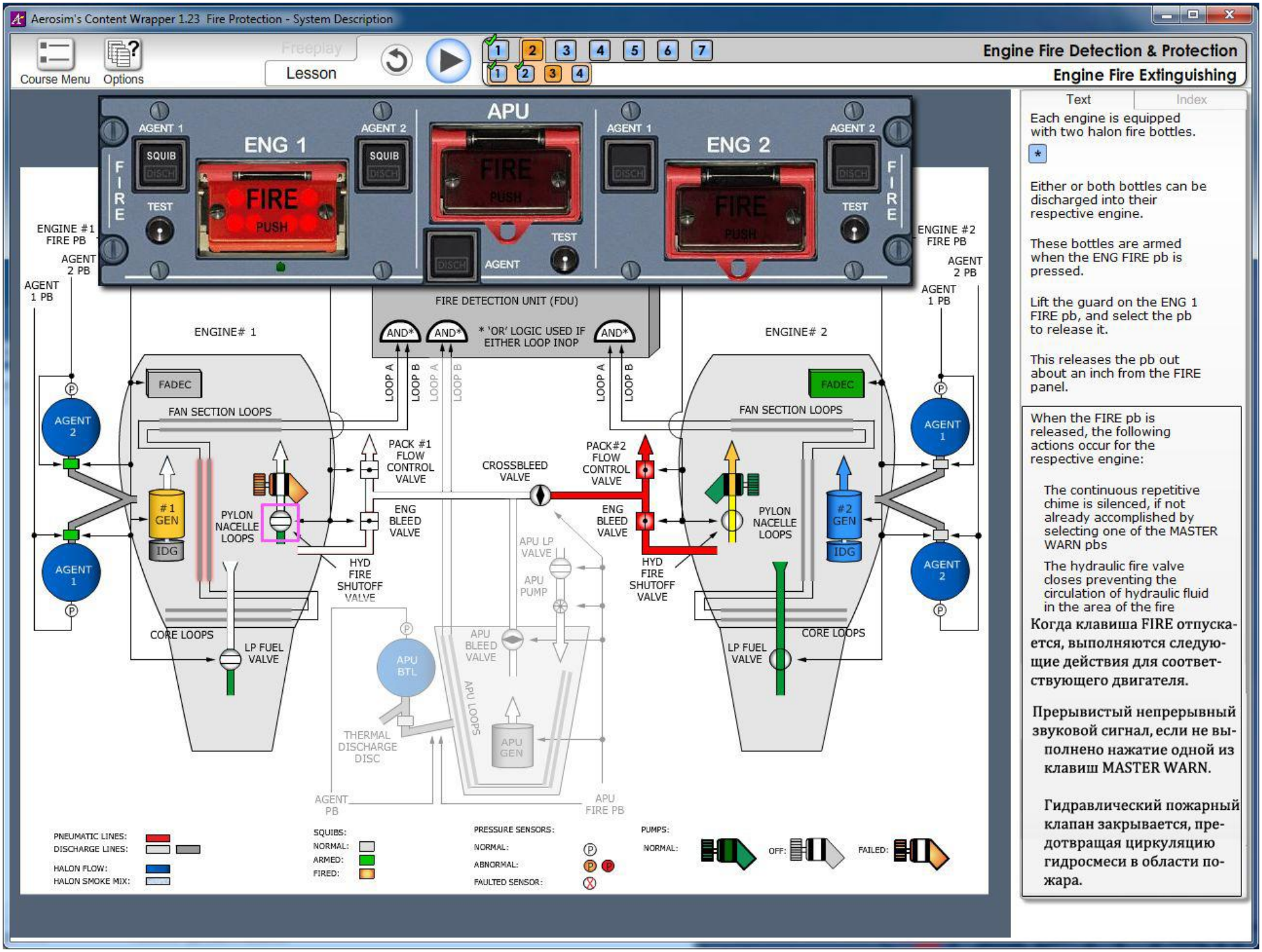

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Extinguishing
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Index
Each engine is equipped with two halon fire bottles.
Either or both bottles can be discharged into their respective engine.
ENGINE #1 FIRE PB
AGENT
TO APPLICABLE FIRE WARNINGS
ENGINE #2 FIRE PB
AGENT 2 PB
AGENT 1 PB
AerosimFlashWindow
LP Fuel Valves
SQUIB Lights
Fire Protection
Exterior Preflight
Engine Halon Bottles
Баллоны двигателя с халоном
Location
Размещение
The engine halon bottles are located in the engine pylon.
Баллоны двигателя с халоном расположены в пилоне двигателя.
Location
FADEC
LOOPS
AGENT 1
#2 GEN
IDG
AGENT 2
FAILED:

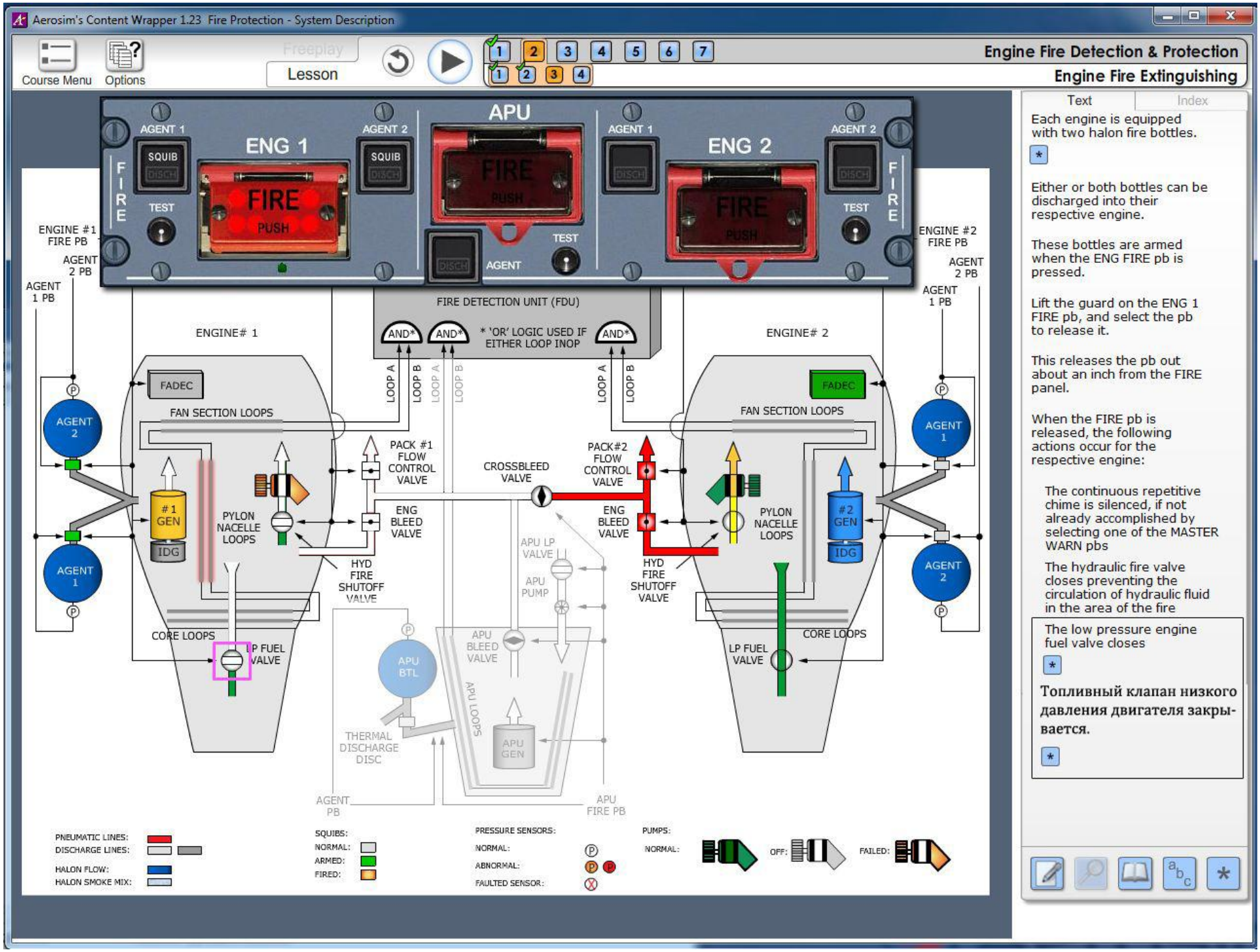

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
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Engine Fire Extinguishing
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Index
Each engine is equipped with two halon fire bottles.
Either or both bottles can be discharged into their respective engine.
These bottles are armed when the ENG FIRE pb is pressed.
Эти баллоны приводятся в боевое состояние, когда нажата клавиша ENG FIRE.
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
DISCH
AGENT
ENGINE #1 FIRE PB
ENGINE #2 FIRE PB
AGENT 2 PB
AGENT 1 PB
FIRE DETECTION UNIT (FDU)
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
ENGINE# 1
ENGINE# 2
LOOP A
LOOP B
FADEC
FAN SECTION LOOPS
PACK #1 FLOW CONTROL VALVE
PACK#2 FLOW CONTROL VALVE
CROSSBLEED VALVE
ENG BLEED VALVE
PYLON NACELLE LOOPS
#1 GEN
#2 GEN
IDG
HYD FIRE SHUTOFF VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
CORE LOOPS
LP FUEL VALVE
THERMAL DISCHARGE DISC
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:

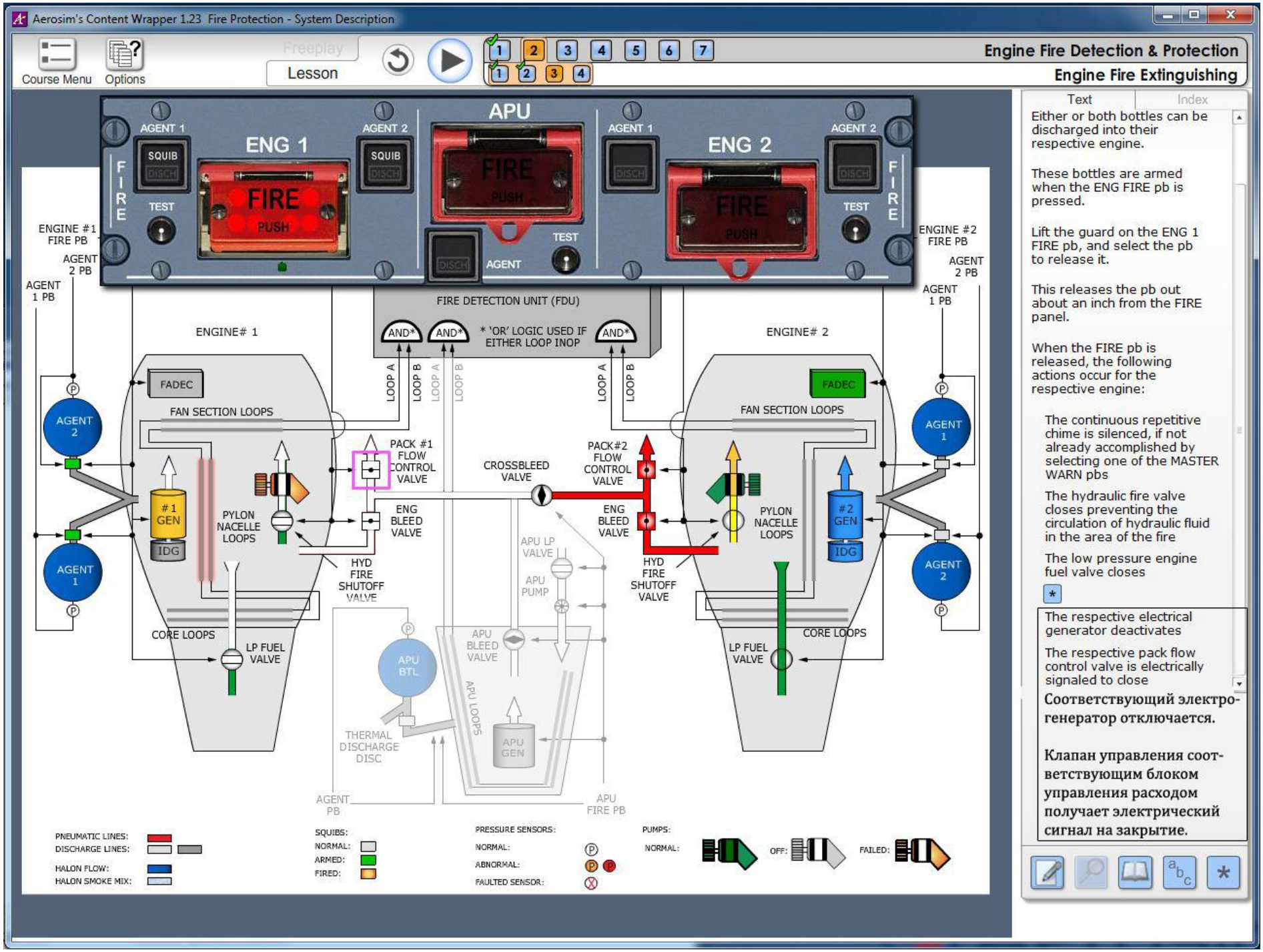

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
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Lesson
Engine Fire Detection & Protection
Engine Fire Extinguishing
Text
Index
Each engine is equipped with two halon fire bottles.
*
Either or both bottles can be discharged into their respective engine.
These bottles are armed when the ENG FIRE pb is pressed.
Lift the guard on the ENG 1 FIRE pb, and select the pb to release it.
Поднимите щиток на клавише ENG 1 FIRE и нажмите клавишу, чтобы освободить её.
AGENT 1
ENG 1
AGENT 2
APU
ENG 2
FIRE
PUSH
TEST
DISCH
AGENT
ENGINE #1 FIRE PB
AGENT 2 PB
AGENT 1 PB
ENGINE #2 FIRE PB
FIRE DETECTION UNIT (FDU)
* 'OR' LOGIC USED IF EITHER LOOP INOP
AND*
ENGINE# 1
ENGINE# 2
LOOP A
LOOP B
FADEC
FAN SECTION LOOPS
PACK #1 FLOW CONTROL VALVE
PACK#2 FLOW CONTROL VALVE
CROSSBLEED VALVE
ENG BLEED VALVE
PYLON NACELLE LOOPS
#1 GEN
#2 GEN
IDG
HYD FIRE SHUTOFF VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
CORE LOOPS
LP FUEL VALVE
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:

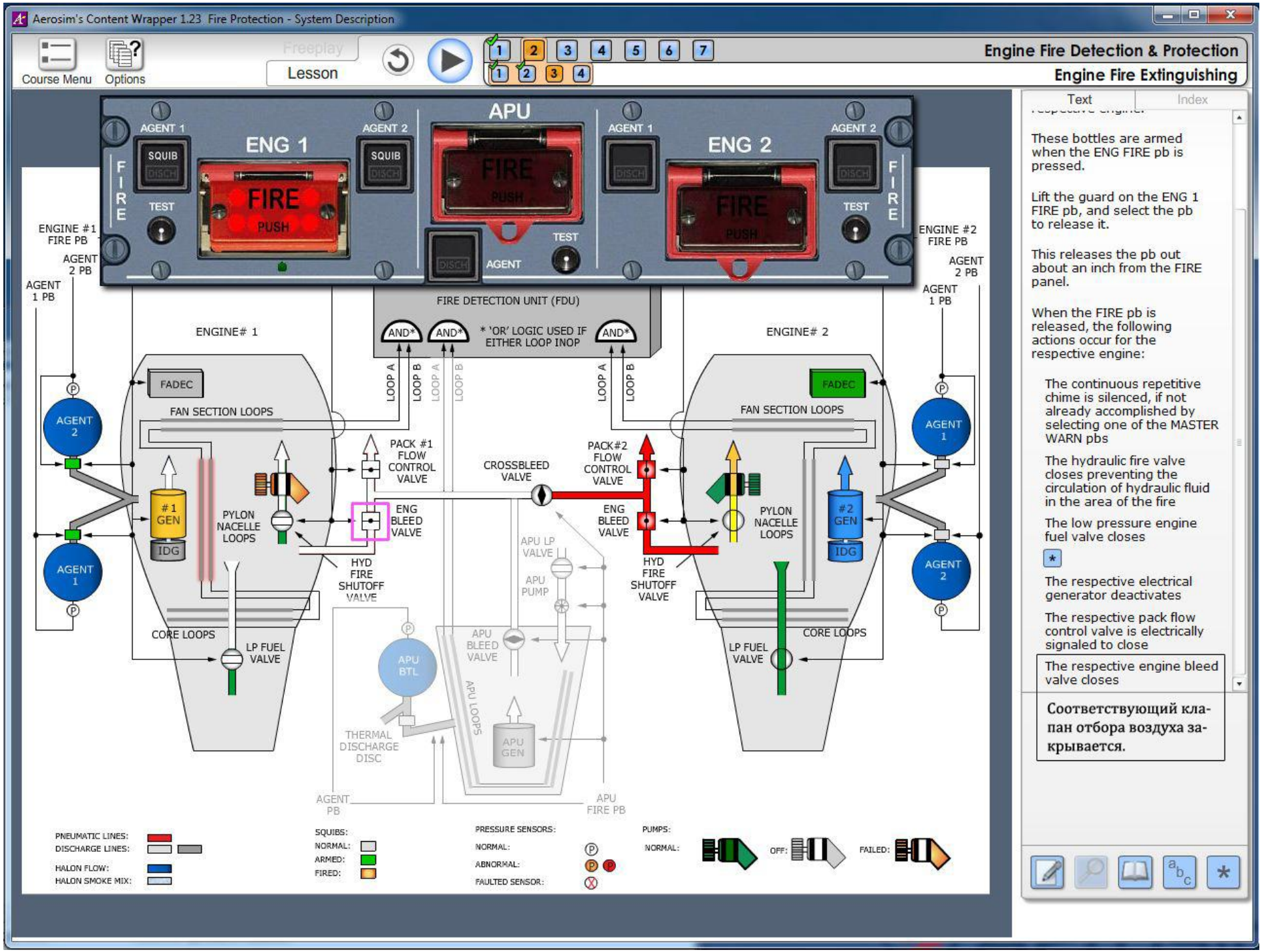

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Each engine is equipped with two halon fire bottles.
Either or both bottles can be discharged into their respective engine.
These bottles are armed when the ENG FIRE pb is pressed.
Lift the guard on the ENG 1 FIRE pb, and select the pb to release it.
Lift the guard on the ENG 1 FIRE pb, and select the pb to release it.
Поднимите щиток на клавише ENG 1 FIRE и нажмите клавишу, чтобы освободить её.
AGENT 1
ENG 1
AGENT 2
APU
ENG 2
FIRE
PUSH
TEST
DISCH
AGENT
FIRE DETECTION UNIT (FDU)
* 'OR' LOGIC USED IF EITHER LOOP INOP
ENGINE# 1
ENGINE# 2
FADEC
FAN SECTION LOOPS
PACK #1 FLOW CONTROL VALVE
PACK#2 FLOW CONTROL VALVE
CROSSBLEED VALVE
ENG BLEED VALVE
PYLON NACELLE LOOPS
HYD FIRE SHUTOFF VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
CORE LOOPS
LP FUEL VALVE
THERMAL DISCHARGE DISC
APU LOOPS
ENGINE #1 FIRE PB
ENGINE #2 FIRE PB
AGENT 1 PB
AGENT 2 PB
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
OFF:
FAILED:

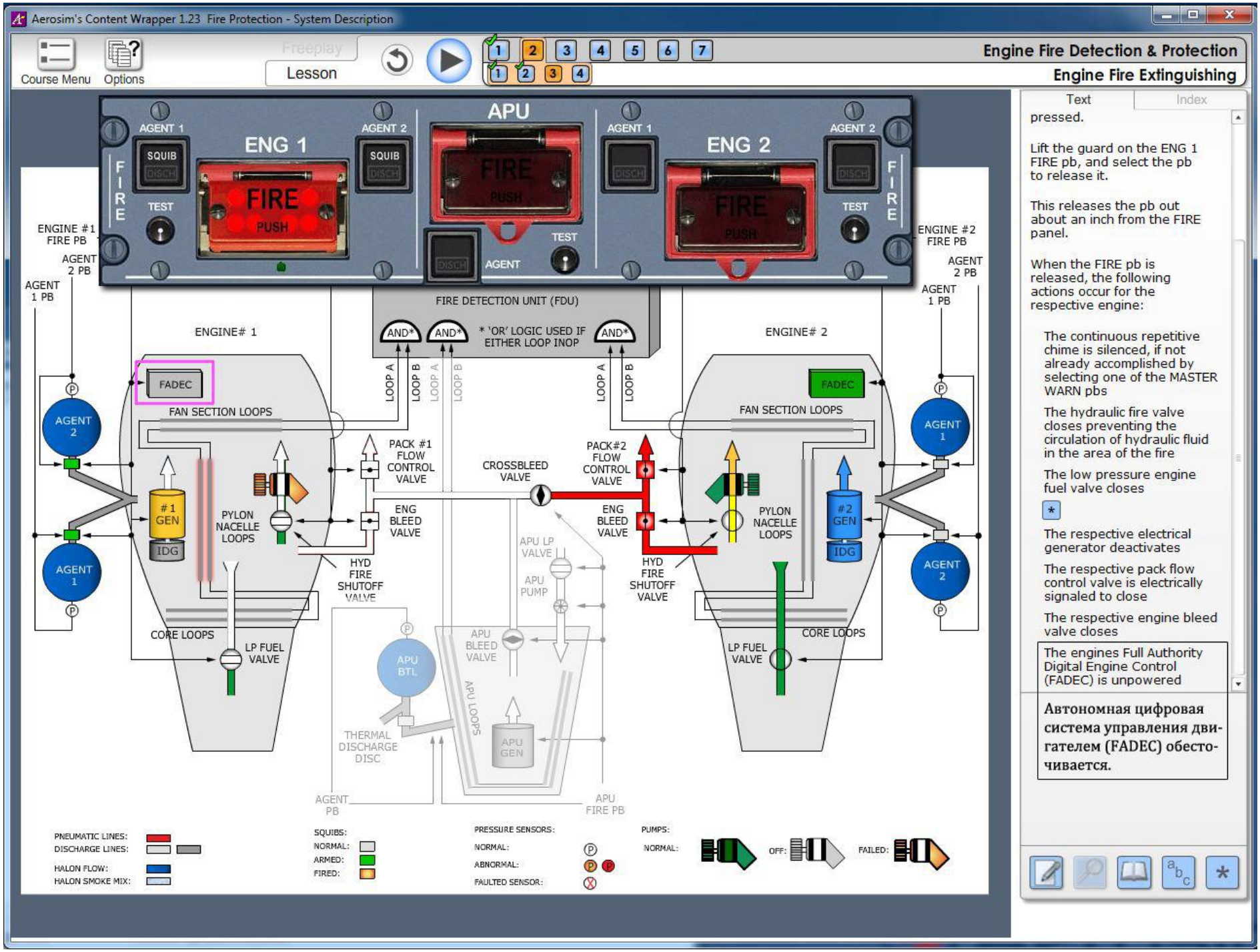

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
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Each engine is equipped with two halon fire bottles.
*
Either or both bottles can be discharged into their respective engine.
These bottles are armed when the ENG FIRE pb is pressed.
Lift the guard on the ENG 1 FIRE pb, and select the pb to release it.
This releases the pb out about an inch from the FIRE panel.
Это высвобождает клавишу примерно на дюйм над FIRE панелью.
AGENT 1
SQUIB
DISCH
TEST
ENG 1
FIRE
PUSH
AGENT 2
APU
AGENT
ENG 2
ENGINE #1 FIRE PB
AGENT 2 PB
AGENT 1 PB
ENGINE #2 FIRE PB
FIRE DETECTION UNIT (FDU)
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
ENGINE# 1
ENGINE# 2
LOOP A
LOOP B
FADEC
FAN SECTION LOOPS
PACK #1 FLOW CONTROL VALVE
PACK#2 FLOW CONTROL VALVE
CROSSBLEED VALVE
ENG BLEED VALVE
#1 GEN
#2 GEN
IDG
PYLON NACELLE LOOPS
HYD FIRE SHUTOFF VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
CORE LOOPS
LP FUEL VALVE
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:

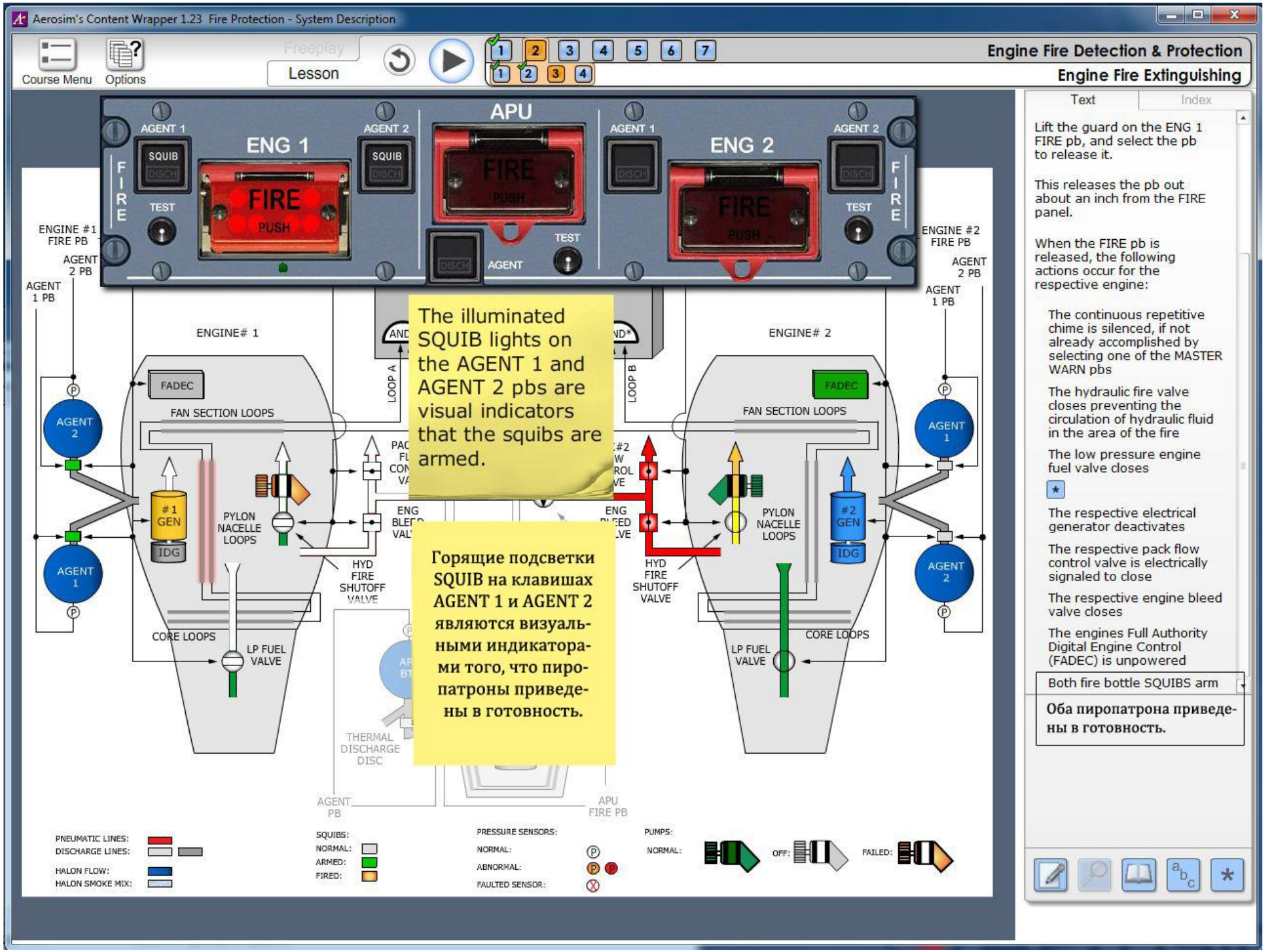

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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Each engine is equipped with two halon fire bottles.
*
Either or both bottles can be discharged into their respective engine.
These bottles are armed when the ENG FIRE pb is pressed.
Lift the guard on the ENG 1 FIRE pb, and select the pb to release it.
This releases the pb out about an inch from the FIRE panel.
When the FIRE pb is released, the following actions occur for the respective engine:
The continuous repetitive chime is silenced, if not already accomplished by selecting one of the MASTER WARN pbs
The hydraulic fire valve closes preventing the circulation of hydraulic fluid in the area of the fire
Когда клавиша FIRE отпускается, выполняются следующие действия для соответствующего двигателя.
Прерывистый непрерывный звуковой сигнал, если не выполнено нажатие одной из клавиш MASTER WARN.
Гидравлический пожарный клапан закрывается, предотвращая циркуляцию гидросмеси в области пожара.
AGENT 1
SQUIB
DISCH
TEST
ENG 1
FIRE
PUSH
AGENT 2
APU
AGENT
ENG 2
FIRE DETECTION UNIT (FDU)
* 'OR' LOGIC USED IF EITHER LOOP INOP
AND*
ENGINE #1 FIRE PB
AGENT 2 PB
AGENT 1 PB
ENGINE #2 FIRE PB
ENGINE# 1
ENGINE# 2
FADEC
LOOP A
LOOP B
FAN SECTION LOOPS
PACK #1 FLOW CONTROL VALVE
PACK#2 FLOW CONTROL VALVE
CROSSBLEED VALVE
ENG BLEED VALVE
#1 GEN
#2 GEN
IDG
PYLON NACELLE LOOPS
HYD FIRE SHUTOFF VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
CORE LOOPS
LP FUEL VALVE
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:

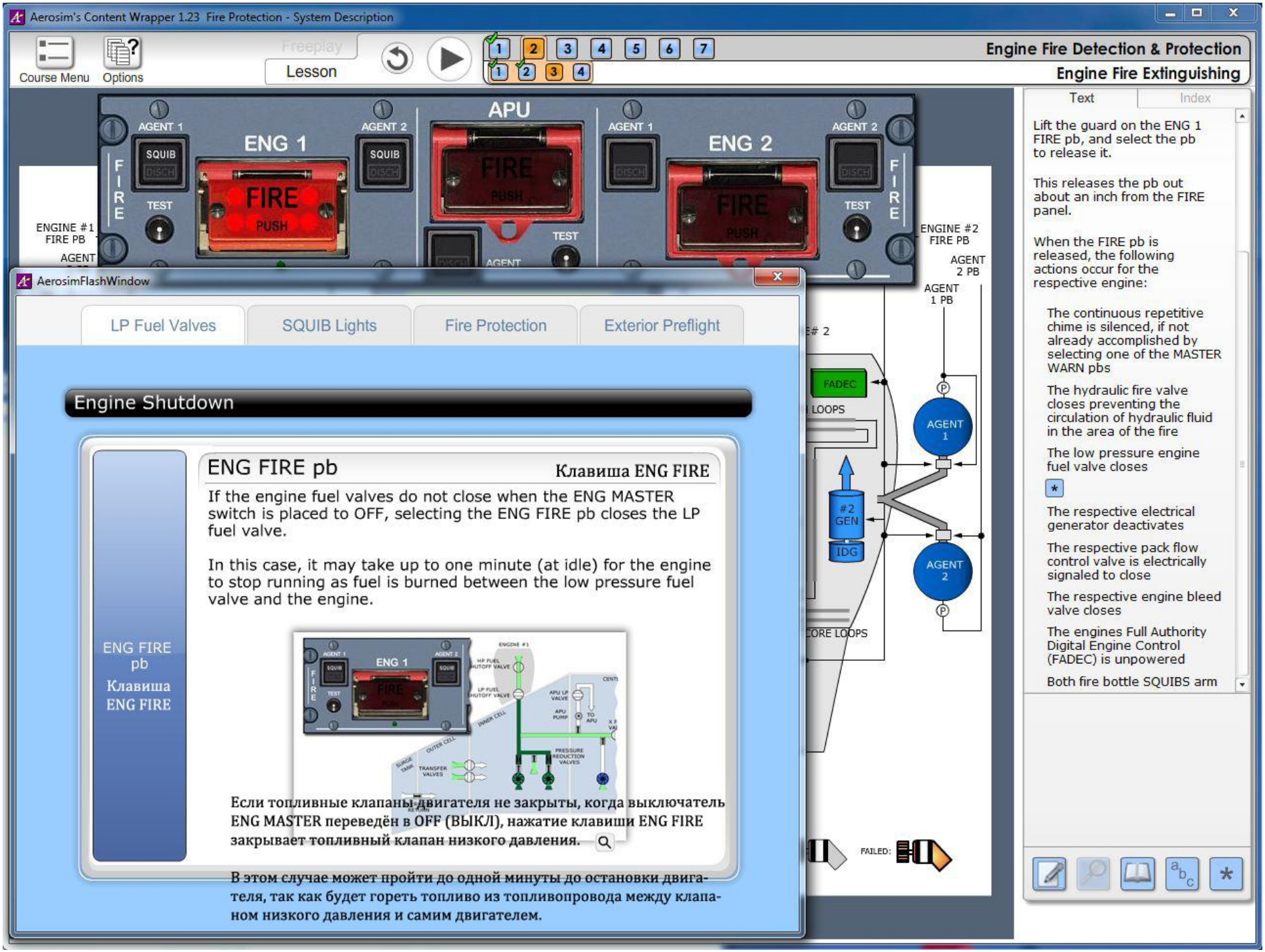

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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Each engine is equipped with two halon fire bottles.
Either or both bottles can be discharged into their respective engine.
These bottles are armed when the ENG FIRE pb is pressed.
Lift the guard on the ENG 1 FIRE pb, and select the pb to release it.
This releases the pb out about an inch from the FIRE panel.
When the FIRE pb is released, the following actions occur for the respective engine:
The continuous repetitive chime is silenced, if not already accomplished by selecting one of the MASTER WARN pbs
The hydraulic fire valve closes preventing the circulation of hydraulic fluid in the area of the fire
The low pressure engine fuel valve closes
Топливный клапан низкого давления двигателя закрывается.
AGENT 1
SQUIB
TEST
ENG 1
FIRE
PUSH
AGENT 2
APU
AGENT
ENG 2
ENGINE #1 FIRE PB
AGENT 2 PB
AGENT 1 PB
ENGINE #2 FIRE PB
FIRE DETECTION UNIT (FDU)
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
ENGINE# 1
ENGINE# 2
LOOP A
LOOP B
FADEC
FAN SECTION LOOPS
PACK #1 FLOW CONTROL VALVE
PACK#2 FLOW CONTROL VALVE
CROSSBLEED VALVE
ENG BLEED VALVE
#1 GEN
#2 GEN
IDG
PYLON NACELLE LOOPS
HYD FIRE SHUTOFF VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
CORE LOOPS
LP FUEL VALVE
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
OFF:
FAILED:

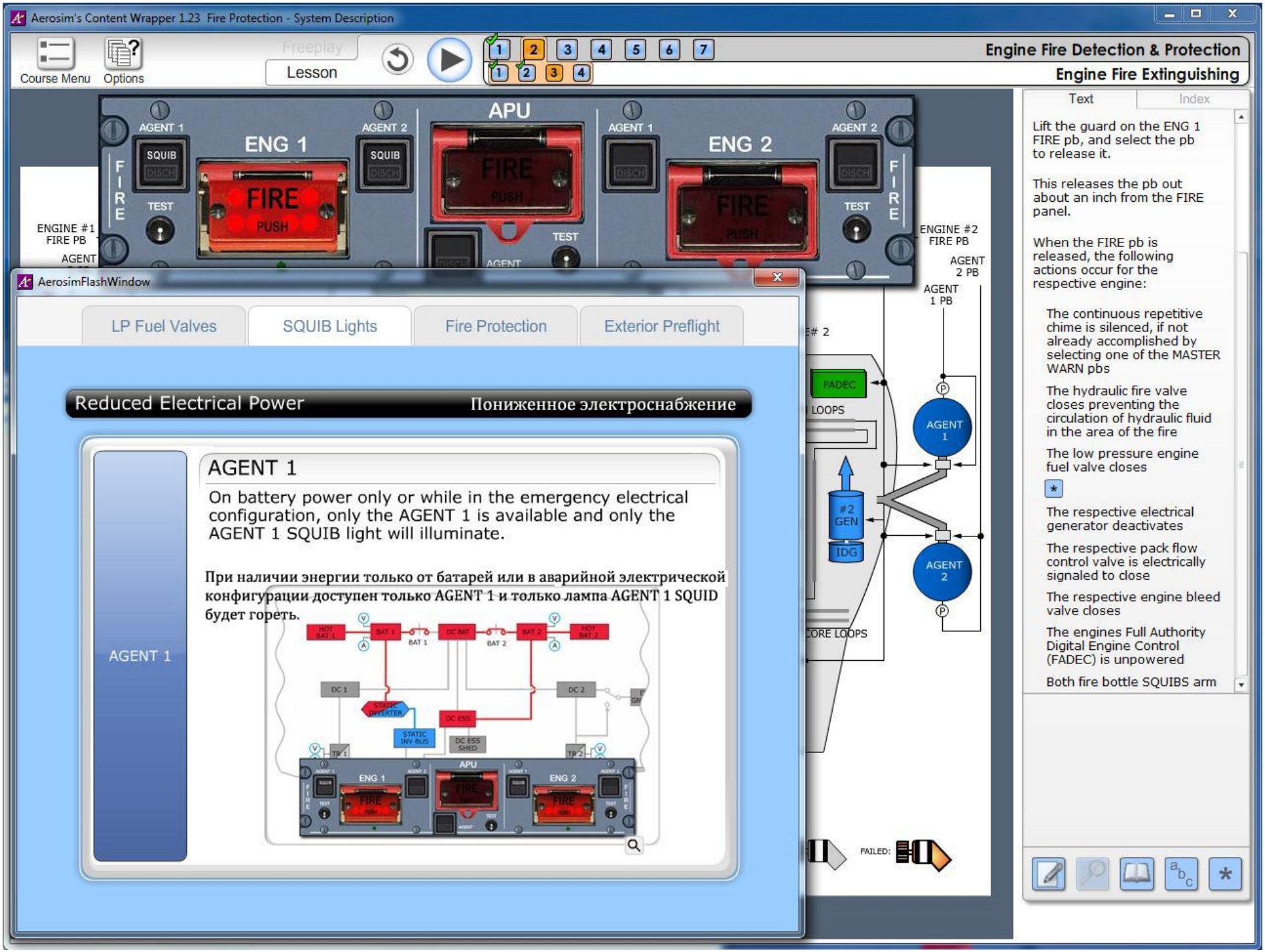

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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Options
Freeplay
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Either or both bottles can be discharged into their respective engine.
These bottles are armed when the ENG FIRE pb is pressed.
Lift the guard on the ENG 1 FIRE pb, and select the pb to release it.
This releases the pb out about an inch from the FIRE panel.
When the FIRE pb is released, the following actions occur for the respective engine:
The continuous repetitive chime is silenced, if not already accomplished by selecting one of the MASTER WARN pbs
The hydraulic fire valve closes preventing the circulation of hydraulic fluid in the area of the fire
The low pressure engine fuel valve closes
The respective electrical generator deactivates
The respective pack flow control valve is electrically signaled to close
Соответствующий электро-генератор отключается.
Клапан управления соот-ветствующим блоком управления расходом получает электрический сигнал на закрытие.
AGENT 1
AGENT 2
SQUIB
DISCH
TEST
FIRE
PUSH
ENG 1
APU
ENG 2
AGENT
ENGINE #1 FIRE PB
AGENT 2 PB
AGENT 1 PB
ENGINE #2 FIRE PB
FIRE DETECTION UNIT (FDU)
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
ENGINE# 1
ENGINE# 2
LOOP A
LOOP B
FADEC
FAN SECTION LOOPS
PACK #1 FLOW CONTROL VALVE
PACK#2 FLOW CONTROL VALVE
CROSSBLEED VALVE
ENG BLEED VALVE
#1 GEN
#2 GEN
IDG
PYLON NACELLE LOOPS
HYD FIRE SHUTOFF VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
CORE LOOPS
LP FUEL VALVE
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
OFF:
FAILED:

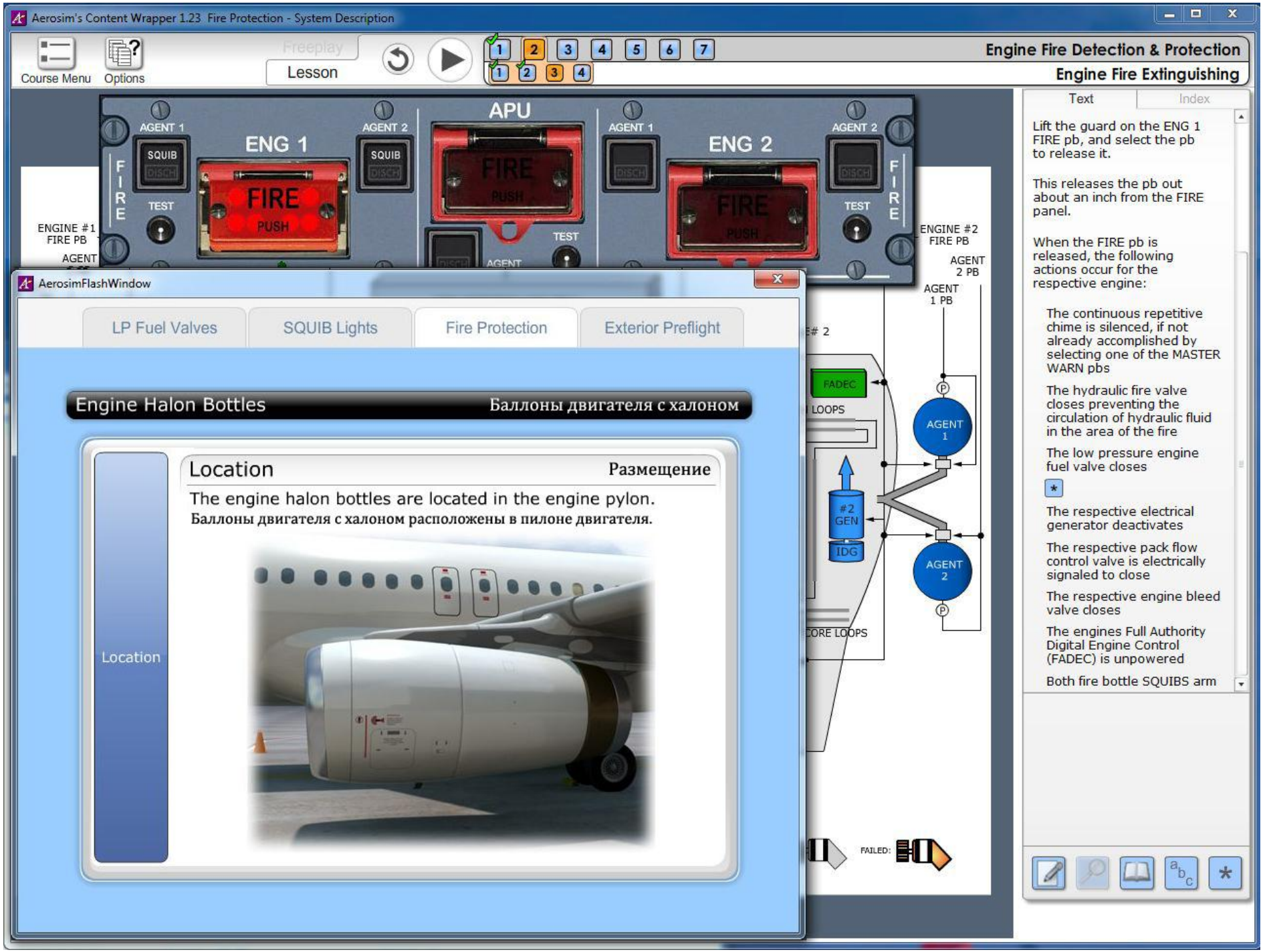

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
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These bottles are armed when the ENG FIRE pb is pressed.
Lift the guard on the ENG 1 FIRE pb, and select the pb to release it.
This releases the pb out about an inch from the FIRE panel.
When the FIRE pb is released, the following actions occur for the respective engine:
The continuous repetitive chime is silenced, if not already accomplished by selecting one of the MASTER WARN pbs
The hydraulic fire valve closes preventing the circulation of hydraulic fluid in the area of the fire
The low pressure engine fuel valve closes
*
The respective electrical generator deactivates
The respective pack flow control valve is electrically signaled to close
The respective engine bleed valve closes
Соответствующий клапан отбора воздуха закрывается.
ENG 1
ENG 2
APU
AGENT 1
AGENT 2
SQUIB
DISCH
TEST
FIRE
PUSH
AGENT
FIRE DETECTION UNIT (FDU)
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
ENGINE# 1
ENGINE# 2
ENGINE #1 FIRE PB
ENGINE #2 FIRE PB
AGENT 2 PB
AGENT 1 PB
FADEC
FAN SECTION LOOPS
LOOP A
LOOP B
PACK #1 FLOW CONTROL VALVE
PACK#2 FLOW CONTROL VALVE
CROSSBLEED VALVE
ENG BLEED VALVE
#1 GEN
#2 GEN
IDG
PYLON NACELLE LOOPS
HYD FIRE SHUTOFF VALVE
CORE LOOPS
LP FUEL VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:

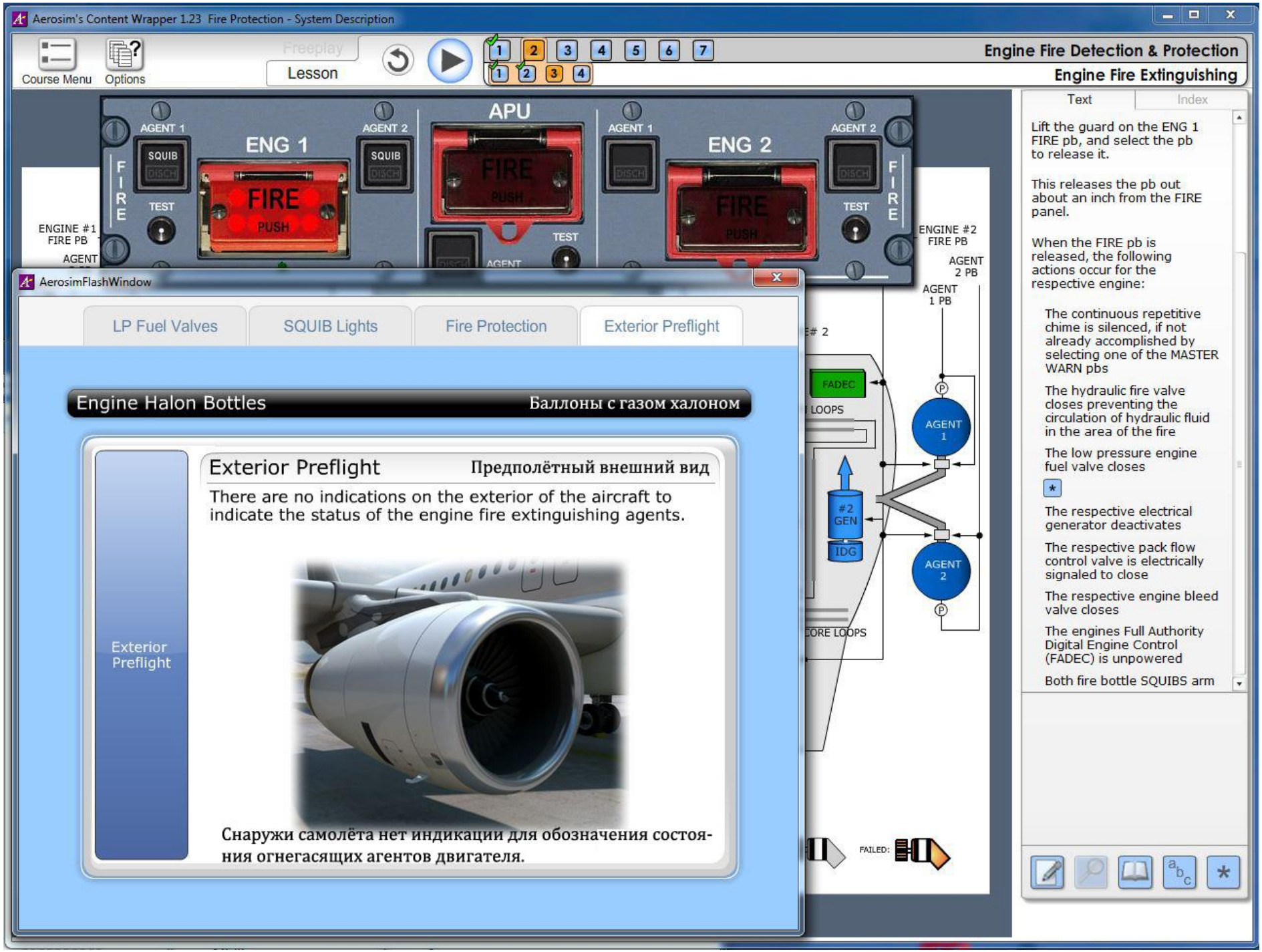

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
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Lesson
Engine Fire Detection & Protection
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Text
Index
pressed.
Lift the guard on the ENG 1 FIRE pb, and select the pb to release it.
This releases the pb out about an inch from the FIRE panel.
When the FIRE pb is released, the following actions occur for the respective engine:
The continuous repetitive chime is silenced, if not already accomplished by selecting one of the MASTER WARN pbs
The hydraulic fire valve closes preventing the circulation of hydraulic fluid in the area of the fire
The low pressure engine fuel valve closes
*
The respective electrical generator deactivates
The respective pack flow control valve is electrically signaled to close
The respective engine bleed valve closes
The engines Full Authority Digital Engine Control (FADEC) is unpowered
Автономная цифровая система управления двигателем (FADEC) обесточивается.
AGENT 1
SQUIB
DISCH
TEST
ENG 1
FIRE
PUSH
AGENT 2
APU
AGENT
ENG 2
FIRE DETECTION UNIT (FDU)
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
ENGINE #1 FIRE PB
AGENT 2 PB
AGENT 1 PB
ENGINE #2 FIRE PB
ENGINE# 1
ENGINE# 2
FADEC
LOOP A
LOOP B
FAN SECTION LOOPS
PACK #1 FLOW CONTROL VALVE
PACK#2 FLOW CONTROL VALVE
CROSSBLEED VALVE
ENG BLEED VALVE
#1 GEN
#2 GEN
IDG
PYLON NACELLE LOOPS
HYD FIRE SHUTOFF VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
CORE LOOPS
LP FUEL VALVE
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:

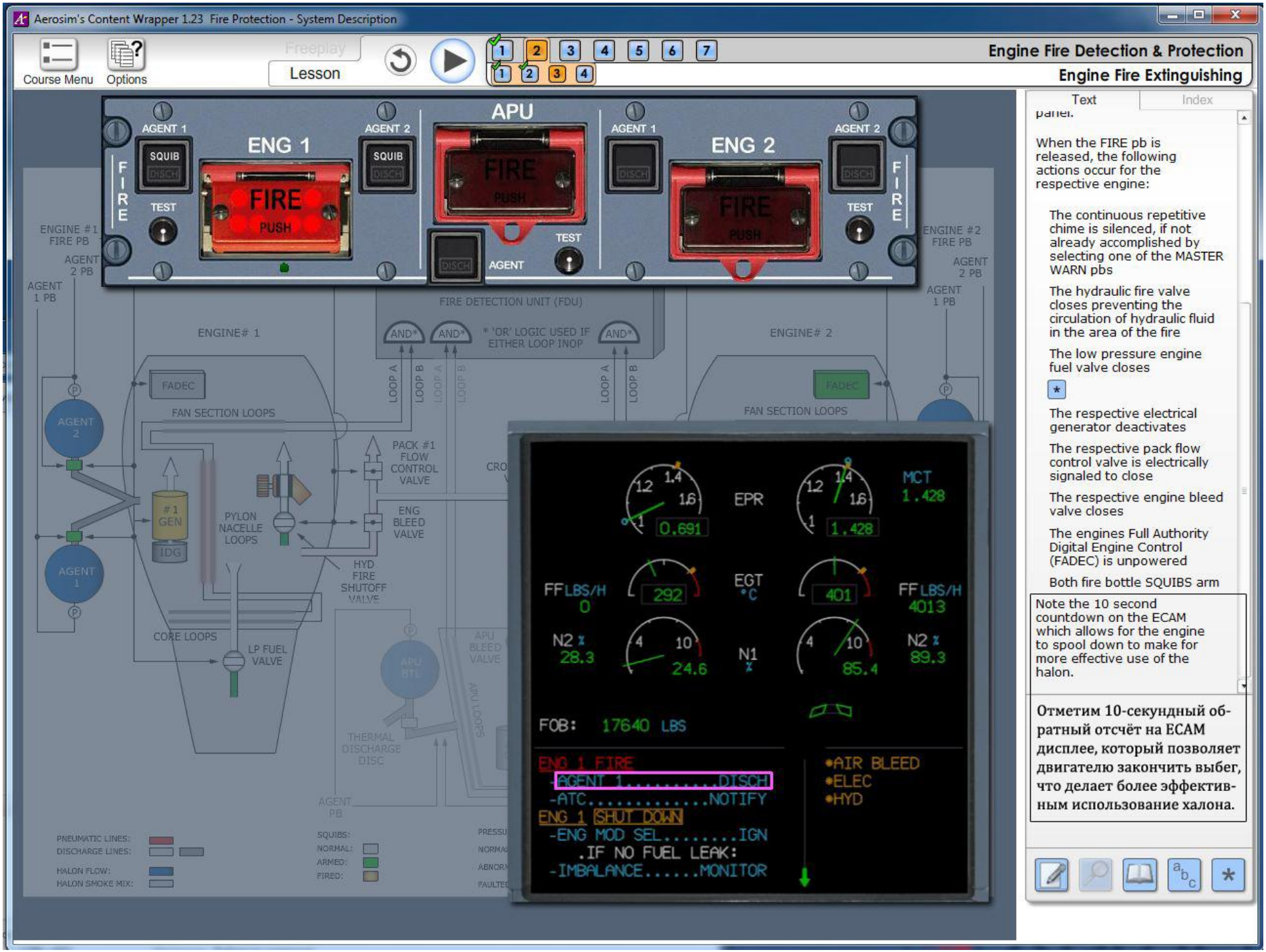

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Extinguishing
Text
Index
Lift the guard on the ENG 1 FIRE pb, and select the pb to release it.
This releases the pb out about an inch from the FIRE panel.
When the FIRE pb is released, the following actions occur for the respective engine:
The continuous repetitive chime is silenced, if not already accomplished by selecting one of the MASTER WARN pbs
The hydraulic fire valve closes preventing the circulation of hydraulic fluid in the area of the fire
The low pressure engine fuel valve closes
*
The respective electrical generator deactivates
The respective pack flow control valve is electrically signaled to close
The respective engine bleed valve closes
The engines Full Authority Digital Engine Control (FADEC) is unpowered
Both fire bottle SQUIBS arm
Оба пиропатрона приведены в готовность.
AGENT 1
AGENT 2
SQUIB
TEST
FIRE
PUSH
ENG 1
APU
ENG 2
AGENT
ENGINE #1 FIRE PB
AGENT 2 PB
AGENT 1 PB
ENGINE #2 FIRE PB
ENGINE# 1
ENGINE# 2
FADEC
FAN SECTION LOOPS
LOOP A
LOOP B
#1 GEN
#2 GEN
IDG
PYLON NACELLE LOOPS
HYD FIRE SHUTOFF VALVE
CORE LOOPS
LP FUEL VALVE
THERMAL DISCHARGE DISC
The illuminated SQUIB lights on the AGENT 1 and AGENT 2 pbs are visual indicators that the squibs are armed.
Горящие подсветки SQUIB на клавишах AGENT 1 и AGENT 2 являются визуальными индикаторами того, что пиропатроны приведены в готовность.
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:

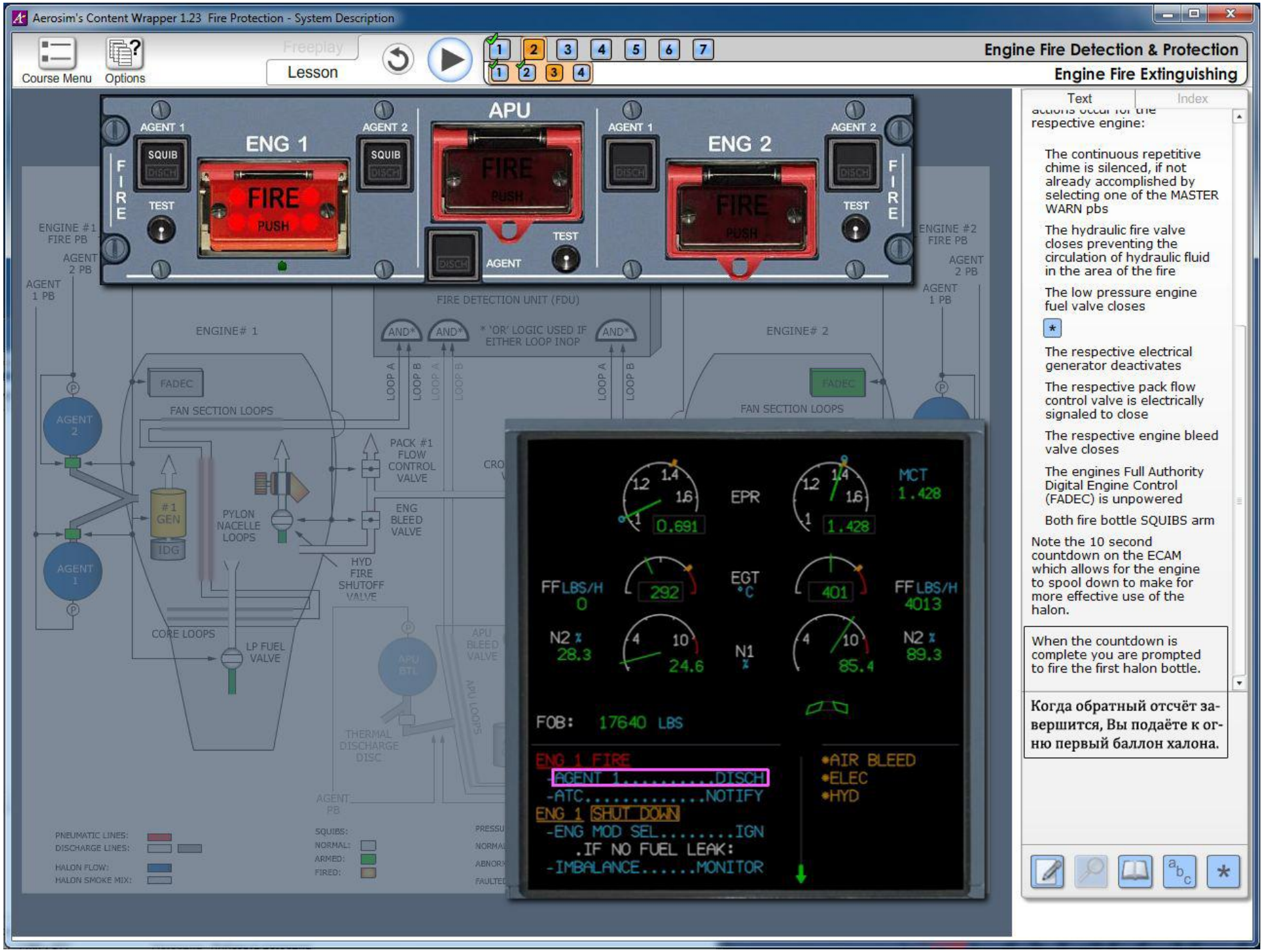

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Extinguishing
AGENT 1
SQUIB
ENG 1
AGENT 2
APU
ENG 2
FIRE
PUSH
TEST
ENGINE #1 FIRE PB
ENGINE #2 FIRE PB
AGENT 1 PB
AGENT 2 PB
AerosimFlashWindow
LP Fuel Valves
SQUIB Lights
Fire Protection
Exterior Preflight
Engine Shutdown
ENG FIRE pb
Клавиша ENG FIRE
If the engine fuel valves do not close when the ENG MASTER switch is placed to OFF, selecting the ENG FIRE pb closes the LP fuel valve.
In this case, it may take up to one minute (at idle) for the engine to stop running as fuel is burned between the low pressure fuel valve and the engine.
Если топливные клапаны двигателя не закрыты, когда выключатель ENG MASTER переведён в OFF (ВЫКЛ), нажатие клавиши ENG FIRE закрывает топливный клапан низкого давления.
В этом случае может пройти до одной минуты до остановки двигателя, так как будет гореть топливо из топливопровода между клапаном низкого давления и самим двигателем.
Text
Index
Lift the guard on the ENG 1 FIRE pb, and select the pb to release it.
This releases the pb out about an inch from the FIRE panel.
When the FIRE pb is released, the following actions occur for the respective engine:
The continuous repetitive chime is silenced, if not already accomplished by selecting one of the MASTER WARN pbs
The hydraulic fire valve closes preventing the circulation of hydraulic fluid in the area of the fire
The low pressure engine fuel valve closes
The respective electrical generator deactivates
The respective pack flow control valve is electrically signaled to close
The respective engine bleed valve closes
The engines Full Authority Digital Engine Control (FADEC) is unpowered
Both fire bottle SQUIBS arm
FADEC
LOOPS
#2 GEN
IDG
AGENT 1
AGENT 2
FAILED:

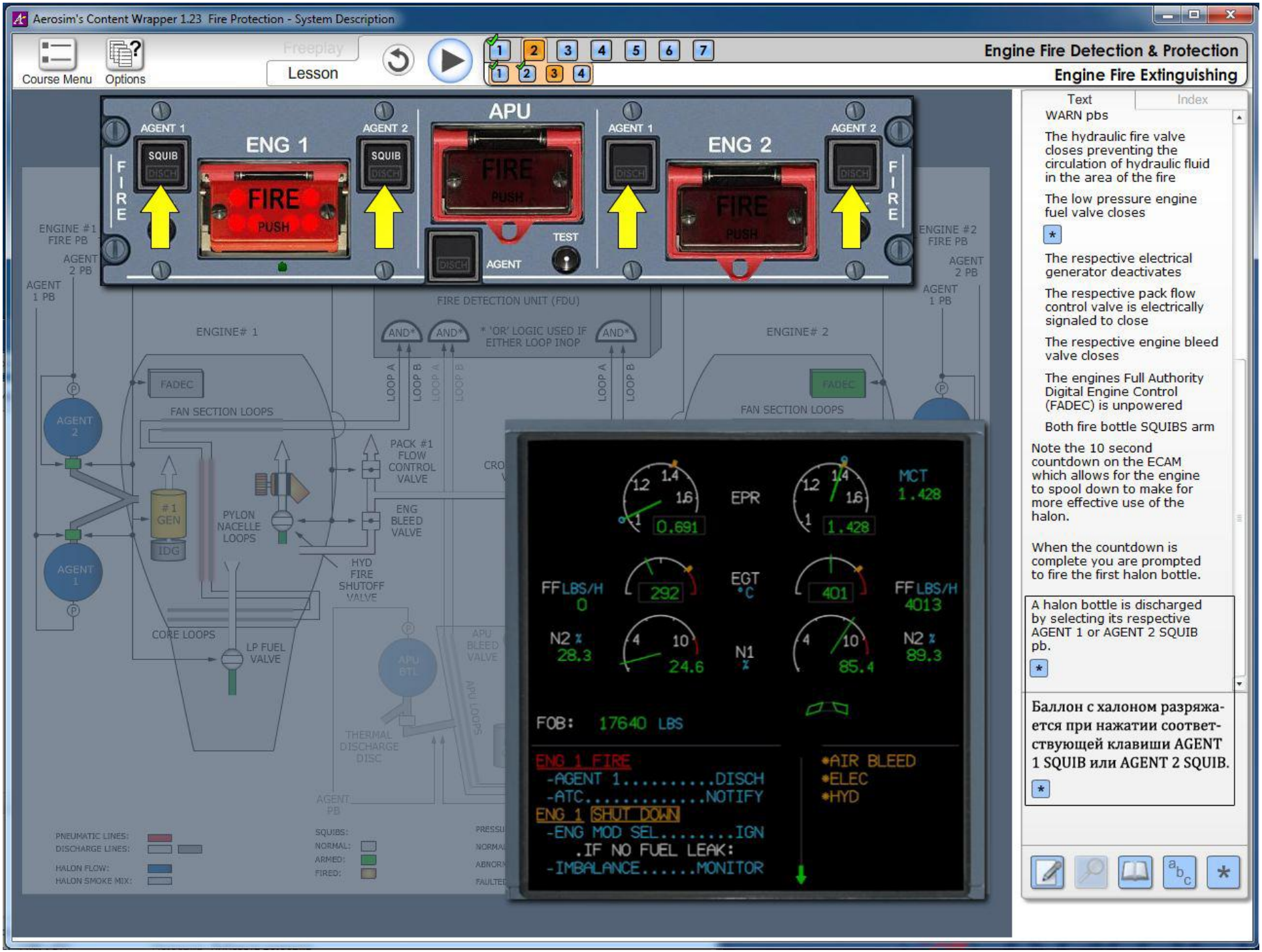

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Extinguishing
AGENT 1
SQUIB
ENG 1
AGENT 2
APU
ENG 2
FIRE
PUSH
TEST
AerosimFlashWindow
LP Fuel Valves
SQUIB Lights
Fire Protection
Exterior Preflight
Reduced Electrical Power
Пониженное электроснабжение
AGENT 1
On battery power only or while in the emergency electrical configuration, only the AGENT 1 is available and only the AGENT 1 SQUIB light will illuminate.
При наличии энергии только от батарей или в аварийной электрической конфигурации доступен только AGENT 1 и только лампа AGENT 1 SQUID будет гореть.
Text
Index
Lift the guard on the ENG 1 FIRE pb, and select the pb to release it.
This releases the pb out about an inch from the FIRE panel.
When the FIRE pb is released, the following actions occur for the respective engine:
The continuous repetitive chime is silenced, if not already accomplished by selecting one of the MASTER WARN pbs
The hydraulic fire valve closes preventing the circulation of hydraulic fluid in the area of the fire
The low pressure engine fuel valve closes
The respective electrical generator deactivates
The respective pack flow control valve is electrically signaled to close
The respective engine bleed valve closes
The engines Full Authority Digital Engine Control (FADEC) is unpowered
Both fire bottle SQUIBS arm
ENGINE #1 FIRE PB
ENGINE #2 FIRE PB
AGENT 1 PB
AGENT 2 PB
FADEC
#2 GEN
IDG
FAILED:

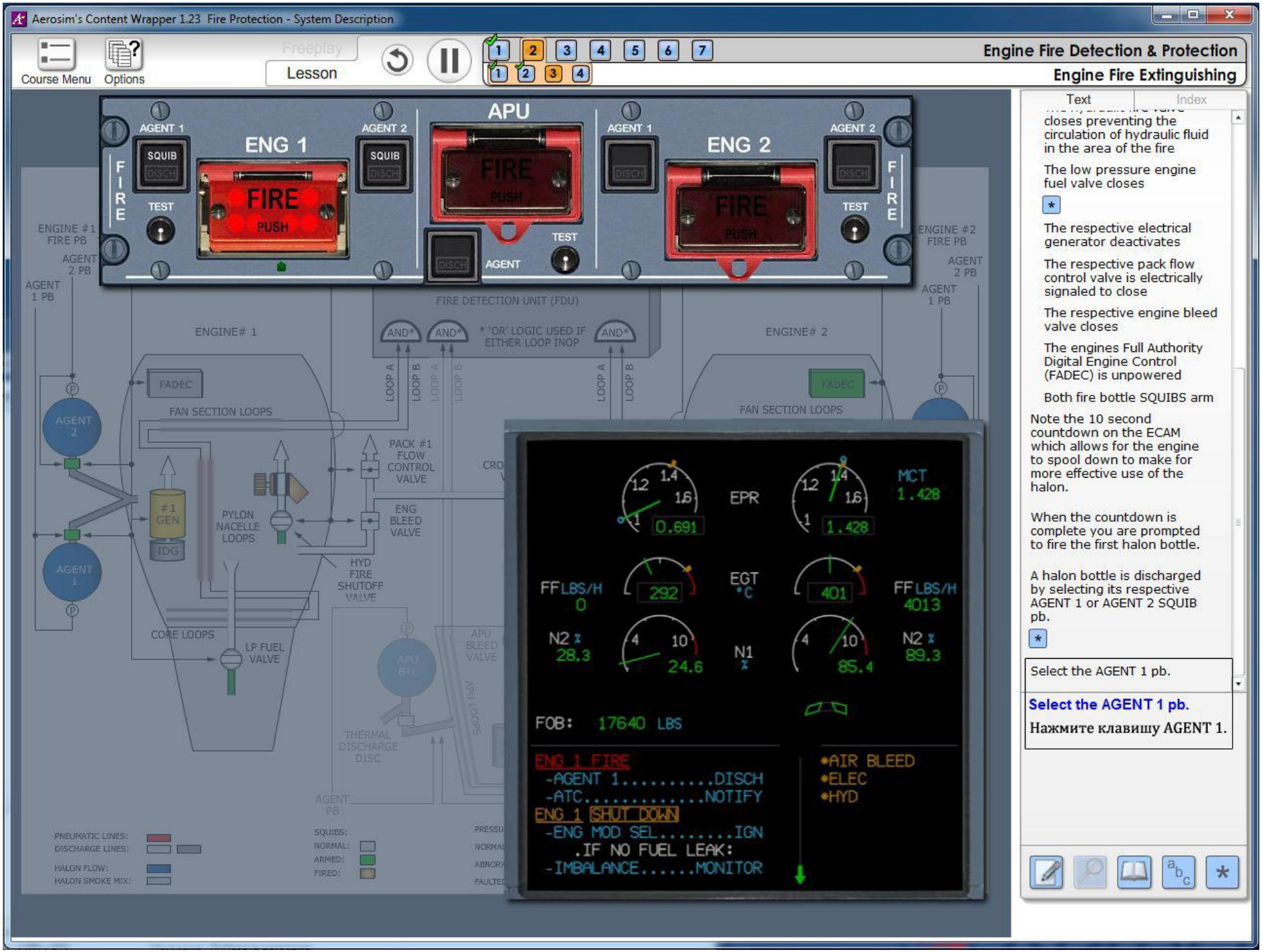

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Extinguishing
AGENT 1
SQUIB
TEST
ENG 1
FIRE
PUSH
AGENT 2
APU
ENG 2
ENGINE #1 FIRE PB
ENGINE #2 FIRE PB
AGENT 1 PB
AGENT 2 PB
AerosimFlashWindow
LP Fuel Valves
SQUIB Lights
Fire Protection
Exterior Preflight
Engine Halon Bottles
Баллоны двигателя с халоном
Location
Размещение
The engine halon bottles are located in the engine pylon.
Баллоны двигателя с халоном расположены в пилоне двигателя.
Location
FADEC
LOOPS
#2 GEN
IDG
AGENT 1
AGENT 2
FAILED:
Text
Index
Lift the guard on the ENG 1 FIRE pb, and select the pb to release it.
This releases the pb out about an inch from the FIRE panel.
When the FIRE pb is released, the following actions occur for the respective engine:
The continuous repetitive chime is silenced, if not already accomplished by selecting one of the MASTER WARN pbs
The hydraulic fire valve closes preventing the circulation of hydraulic fluid in the area of the fire
The low pressure engine fuel valve closes
*
The respective electrical generator deactivates
The respective pack flow control valve is electrically signaled to close
The respective engine bleed valve closes
The engines Full Authority Digital Engine Control (FADEC) is unpowered
Both fire bottle SQUIBS arm

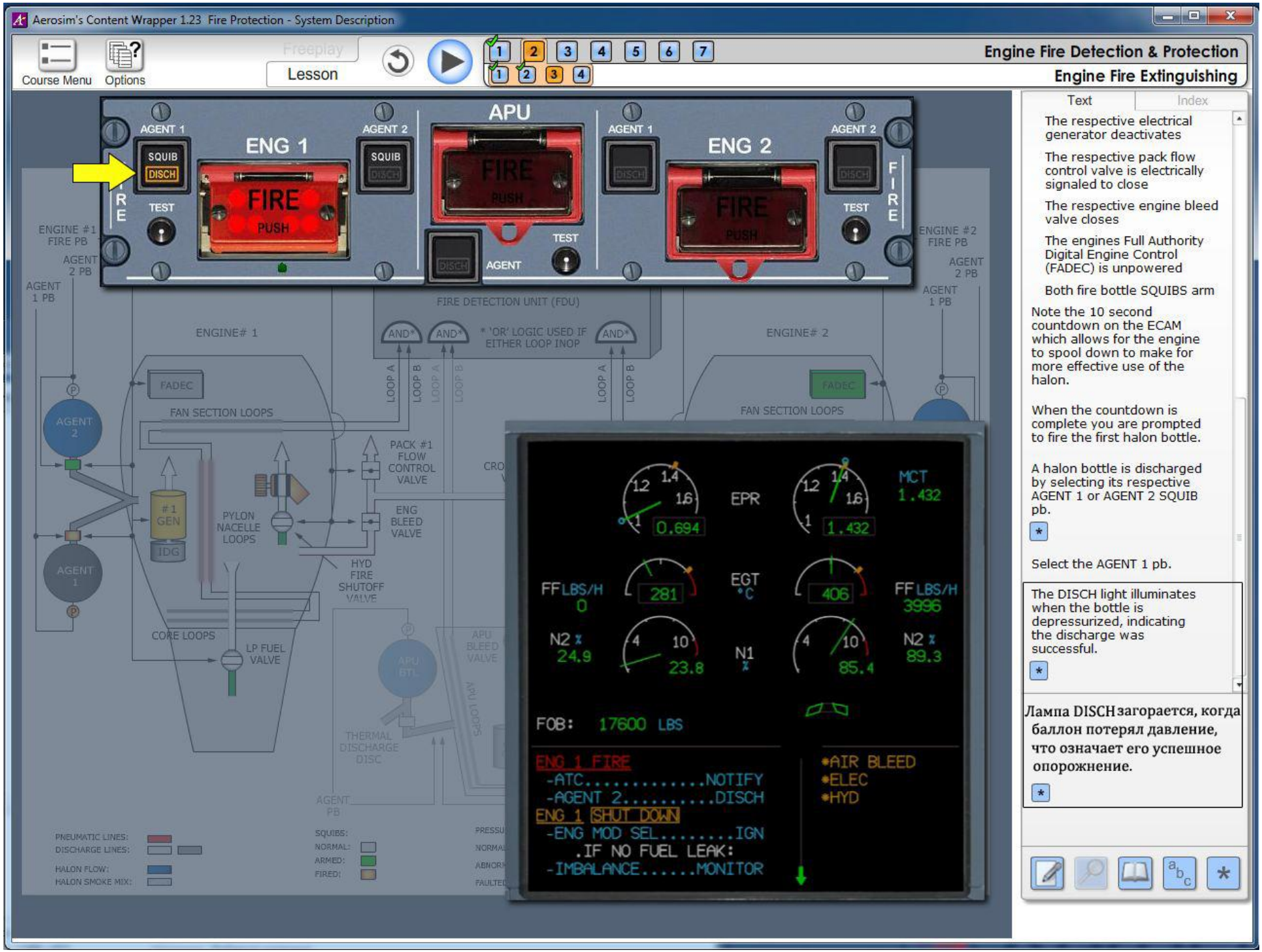

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Extinguishing
AGENT 1
SQUIB
TEST
ENG 1
FIRE
PUSH
AGENT 2
APU
ENG 2
AerosimFlashWindow
LP Fuel Valves
SQUIB Lights
Fire Protection
Exterior Preflight
Engine Halon Bottles
Баллоны с газом халоном
Exterior Preflight
Предполётный внешний вид
There are no indications on the exterior of the aircraft to indicate the status of the engine fire extinguishing agents.
Снаружи самолёта нет индикации для обозначения состояния огнегасящих агентов двигателя.
Text
Index
Lift the guard on the ENG 1 FIRE pb, and select the pb to release it.
This releases the pb out about an inch from the FIRE panel.
When the FIRE pb is released, the following actions occur for the respective engine:
The continuous repetitive chime is silenced, if not already accomplished by selecting one of the MASTER WARN pbs
The hydraulic fire valve closes preventing the circulation of hydraulic fluid in the area of the fire
The low pressure engine fuel valve closes
The respective electrical generator deactivates
The respective pack flow control valve is electrically signaled to close
The respective engine bleed valve closes
The engines Full Authority Digital Engine Control (FADEC) is unpowered
Both fire bottle SQUIBS arm
ENGINE #1 FIRE PB
ENGINE #2 FIRE PB
AGENT 1 PB
AGENT 2 PB
FADEC
AGENT 1
AGENT 2
#2 GEN
IDG
FAILED:

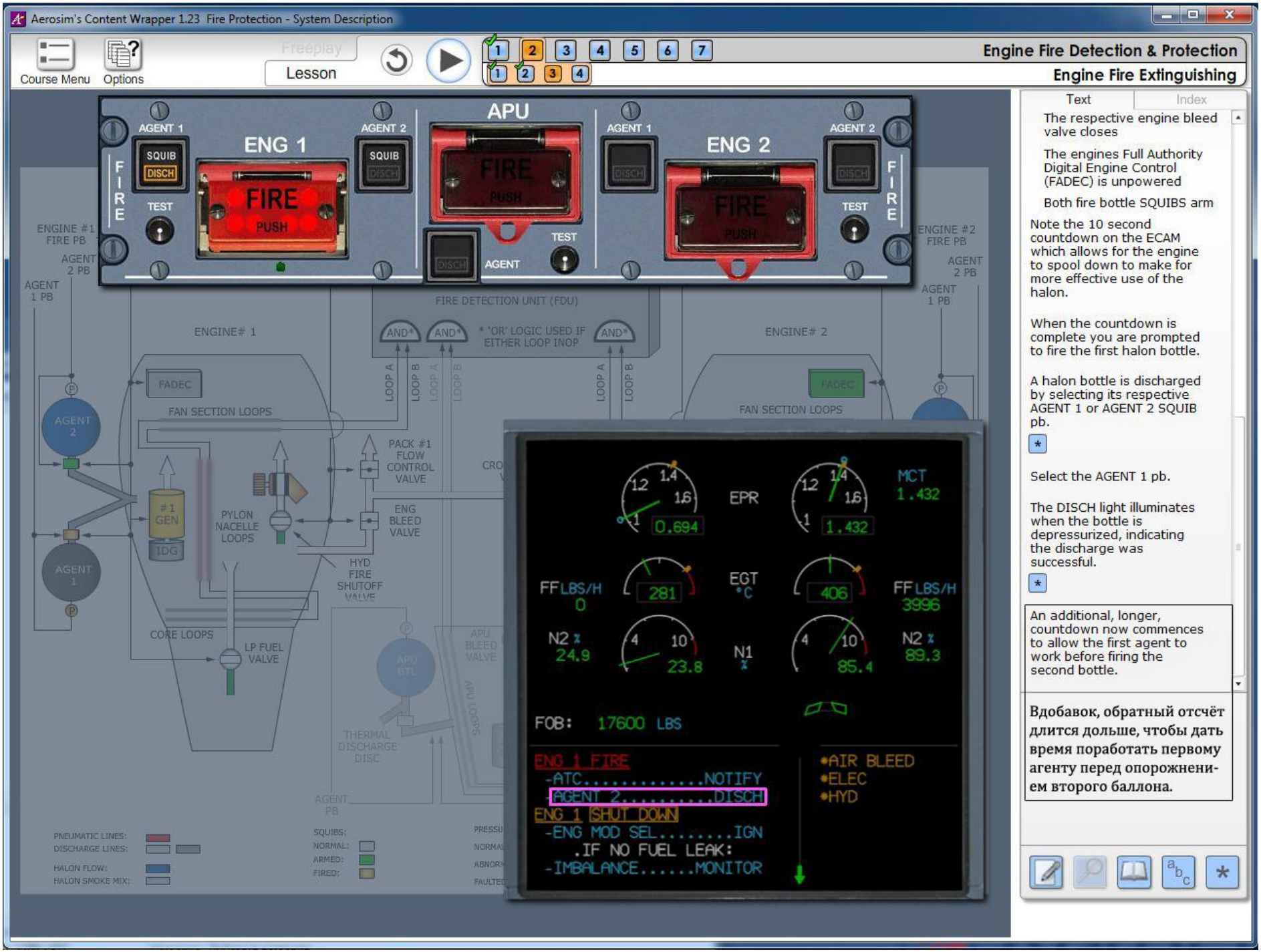

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Extinguishing
Text
Index
When the FIRE pb is released, the following actions occur for the respective engine:
The continuous repetitive chime is silenced, if not already accomplished by selecting one of the MASTER WARN pbs
The hydraulic fire valve closes preventing the circulation of hydraulic fluid in the area of the fire
The low pressure engine fuel valve closes
*
The respective electrical generator deactivates
The respective pack flow control valve is electrically signaled to close
The respective engine bleed valve closes
The engines Full Authority Digital Engine Control (FADEC) is unpowered
Both fire bottle SQUIBS arm
Note the 10 second countdown on the ECAM which allows for the engine to spool down to make for more effective use of the halon.
Отметим 10-секундный обратный отсчёт на ECAM дисплее, который позволяет двигателю закончить выбег, что делает более эффективным использование халона.
AGENT 1
SQUIB
TEST
ENG 1
FIRE
PUSH
AGENT 2
APU
AGENT
ENG 2
ENGINE #1 FIRE PB
ENGINE #2 FIRE PB
AGENT 2 PB
AGENT 1 PB
FIRE DETECTION UNIT (FDU)
ENGINE# 1
ENGINE# 2
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
LOOP A
LOOP B
FADEC
FAN SECTION LOOPS
PACK #1 FLOW CONTROL VALVE
ENG BLEED VALVE
#1 GEN
IDG
PYLON NACELLE LOOPS
HYD FIRE SHUTOFF VALVE
CORE LOOPS
LP FUEL VALVE
APU BLEED VALVE
THERMAL DISCHARGE DISC
EPR
MCT
1.428
0.691
FF LBS/H
0
292
EGT °C
401
4013
N2 %
28.3
24.6
N1 %
85.4
89.3
FOB: 17640 LBS
ENG 1 FIRE
-AGENT 1.....DISCH
-ATC.....NOTIFY
ENG 1 SHUT DOWN
-ENG MOD SEL.....IGN
.IF NO FUEL LEAK:
-IMBALANCE.....MONITOR
•AIR BLEED
•ELEC
•HYD
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:

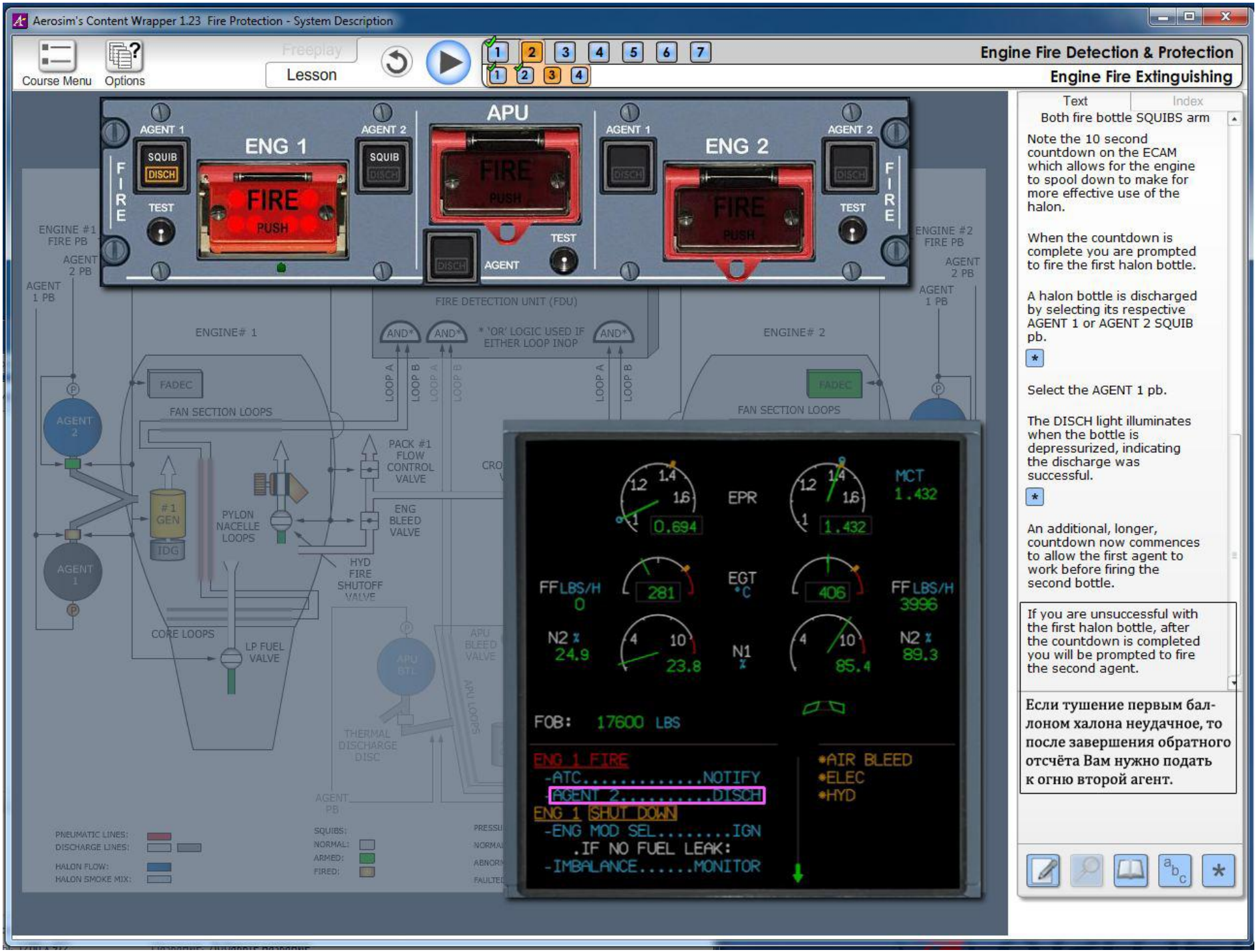

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Extinguishing
Text
Index
respective engine:
The continuous repetitive chime is silenced, if not already accomplished by selecting one of the MASTER WARN pbs
The hydraulic fire valve closes preventing the circulation of hydraulic fluid in the area of the fire
The low pressure engine fuel valve closes
*
The respective electrical generator deactivates
The respective pack flow control valve is electrically signaled to close
The respective engine bleed valve closes
The engines Full Authority Digital Engine Control (FADEC) is unpowered
Both fire bottle SQUIBS arm
Note the 10 second countdown on the ECAM which allows for the engine to spool down to make for more effective use of the halon.
When the countdown is complete you are prompted to fire the first halon bottle.
Когда обратный отсчёт завершится, Вы подаёте к огню первый баллон халона.
AGENT 1
SQUIB
DISCH
TEST
ENG 1
FIRE
PUSH
AGENT 2
APU
AGENT
ENG 2
FIRE DETECTION UNIT (FDU)
ENGINE# 1
ENGINE# 2
FADEC
FAN SECTION LOOPS
PACK #1 FLOW CONTROL VALVE
ENG BLEED VALVE
PYLON NACELLE LOOPS
HYD FIRE SHUTOFF VALVE
CORE LOOPS
LP FUEL VALVE
THERMAL DISCHARGE DISC
EPR
0.691
1.428
MCT
1.428
EGT °C
292
401
FF LBS/H
0
4013
N2 %
28.3
24.6
N1 %
85.4
89.3
FOB: 17640 LBS
ENG 1 FIRE
-AGENT 1.....DISCH
-ATC.....NOTIFY
ENG 1 SHUT DOWN
-ENG MOD SEL.....IGN
.IF NO FUEL LEAK:
-IMBALANCE.....MONITOR
•AIR BLEED
•ELEC
•HYD

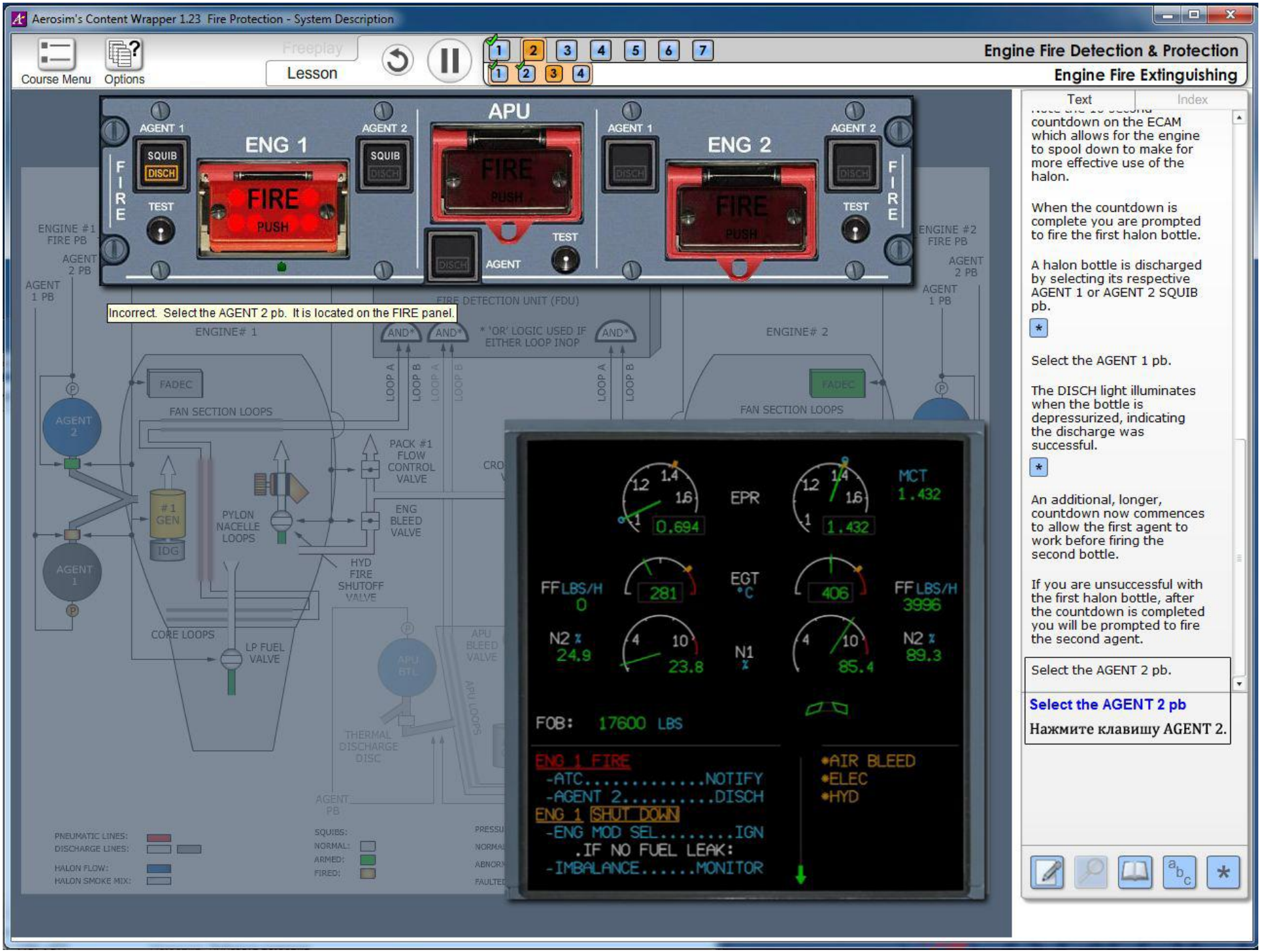

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Extinguishing
Text
Index
WARN pbs
The hydraulic fire valve closes preventing the circulation of hydraulic fluid in the area of the fire
The low pressure engine fuel valve closes
The respective electrical generator deactivates
The respective pack flow control valve is electrically signaled to close
The respective engine bleed valve closes
The engines Full Authority Digital Engine Control (FADEC) is unpowered
Both fire bottle SQUIBS arm
Note the 10 second countdown on the ECAM which allows for the engine to spool down to make for more effective use of the halon.
When the countdown is complete you are prompted to fire the first halon bottle.
A halon bottle is discharged by selecting its respective AGENT 1 or AGENT 2 SQUIB pb.
Баллон с халоном разряжается при нажатии соответствующей клавиши AGENT 1 SQUIB или AGENT 2 SQUIB.
AGENT 1
AGENT 2
SQUIB
DISCH
ENG 1
ENG 2
APU
FIRE
PUSH
TEST
AGENT
ENGINE #1 FIRE PB
ENGINE #2 FIRE PB
AGENT 1 PB
AGENT 2 PB
FIRE DETECTION UNIT (FDU)
ENGINE# 1
ENGINE# 2
FADEC
FAN SECTION LOOPS
PACK #1 FLOW CONTROL VALVE
ENG BLEED VALVE
HYD FIRE SHUTOFF VALVE
PYLON NACELLE LOOPS
#1 GEN
IDG
CORE LOOPS
LP FUEL VALVE
APU BLEED VALVE
THERMAL DISCHARGE DISC
EPR
0.691
1.428
MCT
1.428
FF LBS/H
0
EGT °C
292
401
FF LBS/H
4013
N2 %
28.3
24.6
N1 %
85.4
N2 %
89.3
FOB: 17640 LBS
ENG 1 FIRE
-AGENT 1.....DISCH
-ATC.....NOTIFY
ENG 1 SHUT DOWN
-ENG MOD SEL.....IGN
.IF NO FUEL LEAK:
-IMBALANCE.....MONITOR
•AIR BLEED
•ELEC
•HYD
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:

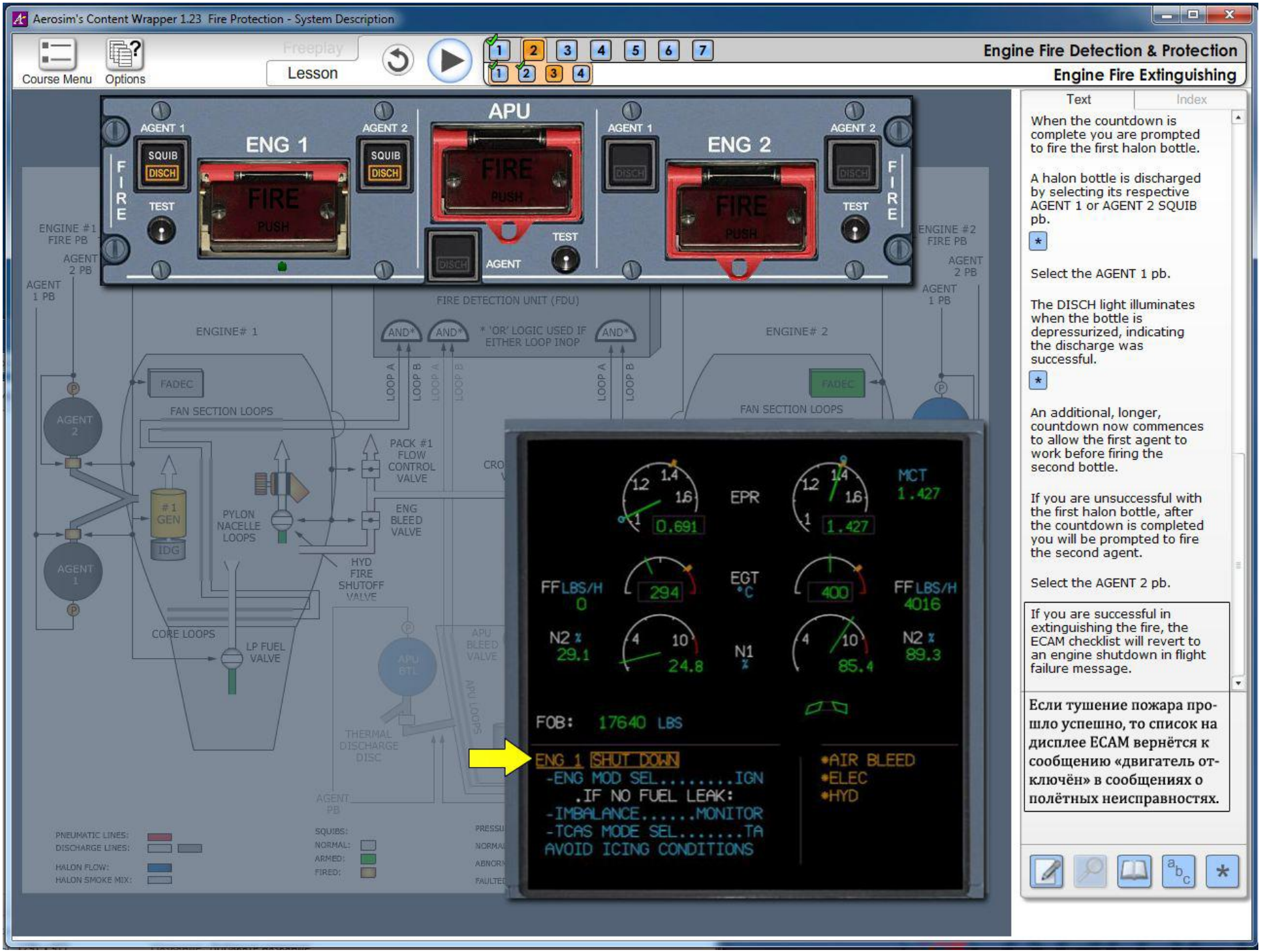

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Extinguishing
Text
Index
AGENT 1
SQUIB
DISCH
TEST
ENG 1
FIRE
PUSH
AGENT 2
APU
AGENT
ENG 2
FIRE PUSH
ENGINE #1 FIRE PB
AGENT 2 PB
AGENT 1 PB
ENGINE #2 FIRE PB
FIRE DETECTION UNIT (FDU)
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
ENGINE# 1
ENGINE# 2
LOOP A
LOOP B
FADEC
FAN SECTION LOOPS
PACK #1 FLOW CONTROL VALVE
ENG BLEED VALVE
#1 GEN
IDG
PYLON NACELLE LOOPS
HYD FIRE SHUTOFF VALVE
CORE LOOPS
LP FUEL VALVE
APU BLEED VALVE
APU BTL
APU LOOPS
THERMAL DISCHARGE DISC
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
EPR
0.691
1.428
MCT
1.428
FF LBS/H
0
292
EGT °C
401
FF LBS/H
4013
N2 %
28.3
24.6
N1 %
85.4
N2 %
89.3
FOB: 17640 LBS
ENG 1 FIRE
-AGENT 1.....DISCH
-ATC.....NOTIFY
ENG 1 SHUT DOWN
-ENG MOD SEL.....IGN
.IF NO FUEL LEAK:
-IMBALANCE.....MONITOR
•AIR BLEED
•ELEC
•HYD
closes preventing the circulation of hydraulic fluid in the area of the fire
The low pressure engine fuel valve closes
*
The respective electrical generator deactivates
The respective pack flow control valve is electrically signaled to close
The respective engine bleed valve closes
The engines Full Authority Digital Engine Control (FADEC) is unpowered
Both fire bottle SQUIBS arm
Note the 10 second countdown on the ECAM which allows for the engine to spool down to make for more effective use of the halon.
When the countdown is complete you are prompted to fire the first halon bottle.
A halon bottle is discharged by selecting its respective AGENT 1 or AGENT 2 SQUIB pb.
*
Select the AGENT 1 pb.
Select the AGENT 1 pb.
Нажмите клавишу AGENT 1.

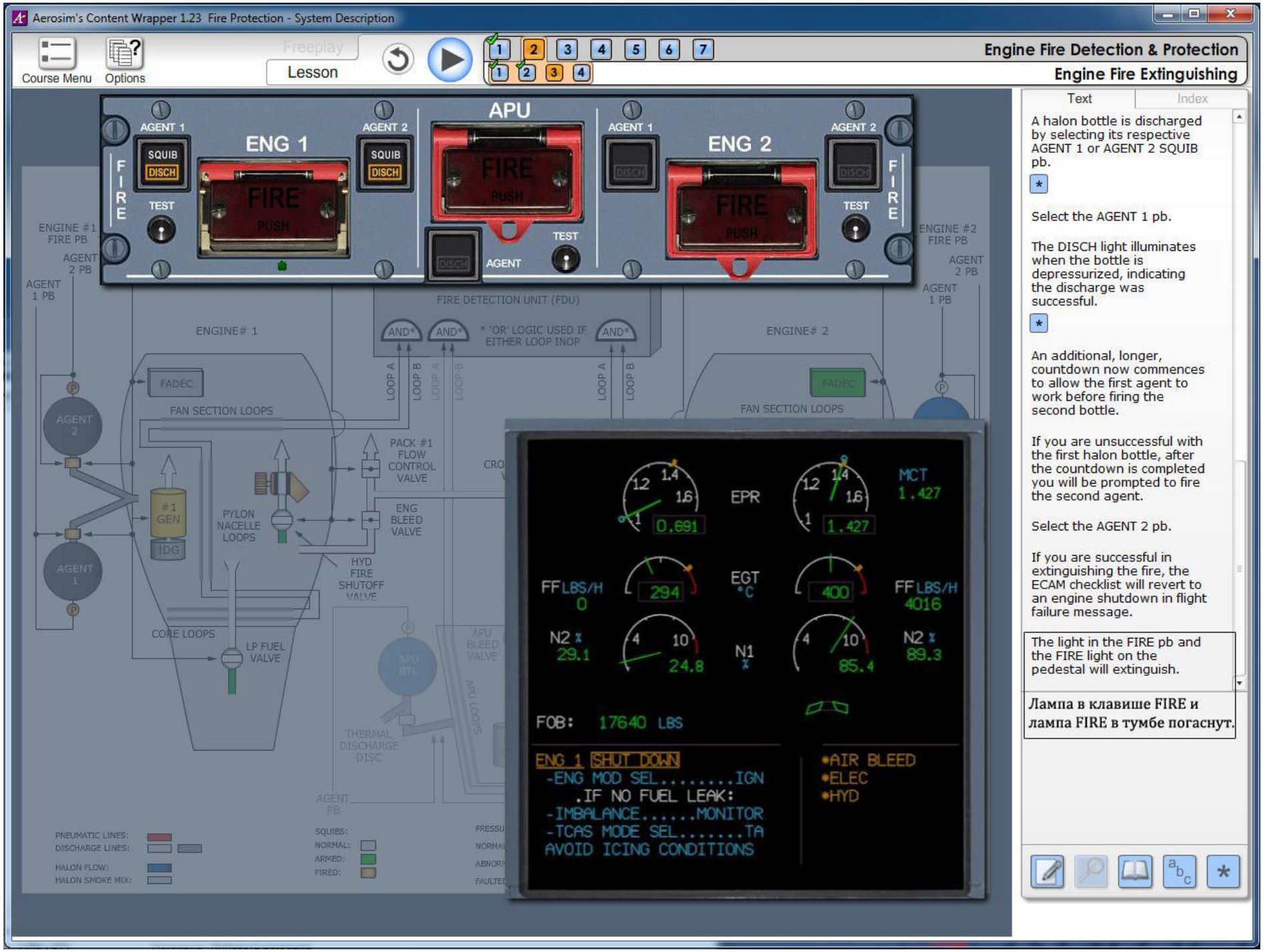

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Extinguishing
AGENT 1
SQUIB
DISCH
TEST
ENG 1
FIRE
PUSH
AGENT 2
APU
AGENT
ENG 2
ENGINE #1 FIRE PB
ENGINE #2 FIRE PB
AGENT 2 PB
AGENT 1 PB
FIRE DETECTION UNIT (FDU)
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
ENGINE# 1
ENGINE# 2
LOOP A
LOOP B
FADEC
FAN SECTION LOOPS
PACK #1 FLOW CONTROL VALVE
ENG BLEED VALVE
#1 GEN
IDG
PYLON NACELLE LOOPS
HYD FIRE SHUTOFF VALVE
CORE LOOPS
LP FUEL VALVE
APU BLEED VALVE
THERMAL DISCHARGE DISC
EPR
MCT
1.432
0.694
FF LBS/H
0
EGT °C
281
406
3996
N2 %
24.9
N1 %
23.8
85.4
89.3
FOB: 17600 LBS
ENG 1 FIRE
-ATC.....NOTIFY
-AGENT 2.....DISCH
ENG 1 SHUT DOWN
-ENG MOD SEL.....IGN
.IF NO FUEL LEAK:
-IMBALANCE.....MONITOR
•AIR BLEED
•ELEC
•HYD
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
Text
Index
The respective electrical generator deactivates
The respective pack flow control valve is electrically signaled to close
The respective engine bleed valve closes
The engines Full Authority Digital Engine Control (FADEC) is unpowered
Both fire bottle SQUIBS arm
Note the 10 second countdown on the ECAM which allows for the engine to spool down to make for more effective use of the halon.
When the countdown is complete you are prompted to fire the first halon bottle.
A halon bottle is discharged by selecting its respective AGENT 1 or AGENT 2 SQUIB pb.
Select the AGENT 1 pb.
The DISCH light illuminates when the bottle is depressurized, indicating the discharge was successful.
Лампа DISCH загорается, когда баллон потерял давление, что означает его успешное опорожнение.

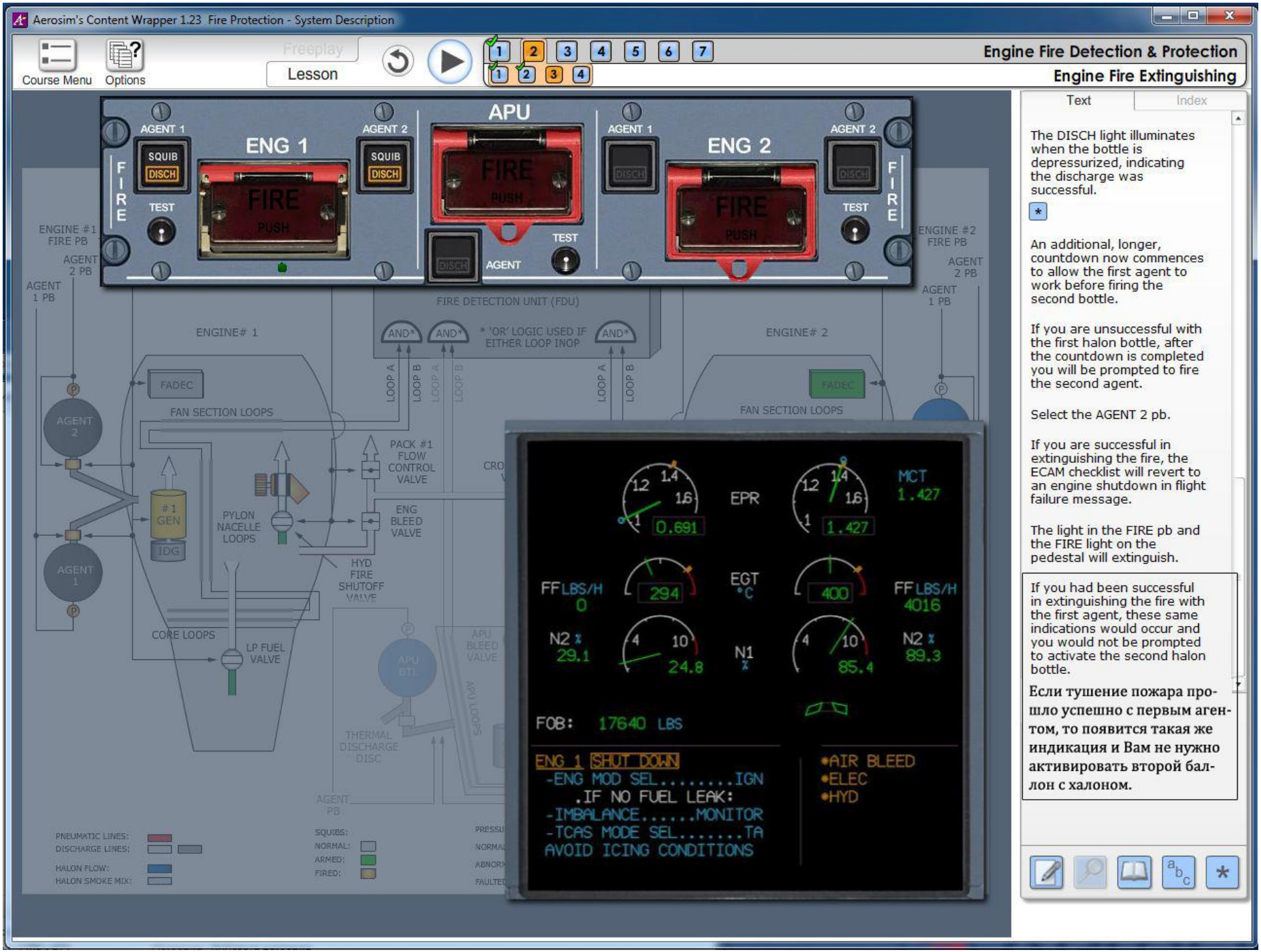

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Extinguishing
Text
Index
The respective engine bleed valve closes
The engines Full Authority Digital Engine Control (FADEC) is unpowered
Both fire bottle SQUIBS arm
Note the 10 second countdown on the ECAM which allows for the engine to spool down to make for more effective use of the halon.
When the countdown is complete you are prompted to fire the first halon bottle.
A halon bottle is discharged by selecting its respective AGENT 1 or AGENT 2 SQUIB pb.
Select the AGENT 1 pb.
The DISCH light illuminates when the bottle is depressurized, indicating the discharge was successful.
An additional, longer, countdown now commences to allow the first agent to work before firing the second bottle.
Вдобавок, обратный отсчёт длится дольше, чтобы дать время поработать первому агенту перед опорожнением второго баллона.
AGENT 1
SQUIB
DISCH
TEST
ENG 1
FIRE
PUSH
AGENT 2
APU
AGENT
ENG 2
ENGINE #1 FIRE PB
ENGINE #2 FIRE PB
FIRE DETECTION UNIT (FDU)
ENGINE# 1
ENGINE# 2
FADEC
FAN SECTION LOOPS
PACK #1 FLOW CONTROL VALVE
ENG BLEED VALVE
HYD FIRE SHUTOFF VALVE
PYLON NACELLE LOOPS
CORE LOOPS
LP FUEL VALVE
THERMAL DISCHARGE DISC
EPR
MCT 1.432
EGT °C
N1
N2
FOB: 17600 LBS
ENG 1 FIRE
-ATC.....NOTIFY
-AGENT 2.....DISCH
ENG 1 SHUT DOWN
-ENG MOD SEL.....IGN
.IF NO FUEL LEAK:
-IMBALANCE.....MONITOR
•AIR BLEED
•ELEC
•HYD


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Extinguishing
AGENT 1
SQUIB
DISCH
TEST
FIRE
PUSH
ENG 1
AGENT 2
APU
AGENT
ENG 2
ENGINE #1 FIRE PB
AGENT 2 PB
AGENT 1 PB
ENGINE #2 FIRE PB
FIRE DETECTION UNIT (FDU)
ENGINE# 1
ENGINE# 2
FADEC
FAN SECTION LOOPS
PACK #1 FLOW CONTROL VALVE
ENG BLEED VALVE
#1 GEN
IDG
PYLON NACELLE LOOPS
HYD FIRE SHUTOFF VALVE
CORE LOOPS
LP FUEL VALVE
APU BLEED VALVE
THERMAL DISCHARGE DISC
EPR
MCT
1.432
0.694
FF LBS/H
0
EGT °C
281
406
3996
N2 %
24.9
23.8
N1 %
85.4
89.3
FOB: 17600 LBS
ENG 1 FIRE
-ATC.....NOTIFY
-AGENT 2.....DISCH
ENG 1 SHUT DOWN
-ENG MOD SEL.....IGN
.IF NO FUEL LEAK:
-IMBALANCE.....MONITOR
•AIR BLEED
•ELEC
•HYD
Text
Index
Both fire bottle SQUIBS arm
Note the 10 second countdown on the ECAM which allows for the engine to spool down to make for more effective use of the halon.
When the countdown is complete you are prompted to fire the first halon bottle.
A halon bottle is discharged by selecting its respective AGENT 1 or AGENT 2 SQUIB pb.
Select the AGENT 1 pb.
The DISCH light illuminates when the bottle is depressurized, indicating the discharge was successful.
An additional, longer, countdown now commences to allow the first agent to work before firing the second bottle.
If you are unsuccessful with the first halon bottle, after the countdown is completed you will be prompted to fire the second agent.
Если тушение первым баллоном халона неудачное, то после завершения обратного отсчёта Вам нужно подать к огню второй агент.


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Extinguishing
Text
Index
countdown on the ECAM which allows for the engine to spool down to make for more effective use of the halon.
When the countdown is complete you are prompted to fire the first halon bottle.
A halon bottle is discharged by selecting its respective AGENT 1 or AGENT 2 SQUIB pb.
Select the AGENT 1 pb.
The DISCH light illuminates when the bottle is depressurized, indicating the discharge was successful.
An additional, longer, countdown now commences to allow the first agent to work before firing the second bottle.
If you are unsuccessful with the first halon bottle, after the countdown is completed you will be prompted to fire the second agent.
Select the AGENT 2 pb.
Select the AGENT 2 pb
Нажмите клавишу AGENT 2.
Incorrect. Select the AGENT 2 pb. It is located on the FIRE panel.
AGENT 1
AGENT 2
SQUIB
DISCH
TEST
FIRE
PUSH
ENG 1
APU
ENG 2
AGENT
ENGINE #1 FIRE PB
ENGINE #2 FIRE PB
AGENT 2 PB
AGENT 1 PB
FIRE DETECTION UNIT (FDU)
ENGINE# 1
ENGINE# 2
FADEC
FAN SECTION LOOPS
PACK #1 FLOW CONTROL VALVE
ENG BLEED VALVE
PYLON NACELLE LOOPS
HYD FIRE SHUTOFF VALVE
CORE LOOPS
LP FUEL VALVE
THERMAL DISCHARGE DISC
EPR
MCT
1.432
0.694
FF LBS/H
0
281
EGT °C
406
FF LBS/H
3996
N2 %
24.9
23.8
N1 %
85.4
N2 %
89.3
FOB: 17600 LBS
ENG 1 FIRE
-ATC.....NOTIFY
-AGENT 2.....DISCH
ENG 1 SHUT DOWN
-ENG MOD SEL.....IGN
.IF NO FUEL LEAK:
-IMBALANCE.....MONITOR
•AIR BLEED
•ELEC
•HYD


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Extinguishing
Text
Index
When the countdown is complete you are prompted to fire the first halon bottle.
A halon bottle is discharged by selecting its respective AGENT 1 or AGENT 2 SQUIB pb.
Select the AGENT 1 pb.
The DISCH light illuminates when the bottle is depressurized, indicating the discharge was successful.
An additional, longer, countdown now commences to allow the first agent to work before firing the second bottle.
If you are unsuccessful with the first halon bottle, after the countdown is completed you will be prompted to fire the second agent.
Select the AGENT 2 pb.
If you are successful in extinguishing the fire, the ECAM checklist will revert to an engine shutdown in flight failure message.
Если тушение пожара прошло успешно, то список на дисплее ECAM вернётся к сообщению «двигатель отключён» в сообщениях о полётных неисправностях.
AGENT 1
AGENT 2
SQUIB
DISCH
TEST
FIRE
PUSH
ENG 1
APU
ENG 2
AGENT
ENGINE #1 FIRE PB
ENGINE #2 FIRE PB
AGENT 1 PB
AGENT 2 PB
FIRE DETECTION UNIT (FDU)
ENGINE# 1
ENGINE# 2
FADEC
FAN SECTION LOOPS
PACK #1 FLOW CONTROL VALVE
ENG BLEED VALVE
PYLON NACELLE LOOPS
HYD FIRE SHUTOFF VALVE
CORE LOOPS
LP FUEL VALVE
#1 GEN
IDG
APU BLEED VALVE
THERMAL DISCHARGE DISC
EPR
MCT
1.427
0.691
FF LBS/H
0
EGT °C
294
400
FF LBS/H
4016
N2 %
29.1
24.8
N1 %
85.4
N2 %
89.3
FOB: 17640 LBS
ENG 1 SHUT DOWN
-ENG MOD SEL.....IGN
.IF NO FUEL LEAK:
-IMBALANCE.....MONITOR
-TCAS MODE SEL.....TA
AVOID ICING CONDITIONS
•AIR BLEED
•ELEC
•HYD


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Extinguishing
Text
Index
A halon bottle is discharged by selecting its respective AGENT 1 or AGENT 2 SQUIB pb.
Select the AGENT 1 pb.
The DISCH light illuminates when the bottle is depressurized, indicating the discharge was successful.
An additional, longer, countdown now commences to allow the first agent to work before firing the second bottle.
If you are unsuccessful with the first halon bottle, after the countdown is completed you will be prompted to fire the second agent.
Select the AGENT 2 pb.
If you are successful in extinguishing the fire, the ECAM checklist will revert to an engine shutdown in flight failure message.
The light in the FIRE pb and the FIRE light on the pedestal will extinguish.
Лампа в клавише FIRE и лампа FIRE в тумбе погаснут.
AGENT 1
AGENT 2
SQUIB
DISCH
TEST
FIRE
PUSH
ENG 1
APU
ENG 2
AGENT
ENGINE #1 FIRE PB
ENGINE #2 FIRE PB
FIRE DETECTION UNIT (FDU)
ENGINE# 1
ENGINE# 2
FADEC
FAN SECTION LOOPS
PACK #1 FLOW CONTROL VALVE
ENG BLEED VALVE
#1 GEN
IDG
PYLON NACELLE LOOPS
HYD FIRE SHUTOFF VALVE
CORE LOOPS
LP FUEL VALVE
APU BLEED VALVE
THERMAL DISCHARGE DISC
EPR
MCT
1.427
0.691
1.427
FF LBS/H
0
294
EGT °C
400
FF LBS/H
4016
N2 %
29.1
24.8
N1 %
85.4
N2 %
89.3
FOB: 17640 LBS
ENG 1 SHUT DOWN
-ENG MOD SEL.....IGN
.IF NO FUEL LEAK:
-IMBALANCE.....MONITOR
-TCAS MODE SEL.....TA
AVOID ICING CONDITIONS
•AIR BLEED
•ELEC
•HYD
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:

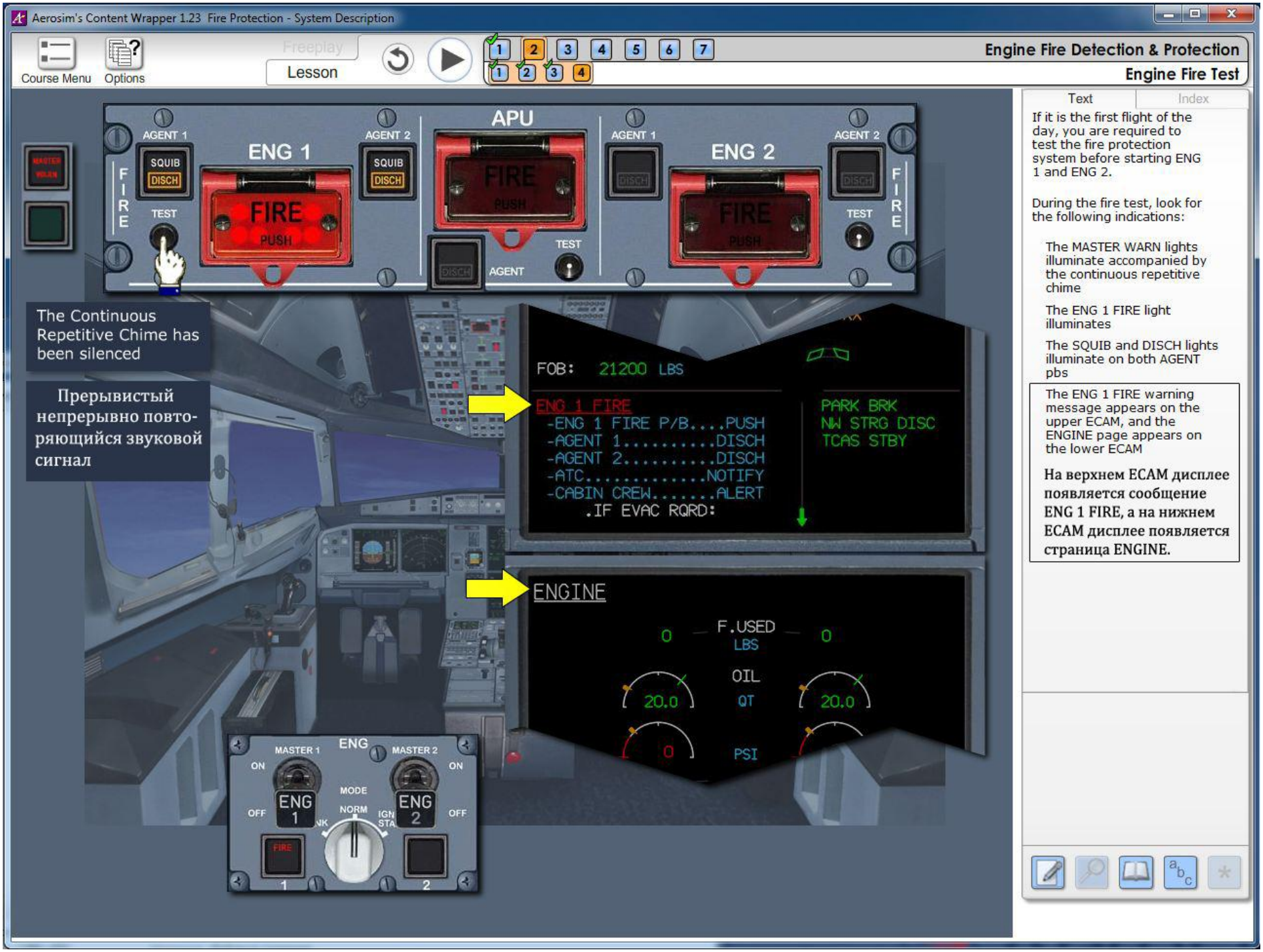

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Extinguishing
Text
Index
The DISCH light illuminates when the bottle is depressurized, indicating the discharge was successful.
An additional, longer, countdown now commences to allow the first agent to work before firing the second bottle.
If you are unsuccessful with the first halon bottle, after the countdown is completed you will be prompted to fire the second agent.
Select the AGENT 2 pb.
If you are successful in extinguishing the fire, the ECAM checklist will revert to an engine shutdown in flight failure message.
The light in the FIRE pb and the FIRE light on the pedestal will extinguish.
If you had been successful in extinguishing the fire with the first agent, these same indications would occur and you would not be prompted to activate the second halon bottle.
Если тушение пожара прошло успешно с первым агентом, то появится такая же индикация и Вам не нужно активировать второй баллон с халоном.
AGENT 1
AGENT 2
SQUIB
DISCH
TEST
FIRE
PUSH
ENG 1
APU
ENG 2
AGENT
ENGINE #1 FIRE PB
ENGINE #2 FIRE PB
AGENT 2 PB
AGENT 1 PB
FIRE DETECTION UNIT (FDU)
ENGINE# 1
ENGINE# 2
* 'OR' LOGIC USED IF EITHER LOOP INOP
FADEC
FAN SECTION LOOPS
PACK #1 FLOW CONTROL VALVE
ENG BLEED VALVE
#1 GEN
IDG
PYLON NACELLE LOOPS
HYD FIRE SHUTOFF VALVE
CORE LOOPS
LP FUEL VALVE
APU BLEED VALVE
THERMAL DISCHARGE DISC
EPR
MCT
1.427
0.691
FF LBS/H
0
EGT °C
294
400
FF LBS/H
4016
N2 %
29.1
N1 %
24.8
85.4
89.3
FOB: 17640 LBS
ENG 1 SHUT DOWN
-ENG MOD SEL.....IGN
.IF NO FUEL LEAK:
-IMBALANCE.....MONITOR
-TCAS MODE SEL.....TA
AVOID ICING CONDITIONS
*AIR BLEED
*ELEC
*HYD
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Test
Text
Index
If it is the first flight of the day, you are required to test the fire protection system before starting ENG 1 and ENG 2.
Если это первый полёт в день, то Вам нужно протестировать систему защиты от пожара перед запуском двигателей ENG 1 и ENG 2.
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
DISCH
AGENT
FOB: 21200 LBS
PARK BRK
NW STRG DISC
TCAS STBY
STS
DOOR/OXY
OXY 1850 PSI
REGUL LO PR
CABIN
ENG
MASTER 1
MASTER 2
ON
OFF
MODE
NORM
IGN
STA
ENG 1
ENG 2

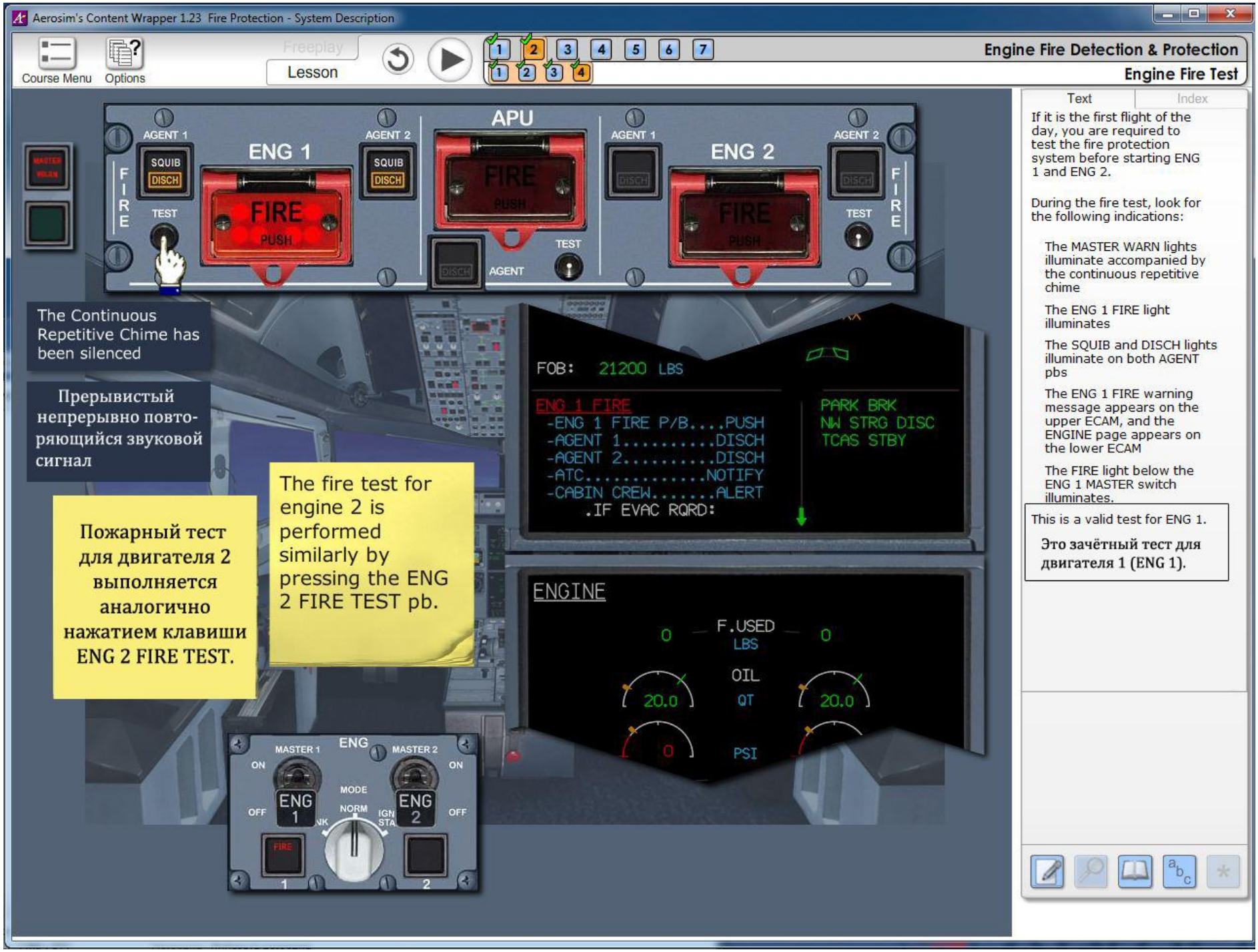

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Test
Text
Index
If it is the first flight of the day, you are required to test the fire protection system before starting ENG 1 and ENG 2.
During the fire test, look for the following indications:
The MASTER WARN lights illuminate accompanied by the continuous repetitive chime
Во время пожарного теста следите за следующей индикацией.
Лампы MASTER WARN горят в сочетании с непрерывно повторяющимся звуковым сигналом.
AGENT 1
SQUIB
DISCH
TEST
ENG 1
FIRE
PUSH
AGENT 2
APU
AGENT
ENG 2
The Continuous Repetitive Chime has been silenced
Прерывистый непрерывно повторяющийся звуковой сигнал
FOB: 21200 LBS
ENG 1 FIRE
-ENG 1 FIRE P/B....PUSH
-AGENT 1.....DISCH
-AGENT 2.....DISCH
-ATC.....NOTIFY
-CABIN CREW.....ALERT
.IF EVAC RQRD:
PARK BRK
NW STRG DISC
TCAS STBY
ENGINE
F.USED
LBS
OIL
QT
PSI
20.0
ENG
MASTER 1
MASTER 2
ON
OFF
MODE
NORM
IGN
STA

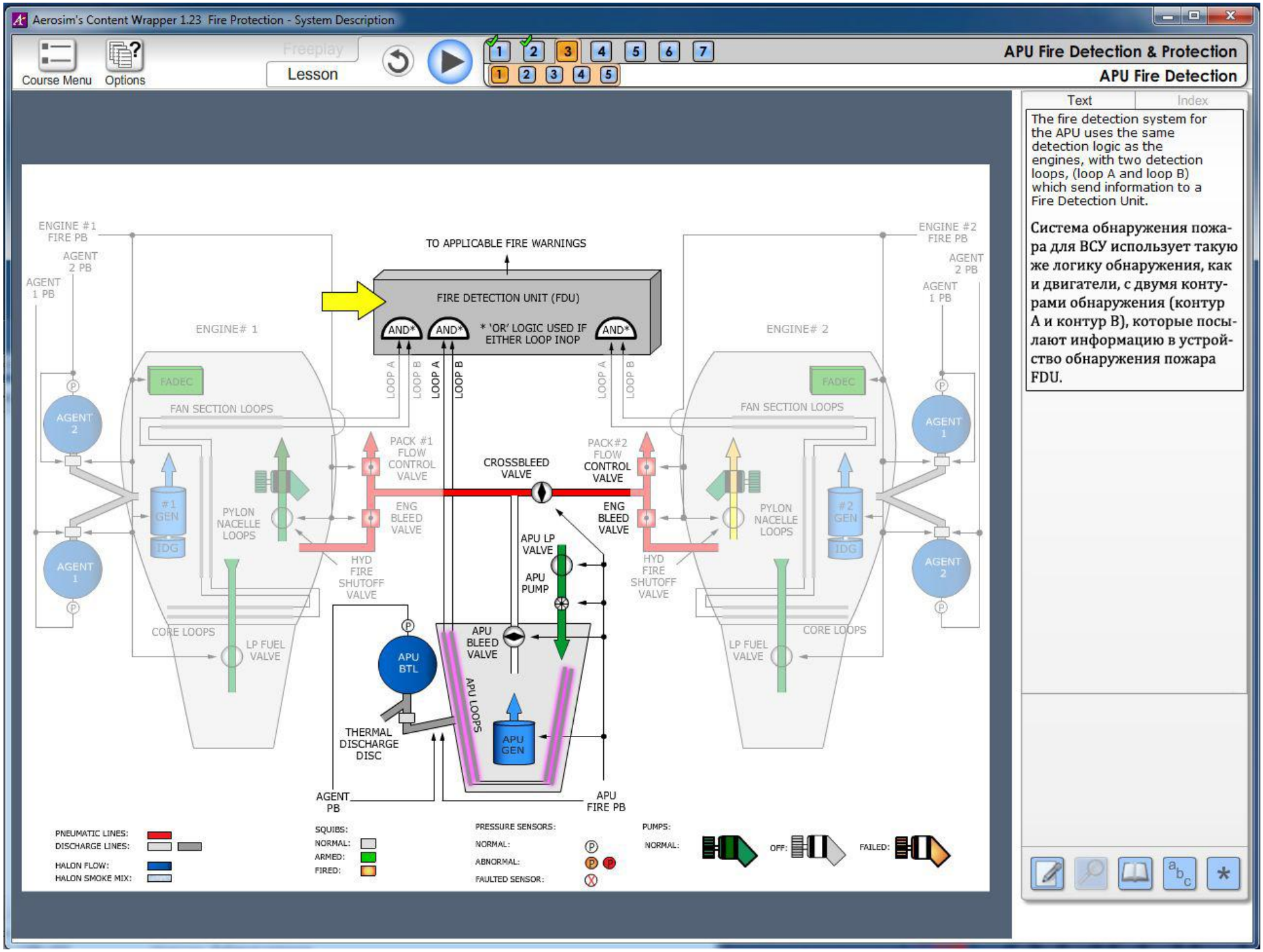

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Test
Text
Index
If it is the first flight of the day, you are required to test the fire protection system before starting ENG 1 and ENG 2.
During the fire test, look for the following indications:
The MASTER WARN lights illuminate accompanied by the continuous repetitive chime
The ENG 1 FIRE light illuminates
Горит лампа ENG 1 FIRE.
AGENT 1
SQUIB
DISCH
TEST
ENG 1
FIRE
PUSH
AGENT 2
APU
AGENT
ENG 2
FIRE
The Continuous Repetitive Chime has been silenced
Прерывистый непрерывно повто-ряющийся звуковой сигнал
FOB: 21200 LBS
ENG 1 FIRE
-ENG 1 FIRE P/B....PUSH
-AGENT 1.....DISCH
-AGENT 2.....DISCH
-ATC.....NOTIFY
-CABIN CREW.....ALERT
.IF EVAC RQRD:
PARK BRK
NW STRG DISC
TCAS STBY
ENGINE
F.USED
LBS
OIL
QT
PSI
20.0
ENG
MASTER 1
MASTER 2
ON
OFF
MODE
NORM
IGN
STA

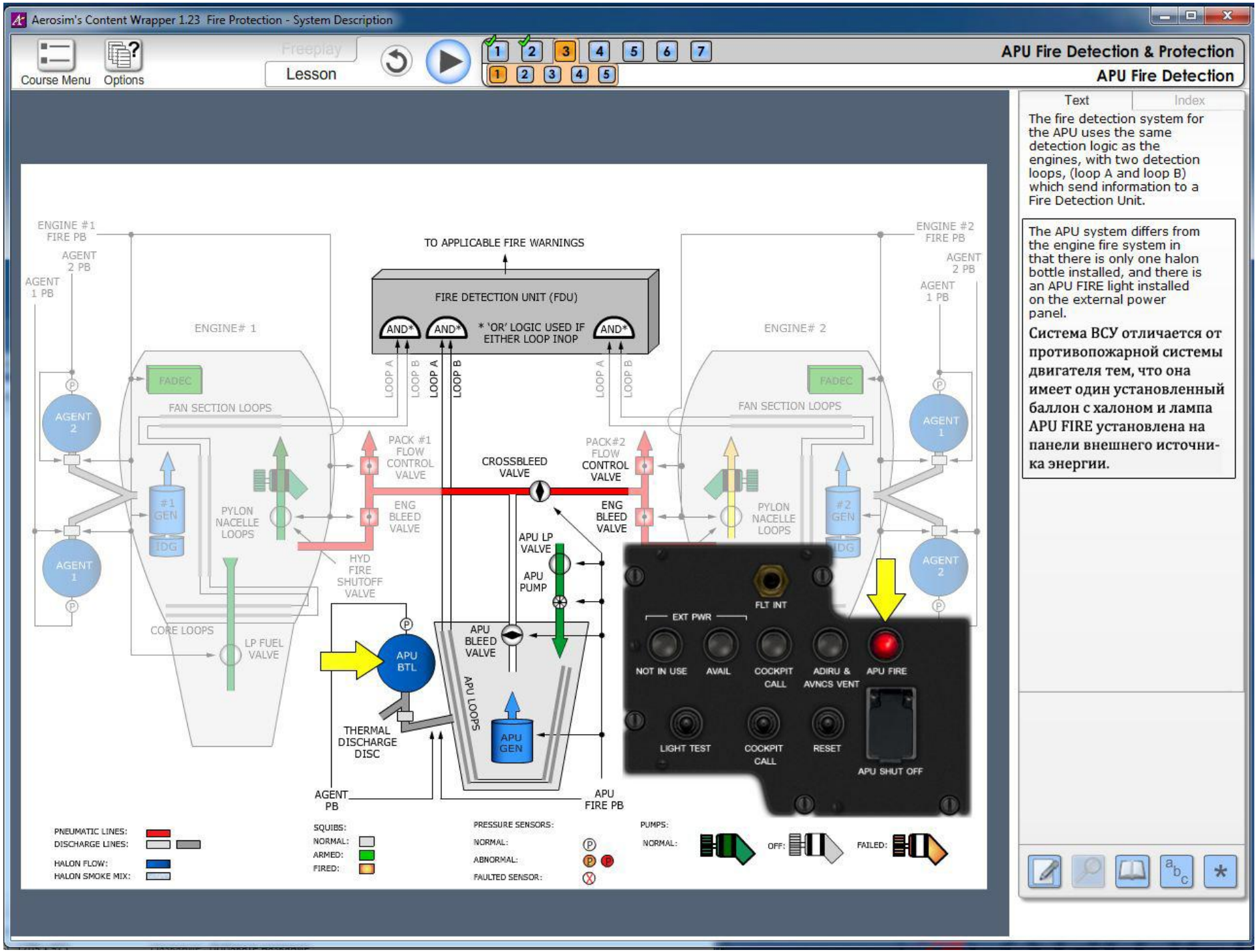

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Test
Text
Index
If it is the first flight of the day, you are required to test the fire protection system before starting ENG 1 and ENG 2.
During the fire test, look for the following indications:
The MASTER WARN lights illuminate accompanied by the continuous repetitive chime
The ENG 1 FIRE light illuminates
The SQUIB and DISCH lights illuminate on both AGENT pbs
Лампы SQUIB и DISCH горят на обеих клавишах AGENT.
AGENT 1
SQUIB
DISCH
TEST
ENG 1
FIRE
PUSH
AGENT 2
APU
AGENT
ENG 2
The Continuous Repetitive Chime has been silenced
Прерывистый непрерывно повто-ряющийся звуковой сигнал
FOB: 21200 LBS
ENG 1 FIRE
-ENG 1 FIRE P/B....PUSH
-AGENT 1.....DISCH
-AGENT 2.....DISCH
-ATC.....NOTIFY
-CABIN CREW.....ALERT
.IF EVAC RQRD:
PARK BRK
NW STRG DISC
TCAS STBY
ENGINE
F.USED
LBS
OIL
QT
PSI
20.0
MASTER 1
MASTER 2
ON
OFF
ENG
MODE
NORM
IGN
STA

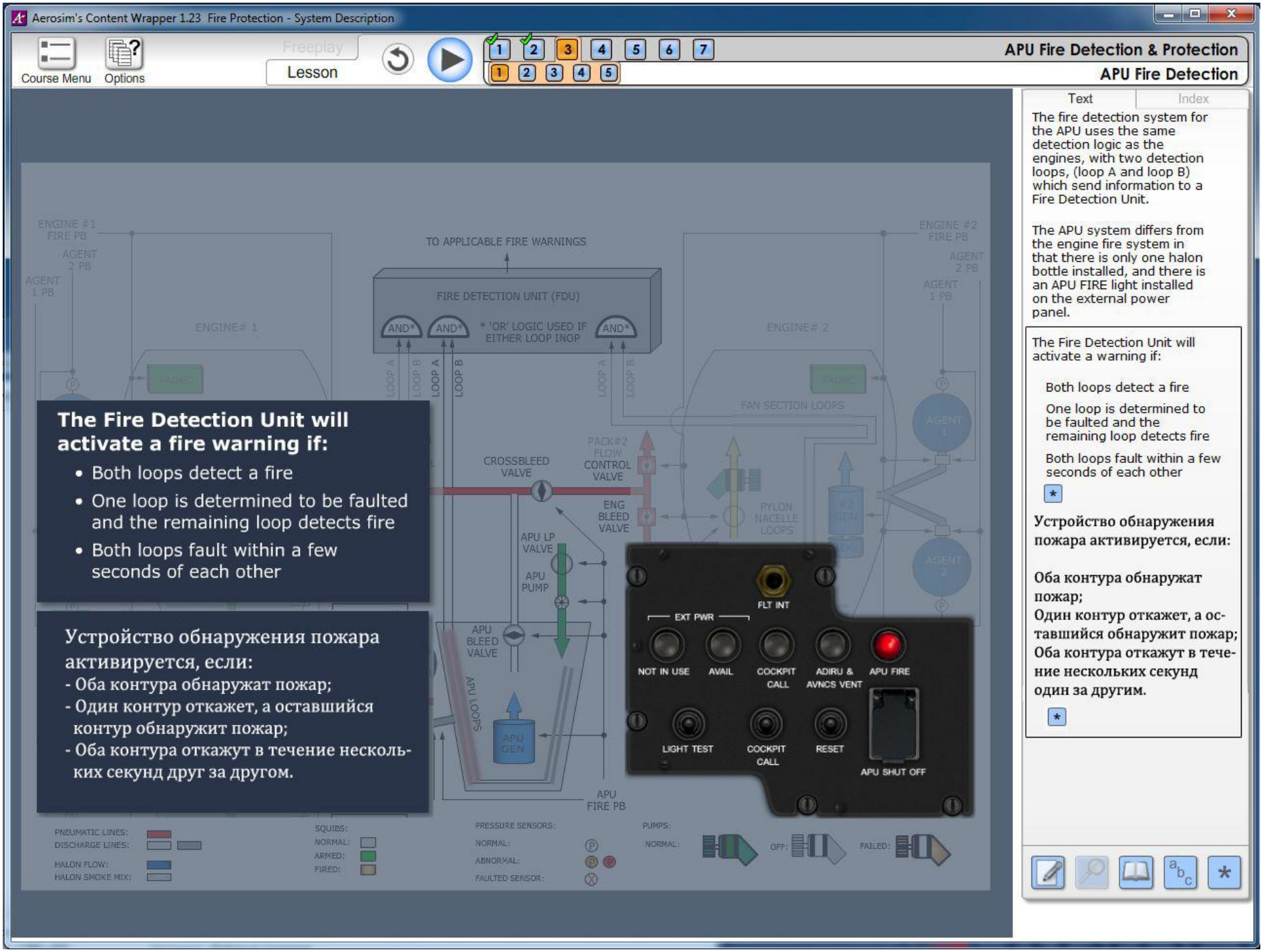

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Test
Text
Index
If it is the first flight of the day, you are required to test the fire protection system before starting ENG 1 and ENG 2.
During the fire test, look for the following indications:
The MASTER WARN lights illuminate accompanied by the continuous repetitive chime
The ENG 1 FIRE light illuminates
The SQUIB and DISCH lights illuminate on both AGENT pbs
The ENG 1 FIRE warning message appears on the upper ECAM, and the ENGINE page appears on the lower ECAM
На верхнем ECAM дисплее появляется сообщение ENG 1 FIRE, а на нижнем ECAM дисплее появляется страница ENGINE.
AGENT 1
AGENT 2
SQUIB
DISCH
TEST
ENG 1
ENG 2
APU
FIRE
PUSH
AGENT
The Continuous Repetitive Chime has been silenced
Прерывистый непрерывно повто-ряющийся звуковой сигнал
FOB: 21200 LBS
ENG 1 FIRE
-ENG 1 FIRE P/B....PUSH
-AGENT 1.....DISCH
-AGENT 2.....DISCH
-ATC.....NOTIFY
-CABIN CREW.....ALERT
.IF EVAC RQRD:
PARK BRK
NW STRG DISC
TCAS STBY
ENGINE
F.USED
LBS
OIL
QT
PSI
20.0
MASTER 1
MASTER 2
ON
OFF
ENG
MODE
NORM

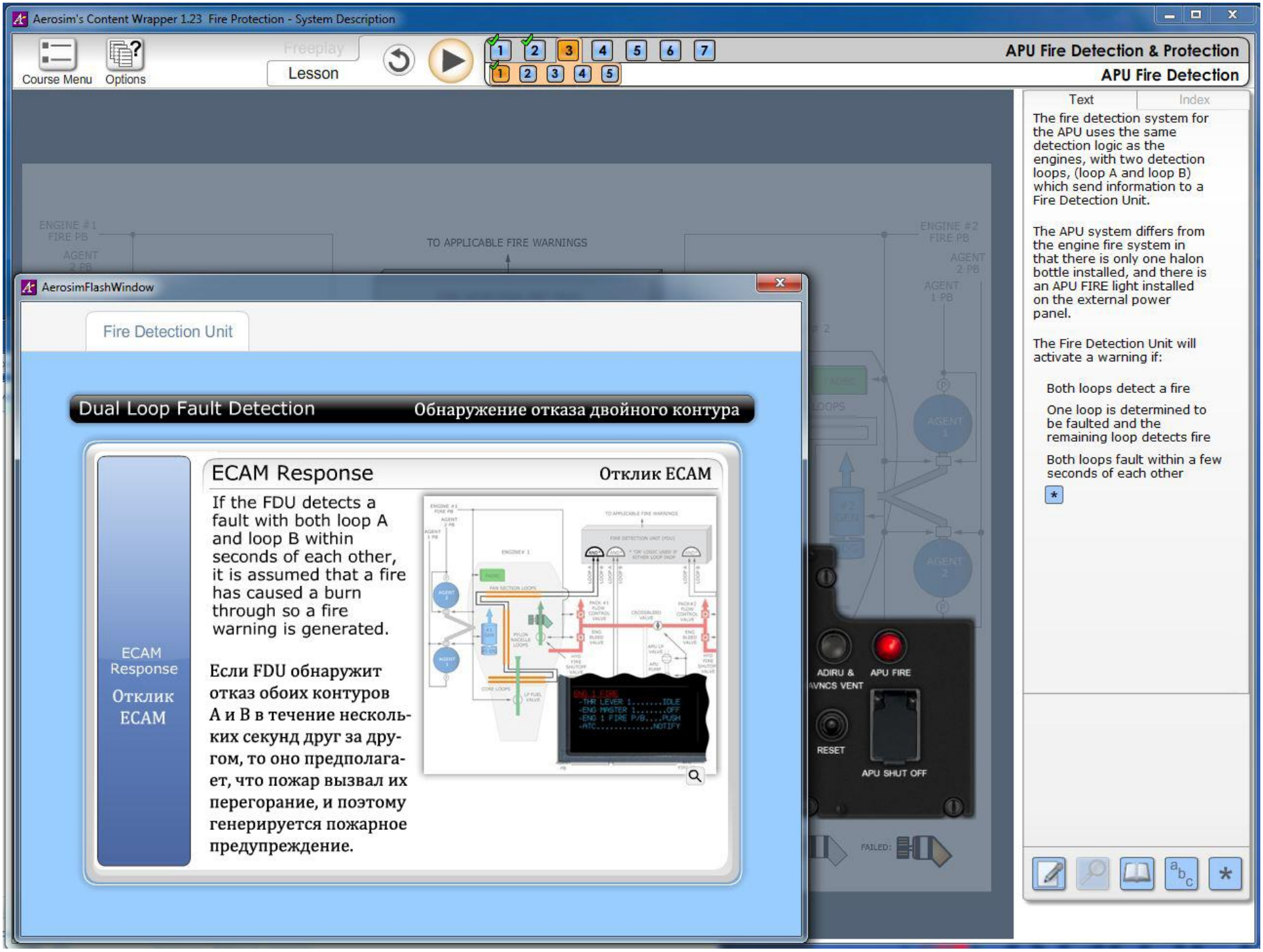

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Test
Text
Index
If it is the first flight of the day, you are required to test the fire protection system before starting ENG 1 and ENG 2.
During the fire test, look for the following indications:
The MASTER WARN lights illuminate accompanied by the continuous repetitive chime
The ENG 1 FIRE light illuminates
The SQUIB and DISCH lights illuminate on both AGENT pbs
The ENG 1 FIRE warning message appears on the upper ECAM, and the ENGINE page appears on the lower ECAM
The FIRE light below the ENG 1 MASTER switch illuminates.
Загорается лампа FIRE ниже выключателя ENG 1 MASTER.
AGENT 1
SQUIB
DISCH
TEST
ENG 1
FIRE
PUSH
AGENT 2
APU
AGENT
ENG 2
The Continuous Repetitive Chime has been silenced
Прерывистый непрерывно повто-ряющийся звуковой сигнал
FOB: 21200 LBS
ENG 1 FIRE
-ENG 1 FIRE P/B....PUSH
-AGENT 1.....DISCH
-AGENT 2.....DISCH
-ATC.....NOTIFY
-CABIN CREW.....ALERT
.IF EVAC RQRD:
PARK BRK
NW STRG DISC
TCAS STBY
ENGINE
F.USED
LBS
OIL
QT
PSI
20.0
MASTER 1
MASTER 2
ON
OFF
ENG
MODE
NORM
IGN STA


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Test
Text
Index
If it is the first flight of the day, you are required to test the fire protection system before starting ENG 1 and ENG 2.
During the fire test, look for the following indications:
The MASTER WARN lights illuminate accompanied by the continuous repetitive chime
The ENG 1 FIRE light illuminates
The SQUIB and DISCH lights illuminate on both AGENT pbs
The ENG 1 FIRE warning message appears on the upper ECAM, and the ENGINE page appears on the lower ECAM
The FIRE light below the ENG 1 MASTER switch illuminates.
This is a valid test for ENG 1.
Это зачётный тест для двигателя 1 (ENG 1).
AGENT 1
SQUIB
DISCH
TEST
ENG 1
FIRE
PUSH
AGENT 2
APU
AGENT
ENG 2
The Continuous Repetitive Chime has been silenced
Прерывистый непрерывно повто-ряющийся звуковой сигнал
Пожарный тест для двигателя 2 выполняется аналогично нажатием клавиши ENG 2 FIRE TEST.
The fire test for engine 2 is performed similarly by pressing the ENG 2 FIRE TEST pb.
FOB: 21200 LBS
ENG 1 FIRE
-ENG 1 FIRE P/B....PUSH
-AGENT 1.....DISCH
-AGENT 2.....DISCH
-ATC.....NOTIFY
-CABIN CREW.....ALERT
.IF EVAC RQRD:
PARK BRK
NW STRG DISC
TCAS STBY
ENGINE
F.USED
LBS
OIL
QT
PSI
20.0
MASTER 1
MASTER 2
ON
OFF
ENG
MODE
NORM


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
APU Fire Detection & Protection
APU Fire Detection
Text
Index
The fire detection system for the APU uses the same detection logic as the engines, with two detection loops, (loop A and loop B) which send information to a Fire Detection Unit.
Система обнаружения пожара для ВСУ использует такую же логику обнаружения, как и двигатели, с двумя контурами обнаружения (контур А и контур В), которые посылают информацию в устройство обнаружения пожара FDU.
TO APPLICABLE FIRE WARNINGS
FIRE DETECTION UNIT (FDU)
AND*
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
AND*
ENGINE #1 FIRE PB
AGENT 2 PB
AGENT 1 PB
ENGINE# 1
ENGINE #2 FIRE PB
AGENT 2 PB
AGENT 1 PB
ENGINE# 2
LOOP A
LOOP B
LOOP A
LOOP B
LOOP A
LOOP B
FADEC
FADEC
FAN SECTION LOOPS
FAN SECTION LOOPS
AGENT 2
AGENT 1
AGENT 1
AGENT 2
PACK #1 FLOW CONTROL VALVE
CROSSBLEED VALVE
PACK#2 FLOW CONTROL VALVE
#1 GEN
IDG
#2 GEN
IDG
PYLON NACELLE LOOPS
ENG BLEED VALVE
ENG BLEED VALVE
PYLON NACELLE LOOPS
APU LP VALVE
APU PUMP
HYD FIRE SHUTOFF VALVE
HYD FIRE SHUTOFF VALVE
CORE LOOPS
LP FUEL VALVE
CORE LOOPS
LP FUEL VALVE
APU BTL
APU BLEED VALVE
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
APU Fire Detection & Protection
APU Fire Detection
Text
Index
The fire detection system for the APU uses the same detection logic as the engines, with two detection loops, (loop A and loop B) which send information to a Fire Detection Unit.
The APU system differs from the engine fire system in that there is only one halon bottle installed, and there is an APU FIRE light installed on the external power panel.
Система ВСУ отличается от противопожарной системы двигателя тем, что она имеет один установленный баллон с халоном и лампа APU FIRE установлена на панели внешнего источника энергии.
TO APPLICABLE FIRE WARNINGS
FIRE DETECTION UNIT (FDU)
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
ENGINE #1 FIRE PB
AGENT 2 PB
AGENT 1 PB
ENGINE# 1
ENGINE# 2
FADEC
FAN SECTION LOOPS
LOOP A
LOOP B
AGENT 2
AGENT 1
PACK #1 FLOW CONTROL VALVE
PACK#2 FLOW CONTROL VALVE
CROSSBLEED VALVE
ENG BLEED VALVE
#1 GEN
#2 GEN
IDG
PYLON NACELLE LOOPS
HYD FIRE SHUTOFF VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU GEN
APU LOOPS
CORE LOOPS
LP FUEL VALVE
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
EXT PWR
FLT INT
NOT IN USE
AVAIL
COCKPIT CALL
ADIRU & AVNCS VENT
APU FIRE
LIGHT TEST
COCKPIT CALL
RESET
APU SHUT OFF
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
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Lesson
APU Fire Detection & Protection
APU Fire Detection
Text
Index
The fire detection system for the APU uses the same detection logic as the engines, with two detection loops, (loop A and loop B) which send information to a Fire Detection Unit.
The APU system differs from the engine fire system in that there is only one halon bottle installed, and there is an APU FIRE light installed on the external power panel.
The Fire Detection Unit will activate a warning if:
Both loops detect a fire
One loop is determined to be faulted and the remaining loop detects fire
Both loops fault within a few seconds of each other
Устройство обнаружения пожара активируется, если:
Оба контура обнаружат пожар;
Один контур откажет, а оставшийся обнаружит пожар;
Оба контура откажут в течение нескольких секунд один за другим.
The Fire Detection Unit will activate a fire warning if:
Both loops detect a fire
One loop is determined to be faulted and the remaining loop detects fire
Both loops fault within a few seconds of each other
Устройство обнаружения пожара активируется, если:
- Оба контура обнаружат пожар;
- Один контур откажет, а оставшийся контур обнаружит пожар;
- Оба контура откажут в течение нескольких секунд друг за другом.
TO APPLICABLE FIRE WARNINGS
FIRE DETECTION UNIT (FDU)
* 'OR' LOGIC USED IF EITHER LOOP INOP
ENGINE #1 FIRE PB
ENGINE #2 FIRE PB
ENGINE# 1
ENGINE# 2
FAN SECTION LOOPS
CROSSBLEED VALVE
PACK#2 FLOW CONTROL VALVE
ENG BLEED VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU LOOPS
APU GEN
APU FIRE PB
PYLON NACELLE LOOPS
FLT INT
EXT PWR
NOT IN USE
AVAIL
COCKPIT CALL
ADIRU & AVNCS VENT
APU FIRE
LIGHT TEST
COCKPIT CALL
RESET
APU SHUT OFF


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APU Fire Detection & Protection
APU Fire Detection
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The fire detection system for the APU uses the same detection logic as the engines, with two detection loops, (loop A and loop B) which send information to a Fire Detection Unit.
The APU system differs from the engine fire system in that there is only one halon bottle installed, and there is an APU FIRE light installed on the external power panel.
The Fire Detection Unit will activate a warning if:
Both loops detect a fire
One loop is determined to be faulted and the remaining loop detects fire
Both loops fault within a few seconds of each other
TO APPLICABLE FIRE WARNINGS
ADIRU & IR VENT
APU FIRE
RESET
APU SHUT OFF
AerosimFlashWindow
Fire Detection Unit
Dual Loop Fault Detection
Обнаружение отказа двойного контура
ECAM Response
Отклик ECAM
If the FDU detects a fault with both loop A and loop B within seconds of each other, it is assumed that a fire has caused a burn through so a fire warning is generated.
Если FDU обнаружит отказ обоих контуров A и B в течение несколь-ких секунд друг за дру-гом, то оно предполага-ет, что пожар вызвал их перегорание, и поэтому генерируется пожарное предупреждение.
ENG 1 FIRE
-THR LEVER 1.....IDLE
-ENG MASTER 1.....OFF
-ENG 1 FIRE P/B....PUSH
-ATC.....NOTIFY

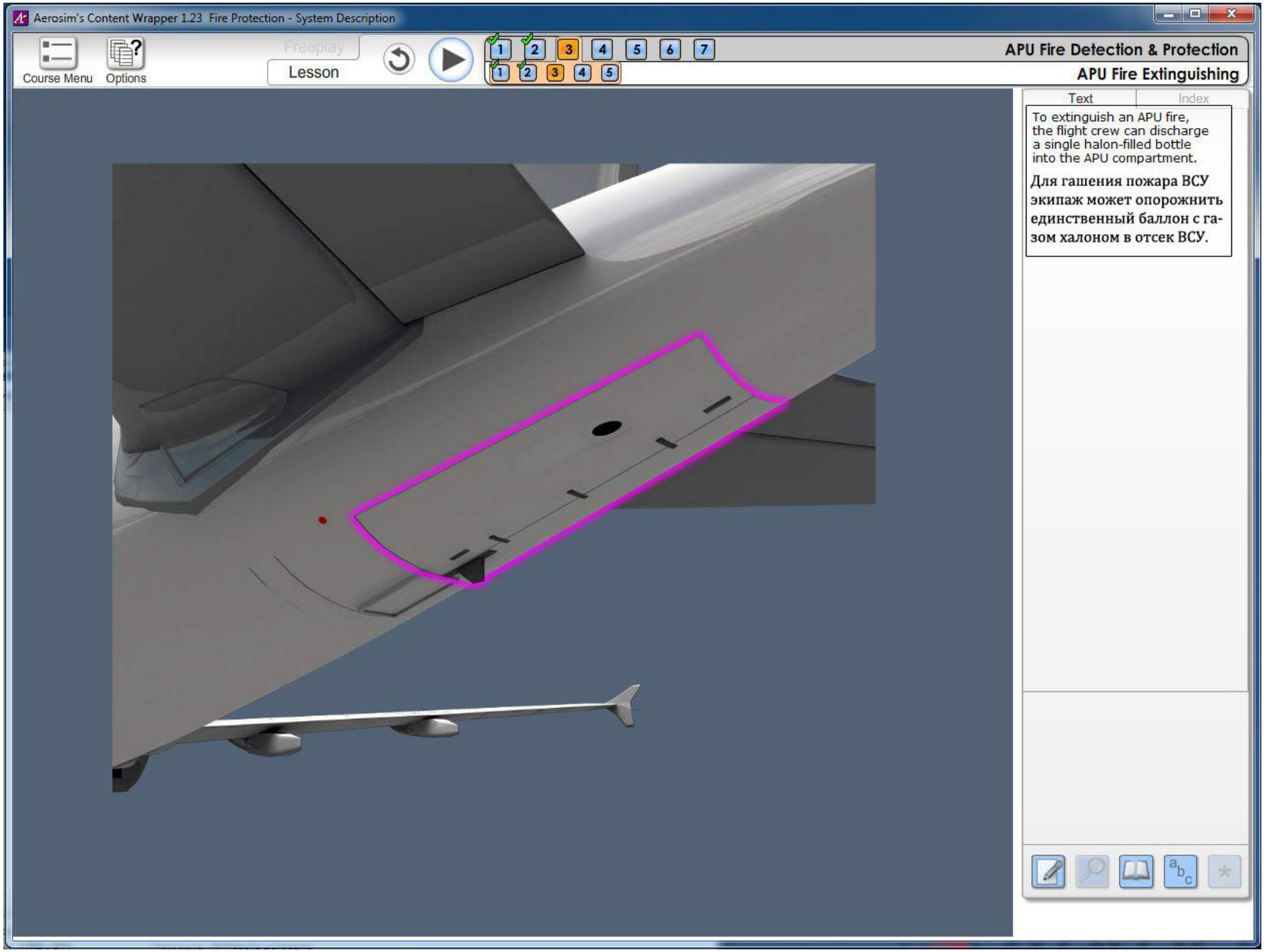

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
APU Fire Detection & Protection
APU Fire Indications - Flight Deck
Text
Index
If the Fire Detection Unit senses a fire, the following indications occur:
The Continuous Repetitive Chime (CRC) sounds and the red MASTER WARN lights illuminate
Если устройство обнаружения пожара почувствует пожар, то появляется следующая индикация.
Непрерывный повторяющийся звуковой сигнал и загорание красной лампы MASTER WARN.
The Continuous Repetitive Chime has been silenced
Прерывистый непрерывно повторяющийся звуковой сигнал

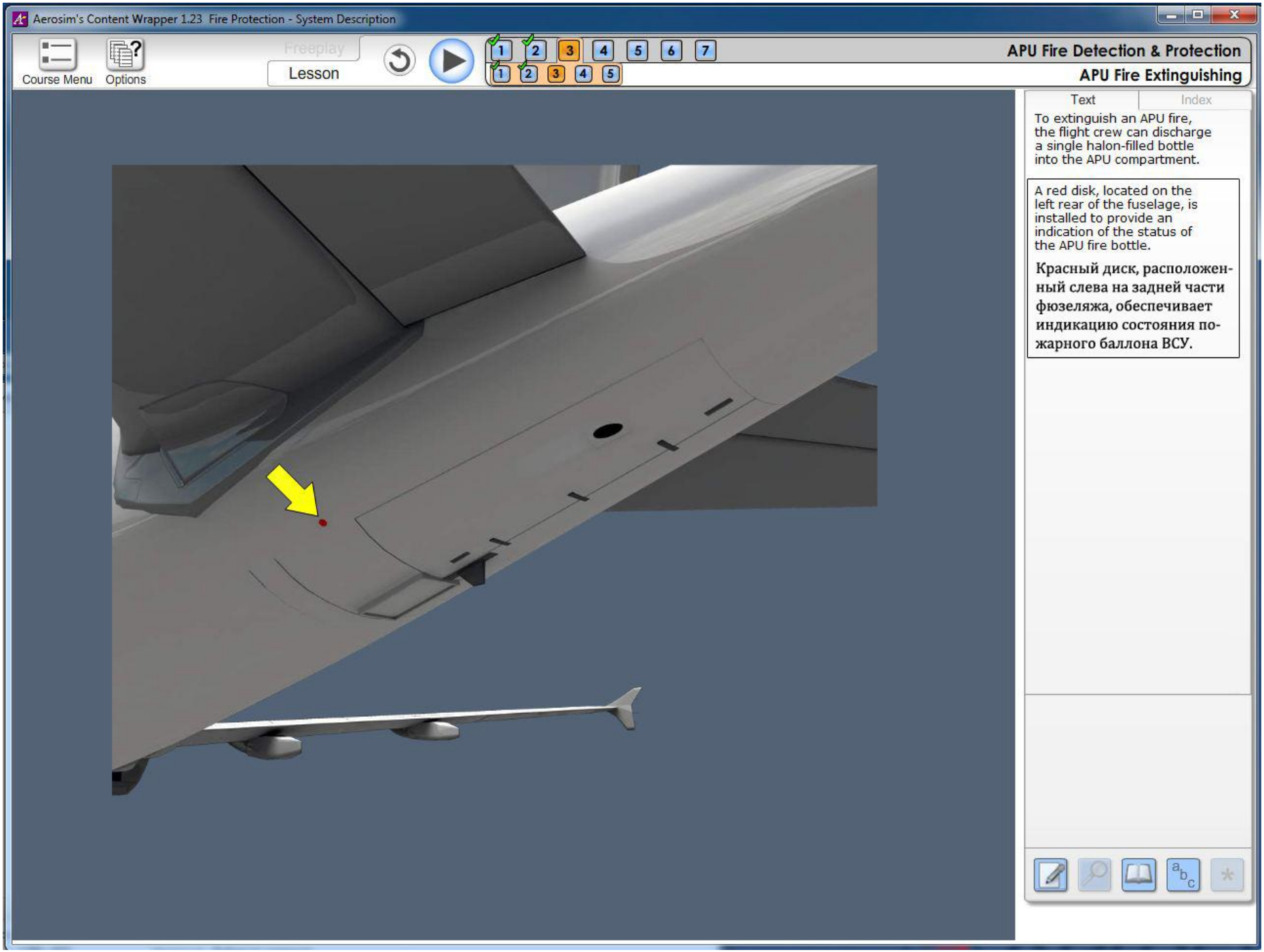

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
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APU Fire Detection & Protection
APU Fire Indications - Flight Deck
Text
Index
If the Fire Detection Unit senses a fire, the following indications occur:
The Continuous Repetitive Chime (CRC) sounds and the red MASTER WARN lights illuminate
A red failure message appears on the upper ECAM
Появляется красное сообщение об отказе на верхнем ECAM дисплее.
The Continuous Repetitive Chime has been silenced
Прерывистый непрерывно повторяющийся звуковой сигнал
FOB: 20240 LBS
APU FIRE
-APU FIRE P/B.....PUSH
-MASTER SW.....OFF
LAND ASAP
APU AVAIL
LDG LT

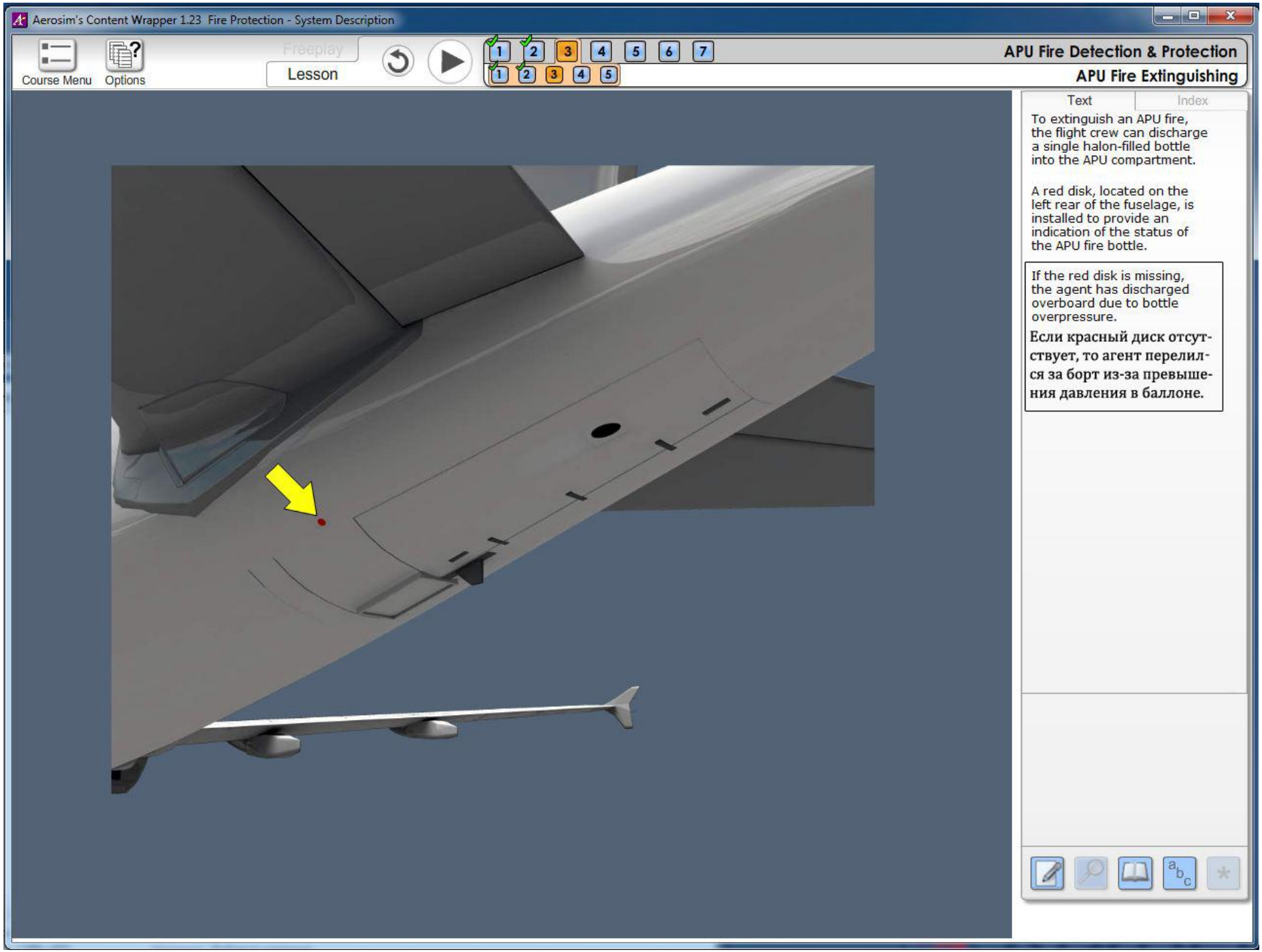

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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Lesson
APU Fire Detection & Protection
APU Fire Indications - Flight Deck
Text
Index
If the Fire Detection Unit senses a fire, the following indications occur:
The Continuous Repetitive Chime (CRC) sounds and the red MASTER WARN lights illuminate
A red failure message appears on the upper ECAM
The APU system page displays on the lower ECAM
Показывается страница систем ВСУ на нижнем ECAM дисплее.
The Continuous Repetitive Chime has been silenced
Прерывистый непрерывно повто-ряющийся звуковой сигнал
FOB: 20240 LBS
APU FIRE
-APU FIRE P/B.....PUSH
-MASTER SW.....OFF
LAND ASAP
APU AVAIL
LDG LT
APU
AVAIL
APU GEN
0 %
115 V
400 HZ
BLEED
0 PSI
N

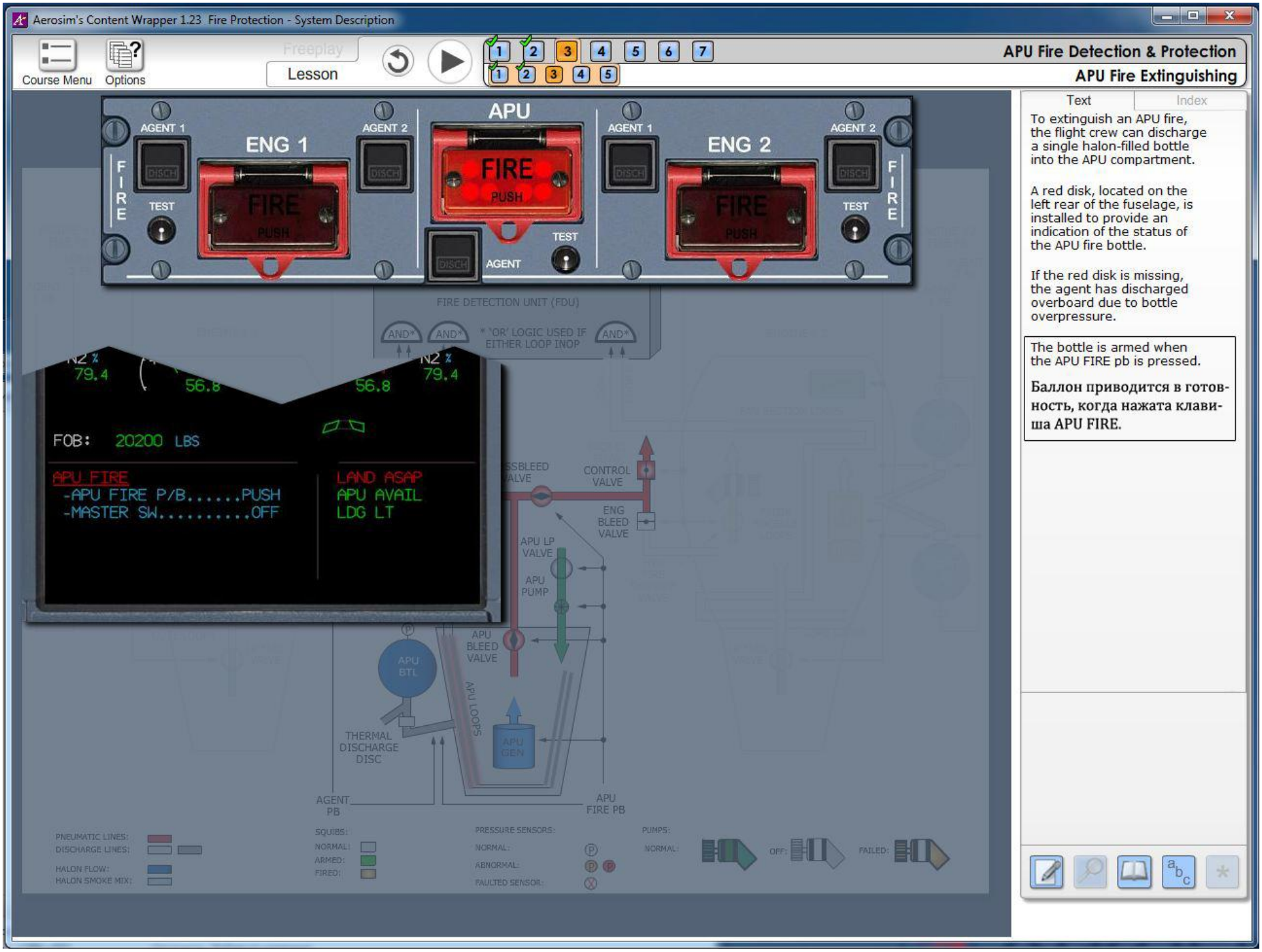

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Course Menu
Options
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Lesson
APU Fire Detection & Protection
APU Fire Indications - Flight Deck
Text
Index
If the Fire Detection Unit senses a fire, the following indications occur:
The Continuous Repetitive Chime (CRC) sounds and the red MASTER WARN lights illuminate
A red failure message appears on the upper ECAM
The APU system page displays on the lower ECAM
The APU FIRE pb illuminates on the overhead FIRE panel
Загорается клавиша APU FIRE на верхней пожарной панели.
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
DISCH
AGENT
The Continuous Repetitive Chime has been silenced
Прерывистый непрерывно повто-ряющийся звуковой сигнал
FOB: 20240 LBS
APU FIRE
-APU FIRE P/B.....PUSH
-MASTER SW.....OFF
LAND ASAP
APU AVAIL
LDG LT
APU
AVAIL
APU GEN
0 %
115 V
400 HZ
BLEED
0 PSI
N

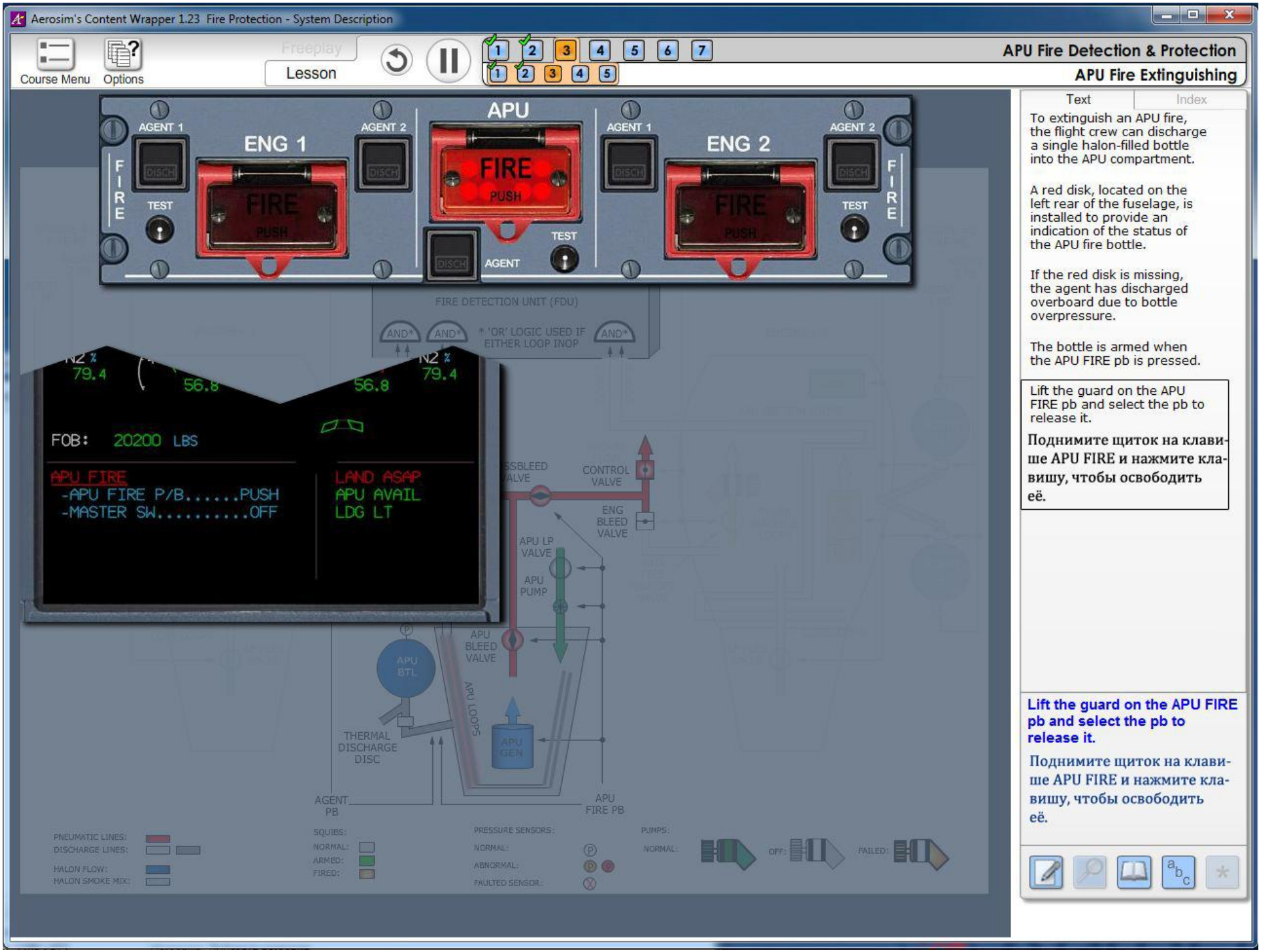

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
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APU Fire Detection & Protection
APU Fire Indications - Flight Deck
Text
Index
If the Fire Detection Unit senses a fire, the following indications occur:
The Continuous Repetitive Chime (CRC) sounds and the red MASTER WARN lights illuminate
A red failure message appears on the upper ECAM
The APU system page displays on the lower ECAM
The APU FIRE pb illuminates on the overhead FIRE panel
These indications will remain on as long as a fire is detected.
Эта индикация остаётся включённой в течение всего времени, пока пожар имеет место (обнаруживается).
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
AGENT
DISCH
The Continuous Repetitive Chime has been silenced
Прерывистый непрерывно повто-ряющийся звуковой сигнал
FOB: 20240 LBS
APU FIRE
-APU FIRE P/B.....PUSH
-MASTER SW.....OFF
LAND ASAP
APU AVAIL
LDG LT
APU
AVAIL
APU GEN
0 %
115 V
400 HZ
BLEED
0 PSI

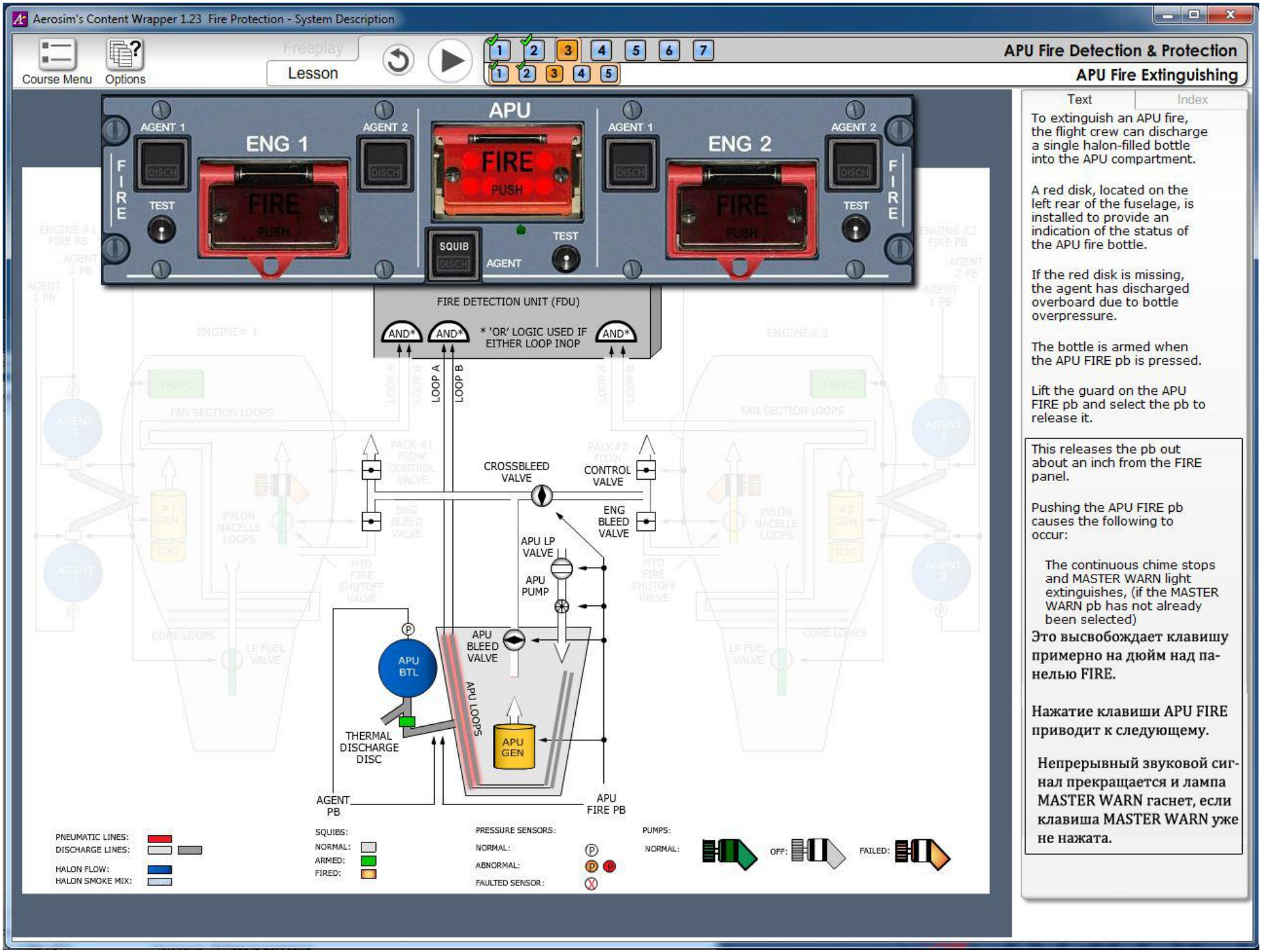

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
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1 2 3 4 5 6 7
1 2 3 4 5
APU Fire Detection & Protection
APU Fire Extinguishing
Text
Index
To extinguish an APU fire, the flight crew can discharge a single halon-filled bottle into the APU compartment.
Для гашения пожара ВСУ экипаж может опорожнить единственный баллон с газом халоном в отсек ВСУ.

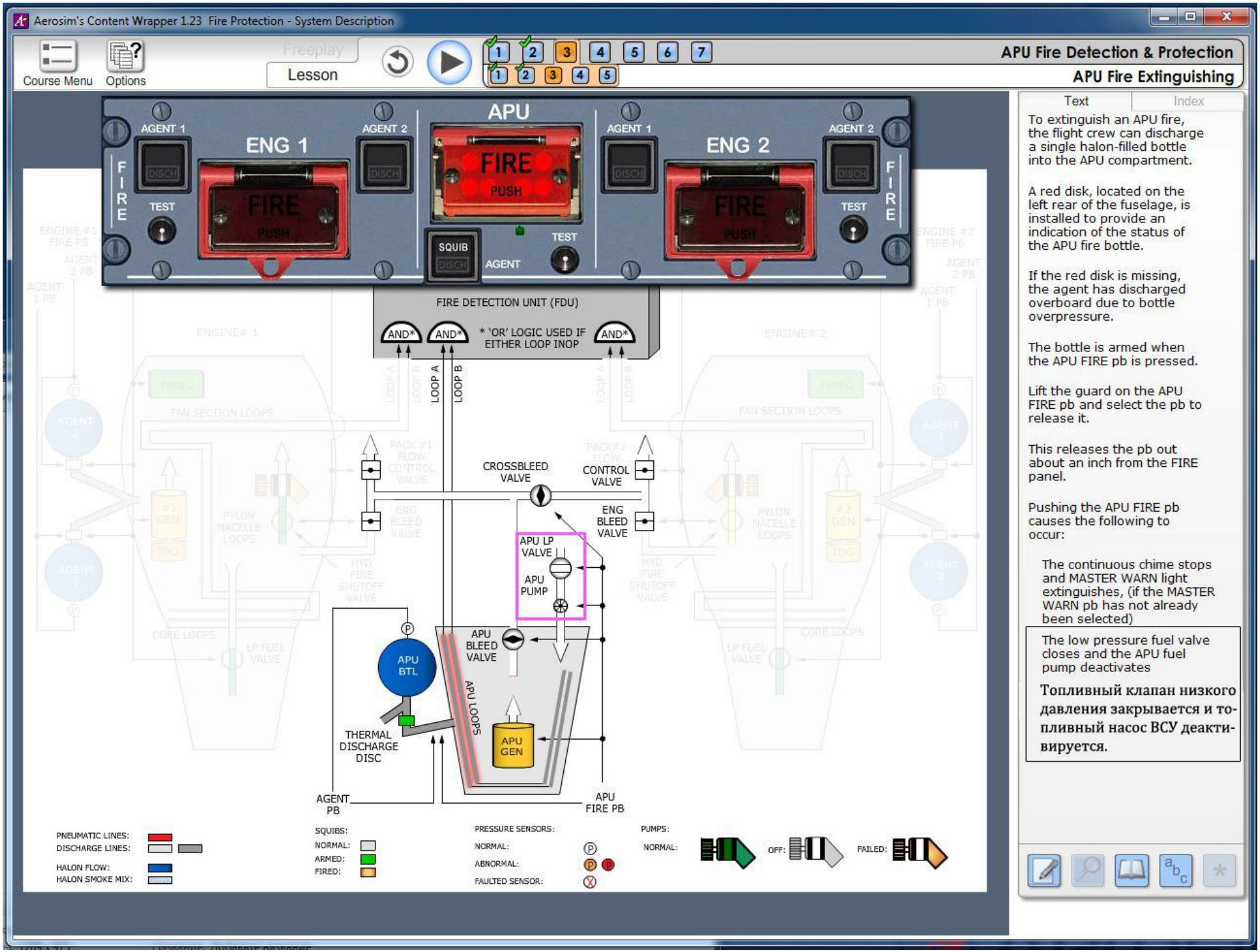

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
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APU Fire Detection & Protection
APU Fire Extinguishing
Text
Index
To extinguish an APU fire, the flight crew can discharge a single halon-filled bottle into the APU compartment.
A red disk, located on the left rear of the fuselage, is installed to provide an indication of the status of the APU fire bottle.
Красный диск, расположенный слева на задней части фюзеляжа, обеспечивает индикацию состояния пожарного баллона ВСУ.

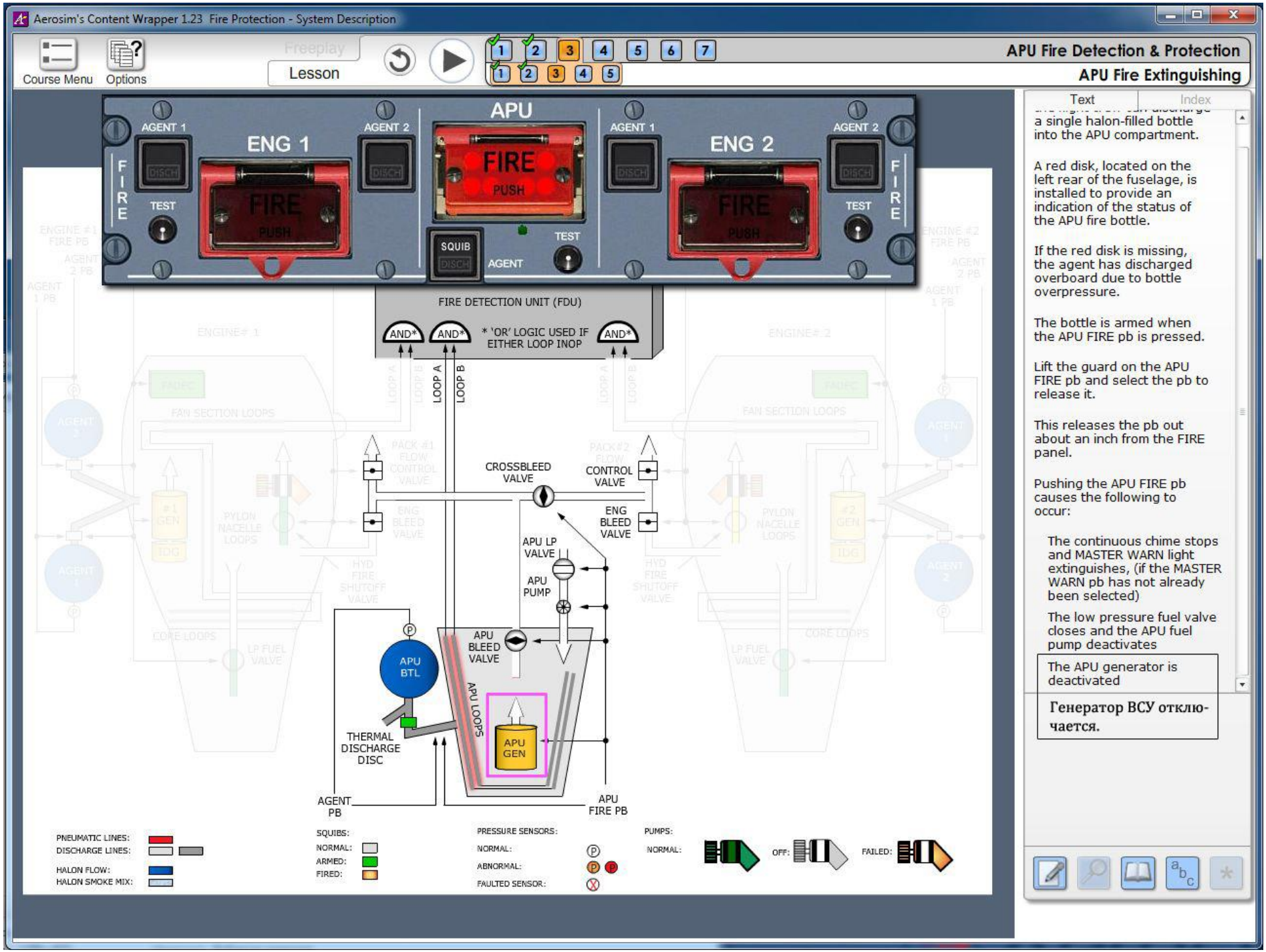

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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APU Fire Detection & Protection
APU Fire Extinguishing
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To extinguish an APU fire, the flight crew can discharge a single halon-filled bottle into the APU compartment.
A red disk, located on the left rear of the fuselage, is installed to provide an indication of the status of the APU fire bottle.
If the red disk is missing, the agent has discharged overboard due to bottle overpressure.
Если красный диск отсутствует, то агент перелился за борт из-за превышения давления в баллоне.

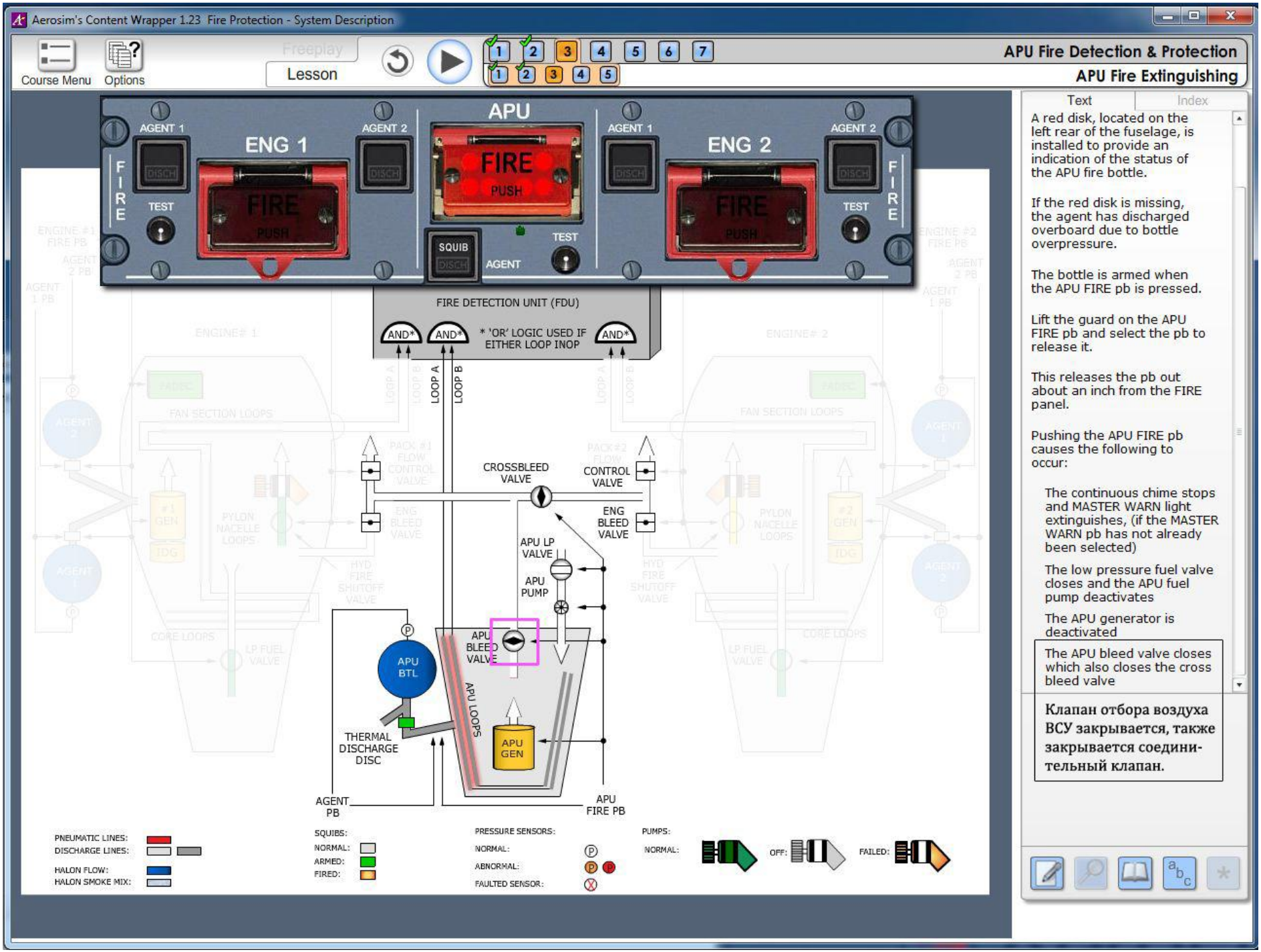

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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APU Fire Detection & Protection
APU Fire Extinguishing
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To extinguish an APU fire, the flight crew can discharge a single halon-filled bottle into the APU compartment.
A red disk, located on the left rear of the fuselage, is installed to provide an indication of the status of the APU fire bottle.
If the red disk is missing, the agent has discharged overboard due to bottle overpressure.
The bottle is armed when the APU FIRE pb is pressed.
Баллон приводится в готовность, когда нажата клавиша APU FIRE.
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
DISCH
AGENT
FIRE DETECTION UNIT (FDU)
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
N2 %
79.4
56.8
FOB: 20200 LBS
APU FIRE
-APU FIRE P/B.....PUSH
-MASTER SW.....OFF
LAND ASAP
APU AVAIL
LDG LT
CONTROL VALVE
ENG BLEED VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:

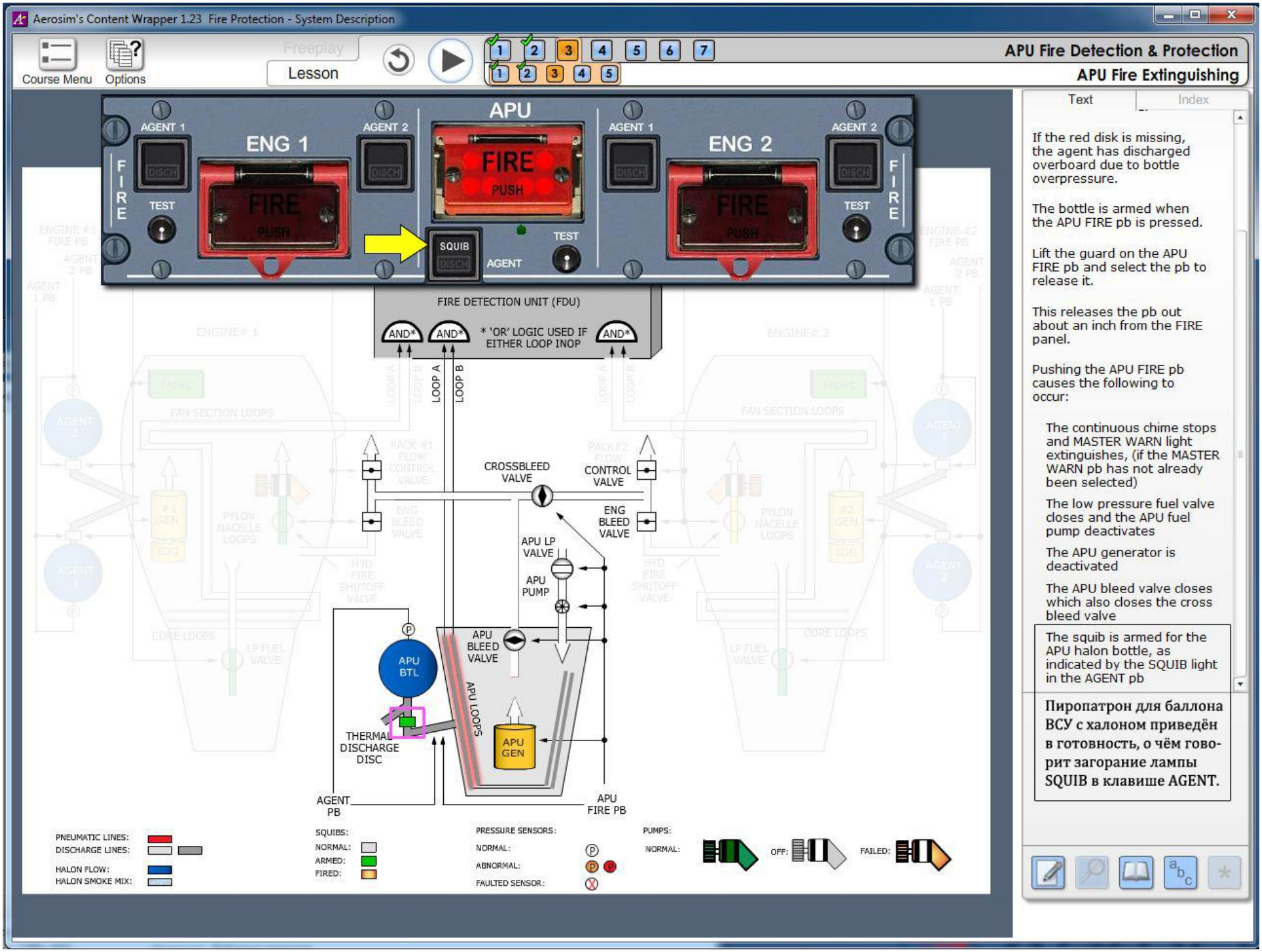

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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APU Fire Detection & Protection
APU Fire Extinguishing
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To extinguish an APU fire, the flight crew can discharge a single halon-filled bottle into the APU compartment.
A red disk, located on the left rear of the fuselage, is installed to provide an indication of the status of the APU fire bottle.
If the red disk is missing, the agent has discharged overboard due to bottle overpressure.
The bottle is armed when the APU FIRE pb is pressed.
Lift the guard on the APU FIRE pb and select the pb to release it.
Поднимите щиток на клавише APU FIRE и нажмите клавишу, чтобы освободить её.
Lift the guard on the APU FIRE pb and select the pb to release it.
Поднимите щиток на клавише APU FIRE и нажмите клавишу, чтобы освободить её.
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
DISCH
AGENT
FIRE DETECTION UNIT (FDU)
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
N2 %
79.4
56.8
FOB: 20200 LBS
APU FIRE
-APU FIRE P/B.....PUSH
-MASTER SW.....OFF
LAND ASAP
APU AVAIL
LDG LT
CONTROL VALVE
ENG BLEED VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:

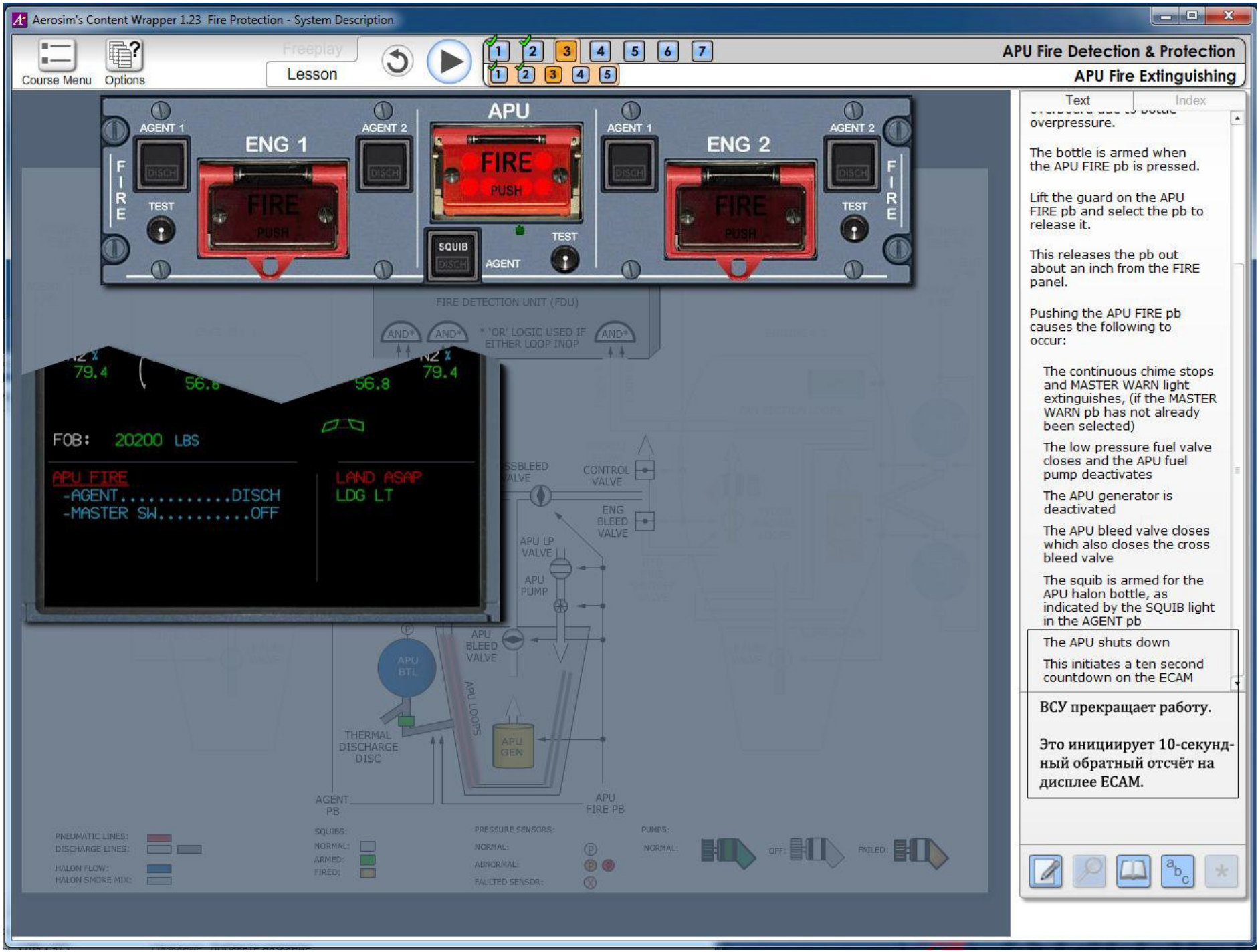

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APU Fire Detection & Protection
APU Fire Extinguishing
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To extinguish an APU fire, the flight crew can discharge a single halon-filled bottle into the APU compartment.
A red disk, located on the left rear of the fuselage, is installed to provide an indication of the status of the APU fire bottle.
If the red disk is missing, the agent has discharged overboard due to bottle overpressure.
The bottle is armed when the APU FIRE pb is pressed.
Lift the guard on the APU FIRE pb and select the pb to release it.
This releases the pb out about an inch from the FIRE panel.
Pushing the APU FIRE pb causes the following to occur:
The continuous chime stops and MASTER WARN light extinguishes, (if the MASTER WARN pb has not already been selected)
Это высвобождает клавишу примерно на дюйм над панелью FIRE.
Нажатие клавиши APU FIRE приводит к следующему.
Непрерывный звуковой сигнал прекращается и лампа MASTER WARN гаснет, если клавиша MASTER WARN уже не нажата.
ENG 1
ENG 2
APU
AGENT 1
AGENT 2
FIRE
PUSH
TEST
DISCH
SQUIB
AGENT
FIRE DETECTION UNIT (FDU)
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
LOOP A
LOOP B
CROSSBLEED VALVE
CONTROL VALVE
ENG BLEED VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:

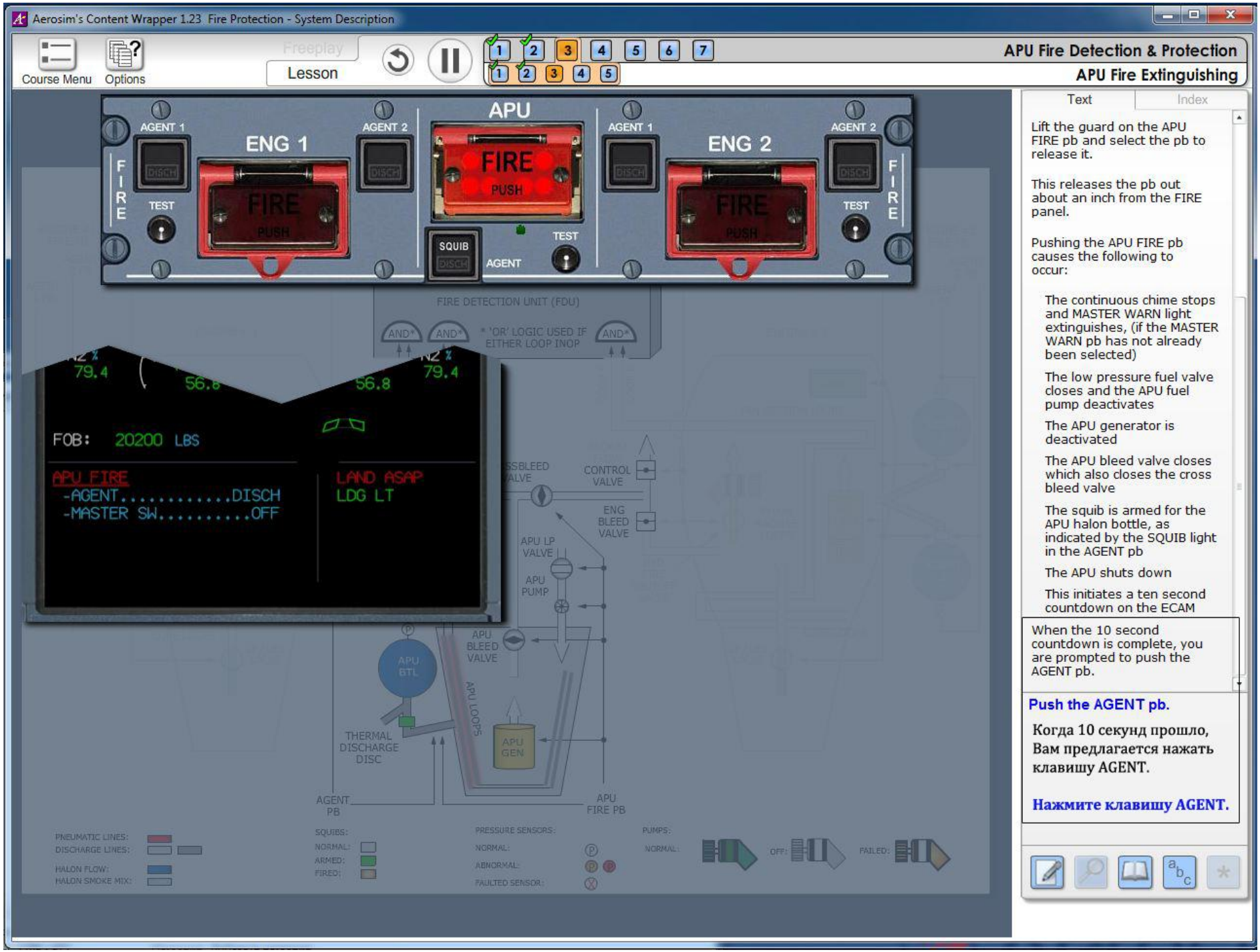

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APU Fire Detection & Protection
APU Fire Extinguishing
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The bottle is armed when the APU FIRE pb is pressed.
Lift the guard on the APU FIRE pb and select the pb to release it.
This releases the pb out about an inch from the FIRE panel.
Pushing the APU FIRE pb causes the following to occur:
The continuous chime stops and MASTER WARN light extinguishes, (if the MASTER WARN pb has not already been selected)
The low pressure fuel valve closes and the APU fuel pump deactivates
Топливный клапан низкого давления закрывается и топливный насос ВСУ деактивируется.
AGENT 1
AGENT 2
ENG 1
ENG 2
APU
FIRE
PUSH
TEST
SQUIB
AGENT
FIRE DETECTION UNIT (FDU)
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
LOOP A
LOOP B
CROSSBLEED VALVE
CONTROL VALVE
ENG BLEED VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:

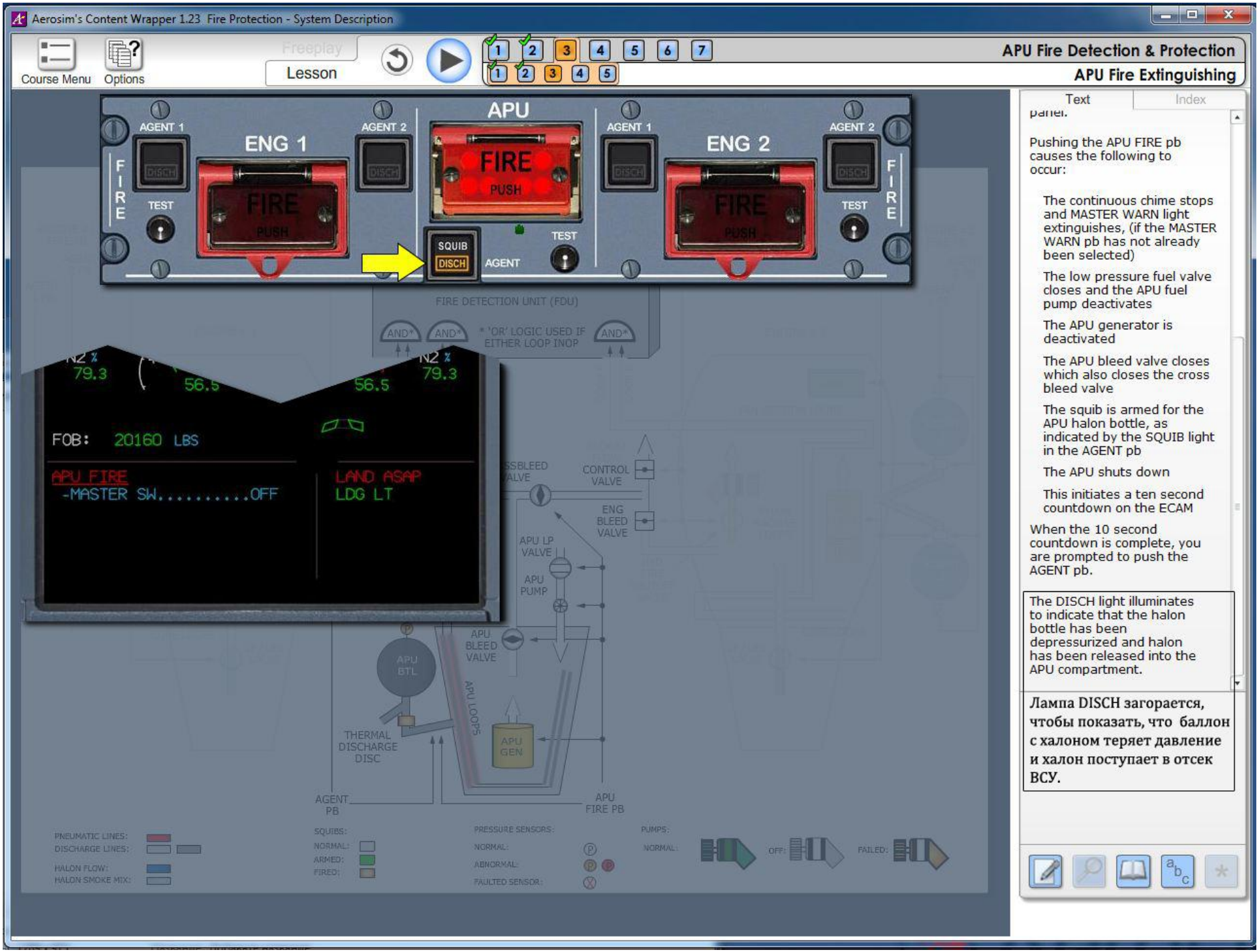

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
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APU Fire Extinguishing
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a single halon-filled bottle into the APU compartment.
A red disk, located on the left rear of the fuselage, is installed to provide an indication of the status of the APU fire bottle.
If the red disk is missing, the agent has discharged overboard due to bottle overpressure.
The bottle is armed when the APU FIRE pb is pressed.
Lift the guard on the APU FIRE pb and select the pb to release it.
This releases the pb out about an inch from the FIRE panel.
Pushing the APU FIRE pb causes the following to occur:
The continuous chime stops and MASTER WARN light extinguishes, (if the MASTER WARN pb has not already been selected)
The low pressure fuel valve closes and the APU fuel pump deactivates
The APU generator is deactivated
Генератор ВСУ отключается.
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
DISCH
SQUIB
AGENT
FIRE DETECTION UNIT (FDU)
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
LOOP A
LOOP B
CROSSBLEED VALVE
CONTROL VALVE
ENG BLEED VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:

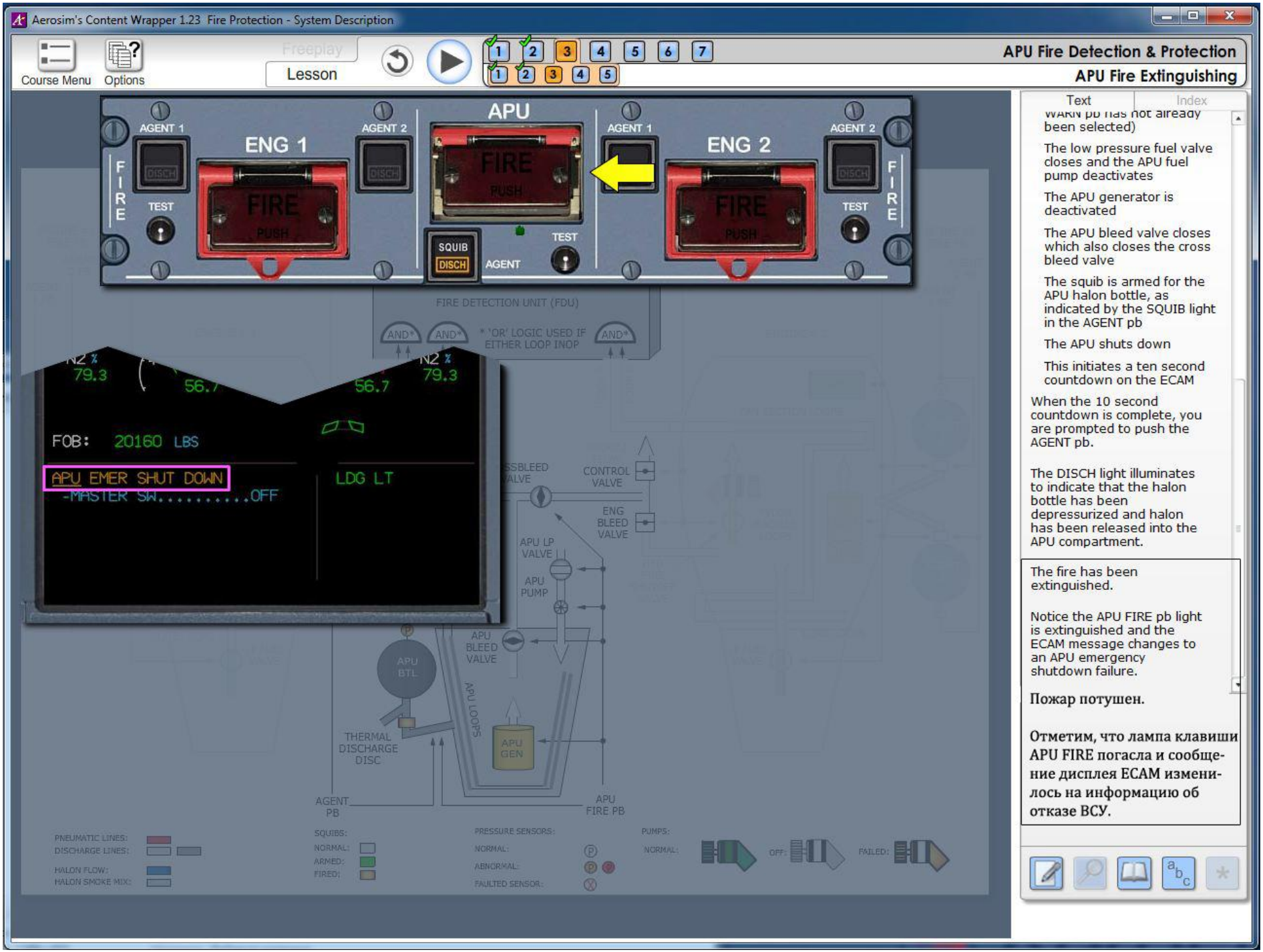

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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APU Fire Detection & Protection
APU Fire Extinguishing
Text
Index
A red disk, located on the left rear of the fuselage, is installed to provide an indication of the status of the APU fire bottle.
If the red disk is missing, the agent has discharged overboard due to bottle overpressure.
The bottle is armed when the APU FIRE pb is pressed.
Lift the guard on the APU FIRE pb and select the pb to release it.
This releases the pb out about an inch from the FIRE panel.
Pushing the APU FIRE pb causes the following to occur:
The continuous chime stops and MASTER WARN light extinguishes, (if the MASTER WARN pb has not already been selected)
The low pressure fuel valve closes and the APU fuel pump deactivates
The APU generator is deactivated
The APU bleed valve closes which also closes the cross bleed valve
Клапан отбора воздуха ВСУ закрывается, также закрывается соединительный клапан.
AGENT 1
AGENT 2
ENG 1
ENG 2
APU
FIRE
PUSH
TEST
SQUIB
AGENT
FIRE DETECTION UNIT (FDU)
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
LOOP A
LOOP B
CROSSBLEED VALVE
CONTROL VALVE
ENG BLEED VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:

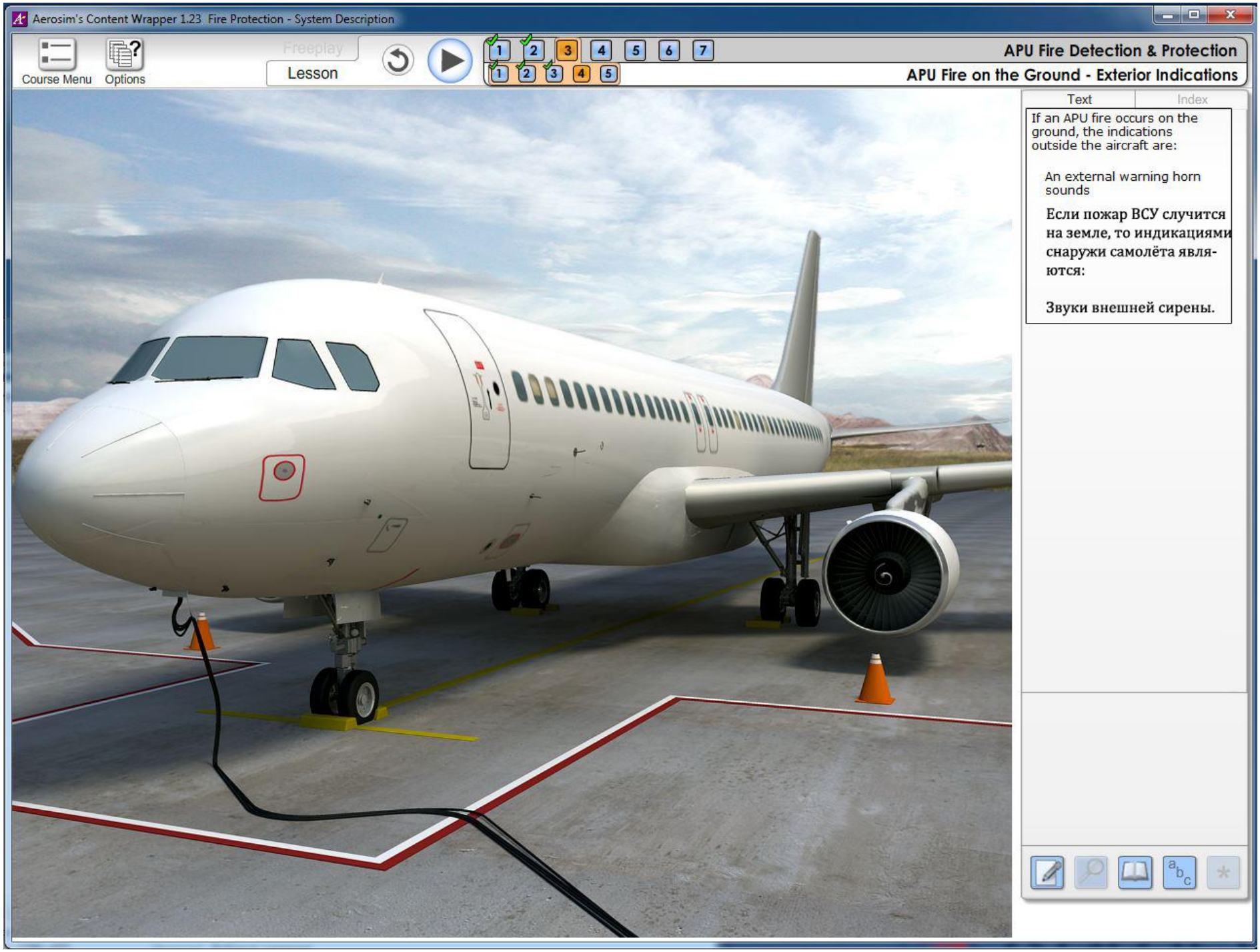

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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APU Fire Detection & Protection
APU Fire Extinguishing
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ENG 1
AGENT 2
APU
ENG 2
FIRE
PUSH
TEST
SQUIB
DISCH
AGENT
FIRE DETECTION UNIT (FDU)
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
LOOP A
LOOP B
CROSSBLEED VALVE
CONTROL VALVE
ENG BLEED VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
OFF:
FAILED:
Text
Index
If the red disk is missing, the agent has discharged overboard due to bottle overpressure.
The bottle is armed when the APU FIRE pb is pressed.
Lift the guard on the APU FIRE pb and select the pb to release it.
This releases the pb out about an inch from the FIRE panel.
Pushing the APU FIRE pb causes the following to occur:
The continuous chime stops and MASTER WARN light extinguishes, (if the MASTER WARN pb has not already been selected)
The low pressure fuel valve closes and the APU fuel pump deactivates
The APU generator is deactivated
The APU bleed valve closes which also closes the cross bleed valve
The squib is armed for the APU halon bottle, as indicated by the SQUIB light in the AGENT pb
Пиропатрон для баллона ВСУ с халоном приведён в готовность, о чём говорит загорание лампы SQUIB в клавише AGENT.

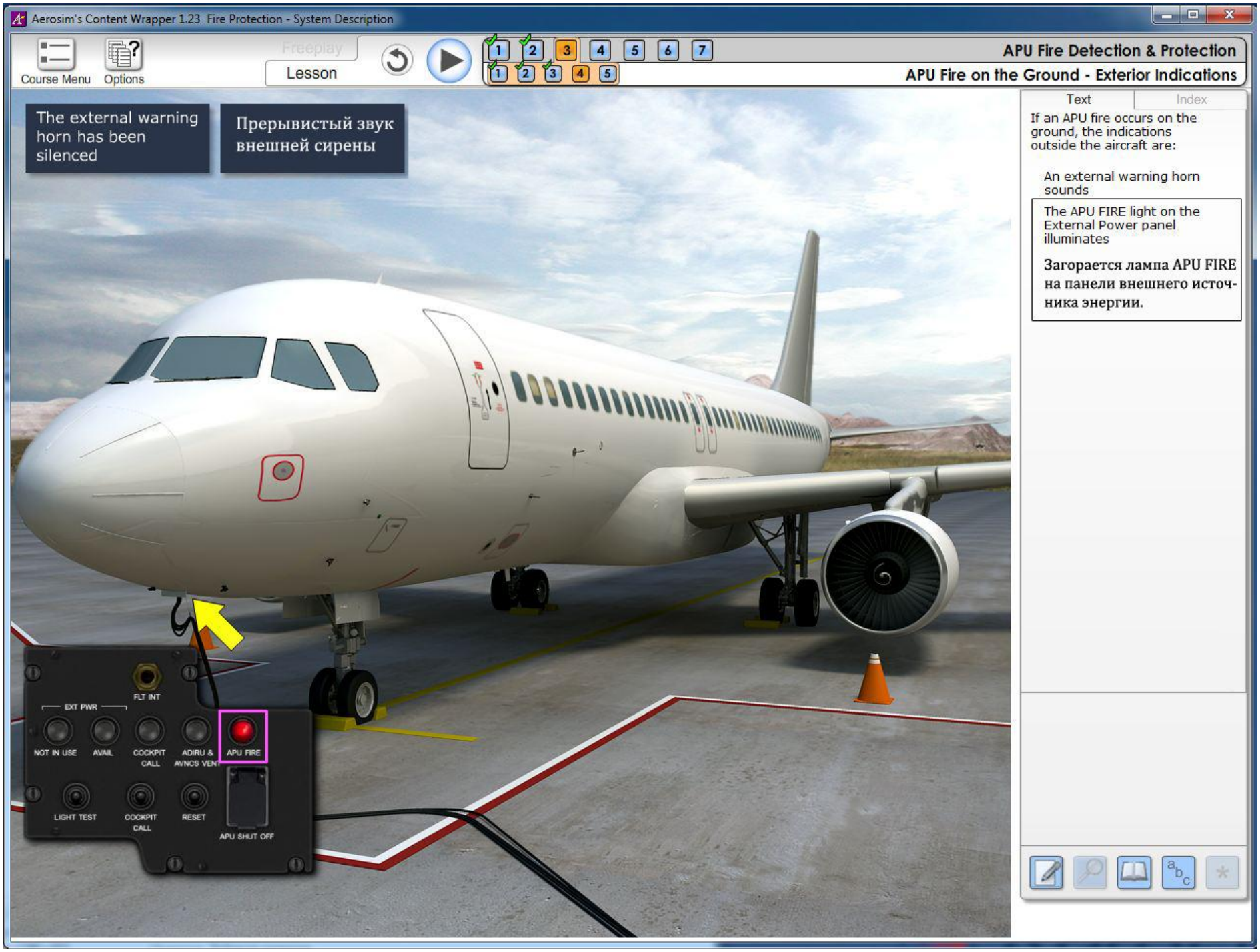

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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AGENT 2
ENG 1
ENG 2
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FIRE
PUSH
TEST
SQUIB
DISCH
AGENT
FIRE DETECTION UNIT (FDU)
* 'OR' LOGIC USED IF EITHER LOOP INOP
79.4
56.8
FOB: 20200 LBS
APU FIRE
-AGENT.....DISCH
-MASTER SW.....OFF
LAND ASAP
LDG LT
CONTROL VALVE
ENG BLEED VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
overpressure.
The bottle is armed when the APU FIRE pb is pressed.
Lift the guard on the APU FIRE pb and select the pb to release it.
This releases the pb out about an inch from the FIRE panel.
Pushing the APU FIRE pb causes the following to occur:
The continuous chime stops and MASTER WARN light extinguishes, (if the MASTER WARN pb has not already been selected)
The low pressure fuel valve closes and the APU fuel pump deactivates
The APU generator is deactivated
The APU bleed valve closes which also closes the cross bleed valve
The squib is armed for the APU halon bottle, as indicated by the SQUIB light in the AGENT pb
The APU shuts down
This initiates a ten second countdown on the ECAM
ВСУ прекращает работу.
Это инициирует 10-секундный обратный отсчёт на дисплее ECAM.

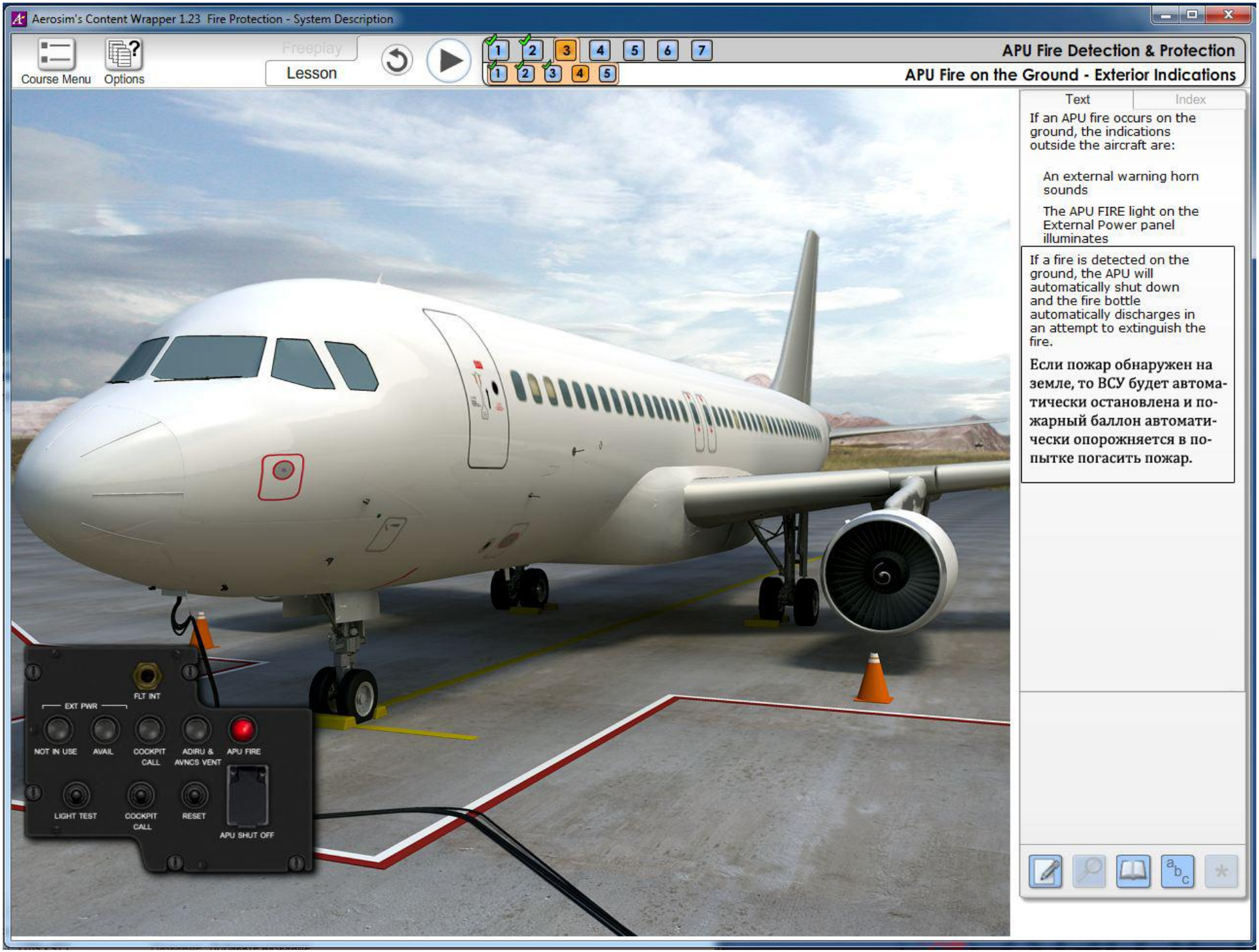

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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APU Fire Detection & Protection
APU Fire Extinguishing
Text
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Lift the guard on the APU FIRE pb and select the pb to release it.
This releases the pb out about an inch from the FIRE panel.
Pushing the APU FIRE pb causes the following to occur:
The continuous chime stops and MASTER WARN light extinguishes, (if the MASTER WARN pb has not already been selected)
The low pressure fuel valve closes and the APU fuel pump deactivates
The APU generator is deactivated
The APU bleed valve closes which also closes the cross bleed valve
The squib is armed for the APU halon bottle, as indicated by the SQUIB light in the AGENT pb
The APU shuts down
This initiates a ten second countdown on the ECAM
When the 10 second countdown is complete, you are prompted to push the AGENT pb.
Push the AGENT pb.
Когда 10 секунд прошло, Вам предлагается нажать клавишу AGENT.
Нажмите клавишу AGENT.
AGENT 1
AGENT 2
ENG 1
ENG 2
APU
FIRE
PUSH
TEST
SQUIB
AGENT
FOB: 20200 LBS
APU FIRE
-AGENT.....DISCH
-MASTER SW.....OFF
LAND ASAP
LDG LT
FIRE DETECTION UNIT (FDU)
CONTROL VALVE
ENG BLEED VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB

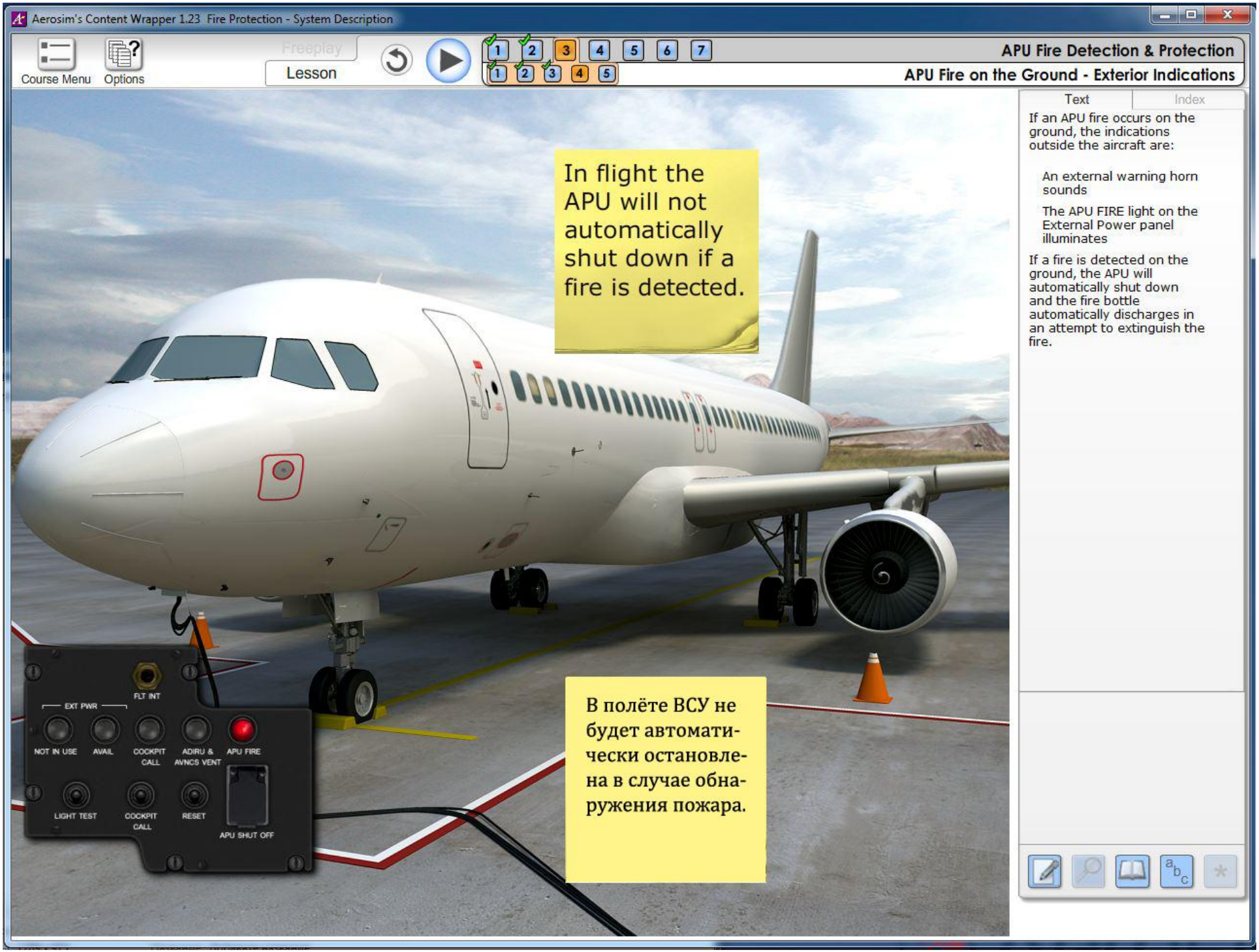

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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AGENT 2
ENG 1
ENG 2
APU
FIRE
PUSH
TEST
SQUIB
DISCH
AGENT
FIRE DETECTION UNIT (FDU)
'OR' LOGIC USED IF EITHER LOOP INOP
N2 %
79.3
56.5
FOB: 20160 LBS
APU FIRE
-MASTER SW.....OFF
LAND ASAP
LDG LT
CONTROL VALVE
ENG BLEED VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
OFF:
FAILED:
Pushing the APU FIRE pb causes the following to occur:
The continuous chime stops and MASTER WARN light extinguishes, (if the MASTER WARN pb has not already been selected)
The low pressure fuel valve closes and the APU fuel pump deactivates
The APU generator is deactivated
The APU bleed valve closes which also closes the cross bleed valve
The squib is armed for the APU halon bottle, as indicated by the SQUIB light in the AGENT pb
The APU shuts down
This initiates a ten second countdown on the ECAM
When the 10 second countdown is complete, you are prompted to push the AGENT pb.
The DISCH light illuminates to indicate that the halon bottle has been depressurized and halon has been released into the APU compartment.
Лампа DISCH загорается, чтобы показать, что баллон с халоном теряет давление и халон поступает в отсек ВСУ.

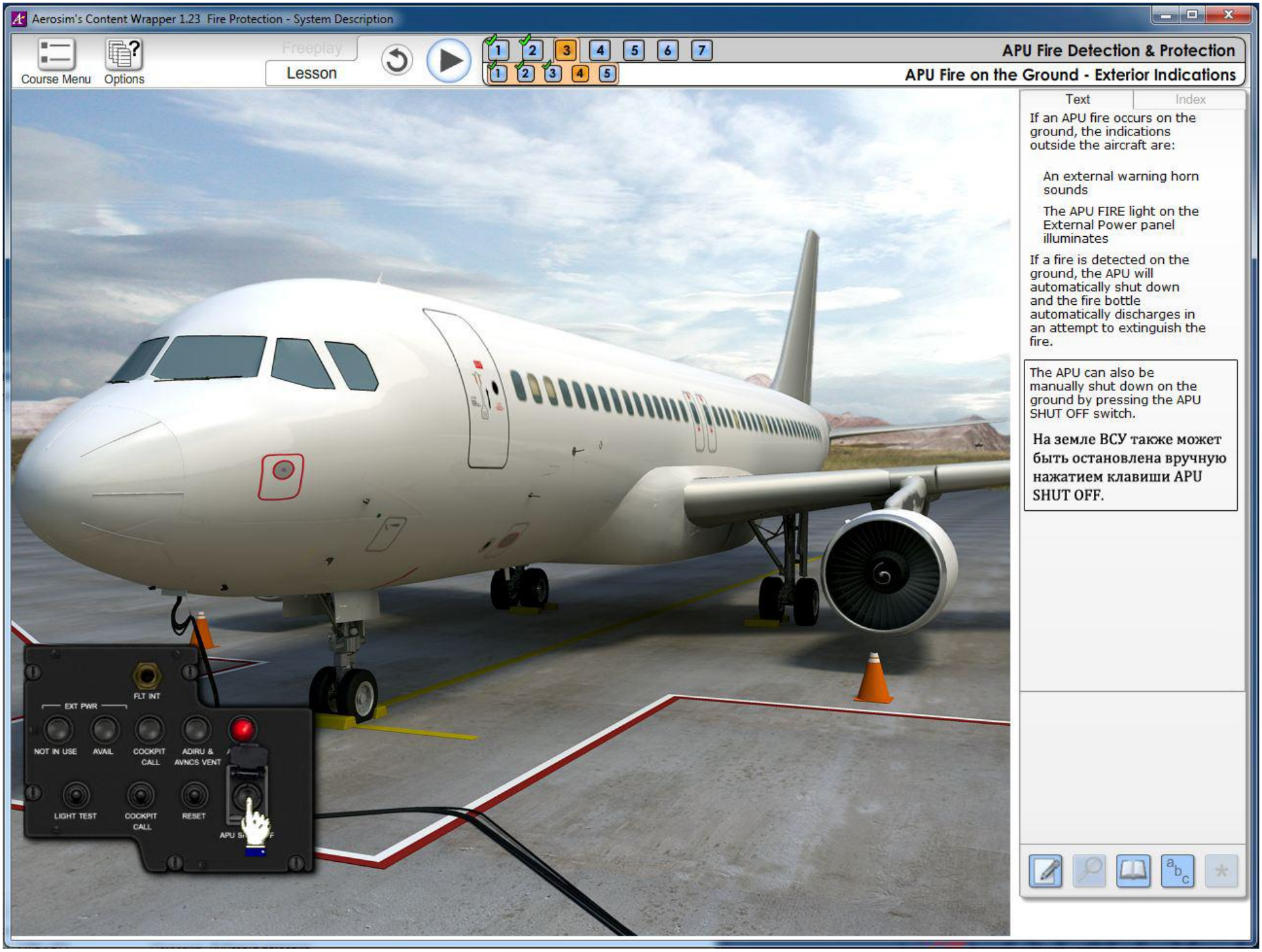

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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APU Fire Extinguishing
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AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
SQUIB
DISCH
AGENT
FIRE DETECTION UNIT (FDU)
* 'OR' LOGIC USED IF EITHER LOOP INOP
N2 %
79.3
56.7
FOB: 20160 LBS
APU EMER SHUT DOWN
-MASTER SW.....OFF
LDG LT
CONTROL VALVE
ENG BLEED VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
OFF:
FAILED:
WARN pb has not already been selected)
The low pressure fuel valve closes and the APU fuel pump deactivates
The APU generator is deactivated
The APU bleed valve closes which also closes the cross bleed valve
The squib is armed for the APU halon bottle, as indicated by the SQUIB light in the AGENT pb
The APU shuts down
This initiates a ten second countdown on the ECAM
When the 10 second countdown is complete, you are prompted to push the AGENT pb.
The DISCH light illuminates to indicate that the halon bottle has been depressurized and halon has been released into the APU compartment.
The fire has been extinguished.
Notice the APU FIRE pb light is extinguished and the ECAM message changes to an APU emergency shutdown failure.
Пожар потушен.
Отметим, что лампа клавиши APU FIRE погасла и сообщение дисплея ECAM изменилось на информацию об отказе ВСУ.

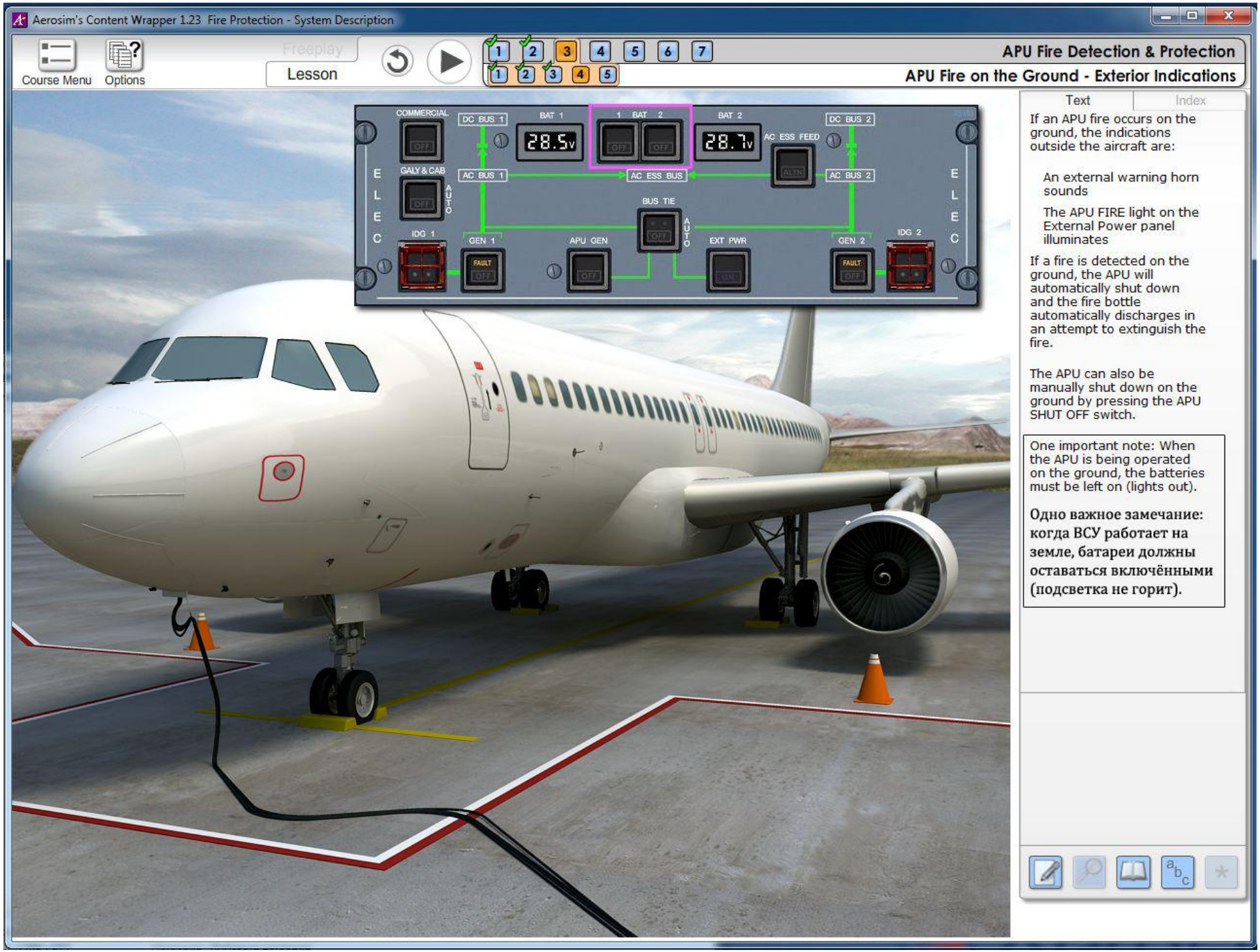

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
APU Fire Detection & Protection
APU Fire on the Ground - Exterior Indications
Text
Index
If an APU fire occurs on the ground, the indications outside the aircraft are:
An external warning horn sounds
Если пожар ВСУ случится на земле, то индикациями снаружи самолёта являются:
Звуки внешней сирены.

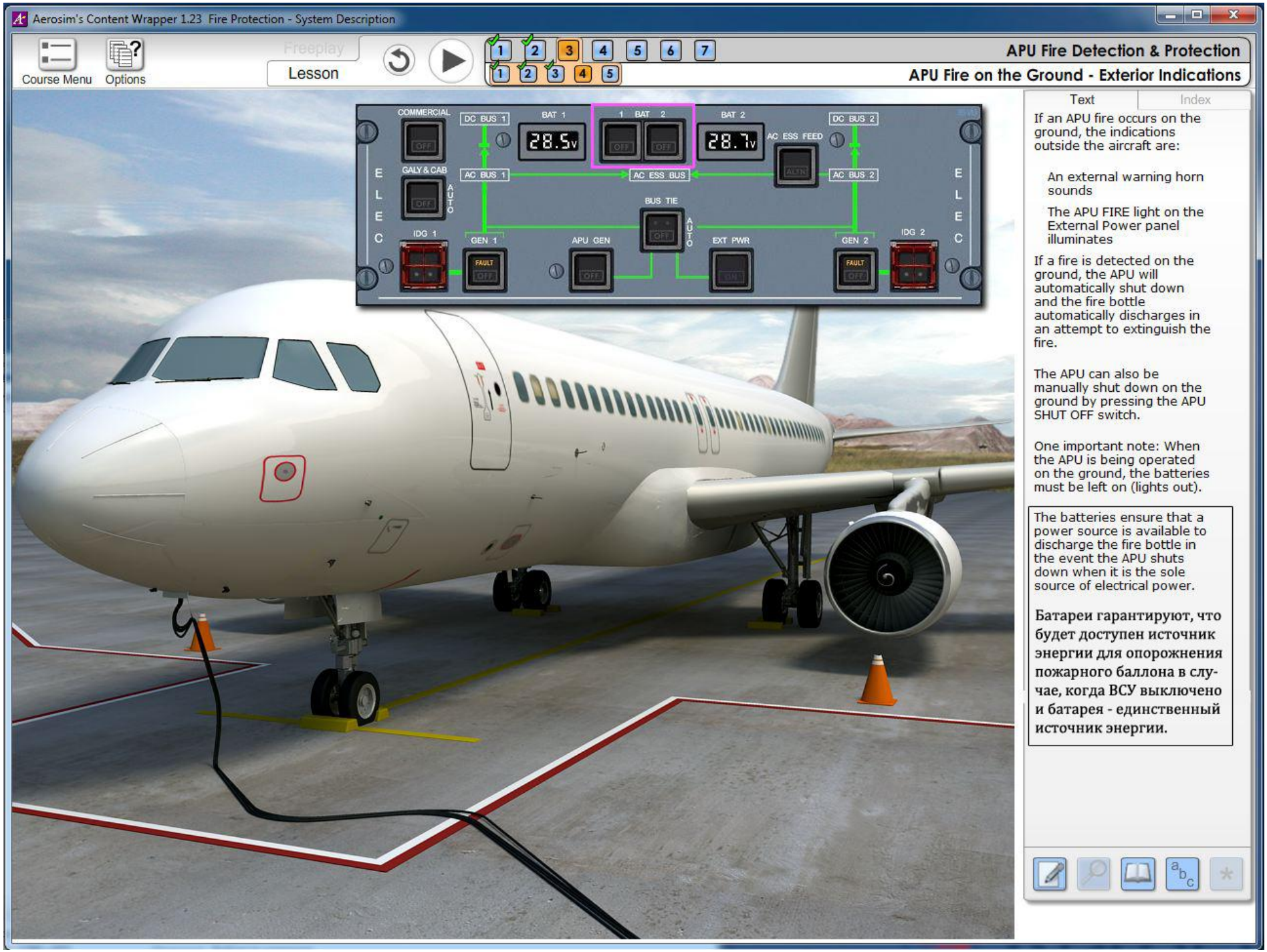

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
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Lesson
APU Fire Detection & Protection
APU Fire on the Ground - Exterior Indications
The external warning horn has been silenced
Прерывистый звук внешней сирены
Text
Index
If an APU fire occurs on the ground, the indications outside the aircraft are:
An external warning horn sounds
The APU FIRE light on the External Power panel illuminates
Загорается лампа APU FIRE на панели внешнего источника энергии.
FLT INT
EXT PWR
NOT IN USE
AVAIL
COCKPIT CALL
ADIRU & AVNCS VENT
APU FIRE
LIGHT TEST
COCKPIT CALL
RESET
APU SHUT OFF


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
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APU Fire Detection & Protection
APU Fire on the Ground - Exterior Indications
Text
Index
If an APU fire occurs on the ground, the indications outside the aircraft are:
An external warning horn sounds
The APU FIRE light on the External Power panel illuminates
If a fire is detected on the ground, the APU will automatically shut down and the fire bottle automatically discharges in an attempt to extinguish the fire.
Если пожар обнаружен на земле, то ВСУ будет автоматически остановлена и пожарный баллон автоматически опорожняется в попытке погасить пожар.
FLT INT
EXT PWR
NOT IN USE
AVAIL
COCKPIT CALL
ADIRU & AVNCS VENT
APU FIRE
LIGHT TEST
COCKPIT CALL
RESET
APU SHUT OFF


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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APU Fire Detection & Protection
APU Fire on the Ground - Exterior Indications
Text
Index
If an APU fire occurs on the ground, the indications outside the aircraft are:
An external warning horn sounds
The APU FIRE light on the External Power panel illuminates
If a fire is detected on the ground, the APU will automatically shut down and the fire bottle automatically discharges in an attempt to extinguish the fire.
In flight the APU will not automatically shut down if a fire is detected.
В полёте ВСУ не будет автомати-чески останов-лена в случае обна-ружения пожара.
FLT INT
EXT PWR
NOT IN USE
AVAIL
COCKPIT CALL
ADIRU & AVNCS VENT
APU FIRE
LIGHT TEST
COCKPIT CALL
RESET
APU SHUT OFF


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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APU Fire Detection & Protection
APU Fire on the Ground - Exterior Indications
Text
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If an APU fire occurs on the ground, the indications outside the aircraft are:
An external warning horn sounds
The APU FIRE light on the External Power panel illuminates
If a fire is detected on the ground, the APU will automatically shut down and the fire bottle automatically discharges in an attempt to extinguish the fire.
The APU can also be manually shut down on the ground by pressing the APU SHUT OFF switch.
На земле ВСУ также может быть остановлена вручную нажатием клавиши APU SHUT OFF.
FLT INT
EXT PWR
NOT IN USE
AVAIL
COCKPIT CALL
ADIRU & AVNCS VENT
LIGHT TEST
COCKPIT CALL
RESET


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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Options
Freeplay
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APU Fire Detection & Protection
APU Fire on the Ground - Exterior Indications
Text
Index
If an APU fire occurs on the ground, the indications outside the aircraft are:
An external warning horn sounds
The APU FIRE light on the External Power panel illuminates
If a fire is detected on the ground, the APU will automatically shut down and the fire bottle automatically discharges in an attempt to extinguish the fire.
The APU can also be manually shut down on the ground by pressing the APU SHUT OFF switch.
One important note: When the APU is being operated on the ground, the batteries must be left on (lights out).
Одно важное замечание: когда ВСУ работает на земле, батареи должны оставаться включёнными (подсветка не горит).
COMMERCIAL
DC BUS 1
BAT 1
BAT 2
DC BUS 2
AC ESS FEED
GALY & CAB
AC BUS 1
AC ESS BUS
AC BUS 2
BUS TIE
IDG 1
GEN 1
APU GEN
EXT PWR
GEN 2
IDG 2
ELEC


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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APU Fire Detection & Protection
APU Fire on the Ground - Exterior Indications
Text
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If an APU fire occurs on the ground, the indications outside the aircraft are:
An external warning horn sounds
The APU FIRE light on the External Power panel illuminates
If a fire is detected on the ground, the APU will automatically shut down and the fire bottle automatically discharges in an attempt to extinguish the fire.
The APU can also be manually shut down on the ground by pressing the APU SHUT OFF switch.
One important note: When the APU is being operated on the ground, the batteries must be left on (lights out).
The batteries ensure that a power source is available to discharge the fire bottle in the event the APU shuts down when it is the sole source of electrical power.
Батареи гарантируют, что будет доступен источник энергии для опорожнения пожарного баллона в случае, когда ВСУ выключено и батарея - единственный источник энергии.
COMMERCIAL
DC BUS 1
BAT 1
BAT 2
DC BUS 2
AC ESS FEED
GALY & CAB
AC BUS 1
AC ESS BUS
AC BUS 2
BUS TIE
IDG 1
GEN 1
APU GEN
EXT PWR
GEN 2
IDG 2
FAULT

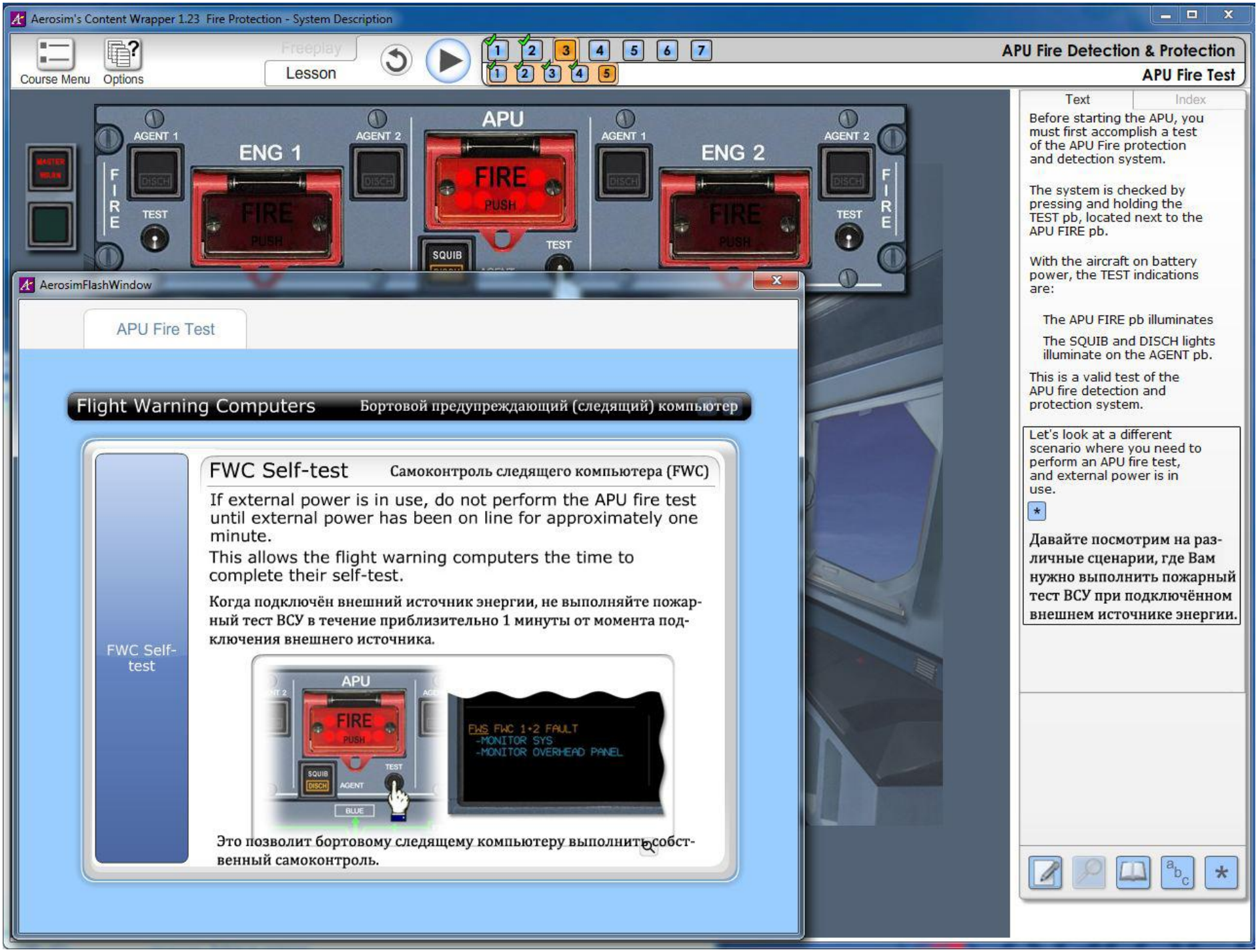

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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APU Fire Detection & Protection
APU Fire Test
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Before starting the APU, you must first accomplish a test of the APU Fire protection and detection system.
Перед запуском ВСУ Вы должны сначала выполнить тест обнаружения и пожарной защиты ВСУ.
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
DISCH
AGENT
FIRE


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
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APU Fire Detection & Protection
APU Fire Test
Text
Index
Before starting the APU, you must first accomplish a test of the APU Fire protection and detection system.
The system is checked by pressing and holding the TEST pb, located next to the APU FIRE pb.
Система проверяется нажатием и удержанием клавиши TEST, расположенной рядом с клавишей APU FIRE.
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
SQUIB
DISCH
AGENT
FIRE

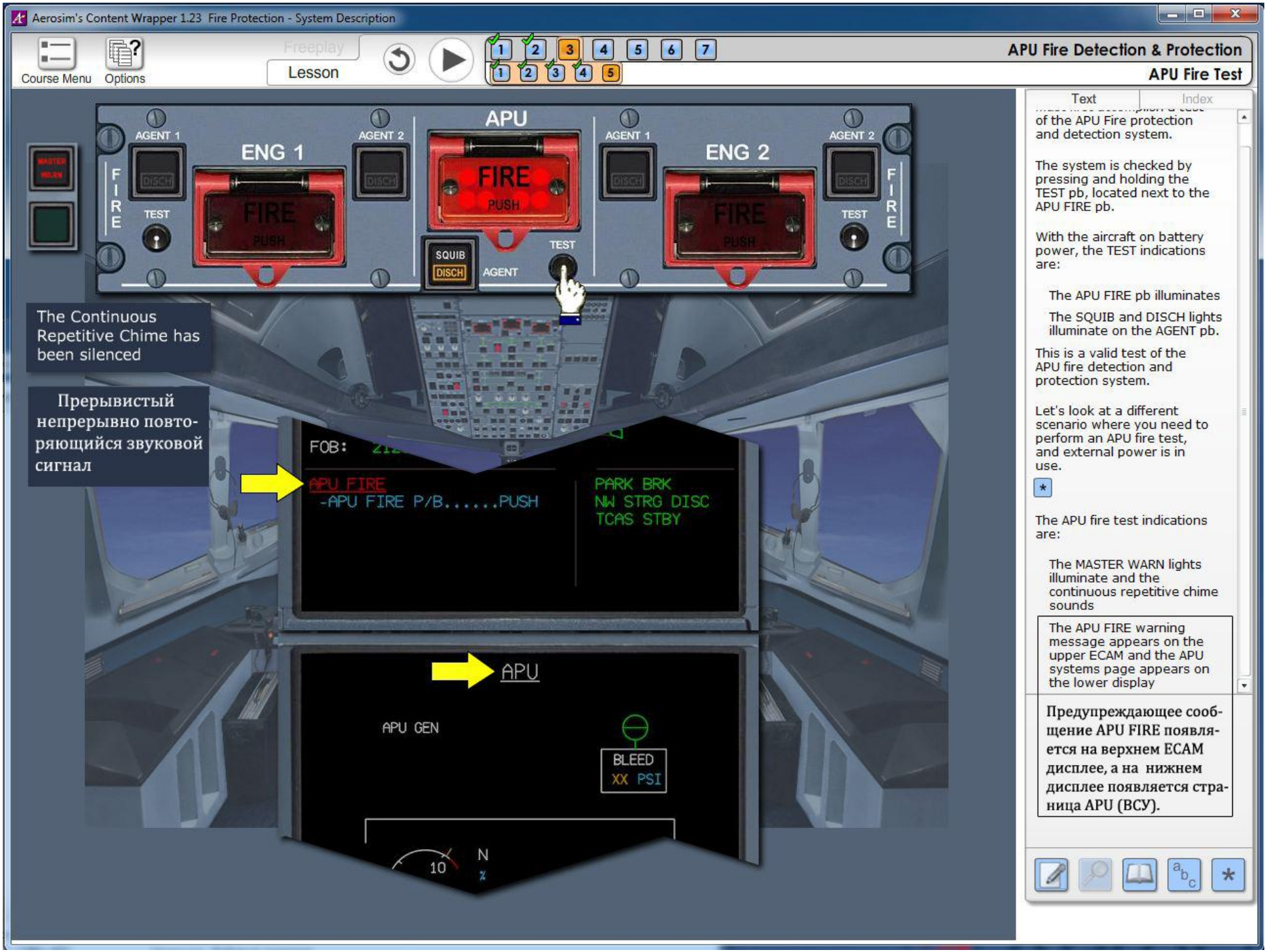

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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APU Fire Detection & Protection
APU Fire Test
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Before starting the APU, you must first accomplish a test of the APU Fire protection and detection system.
The system is checked by pressing and holding the TEST pb, located next to the APU FIRE pb.
With the aircraft on battery power, the TEST indications are:
The APU FIRE pb illuminates
При включённой энергии от самолётной батареи TEST индикации следующие.
Горит лампа клавиши APU FIRE.
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
SQUIB DISCH
AGENT
DISCH


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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APU Fire Test
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Before starting the APU, you must first accomplish a test of the APU Fire protection and detection system.
The system is checked by pressing and holding the TEST pb, located next to the APU FIRE pb.
With the aircraft on battery power, the TEST indications are:
The APU FIRE pb illuminates
The SQUIB and DISCH lights illuminate on the AGENT pb.
Горят лампы SQUIB и DISCH в клавише AGENT.
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
SQUIB
DISCH
AGENT


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
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APU Fire Detection & Protection
APU Fire Test
Text
Index
Before starting the APU, you must first accomplish a test of the APU Fire protection and detection system.
The system is checked by pressing and holding the TEST pb, located next to the APU FIRE pb.
With the aircraft on battery power, the TEST indications are:
The APU FIRE pb illuminates
The SQUIB and DISCH lights illuminate on the AGENT pb.
This is a valid test of the APU fire detection and protection system.
Это зачётный тест системы обнаружения и защиты от пожара ВСУ.
ENG 1
ENG 2
APU
AGENT 1
AGENT 2
FIRE
PUSH
TEST
SQUIB
DISCH
AGENT

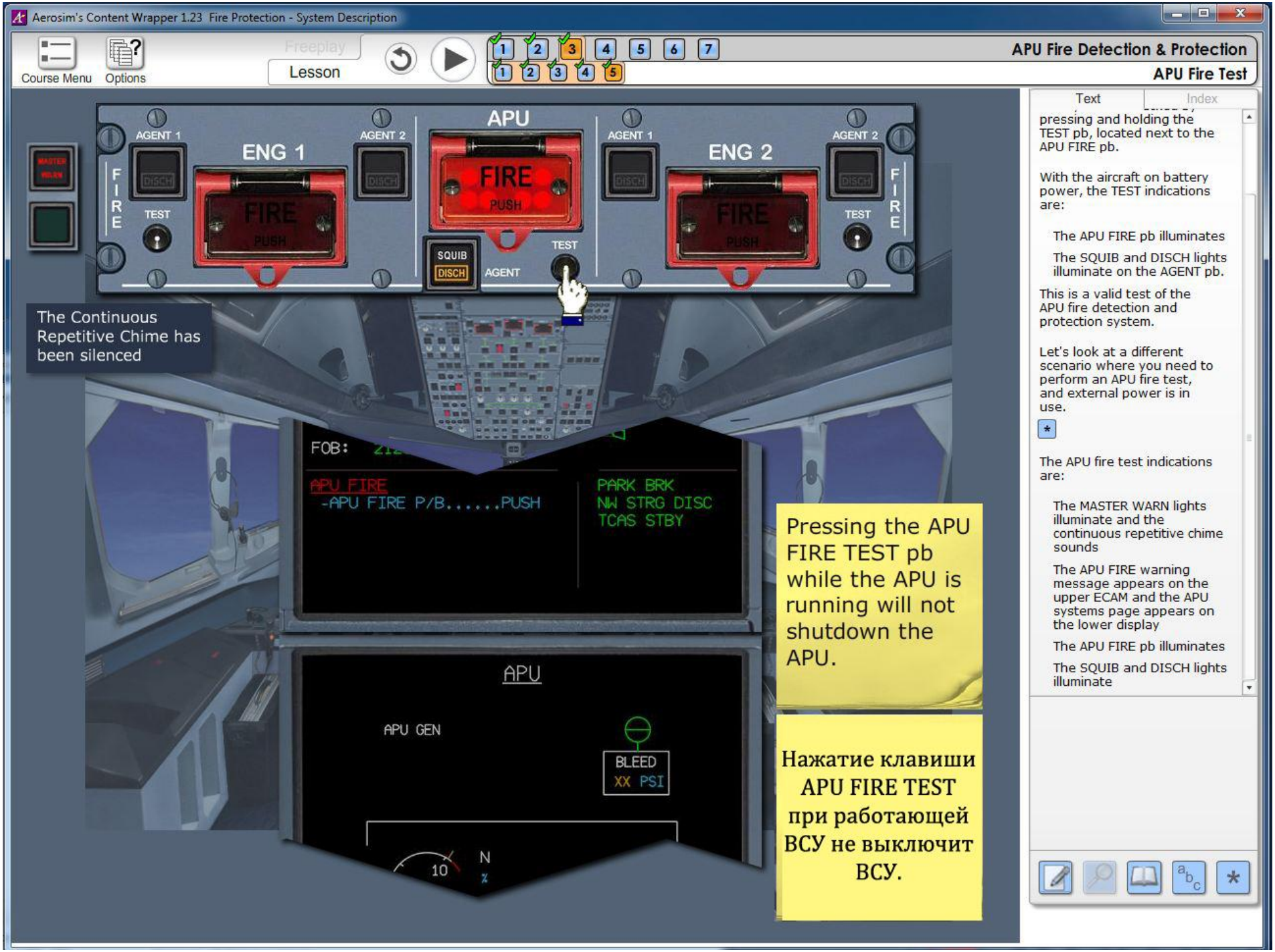

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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Options
Freeplay
Lesson
APU Fire Detection & Protection
APU Fire Test
Text
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Before starting the APU, you must first accomplish a test of the APU Fire protection and detection system.
The system is checked by pressing and holding the TEST pb, located next to the APU FIRE pb.
With the aircraft on battery power, the TEST indications are:
The APU FIRE pb illuminates
The SQUIB and DISCH lights illuminate on the AGENT pb.
This is a valid test of the APU fire detection and protection system.
Let's look at a different scenario where you need to perform an APU fire test, and external power is in use.
Давайте посмотрим на различные сценарии, где Вам нужно выполнить пожарный тест ВСУ при подключённом внешнем источнике энергии.
AerosimFlashWindow
APU Fire Test
Flight Warning Computers
Бортовой предупреждающий (следящий) компьютер
FWC Self-test
FWC Self-test
Самоконтроль следящего компьютера (FWC)
If external power is in use, do not perform the APU fire test until external power has been on line for approximately one minute.
This allows the flight warning computers the time to complete their self-test.
Когда подключён внешний источник энергии, не выполняйте пожарный тест ВСУ в течение приблизительно 1 минуты от момента подключения внешнего источника.
Это позволит бортовому следящему компьютеру выполнить собственный самоконтроль.
APU
FIRE
PUSH
TEST
SQUIB
DISCH
AGENT
BLUE
FWS FWC 1+2 FAULT
-MONITOR SYS
-MONITOR OVERHEAD PANEL
AGENT 1
AGENT 2
ENG 1
ENG 2
FIRE

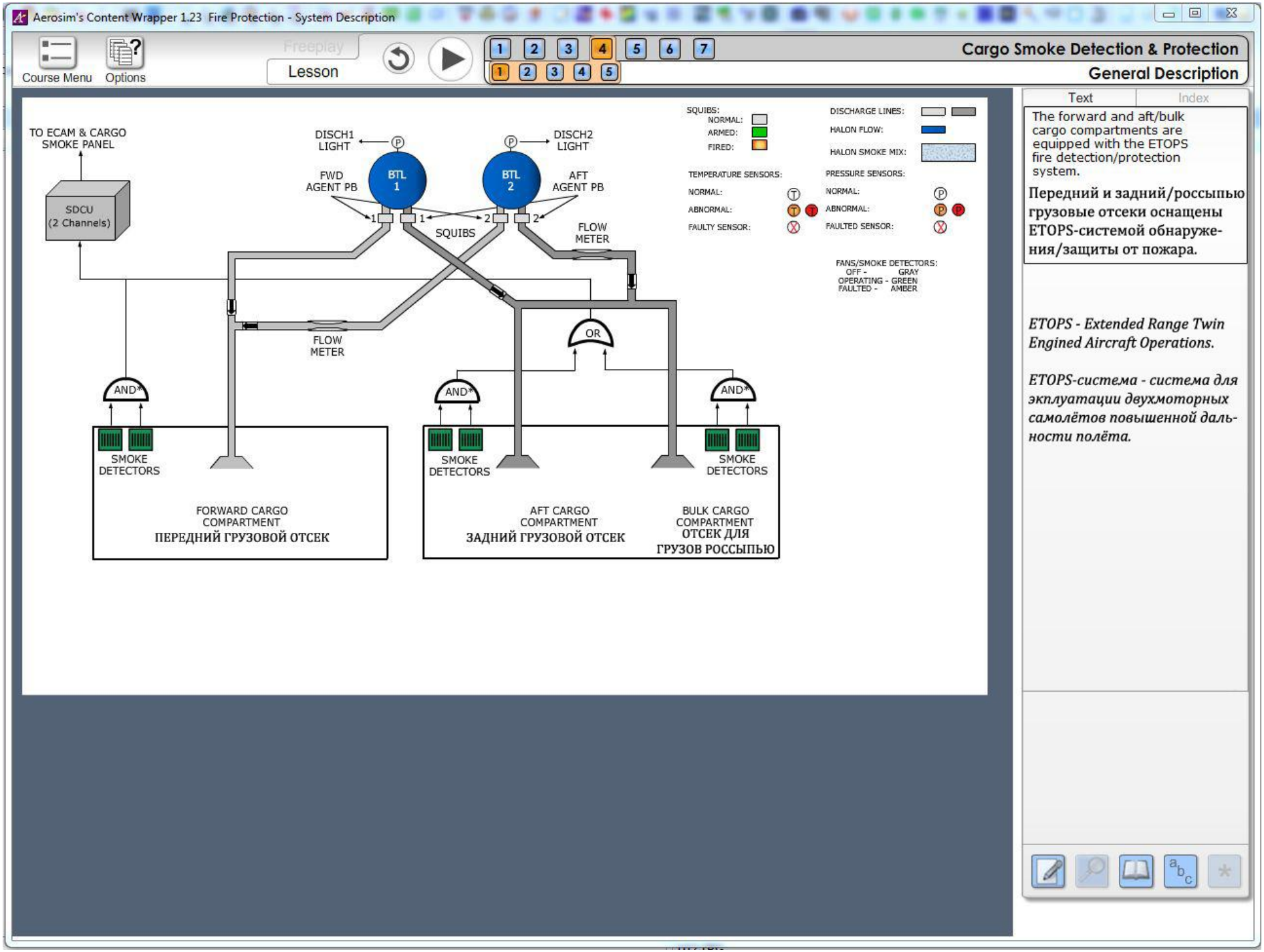

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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Options
Freeplay
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APU Fire Detection & Protection
APU Fire Test
Text
Index
Before starting the APU, you must first accomplish a test of the APU Fire protection and detection system.
The system is checked by pressing and holding the TEST pb, located next to the APU FIRE pb.
With the aircraft on battery power, the TEST indications are:
The APU FIRE pb illuminates
The SQUIB and DISCH lights illuminate on the AGENT pb.
This is a valid test of the APU fire detection and protection system.
Let's look at a different scenario where you need to perform an APU fire test, and external power is in use.
The APU fire test indications are:
The MASTER WARN lights illuminate and the continuous repetitive chime sounds
Индикации пожарного теста ВСУ следующие.
Лампы MASTER WARN горят и включён непрерывно повторяющийся звуковой сигнал.
The Continuous Repetitive Chime has been silenced
Прерывистый непрерывно повторяющийся звуковой сигнал
APU
ENG 1
ENG 2
AGENT 1
AGENT 2
FIRE
PUSH
TEST
SQUIB
DISCH
AGENT
APU FIRE
-APU FIRE P/B.....PUSH
PARK BRK
NW STRG DISC
TCAS STBY
APU GEN
BLEED
XX PSI
N
%

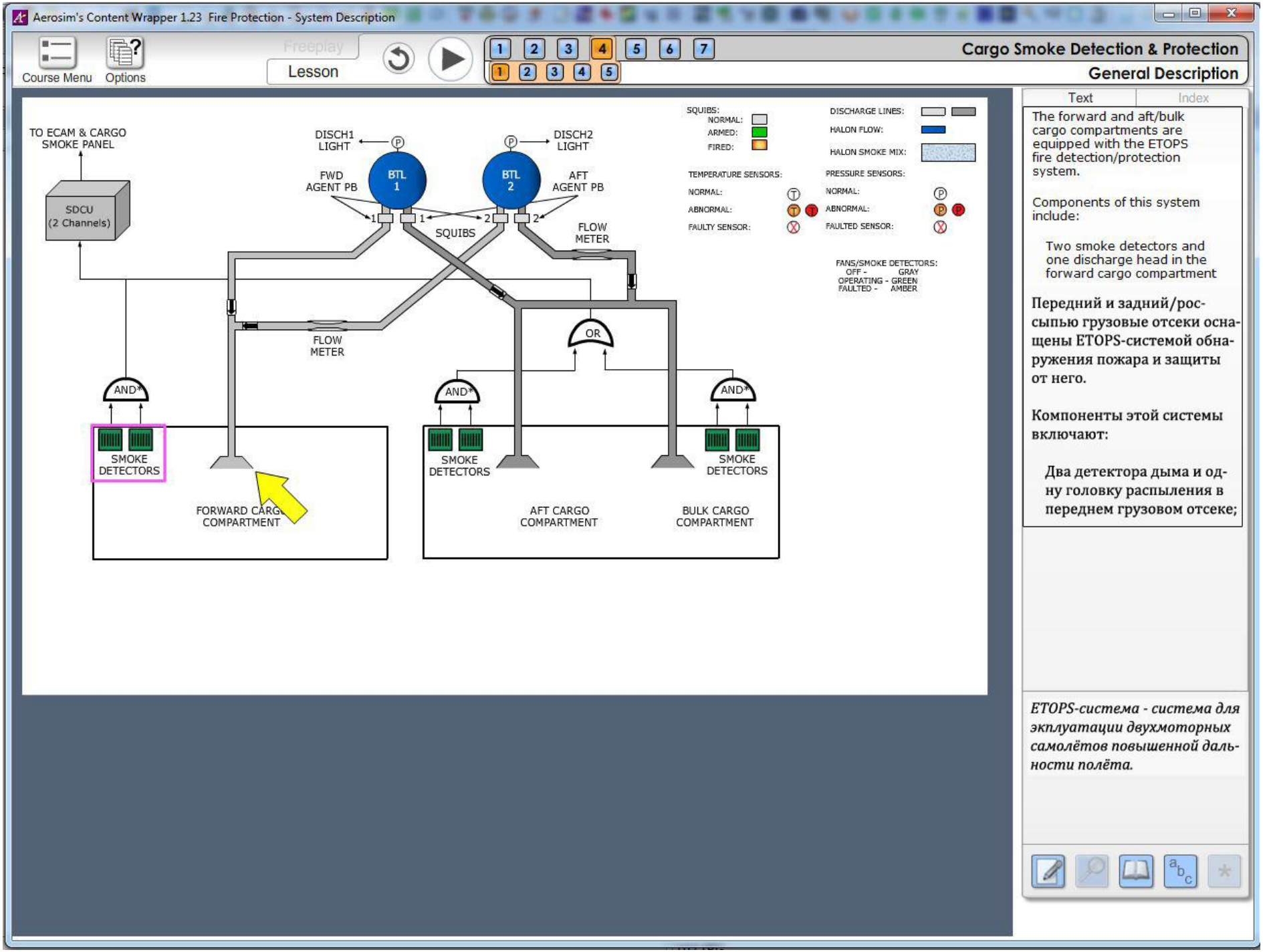

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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The system is checked by pressing and holding the TEST pb, located next to the APU FIRE pb.
With the aircraft on battery power, the TEST indications are:
The APU FIRE pb illuminates
The SQUIB and DISCH lights illuminate on the AGENT pb.
This is a valid test of the APU fire detection and protection system.
Let's look at a different scenario where you need to perform an APU fire test, and external power is in use.
The APU fire test indications are:
The MASTER WARN lights illuminate and the continuous repetitive chime sounds
The APU FIRE warning message appears on the upper ECAM and the APU systems page appears on the lower display
Предупреждающее сообщение APU FIRE появляется на верхнем ECAM дисплее, а на нижнем дисплее появляется страница APU (ВСУ).
APU
ENG 1
ENG 2
AGENT 1
AGENT 2
FIRE
PUSH
TEST
SQUIB
DISCH
AGENT
The Continuous Repetitive Chime has been silenced
Прерывистый непрерывно повторяющийся звуковой сигнал
APU FIRE
-APU FIRE P/B.....PUSH
PARK BRK
NW STRG DISC
TCAS STBY
APU GEN
BLEED
XX PSI

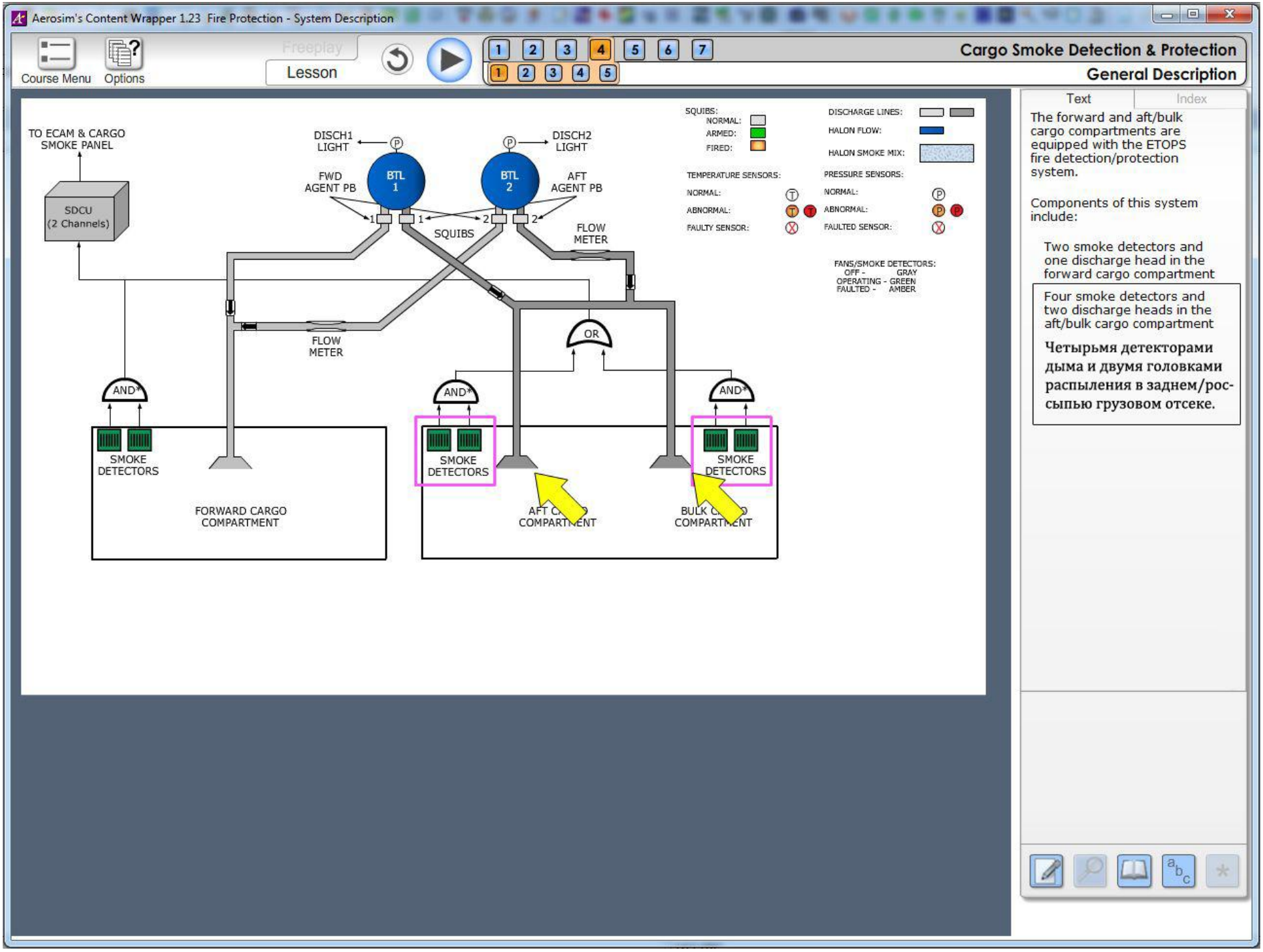

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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The APU FIRE pb illuminates
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The APU fire test indications are:
The MASTER WARN lights illuminate and the continuous repetitive chime sounds
The APU FIRE warning message appears on the upper ECAM and the APU systems page appears on the lower display
The APU FIRE pb illuminates
Горит клавиша APU FIRE.
APU
ENG 1
ENG 2
AGENT 1
AGENT 2
FIRE
PUSH
TEST
SQUIB
DISCH
AGENT
The Continuous Repetitive Chime has been silenced
Прерывистый непрерывно повто-ряющийся звуковой сигнал
FOB:
APU FIRE
-APU FIRE P/B.....PUSH
PARK BRK
NW STRG DISC
TCAS STBY
APU
APU GEN
BLEED
XX PSI
N
%
10

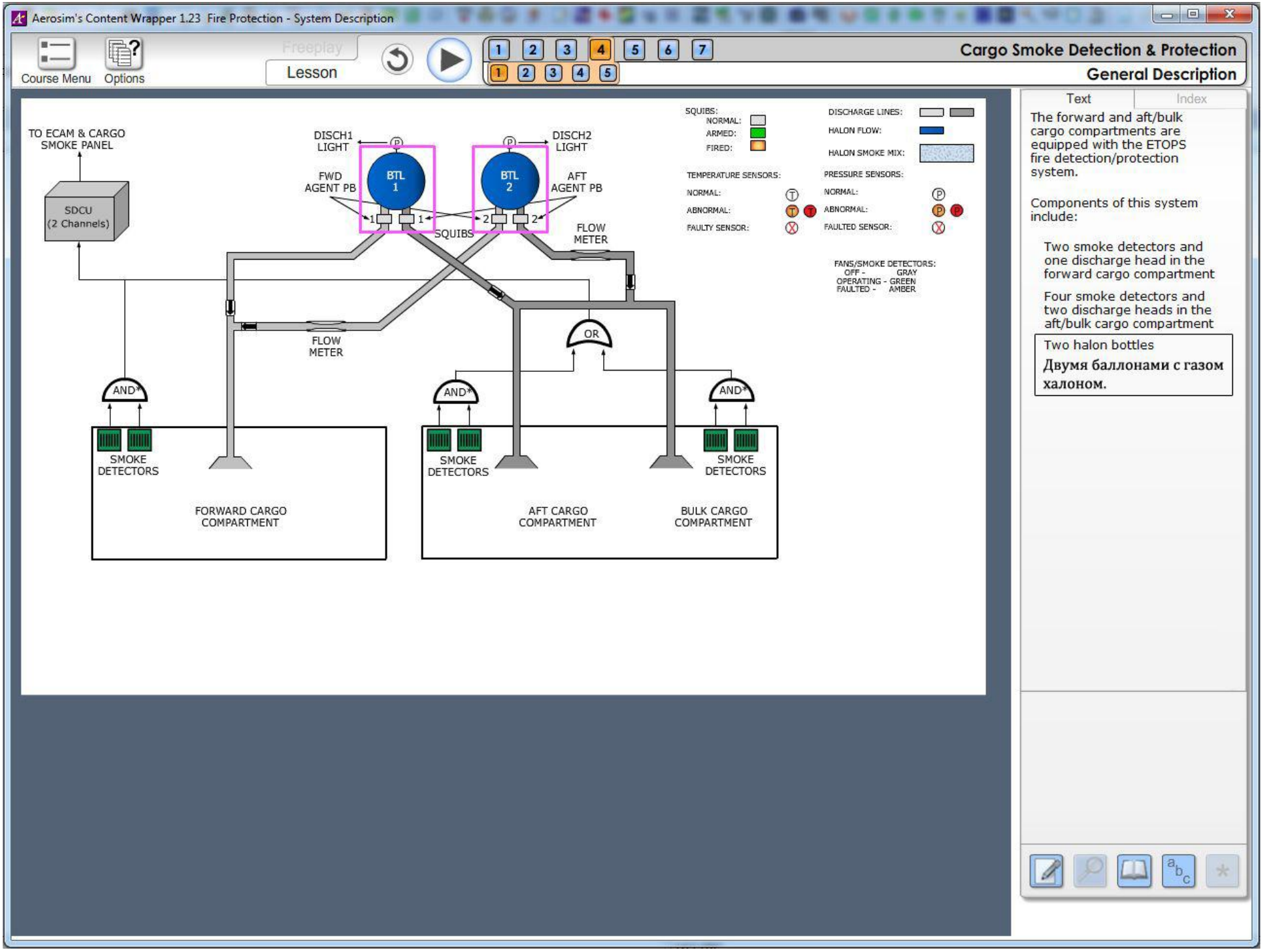

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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APU Fire Test
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The MASTER WARN lights illuminate and the continuous repetitive chime sounds
The APU FIRE warning message appears on the upper ECAM and the APU systems page appears on the lower display
The APU FIRE pb illuminates
The SQUIB and DISCH lights illuminate
Горят лампы SQUIB и DISCH.
APU
ENG 1
ENG 2
AGENT 1
AGENT 2
FIRE
TEST
SQUIB
DISCH
AGENT
PUSH
The Continuous Repetitive Chime has been silenced
Прерывистый непрерывно повто-ряющийся звуковой сигнал
APU FIRE
-APU FIRE P/B.....PUSH
PARK BRK
NW STRG DISC
TCAS STBY
APU GEN
BLEED
XX PSI
N
%
10

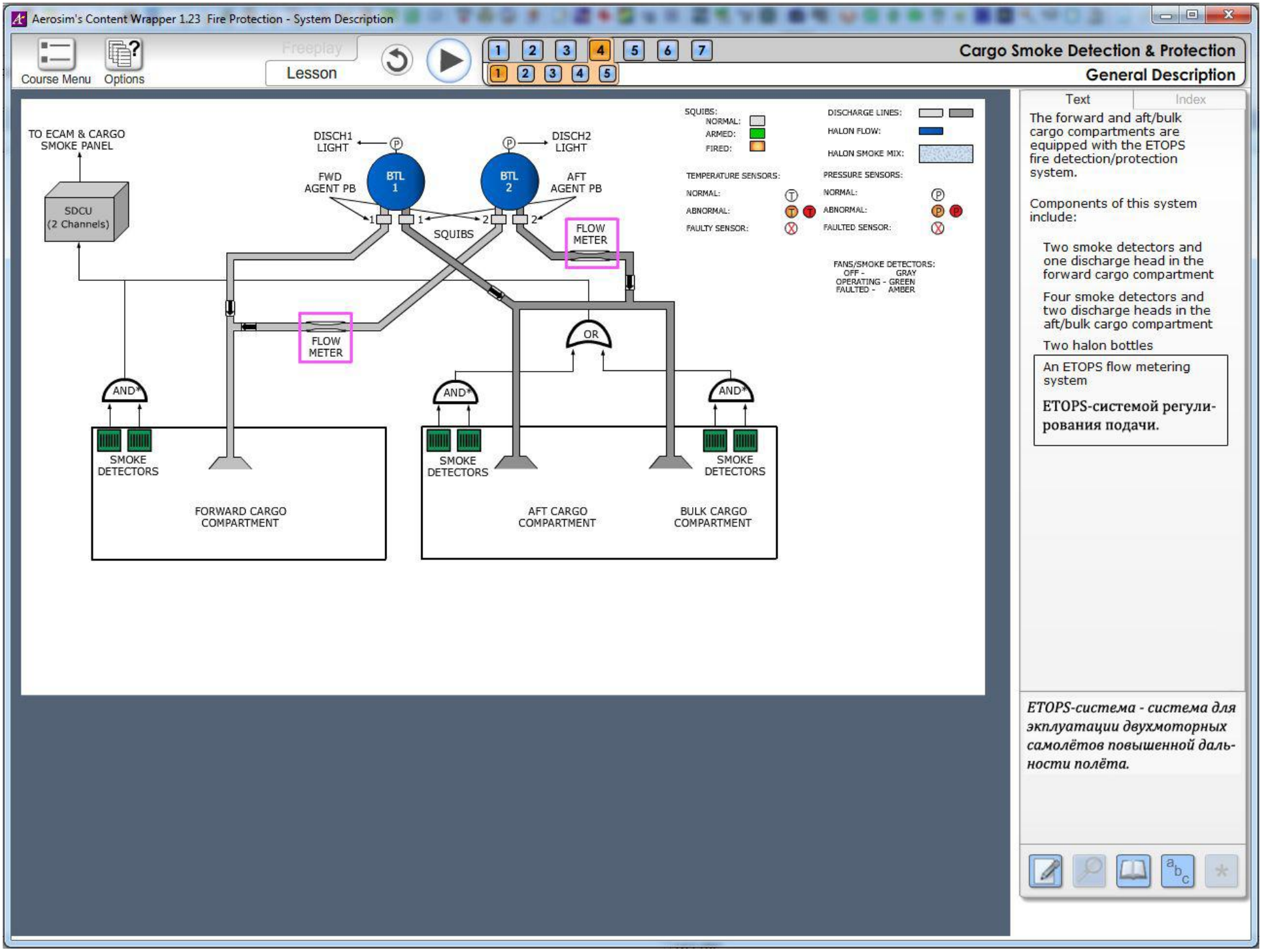

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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Options
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Lesson
APU Fire Detection & Protection
APU Fire Test
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This is a valid test of the APU fire detection and protection system.
Let's look at a different scenario where you need to perform an APU fire test, and external power is in use.
The APU fire test indications are:
The MASTER WARN lights illuminate and the continuous repetitive chime sounds
The APU FIRE warning message appears on the upper ECAM and the APU systems page appears on the lower display
The APU FIRE pb illuminates
The SQUIB and DISCH lights illuminate
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
SQUIB
DISCH
AGENT
The Continuous Repetitive Chime has been silenced
FOB:
APU FIRE
-APU FIRE P/B.....PUSH
PARK BRK
NW STRG DISC
TCAS STBY
APU
APU GEN
BLEED
XX PSI
N
%
Pressing the APU FIRE TEST pb while the APU is running will not shutdown the APU.
Нажатие клавиши APU FIRE TEST при работающей ВСУ не выключит ВСУ.

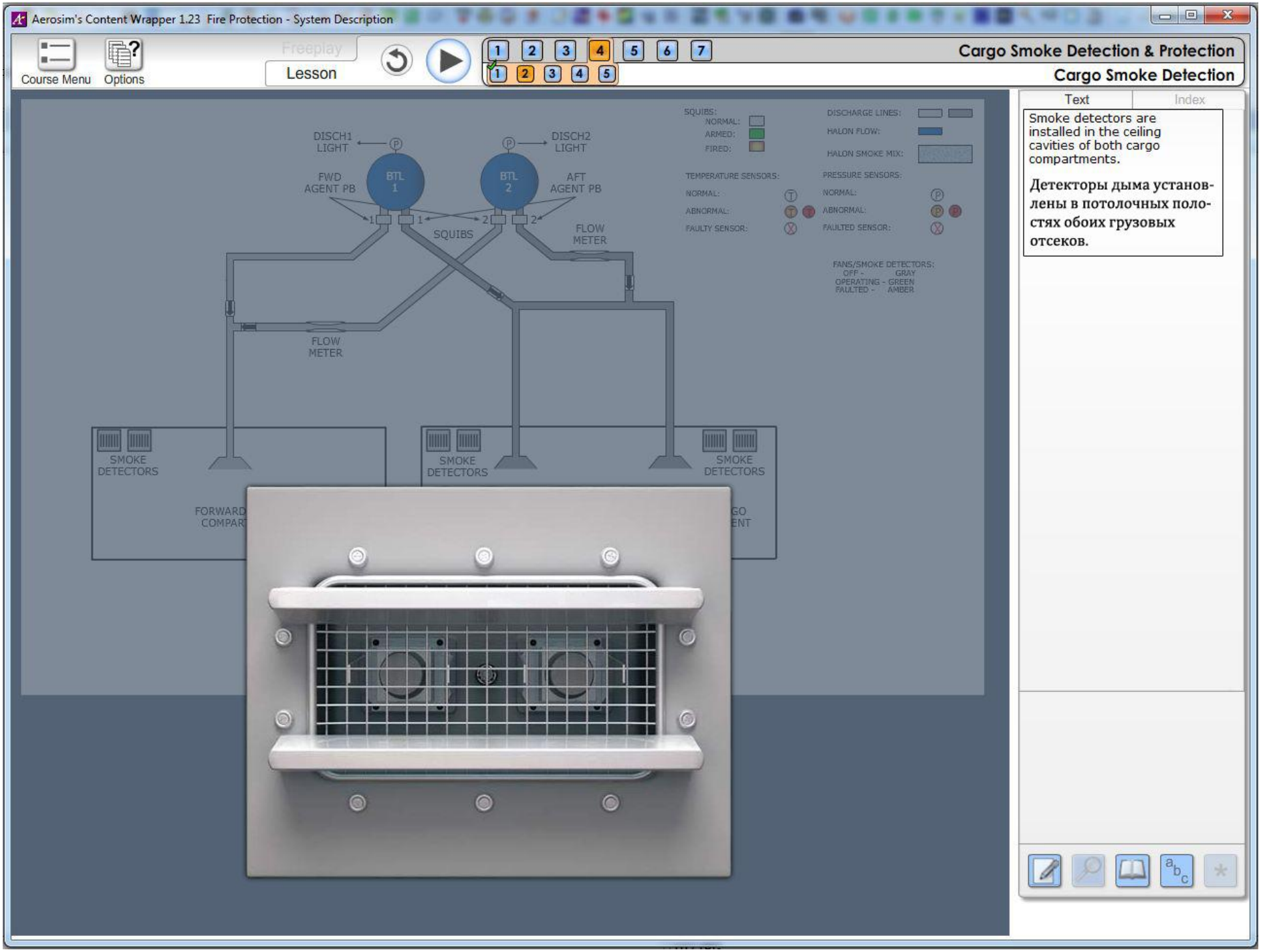

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
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Cargo Smoke Detection & Protection
General Description
TO ECAM & CARGO SMOKE PANEL
SDCU (2 Channels)
DISCH1 LIGHT
DISCH2 LIGHT
FWD AGENT PB
AFT AGENT PB
BTL 1
BTL 2
SQUIBS
FLOW METER
FLOW METER
OR
AND*
AND*
AND*
SMOKE DETECTORS
SMOKE DETECTORS
SMOKE DETECTORS
FORWARD CARGO COMPARTMENT
ПЕРЕДНИЙ ГРУЗОВОЙ ОТСЕК
AFT CARGO COMPARTMENT
ЗАДНИЙ ГРУЗОВОЙ ОТСЕК
BULK CARGO COMPARTMENT
ОТСЕК ДЛЯ ГРУЗОВ РОССЫПЬЮ
SQUIBS:
NORMAL:
ARMED:
FIRED:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
FANS/SMOKE DETECTORS:
OFF - GRAY
OPERATING - GREEN
FAULTED - AMBER
Text
Index
The forward and aft/bulk cargo compartments are equipped with the ETOPS fire detection/protection system.
Передний и задний/россыпью грузовые отсеки оснащены ETOPS-системой обнаружения/защиты от пожара.
ETOPS - Extended Range Twin Engined Aircraft Operations.
ETOPS-система - система для эксплуатации двухмоторных самолётов повышенной дальности полёта.

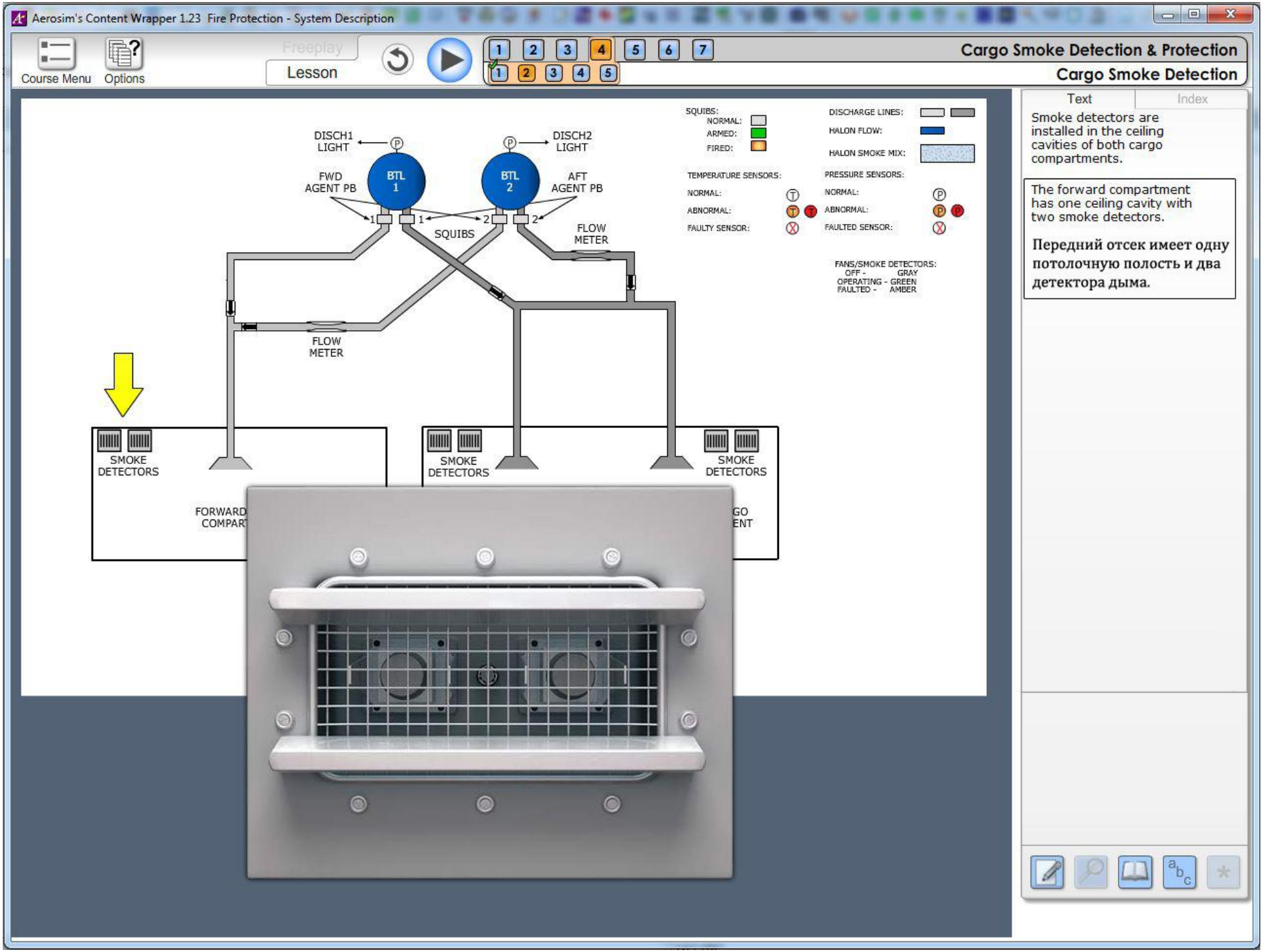

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
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Cargo Smoke Detection & Protection
General Description
TO ECAM & CARGO SMOKE PANEL
SDCU (2 Channels)
DISCH1 LIGHT
DISCH2 LIGHT
FWD AGENT PB
AFT AGENT PB
BTL 1
BTL 2
SQUIBS
FLOW METER
FLOW METER
OR
AND
SMOKE DETECTORS
SMOKE DETECTORS
SMOKE DETECTORS
FORWARD CARGO COMPARTMENT
AFT CARGO COMPARTMENT
BULK CARGO COMPARTMENT
SQUIBS:
NORMAL:
ARMED:
FIRED:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
FANS/SMOKE DETECTORS:
OFF - GRAY
OPERATING - GREEN
FAULTED - AMBER
Text
Index
The forward and aft/bulk cargo compartments are equipped with the ETOPS fire detection/protection system.
Components of this system include:
Two smoke detectors and one discharge head in the forward cargo compartment
Передний и задний/рос-сыпью грузовые отсеки осна-щены ETOPS-системой обна-ружения пожара и защиты от него.
Компоненты этой системы включают:
Два детектора дыма и од-ну головку распыления в переднем грузовом отсеке;
ETOPS-система - система для эксплуатации двухмоторных самолётов повышенной даль-ности полёта.

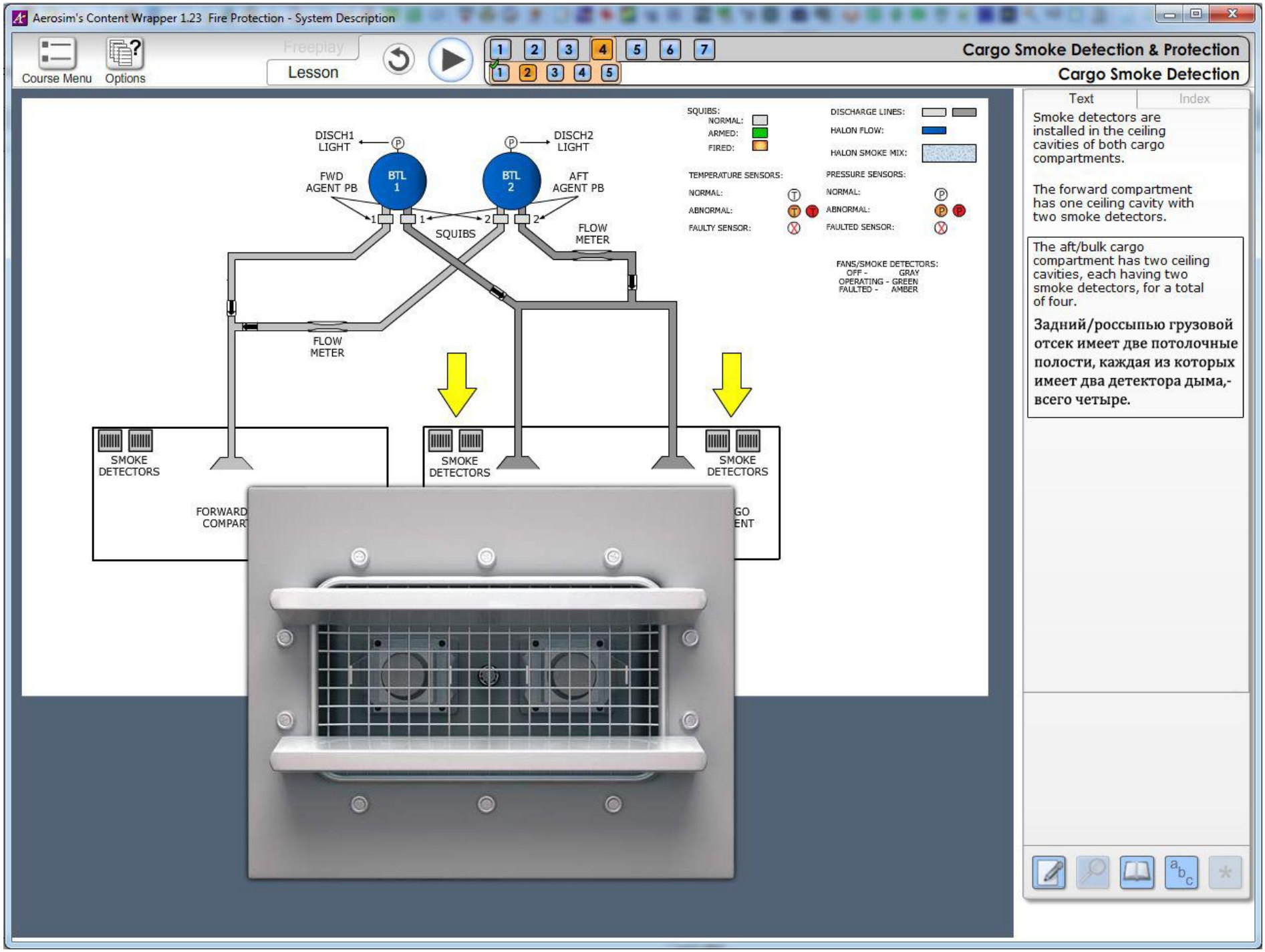

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
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Cargo Smoke Detection & Protection
General Description
Text
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The forward and aft/bulk cargo compartments are equipped with the ETOPS fire detection/protection system.
Components of this system include:
Two smoke detectors and one discharge head in the forward cargo compartment
Four smoke detectors and two discharge heads in the aft/bulk cargo compartment
Четырьмя детекторами дыма и двумя головками распыления в заднем/рос-сыпью грузовом отсеке.
TO ECAM & CARGO SMOKE PANEL
SDCU (2 Channels)
DISCH1 LIGHT
DISCH2 LIGHT
FWD AGENT PB
AFT AGENT PB
BTL 1
BTL 2
SQUIBS
FLOW METER
FLOW METER
OR
AND*
AND*
AND*
SMOKE DETECTORS
SMOKE DETECTORS
SMOKE DETECTORS
FORWARD CARGO COMPARTMENT
SQUIBS:
NORMAL:
ARMED:
FIRED:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
FANS/SMOKE DETECTORS:
OFF - GRAY
OPERATING - GREEN
FAULTED - AMBER

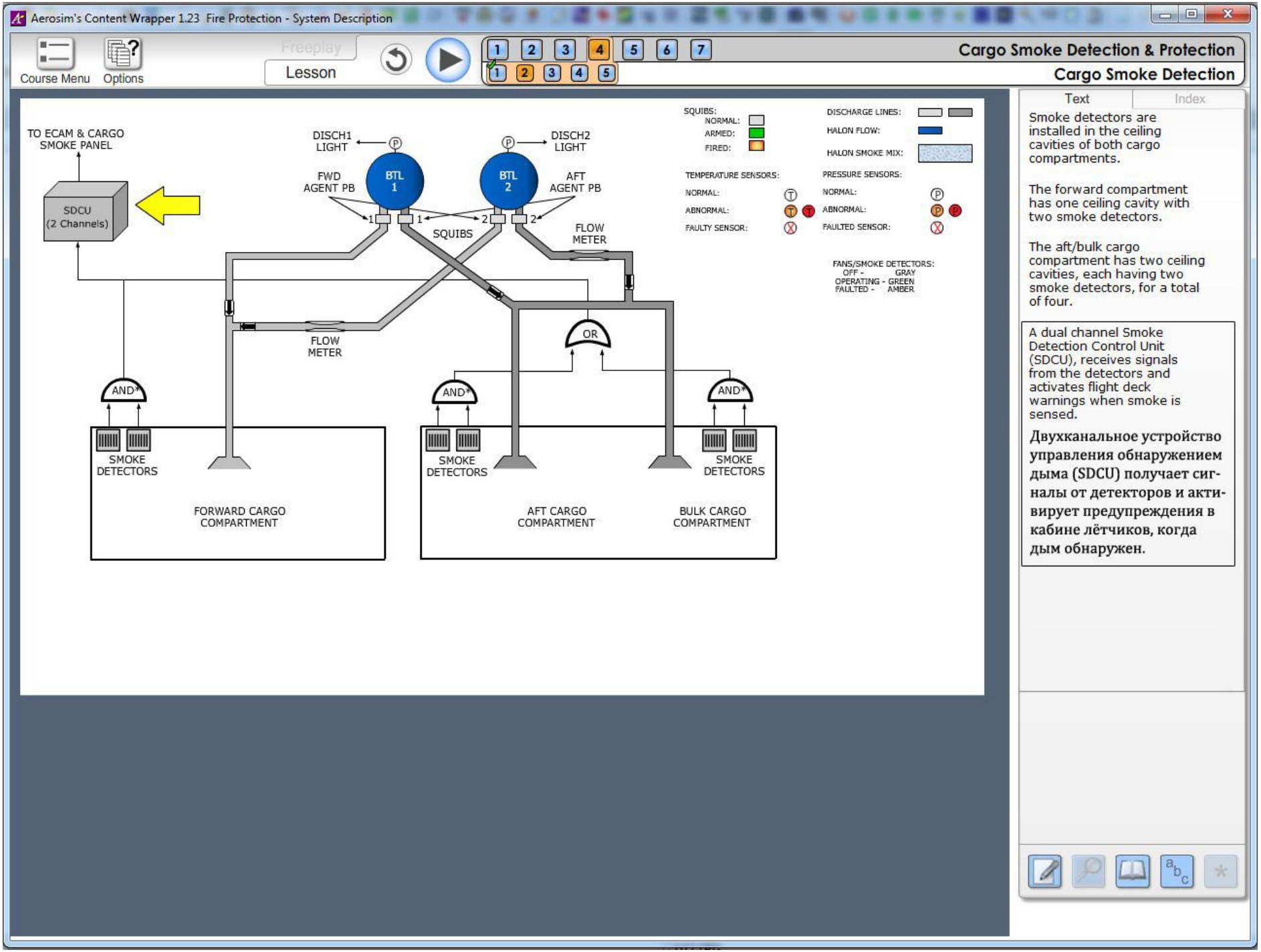

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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Freeplay
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Cargo Smoke Detection & Protection
General Description
Text
Index
The forward and aft/bulk cargo compartments are equipped with the ETOPS fire detection/protection system.
Components of this system include:
Two smoke detectors and one discharge head in the forward cargo compartment
Four smoke detectors and two discharge heads in the aft/bulk cargo compartment
Two halon bottles
Двумя баллонами с газом халоном.
TO ECAM & CARGO SMOKE PANEL
SDCU (2 Channels)
DISCH1 LIGHT
DISCH2 LIGHT
FWD AGENT PB
AFT AGENT PB
BTL 1
BTL 2
SQUIBS
FLOW METER
FLOW METER
OR
AND*
AND*
AND*
SMOKE DETECTORS
SMOKE DETECTORS
SMOKE DETECTORS
FORWARD CARGO COMPARTMENT
AFT CARGO COMPARTMENT
BULK CARGO COMPARTMENT
SQUIBS:
NORMAL:
ARMED:
FIRED:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
FANS/SMOKE DETECTORS:
OFF - GRAY
OPERATING - GREEN
FAULTED - AMBER

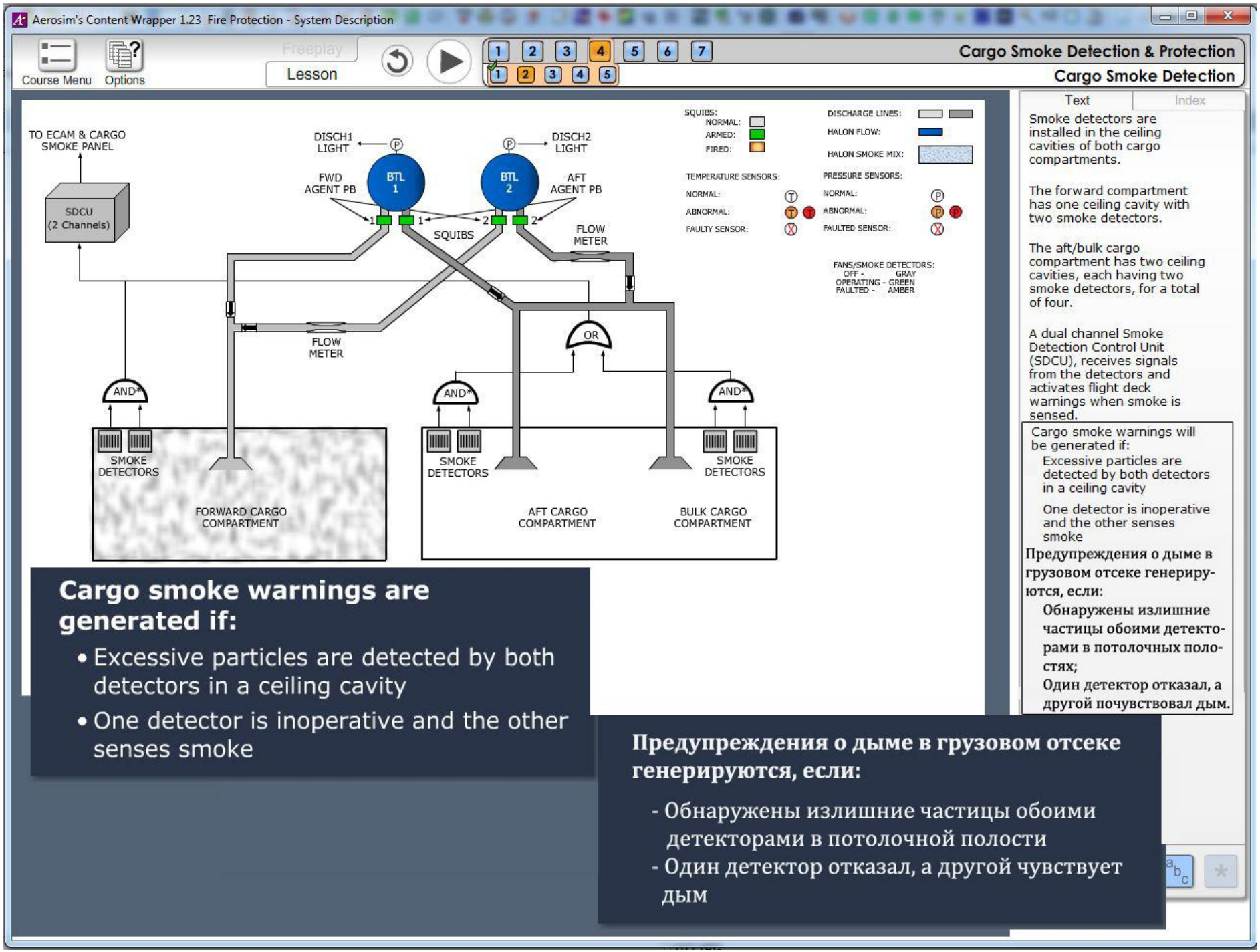

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Course Menu
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Cargo Smoke Detection & Protection
General Description
TO ECAM & CARGO SMOKE PANEL
SDCU (2 Channels)
DISCH1 LIGHT
DISCH2 LIGHT
FWD AGENT PB
AFT AGENT PB
BTL 1
BTL 2
SQUIBS
FLOW METER
FLOW METER
OR
AND*
AND*
AND*
SMOKE DETECTORS
SMOKE DETECTORS
SMOKE DETECTORS
FORWARD CARGO COMPARTMENT
AFT CARGO COMPARTMENT
BULK CARGO COMPARTMENT
SQUIBS:
NORMAL:
ARMED:
FIRED:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
FANS/SMOKE DETECTORS:
OFF - GRAY
OPERATING - GREEN
FAULTED - AMBER
Text
Index
The forward and aft/bulk cargo compartments are equipped with the ETOPS fire detection/protection system.
Components of this system include:
Two smoke detectors and one discharge head in the forward cargo compartment
Four smoke detectors and two discharge heads in the aft/bulk cargo compartment
Two halon bottles
An ETOPS flow metering system
ETOPS-системой регулирования подачи.
ETOPS-система - система для эксплуатации двухмоторных самолётов повышенной дальности полёта.

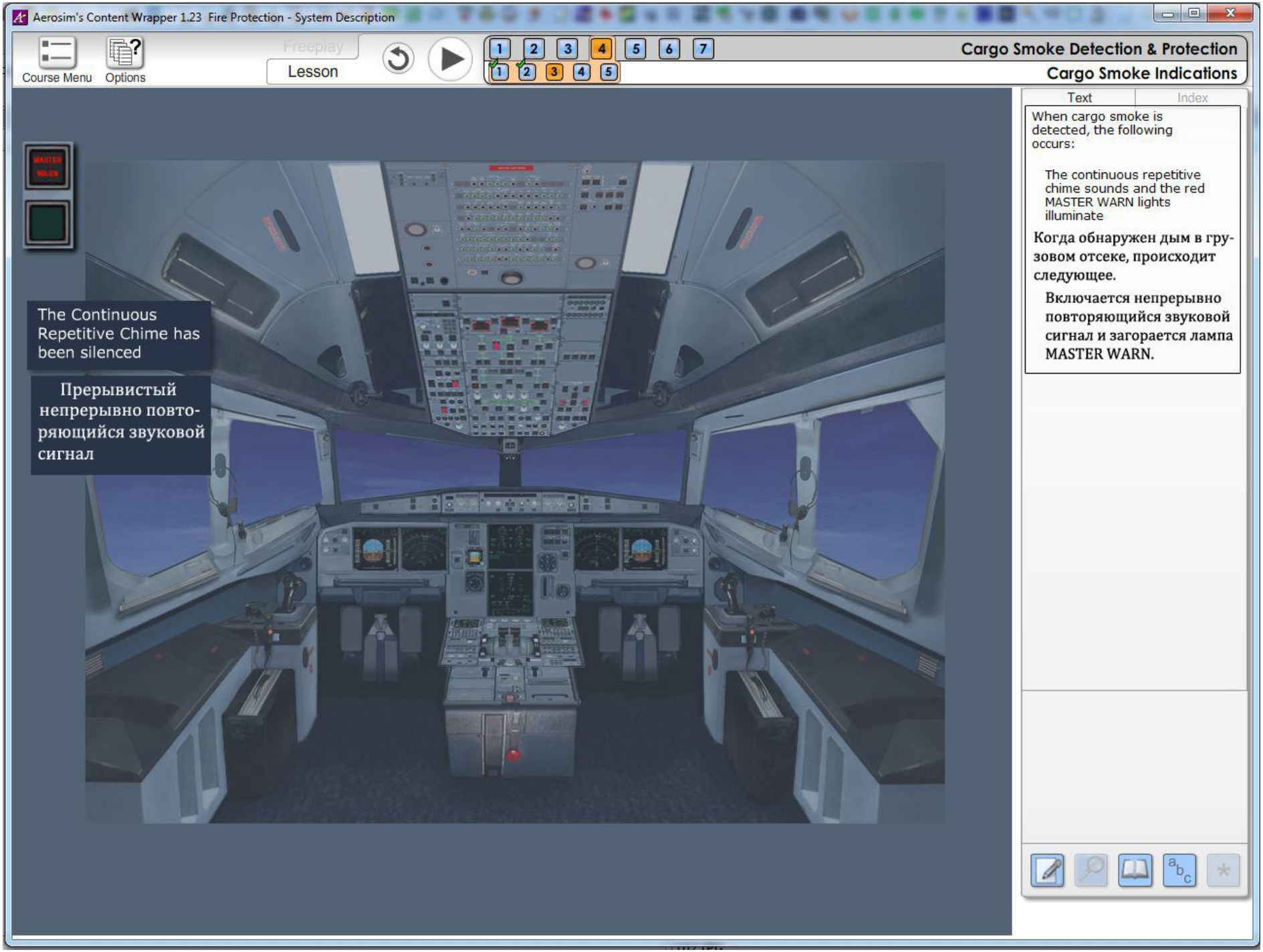

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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Cargo Smoke Detection & Protection
Cargo Smoke Detection
Text
Index
Smoke detectors are installed in the ceiling cavities of both cargo compartments.
Детекторы дыма установлены в потолочных полостях обоих грузовых отсеков.
DISCH1 LIGHT
DISCH2 LIGHT
FWD AGENT PB
AFT AGENT PB
BTL 1
BTL 2
SQUIBS
FLOW METER
SMOKE DETECTORS
SQUIBS:
NORMAL:
ARMED:
FIRED:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
TEMPERATURE SENSORS:
PRESSURE SENSORS:
ABNORMAL:
FAULTY SENSOR:
FAULTED SENSOR:


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
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Cargo Smoke Detection & Protection
Cargo Smoke Detection
Text
Index
Smoke detectors are installed in the ceiling cavities of both cargo compartments.
The forward compartment has one ceiling cavity with two smoke detectors.
Передний отсек имеет одну потолочную полость и два детектора дыма.
DISCH1 LIGHT
DISCH2 LIGHT
FWD AGENT PB
AFT AGENT PB
BTL 1
BTL 2
SQUIBS
FLOW METER
FLOW METER
SMOKE DETECTORS
SMOKE DETECTORS
SMOKE DETECTORS
SQUIBS:
NORMAL:
ARMED:
FIRED:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
FANS/SMOKE DETECTORS:
OFF - GRAY
OPERATING - GREEN
FAULTED - AMBER

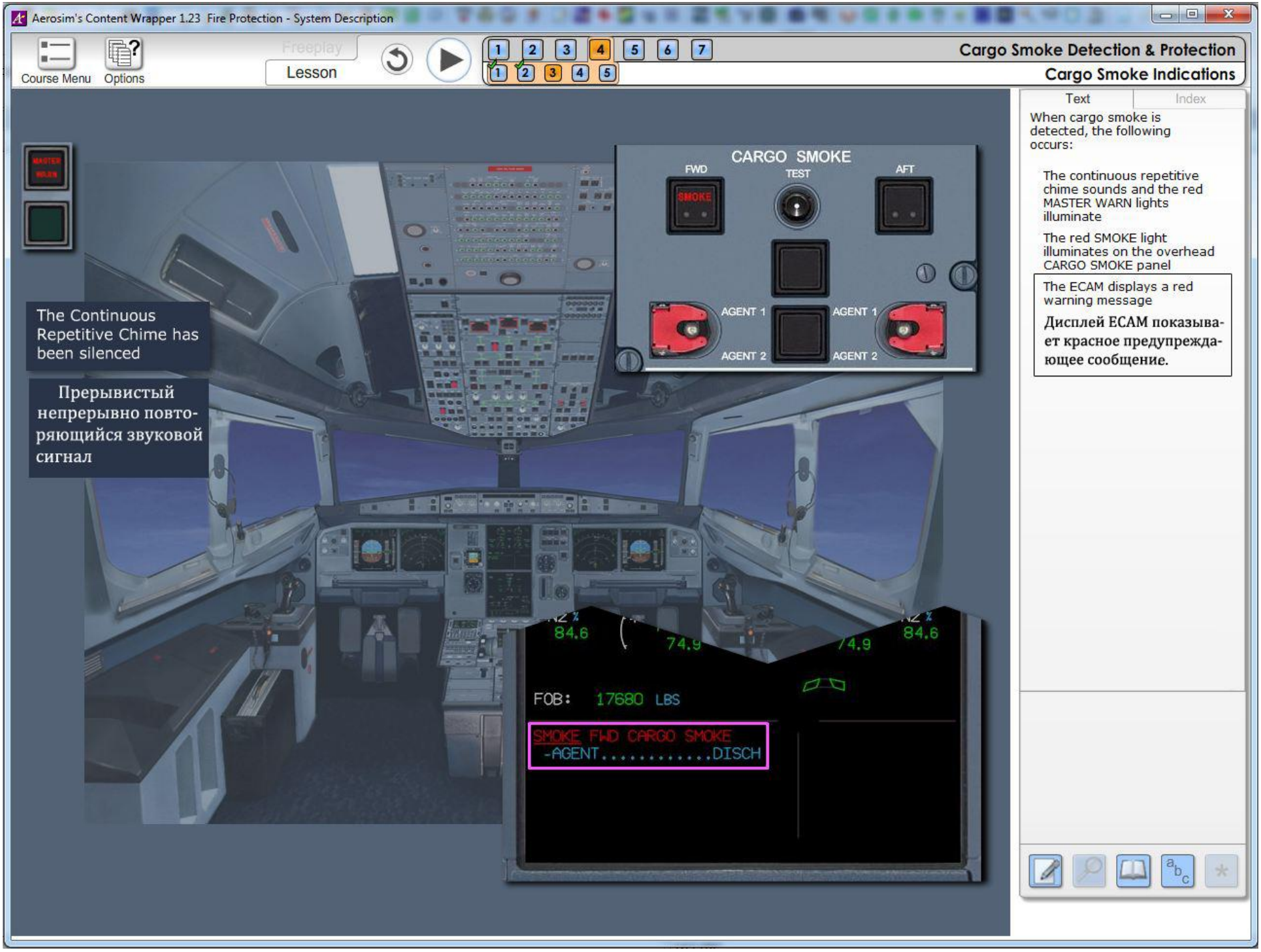

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
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Cargo Smoke Detection & Protection
Cargo Smoke Detection
Text
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Smoke detectors are installed in the ceiling cavities of both cargo compartments.
The forward compartment has one ceiling cavity with two smoke detectors.
The aft/bulk cargo compartment has two ceiling cavities, each having two smoke detectors, for a total of four.
Задний/россыпью грузовой отсек имеет две потолочные полости, каждая из которых имеет два детектора дыма,- всего четыре.
DISCH1 LIGHT
DISCH2 LIGHT
FWD AGENT PB
AFT AGENT PB
BTL 1
BTL 2
SQUIBS
FLOW METER
FLOW METER
SMOKE DETECTORS
SMOKE DETECTORS
SMOKE DETECTORS
SQUIBS:
NORMAL:
ARMED:
FIRED:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
FANS/SMOKE DETECTORS:
OFF - GRAY
OPERATING - GREEN
FAULTED - AMBER

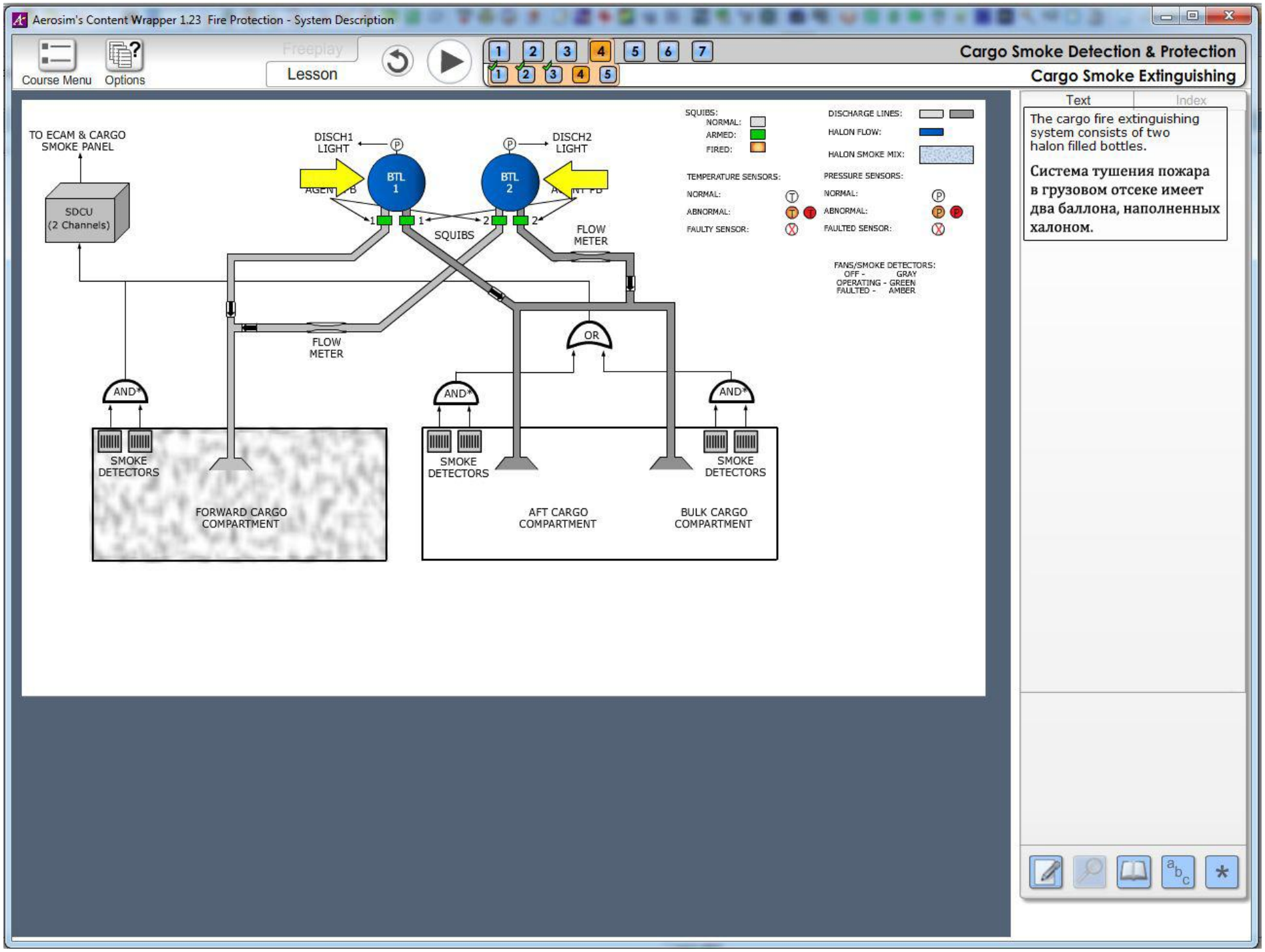

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Cargo Smoke Detection & Protection
Cargo Smoke Detection
TO ECAM & CARGO SMOKE PANEL
SDCU (2 Channels)
DISCH1 LIGHT
DISCH2 LIGHT
FWD AGENT PB
AFT AGENT PB
BTL 1
BTL 2
SQUIBS
FLOW METER
FLOW METER
OR
AND*
AND*
AND*
SMOKE DETECTORS
SMOKE DETECTORS
SMOKE DETECTORS
FORWARD CARGO COMPARTMENT
AFT CARGO COMPARTMENT
BULK CARGO COMPARTMENT
SQUIBS:
NORMAL:
ARMED:
FIRED:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
FANS/SMOKE DETECTORS:
OFF - GRAY
OPERATING - GREEN
FAULTED - AMBER
Text
Index
Smoke detectors are installed in the ceiling cavities of both cargo compartments.
The forward compartment has one ceiling cavity with two smoke detectors.
The aft/bulk cargo compartment has two ceiling cavities, each having two smoke detectors, for a total of four.
A dual channel Smoke Detection Control Unit (SDCU), receives signals from the detectors and activates flight deck warnings when smoke is sensed.
Двухканальное устройство управления обнаружением дыма (SDCU) получает сигналы от детекторов и активирует предупреждения в кабине лётчиков, когда дым обнаружен.

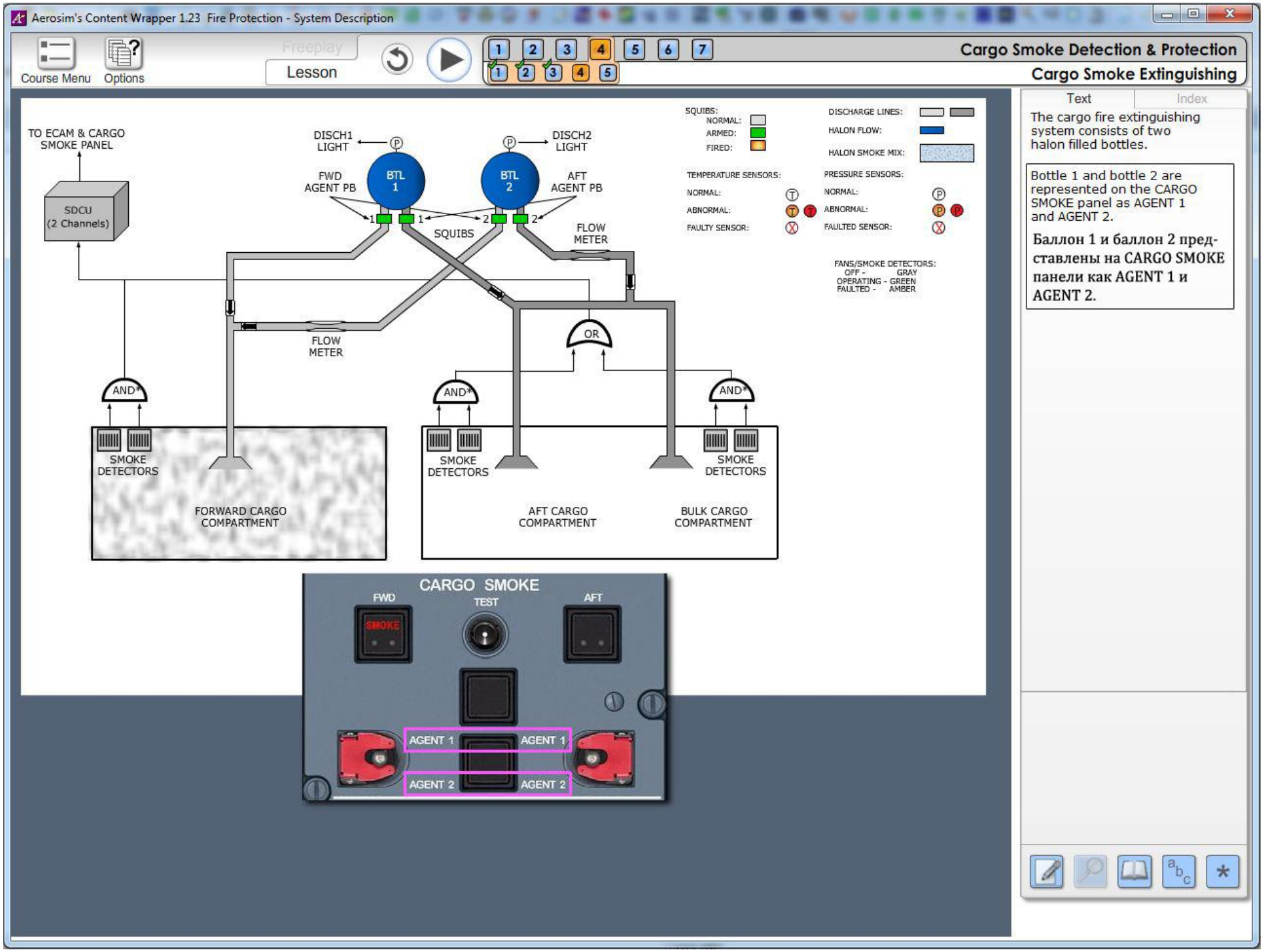

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Cargo Smoke Detection & Protection
Cargo Smoke Detection
TO ECAM & CARGO SMOKE PANEL
SDCU (2 Channels)
DISCH1 LIGHT
DISCH2 LIGHT
FWD AGENT PB
AFT AGENT PB
BTL 1
BTL 2
SQUIBS
FLOW METER
FLOW METER
OR
AND*
AND*
AND*
SMOKE DETECTORS
SMOKE DETECTORS
SMOKE DETECTORS
FORWARD CARGO COMPARTMENT
AFT CARGO COMPARTMENT
BULK CARGO COMPARTMENT
SQUIBS:
NORMAL:
ARMED:
FIRED:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
FANS/SMOKE DETECTORS:
OFF - GRAY
OPERATING - GREEN
FAULTED - AMBER
Text
Index
Smoke detectors are installed in the ceiling cavities of both cargo compartments.
The forward compartment has one ceiling cavity with two smoke detectors.
The aft/bulk cargo compartment has two ceiling cavities, each having two smoke detectors, for a total of four.
A dual channel Smoke Detection Control Unit (SDCU), receives signals from the detectors and activates flight deck warnings when smoke is sensed.
Cargo smoke warnings will be generated if:
Excessive particles are detected by both detectors in a ceiling cavity
One detector is inoperative and the other senses smoke
Предупреждения о дыме в грузовом отсеке генерируются, если:
Обнаружены излишние частицы обоими детекторами в потолочных полостях;
Один детектор отказал, а другой почувствовал дым.
Cargo smoke warnings are generated if:
• Excessive particles are detected by both detectors in a ceiling cavity
• One detector is inoperative and the other senses smoke
Предупреждения о дыме в грузовом отсеке генерируются, если:
- Обнаружены излишние частицы обоими детекторами в потолочной полости
- Один детектор отказал, а другой чувствует дым

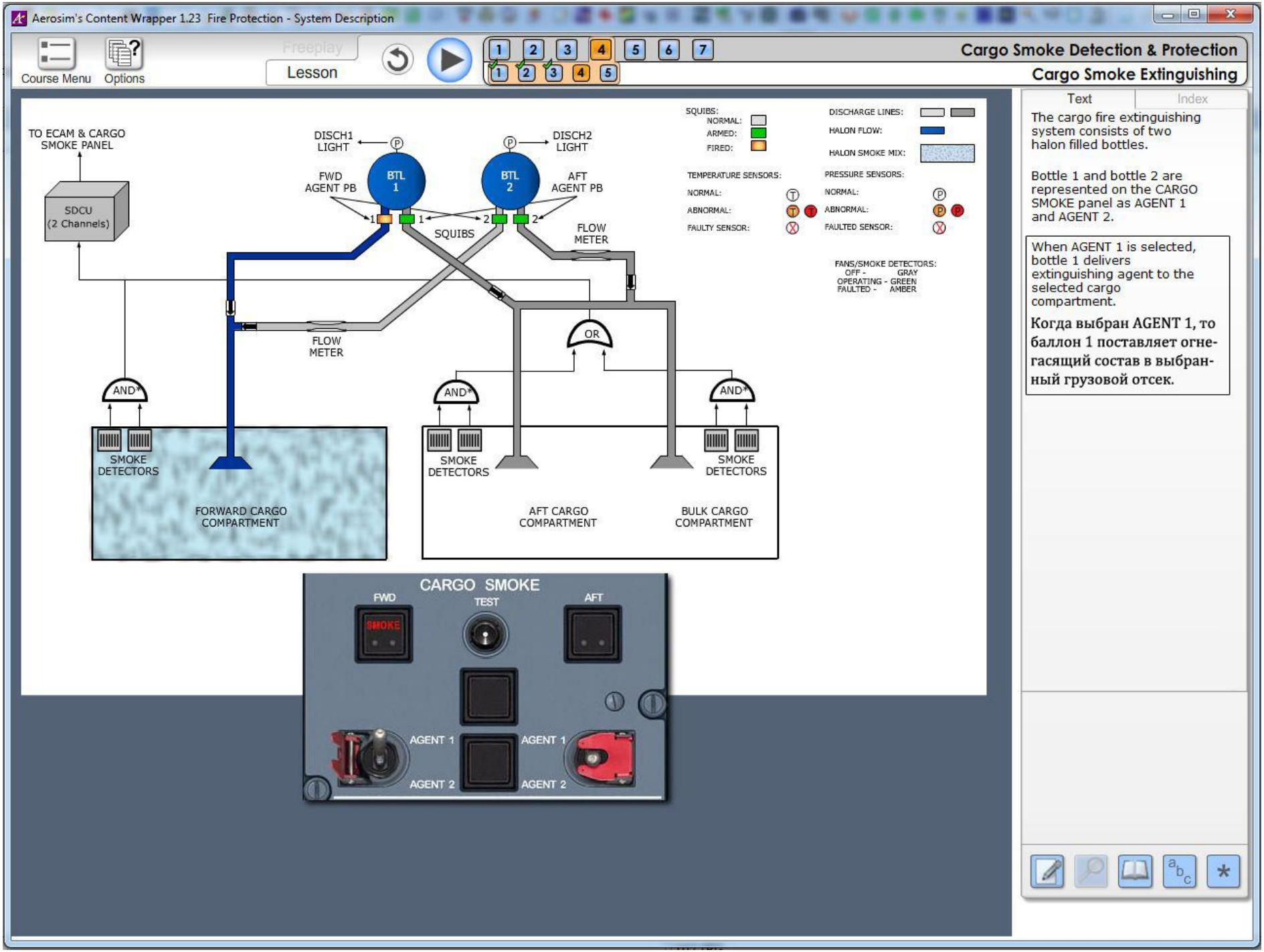

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Cargo Smoke Detection & Protection
Cargo Smoke Indications
Text
Index
When cargo smoke is detected, the following occurs:
The continuous repetitive chime sounds and the red MASTER WARN lights illuminate
Когда обнаружен дым в грузовом отсеке, происходит следующее.
Включается непрерывно повторяющийся звуковой сигнал и загорается лампа MASTER WARN.
The Continuous Repetitive Chime has been silenced
Прерывистый непрерывно повторяющийся звуковой сигнал

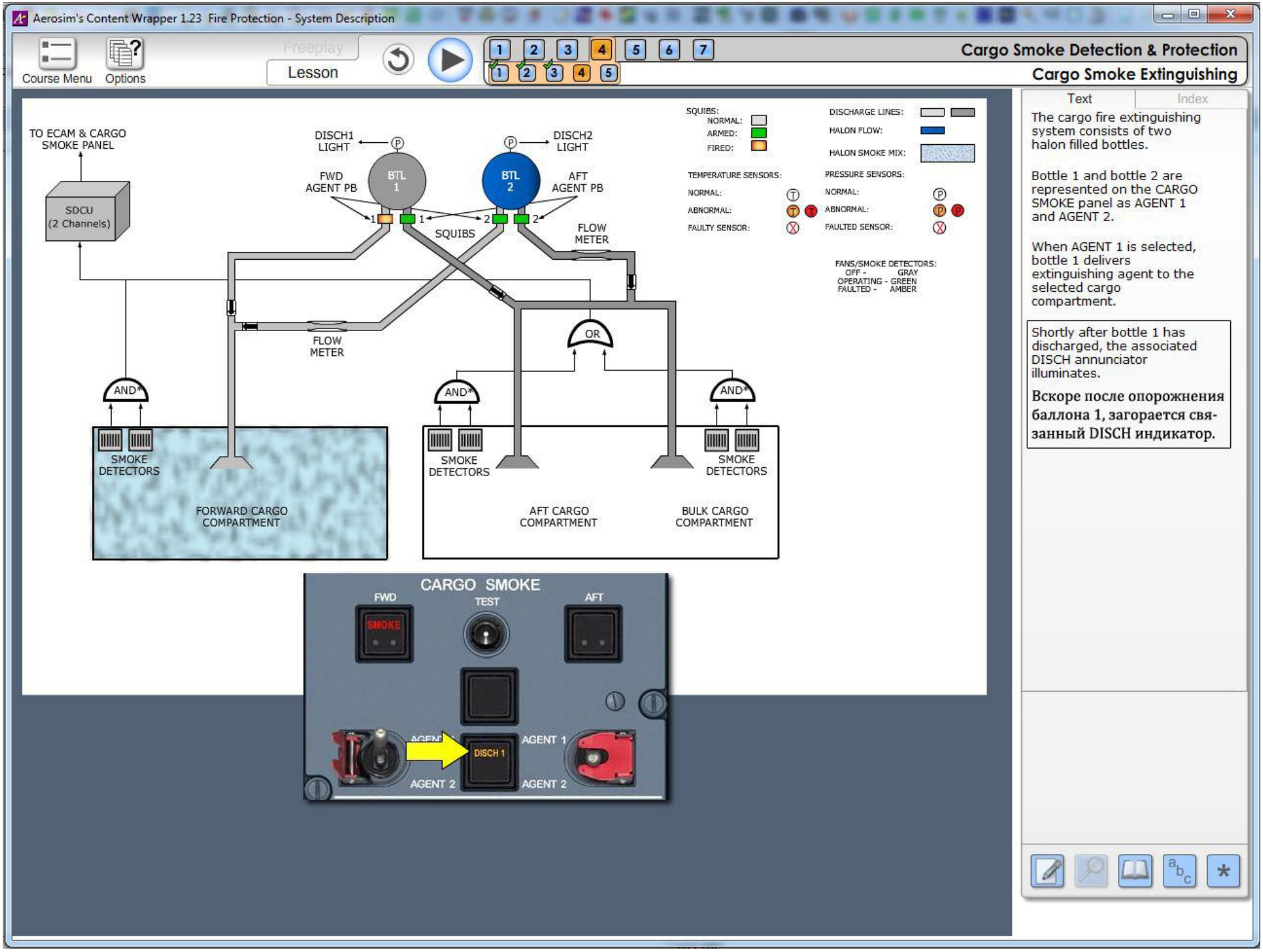

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
1 2 3 4 5 6 7
1 2 3 4 5
Cargo Smoke Detection & Protection
Cargo Smoke Indications
Text
Index
When cargo smoke is detected, the following occurs:
The continuous repetitive chime sounds and the red MASTER WARN lights illuminate
The red SMOKE light illuminates on the overhead CARGO SMOKE panel
Загорается красная лампа SMOKE на верхней панели CARGO SMOKE.
CARGO SMOKE
FWD
TEST
AFT
SMOKE
AGENT 1
AGENT 2
AGENT 1
AGENT 2
The Continuous Repetitive Chime has been silenced
Прерывистый непрерывно повто-ряющийся звуковой сигнал

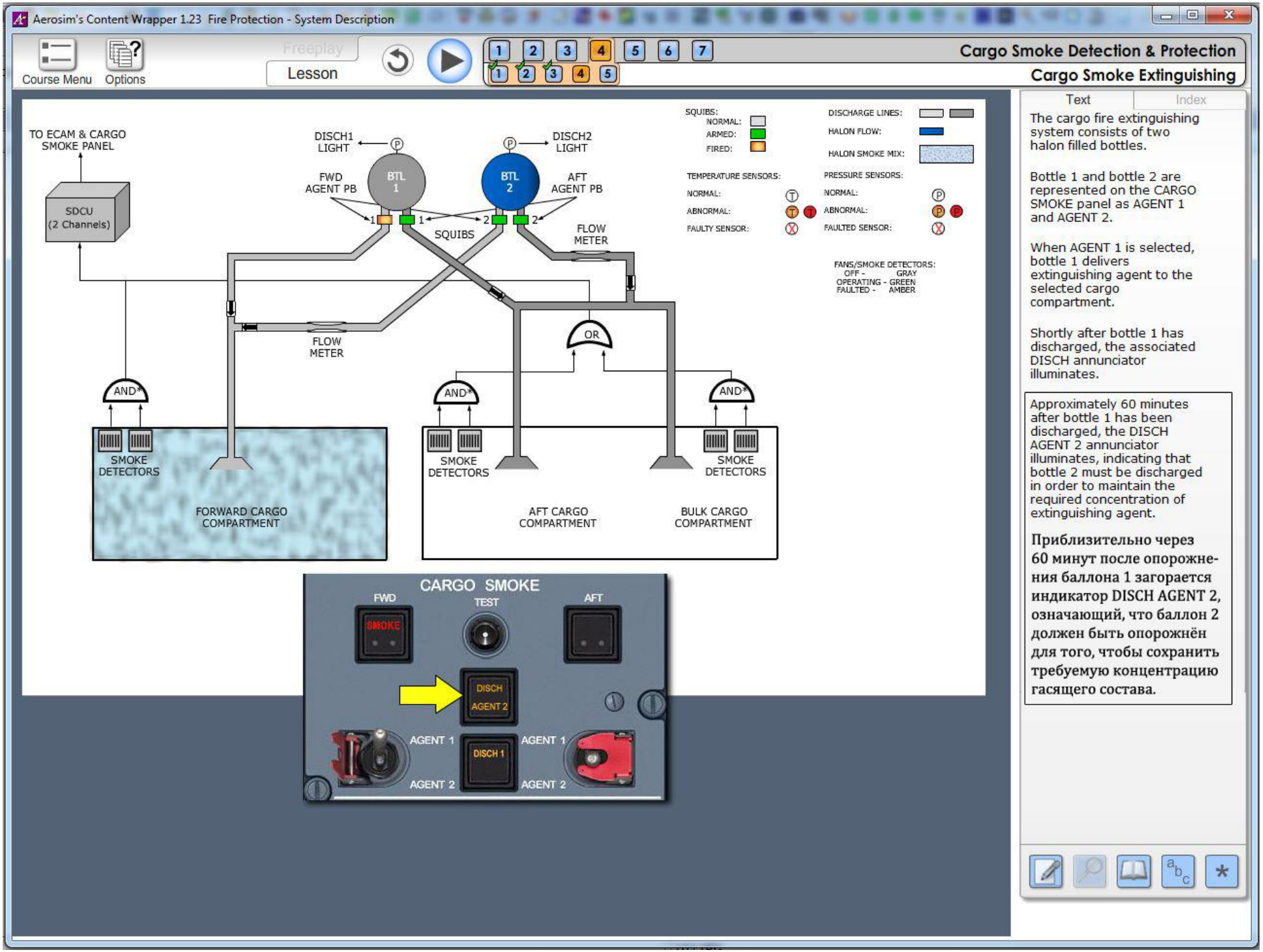

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Cargo Smoke Detection & Protection
Cargo Smoke Indications
Text
Index
When cargo smoke is detected, the following occurs:
The continuous repetitive chime sounds and the red MASTER WARN lights illuminate
The red SMOKE light illuminates on the overhead CARGO SMOKE panel
The ECAM displays a red warning message
Дисплей ECAM показывает красное предупреждающее сообщение.
The Continuous Repetitive Chime has been silenced
Прерывистый непрерывно повторяющийся звуковой сигнал
CARGO SMOKE
FWD
TEST
AFT
SMOKE
AGENT 1
AGENT 2
AGENT 1
AGENT 2
84.6
74.9
74.9
84.6
FOB: 17680 LBS
SMOKE FWD CARGO SMOKE
-AGENT.....DISCH

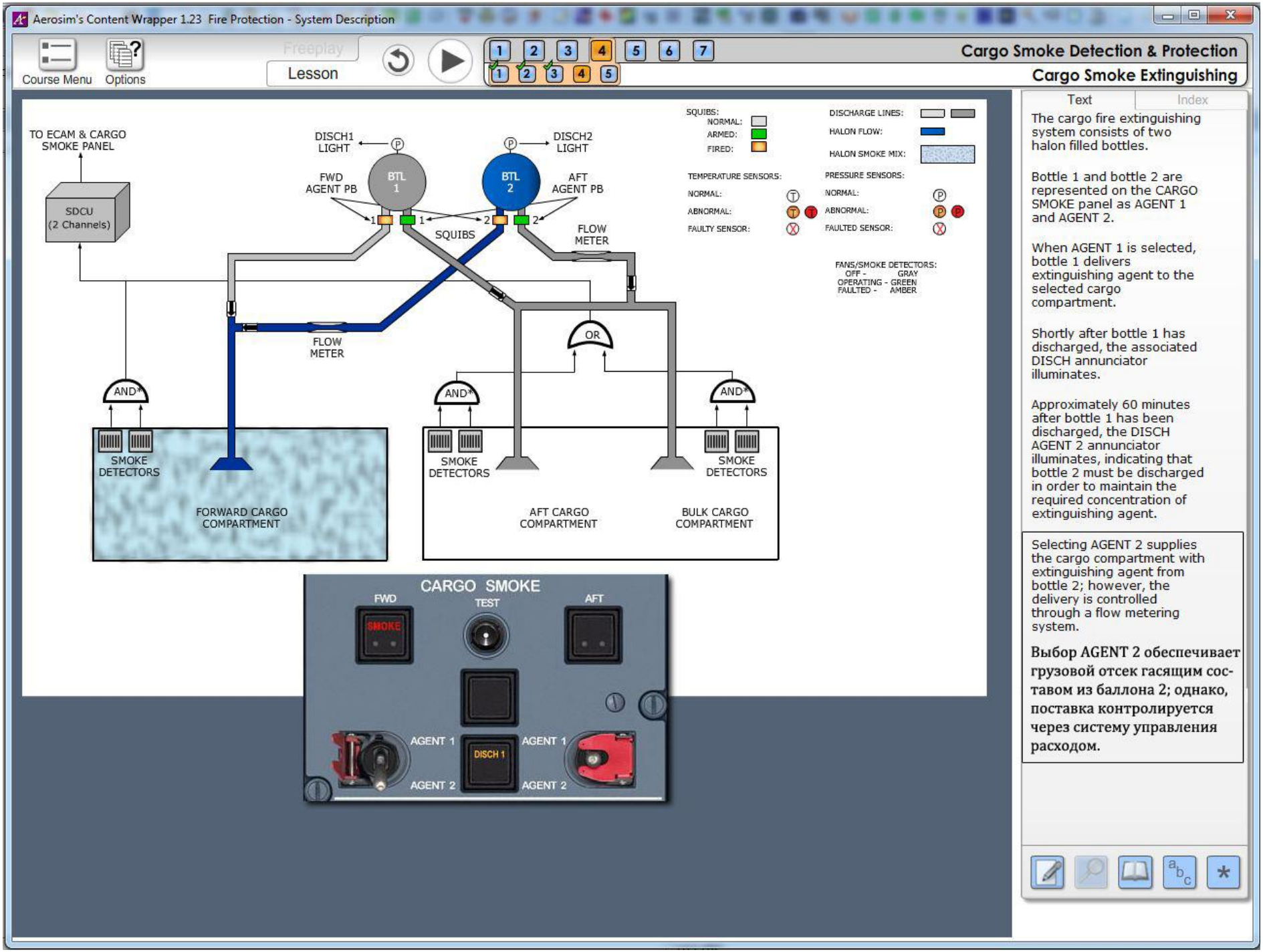

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Cargo Smoke Detection & Protection
Cargo Smoke Extinguishing
TO ECAM & CARGO SMOKE PANEL
SDCU (2 Channels)
DISCH1 LIGHT
DISCH2 LIGHT
BTL 1
BTL 2
SQUIBS
FLOW METER
FLOW METER
OR
AND*
AND*
AND*
SMOKE DETECTORS
SMOKE DETECTORS
SMOKE DETECTORS
FORWARD CARGO COMPARTMENT
AFT CARGO COMPARTMENT
BULK CARGO COMPARTMENT
SQUIBS:
NORMAL:
ARMED:
FIRED:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
FANS/SMOKE DETECTORS:
OFF - GRAY
OPERATING - GREEN
FAULTED - AMBER
Text
Index
The cargo fire extinguishing system consists of two halon filled bottles.
Система тушения пожара в грузовом отсеке имеет два баллона, наполненных халоном.

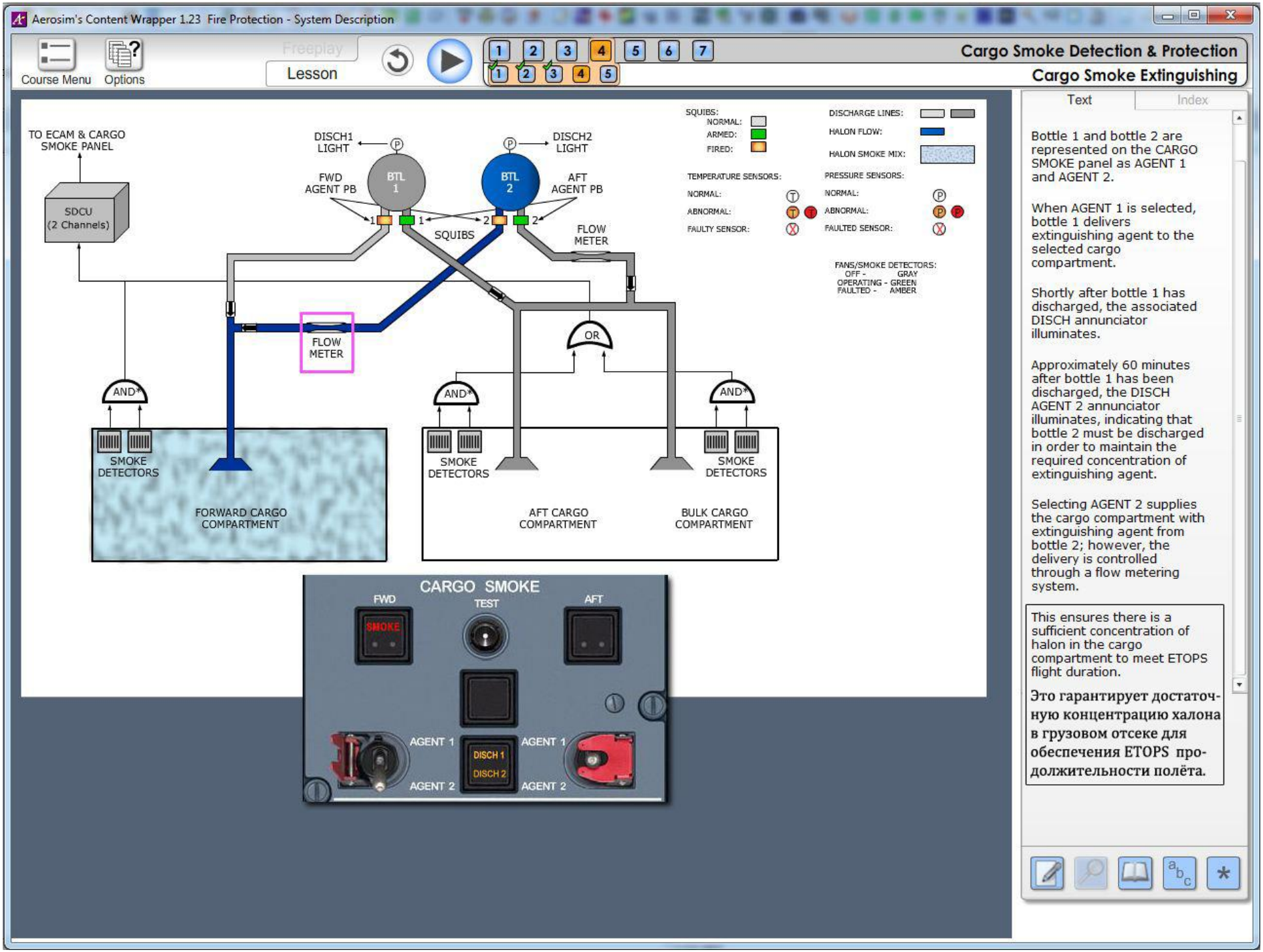

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Cargo Smoke Detection & Protection
Cargo Smoke Extinguishing
Text
Index
The cargo fire extinguishing system consists of two halon filled bottles.
Bottle 1 and bottle 2 are represented on the CARGO SMOKE panel as AGENT 1 and AGENT 2.
Баллон 1 и баллон 2 представлены на CARGO SMOKE панели как AGENT 1 и AGENT 2.
TO ECAM & CARGO SMOKE PANEL
SDCU (2 Channels)
DISCH1 LIGHT
DISCH2 LIGHT
FWD AGENT PB
AFT AGENT PB
BTL 1
BTL 2
SQUIBS
FLOW METER
FLOW METER
OR
AND*
AND*
AND*
SMOKE DETECTORS
SMOKE DETECTORS
SMOKE DETECTORS
FORWARD CARGO COMPARTMENT
AFT CARGO COMPARTMENT
BULK CARGO COMPARTMENT
SQUIBS:
NORMAL:
ARMED:
FIRED:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
FANS/SMOKE DETECTORS:
OFF - GRAY
OPERATING - GREEN
FAULTED - AMBER
CARGO SMOKE
FWD
TEST
AFT
SMOKE
AGENT 1
AGENT 1
AGENT 2
AGENT 2

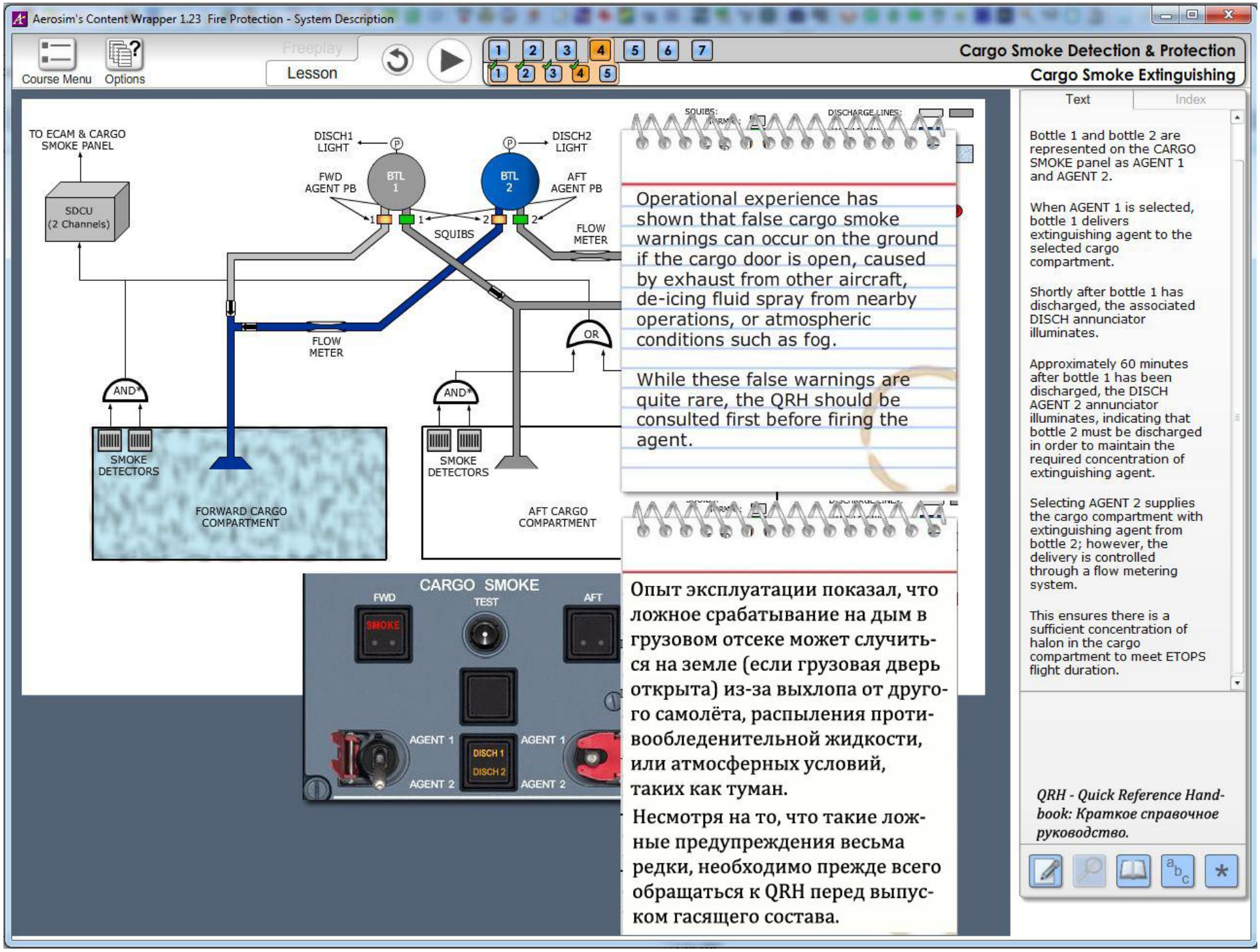

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Cargo Smoke Detection & Protection
Cargo Smoke Extinguishing
TO ECAM & CARGO SMOKE PANEL
SDCU (2 Channels)
DISCH1 LIGHT
DISCH2 LIGHT
FWD AGENT PB
AFT AGENT PB
BTL 1
BTL 2
SQUIBS
FLOW METER
FLOW METER
OR
AND*
AND*
AND*
SMOKE DETECTORS
SMOKE DETECTORS
SMOKE DETECTORS
FORWARD CARGO COMPARTMENT
AFT CARGO COMPARTMENT
BULK CARGO COMPARTMENT
SQUIBS:
NORMAL:
ARMED:
FIRED:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
FANS/SMOKE DETECTORS:
OFF - GRAY
OPERATING - GREEN
FAULTED - AMBER
CARGO SMOKE
FWD
TEST
AFT
SMOKE
AGENT 1
AGENT 1
AGENT 2
AGENT 2
Text
Index
The cargo fire extinguishing system consists of two halon filled bottles.
Bottle 1 and bottle 2 are represented on the CARGO SMOKE panel as AGENT 1 and AGENT 2.
When AGENT 1 is selected, bottle 1 delivers extinguishing agent to the selected cargo compartment.
Когда выбран AGENT 1, то баллон 1 поставляет огнегасящий состав в выбранный грузовой отсек.

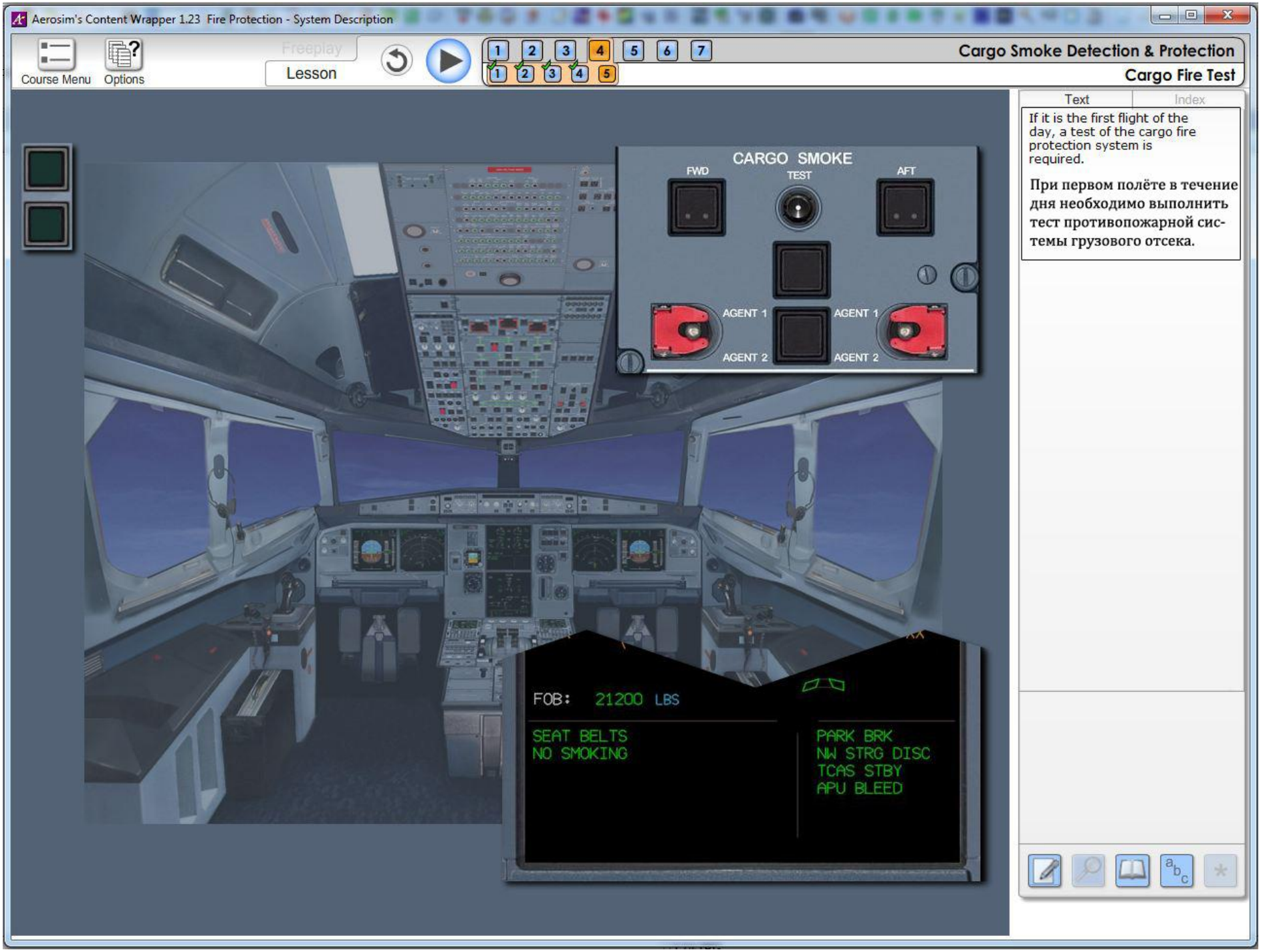

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
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Cargo Smoke Detection & Protection
Cargo Smoke Extinguishing
Text
Index
The cargo fire extinguishing system consists of two halon filled bottles.
Bottle 1 and bottle 2 are represented on the CARGO SMOKE panel as AGENT 1 and AGENT 2.
When AGENT 1 is selected, bottle 1 delivers extinguishing agent to the selected cargo compartment.
Shortly after bottle 1 has discharged, the associated DISCH annunciator illuminates.
Вскоре после опорожнения баллона 1, загорается связанный DISCH индикатор.
TO ECAM & CARGO SMOKE PANEL
SDCU (2 Channels)
DISCH1 LIGHT
DISCH2 LIGHT
FWD AGENT PB
AFT AGENT PB
BTL 1
BTL 2
SQUIBS
FLOW METER
FLOW METER
OR
AND*
AND*
AND*
SMOKE DETECTORS
SMOKE DETECTORS
SMOKE DETECTORS
FORWARD CARGO COMPARTMENT
AFT CARGO COMPARTMENT
BULK CARGO COMPARTMENT
SQUIBS:
NORMAL:
ARMED:
FIRED:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
FANS/SMOKE DETECTORS:
OFF - GRAY
OPERATING - GREEN
FAULTED - AMBER
CARGO SMOKE
FWD
TEST
AFT
SMOKE
DISCH 1
AGENT 1
AGENT 2
AGENT 2
AGENT 2

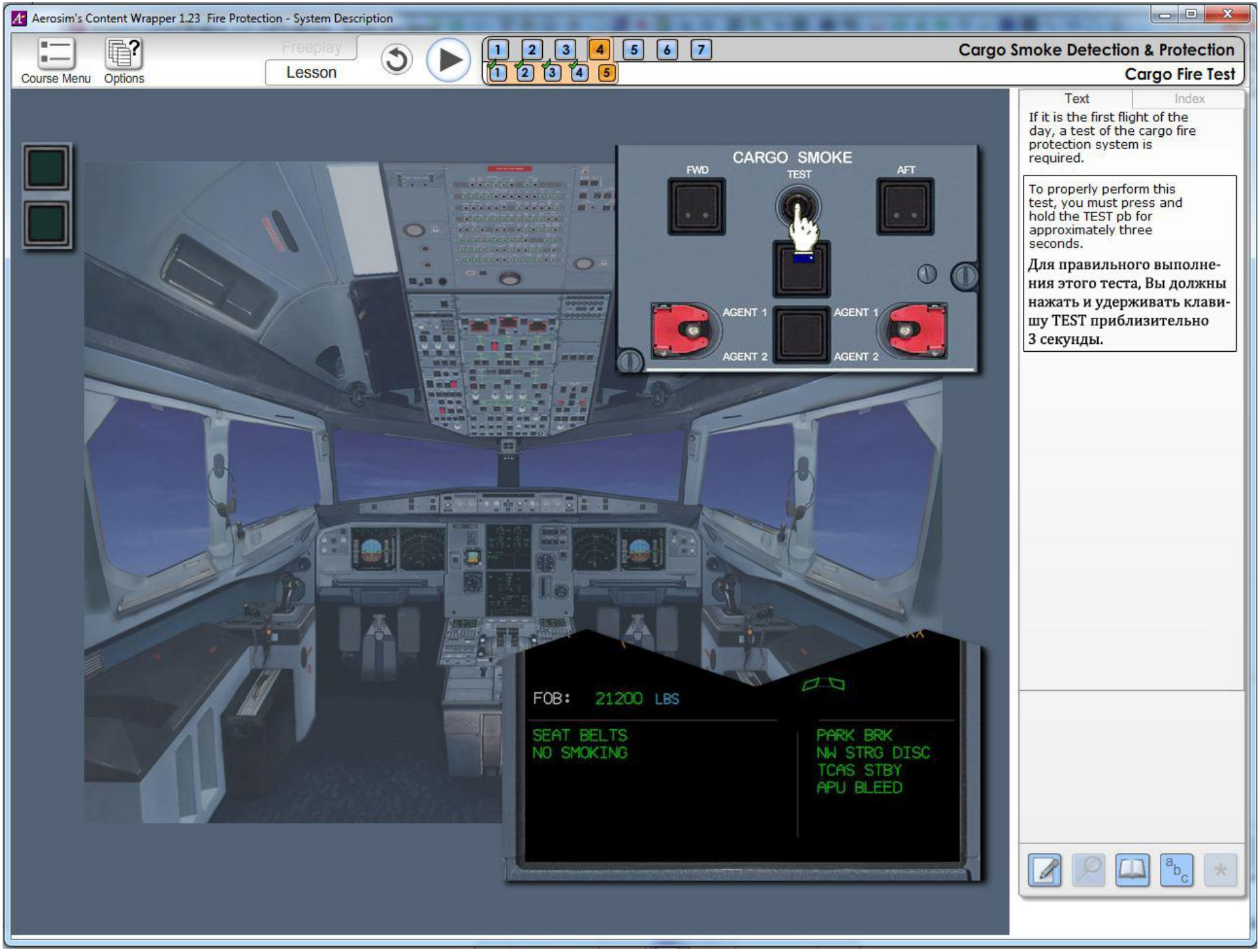

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Cargo Smoke Detection & Protection
Cargo Smoke Extinguishing
Text
Index
The cargo fire extinguishing system consists of two halon filled bottles.
Bottle 1 and bottle 2 are represented on the CARGO SMOKE panel as AGENT 1 and AGENT 2.
When AGENT 1 is selected, bottle 1 delivers extinguishing agent to the selected cargo compartment.
Shortly after bottle 1 has discharged, the associated DISCH annunciator illuminates.
Approximately 60 minutes after bottle 1 has been discharged, the DISCH AGENT 2 annunciator illuminates, indicating that bottle 2 must be discharged in order to maintain the required concentration of extinguishing agent.
Приблизительно через 60 минут после опорожнения баллона 1 загорается индикатор DISCH AGENT 2, означающий, что баллон 2 должен быть опорожнён для того, чтобы сохранить требуемую концентрацию гасящего состава.
TO ECAM & CARGO SMOKE PANEL
SDCU (2 Channels)
DISCH1 LIGHT
DISCH2 LIGHT
FWD AGENT PB
AFT AGENT PB
BTL 1
BTL 2
SQUIBS
FLOW METER
FLOW METER
OR
AND*
AND*
AND*
SMOKE DETECTORS
SMOKE DETECTORS
SMOKE DETECTORS
FORWARD CARGO COMPARTMENT
AFT CARGO COMPARTMENT
BULK CARGO COMPARTMENT
SQUIBS:
NORMAL:
ARMED:
FIRED:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
FANS/SMOKE DETECTORS:
OFF - GRAY
OPERATING - GREEN
FAULTED - AMBER
CARGO SMOKE
FWD
TEST
AFT
SMOKE
DISCH AGENT 2
AGENT 1
DISCH 1
AGENT 1
AGENT 2
AGENT 2


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Cargo Smoke Detection & Protection
Cargo Smoke Extinguishing
Text
Index
The cargo fire extinguishing system consists of two halon filled bottles.
Bottle 1 and bottle 2 are represented on the CARGO SMOKE panel as AGENT 1 and AGENT 2.
When AGENT 1 is selected, bottle 1 delivers extinguishing agent to the selected cargo compartment.
Shortly after bottle 1 has discharged, the associated DISCH annunciator illuminates.
Approximately 60 minutes after bottle 1 has been discharged, the DISCH AGENT 2 annunciator illuminates, indicating that bottle 2 must be discharged in order to maintain the required concentration of extinguishing agent.
Selecting AGENT 2 supplies the cargo compartment with extinguishing agent from bottle 2; however, the delivery is controlled through a flow metering system.
Выбор AGENT 2 обеспечивает грузовой отсек гасящим составом из баллона 2; однако, поставка контролируется через систему управления расходом.
TO ECAM & CARGO SMOKE PANEL
SDCU (2 Channels)
DISCH1 LIGHT
DISCH2 LIGHT
FWD AGENT PB
AFT AGENT PB
BTL 1
BTL 2
SQUIBS
FLOW METER
FLOW METER
OR
AND*
AND*
AND*
SMOKE DETECTORS
SMOKE DETECTORS
SMOKE DETECTORS
FORWARD CARGO COMPARTMENT
AFT CARGO COMPARTMENT
BULK CARGO COMPARTMENT
SQUIBS:
NORMAL:
ARMED:
FIRED:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
FANS/SMOKE DETECTORS:
OFF - GRAY
OPERATING - GREEN
FAULTED - AMBER
CARGO SMOKE
FWD
TEST
AFT
SMOKE
AGENT 1
DISCH 1
AGENT 1
AGENT 2
AGENT 2


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Cargo Smoke Detection & Protection
Cargo Smoke Extinguishing
TO ECAM & CARGO SMOKE PANEL
SDCU (2 Channels)
DISCH1 LIGHT
DISCH2 LIGHT
FWD AGENT PB
AFT AGENT PB
BTL 1
BTL 2
SQUIBS
FLOW METER
OR
AND*
SMOKE DETECTORS
FORWARD CARGO COMPARTMENT
AFT CARGO COMPARTMENT
BULK CARGO COMPARTMENT
SQUIBS:
NORMAL:
ARMED:
FIRED:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
TEMPERATURE SENSORS:
PRESSURE SENSORS:
FANS/SMOKE DETECTORS:
OFF - GRAY
OPERATING - GREEN
FAULTED - AMBER
CARGO SMOKE
FWD
TEST
AFT
SMOKE
AGENT 1
AGENT 2
DISCH 1
DISCH 2
Text
Index
Bottle 1 and bottle 2 are represented on the CARGO SMOKE panel as AGENT 1 and AGENT 2.
When AGENT 1 is selected, bottle 1 delivers extinguishing agent to the selected cargo compartment.
Shortly after bottle 1 has discharged, the associated DISCH annunciator illuminates.
Approximately 60 minutes after bottle 1 has been discharged, the DISCH AGENT 2 annunciator illuminates, indicating that bottle 2 must be discharged in order to maintain the required concentration of extinguishing agent.
Selecting AGENT 2 supplies the cargo compartment with extinguishing agent from bottle 2; however, the delivery is controlled through a flow metering system.
This ensures there is a sufficient concentration of halon in the cargo compartment to meet ETOPS flight duration.
Это гарантирует достаточную концентрацию халона в грузовом отсеке для обеспечения ETOPS продолжительности полёта.

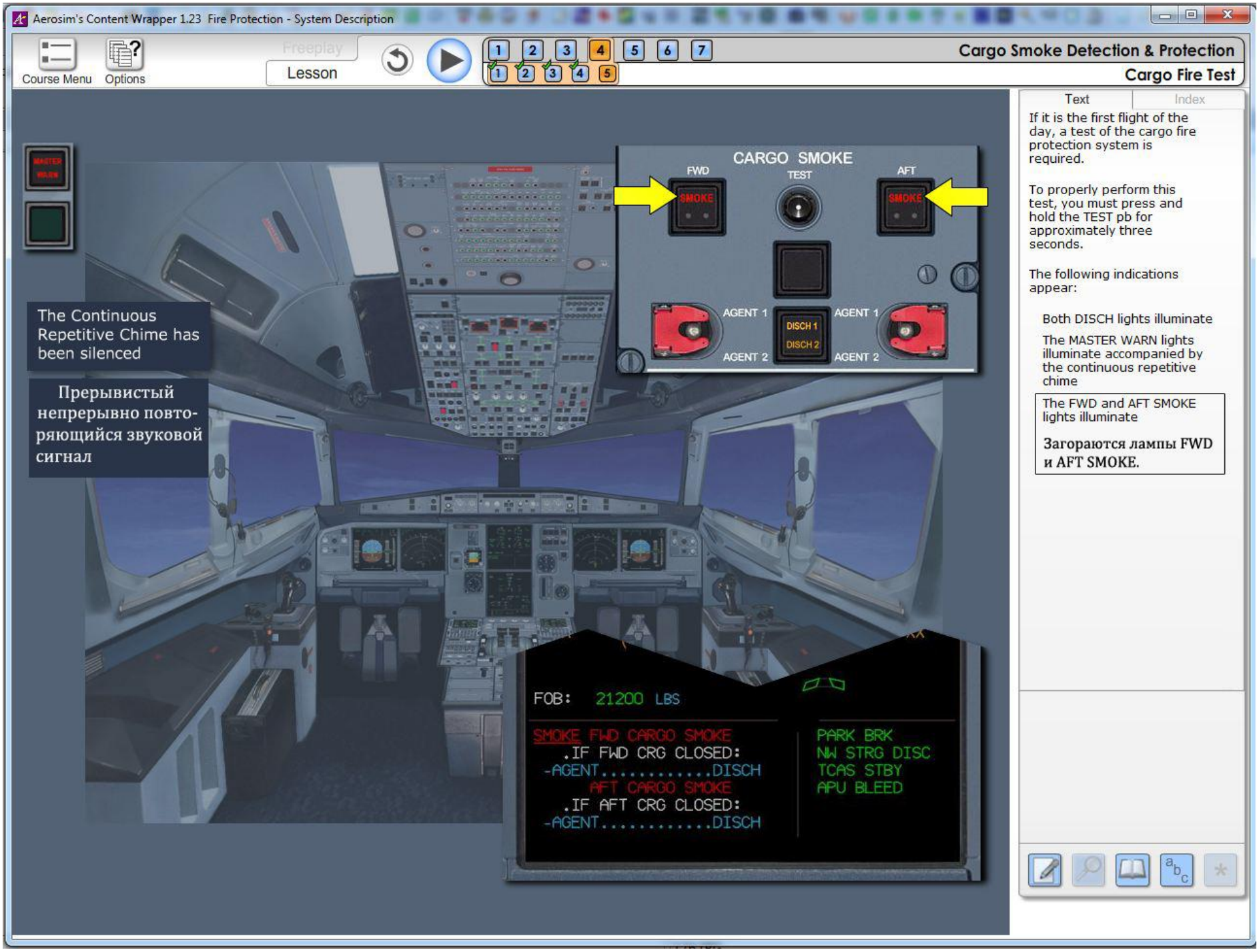

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Cargo Smoke Detection & Protection
Cargo Smoke Extinguishing
TO ECAM & CARGO SMOKE PANEL
SDCU (2 Channels)
DISCH1 LIGHT
DISCH2 LIGHT
FWD AGENT PB
AFT AGENT PB
BTL 1
BTL 2
SQUIBS
FLOW METER
OR
AND*
SMOKE DETECTORS
FORWARD CARGO COMPARTMENT
AFT CARGO COMPARTMENT
Operational experience has shown that false cargo smoke warnings can occur on the ground if the cargo door is open, caused by exhaust from other aircraft, de-icing fluid spray from nearby operations, or atmospheric conditions such as fog.
While these false warnings are quite rare, the QRH should be consulted first before firing the agent.
CARGO SMOKE
FWD
TEST
AFT
SMOKE
AGENT 1
AGENT 2
DISCH 1
DISCH 2
Опыт эксплуатации показал, что ложное срабатывание на дым в грузовом отсеке может случиться на земле (если грузовая дверь открыта) из-за выхлопа от другого самолёта, распыления противообледенительной жидкости, или атмосферных условий, таких как туман.
Несмотря на то, что такие ложные предупреждения весьма редки, необходимо прежде всего обращаться к QRH перед выпуском гасящего состава.
Text
Index
Bottle 1 and bottle 2 are represented on the CARGO SMOKE panel as AGENT 1 and AGENT 2.
When AGENT 1 is selected, bottle 1 delivers extinguishing agent to the selected cargo compartment.
Shortly after bottle 1 has discharged, the associated DISCH annunciator illuminates.
Approximately 60 minutes after bottle 1 has been discharged, the DISCH AGENT 2 annunciator illuminates, indicating that bottle 2 must be discharged in order to maintain the required concentration of extinguishing agent.
Selecting AGENT 2 supplies the cargo compartment with extinguishing agent from bottle 2; however, the delivery is controlled through a flow metering system.
This ensures there is a sufficient concentration of halon in the cargo compartment to meet ETOPS flight duration.
QRH - Quick Reference Handbook: Краткое справочное руководство.

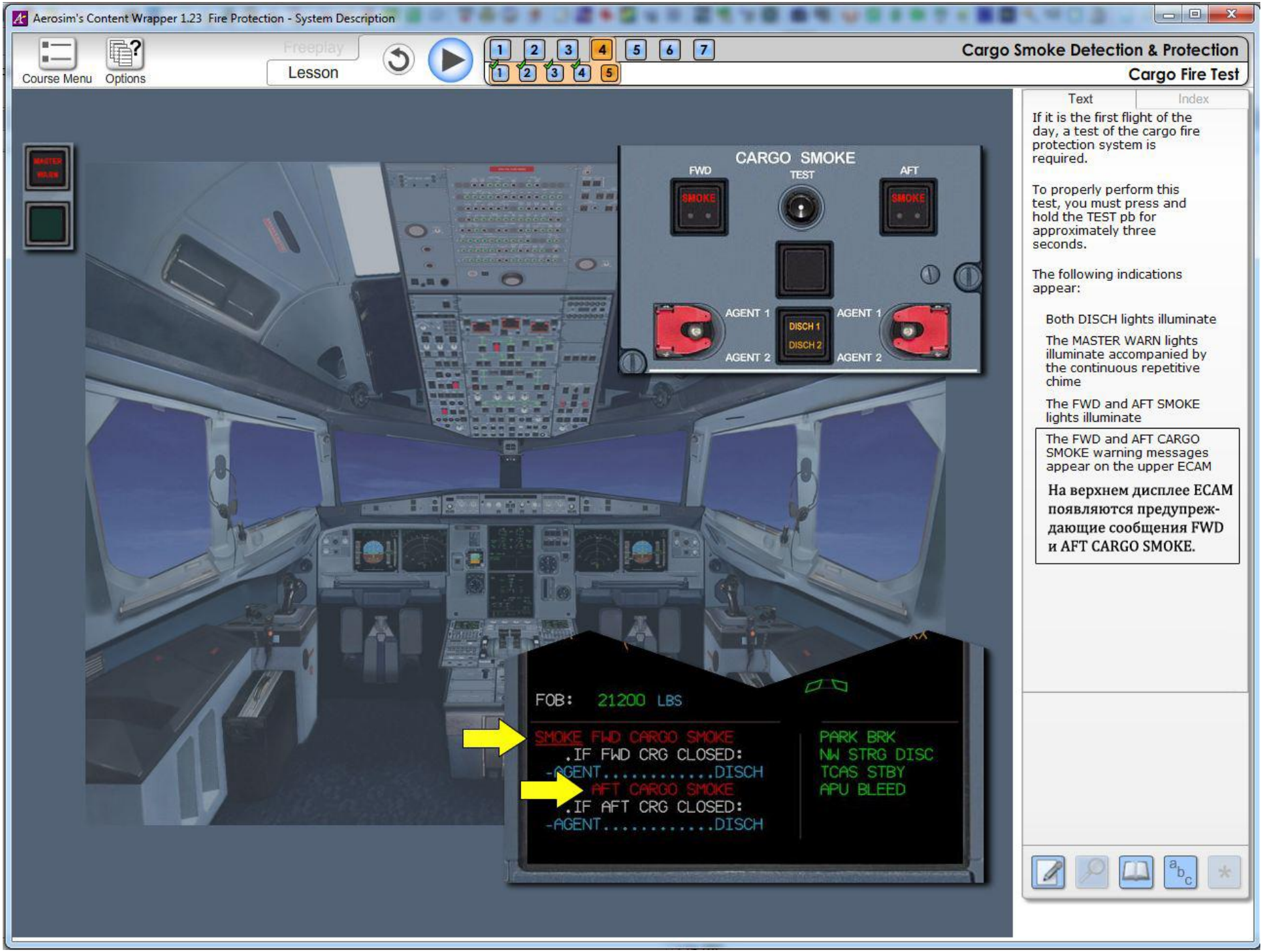

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Cargo Smoke Detection & Protection
Cargo Fire Test
Text
Index
If it is the first flight of the day, a test of the cargo fire protection system is required.
При первом полёте в течение дня необходимо выполнить тест противопожарной системы грузового отсека.
CARGO SMOKE
FWD
TEST
AFT
AGENT 1
AGENT 2
AGENT 1
AGENT 2
FOB: 21200 LBS
SEAT BELTS
NO SMOKING
PARK BRK
NW STRG DISC
TCAS STBY
APU BLEED


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
1 2 3 4 5 6 7
1 2 3 4 5
Cargo Smoke Detection & Protection
Cargo Fire Test
Text
Index
If it is the first flight of the day, a test of the cargo fire protection system is required.
To properly perform this test, you must press and hold the TEST pb for approximately three seconds.
Для правильного выполнения этого теста, Вы должны нажать и удерживать клавишу TEST приблизительно 3 секунды.
CARGO SMOKE
FWD
TEST
AFT
AGENT 1
AGENT 2
AGENT 1
AGENT 2
FOB: 21200 LBS
SEAT BELTS
NO SMOKING
PARK BRK
NW STRG DISC
TCAS STBY
APU BLEED

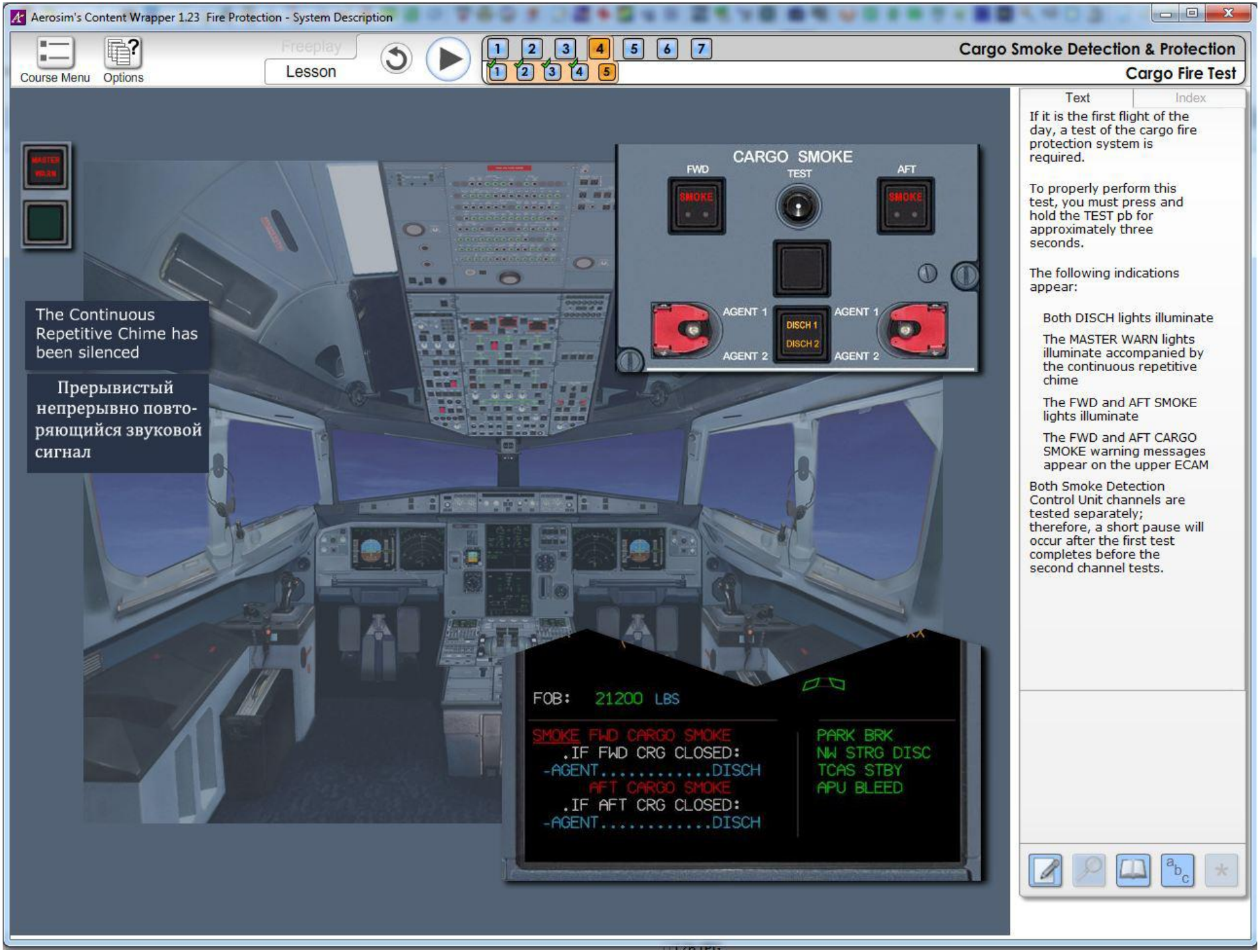

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
1 2 3 4 5 6 7
1 2 3 4 5
Cargo Smoke Detection & Protection
Cargo Fire Test
Text
Index
If it is the first flight of the day, a test of the cargo fire protection system is required.
To properly perform this test, you must press and hold the TEST pb for approximately three seconds.
The following indications appear:
Both DISCH lights illuminate
Появляется следующая индикация:
Загораются обе лампы DISCH.
CARGO SMOKE
FWD
TEST
AFT
SMOKE
SMOKE
AGENT 1
DISCH 1
DISCH 2
AGENT 2
FOB: 21200 LBS
SMOKE FWD CARGO SMOKE
.IF FWD CRG CLOSED:
-AGENT.....DISCH
AFT CARGO SMOKE
.IF AFT CRG CLOSED:
-AGENT.....DISCH
PARK BRK
NW STRG DISC
TCAS STBY
APU BLEED


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Cargo Smoke Detection & Protection
Cargo Fire Test
Text
Index
If it is the first flight of the day, a test of the cargo fire protection system is required.
To properly perform this test, you must press and hold the TEST pb for approximately three seconds.
The following indications appear:
Both DISCH lights illuminate
The MASTER WARN lights illuminate accompanied by the continuous repetitive chime
Загораются лампы MASTER WARN в сопровождении непрерывно повторяющегося звукового сигнала.
CARGO SMOKE
FWD
TEST
AFT
SMOKE
AGENT 1
AGENT 2
DISCH 1
DISCH 2
FOB: 21200 LBS
SMOKE FWD CARGO SMOKE
.IF FWD CRG CLOSED:
-AGENT.....DISCH
AFT CARGO SMOKE
.IF AFT CRG CLOSED:
-AGENT.....DISCH
PARK BRK
NW STRG DISC
TCAS STBY
APU BLEED

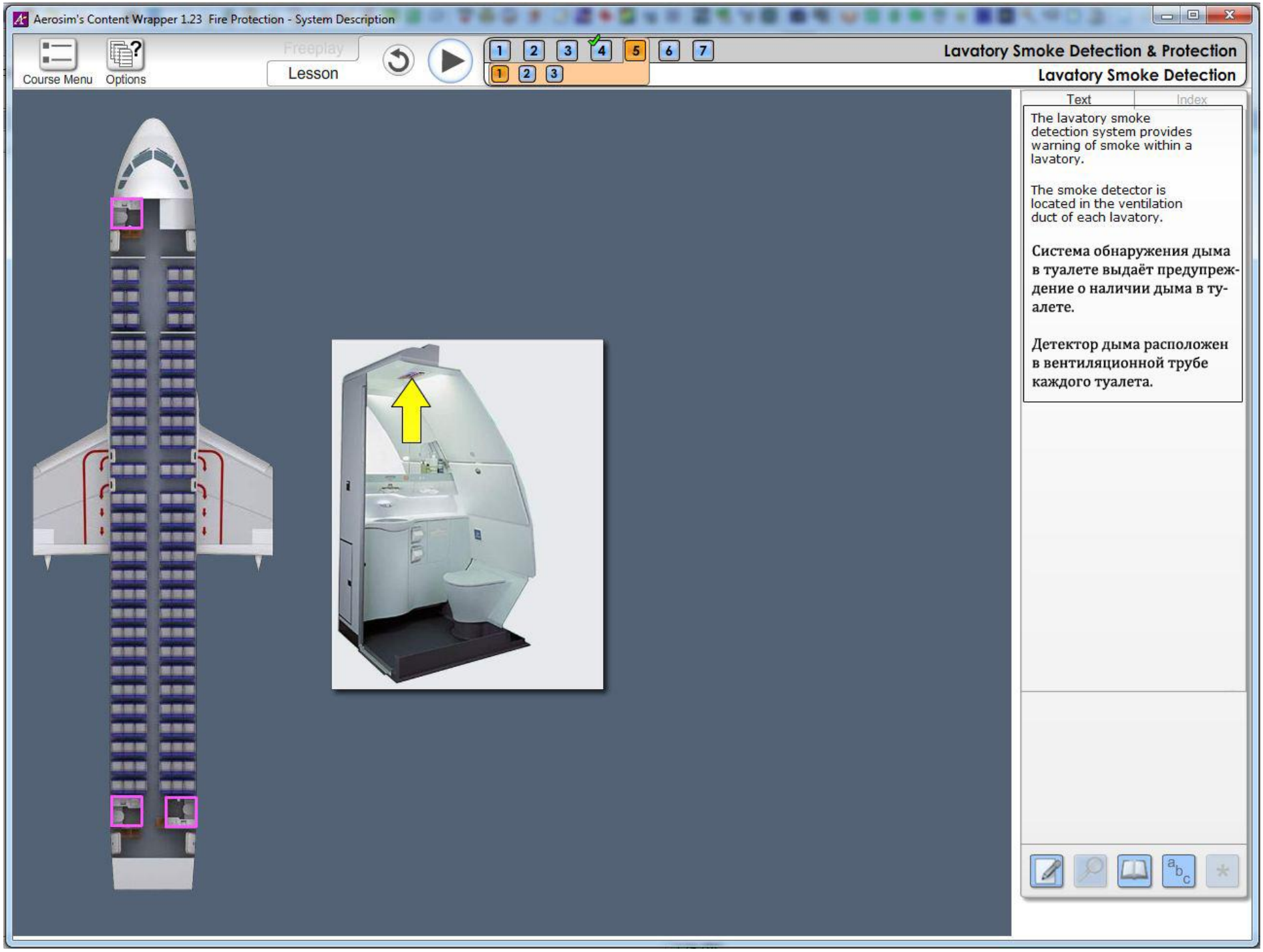

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Cargo Smoke Detection & Protection
Cargo Fire Test
Text
Index
If it is the first flight of the day, a test of the cargo fire protection system is required.
To properly perform this test, you must press and hold the TEST pb for approximately three seconds.
The following indications appear:
Both DISCH lights illuminate
The MASTER WARN lights illuminate accompanied by the continuous repetitive chime
The FWD and AFT SMOKE lights illuminate
Загораются лампы FWD и AFT SMOKE.
CARGO SMOKE
FWD
TEST
AFT
SMOKE
SMOKE
AGENT 1
AGENT 2
DISCH 1
DISCH 2
AGENT 1
AGENT 2
The Continuous Repetitive Chime has been silenced
Прерывистый непрерывно повто-ряющийся звуковой сигнал
FOB: 21200 LBS
SMOKE FWD CARGO SMOKE
.IF FWD CRG CLOSED:
-AGENT.....DISCH
AFT CARGO SMOKE
.IF AFT CRG CLOSED:
-AGENT.....DISCH
PARK BRK
NW STRG DISC
TCAS STBY
APU BLEED

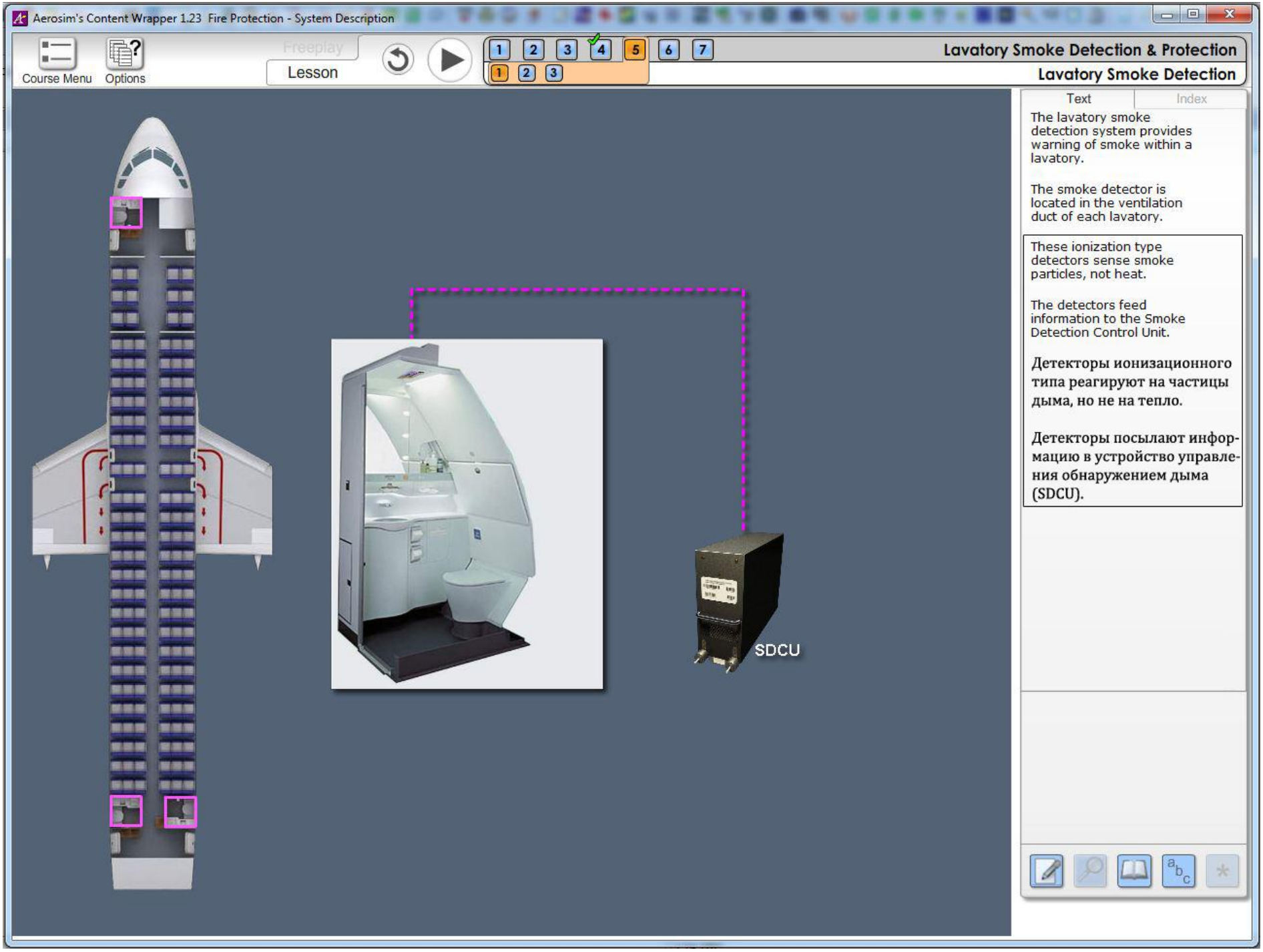

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Cargo Smoke Detection & Protection
Cargo Fire Test
Text
Index
If it is the first flight of the day, a test of the cargo fire protection system is required.
To properly perform this test, you must press and hold the TEST pb for approximately three seconds.
The following indications appear:
Both DISCH lights illuminate
The MASTER WARN lights illuminate accompanied by the continuous repetitive chime
The FWD and AFT SMOKE lights illuminate
The FWD and AFT CARGO SMOKE warning messages appear on the upper ECAM
На верхнем дисплее ECAM появляются предупреждающие сообщения FWD и AFT CARGO SMOKE.
CARGO SMOKE
FWD
TEST
AFT
SMOKE
SMOKE
AGENT 1
AGENT 2
DISCH 1
DISCH 2
AGENT 1
AGENT 2
FOB: 21200 LBS
SMOKE FWD CARGO SMOKE
.IF FWD CRG CLOSED:
-AGENT.....DISCH
AFT CARGO SMOKE
.IF AFT CRG CLOSED:
-AGENT.....DISCH
PARK BRK
NW STRG DISC
TCAS STBY
APU BLEED

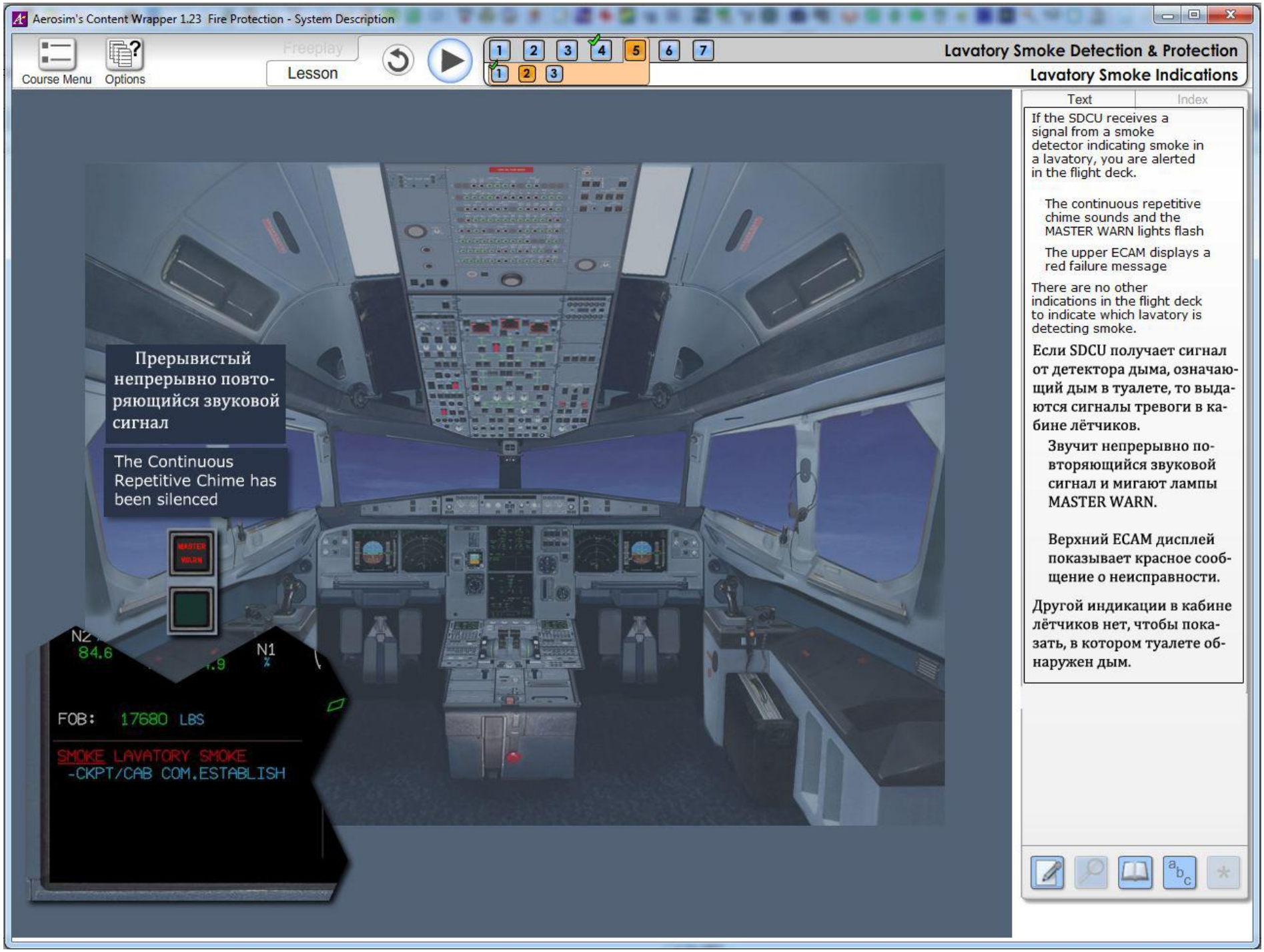

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Cargo Smoke Detection & Protection
Cargo Fire Test
Text
Index
If it is the first flight of the day, a test of the cargo fire protection system is required.
To properly perform this test, you must press and hold the TEST pb for approximately three seconds.
The following indications appear:
Both DISCH lights illuminate
The MASTER WARN lights illuminate accompanied by the continuous repetitive chime
The FWD and AFT SMOKE lights illuminate
The FWD and AFT CARGO SMOKE warning messages appear on the upper ECAM
Both Smoke Detection Control Unit channels are tested separately; therefore, a short pause will occur after the first test completes before the second channel tests.
Оба канала устройства управления обнаружением дыма тестируются отдельно; поэтому имеется короткая пауза после завершения теста первого канала и началом тестирования второго.
CARGO SMOKE
FWD
TEST
AFT
AGENT 1
AGENT 2
AGENT 1
AGENT 2
FOB: 21200 LBS
SEAT BELTS
NO SMOKING
PARK BRK
NW STRG DISC
TCAS STBY
APU BLEED

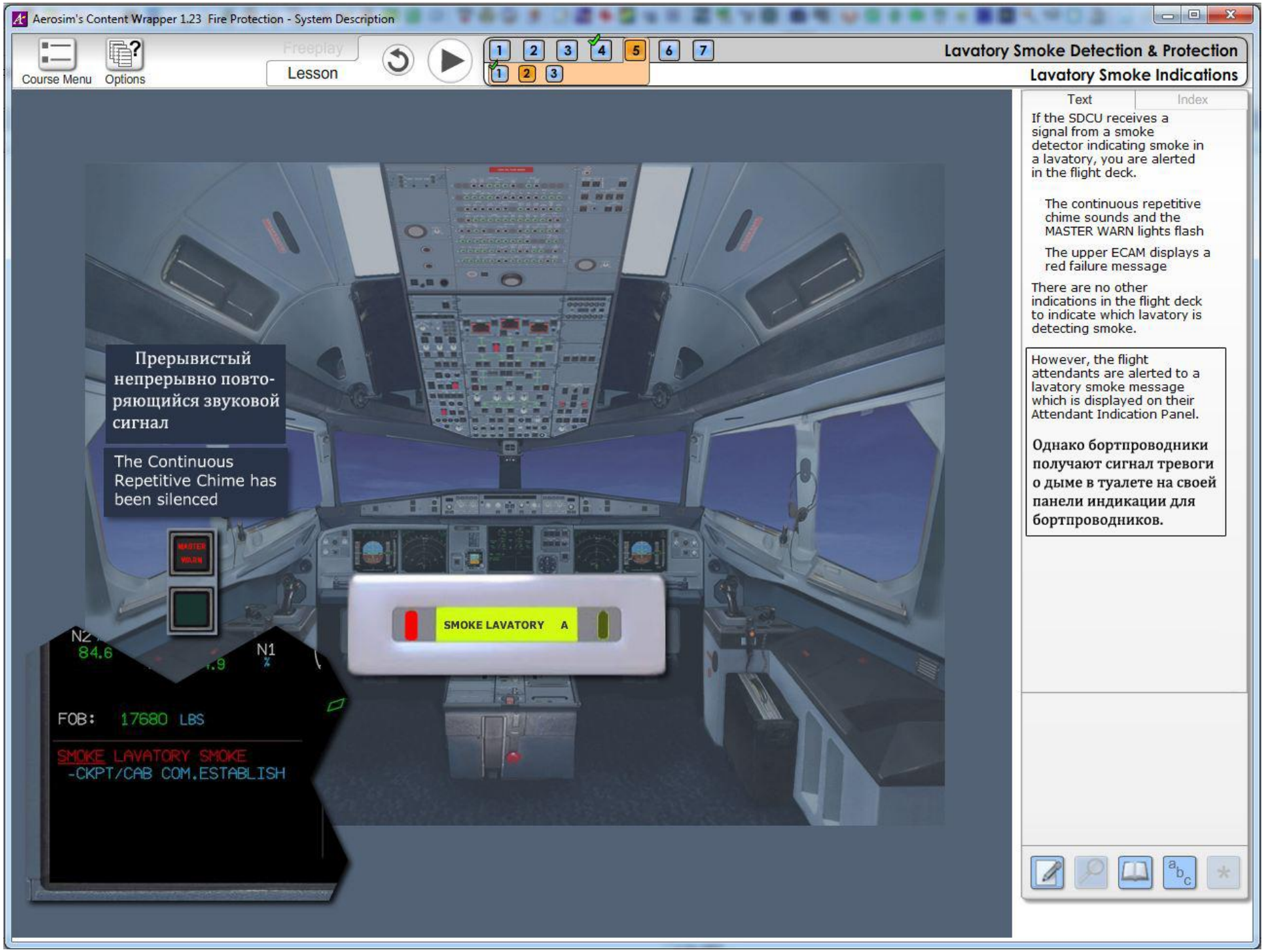

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Cargo Smoke Detection & Protection
Cargo Fire Test
Text
Index
If it is the first flight of the day, a test of the cargo fire protection system is required.
To properly perform this test, you must press and hold the TEST pb for approximately three seconds.
The following indications appear:
Both DISCH lights illuminate
The MASTER WARN lights illuminate accompanied by the continuous repetitive chime
The FWD and AFT SMOKE lights illuminate
The FWD and AFT CARGO SMOKE warning messages appear on the upper ECAM
Both Smoke Detection Control Unit channels are tested separately; therefore, a short pause will occur after the first test completes before the second channel tests.
CARGO SMOKE
FWD
TEST
AFT
SMOKE
SMOKE
AGENT 1
AGENT 2
DISCH 1
DISCH 2
AGENT 1
AGENT 2
The Continuous Repetitive Chime has been silenced
Прерывистый непрерывно повто-ряющийся звуковой сигнал
FOB: 21200 LBS
SMOKE FWD CARGO SMOKE
.IF FWD CRG CLOSED:
-AGENT.....DISCH
AFT CARGO SMOKE
.IF AFT CRG CLOSED:
-AGENT.....DISCH
PARK BRK
NW STRG DISC
TCAS STBY
APU BLEED

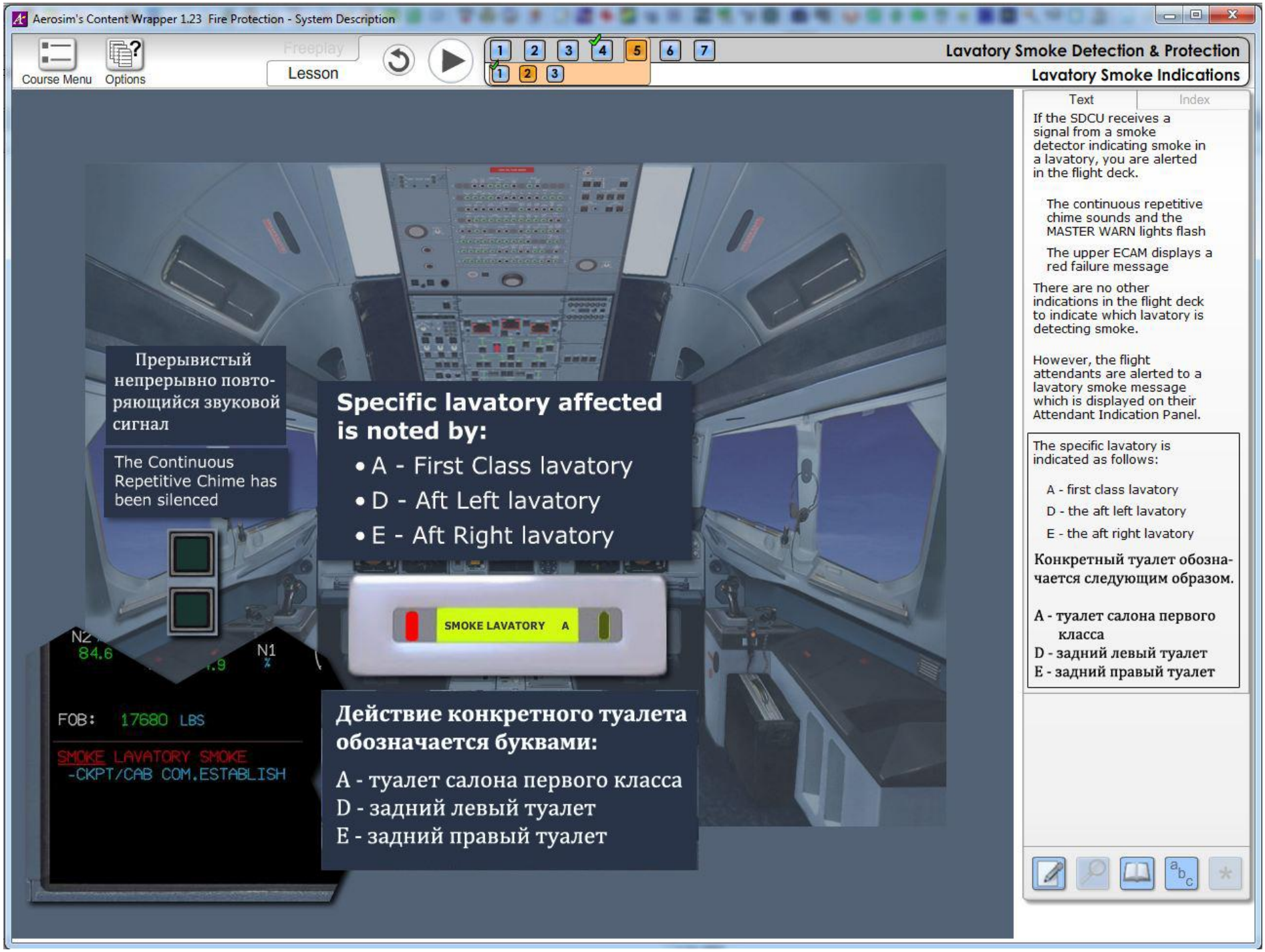

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Cargo Smoke Detection & Protection
Cargo Fire Test
Text
Index
If it is the first flight of the day, a test of the cargo fire protection system is required.
To properly perform this test, you must press and hold the TEST pb for approximately three seconds.
The following indications appear:
Both DISCH lights illuminate
The MASTER WARN lights illuminate accompanied by the continuous repetitive chime
The FWD and AFT SMOKE lights illuminate
The FWD and AFT CARGO SMOKE warning messages appear on the upper ECAM
Both Smoke Detection Control Unit channels are tested separately; therefore, a short pause will occur after the first test completes before the second channel tests.
This indicates a valid test of the cargo smoke detection system.
Такая индикация соответствует правильному тесту системы обнаружения дыма в грузовых отсеках.
CARGO SMOKE
FWD
TEST
AFT
AGENT 1
AGENT 1
AGENT 2
AGENT 2
FOB: 21200 LBS
SEAT BELTS
NO SMOKING
PARK BRK
NW STRG DISC
TCAS STBY
APU BLEED

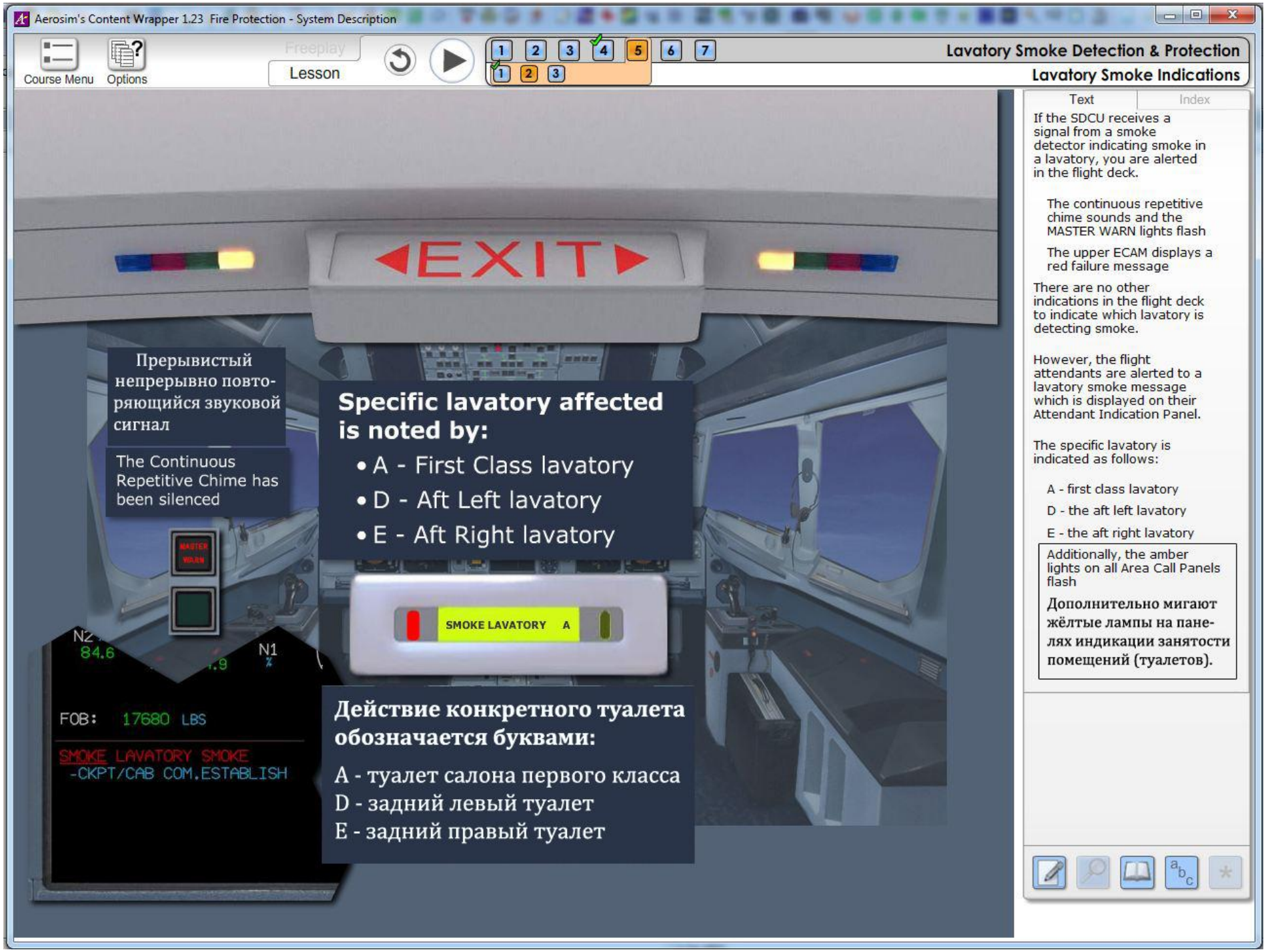

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Lavatory Smoke Detection & Protection
Lavatory Smoke Detection
Text
Index
The lavatory smoke detection system provides warning of smoke within a lavatory.
The smoke detector is located in the ventilation duct of each lavatory.
Система обнаружения дыма в туалете выдаёт предупреждение о наличии дыма в туалете.
Детектор дыма расположен в вентиляционной трубе каждого туалета.

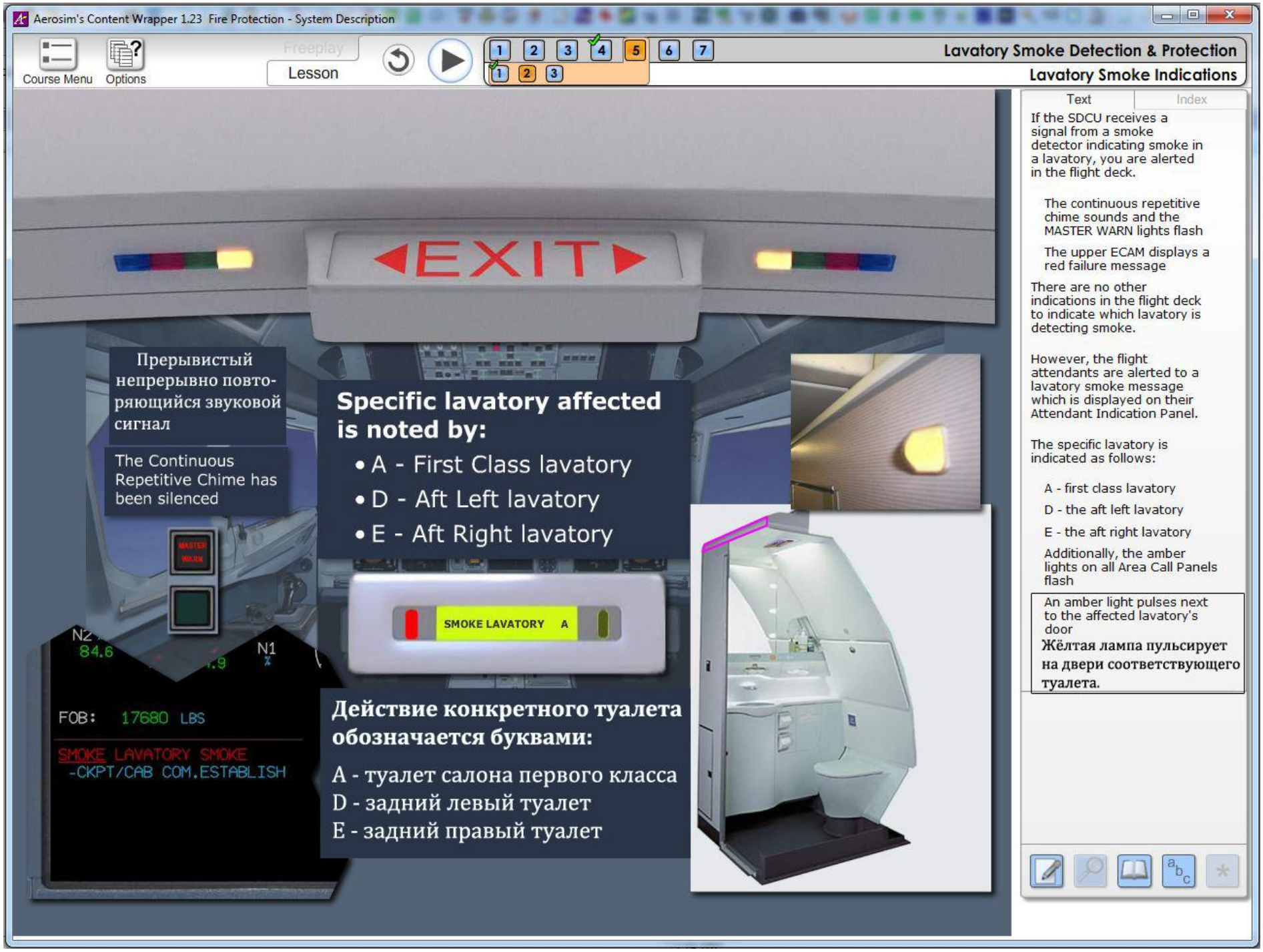

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Lavatory Smoke Detection & Protection
Lavatory Smoke Detection
Text
Index
The lavatory smoke detection system provides warning of smoke within a lavatory.
The smoke detector is located in the ventilation duct of each lavatory.
These ionization type detectors sense smoke particles, not heat.
The detectors feed information to the Smoke Detection Control Unit.
Детекторы ионизационного типа реагируют на частицы дыма, но не на тепло.
Детекторы посылают информацию в устройство управления обнаружением дыма (SDCU).
SDCU

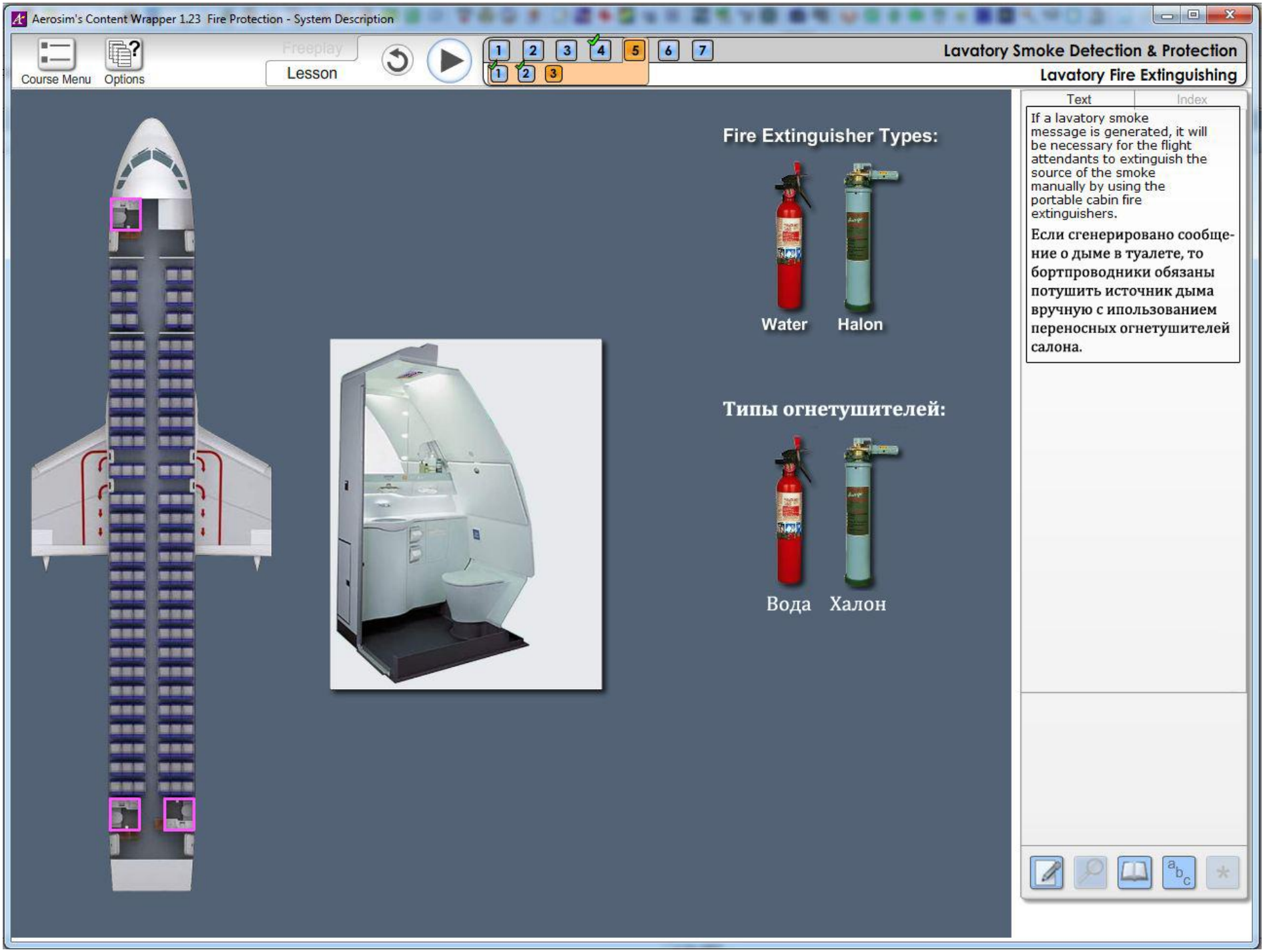

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Lavatory Smoke Detection & Protection
Lavatory Smoke Indications
Text
Index
If the SDCU receives a signal from a smoke detector indicating smoke in a lavatory, you are alerted in the flight deck.
The continuous repetitive chime sounds and the MASTER WARN lights flash
The upper ECAM displays a red failure message
There are no other indications in the flight deck to indicate which lavatory is detecting smoke.
Если SDCU получает сигнал от детектора дыма, означающий дым в туалете, то выдаются сигналы тревоги в кабине лётчиков.
Звучит непрерывно повторяющийся звуковой сигнал и мигают лампы MASTER WARN.
Верхний ECAM дисплей показывает красное сообщение о неисправности.
Другой индикации в кабине лётчиков нет, чтобы показать, в котором туалете обнаружен дым.
Прерывистый непрерывно повторяющийся звуковой сигнал
The Continuous Repetitive Chime has been silenced
N1
FOB: 17680 LBS
SMOKE LAVATORY SMOKE
-CKPT/CAB COM.ESTABLISH


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Lavatory Smoke Detection & Protection
Lavatory Smoke Indications
Text
Index
If the SDCU receives a signal from a smoke detector indicating smoke in a lavatory, you are alerted in the flight deck.
The continuous repetitive chime sounds and the MASTER WARN lights flash
The upper ECAM displays a red failure message
There are no other indications in the flight deck to indicate which lavatory is detecting smoke.
However, the flight attendants are alerted to a lavatory smoke message which is displayed on their Attendant Indication Panel.
Однако бортпроводники получают сигнал тревоги о дыме в туалете на своей панели индикации для бортпроводников.
Прерывистый непрерывно повто-ряющийся звуковой сигнал
The Continuous Repetitive Chime has been silenced
MASTER WARN
SMOKE LAVATORY A
N1
FOB: 17680 LBS
SMOKE LAVATORY SMOKE
-CKPT/CAB COM.ESTABLISH


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Lavatory Smoke Detection & Protection
Lavatory Smoke Indications
Text
Index
If the SDCU receives a signal from a smoke detector indicating smoke in a lavatory, you are alerted in the flight deck.
The continuous repetitive chime sounds and the MASTER WARN lights flash
The upper ECAM displays a red failure message
There are no other indications in the flight deck to indicate which lavatory is detecting smoke.
However, the flight attendants are alerted to a lavatory smoke message which is displayed on their Attendant Indication Panel.
The specific lavatory is indicated as follows:
A - first class lavatory
D - the aft left lavatory
E - the aft right lavatory
Конкретный туалет обозначается следующим образом.
A - туалет салона первого класса
D - задний левый туалет
E - задний правый туалет
Прерывистый непрерывно повторяющийся звуковой сигнал
The Continuous Repetitive Chime has been silenced
Specific lavatory affected is noted by:
• A - First Class lavatory
• D - Aft Left lavatory
• E - Aft Right lavatory
SMOKE LAVATORY A
N2
84.6
N1
FOB: 17680 LBS
SMOKE LAVATORY SMOKE
-CKPT/CAB COM.ESTABLISH
Действие конкретного туалета обозначается буквами:
A - туалет салона первого класса
D - задний левый туалет
E - задний правый туалет


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
1 2 3 4 5 6 7
1 2 3
Lavatory Smoke Detection & Protection
Lavatory Smoke Indications
Text
Index
If the SDCU receives a signal from a smoke detector indicating smoke in a lavatory, you are alerted in the flight deck.
The continuous repetitive chime sounds and the MASTER WARN lights flash
The upper ECAM displays a red failure message
There are no other indications in the flight deck to indicate which lavatory is detecting smoke.
However, the flight attendants are alerted to a lavatory smoke message which is displayed on their Attendant Indication Panel.
The specific lavatory is indicated as follows:
A - first class lavatory
D - the aft left lavatory
E - the aft right lavatory
Additionally, the amber lights on all Area Call Panels flash
Дополнительно мигают жёлтые лампы на панелях индикации занятости помещений (туалетов).
EXIT
Прерывистый непрерывно повторяющийся звуковой сигнал
The Continuous Repetitive Chime has been silenced
Specific lavatory affected is noted by:
• A - First Class lavatory
• D - Aft Left lavatory
• E - Aft Right lavatory
SMOKE LAVATORY A
Действие конкретного туалета обозначается буквами:
A - туалет салона первого класса
D - задний левый туалет
E - задний правый туалет
N1
FOB: 17680 LBS
SMOKE LAVATORY SMOKE
-CKPT/CAB COM.ESTABLISH


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Lavatory Smoke Detection & Protection
Lavatory Smoke Indications
Text
Index
If the SDCU receives a signal from a smoke detector indicating smoke in a lavatory, you are alerted in the flight deck.
The continuous repetitive chime sounds and the MASTER WARN lights flash
The upper ECAM displays a red failure message
There are no other indications in the flight deck to indicate which lavatory is detecting smoke.
However, the flight attendants are alerted to a lavatory smoke message which is displayed on their Attendant Indication Panel.
The specific lavatory is indicated as follows:
A - first class lavatory
D - the aft left lavatory
E - the aft right lavatory
Additionally, the amber lights on all Area Call Panels flash
An amber light pulses next to the affected lavatory's door
Жёлтая лампа пульсирует на двери соответствующего туалета.
◀EXIT▶
Прерывистый непрерывно повто-ряющийся звуковой сигнал
The Continuous Repetitive Chime has been silenced
Specific lavatory affected is noted by:
• A - First Class lavatory
• D - Aft Left lavatory
• E - Aft Right lavatory
SMOKE LAVATORY A
FOB: 17680 LBS
SMOKE LAVATORY SMOKE
-CKPT/CAB COM.ESTABLISH
Действие конкретного туалета обозначается буквами:
A - туалет салона первого класса
D - задний левый туалет
E - задний правый туалет


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
1 2 3 4 5 6 7
1 2 3
Lavatory Smoke Detection & Protection
Lavatory Fire Extinguishing
Text
Index
If a lavatory smoke message is generated, it will be necessary for the flight attendants to extinguish the source of the smoke manually by using the portable cabin fire extinguishers.
Если сгенерировано сообщение о дыме в туалете, то бортпроводники обязаны потушить источник дыма вручную с ипользованием переносных огнетушителей салона.
Fire Extinguisher Types:
Water
Halon
Типы огнетушителей:
Вода
Халон

Aerosim's Content Wrapper 1.23 Fire Protection - System Description

Course Menu Options Freeplay Lesson

Lavatory Smoke Detection & Protection

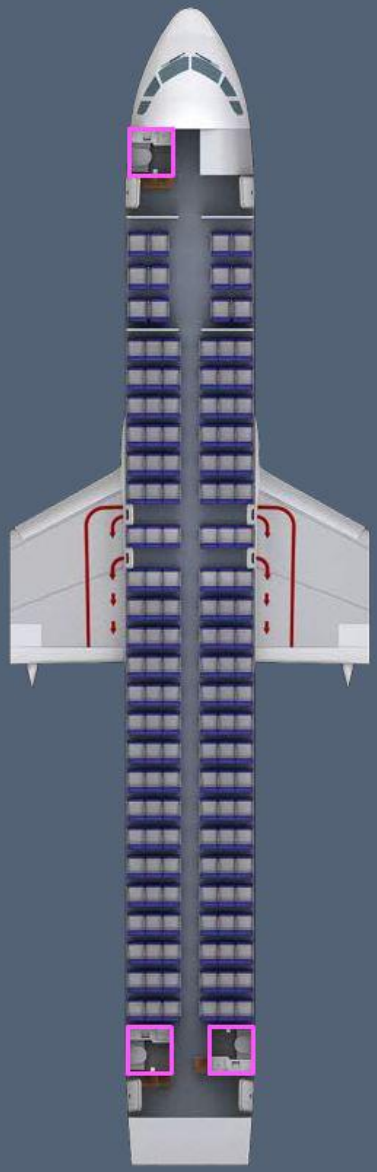
Lavatory Fire Extinguishing

Text Index

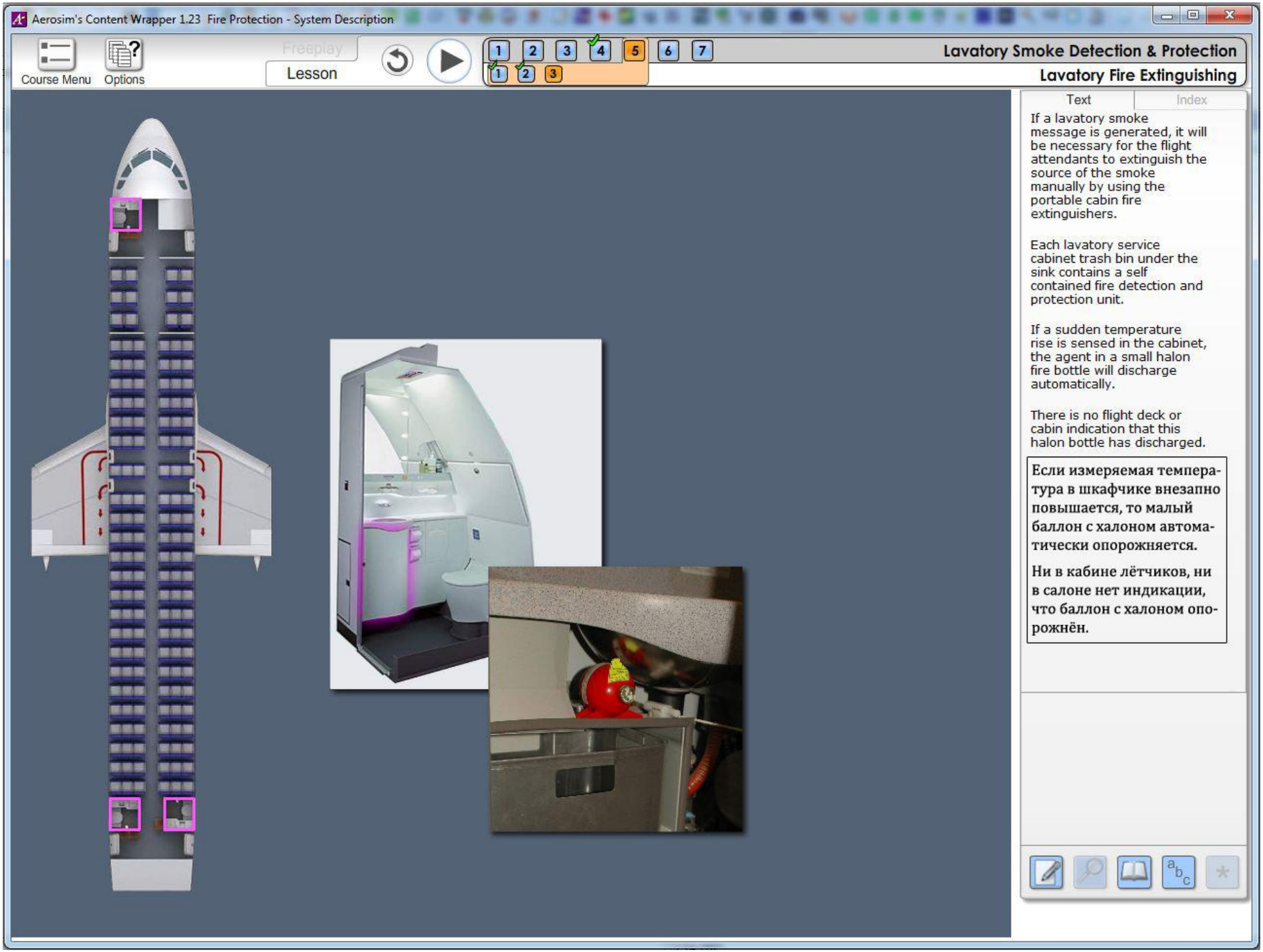
If a lavatory smoke message is generated, it will be necessary for the flight attendants to extinguish the source of the smoke manually by using the portable cabin fire extinguishers.

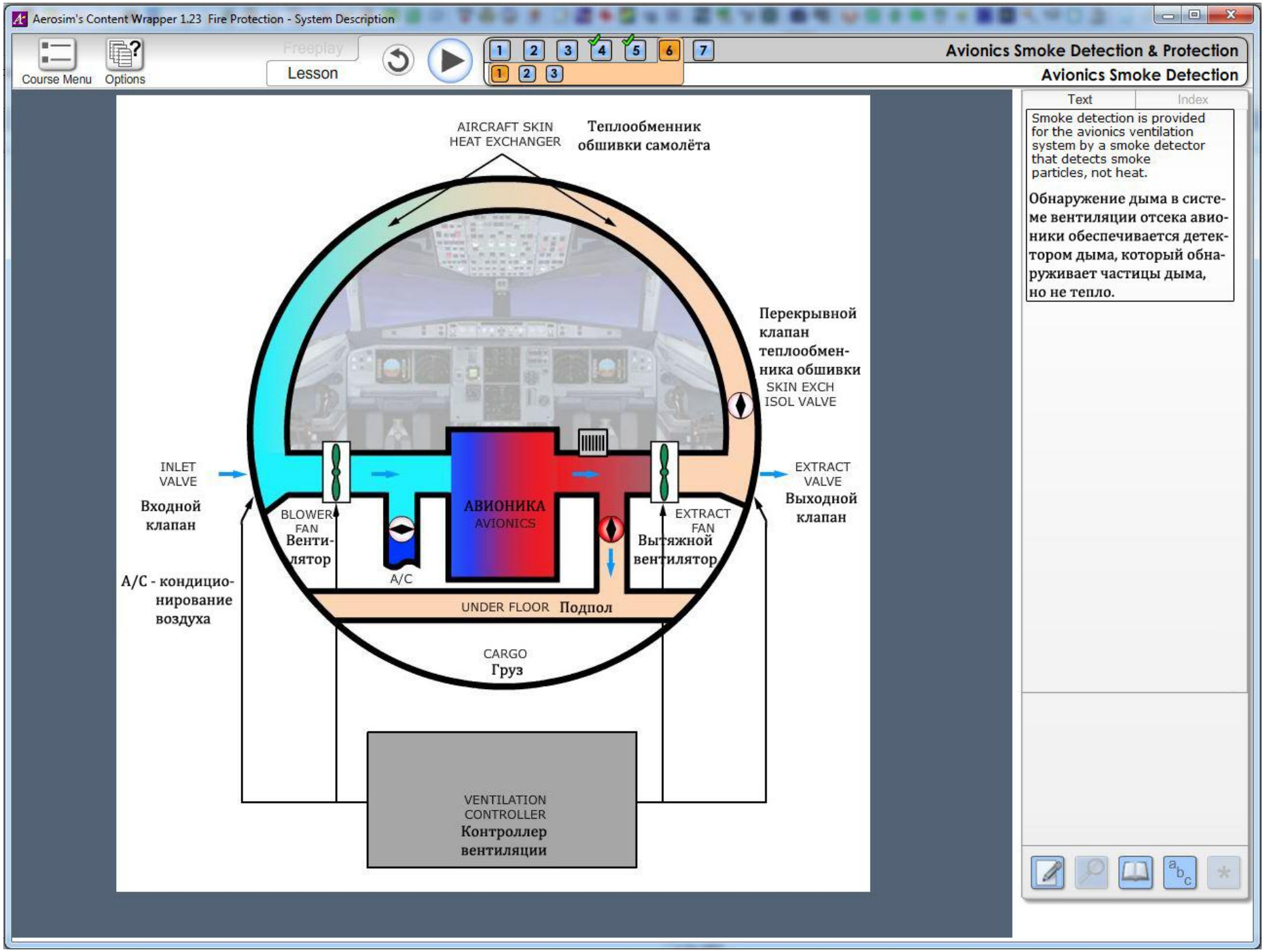
Each lavatory service cabinet trash bin under the sink contains a self contained fire detection and protection unit.

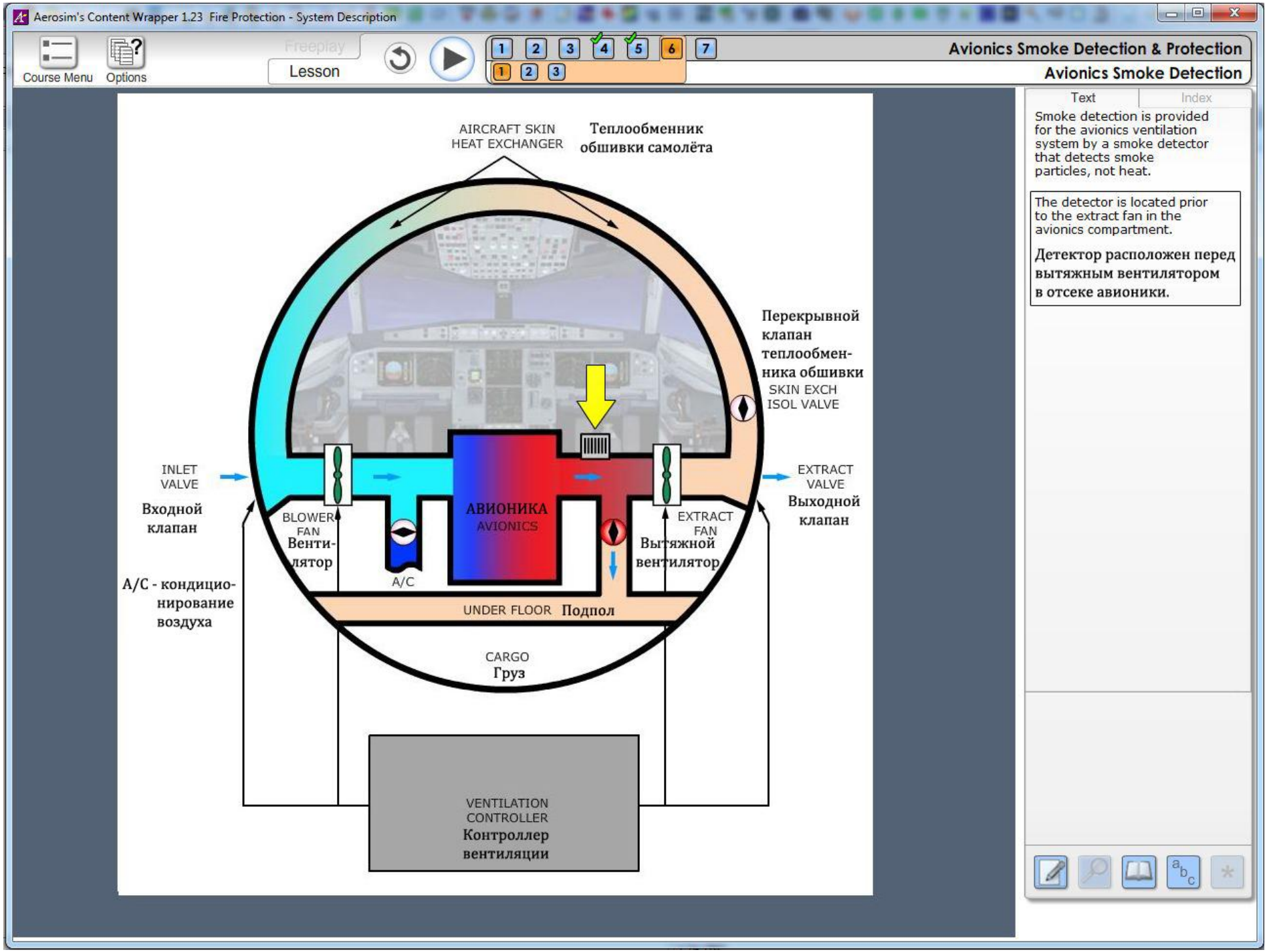
Служебный шкафчик отделения для мусора каждого туалета под раковиной содержит собственное устройство обнаружения и тушения огня.

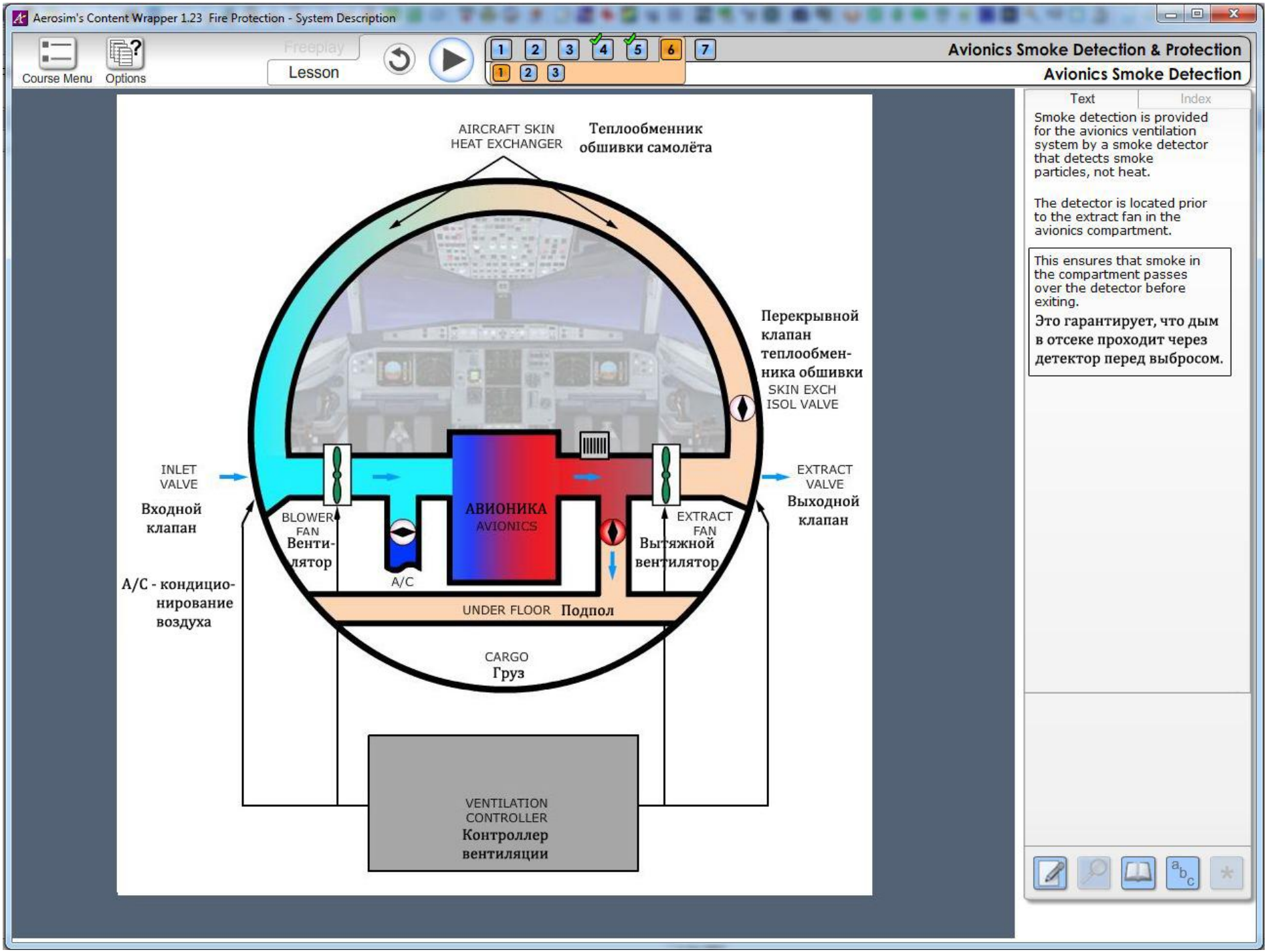


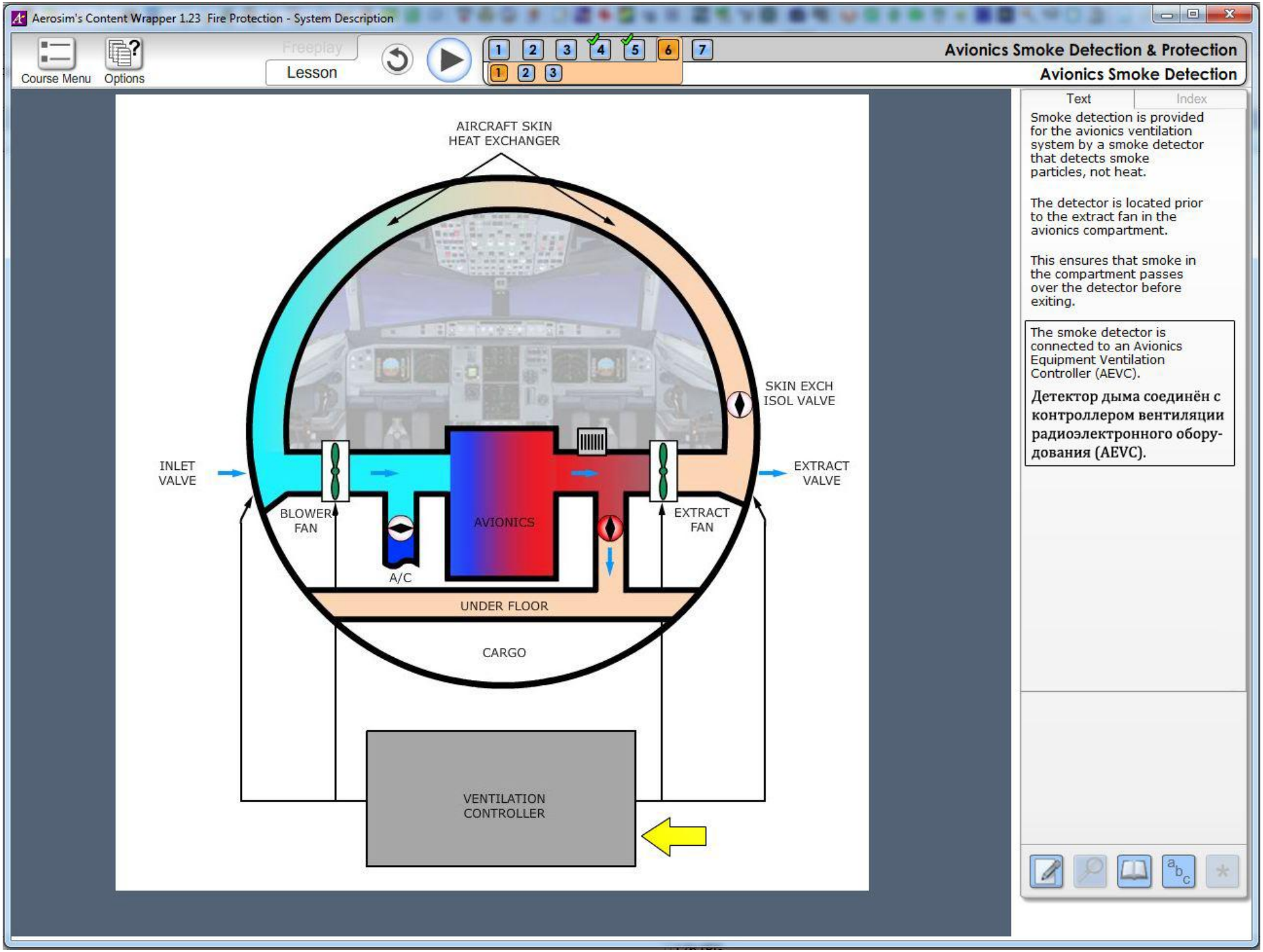


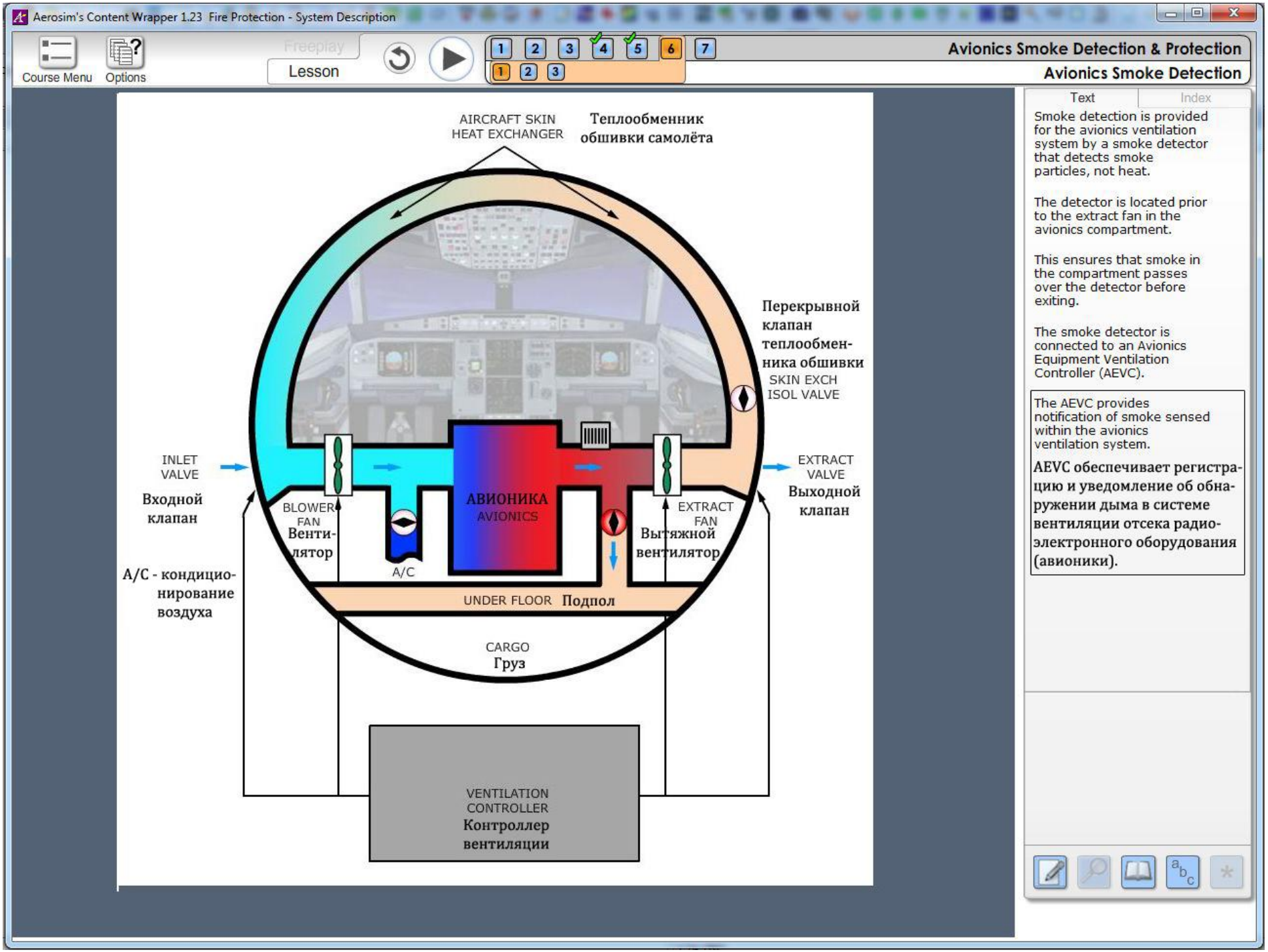

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
1 2 3 4 5 6 7
1 2 3
Lavatory Smoke Detection & Protection
Lavatory Fire Extinguishing
Text
Index
If a lavatory smoke message is generated, it will be necessary for the flight attendants to extinguish the source of the smoke manually by using the portable cabin fire extinguishers.
Each lavatory service cabinet trash bin under the sink contains a self contained fire detection and protection unit.
If a sudden temperature rise is sensed in the cabinet, the agent in a small halon fire bottle will discharge automatically.
There is no flight deck or cabin indication that this halon bottle has discharged.
Если измеряемая температура в шкафчике внезапно повышается, то малый баллон с халоном автоматически опорожняется.
Ни в кабине лётчиков, ни в салоне нет индикации, что баллон с халоном опорожнён.

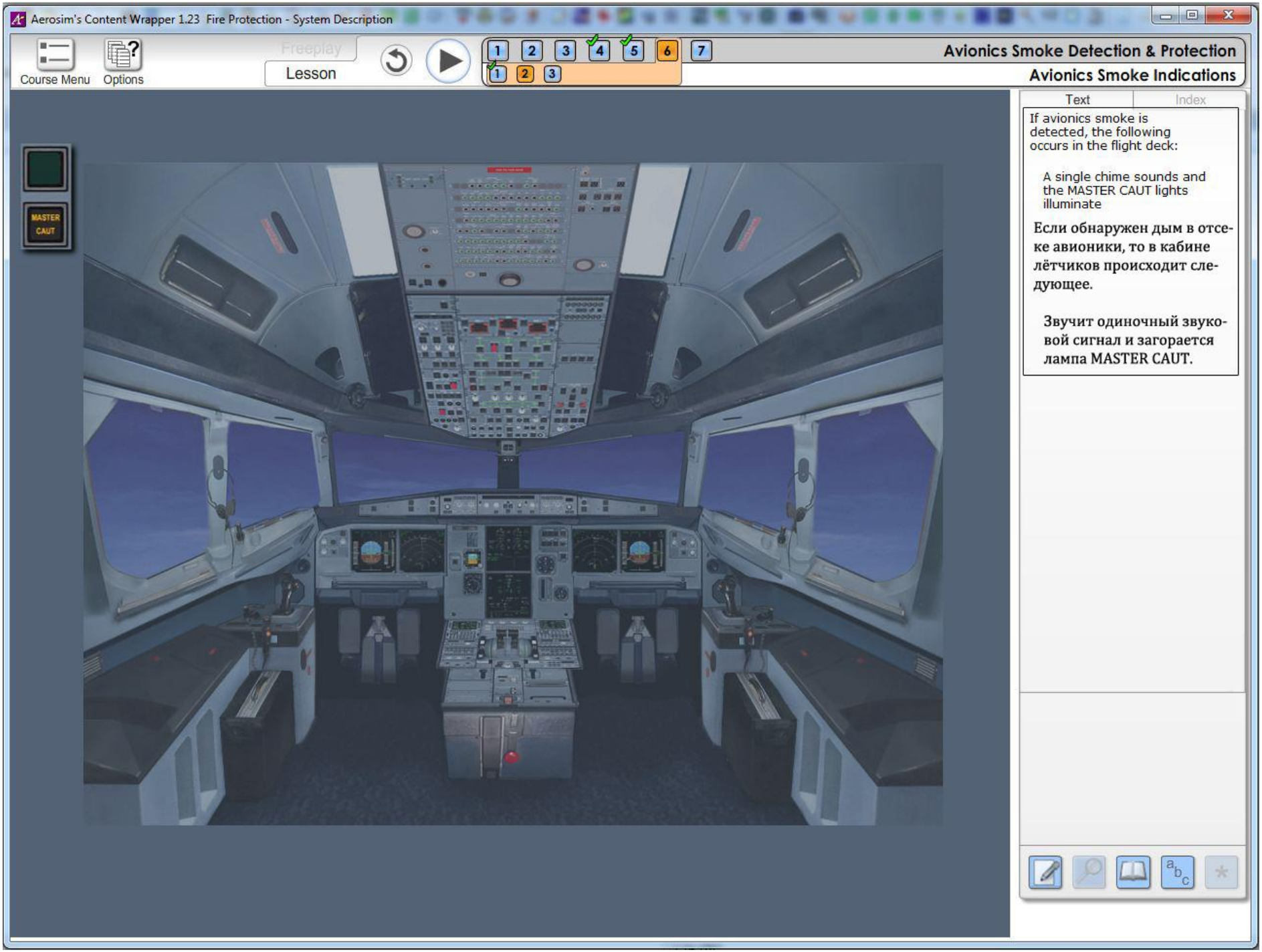

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Avionics Smoke Detection & Protection
Avionics Smoke Detection
Text
Index
Smoke detection is provided for the avionics ventilation system by a smoke detector that detects smoke particles, not heat.
Обнаружение дыма в системе вентиляции отсека авионики обеспечивается детектором дыма, который обнаруживает частицы дыма, но не тепло.
AIRCRAFT SKIN HEAT EXCHANGER
Теплообменник обшивки самолёта
Перекрывной клапан теплообменника обшивки
SKIN EXCH ISOL VALVE
INLET VALVE
Входной клапан
EXTRACT VALVE
Выходной клапан
BLOWER FAN
Вентилятор
АВИОНИКА
AVIONICS
EXTRACT FAN
Вытяжной вентилятор
A/C
A/C - кондиционирование воздуха
UNDER FLOOR Подпол
CARGO
Груз
VENTILATION CONTROLLER
Контроллер вентиляции

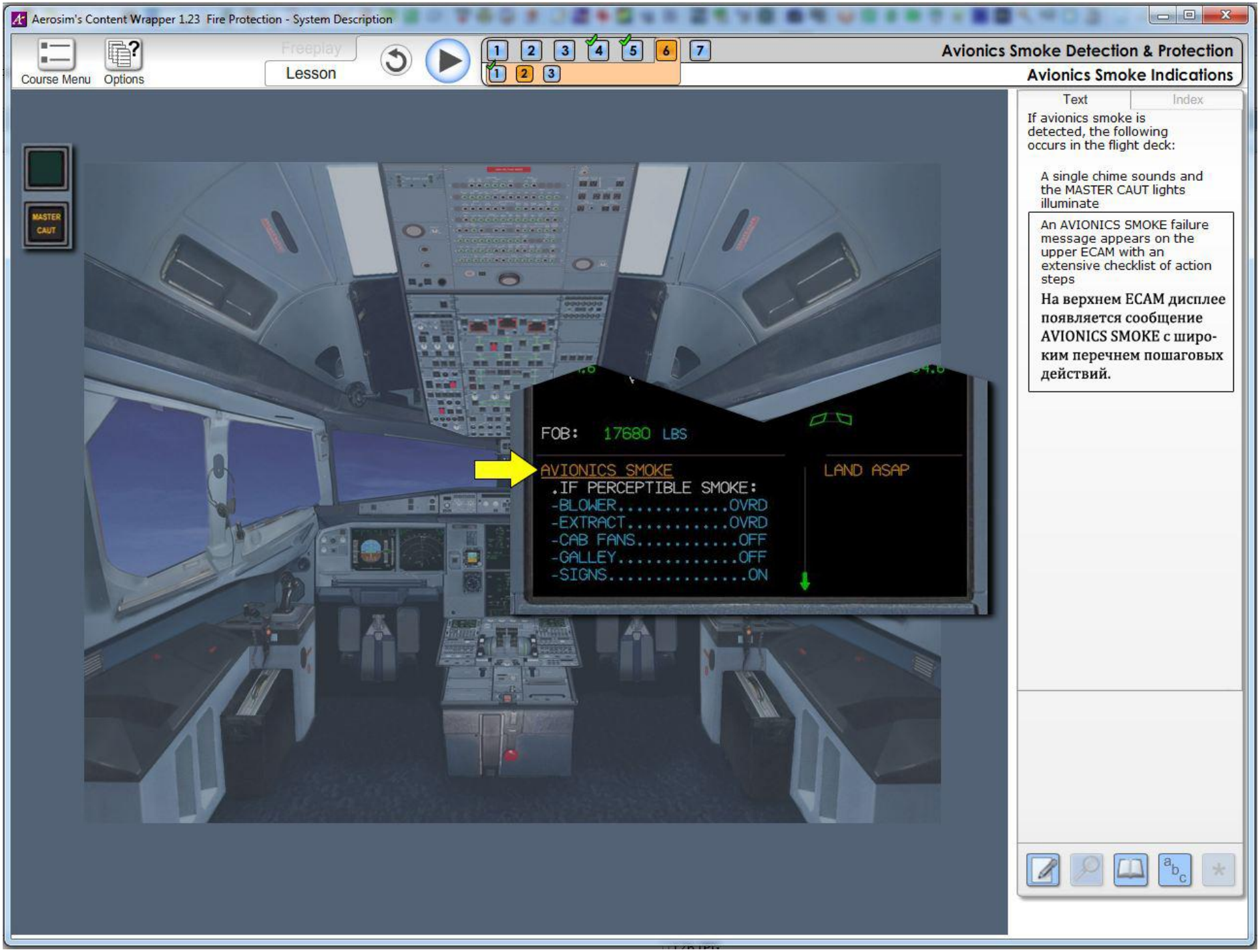

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Avionics Smoke Detection & Protection
Avionics Smoke Detection
Text
Index
Smoke detection is provided for the avionics ventilation system by a smoke detector that detects smoke particles, not heat.
The detector is located prior to the extract fan in the avionics compartment.
Детектор расположен перед вытяжным вентилятором в отсеке авионики.
AIRCRAFT SKIN HEAT EXCHANGER
Теплообменник обшивки самолёта
Перекрывной клапан теплообмен-ника обшивки
SKIN EXCH ISOL VALVE
INLET VALVE
Входной клапан
EXTRACT VALVE
Выходной клапан
BLOWER FAN
Вента-лятор
АВИОНИКА
AVIONICS
EXTRACT FAN
Вытяжной вентилятор
A/C
A/C - кондицио-нирование воздуха
UNDER FLOOR Подпол
CARGO
Груз
VENTILATION CONTROLLER
Контроллер вентиляции

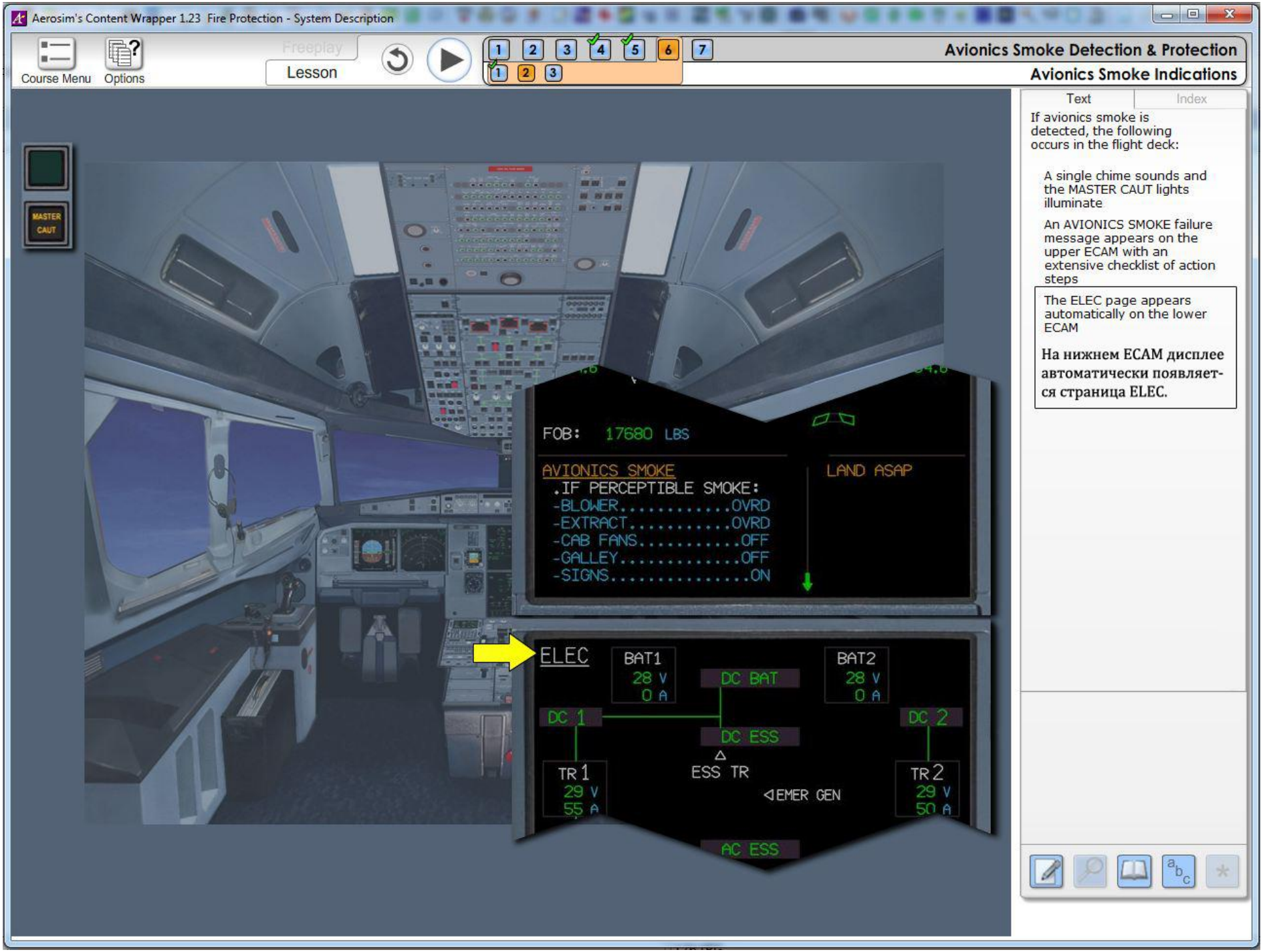

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
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Avionics Smoke Detection
Text
Index
Smoke detection is provided for the avionics ventilation system by a smoke detector that detects smoke particles, not heat.
The detector is located prior to the extract fan in the avionics compartment.
This ensures that smoke in the compartment passes over the detector before exiting.
Это гарантирует, что дым в отсеке проходит через детектор перед выбросом.
AIRCRAFT SKIN HEAT EXCHANGER
Теплообменник обшивки самолёта
Перекрывной клапан теплообменника обшивки
SKIN EXCH ISOL VALVE
INLET VALVE
Входной клапан
EXTRACT VALVE
Выходной клапан
BLOWER FAN
Вентилятор
АВИОНИКА
AVIONICS
EXTRACT FAN
Вытяжной вентилятор
A/C
A/C - кондиционирование воздуха
UNDER FLOOR Подпол
CARGO
Груз
VENTILATION CONTROLLER
Контроллер вентиляции

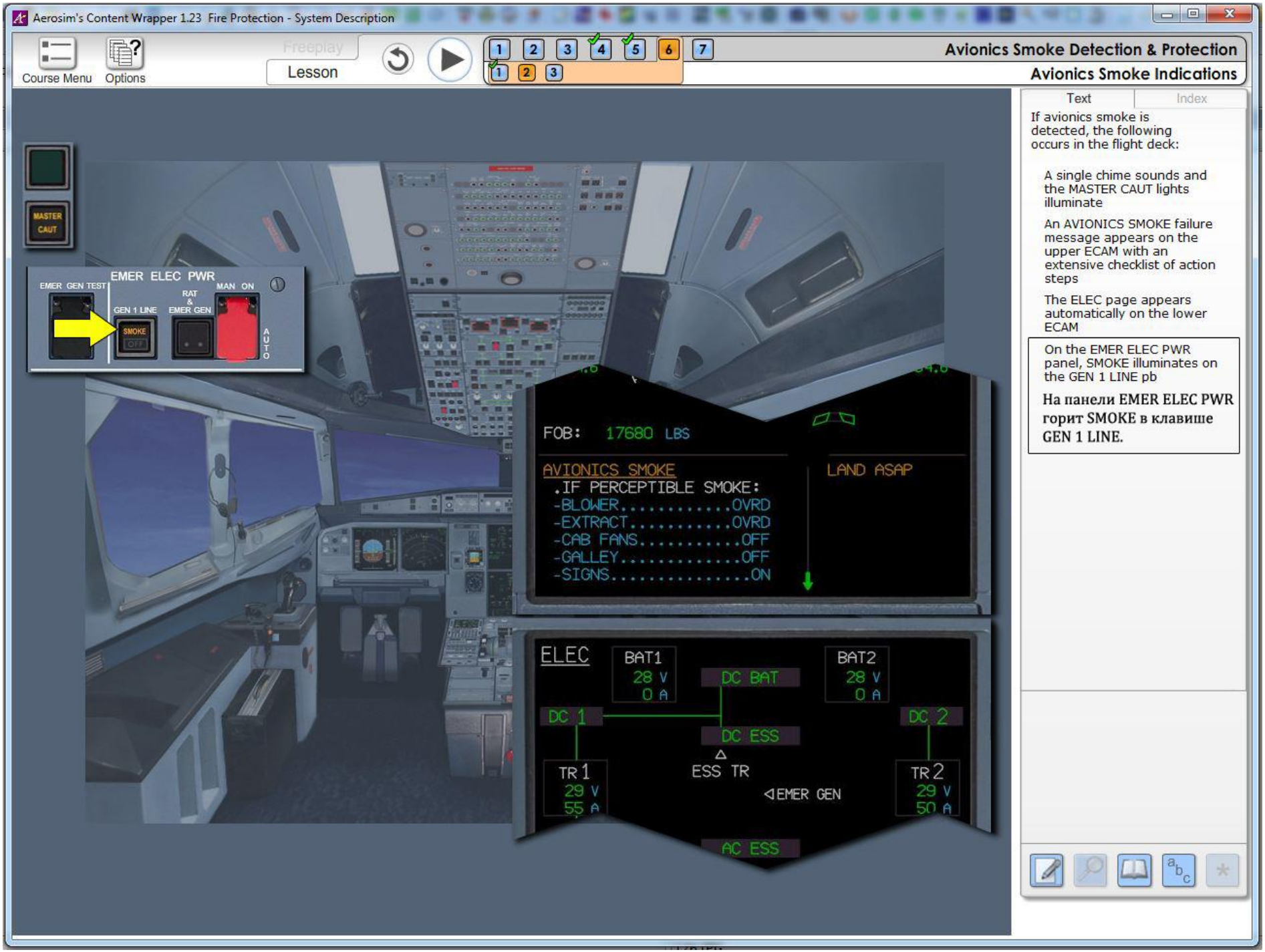

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
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Freeplay
Lesson
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Avionics Smoke Detection
Text
Index
Smoke detection is provided for the avionics ventilation system by a smoke detector that detects smoke particles, not heat.
The detector is located prior to the extract fan in the avionics compartment.
This ensures that smoke in the compartment passes over the detector before exiting.
The smoke detector is connected to an Avionics Equipment Ventilation Controller (AEVC).
Детектор дыма соединён с контроллером вентиляции радиоэлектронного оборудования (AEVC).
AIRCRAFT SKIN
HEAT EXCHANGER
SKIN EXCH
ISOL VALVE
INLET
VALVE
EXTRACT
VALVE
BLOWER
FAN
AVIONICS
EXTRACT
FAN
A/C
UNDER FLOOR
CARGO
VENTILATION
CONTROLLER


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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Avionics Smoke Detection & Protection
Avionics Smoke Detection
Text
Index
Smoke detection is provided for the avionics ventilation system by a smoke detector that detects smoke particles, not heat.
The detector is located prior to the extract fan in the avionics compartment.
This ensures that smoke in the compartment passes over the detector before exiting.
The smoke detector is connected to an Avionics Equipment Ventilation Controller (AEVC).
The AEVC provides notification of smoke sensed within the avionics ventilation system.
AEVC обеспечивает регистрацию и уведомление об обнаружении дыма в системе вентиляции отсека радиоэлектронного оборудования (авионики).
AIRCRAFT SKIN HEAT EXCHANGER
Теплообменник обшивки самолёта
Перекрывной клапан теплообменника обшивки
SKIN EXCH ISOL VALVE
INLET VALVE
Входной клапан
EXTRACT VALVE
Выходной клапан
BLOWER FAN
Вентилятор
АВИОНИКА
AVIONICS
EXTRACT FAN
Вытяжной вентилятор
A/C
A/C - кондиционирование воздуха
UNDER FLOOR Подпол
CARGO
Груз
VENTILATION CONTROLLER
Контроллер вентиляции

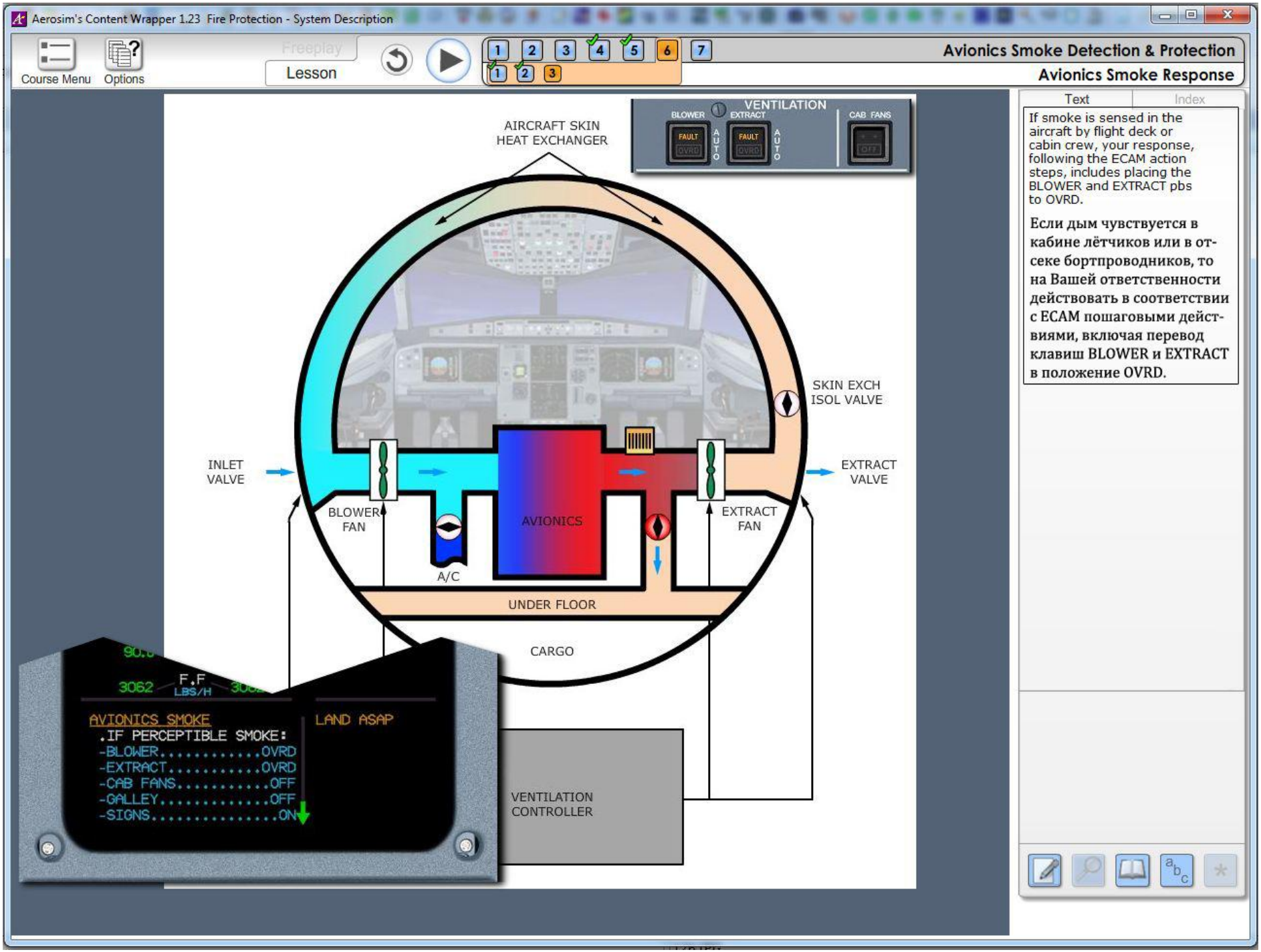

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
1 2 3 4 5 6 7
1 2 3
Avionics Smoke Detection & Protection
Avionics Smoke Indications
Text
Index
If avionics smoke is detected, the following occurs in the flight deck:
A single chime sounds and the MASTER CAUT lights illuminate
Если обнаружен дым в отсеке авионики, то в кабине лётчиков происходит следующее.
Звучит одиночный звуковой сигнал и загорается лампа MASTER CAUT.
MASTER CAUT

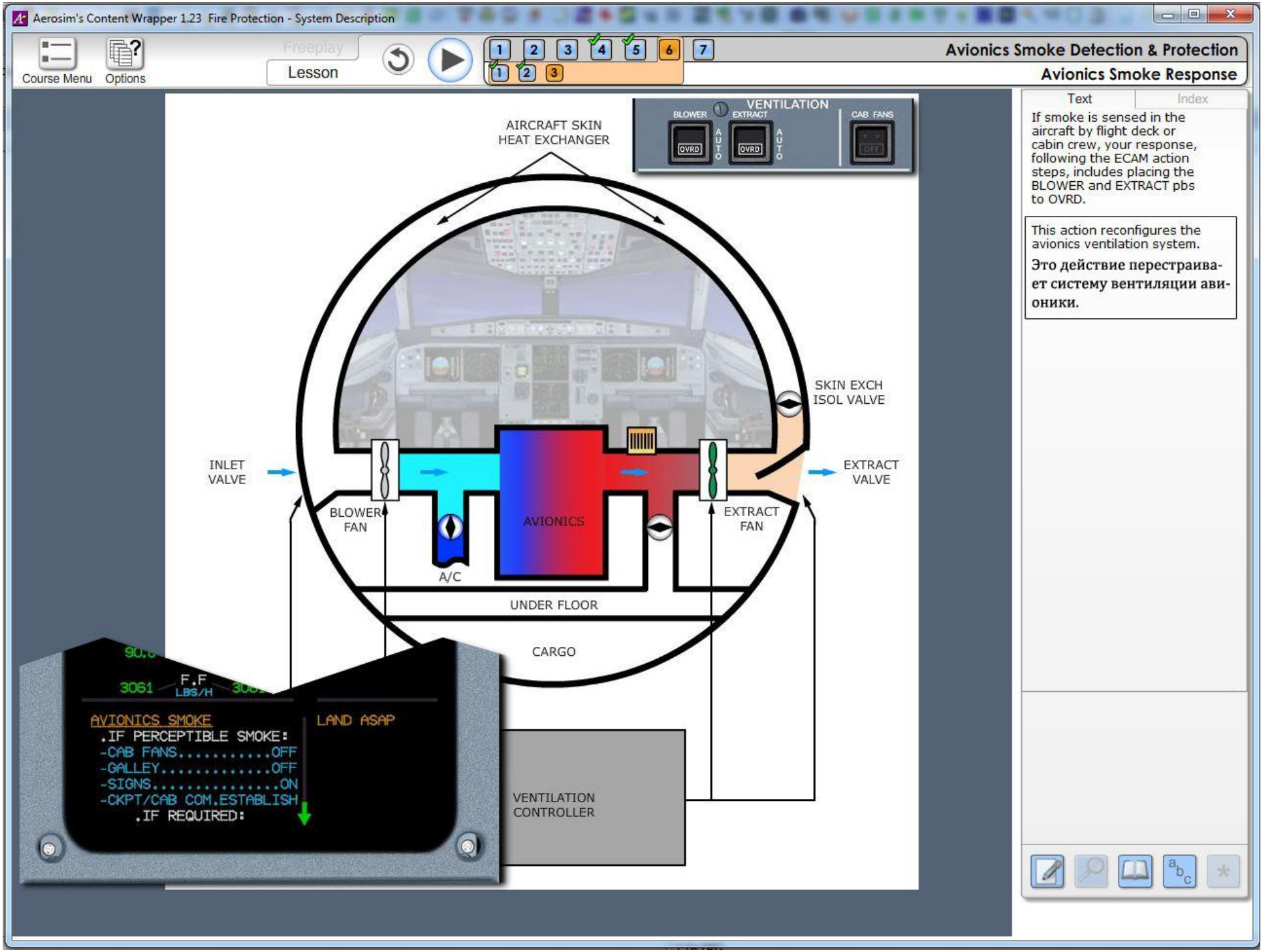

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Avionics Smoke Detection & Protection
Avionics Smoke Indications
Text
Index
If avionics smoke is detected, the following occurs in the flight deck:
A single chime sounds and the MASTER CAUT lights illuminate
An AVIONICS SMOKE failure message appears on the upper ECAM with an extensive checklist of action steps
На верхнем ECAM дисплее появляется сообщение AVIONICS SMOKE с широким перечнем пошаговых действий.
MASTER CAUT
FOB: 17680 LBS
AVIONICS SMOKE
.IF PERCEPTIBLE SMOKE:
-BLOWER.....OVRD
-EXTRACT.....OVRD
-CAB FANS.....OFF
-GALLEY.....OFF
-SIGNS.....ON
LAND ASAP

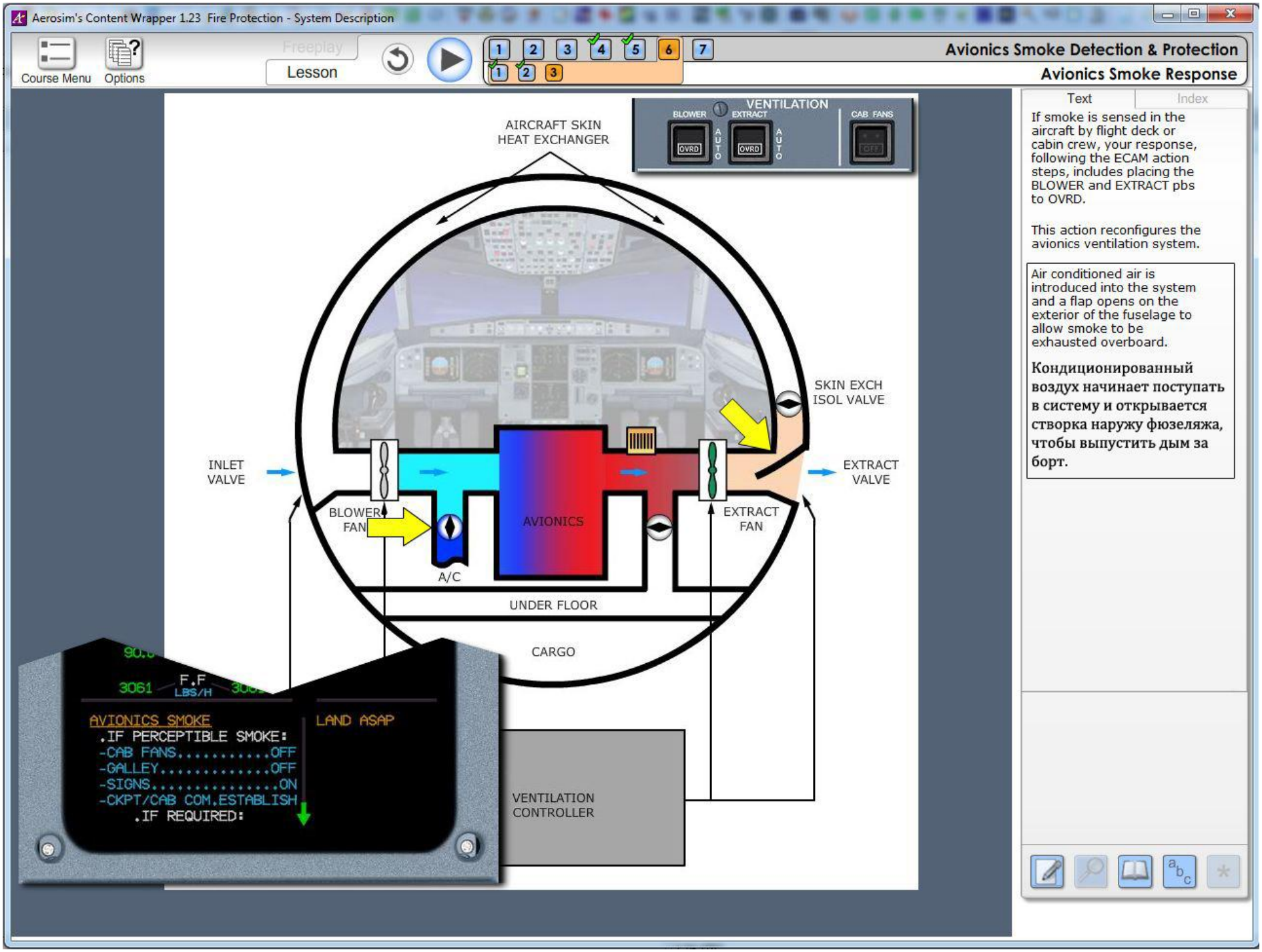

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Avionics Smoke Detection & Protection
Avionics Smoke Indications
Text
Index
If avionics smoke is detected, the following occurs in the flight deck:
A single chime sounds and the MASTER CAUT lights illuminate
An AVIONICS SMOKE failure message appears on the upper ECAM with an extensive checklist of action steps
The ELEC page appears automatically on the lower ECAM
На нижнем ECAM дисплее автоматически появляется страница ELEC.
MASTER CAUT
FOB: 17680 LBS
AVIONICS SMOKE
LAND ASAP
.IF PERCEPTIBLE SMOKE:
-BLOWER.....OVRD
-EXTRACT.....OVRD
-CAB FANS.....OFF
-GALLEY.....OFF
-SIGNS.....ON
ELEC
BAT1
28 V
0 A
BAT2
28 V
0 A
DC BAT
DC 1
DC 2
DC ESS
ESS TR
TR 1
29 V
55 A
TR 2
29 V
50 A
EMER GEN
AC ESS

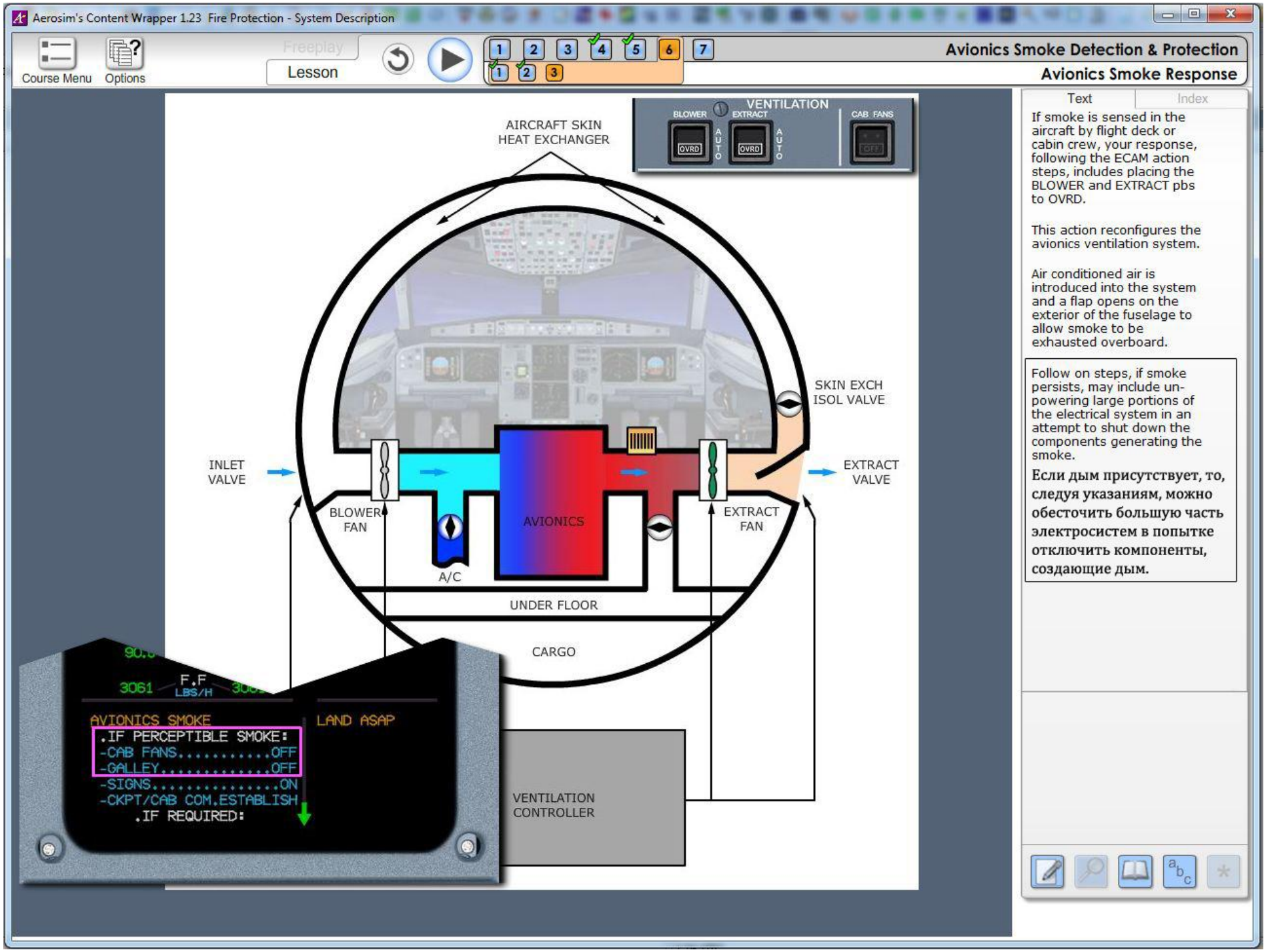

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Avionics Smoke Detection & Protection
Avionics Smoke Indications
Text
Index
If avionics smoke is detected, the following occurs in the flight deck:
A single chime sounds and the MASTER CAUT lights illuminate
An AVIONICS SMOKE failure message appears on the upper ECAM with an extensive checklist of action steps
The ELEC page appears automatically on the lower ECAM
On the EMER ELEC PWR panel, SMOKE illuminates on the GEN 1 LINE pb
На панели EMER ELEC PWR горит SMOKE в клавише GEN 1 LINE.
MASTER CAUT
EMER ELEC PWR
EMER GEN TEST
GEN 1 LINE
SMOKE
RAT & EMER GEN
MAN ON
AUTO
FOB: 17680 LBS
AVIONICS SMOKE
LAND ASAP
.IF PERCEPTIBLE SMOKE:
-BLOWER.....OVRD
-EXTRACT.....OVRD
-CAB FANS.....OFF
-GALLEY.....OFF
-SIGNS.....ON
ELEC
BAT1
28 V
0 A
DC BAT
BAT2
28 V
0 A
DC 1
DC 2
DC ESS
ESS TR
EMER GEN
TR 1
29 V
55 A
TR 2
29 V
50 A
AC ESS

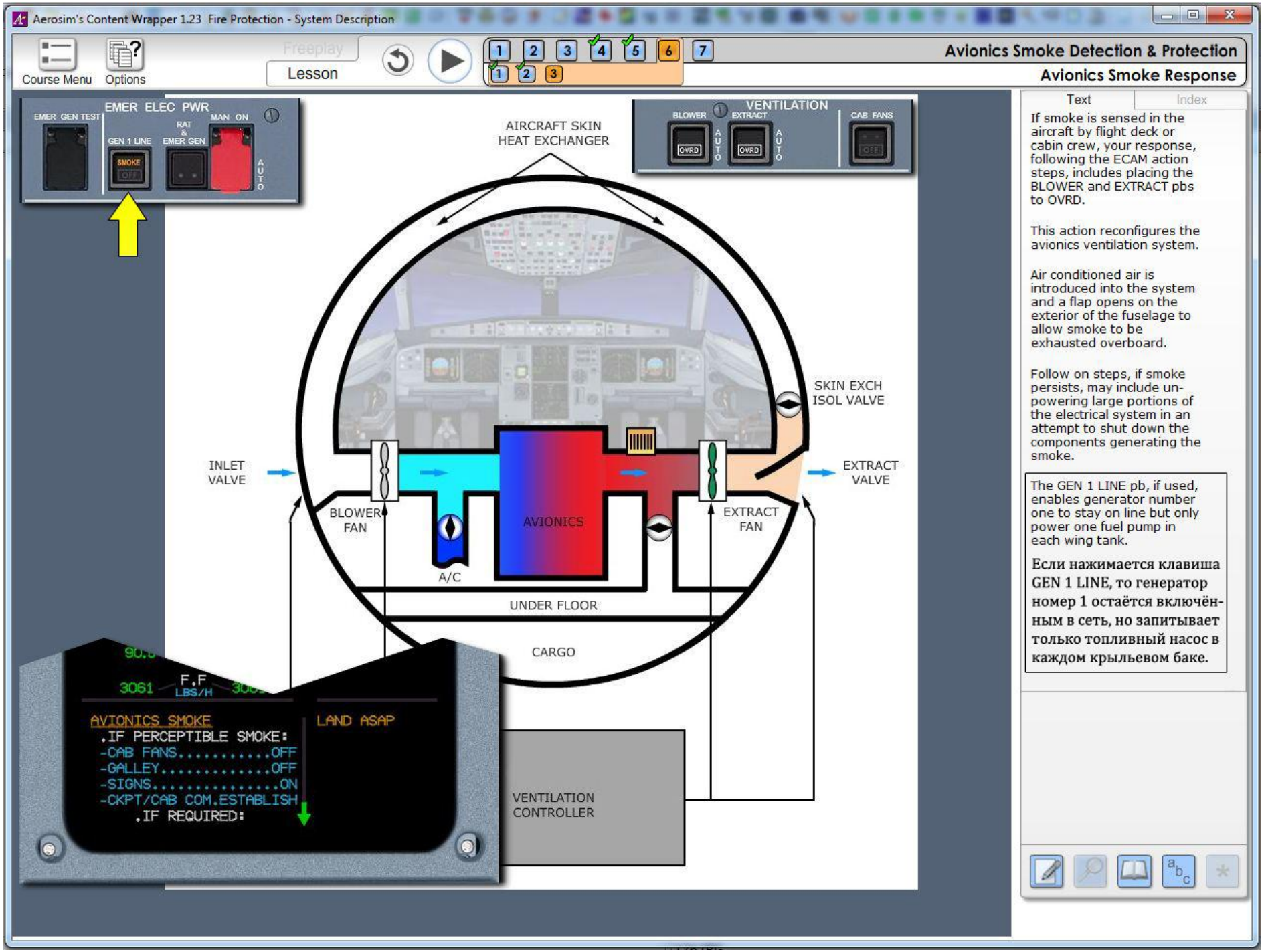

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
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Freeplay
Lesson
Avionics Smoke Detection & Protection
Avionics Smoke Indications
Text
Index
If avionics smoke is detected, the following occurs in the flight deck:
A single chime sounds and the MASTER CAUT lights illuminate
An AVIONICS SMOKE failure message appears on the upper ECAM with an extensive checklist of action steps
The ELEC page appears automatically on the lower ECAM
On the EMER ELEC PWR panel, SMOKE illuminates on the GEN 1 LINE pb
On the VENTILATION panel, FAULT lights illuminate on both the BLOWER and EXTRACT pbs
На панели вентиляции горят лампы FAULT на обеих клавишах BLOWER и EXTRACT.
MASTER CAUT
EMER ELEC PWR
EMER GEN TEST
GEN 1 LINE
SMOKE
RAT & EMER GEN
MAN ON
AUTO
VENTILATION
BLOWER
EXTRACT
FAULT
CAB FANS
FOB: 17680 LBS
AVIONICS SMOKE
.IF PERCEPTIBLE SMOKE:
-BLOWER.....OVRD
-EXTRACT.....OVRD
-CAB FANS.....OFF
-GALLEY.....OFF
-SIGNS.....ON
LAND ASAP
ELEC
BAT1
28 V
0 A
BAT2
28 V
0 A
DC BAT
DC 1
DC 2
DC ESS
ESS TR
EMER GEN
TR 1
29 V
55 A
TR 2
29 V
50 A
AC ESS

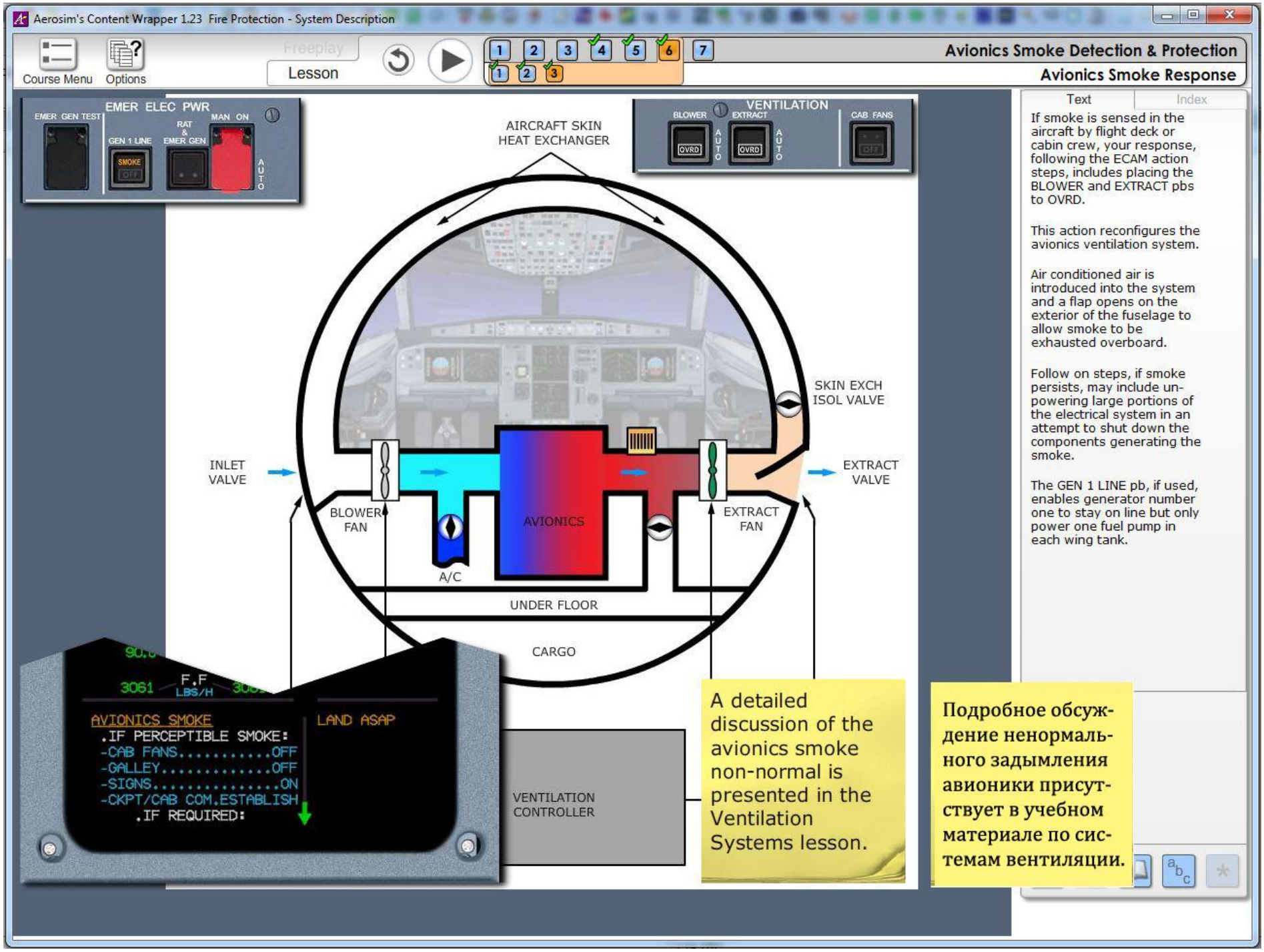

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Avionics Smoke Detection & Protection
Avionics Smoke Response
Text
Index
If smoke is sensed in the aircraft by flight deck or cabin crew, your response, following the ECAM action steps, includes placing the BLOWER and EXTRACT pbs to OVRD.
Если дым чувствуется в кабине лётчиков или в отсеке бортпроводников, то на Вашей ответственности действовать в соответствии с ECAM пошаговыми действиями, включая перевод клавиш BLOWER и EXTRACT в положение OVRD.
VENTILATION
BLOWER
EXTRACT
CAB FANS
FAULT
OVRD
AUTO
OFF
AIRCRAFT SKIN HEAT EXCHANGER
SKIN EXCH ISOL VALVE
INLET VALVE
EXTRACT VALVE
BLOWER FAN
AVIONICS
EXTRACT FAN
A/C
UNDER FLOOR
CARGO
VENTILATION CONTROLLER
F.F
LBS/H
3062
AVIONICS SMOKE
LAND ASAP
.IF PERCEPTIBLE SMOKE:
-BLOWER.....OVRD
-EXTRACT.....OVRD
-CAB FANS.....OFF
-GALLEY.....OFF
-SIGNS.....ON

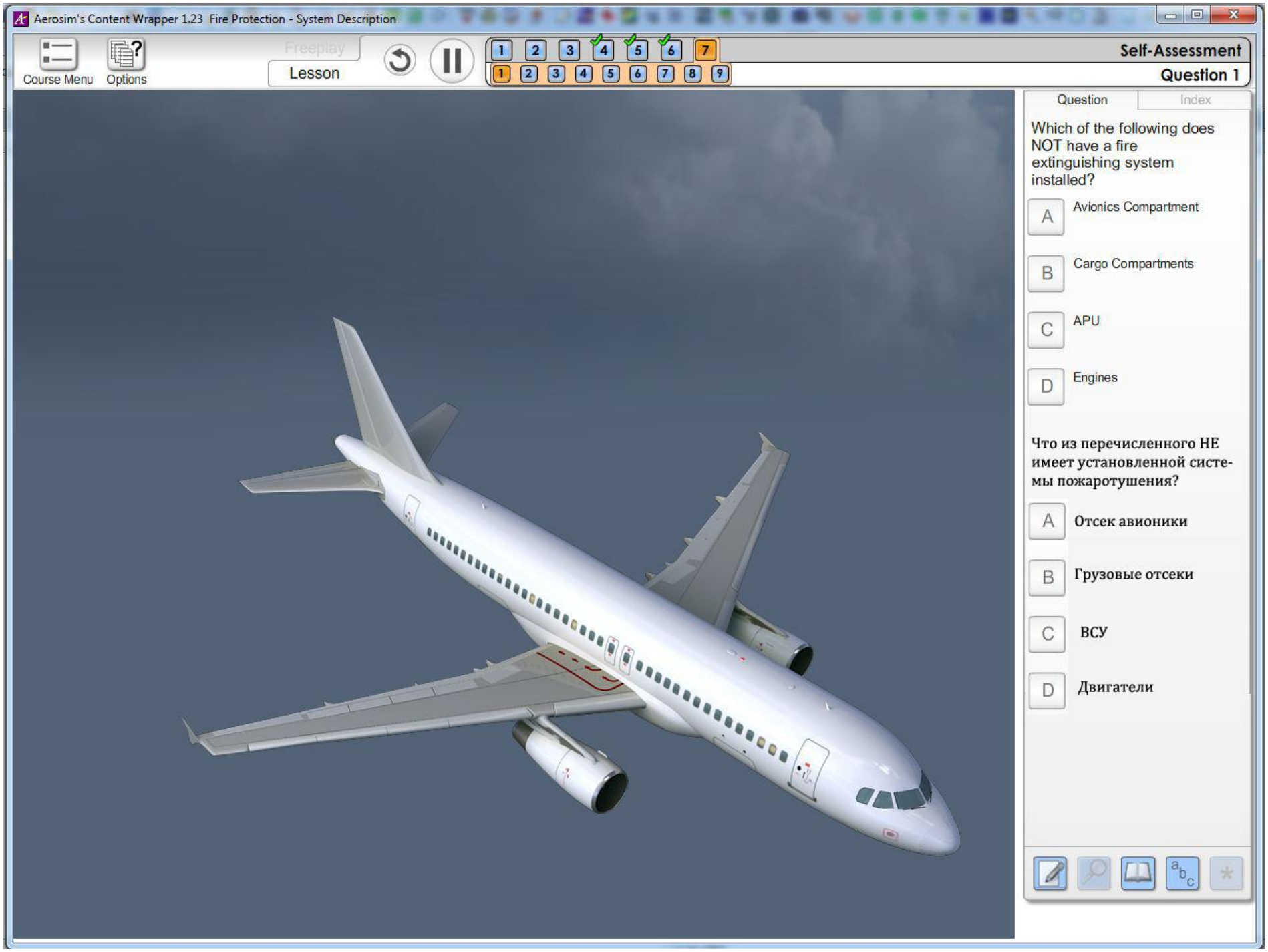

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
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Avionics Smoke Detection & Protection
Avionics Smoke Response
Text
Index
If smoke is sensed in the aircraft by flight deck or cabin crew, your response, following the ECAM action steps, includes placing the BLOWER and EXTRACT pbs to OVRD.
This action reconfigures the avionics ventilation system.
Это действие перестраивает систему вентиляции авионики.
AIRCRAFT SKIN
HEAT EXCHANGER
VENTILATION
BLOWER
EXTRACT
CAB FANS
OVRD
AUTO
OFF
SKIN EXCH
ISOL VALVE
INLET
VALVE
EXTRACT
VALVE
BLOWER
FAN
AVIONICS
EXTRACT
FAN
A/C
UNDER FLOOR
CARGO
VENTILATION
CONTROLLER
F.F
LBS/H
3061
AVIONICS SMOKE
LAND ASAP
.IF PERCEPTIBLE SMOKE:
-CAB FANS.....OFF
-GALLEY.....OFF
-SIGNS.....ON
-CKPT/CAB COM.ESTABLISH
.IF REQUIRED:


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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Avionics Smoke Response
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If smoke is sensed in the aircraft by flight deck or cabin crew, your response, following the ECAM action steps, includes placing the BLOWER and EXTRACT pbs to OVRD.
This action reconfigures the avionics ventilation system.
Air conditioned air is introduced into the system and a flap opens on the exterior of the fuselage to allow smoke to be exhausted overboard.
Кондиционированный воздух начинает поступать в систему и открывается створка наружу фюзеляжа, чтобы выпустить дым за борт.
AIRCRAFT SKIN HEAT EXCHANGER
VENTILATION
BLOWER
EXTRACT
CAB FANS
OVRD
AUTO
OFF
SKIN EXCH ISOL VALVE
INLET VALVE
EXTRACT VALVE
BLOWER FAN
AVIONICS
EXTRACT FAN
A/C
UNDER FLOOR
CARGO
VENTILATION CONTROLLER
3061
F.F
LBS/H
AVIONICS SMOKE
.IF PERCEPTIBLE SMOKE:
-CAB FANS.....OFF
-GALLEY.....OFF
-SIGNS.....ON
-CKPT/CAB COM.ESTABLISH
.IF REQUIRED:
LAND ASAP

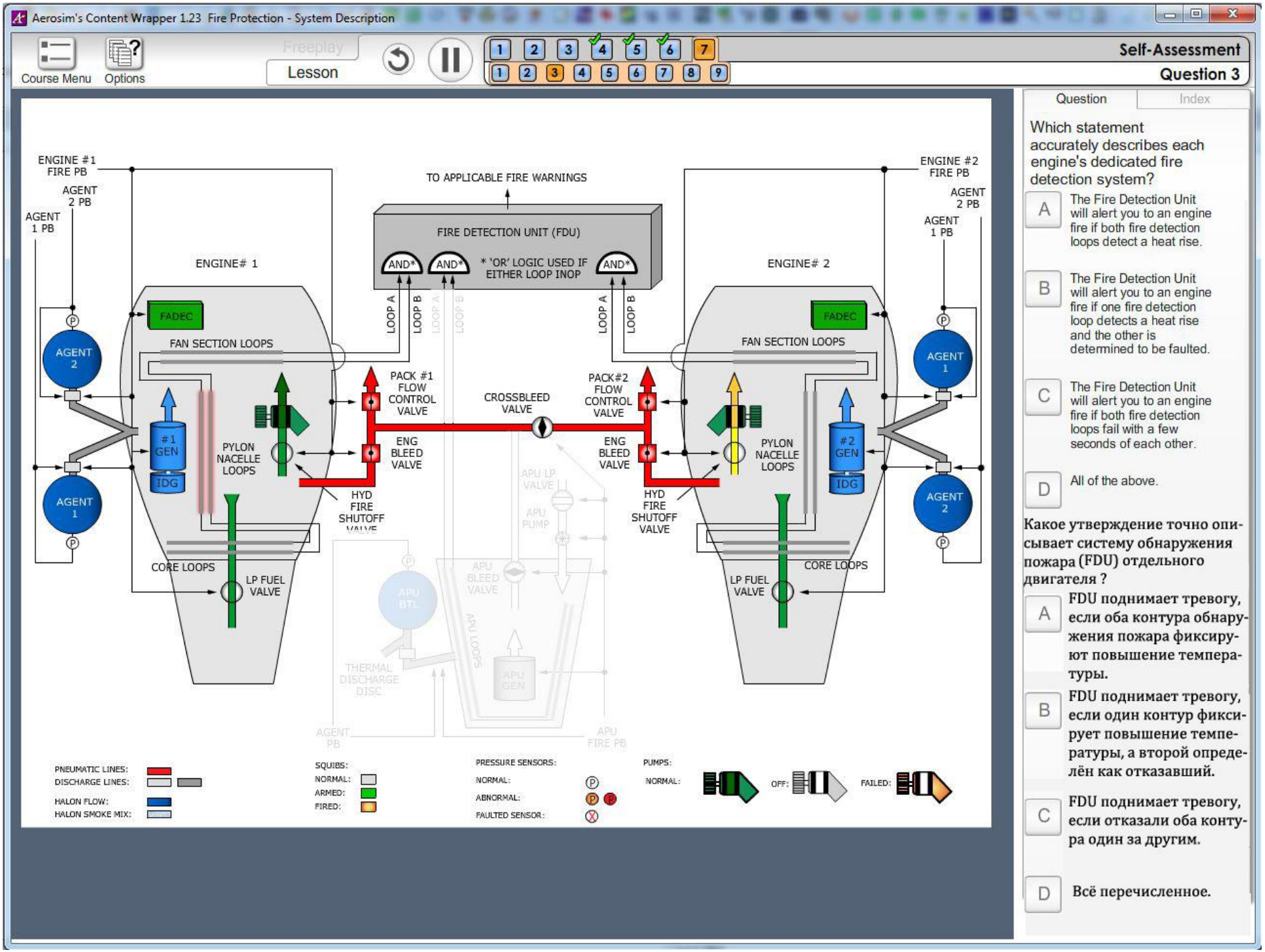

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
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Avionics Smoke Response
Text
Index
If smoke is sensed in the aircraft by flight deck or cabin crew, your response, following the ECAM action steps, includes placing the BLOWER and EXTRACT pbs to OVRD.
This action reconfigures the avionics ventilation system.
Air conditioned air is introduced into the system and a flap opens on the exterior of the fuselage to allow smoke to be exhausted overboard.
Follow on steps, if smoke persists, may include un-powering large portions of the electrical system in an attempt to shut down the components generating the smoke.
Если дым присутствует, то, следуя указаниям, можно обесточить большую часть электросистем в попытке отключить компоненты, создающие дым.
VENTILATION
BLOWER
EXTRACT
CAB FANS
OVRD
AUTO
OFF
AIRCRAFT SKIN
HEAT EXCHANGER
SKIN EXCH
ISOL VALVE
INLET
VALVE
EXTRACT
VALVE
BLOWER
FAN
AVIONICS
EXTRACT
FAN
A/C
UNDER FLOOR
CARGO
VENTILATION
CONTROLLER
F.F
LBS/H
3061
AVIONICS SMOKE
.IF PERCEPTIBLE SMOKE:
-CAB FANS.....OFF
-GALLEY.....OFF
-SIGNS.....ON
-CKPT/CAB COM.ESTABLISH
.IF REQUIRED:
LAND ASAP

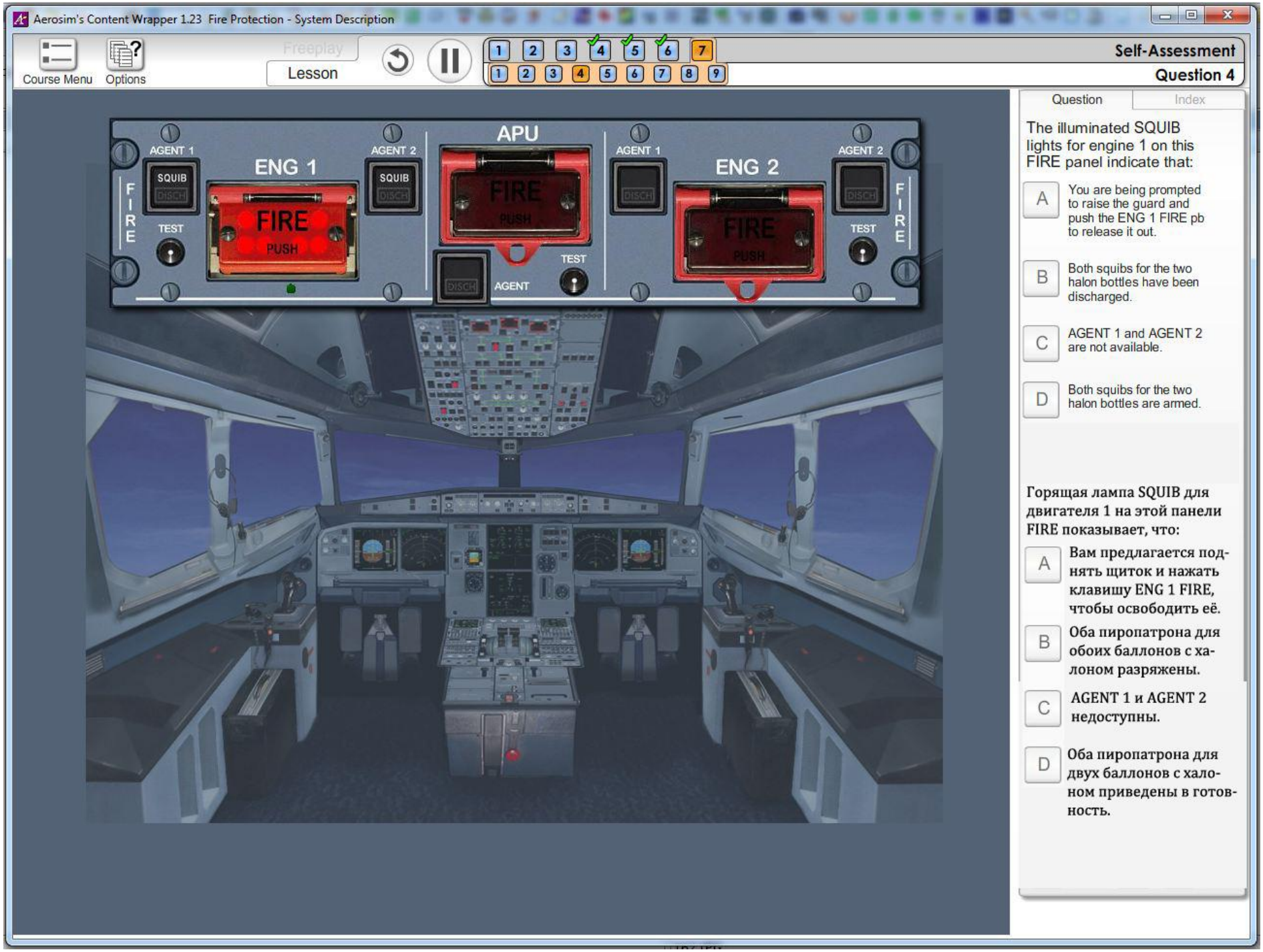

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Avionics Smoke Detection & Protection
Avionics Smoke Response
EMER ELEC PWR
EMER GEN TEST
GEN 1 LINE
SMOKE
RAT & EMER GEN
MAN ON
AUTO
VENTILATION
BLOWER
EXTRACT
CAB FANS
OVRD
AIRCRAFT SKIN HEAT EXCHANGER
SKIN EXCH ISOL VALVE
INLET VALVE
EXTRACT VALVE
BLOWER FAN
AVIONICS
EXTRACT FAN
A/C
UNDER FLOOR
CARGO
VENTILATION CONTROLLER
F.F
LBS/H
3061
AVIONICS SMOKE
.IF PERCEPTIBLE SMOKE:
-CAB FANS.....OFF
-GALLEY.....OFF
-SIGNS.....ON
-CKPT/CAB COM.ESTABLISH
.IF REQUIRED:
LAND ASAP
Text
Index
If smoke is sensed in the aircraft by flight deck or cabin crew, your response, following the ECAM action steps, includes placing the BLOWER and EXTRACT pbs to OVRD.
This action reconfigures the avionics ventilation system.
Air conditioned air is introduced into the system and a flap opens on the exterior of the fuselage to allow smoke to be exhausted overboard.
Follow on steps, if smoke persists, may include un-powering large portions of the electrical system in an attempt to shut down the components generating the smoke.
The GEN 1 LINE pb, if used, enables generator number one to stay on line but only power one fuel pump in each wing tank.
Если нажимается клавиша GEN 1 LINE, то генератор номер 1 остаётся включённым в сеть, но запитывает только топливный насос в каждом крыльевом баке.

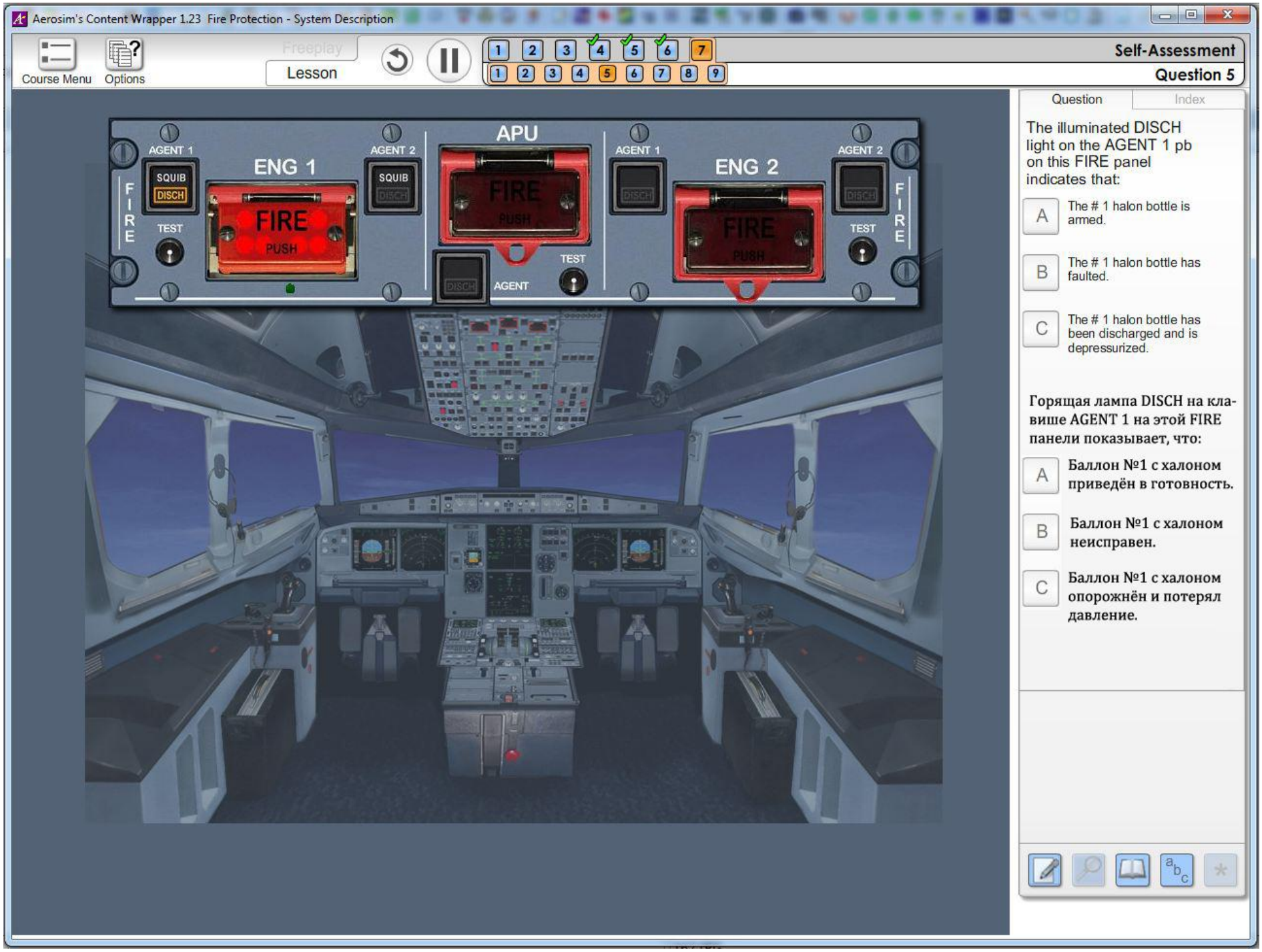

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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Avionics Smoke Response
Text
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Air conditioned air is introduced into the system and a flap opens on the exterior of the fuselage to allow smoke to be exhausted overboard.
Follow on steps, if smoke persists, may include un-powering large portions of the electrical system in an attempt to shut down the components generating the smoke.
The GEN 1 LINE pb, if used, enables generator number one to stay on line but only power one fuel pump in each wing tank.
EMER ELEC PWR
EMER GEN TEST
GEN 1 LINE
RAT & EMER GEN
MAN ON
SMOKE
OFF
AUTO
VENTILATION
BLOWER
EXTRACT
CAB FANS
OVRD
AUTO
OFF
AIRCRAFT SKIN HEAT EXCHANGER
SKIN EXCH ISOL VALVE
INLET VALVE
EXTRACT VALVE
BLOWER FAN
EXTRACT FAN
AVIONICS
A/C
UNDER FLOOR
CARGO
F.F
LBS/H
3061
AVIONICS SMOKE
LAND ASAP
.IF PERCEPTIBLE SMOKE:
-CAB FANS.....OFF
-GALLEY.....OFF
-SIGNS.....ON
-CKPT/CAB COM.ESTABLISH
.IF REQUIRED:
VENTILATION CONTROLLER
A detailed discussion of the avionics smoke non-normal is presented in the Ventilation Systems lesson.
Подробное обсуждение ненормального задымления авионики присутствует в учебном материале по системам вентиляции.

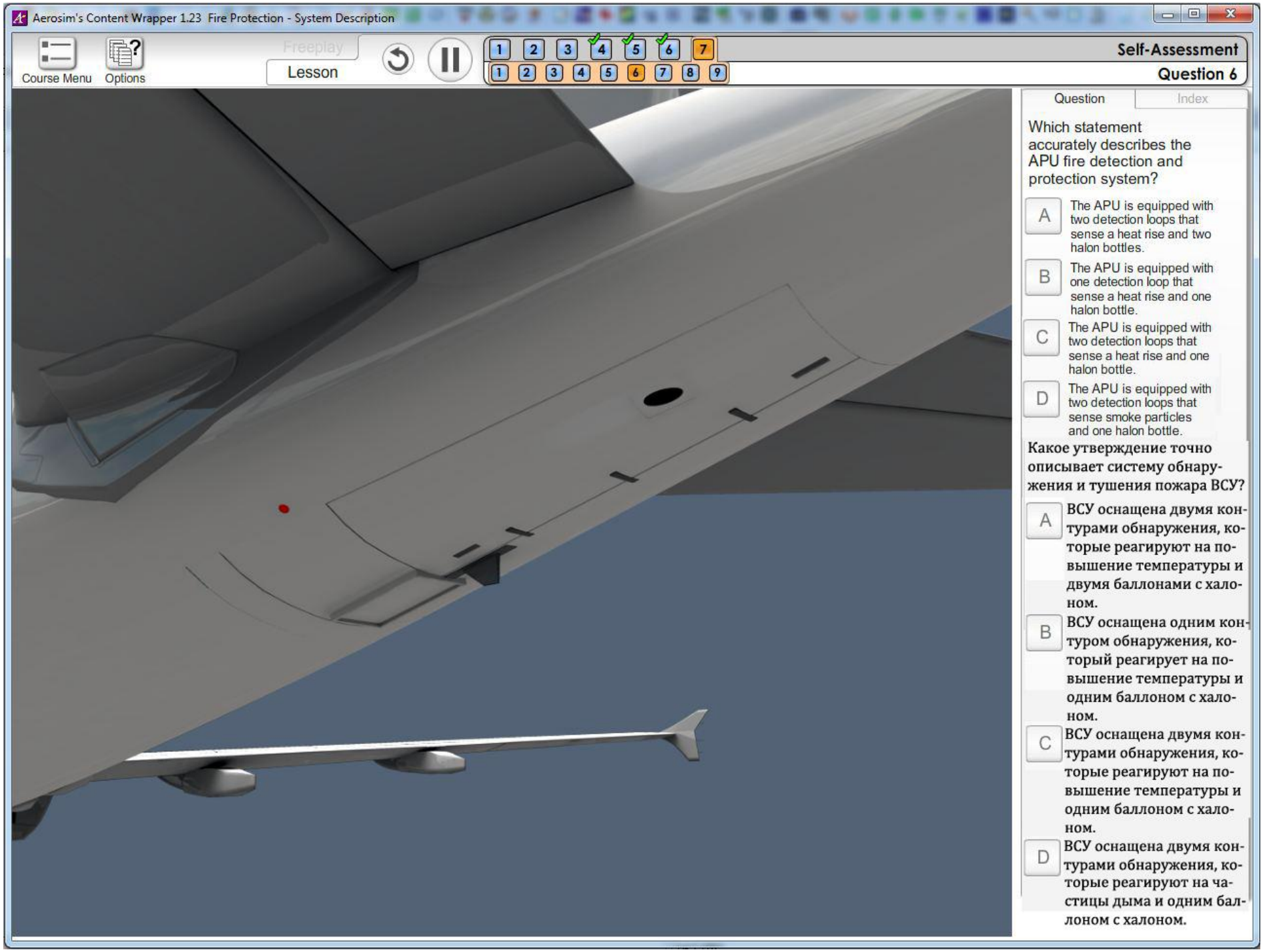

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Self-Assessment
Question 1
Question
Index
Which of the following does NOT have a fire extinguishing system installed?
A Avionics Compartment
B Cargo Compartments
C APU
D Engines
Что из перечисленного НЕ имеет установленной системы пожаротушения?
A Отсек авионики
B Грузовые отсеки
C ВСУ
D Двигатели

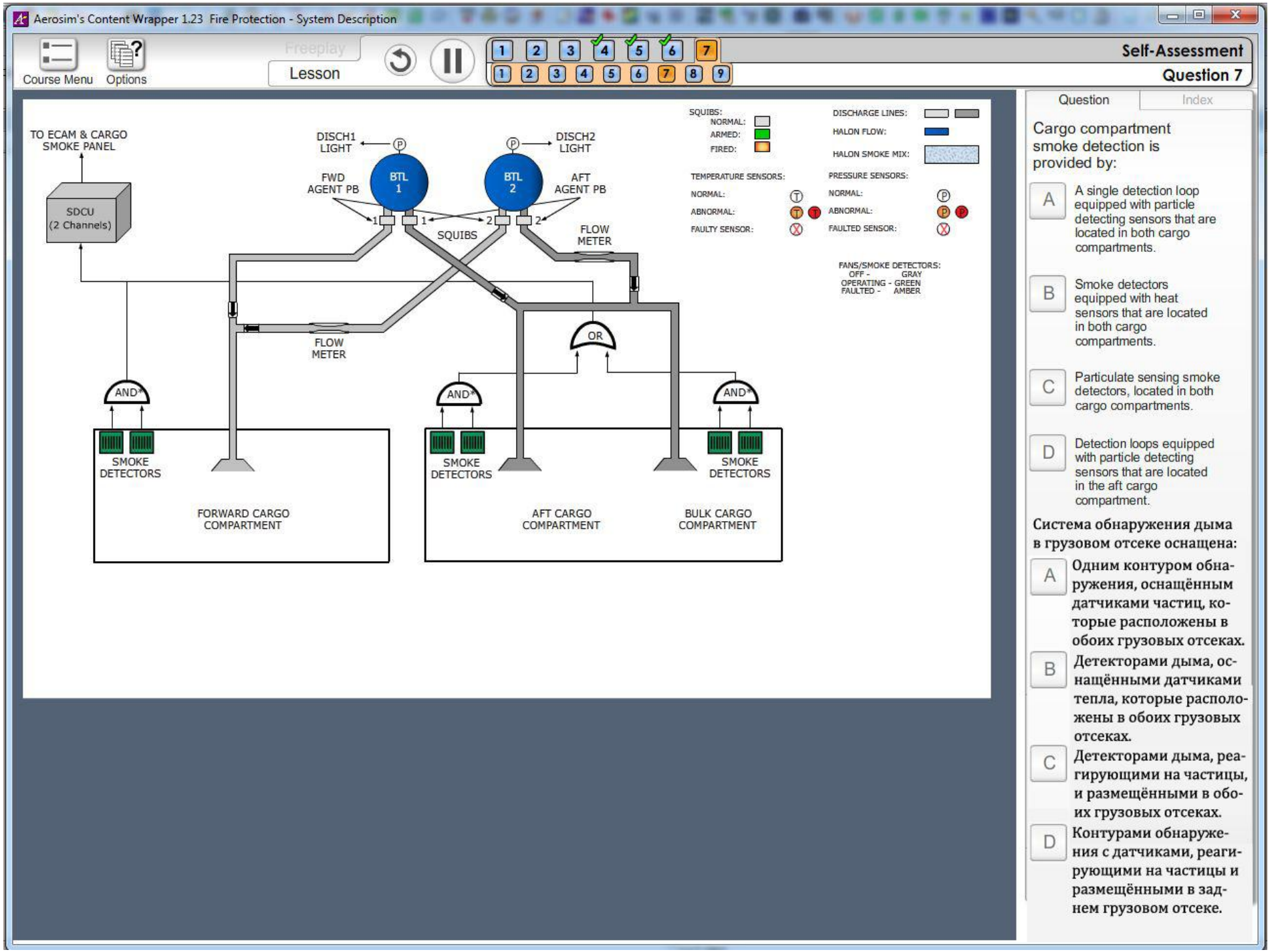

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Self-Assessment
Question 2
Question
Index
Which statement is true regarding cargo compartment fire extinguishing?
A There is only one halon bottle which is discharged into both compartments.
B There are two halon bottles which can be discharged into either cargo compartment.
C There are two halon bottles, one for the FWD compartment and one for the AFT compartment.
Какое утверждение истинно для системы пожаротушения в грузовых отсеках?
A Есть только один баллон с халоном, который опорожняется в оба отсека.
B Есть два баллона с халоном, каждый из которых может опорожняться в любой грузовой отсек.
C Есть два баллона с халоном, один для FWD грузового отсека, и один для AFT грузового отсека.
CARGO SMOKE
FWD
TEST
AFT
SMOKE
AGENT 1
AGENT 2
AGENT 1
AGENT 2
N2 %
84.6
74.9
N2 %
84.6
FOB: 17680 LBS
SMOKE FWD CARGO SMOKE
-AGENT.....DISCH
LAND ASAP

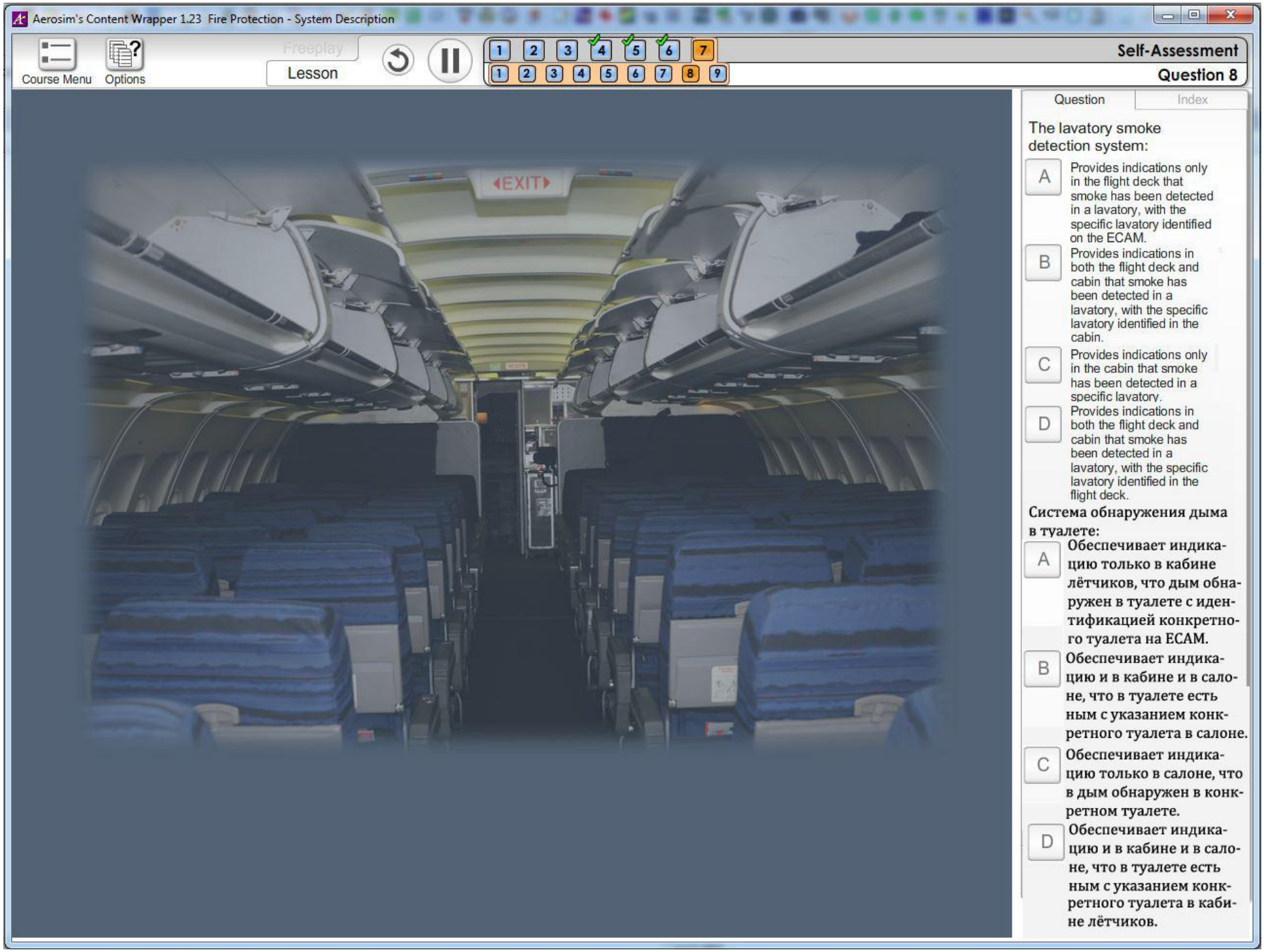

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Self-Assessment
Question 3
ENGINE #1 FIRE PB
AGENT 2 PB
AGENT 1 PB
TO APPLICABLE FIRE WARNINGS
FIRE DETECTION UNIT (FDU)
AND*
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
AND*
ENGINE# 1
ENGINE# 2
ENGINE #2 FIRE PB
AGENT 2 PB
AGENT 1 PB
LOOP A
LOOP B
FADEC
FAN SECTION LOOPS
AGENT 2
AGENT 1
#1 GEN
IDG
PYLON NACELLE LOOPS
PACK #1 FLOW CONTROL VALVE
CROSSBLEED VALVE
PACK#2 FLOW CONTROL VALVE
ENG BLEED VALVE
HYD FIRE SHUTOFF VALVE
#2 GEN
CORE LOOPS
LP FUEL VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:
Question
Index
Which statement accurately describes each engine's dedicated fire detection system?
A The Fire Detection Unit will alert you to an engine fire if both fire detection loops detect a heat rise.
B The Fire Detection Unit will alert you to an engine fire if one fire detection loop detects a heat rise and the other is determined to be faulted.
C The Fire Detection Unit will alert you to an engine fire if both fire detection loops fail with a few seconds of each other.
D All of the above.
Какое утверждение точно описывает систему обнаружения пожара (FDU) отдельного двигателя ?
A FDU поднимает тревогу, если оба контура обнаружения пожара фиксируют повышение температуры.
B FDU поднимает тревогу, если один контур фиксирует повышение температуры, а второй определён как отказавший.
C FDU поднимает тревогу, если отказали оба контура один за другим.
D Всё перечисленное.

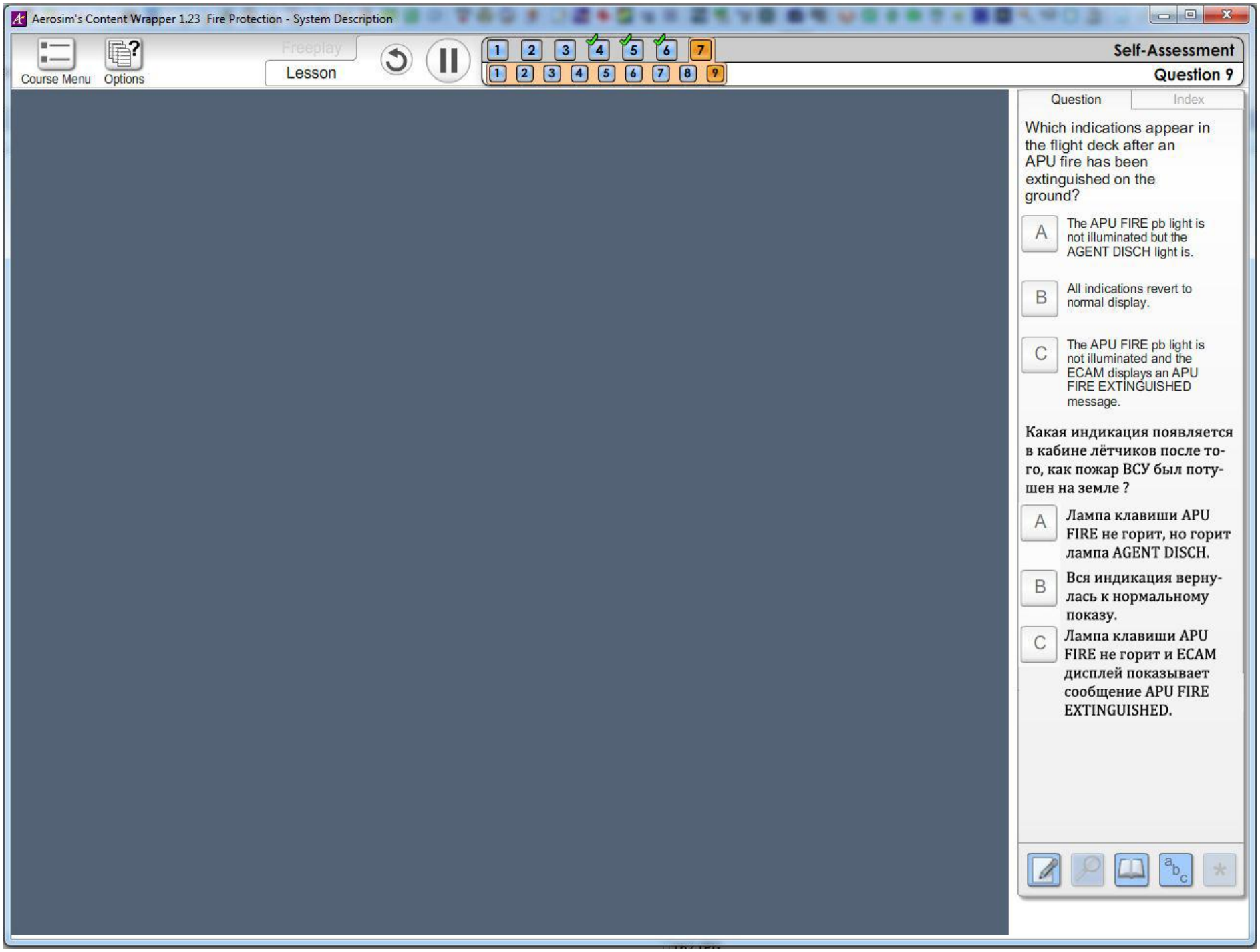

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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Question 4
Question
Index
The illuminated SQUIB lights for engine 1 on this FIRE panel indicate that:
A You are being prompted to raise the guard and push the ENG 1 FIRE pb to release it out.
B Both squibs for the two halon bottles have been discharged.
C AGENT 1 and AGENT 2 are not available.
D Both squibs for the two halon bottles are armed.
Горящая лампа SQUIB для двигателя 1 на этой панели FIRE показывает, что:
A Вам предлагается поднять щиток и нажать клавишу ENG 1 FIRE, чтобы освободить её.
B Оба пиропатрона для обоих баллонов с халоном разряжены.
C AGENT 1 и AGENT 2 недоступны.
D Оба пиропатрона для двух баллонов с халоном приведены в готовность.
AGENT 1
SQUIB
TEST
ENG 1
FIRE
PUSH
AGENT 2
APU
AGENT
ENG 2


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
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Question 5
Question
Index
The illuminated DISCH light on the AGENT 1 pb on this FIRE panel indicates that:
A The # 1 halon bottle is armed.
B The # 1 halon bottle has faulted.
C The # 1 halon bottle has been discharged and is depressurized.
Горящая лампа DISCH на клавише AGENT 1 на этой FIRE панели показывает, что:
A Баллон №1 с халоном приведён в готовность.
B Баллон №1 с халоном неисправен.
C Баллон №1 с халоном опорожнён и потерял давление.
AGENT 1
SQUIB
DISCH
TEST
ENG 1
FIRE
PUSH
AGENT 2
APU
AGENT
ENG 2
FIRE


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
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Lesson
Self-Assessment
Question 6
Question
Index
Which statement accurately describes the APU fire detection and protection system?
A The APU is equipped with two detection loops that sense a heat rise and two halon bottles.
B The APU is equipped with one detection loop that sense a heat rise and one halon bottle.
C The APU is equipped with two detection loops that sense a heat rise and one halon bottle.
D The APU is equipped with two detection loops that sense smoke particles and one halon bottle.
Какое утверждение точно описывает систему обнаружения и тушения пожара ВСУ?
A ВСУ оснащена двумя контурами обнаружения, которые реагируют на повышение температуры и двумя баллонами с халоном.
B ВСУ оснащена одним контуром обнаружения, который реагирует на повышение температуры и одним баллоном с халоном.
C ВСУ оснащена двумя контурами обнаружения, которые реагируют на повышение температуры и одним баллоном с халоном.
D ВСУ оснащена двумя контурами обнаружения, которые реагируют на частицы дыма и одним баллоном с халоном.


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
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Self-Assessment
Question 7
TO ECAM & CARGO SMOKE PANEL
SDCU (2 Channels)
DISCH1 LIGHT
DISCH2 LIGHT
FWD AGENT PB
AFT AGENT PB
BTL 1
BTL 2
SQUIBS
FLOW METER
FLOW METER
OR
AND
AND
AND
SMOKE DETECTORS
SMOKE DETECTORS
SMOKE DETECTORS
FORWARD CARGO COMPARTMENT
AFT CARGO COMPARTMENT
BULK CARGO COMPARTMENT
SQUIBS:
NORMAL:
ARMED:
FIRED:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
FANS/SMOKE DETECTORS:
OFF - GRAY
OPERATING - GREEN
FAULTED - AMBER
Question
Index
Cargo compartment smoke detection is provided by:
A A single detection loop equipped with particle detecting sensors that are located in both cargo compartments.
B Smoke detectors equipped with heat sensors that are located in both cargo compartments.
C Particulate sensing smoke detectors, located in both cargo compartments.
D Detection loops equipped with particle detecting sensors that are located in the aft cargo compartment.
Система обнаружения дыма в грузовом отсеке оснащена:
A Одним контуром обнаружения, оснащённым датчиками частиц, которые расположены в обоих грузовых отсеках.
B Детекторами дыма, оснащёнными датчиками тепла, которые расположены в обоих грузовых отсеках.
C Детекторами дыма, реагирующими на частицы, и размещёнными в обоих грузовых отсеках.
D Контурами обнаружения с датчиками, реагирующими на частицы и размещёнными в заднем грузовом отсеке.


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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Question 8
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The lavatory smoke detection system:
A
Provides indications only in the flight deck that smoke has been detected in a lavatory, with the specific lavatory identified on the ECAM.
B
Provides indications in both the flight deck and cabin that smoke has been detected in a lavatory, with the specific lavatory identified in the cabin.
C
Provides indications only in the cabin that smoke has been detected in a specific lavatory.
D
Provides indications in both the flight deck and cabin that smoke has been detected in a lavatory, with the specific lavatory identified in the flight deck.
Система обнаружения дыма в туалете:
A
Обеспечивает индикацию только в кабине лётчиков, что дым обнаружен в туалете с идентификацией конкретного туалета на ECAM.
B
Обеспечивает индикацию и в кабине и в салоне, что в туалете есть ным с указанием конкретного туалета в салоне.
C
Обеспечивает индикацию только в салоне, что в дым обнаружен в конкретном туалете.
D
Обеспечивает индикацию и в кабине и в салоне, что в туалете есть ным с указанием конкретного туалета в кабине лётчиков.


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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Question
Index
Which indications appear in the flight deck after an APU fire has been extinguished on the ground?
A
The APU FIRE pb light is not illuminated but the AGENT DISCH light is.
B
All indications revert to normal display.
C
The APU FIRE pb light is not illuminated and the ECAM displays an APU FIRE EXTINGUISHED message.
Какая индикация появляется в кабине лётчиков после того, как пожар ВСУ был потушен на земле ?
A
Лампа клавиши APU FIRE не горит, но горит лампа AGENT DISCH.
B
Вся индикация вернулась к нормальному показу.
C
Лампа клавиши APU FIRE не горит и ECAM дисплей показывает сообщение APU FIRE EXTINGUISHED.

МИНИСТЕРСТВО ОБРАЗОВАНИЯ И НАУКИ РОССИЙСКОЙ ФЕДЕРАЦИИ

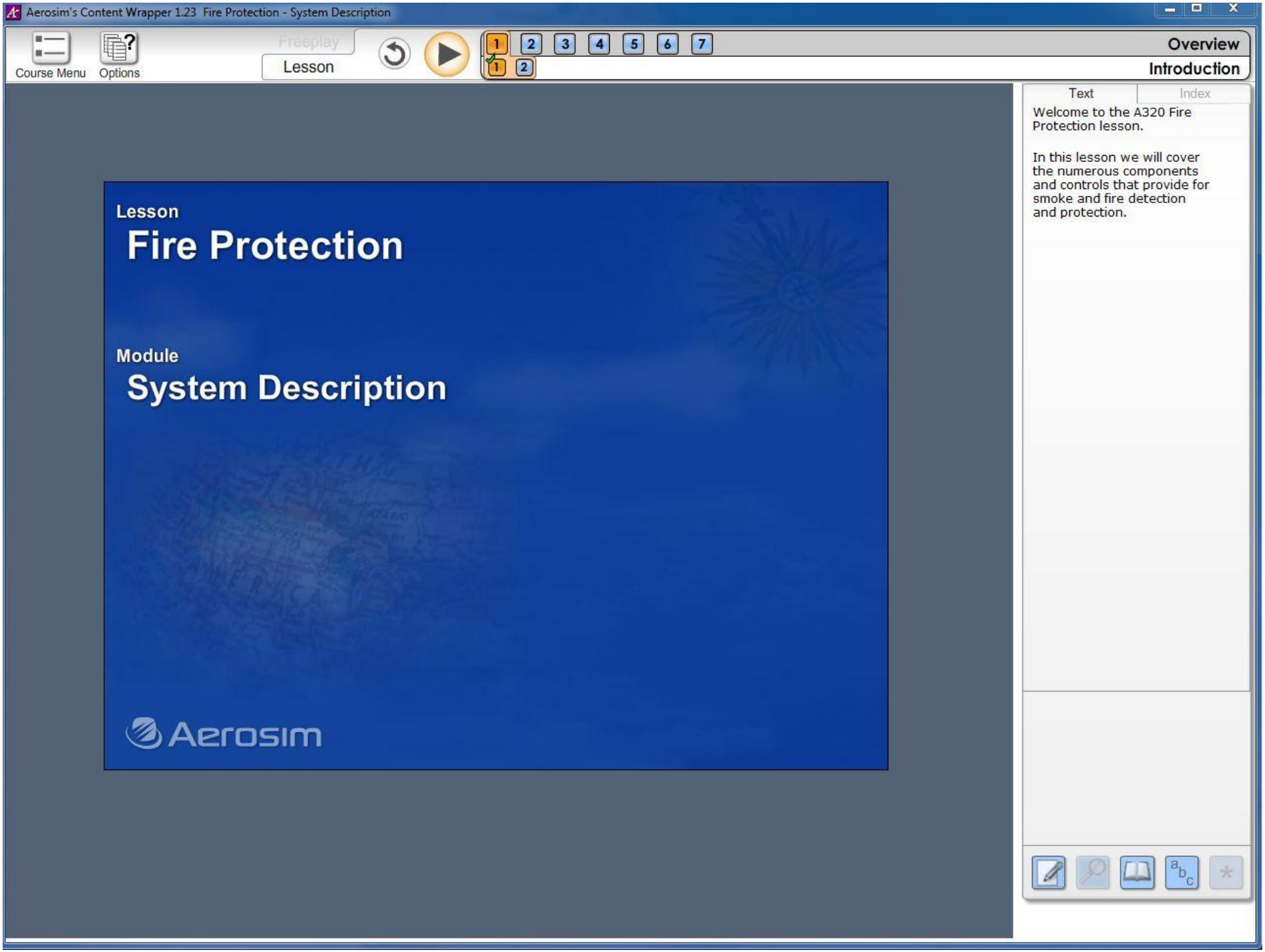
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БЮДЖЕТНОЕ ОБРАЗОВАТЕЛЬНОЕ УЧРЕЖДЕНИЕ
ВЫСШЕГО ПРОФЕССИОНАЛЬНОГО ОБРАЗОВАНИЯ
«САМАРСКИЙ ГОСУДАРСТВЕННЫЙ АЭРОКОСМИЧЕСКИЙ
УНИВЕРСИТЕТ ИМЕНИ АКАДЕМИКА С.П. КОРОЛЕВА
(НАЦИОНАЛЬНЫЙ ИССЛЕДОВАТЕЛЬСКИЙ УНИВЕРСИТЕТ)»

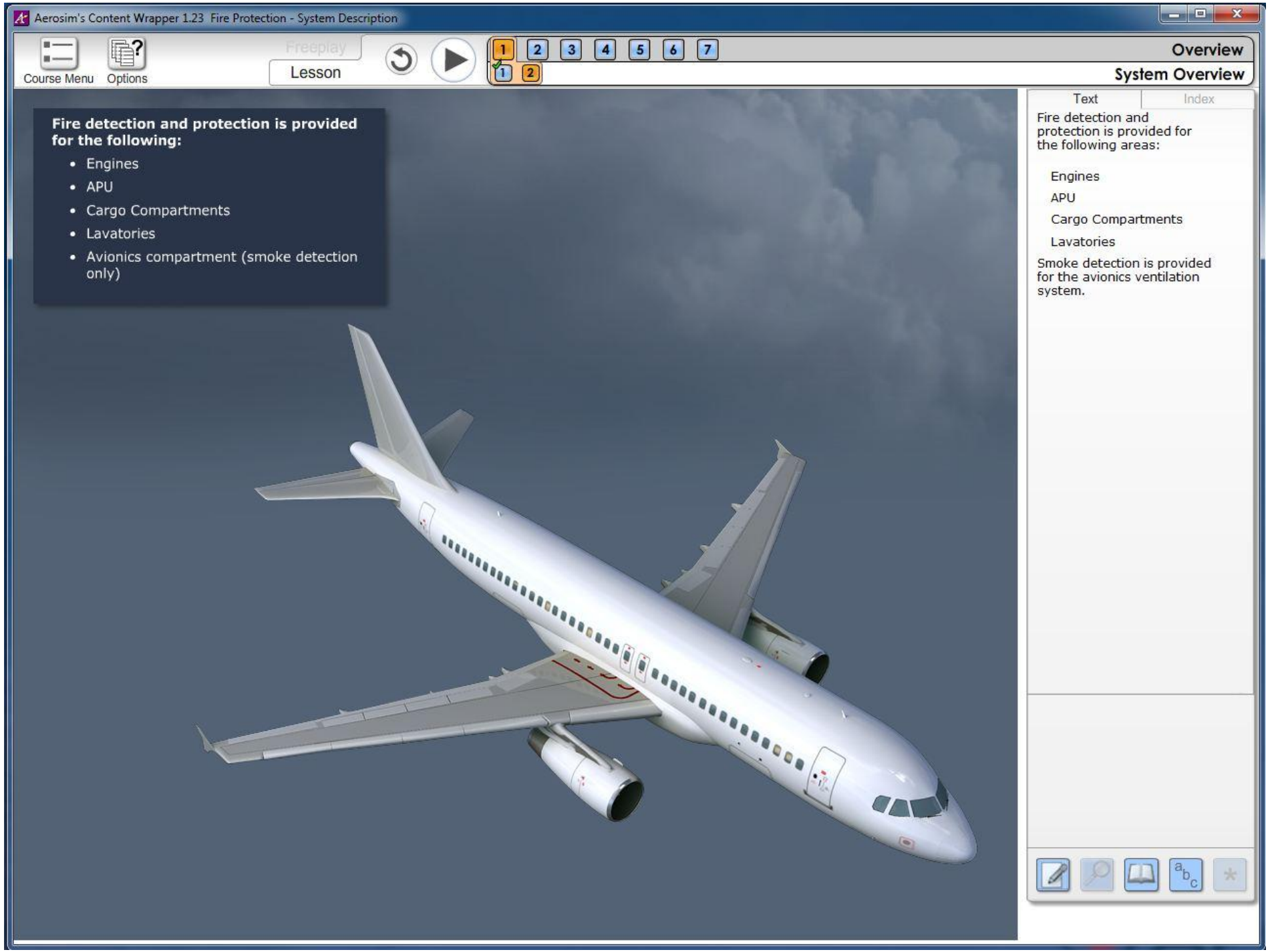
А.И. ДАНИЛИН, А.Н.ТИХОНОВ

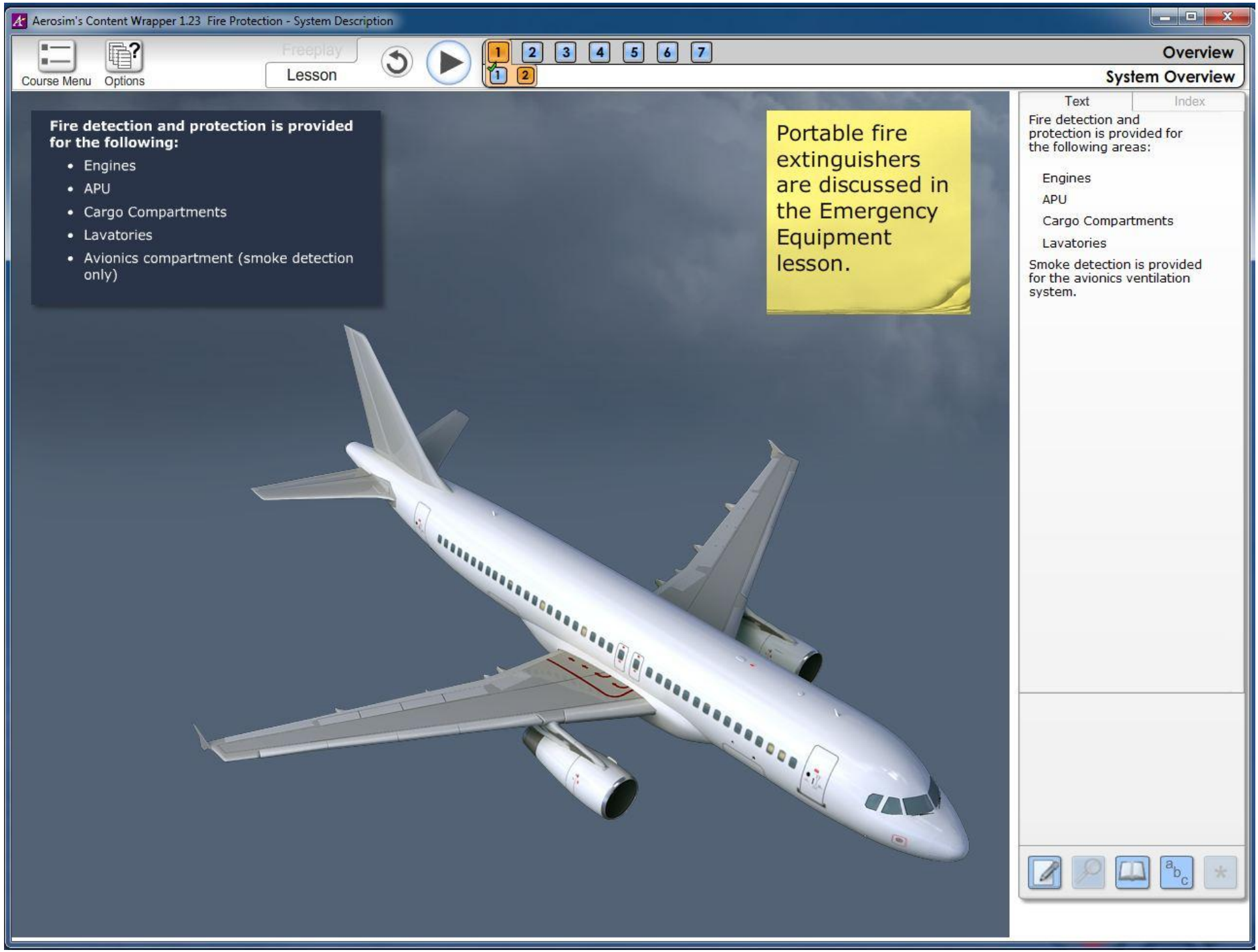
Manual for study of fire protection system of airliner A320 with using the virtual trainer from Aerosim

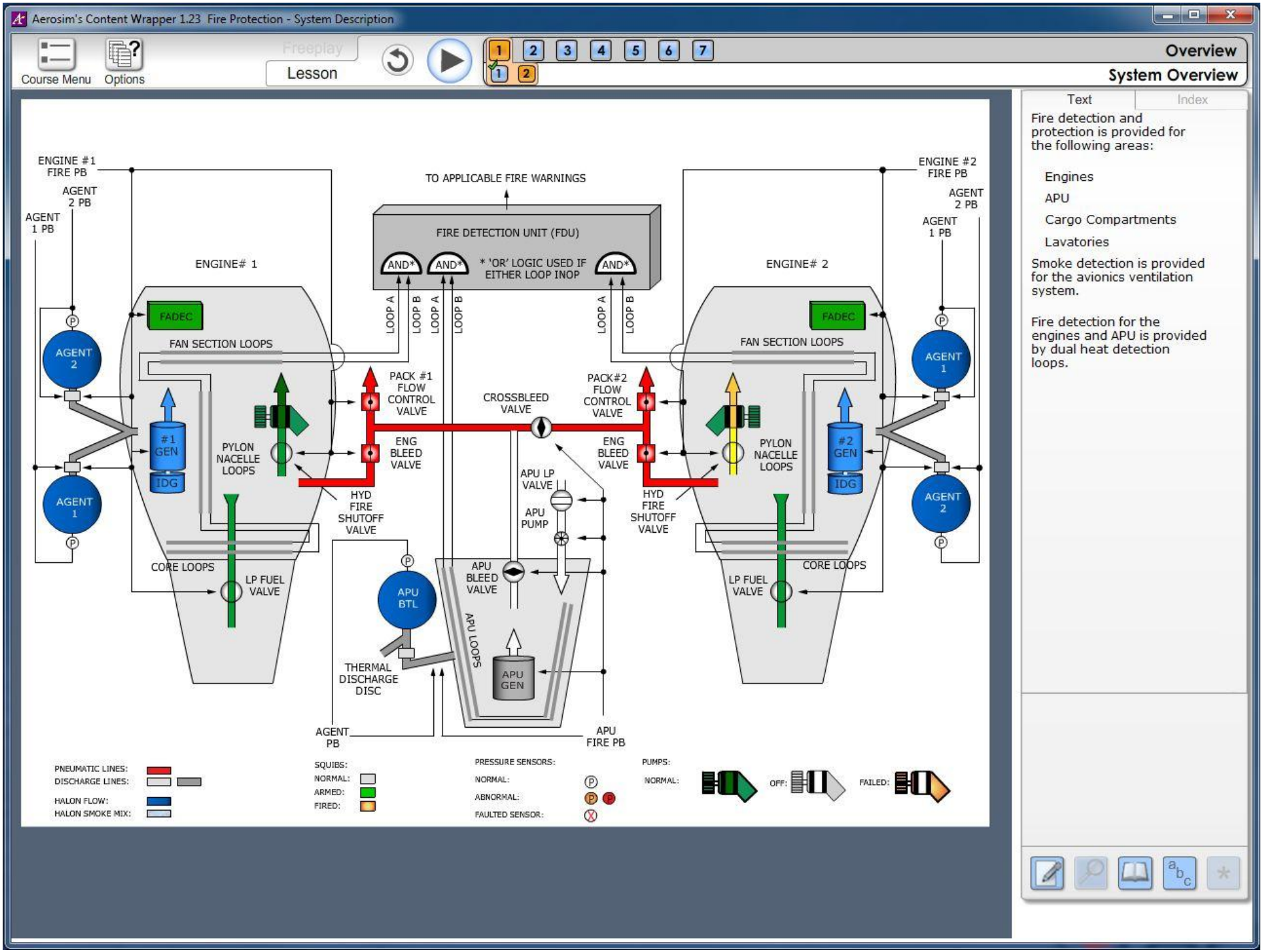
С А М А Р А

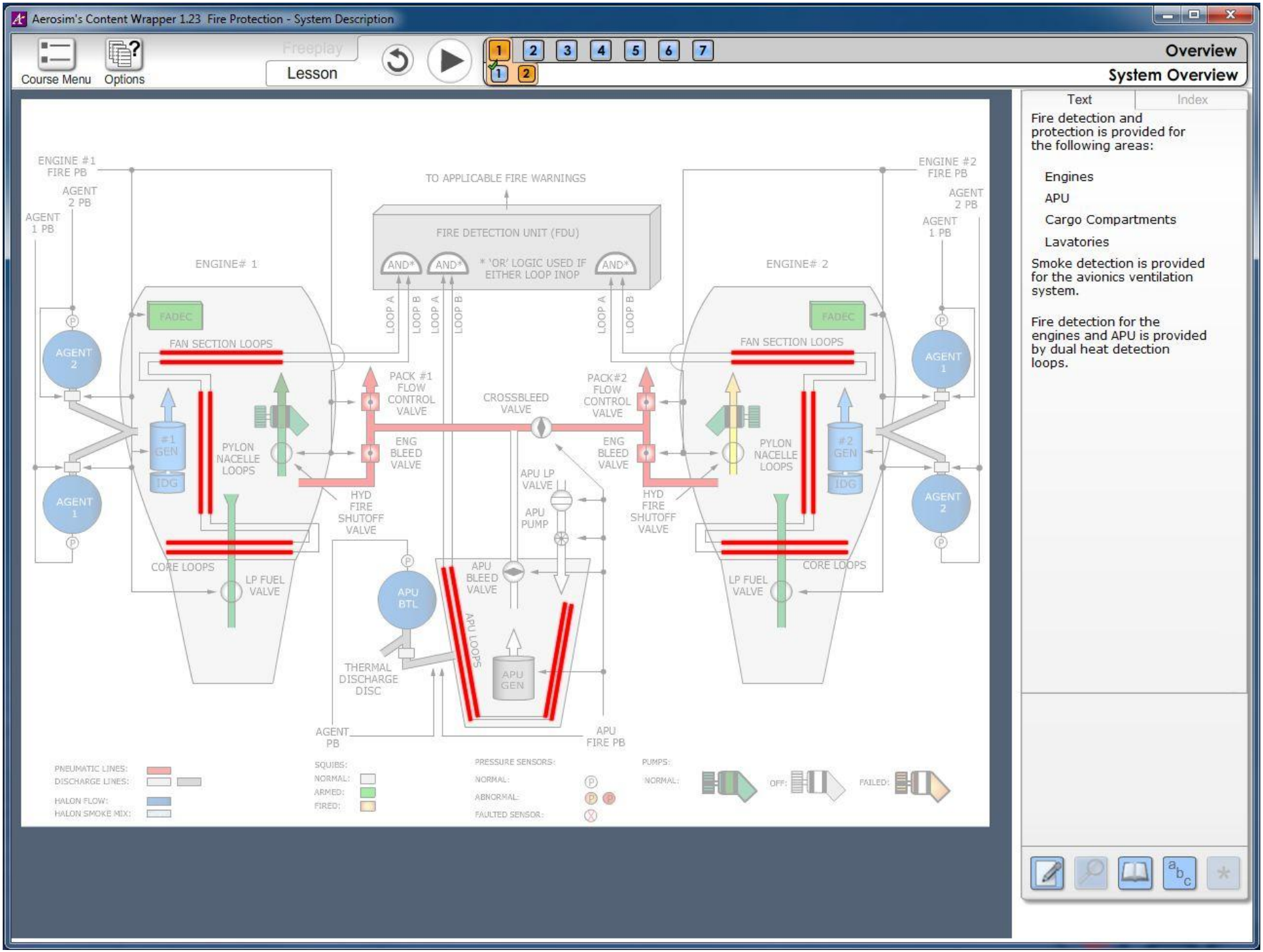
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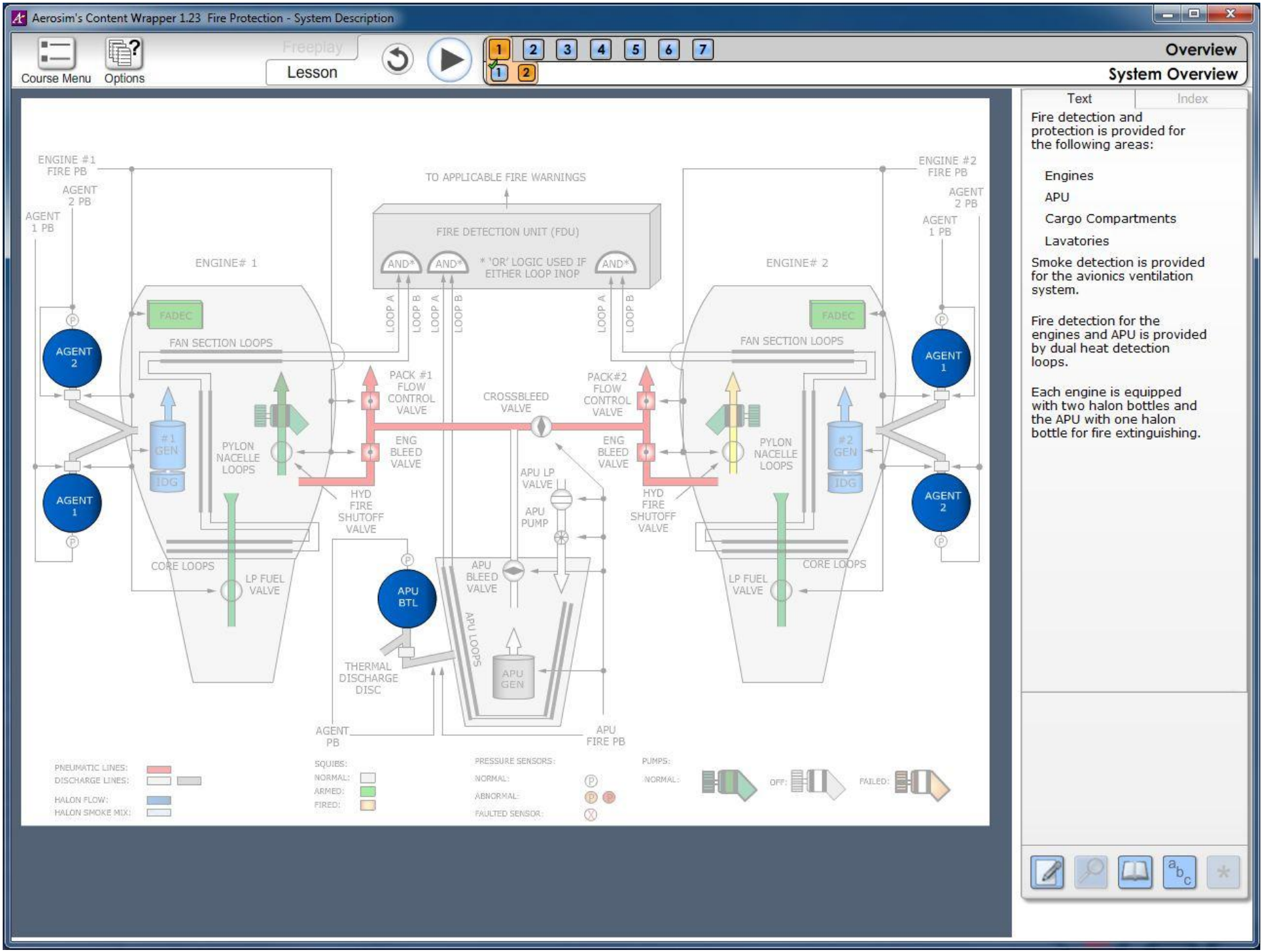

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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5
6
7
Overview
Introduction
Text
Index
Welcome to the A320 Fire Protection lesson.
In this lesson we will cover the numerous components and controls that provide for smoke and fire detection and protection.
Lesson
Fire Protection
Module
System Description
Aerosim

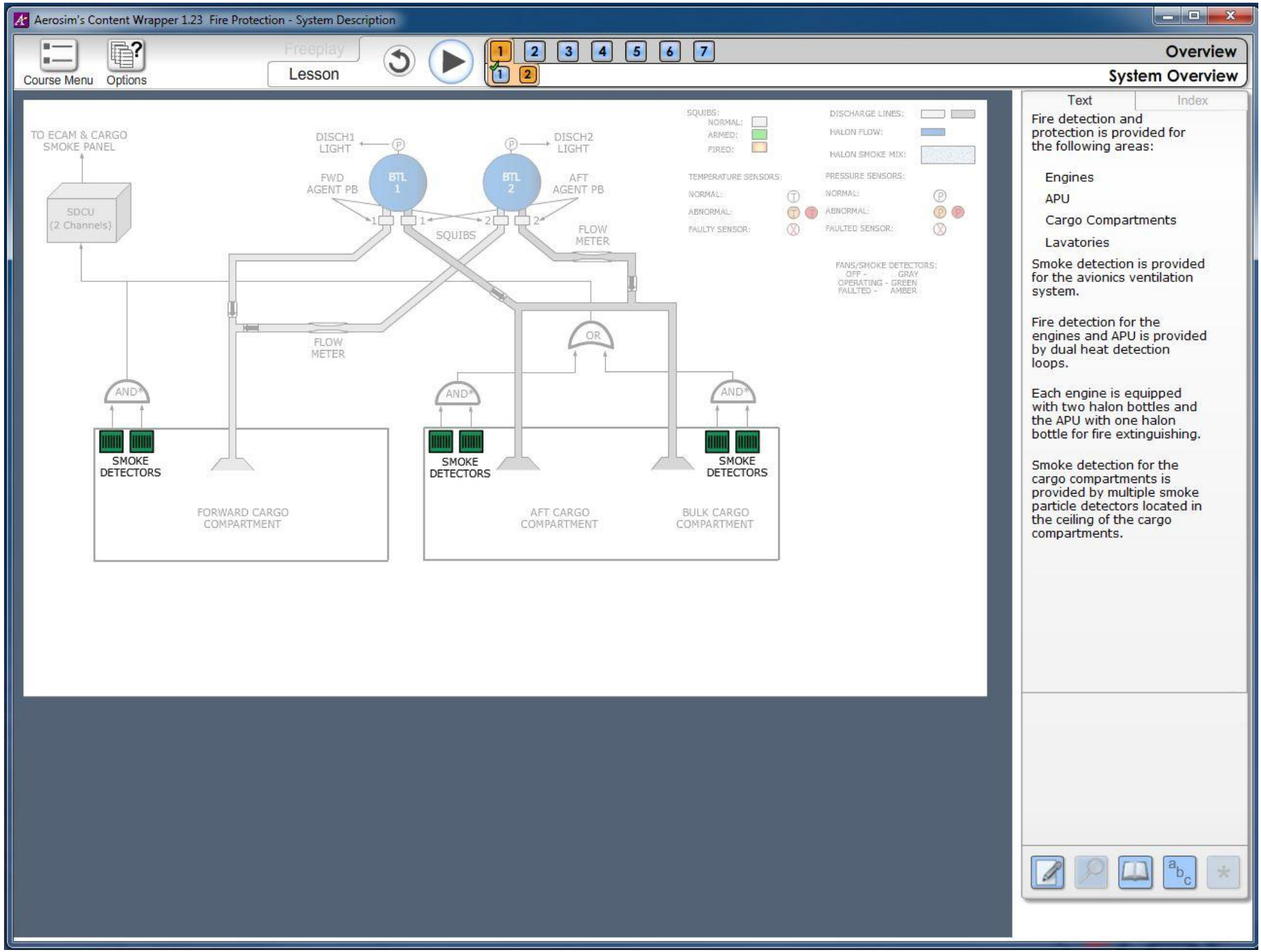

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
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1 2
Overview
System Overview
Fire detection and protection is provided for the following:
Engines
APU
Cargo Compartments
Lavatories
Avionics compartment (smoke detection only)
Text
Index
Fire detection and protection is provided for the following areas:
Engines
APU
Cargo Compartments
Lavatories
Smoke detection is provided for the avionics ventilation system.

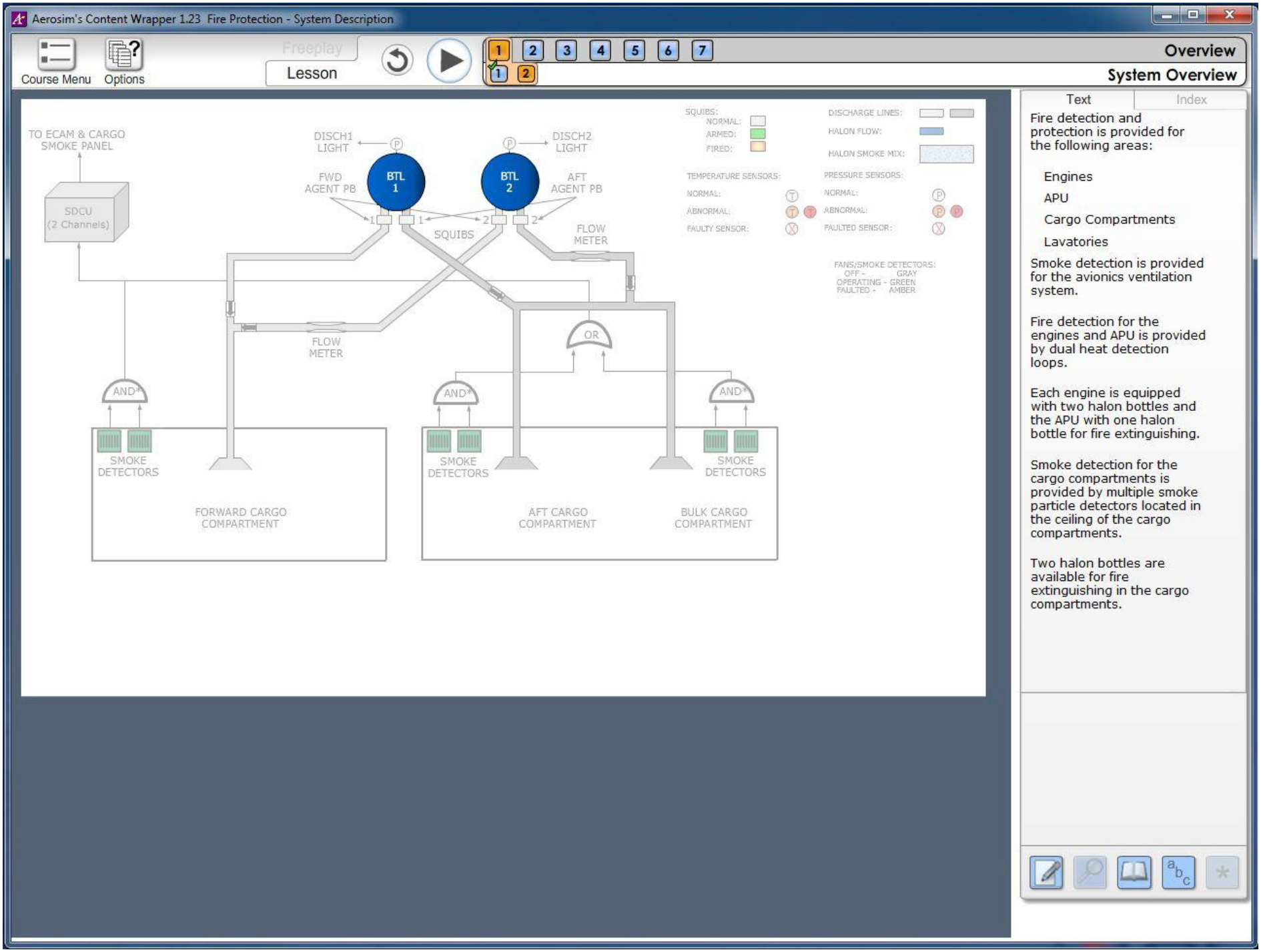

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
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Overview
System Overview
Fire detection and protection is provided for the following:
Engines
APU
Cargo Compartments
Lavatories
Avionics compartment (smoke detection only)
Portable fire extinguishers are discussed in the Emergency Equipment lesson.
Text
Index
Fire detection and protection is provided for the following areas:
Engines
APU
Cargo Compartments
Lavatories
Smoke detection is provided for the avionics ventilation system.

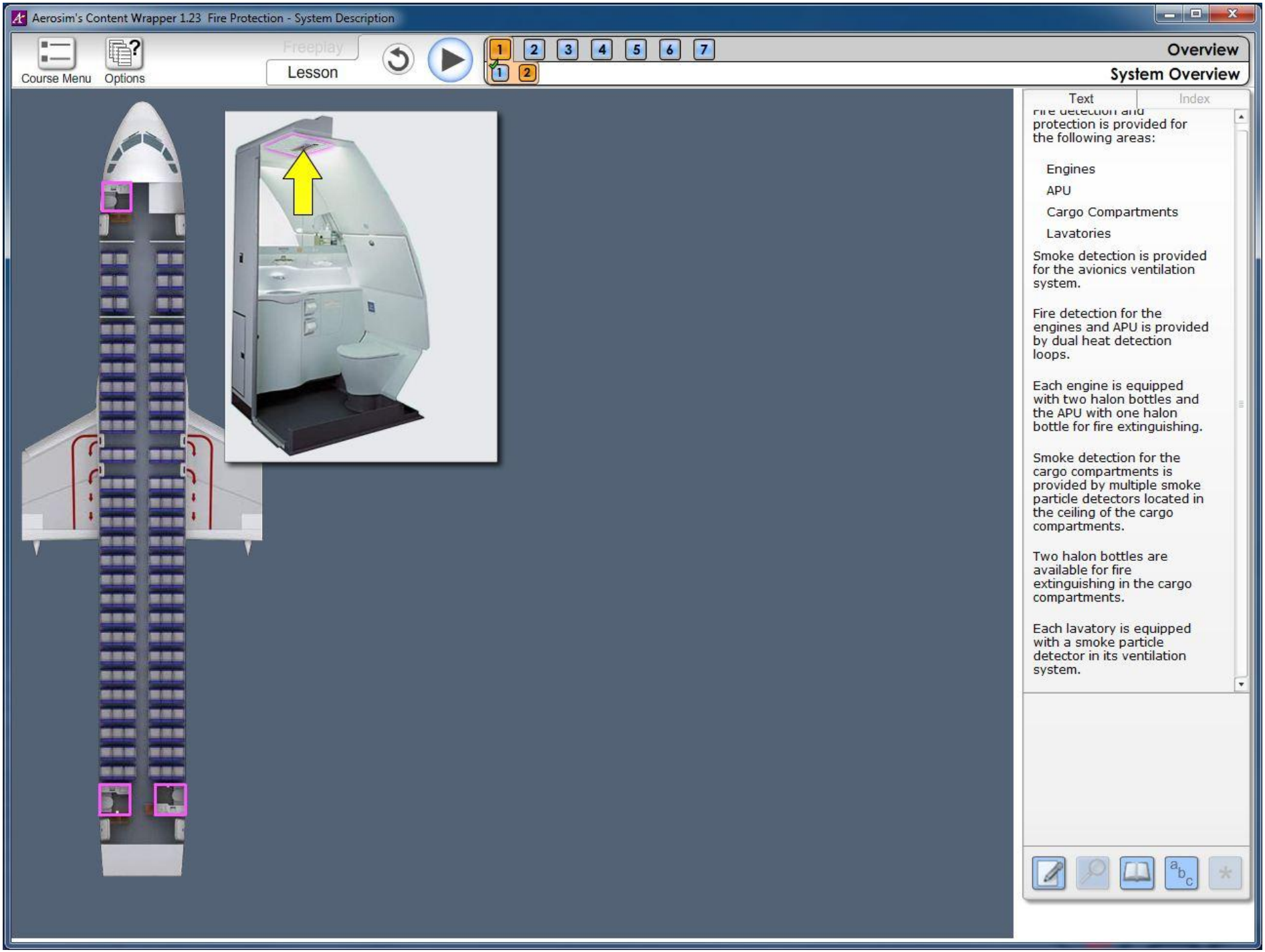

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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System Overview
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Index
Fire detection and protection is provided for the following areas:
Engines
APU
Cargo Compartments
Lavatories
Smoke detection is provided for the avionics ventilation system.
Fire detection for the engines and APU is provided by dual heat detection loops.
ENGINE #1 FIRE PB
AGENT 2 PB
AGENT 1 PB
TO APPLICABLE FIRE WARNINGS
FIRE DETECTION UNIT (FDU)
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
ENGINE #2 FIRE PB
ENGINE# 1
ENGINE# 2
LOOP A
LOOP B
FADEC
FAN SECTION LOOPS
AGENT 2
AGENT 1
#1 GEN
#2 GEN
IDG
PACK #1 FLOW CONTROL VALVE
PACK#2 FLOW CONTROL VALVE
CROSSBLEED VALVE
ENG BLEED VALVE
PYLON NACELLE LOOPS
HYD FIRE SHUTOFF VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU GEN
APU LOOPS
CORE LOOPS
LP FUEL VALVE
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:

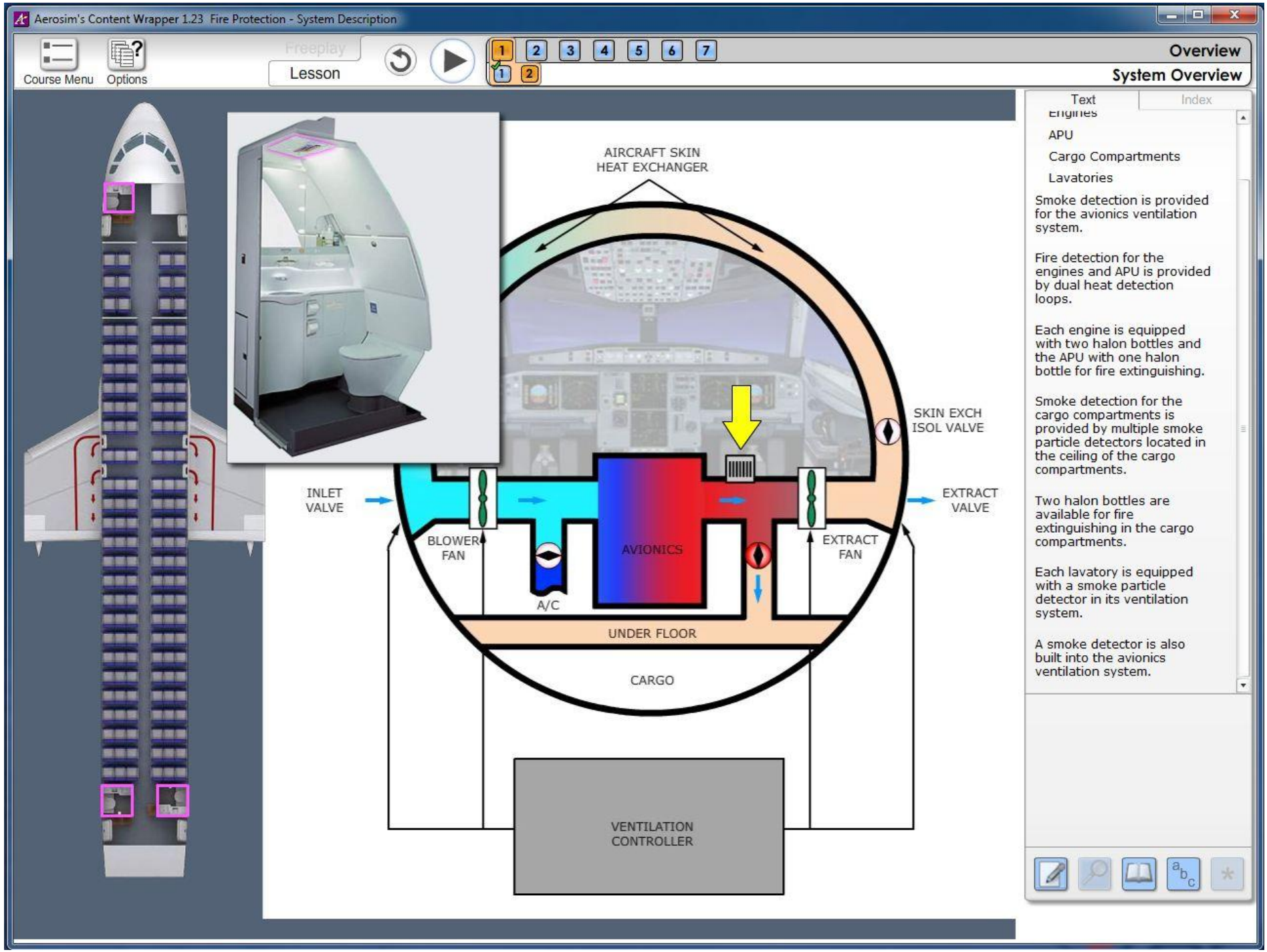

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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System Overview
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Index
Fire detection and protection is provided for the following areas:
Engines
APU
Cargo Compartments
Lavatories
Smoke detection is provided for the avionics ventilation system.
Fire detection for the engines and APU is provided by dual heat detection loops.
ENGINE #1 FIRE PB
AGENT 2 PB
AGENT 1 PB
TO APPLICABLE FIRE WARNINGS
FIRE DETECTION UNIT (FDU)
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
ENGINE# 1
ENGINE# 2
ENGINE #2 FIRE PB
LOOP A
LOOP B
FADEC
FAN SECTION LOOPS
AGENT 2
AGENT 1
#1 GEN
#2 GEN
IDG
PACK #1 FLOW CONTROL VALVE
PACK#2 FLOW CONTROL VALVE
CROSSBLEED VALVE
ENG BLEED VALVE
PYLON NACELLE LOOPS
HYD FIRE SHUTOFF VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU GEN
APU LOOPS
CORE LOOPS
LP FUEL VALVE
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
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Freeplay
Lesson
1 2 3 4 5 6 7
1 2
Overview
System Overview
Text
Index
Fire detection and protection is provided for the following areas:
Engines
APU
Cargo Compartments
Lavatories
Smoke detection is provided for the avionics ventilation system.
Fire detection for the engines and APU is provided by dual heat detection loops.
Each engine is equipped with two halon bottles and the APU with one halon bottle for fire extinguishing.
ENGINE #1 FIRE PB
AGENT 2 PB
AGENT 1 PB
TO APPLICABLE FIRE WARNINGS
FIRE DETECTION UNIT (FDU)
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
ENGINE# 1
ENGINE# 2
FADEC
FAN SECTION LOOPS
LOOP A
LOOP B
AGENT 2
AGENT 1
PACK #1 FLOW CONTROL VALVE
PACK#2 FLOW CONTROL VALVE
CROSSBLEED VALVE
ENG BLEED VALVE
#1 GEN
#2 GEN
IDG
PYLON NACELLE LOOPS
HYD FIRE SHUTOFF VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
CORE LOOPS
LP FUEL VALVE
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:

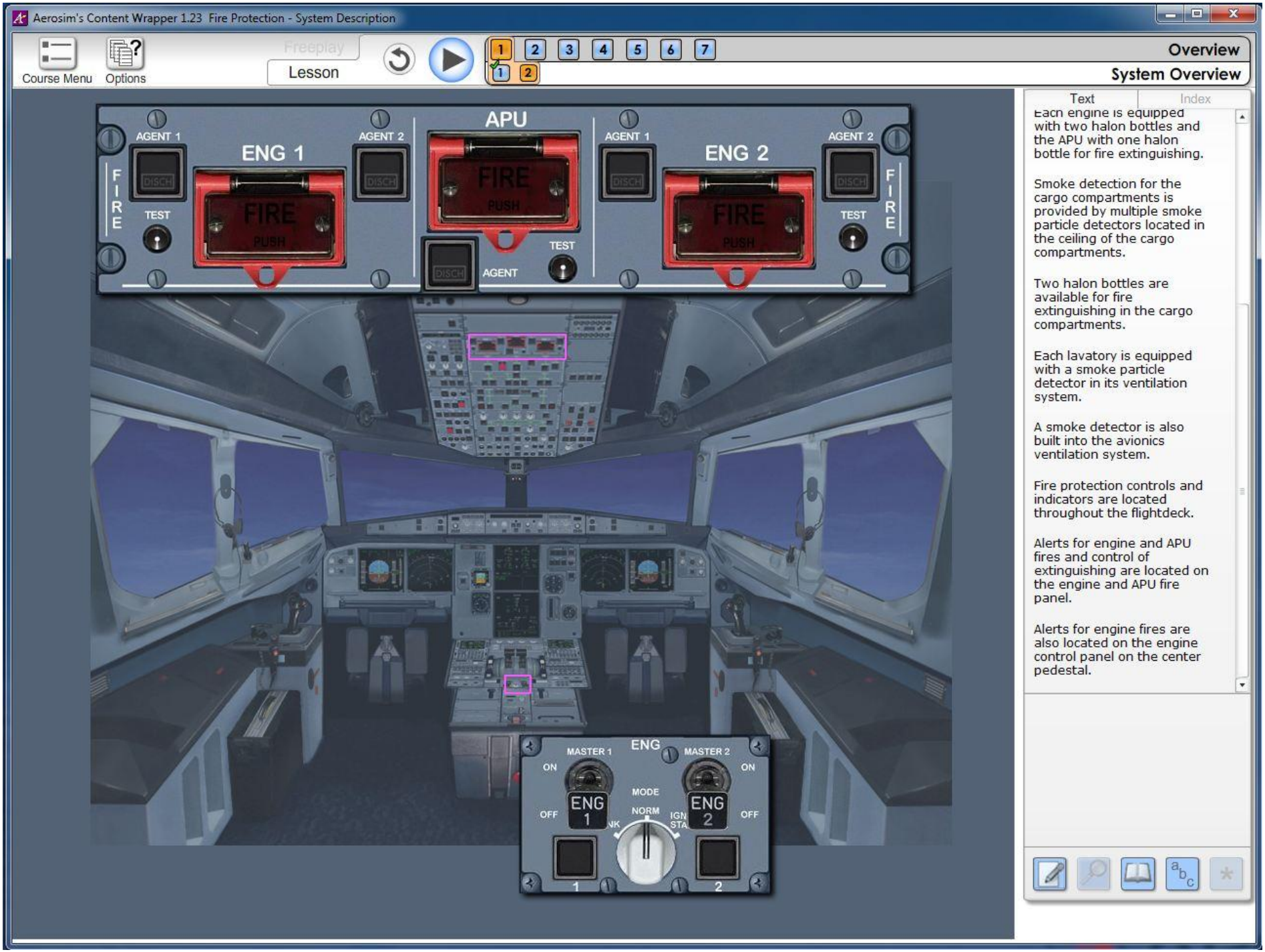

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
1 2 3 4 5 6 7
1 2
Overview
System Overview
TO ECAM & CARGO SMOKE PANEL
SDCU (2 Channels)
DISCH1 LIGHT
DISCH2 LIGHT
FWD AGENT PB
AFT AGENT PB
BTL 1
BTL 2
SQUIBS
FLOW METER
FLOW METER
OR
AND*
AND*
AND*
SMOKE DETECTORS
SMOKE DETECTORS
SMOKE DETECTORS
FORWARD CARGO COMPARTMENT
AFT CARGO COMPARTMENT
BULK CARGO COMPARTMENT
SQUIBS:
NORMAL:
ARMED:
FIRED:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
FANS/SMOKE DETECTORS:
OFF - GRAY
OPERATING - GREEN
FAULTED - AMBER
Text
Index
Fire detection and protection is provided for the following areas:
Engines
APU
Cargo Compartments
Lavatories
Smoke detection is provided for the avionics ventilation system.
Fire detection for the engines and APU is provided by dual heat detection loops.
Each engine is equipped with two halon bottles and the APU with one halon bottle for fire extinguishing.
Smoke detection for the cargo compartments is provided by multiple smoke particle detectors located in the ceiling of the cargo compartments.

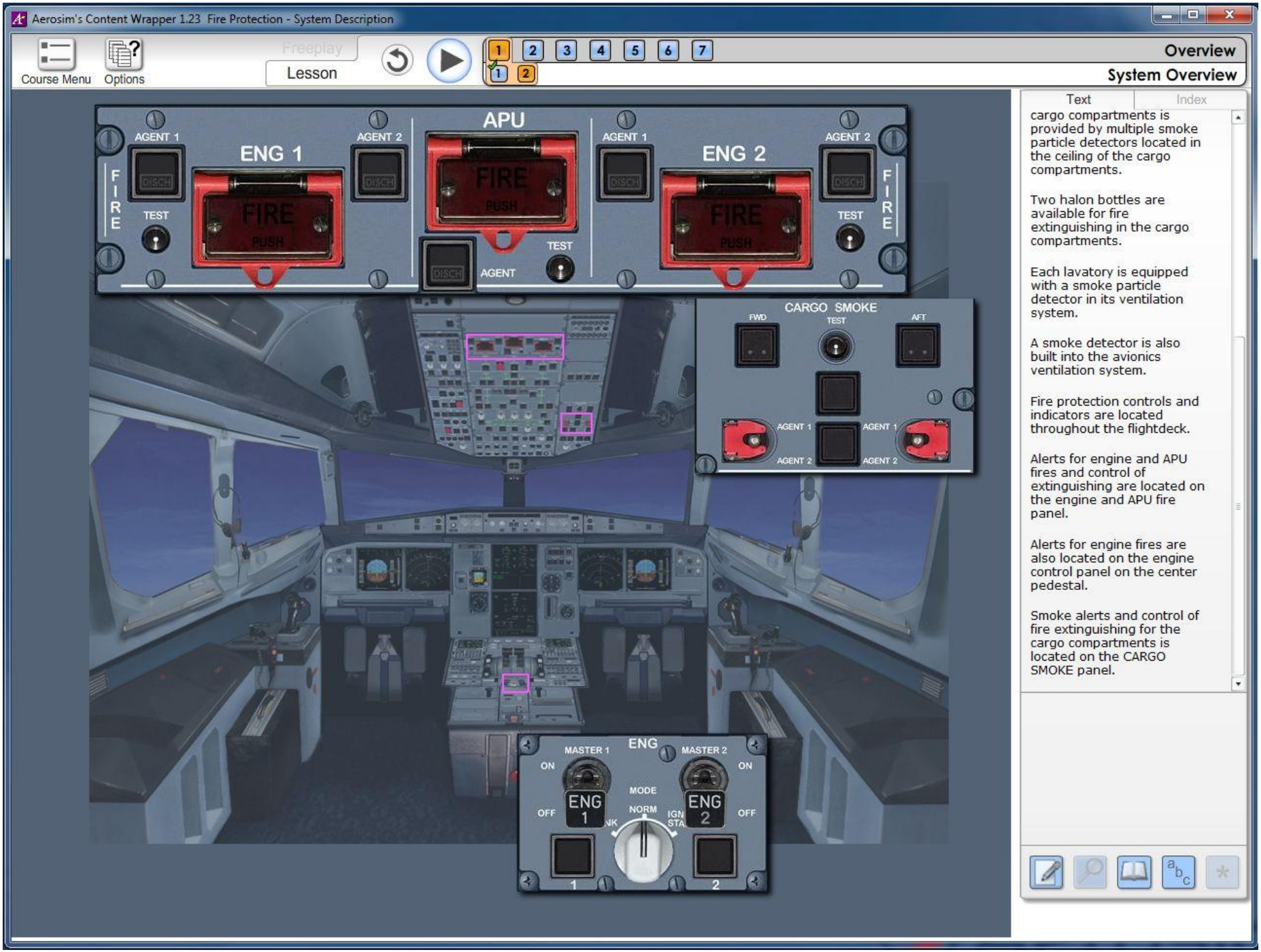

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
1 2 3 4 5 6 7
1 2
Overview
System Overview
TO ECAM & CARGO SMOKE PANEL
SDCU (2 Channels)
DISCH1 LIGHT
DISCH2 LIGHT
FWD AGENT PB
AFT AGENT PB
BTL 1
BTL 2
SQUIBS
FLOW METER
FLOW METER
OR
AND*
AND*
AND*
SMOKE DETECTORS
SMOKE DETECTORS
SMOKE DETECTORS
FORWARD CARGO COMPARTMENT
AFT CARGO COMPARTMENT
BULK CARGO COMPARTMENT
SQUIBS:
NORMAL:
ARMED:
FIRED:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
FANS/SMOKE DETECTORS:
OFF - GRAY
OPERATING - GREEN
FAULTED - AMBER
Text
Index
Fire detection and protection is provided for the following areas:
Engines
APU
Cargo Compartments
Lavatories
Smoke detection is provided for the avionics ventilation system.
Fire detection for the engines and APU is provided by dual heat detection loops.
Each engine is equipped with two halon bottles and the APU with one halon bottle for fire extinguishing.
Smoke detection for the cargo compartments is provided by multiple smoke particle detectors located in the ceiling of the cargo compartments.
Two halon bottles are available for fire extinguishing in the cargo compartments.

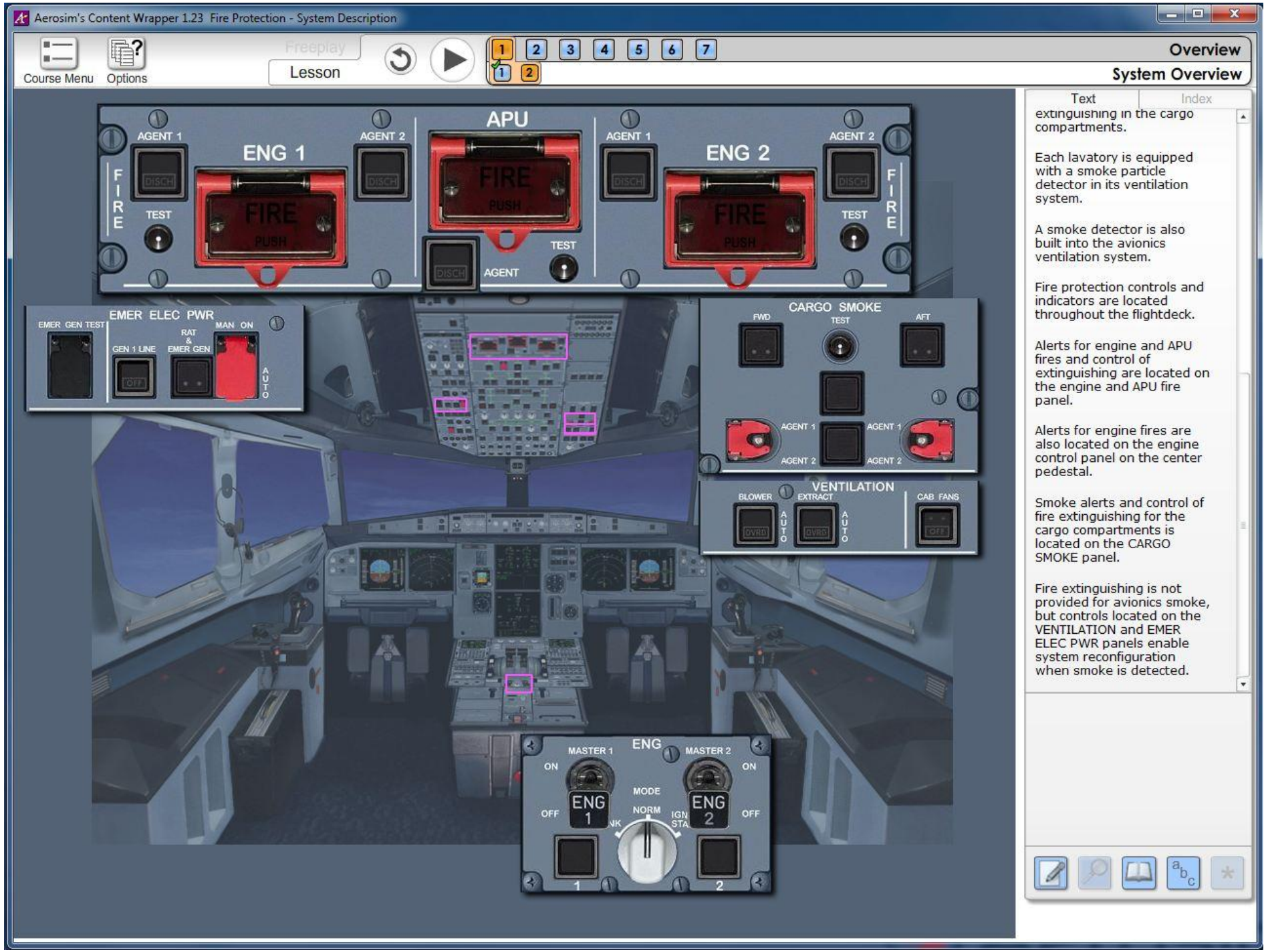

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
1
2
3
4
5
6
7
Overview
System Overview
Text
Index
protection is provided for the following areas:
Engines
APU
Cargo Compartments
Lavatories
Smoke detection is provided for the avionics ventilation system.
Fire detection for the engines and APU is provided by dual heat detection loops.
Each engine is equipped with two halon bottles and the APU with one halon bottle for fire extinguishing.
Smoke detection for the cargo compartments is provided by multiple smoke particle detectors located in the ceiling of the cargo compartments.
Two halon bottles are available for fire extinguishing in the cargo compartments.
Each lavatory is equipped with a smoke particle detector in its ventilation system.

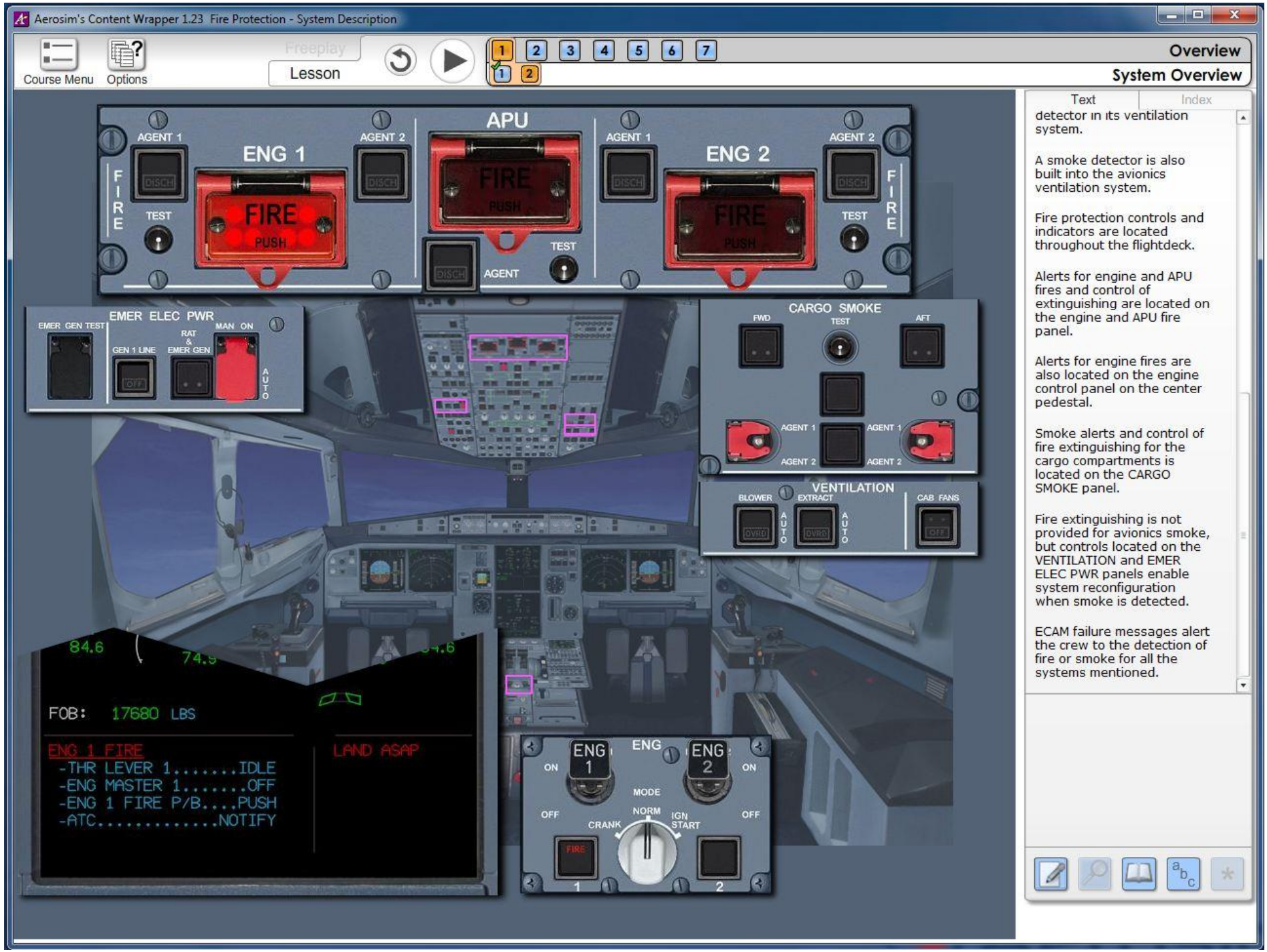

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Overview
System Overview
Text
Index
APU
Cargo Compartments
Lavatories
Smoke detection is provided for the avionics ventilation system.
Fire detection for the engines and APU is provided by dual heat detection loops.
Each engine is equipped with two halon bottles and the APU with one halon bottle for fire extinguishing.
Smoke detection for the cargo compartments is provided by multiple smoke particle detectors located in the ceiling of the cargo compartments.
Two halon bottles are available for fire extinguishing in the cargo compartments.
Each lavatory is equipped with a smoke particle detector in its ventilation system.
A smoke detector is also built into the avionics ventilation system.
AIRCRAFT SKIN
HEAT EXCHANGER
SKIN EXCH
ISOL VALVE
INLET
VALVE
EXTRACT
VALVE
BLOWER
FAN
AVIONICS
EXTRACT
FAN
A/C
UNDER FLOOR
CARGO
VENTILATION
CONTROLLER

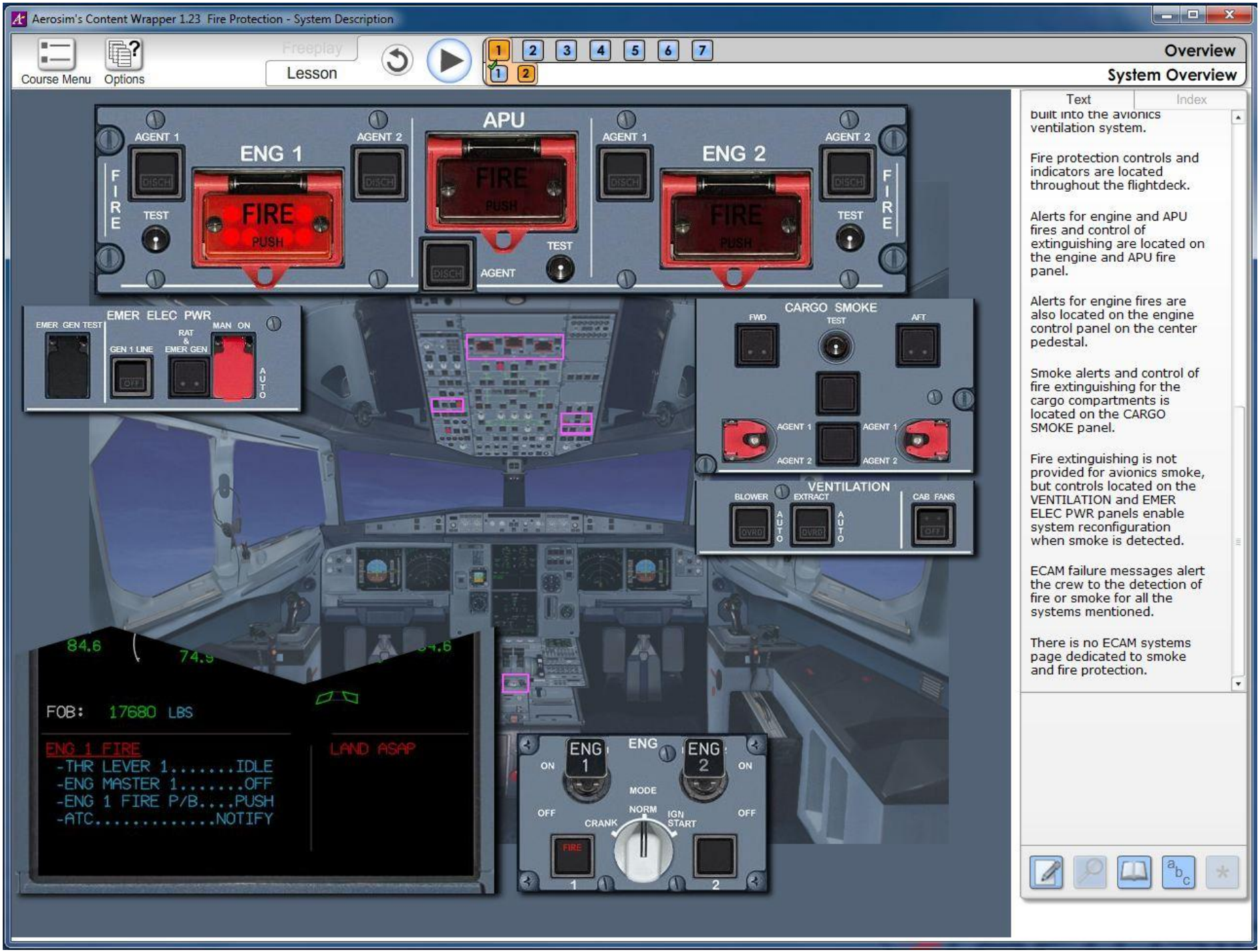

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
1 2 3 4 5 6 7
1 2
Overview
System Overview
Text
Index
Fire detection for the engines and APU is provided by dual heat detection loops.
Each engine is equipped with two halon bottles and the APU with one halon bottle for fire extinguishing.
Smoke detection for the cargo compartments is provided by multiple smoke particle detectors located in the ceiling of the cargo compartments.
Two halon bottles are available for fire extinguishing in the cargo compartments.
Each lavatory is equipped with a smoke particle detector in its ventilation system.
A smoke detector is also built into the avionics ventilation system.
Fire protection controls and indicators are located throughout the flightdeck.
Alerts for engine and APU fires and control of extinguishing are located on the engine and APU fire panel.
AGENT 1
ENG 1
AGENT 2
APU
AGENT 1
ENG 2
AGENT 2
FIRE
PUSH
TEST
DISCH
AGENT

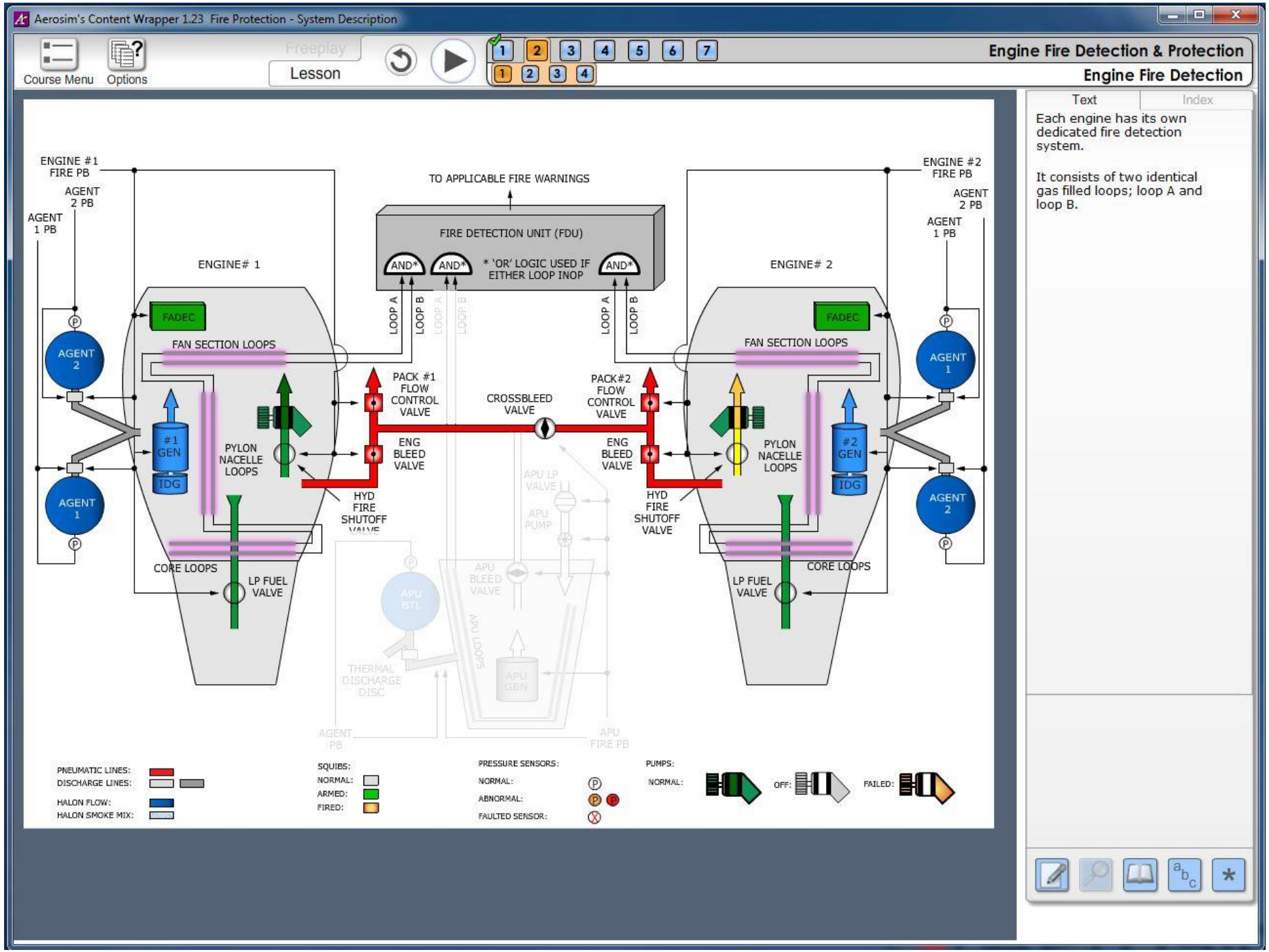

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
1 2 3 4 5 6 7
1 2
Overview
System Overview
Text
Index
Each engine is equipped with two halon bottles and the APU with one halon bottle for fire extinguishing.
Smoke detection for the cargo compartments is provided by multiple smoke particle detectors located in the ceiling of the cargo compartments.
Two halon bottles are available for fire extinguishing in the cargo compartments.
Each lavatory is equipped with a smoke particle detector in its ventilation system.
A smoke detector is also built into the avionics ventilation system.
Fire protection controls and indicators are located throughout the flightdeck.
Alerts for engine and APU fires and control of extinguishing are located on the engine and APU fire panel.
Alerts for engine fires are also located on the engine control panel on the center pedestal.
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
DISCH
AGENT
FIRE
MASTER 1
MASTER 2
ENG
ON
OFF
MODE
NORM
ENG 1
ENG 2
1
2

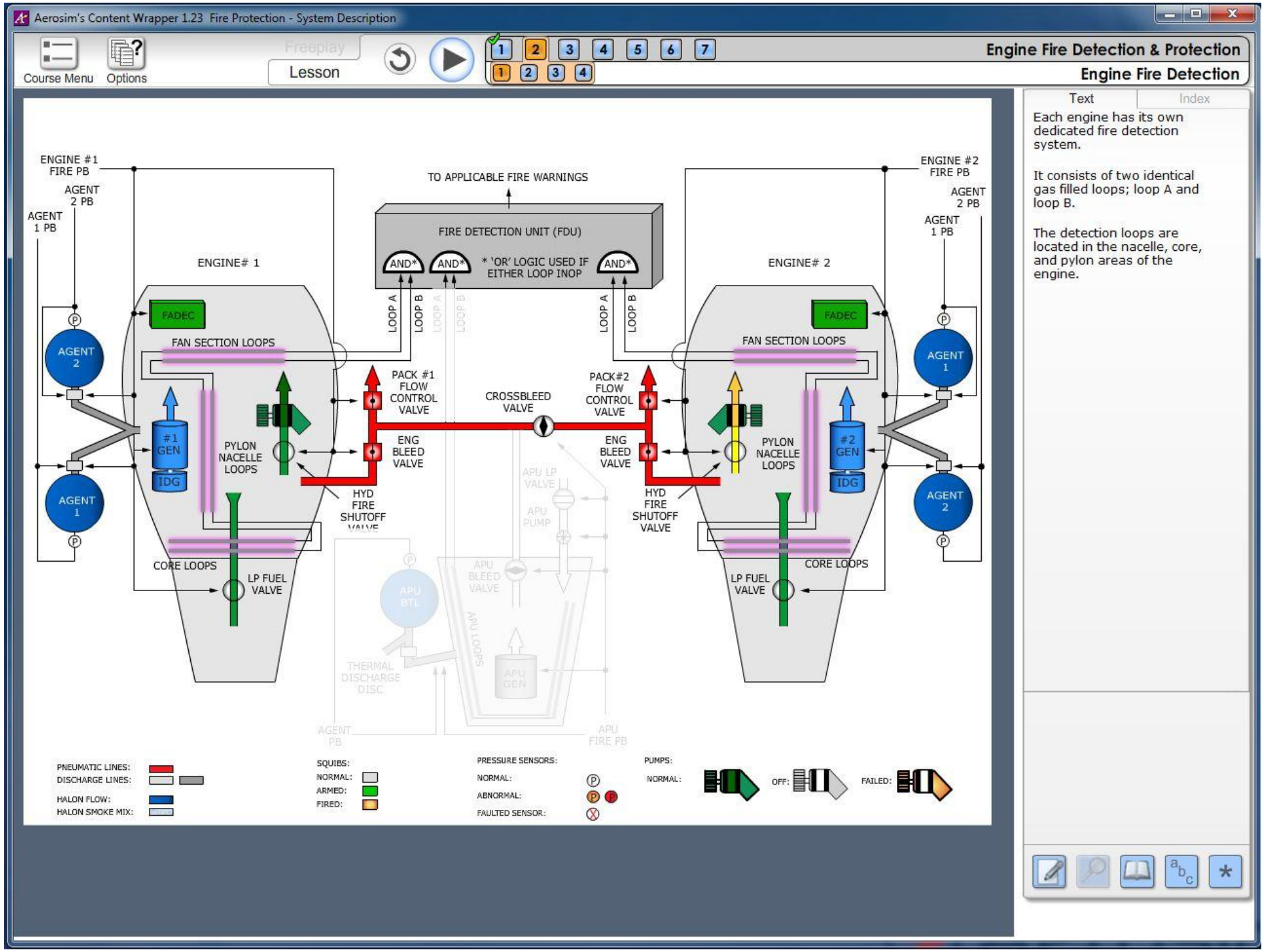

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
1 2 3 4 5 6 7
1 2
Overview
System Overview
Text
Index
cargo compartments is provided by multiple smoke particle detectors located in the ceiling of the cargo compartments.
Two halon bottles are available for fire extinguishing in the cargo compartments.
Each lavatory is equipped with a smoke particle detector in its ventilation system.
A smoke detector is also built into the avionics ventilation system.
Fire protection controls and indicators are located throughout the flightdeck.
Alerts for engine and APU fires and control of extinguishing are located on the engine and APU fire panel.
Alerts for engine fires are also located on the engine control panel on the center pedestal.
Smoke alerts and control of fire extinguishing for the cargo compartments is located on the CARGO SMOKE panel.
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
DISCH
AGENT
CARGO SMOKE
FWD
AFT
ENG
MASTER 1
MASTER 2
ON
OFF
MODE
NORM
ENG 1
ENG 2

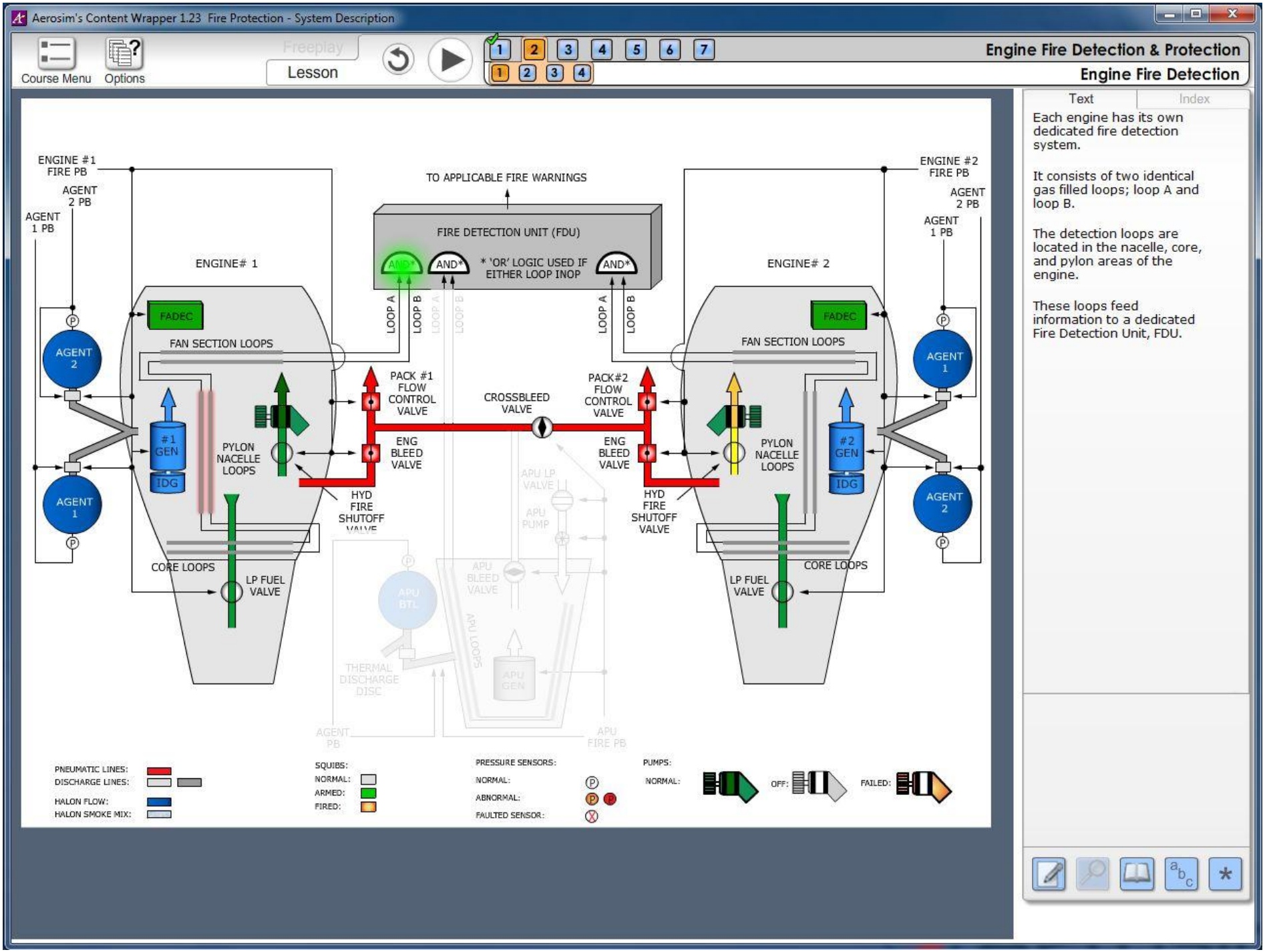

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
1 2 3 4 5 6 7
1 2
Overview
System Overview
Text
Index
extinguishing in the cargo compartments.
Each lavatory is equipped with a smoke particle detector in its ventilation system.
A smoke detector is also built into the avionics ventilation system.
Fire protection controls and indicators are located throughout the flightdeck.
Alerts for engine and APU fires and control of extinguishing are located on the engine and APU fire panel.
Alerts for engine fires are also located on the engine control panel on the center pedestal.
Smoke alerts and control of fire extinguishing for the cargo compartments is located on the CARGO SMOKE panel.
Fire extinguishing is not provided for avionics smoke, but controls located on the VENTILATION and EMER ELEC PWR panels enable system reconfiguration when smoke is detected.
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
DISCH
AGENT
EMER ELEC PWR
EMER GEN TEST
GEN 1 LINE
RAT & EMER GEN
MAN ON
AUTO
OFF
CARGO SMOKE
FWD
AFT
VENTILATION
BLOWER
EXTRACT
CAB FANS
OVRD
ENG
MASTER 1
MASTER 2
ON
OFF
MODE
NORM
IGN STA
ENG 1
ENG 2

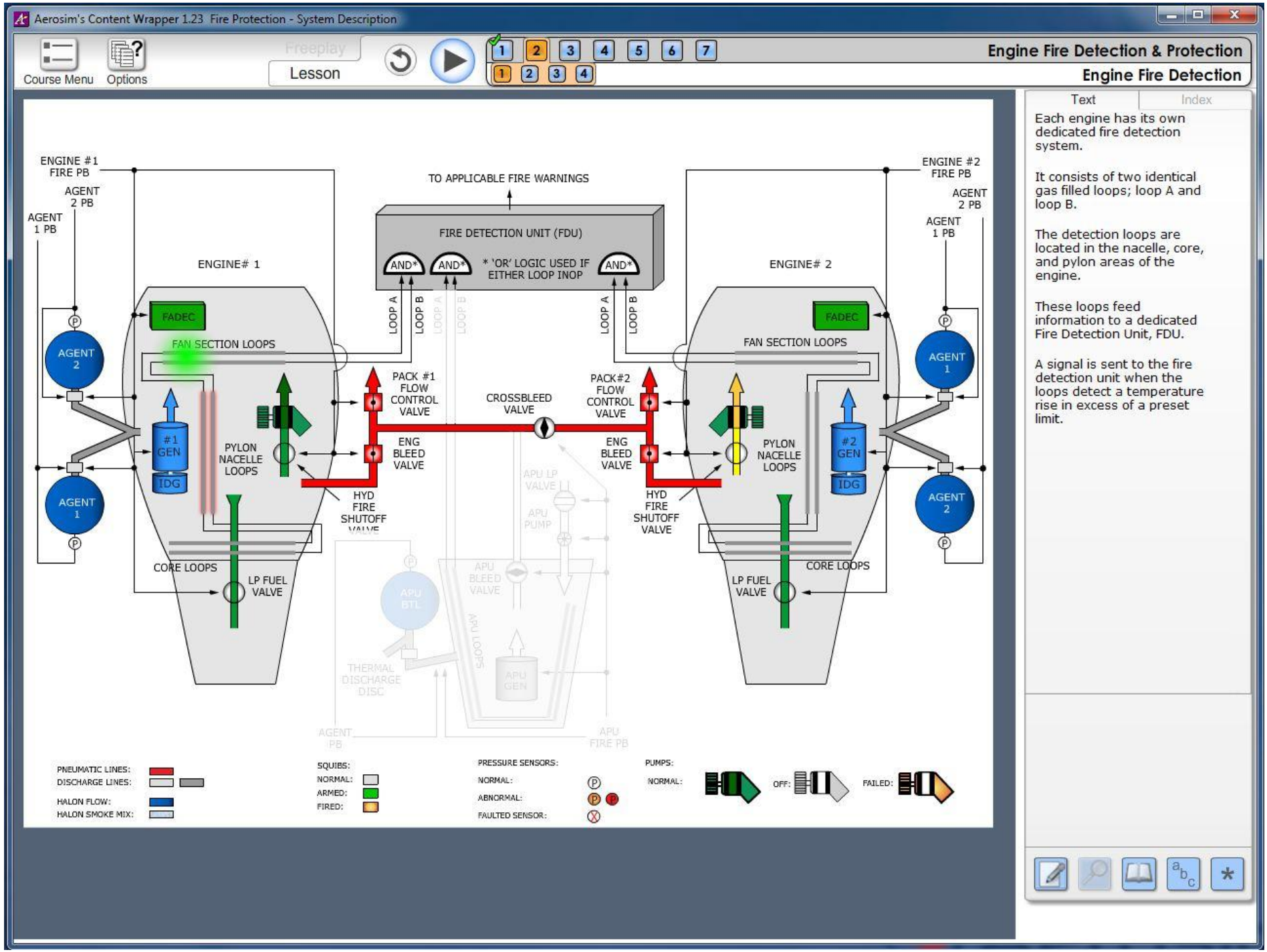

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Overview
System Overview
Text
Index
detector in its ventilation system.
A smoke detector is also built into the avionics ventilation system.
Fire protection controls and indicators are located throughout the flightdeck.
Alerts for engine and APU fires and control of extinguishing are located on the engine and APU fire panel.
Alerts for engine fires are also located on the engine control panel on the center pedestal.
Smoke alerts and control of fire extinguishing for the cargo compartments is located on the CARGO SMOKE panel.
Fire extinguishing is not provided for avionics smoke, but controls located on the VENTILATION and EMER ELEC PWR panels enable system reconfiguration when smoke is detected.
ECAM failure messages alert the crew to the detection of fire or smoke for all the systems mentioned.
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
DISCH
AGENT
EMER ELEC PWR
EMER GEN TEST
GEN 1 LINE
RAT & EMER GEN
MAN ON
AUTO
CARGO SMOKE
FWD
AFT
VENTILATION
BLOWER
EXTRACT
CAB FANS
FOB: 17680 LBS
ENG 1 FIRE
-THR LEVER 1.....IDLE
-ENG MASTER 1.....OFF
-ENG 1 FIRE P/B....PUSH
-ATC.....NOTIFY
LAND ASAP
ENG
MODE
NORM
CRANK
IGN START
ON
OFF

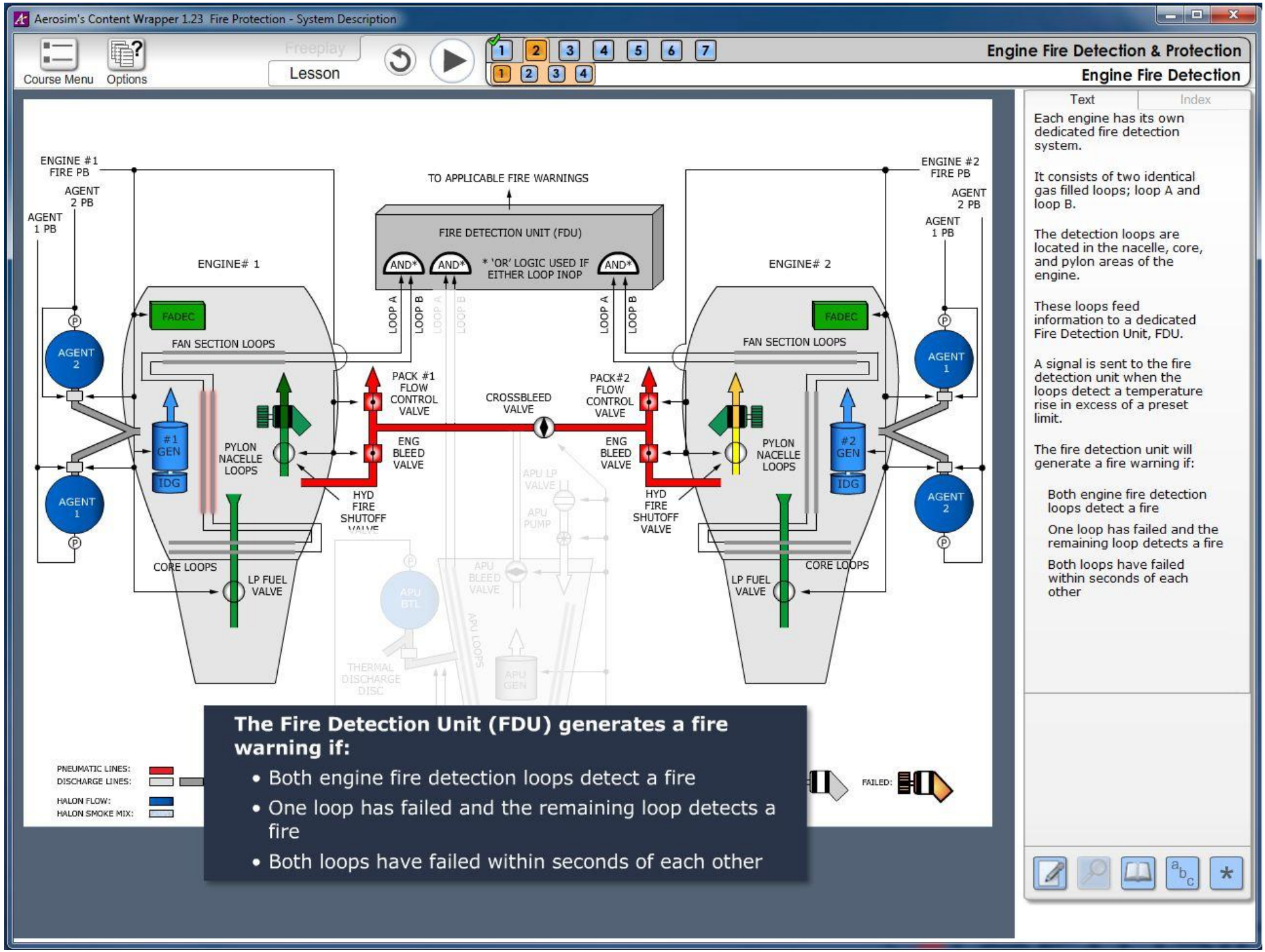

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Overview
System Overview
Text
Index
built into the avionics ventilation system.
Fire protection controls and indicators are located throughout the flightdeck.
Alerts for engine and APU fires and control of extinguishing are located on the engine and APU fire panel.
Alerts for engine fires are also located on the engine control panel on the center pedestal.
Smoke alerts and control of fire extinguishing for the cargo compartments is located on the CARGO SMOKE panel.
Fire extinguishing is not provided for avionics smoke, but controls located on the VENTILATION and EMER ELEC PWR panels enable system reconfiguration when smoke is detected.
ECAM failure messages alert the crew to the detection of fire or smoke for all the systems mentioned.
There is no ECAM systems page dedicated to smoke and fire protection.
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
DISCH
AGENT
EMER ELEC PWR
EMER GEN TEST
GEN 1 LINE
RAT & EMER GEN
MAN ON
AUTO
CARGO SMOKE
FWD
AFT
VENTILATION
BLOWER
EXTRACT
CAB FANS
FOB: 17680 LBS
ENG 1 FIRE
-THR LEVER 1.....IDLE
-ENG MASTER 1.....OFF
-ENG 1 FIRE P/B....PUSH
-ATC.....NOTIFY
LAND ASAP
ENG
MODE
NORM
IGN START
CRANK
ON
OFF

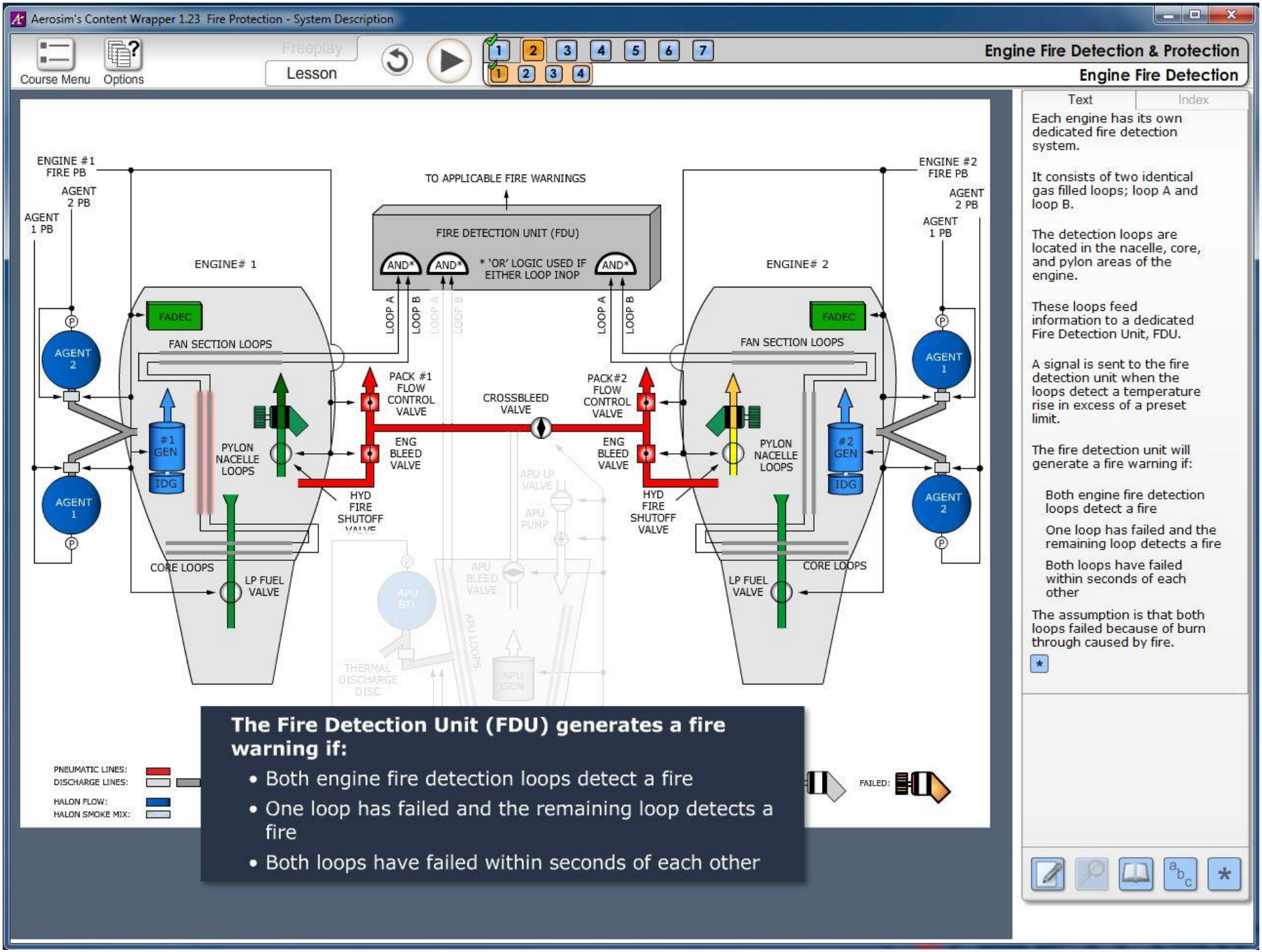

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Detection
Text
Index
Each engine has its own dedicated fire detection system.
It consists of two identical gas filled loops; loop A and loop B.
ENGINE #1 FIRE PB
AGENT 2 PB
AGENT 1 PB
TO APPLICABLE FIRE WARNINGS
FIRE DETECTION UNIT (FDU)
AND*
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
AND*
ENGINE# 1
ENGINE# 2
ENGINE #2 FIRE PB
AGENT 2 PB
AGENT 1 PB
FADEC
FAN SECTION LOOPS
LOOP A
LOOP B
PACK #1 FLOW CONTROL VALVE
CROSSBLEED VALVE
PACK#2 FLOW CONTROL VALVE
ENG BLEED VALVE
PYLON NACELLE LOOPS
#1 GEN
IDG
#2 GEN
IDG
HYD FIRE SHUTOFF VALVE
CORE LOOPS
LP FUEL VALVE
AGENT 2
AGENT 1
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:

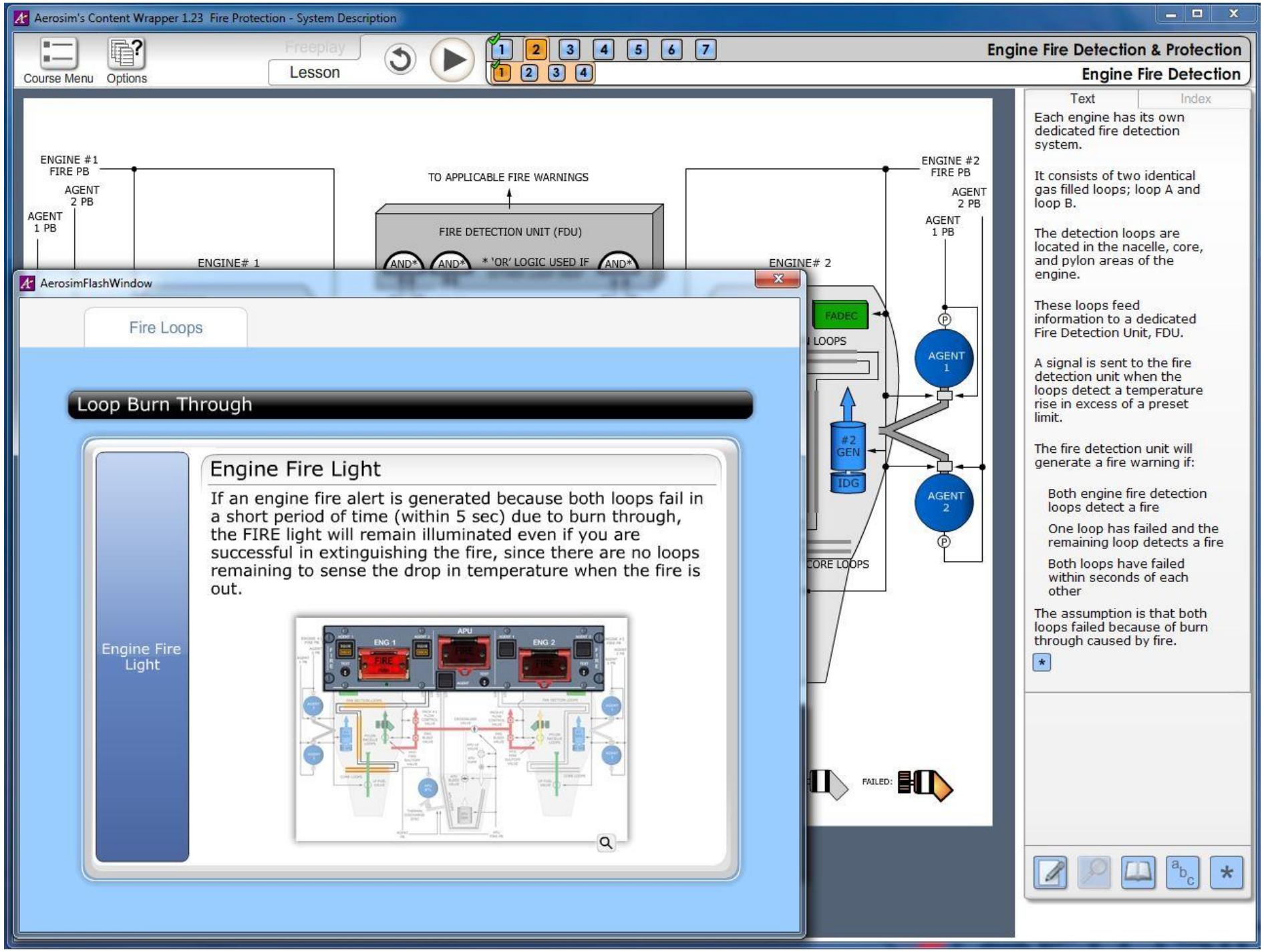

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Detection
Text
Index
Each engine has its own dedicated fire detection system.
It consists of two identical gas filled loops; loop A and loop B.
The detection loops are located in the nacelle, core, and pylon areas of the engine.
ENGINE #1 FIRE PB
AGENT 2 PB
AGENT 1 PB
TO APPLICABLE FIRE WARNINGS
FIRE DETECTION UNIT (FDU)
AND*
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
AND*
ENGINE# 1
ENGINE# 2
ENGINE #2 FIRE PB
AGENT 2 PB
AGENT 1 PB
LOOP A
LOOP B
FADEC
FAN SECTION LOOPS
AGENT 2
AGENT 1
#1 GEN
IDG
PYLON NACELLE LOOPS
PACK #1 FLOW CONTROL VALVE
ENG BLEED VALVE
CROSSBLEED VALVE
PACK#2 FLOW CONTROL VALVE
HYD FIRE SHUTOFF VALVE
CORE LOOPS
LP FUEL VALVE
#2 GEN
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:

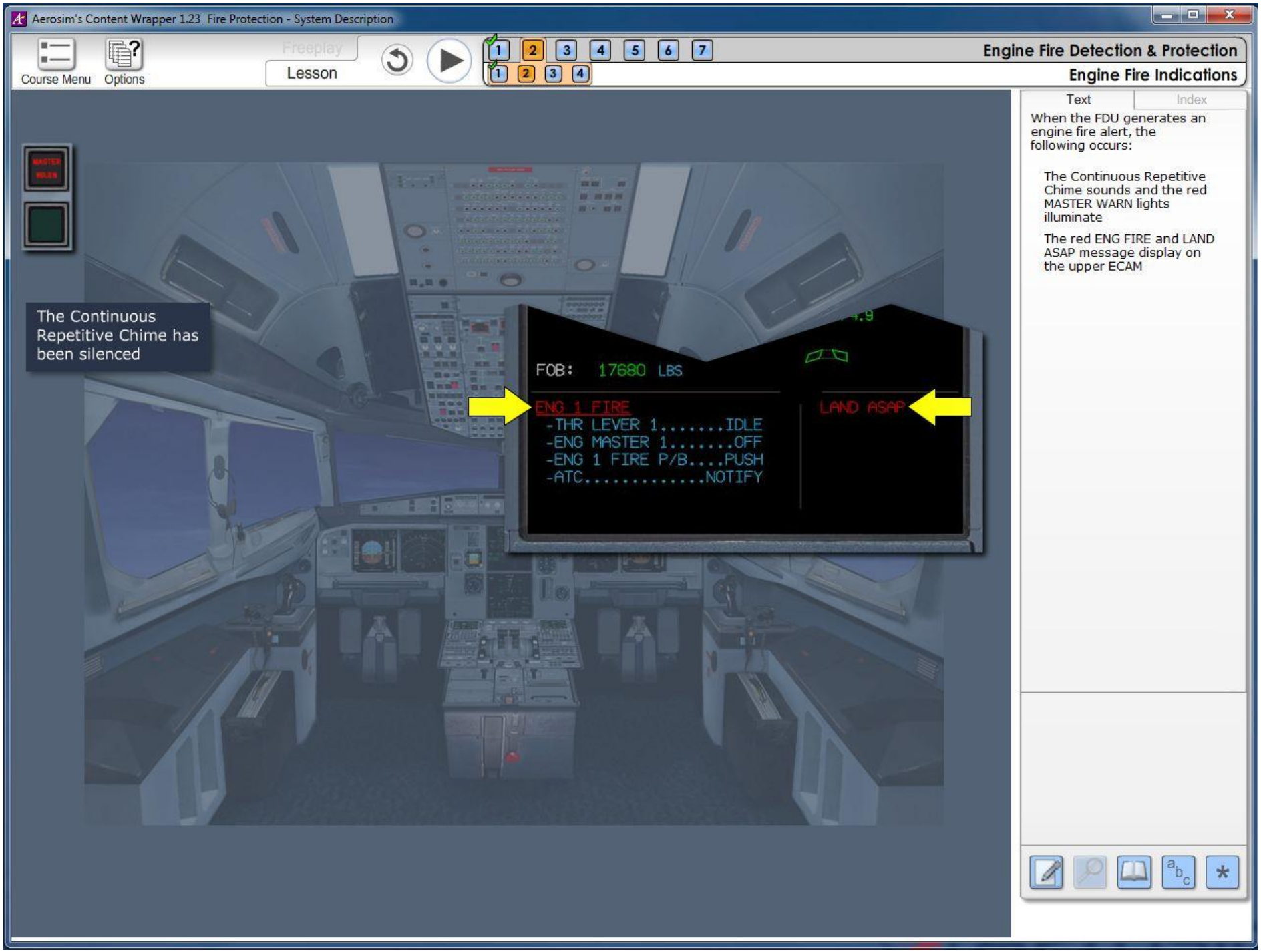

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Detection
Text
Index
Each engine has its own dedicated fire detection system.
It consists of two identical gas filled loops; loop A and loop B.
The detection loops are located in the nacelle, core, and pylon areas of the engine.
These loops feed information to a dedicated Fire Detection Unit, FDU.
ENGINE #1 FIRE PB
AGENT 2 PB
AGENT 1 PB
TO APPLICABLE FIRE WARNINGS
FIRE DETECTION UNIT (FDU)
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
ENGINE# 1
ENGINE# 2
ENGINE #2 FIRE PB
FADEC
FAN SECTION LOOPS
LOOP A
LOOP B
AGENT 2
AGENT 1
#1 GEN
#2 GEN
IDG
PACK #1 FLOW CONTROL VALVE
PACK#2 FLOW CONTROL VALVE
CROSSBLEED VALVE
ENG BLEED VALVE
PYLON NACELLE LOOPS
HYD FIRE SHUTOFF VALVE
CORE LOOPS
LP FUEL VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:

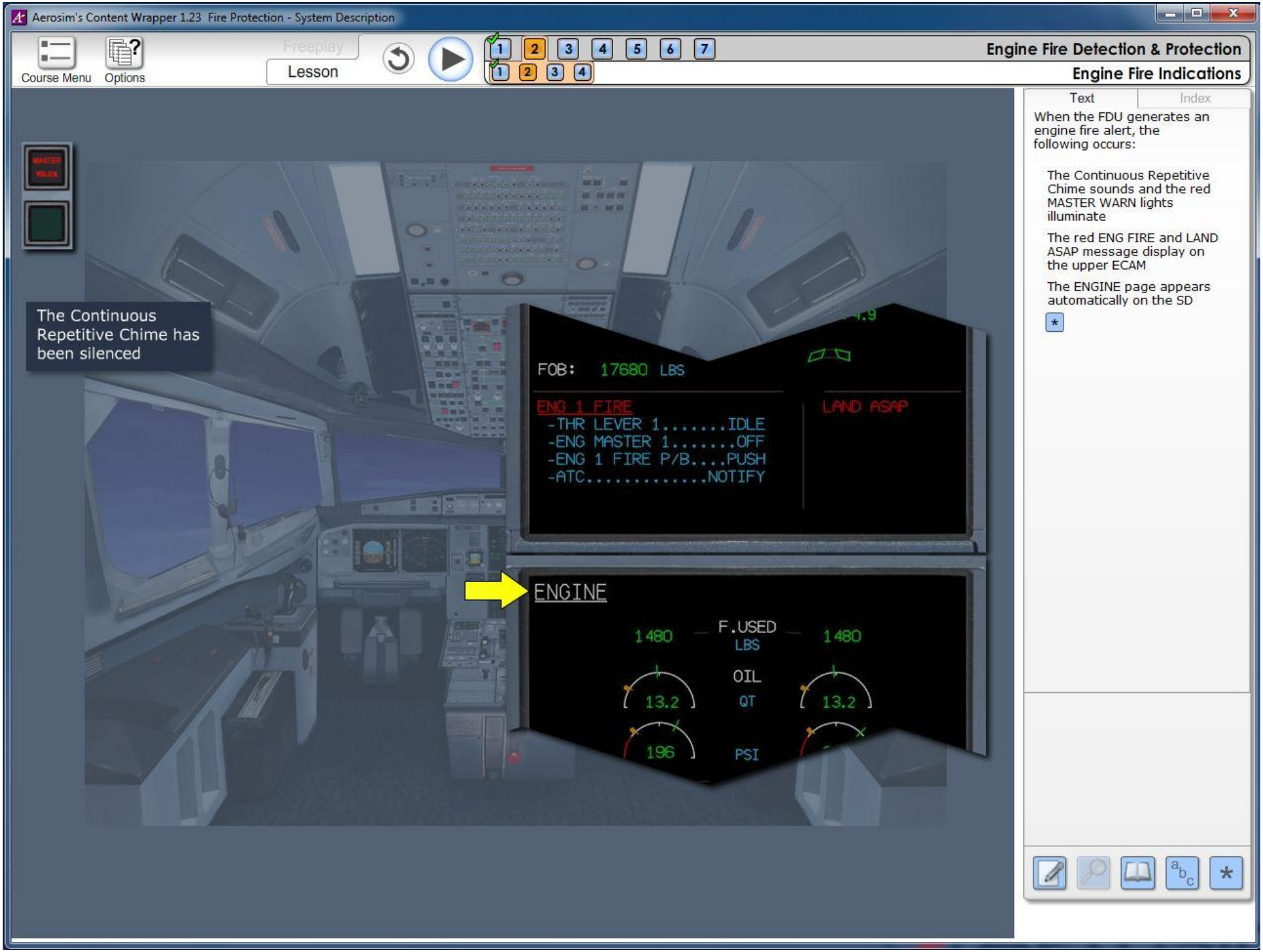

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Detection
Text
Index
Each engine has its own dedicated fire detection system.
It consists of two identical gas filled loops; loop A and loop B.
The detection loops are located in the nacelle, core, and pylon areas of the engine.
These loops feed information to a dedicated Fire Detection Unit, FDU.
A signal is sent to the fire detection unit when the loops detect a temperature rise in excess of a preset limit.
ENGINE #1 FIRE PB
AGENT 2 PB
AGENT 1 PB
TO APPLICABLE FIRE WARNINGS
FIRE DETECTION UNIT (FDU)
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
ENGINE# 1
ENGINE# 2
LOOP A
LOOP B
FADEC
FAN SECTION LOOPS
AGENT 2
AGENT 1
#1 GEN
#2 GEN
IDG
PACK #1 FLOW CONTROL VALVE
PACK#2 FLOW CONTROL VALVE
CROSSBLEED VALVE
ENG BLEED VALVE
PYLON NACELLE LOOPS
HYD FIRE SHUTOFF VALVE
CORE LOOPS
LP FUEL VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Detection
Text
Index
Each engine has its own dedicated fire detection system.
It consists of two identical gas filled loops; loop A and loop B.
The detection loops are located in the nacelle, core, and pylon areas of the engine.
These loops feed information to a dedicated Fire Detection Unit, FDU.
A signal is sent to the fire detection unit when the loops detect a temperature rise in excess of a preset limit.
The fire detection unit will generate a fire warning if:
Both engine fire detection loops detect a fire
One loop has failed and the remaining loop detects a fire
Both loops have failed within seconds of each other
ENGINE #1 FIRE PB
AGENT 2 PB
AGENT 1 PB
TO APPLICABLE FIRE WARNINGS
FIRE DETECTION UNIT (FDU)
AND*
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
AND*
ENGINE# 1
ENGINE# 2
ENGINE #2 FIRE PB
AGENT 2 PB
AGENT 1 PB
FADEC
FAN SECTION LOOPS
LOOP A
LOOP B
PACK #1 FLOW CONTROL VALVE
CROSSBLEED VALVE
PACK#2 FLOW CONTROL VALVE
ENG BLEED VALVE
PYLON NACELLE LOOPS
#1 GEN
IDG
#2 GEN
HYD FIRE SHUTOFF VALVE
CORE LOOPS
LP FUEL VALVE
AGENT 1
AGENT 2
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
The Fire Detection Unit (FDU) generates a fire warning if:
• Both engine fire detection loops detect a fire
• One loop has failed and the remaining loop detects a fire
• Both loops have failed within seconds of each other
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
FAILED:

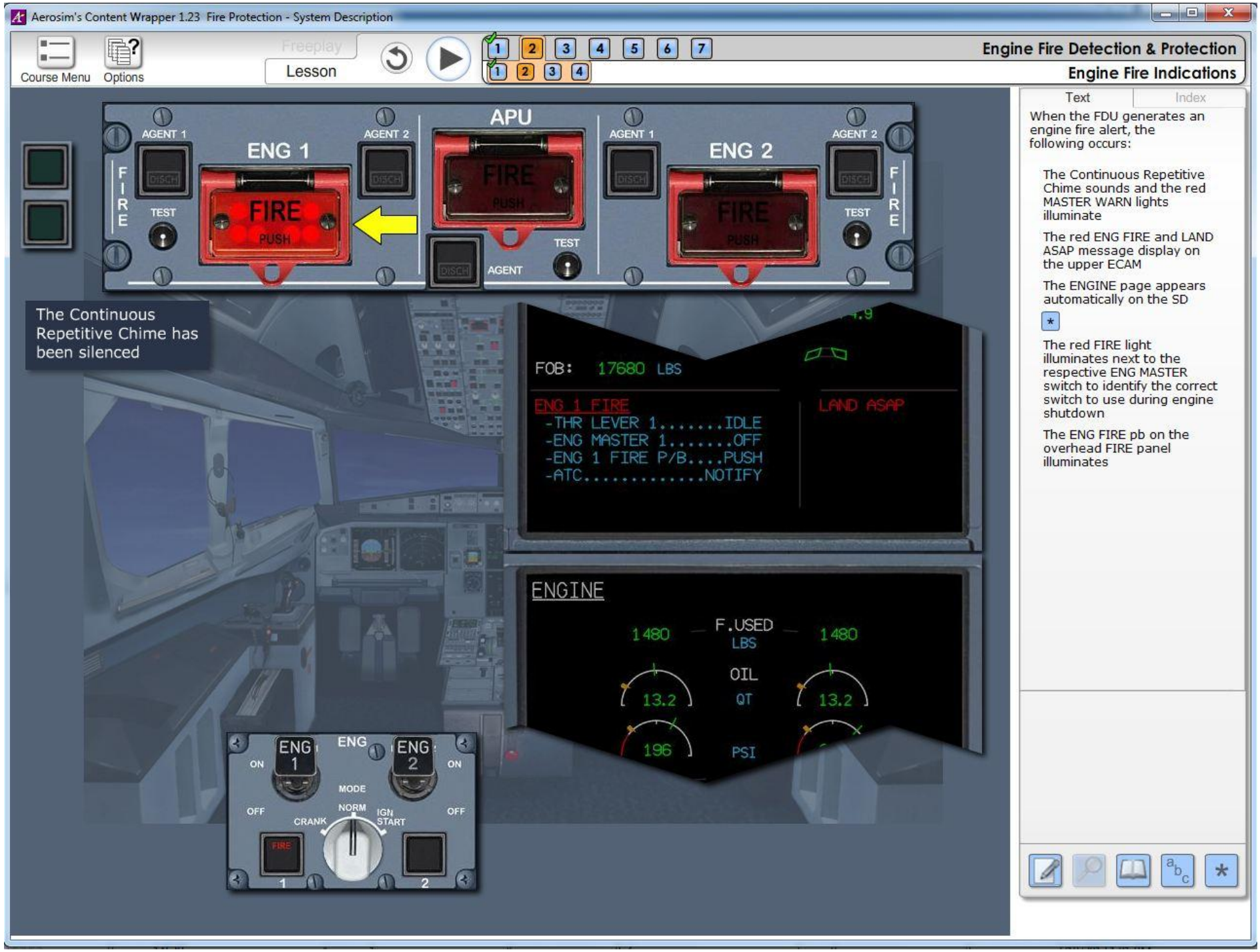

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Detection
Text
Index
Each engine has its own dedicated fire detection system.
It consists of two identical gas filled loops; loop A and loop B.
The detection loops are located in the nacelle, core, and pylon areas of the engine.
These loops feed information to a dedicated Fire Detection Unit, FDU.
A signal is sent to the fire detection unit when the loops detect a temperature rise in excess of a preset limit.
The fire detection unit will generate a fire warning if:
Both engine fire detection loops detect a fire
One loop has failed and the remaining loop detects a fire
Both loops have failed within seconds of each other
The assumption is that both loops failed because of burn through caused by fire.
ENGINE #1 FIRE PB
AGENT 2 PB
AGENT 1 PB
TO APPLICABLE FIRE WARNINGS
FIRE DETECTION UNIT (FDU)
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
ENGINE# 1
ENGINE# 2
LOOP A
LOOP B
FADEC
FAN SECTION LOOPS
AGENT 2
AGENT 1
#1 GEN
#2 GEN
IDG
PACK #1 FLOW CONTROL VALVE
PACK#2 FLOW CONTROL VALVE
CROSSBLEED VALVE
ENG BLEED VALVE
PYLON NACELLE LOOPS
HYD FIRE SHUTOFF VALVE
CORE LOOPS
LP FUEL VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
The Fire Detection Unit (FDU) generates a fire warning if:
• Both engine fire detection loops detect a fire
• One loop has failed and the remaining loop detects a fire
• Both loops have failed within seconds of each other
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
FAILED:

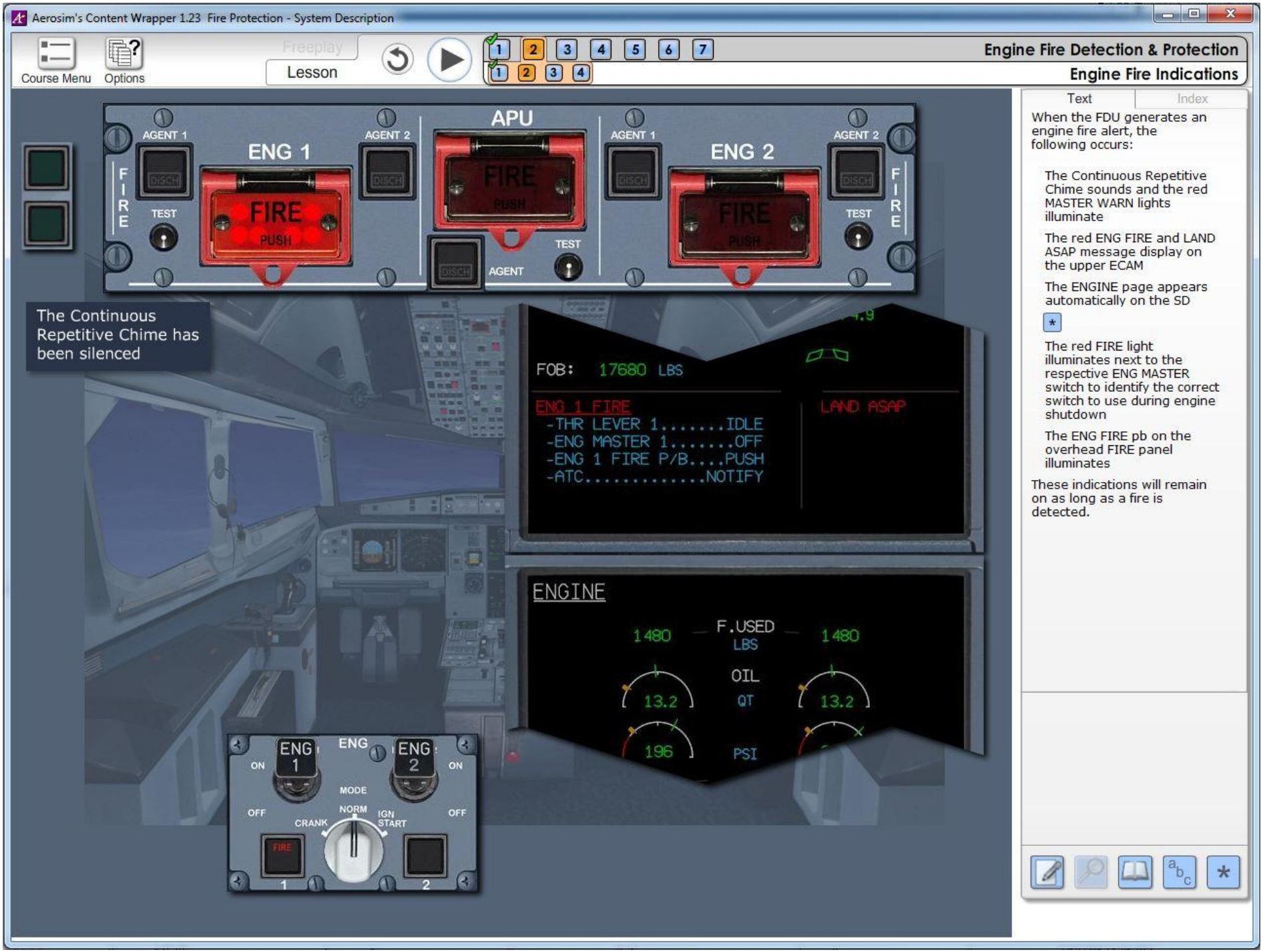

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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Options
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Engine Fire Detection & Protection
Engine Fire Detection
Text
Index
Each engine has its own dedicated fire detection system.
It consists of two identical gas filled loops; loop A and loop B.
The detection loops are located in the nacelle, core, and pylon areas of the engine.
These loops feed information to a dedicated Fire Detection Unit, FDU.
A signal is sent to the fire detection unit when the loops detect a temperature rise in excess of a preset limit.
The fire detection unit will generate a fire warning if:
Both engine fire detection loops detect a fire
One loop has failed and the remaining loop detects a fire
Both loops have failed within seconds of each other
The assumption is that both loops failed because of burn through caused by fire.
ENGINE #1 FIRE PB
AGENT 2 PB
AGENT 1 PB
ENGINE# 1
TO APPLICABLE FIRE WARNINGS
FIRE DETECTION UNIT (FDU)
AND*
AND*
* 'OR' LOGIC USED IF
AND*
ENGINE #2 FIRE PB
AGENT 2 PB
AGENT 1 PB
ENGINE# 2
FADEC
AGENT 1
#2 GEN
IDG
AGENT 2
FAILED:
AerosimFlashWindow
Fire Loops
Loop Burn Through
Engine Fire Light
Engine Fire Light
If an engine fire alert is generated because both loops fail in a short period of time (within 5 sec) due to burn through, the FIRE light will remain illuminated even if you are successful in extinguishing the fire, since there are no loops remaining to sense the drop in temperature when the fire is out.
APU
ENG 1
ENG 2
FIRE

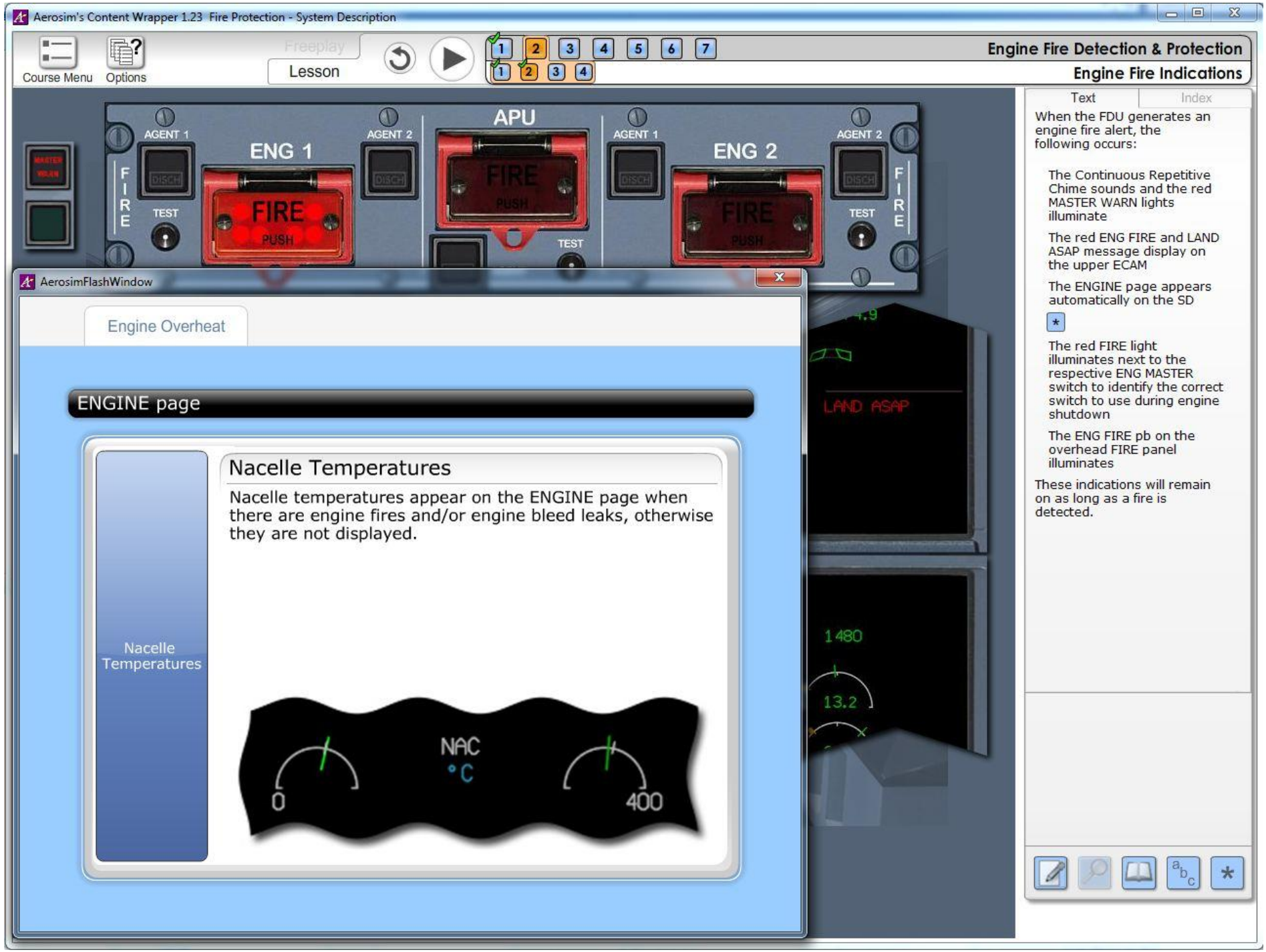

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
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Engine Fire Detection & Protection
Engine Fire Indications
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Index
When the FDU generates an engine fire alert, the following occurs:
The Continuous Repetitive Chime sounds and the red MASTER WARN lights illuminate
The red ENG FIRE and LAND ASAP message display on the upper ECAM
The Continuous Repetitive Chime has been silenced
FOB: 17680 LBS
ENG 1 FIRE
-THR LEVER 1.....IDLE
-ENG MASTER 1.....OFF
-ENG 1 FIRE P/B....PUSH
-ATC.....NOTIFY
LAND ASAP

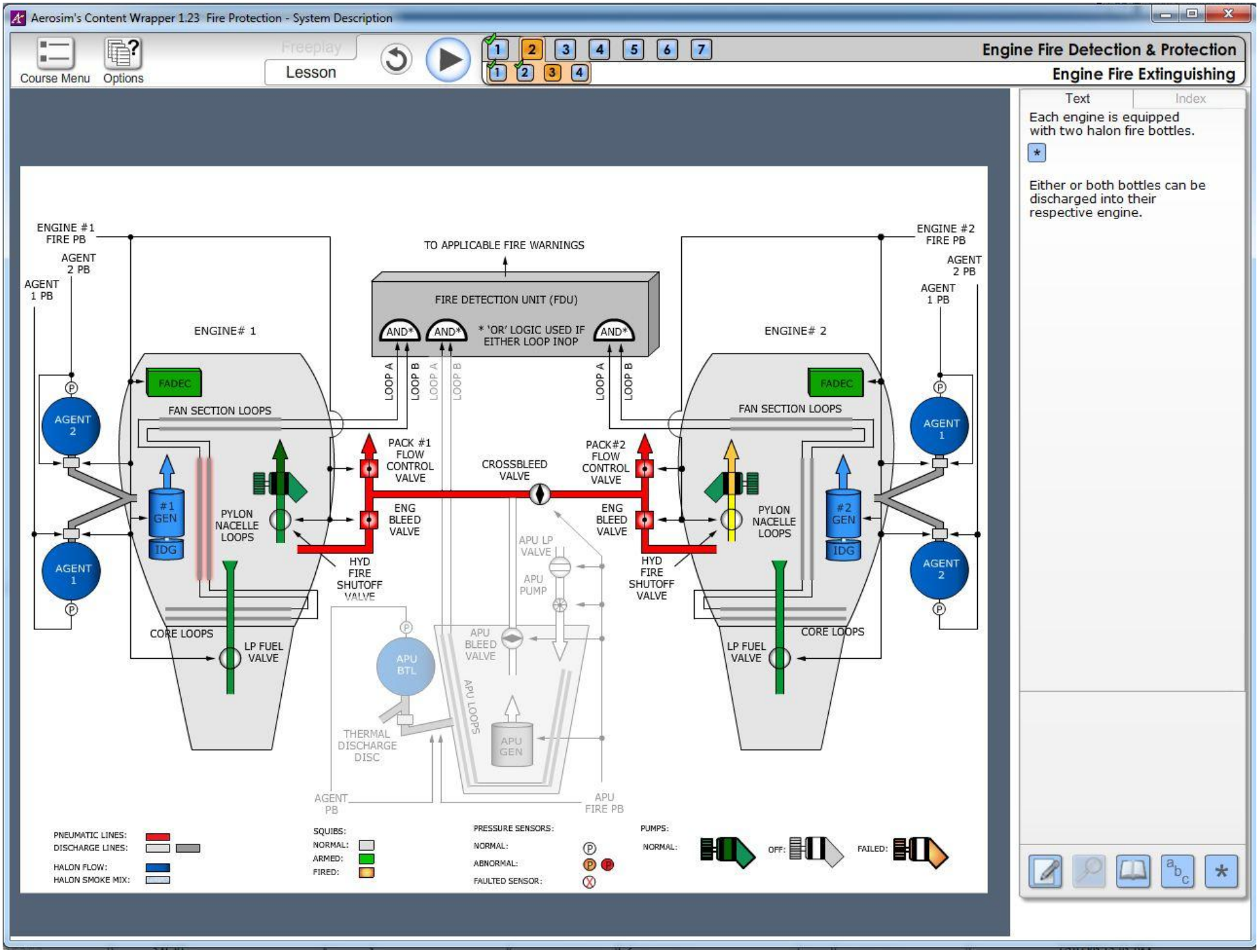

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Engine Fire Detection & Protection
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When the FDU generates an engine fire alert, the following occurs:
The Continuous Repetitive Chime sounds and the red MASTER WARN lights illuminate
The red ENG FIRE and LAND ASAP message display on the upper ECAM
The ENGINE page appears automatically on the SD
The Continuous Repetitive Chime has been silenced
FOB: 17680 LBS
ENG 1 FIRE
-THR LEVER 1.....IDLE
-ENG MASTER 1.....OFF
-ENG 1 FIRE P/B....PUSH
-ATC.....NOTIFY
LAND ASAP
ENGINE
1480
F.USED
LBS
1480
OIL
13.2
QT
13.2
196
PSI

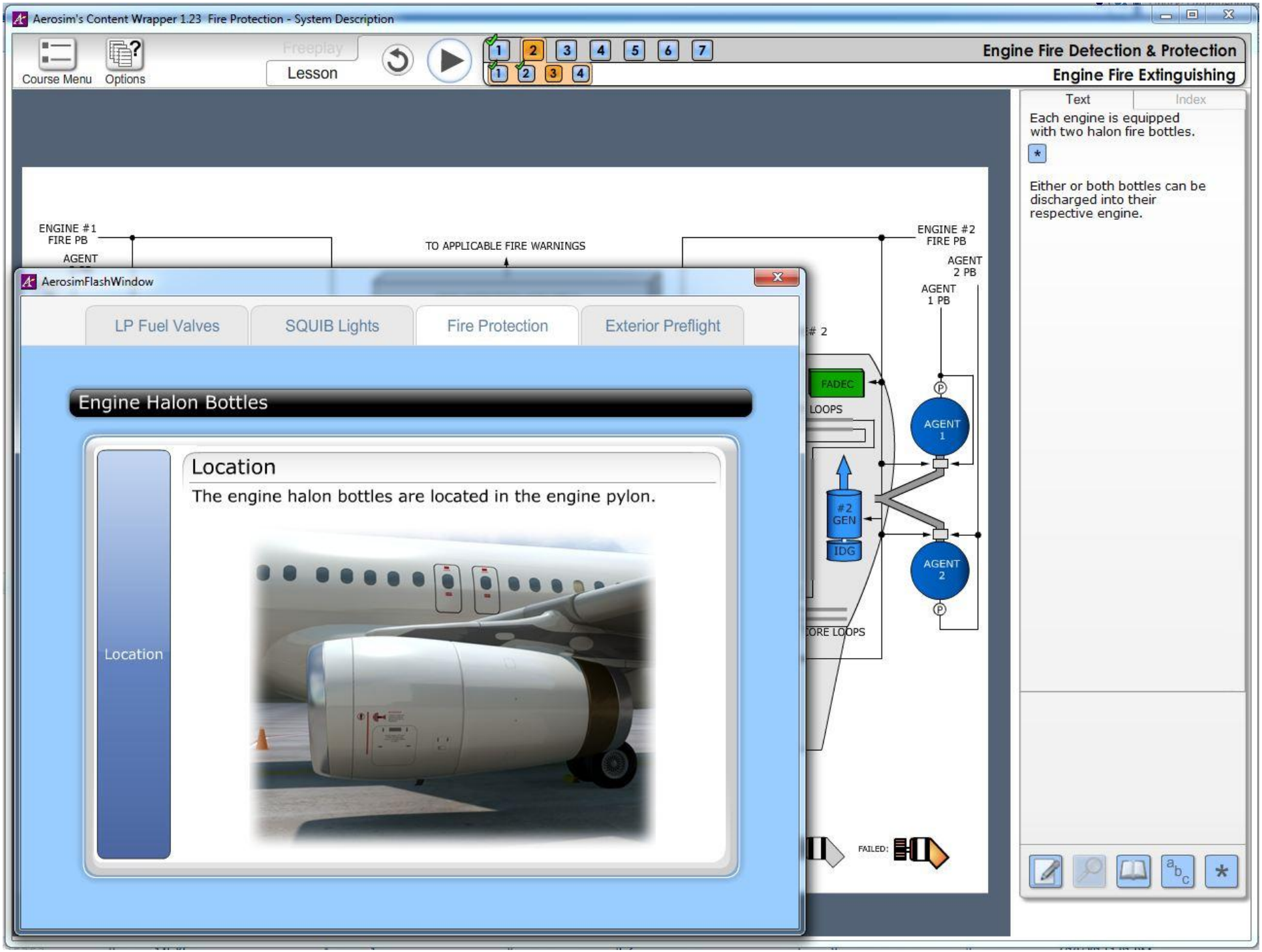

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When the FDU generates an engine fire alert, the following occurs:
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The red ENG FIRE and LAND ASAP message display on the upper ECAM
The ENGINE page appears automatically on the SD
The red FIRE light illuminates next to the respective ENG MASTER switch to identify the correct switch to use during engine shutdown
The Continuous Repetitive Chime has been silenced
FOB: 17680 LBS
ENG 1 FIRE
-THR LEVER 1.....IDLE
-ENG MASTER 1.....OFF
-ENG 1 FIRE P/B....PUSH
-ATC.....NOTIFY
LAND ASAP
ENGINE
1480
F.USED
LBS
1480
OIL
13.2
QT
13.2
196
PSI
ENG
ENG 1
ENG 2
ON
ON
MODE
OFF
OFF
NORM
CRANK
IGN START
FIRE
1
2

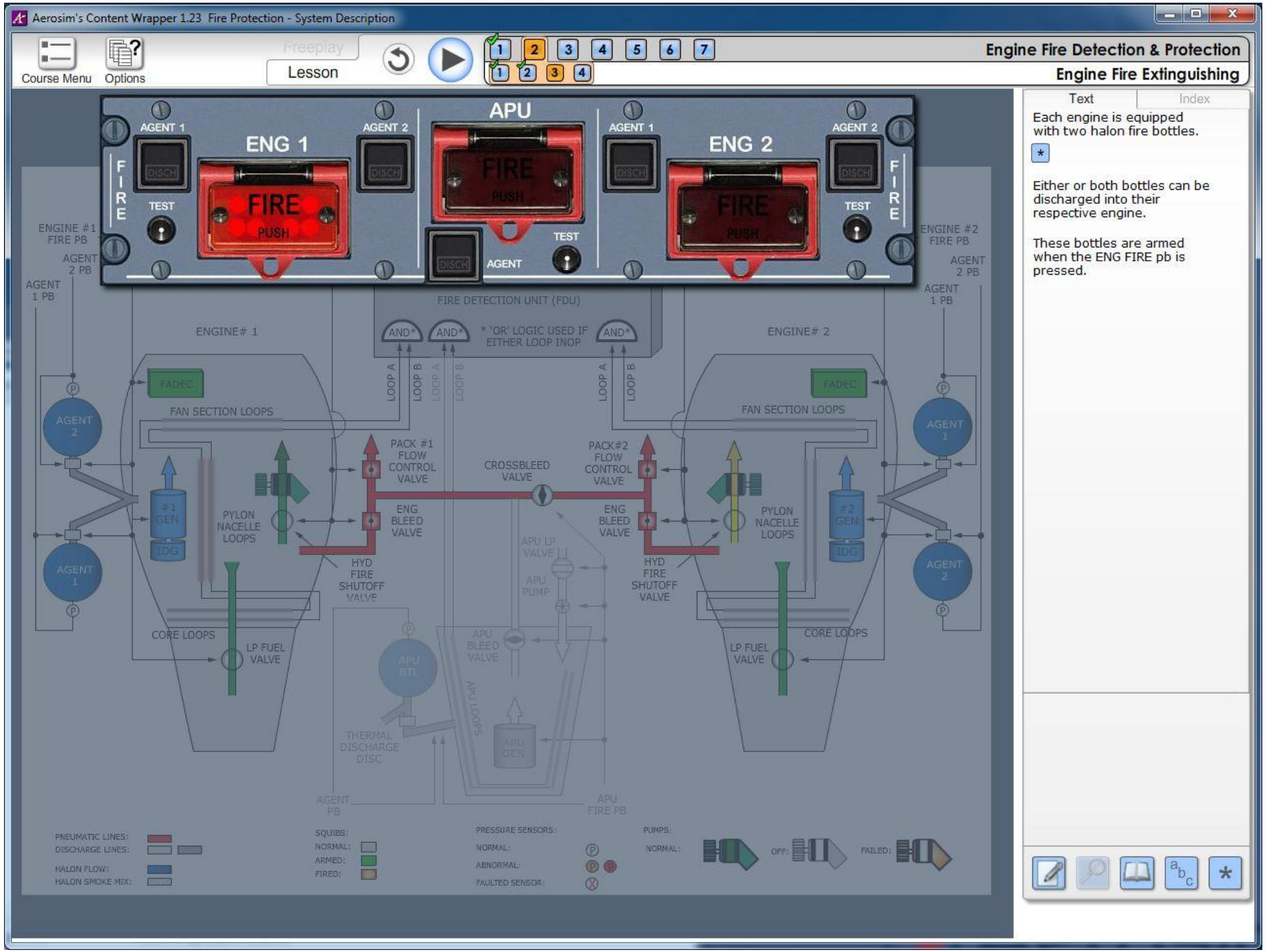

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The red ENG FIRE and LAND ASAP message display on the upper ECAM
The ENGINE page appears automatically on the SD
*
The red FIRE light illuminates next to the respective ENG MASTER switch to identify the correct switch to use during engine shutdown
The ENG FIRE pb on the overhead FIRE panel illuminates
AGENT 1
ENG 1
AGENT 2
APU
ENG 2
FIRE
PUSH
TEST
DISCH
AGENT
The Continuous Repetitive Chime has been silenced
FOB: 17680 LBS
ENG 1 FIRE
-THR LEVER 1.....IDLE
-ENG MASTER 1.....OFF
-ENG 1 FIRE P/B....PUSH
-ATC.....NOTIFY
LAND ASAP
ENGINE
1480
F.USED
LBS
OIL
QT
13.2
196
PSI
ENG
ON
OFF
MODE
NORM
CRANK
IGN START

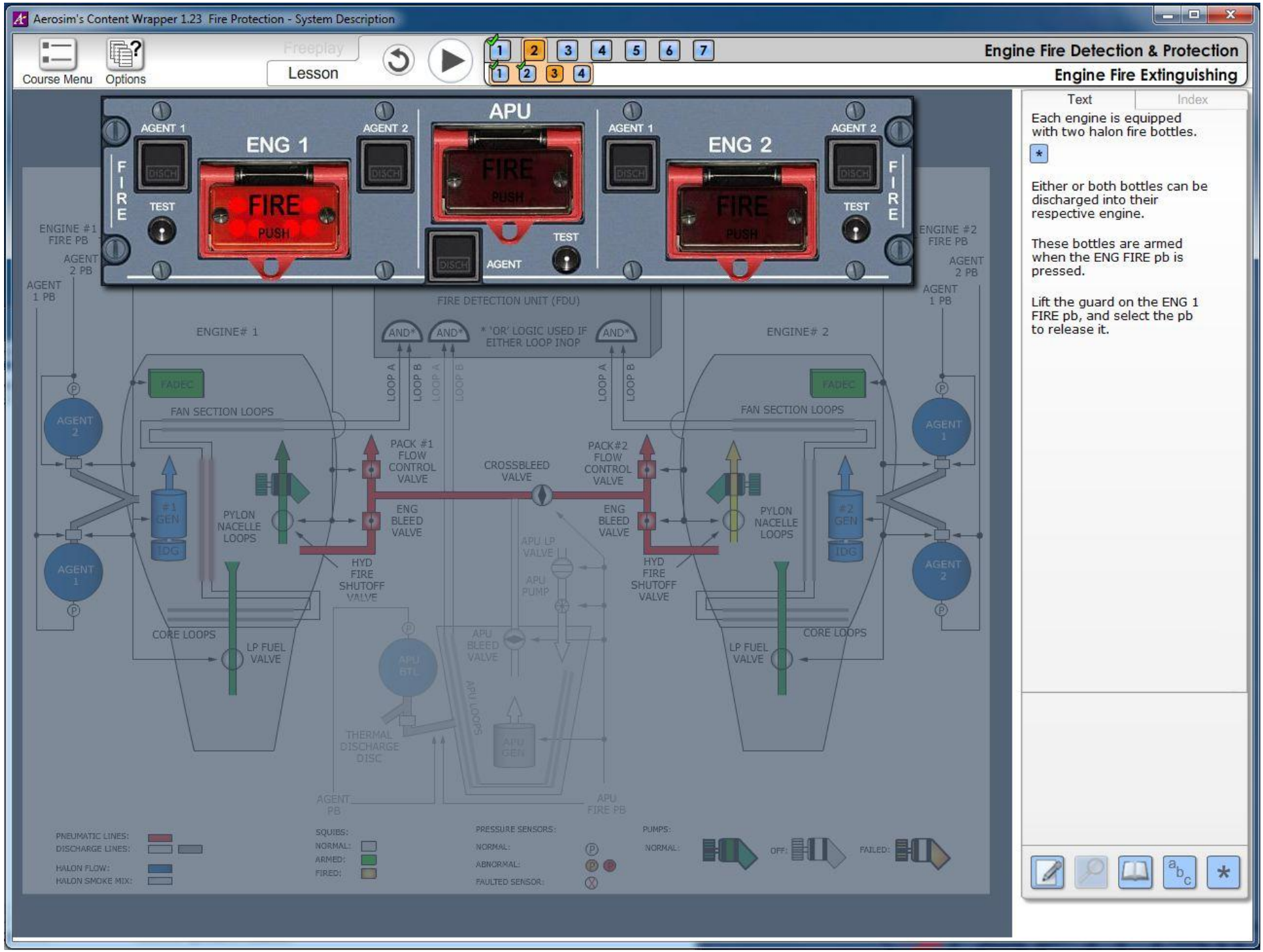

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The red ENG FIRE and LAND ASAP message display on the upper ECAM
The ENGINE page appears automatically on the SD
*
The red FIRE light illuminates next to the respective ENG MASTER switch to identify the correct switch to use during engine shutdown
The ENG FIRE pb on the overhead FIRE panel illuminates
These indications will remain on as long as a fire is detected.
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
DISCH
AGENT
The Continuous Repetitive Chime has been silenced
FOB: 17680 LBS
ENG 1 FIRE
-THR LEVER 1.....IDLE
-ENG MASTER 1.....OFF
-ENG 1 FIRE P/B....PUSH
-ATC.....NOTIFY
LAND ASAP
ENGINE
1480
F.USED
LBS
OIL
13.2
QT
PSI
196
ENG
ON
OFF
MODE
NORM
CRANK
IGN START

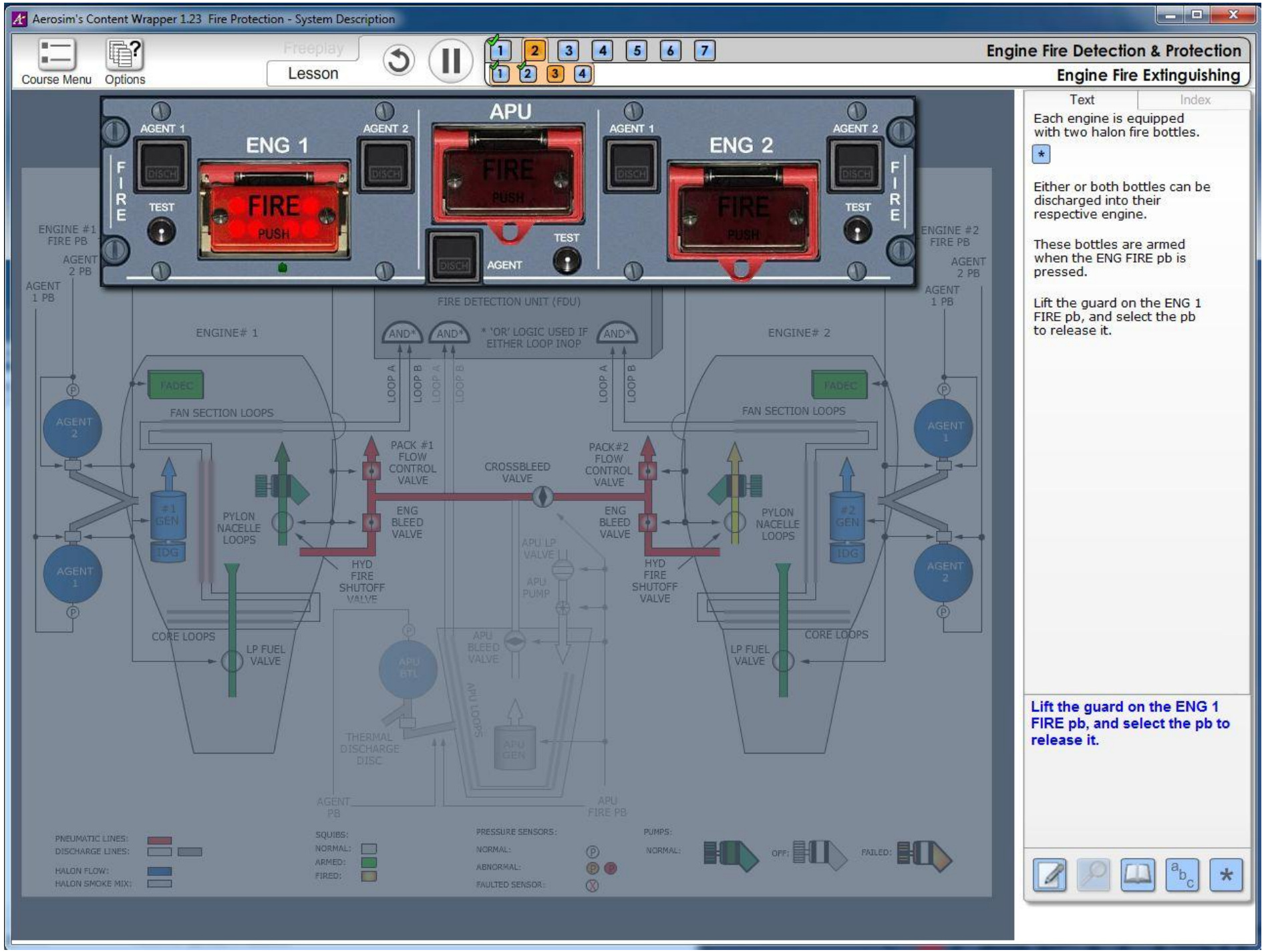

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The ENG FIRE pb on the overhead FIRE panel illuminates
These indications will remain on as long as a fire is detected.
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
DISCH
LAND ASAP
AerosimFlashWindow
Engine Overheat
ENGINE page
Nacelle Temperatures
Nacelle temperatures appear on the ENGINE page when there are engine fires and/or engine bleed leaks, otherwise they are not displayed.
Nacelle Temperatures
NAC
°C
0
400
1480
13.2

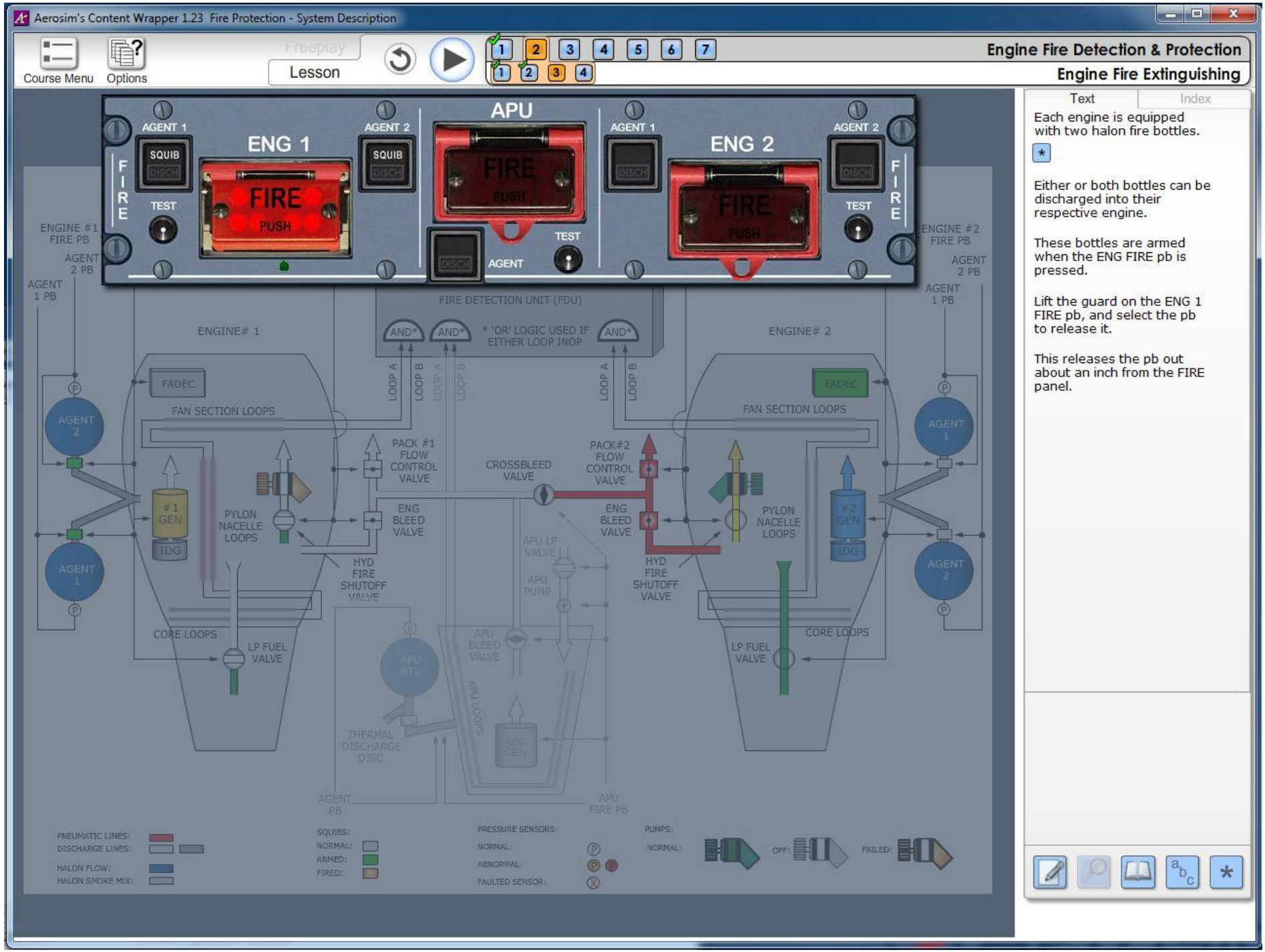

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
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Lesson
Engine Fire Detection & Protection
Engine Fire Extinguishing
Text
Index
Each engine is equipped with two halon fire bottles.
*
Either or both bottles can be discharged into their respective engine.
ENGINE #1 FIRE PB
AGENT 2 PB
AGENT 1 PB
TO APPLICABLE FIRE WARNINGS
FIRE DETECTION UNIT (FDU)
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
ENGINE# 1
ENGINE# 2
LOOP A
LOOP B
FADEC
FAN SECTION LOOPS
AGENT 2
AGENT 1
PACK #1 FLOW CONTROL VALVE
PACK#2 FLOW CONTROL VALVE
CROSSBLEED VALVE
#1 GEN
#2 GEN
IDG
PYLON NACELLE LOOPS
ENG BLEED VALVE
HYD FIRE SHUTOFF VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
CORE LOOPS
LP FUEL VALVE
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:

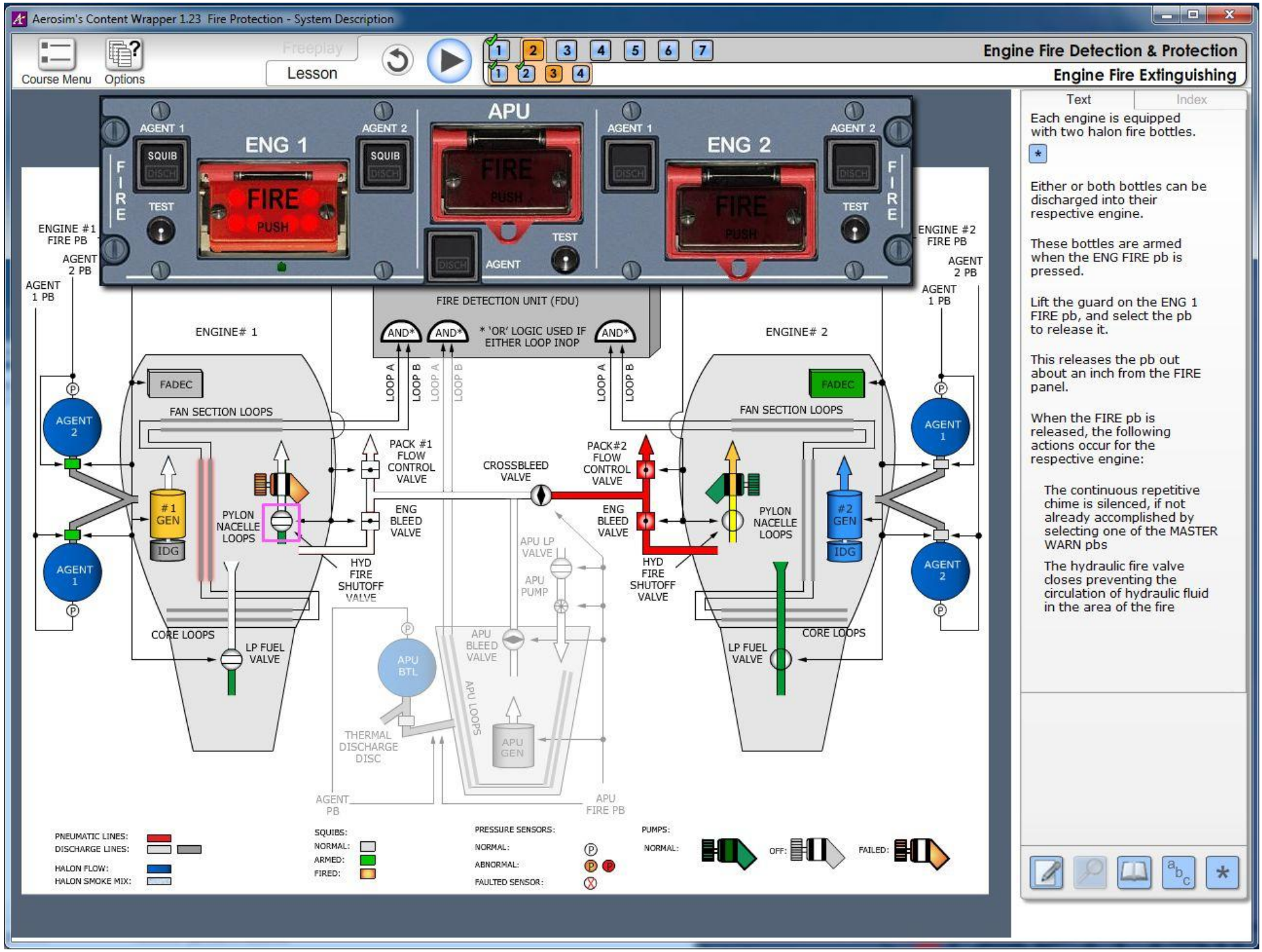

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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Each engine is equipped with two halon fire bottles.
Either or both bottles can be discharged into their respective engine.
ENGINE #1 FIRE PB
AGENT
TO APPLICABLE FIRE WARNINGS
ENGINE #2 FIRE PB
AGENT 2 PB
AGENT 1 PB
AerosimFlashWindow
LP Fuel Valves
SQUIB Lights
Fire Protection
Exterior Preflight
Engine Halon Bottles
Location
The engine halon bottles are located in the engine pylon.
Location
FADEC
LOOPS
AGENT 1
#2 GEN
IDG
AGENT 2
FAILED:

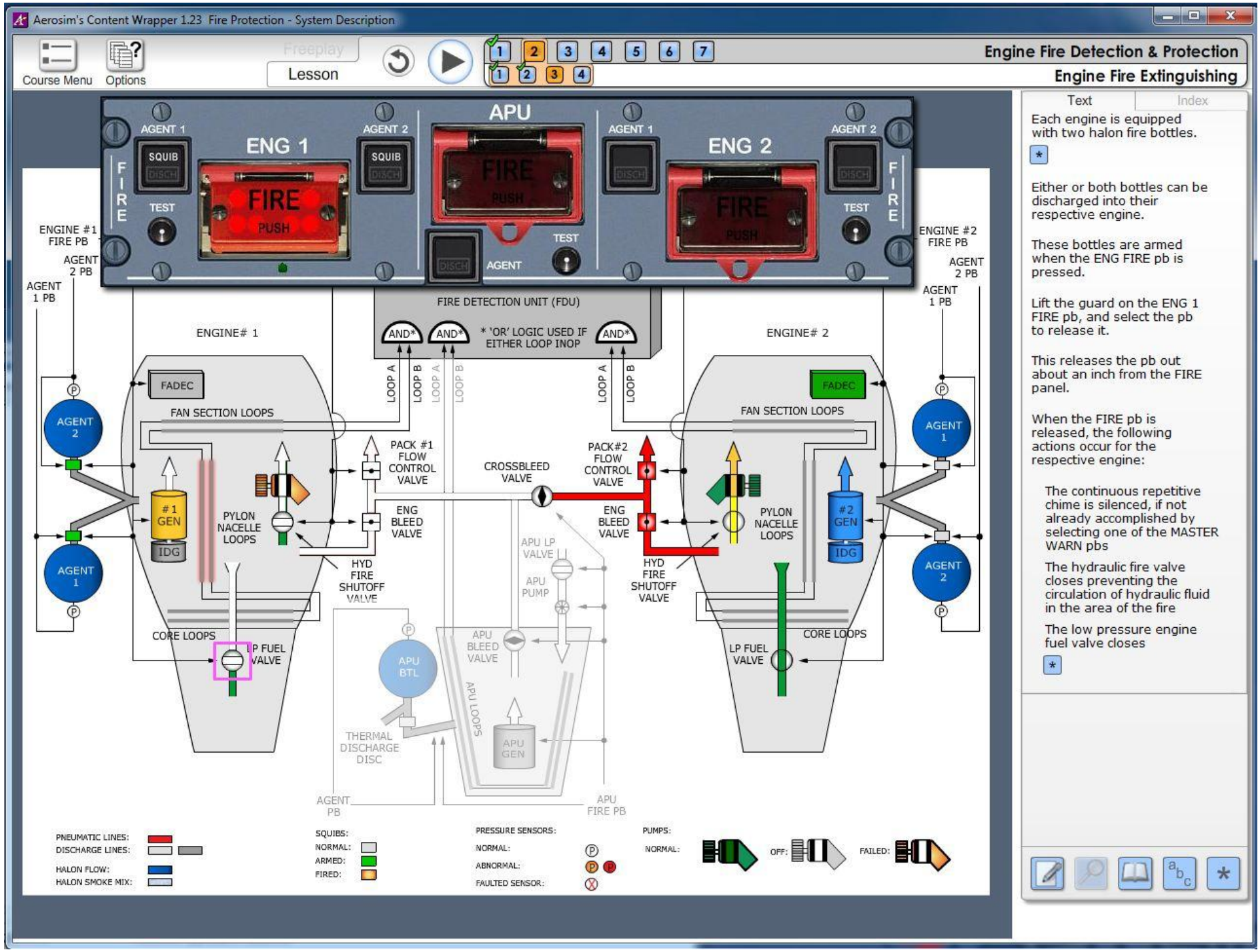

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Each engine is equipped with two halon fire bottles.
Either or both bottles can be discharged into their respective engine.
These bottles are armed when the ENG FIRE pb is pressed.
APU
ENG 1
ENG 2
AGENT 1
AGENT 2
FIRE
PUSH
TEST
DISCH
AGENT
ENGINE #1 FIRE PB
AGENT 2 PB
AGENT 1 PB
ENGINE #2 FIRE PB
FIRE DETECTION UNIT (FDU)
* 'OR' LOGIC USED IF EITHER LOOP INOP
ENGINE# 1
ENGINE# 2
FADEC
FAN SECTION LOOPS
LOOP A
LOOP B
PACK #1 FLOW CONTROL VALVE
PACK#2 FLOW CONTROL VALVE
CROSSBLEED VALVE
ENG BLEED VALVE
PYLON NACELLE LOOPS
HYD FIRE SHUTOFF VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU LOOPS
CORE LOOPS
LP FUEL VALVE
THERMAL DISCHARGE DISC
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
OFF:
FAILED:

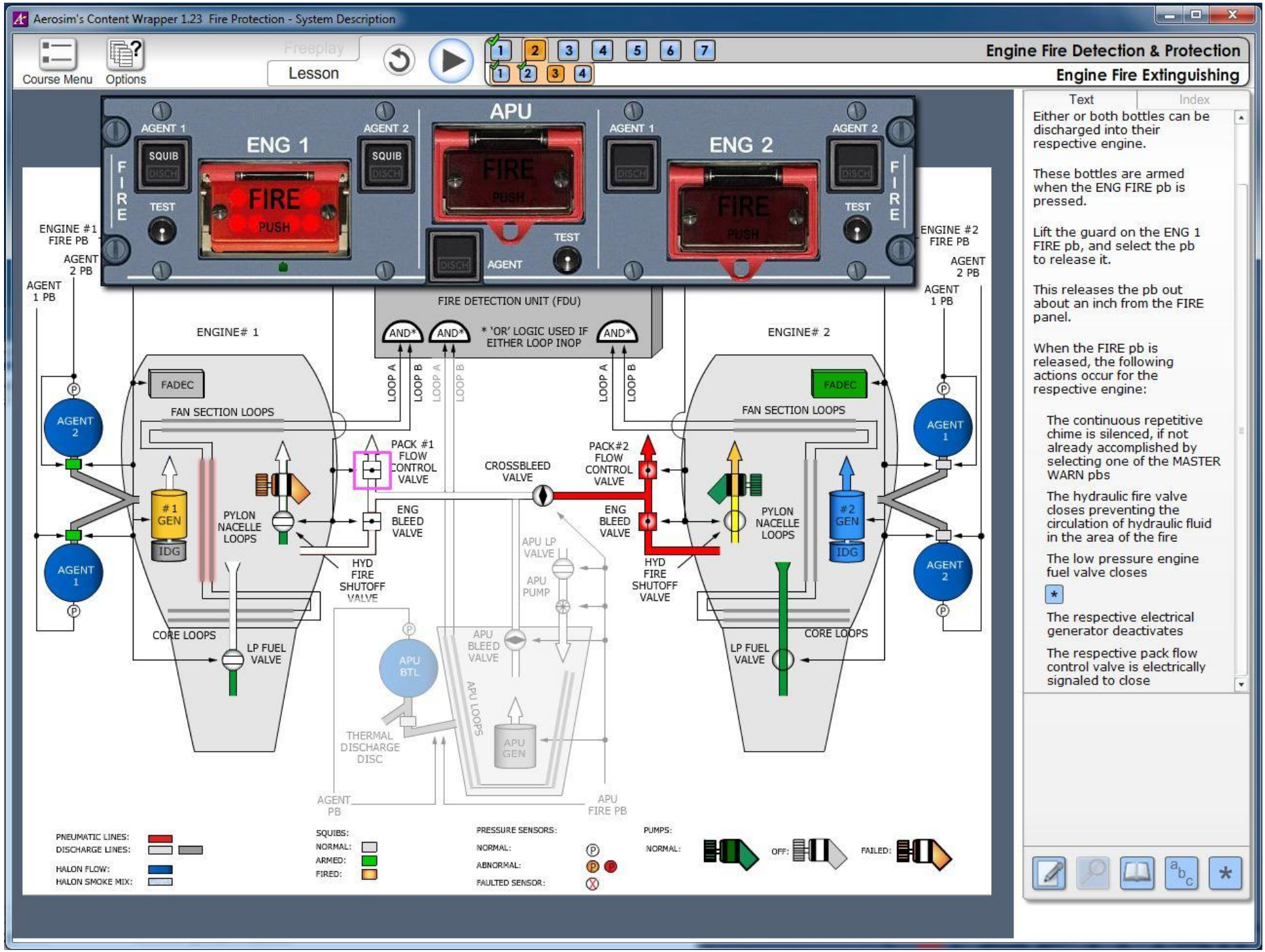

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These bottles are armed when the ENG FIRE pb is pressed.
Lift the guard on the ENG 1 FIRE pb, and select the pb to release it.
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
DISCH
AGENT
FIRE DETECTION UNIT (FDU)
* 'OR' LOGIC USED IF EITHER LOOP INOP
ENGINE# 1
ENGINE# 2
FADEC
FAN SECTION LOOPS
PACK #1 FLOW CONTROL VALVE
PACK#2 FLOW CONTROL VALVE
CROSSBLEED VALVE
ENG BLEED VALVE
PYLON NACELLE LOOPS
HYD FIRE SHUTOFF VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
CORE LOOPS
LP FUEL VALVE
THERMAL DISCHARGE DISC
APU LOOPS
ENGINE #1 FIRE PB
ENGINE #2 FIRE PB
AGENT 1 PB
AGENT 2 PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
OFF:
FAILED:

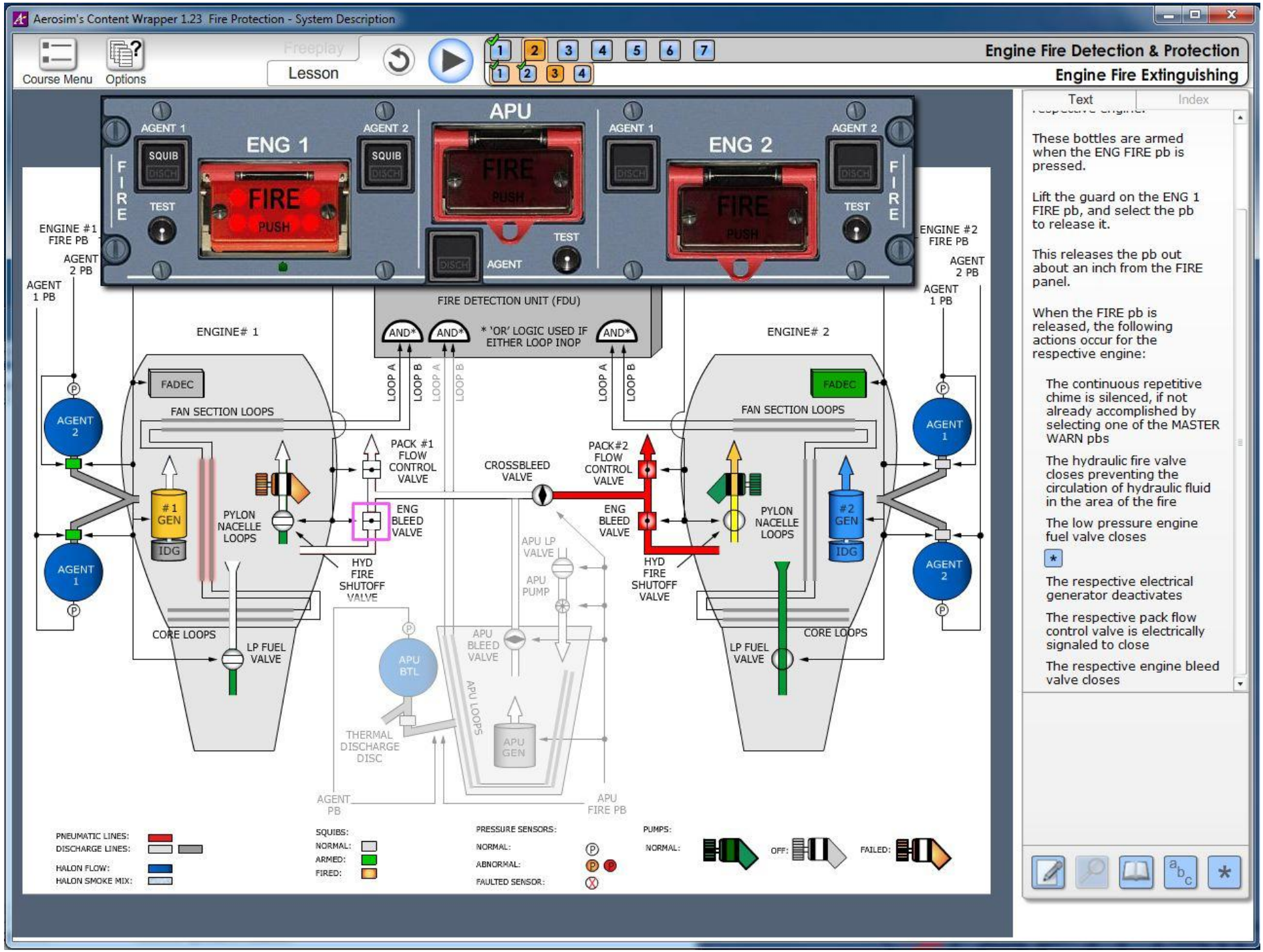

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AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
DISCH
AGENT
FIRE DETECTION UNIT (FDU)
* 'OR' LOGIC USED IF EITHER LOOP INOP
ENGINE# 1
ENGINE# 2
FADEC
FAN SECTION LOOPS
PACK #1 FLOW CONTROL VALVE
PACK#2 FLOW CONTROL VALVE
CROSSBLEED VALVE
ENG BLEED VALVE
PYLON NACELLE LOOPS
HYD FIRE SHUTOFF VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
CORE LOOPS
LP FUEL VALVE
THERMAL DISCHARGE DISC
APU LOOPS
ENGINE #1 FIRE PB
ENGINE #2 FIRE PB
AGENT 1 PB
AGENT 2 PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
OFF:
FAILED:

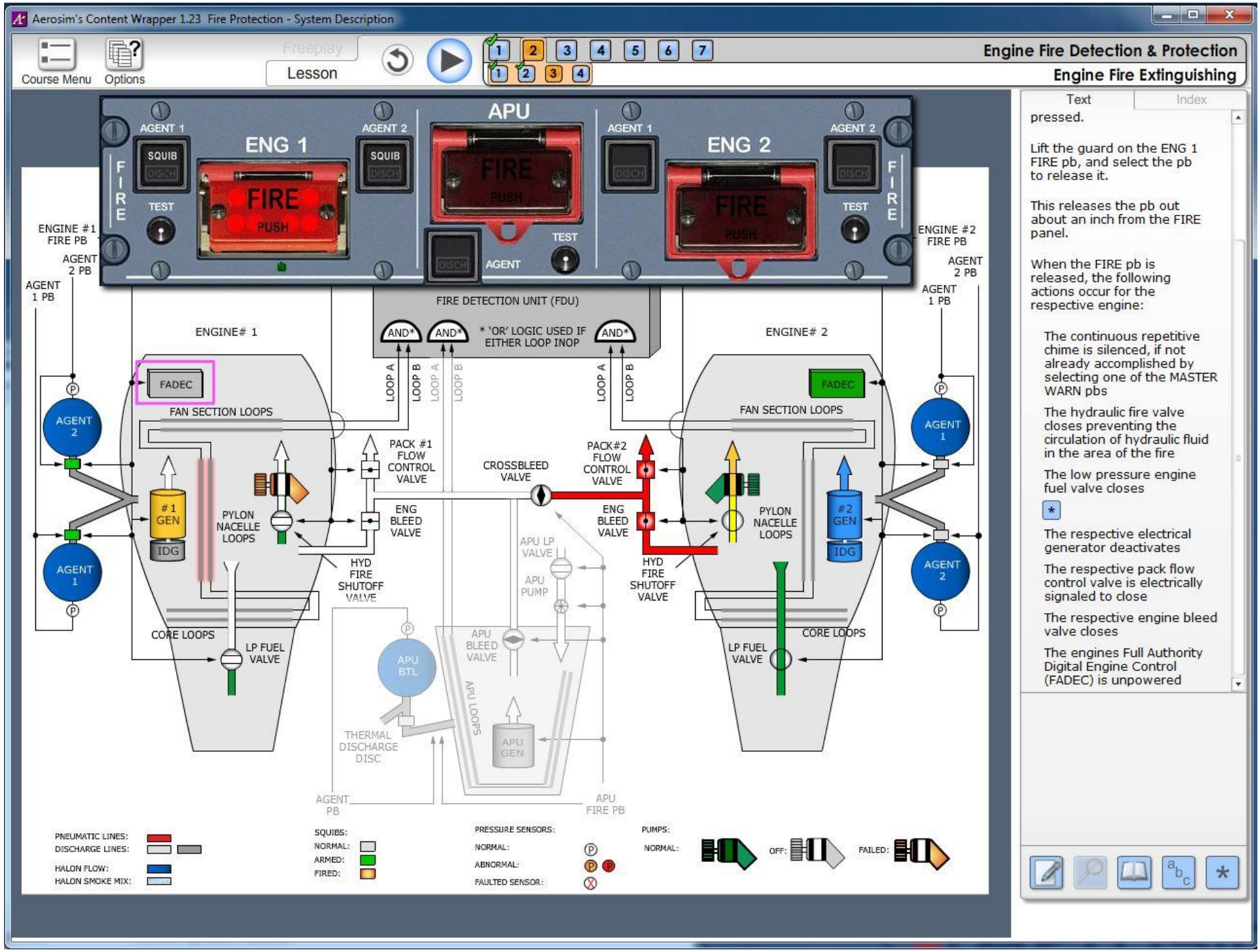

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Each engine is equipped with two halon fire bottles.
Either or both bottles can be discharged into their respective engine.
These bottles are armed when the ENG FIRE pb is pressed.
Lift the guard on the ENG 1 FIRE pb, and select the pb to release it.
This releases the pb out about an inch from the FIRE panel.
ENG 1
ENG 2
APU
AGENT 1
AGENT 2
SQUIB
TEST
FIRE
PUSH
DISCH
AGENT
ENGINE #1 FIRE PB
ENGINE #2 FIRE PB
FIRE DETECTION UNIT (FDU)
* 'OR' LOGIC USED IF EITHER LOOP INOP
ENGINE# 1
ENGINE# 2
FADEC
FAN SECTION LOOPS
PACK #1 FLOW CONTROL VALVE
PACK#2 FLOW CONTROL VALVE
CROSSBLEED VALVE
ENG BLEED VALVE
PYLON NACELLE LOOPS
HYD FIRE SHUTOFF VALVE
CORE LOOPS
LP FUEL VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU LOOPS
THERMAL DISCHARGE DISC
#1 GEN
#2 GEN
IDG
APU GEN
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:

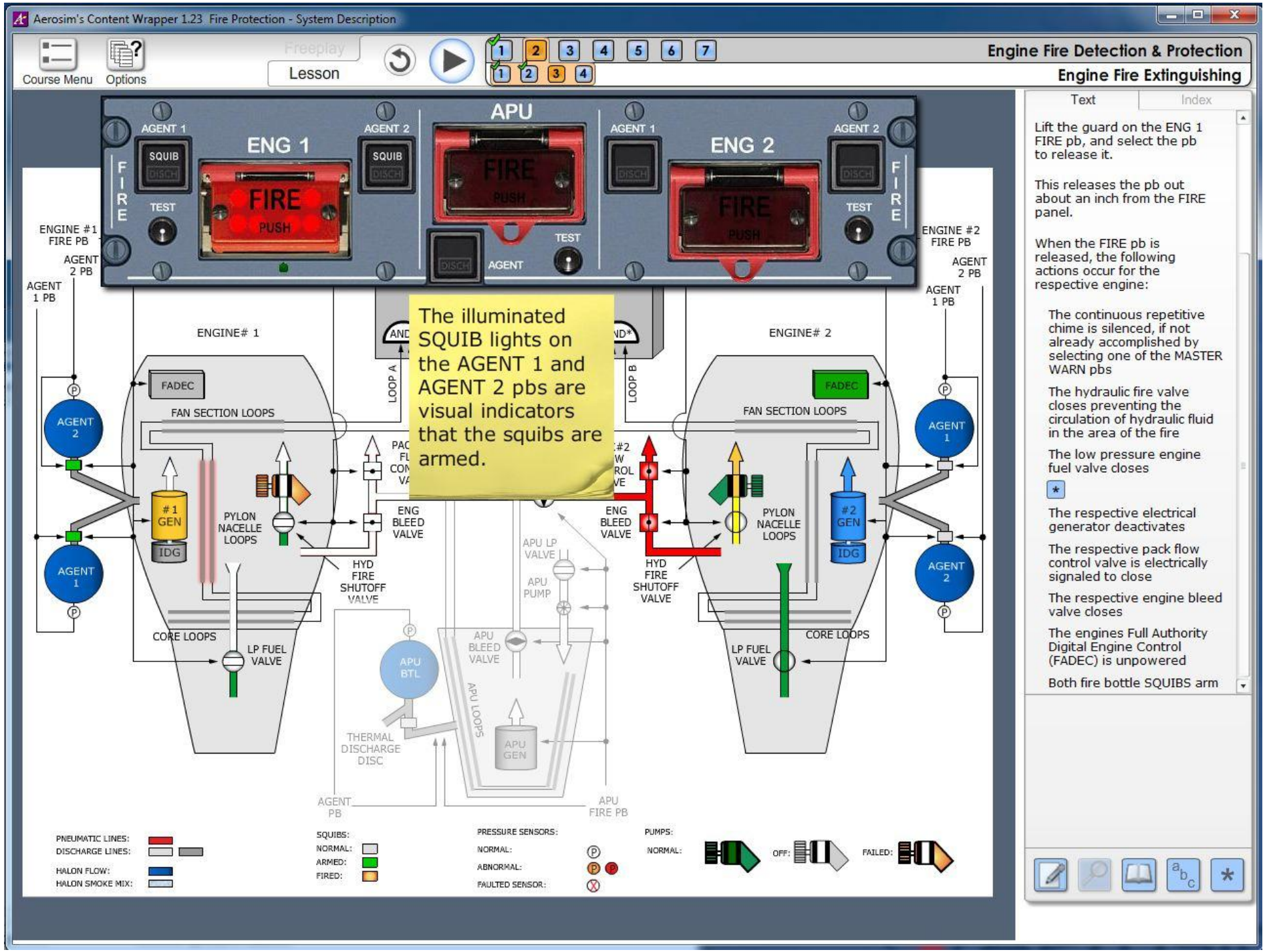

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Either or both bottles can be discharged into their respective engine.
These bottles are armed when the ENG FIRE pb is pressed.
Lift the guard on the ENG 1 FIRE pb, and select the pb to release it.
This releases the pb out about an inch from the FIRE panel.
When the FIRE pb is released, the following actions occur for the respective engine:
The continuous repetitive chime is silenced, if not already accomplished by selecting one of the MASTER WARN pbs
The hydraulic fire valve closes preventing the circulation of hydraulic fluid in the area of the fire
ENG 1
APU
ENG 2
AGENT 1
AGENT 2
SQUIB
TEST
FIRE
PUSH
DISCH
AGENT
ENGINE #1 FIRE PB
ENGINE #2 FIRE PB
AGENT 2 PB
AGENT 1 PB
FIRE DETECTION UNIT (FDU)
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
ENGINE# 1
ENGINE# 2
LOOP A
LOOP B
FADEC
FAN SECTION LOOPS
PACK #1 FLOW CONTROL VALVE
PACK#2 FLOW CONTROL VALVE
CROSSBLEED VALVE
ENG BLEED VALVE
#1 GEN
#2 GEN
IDG
PYLON NACELLE LOOPS
HYD FIRE SHUTOFF VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU LOOPS
APU GEN
APU BTL
THERMAL DISCHARGE DISC
CORE LOOPS
LP FUEL VALVE
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:

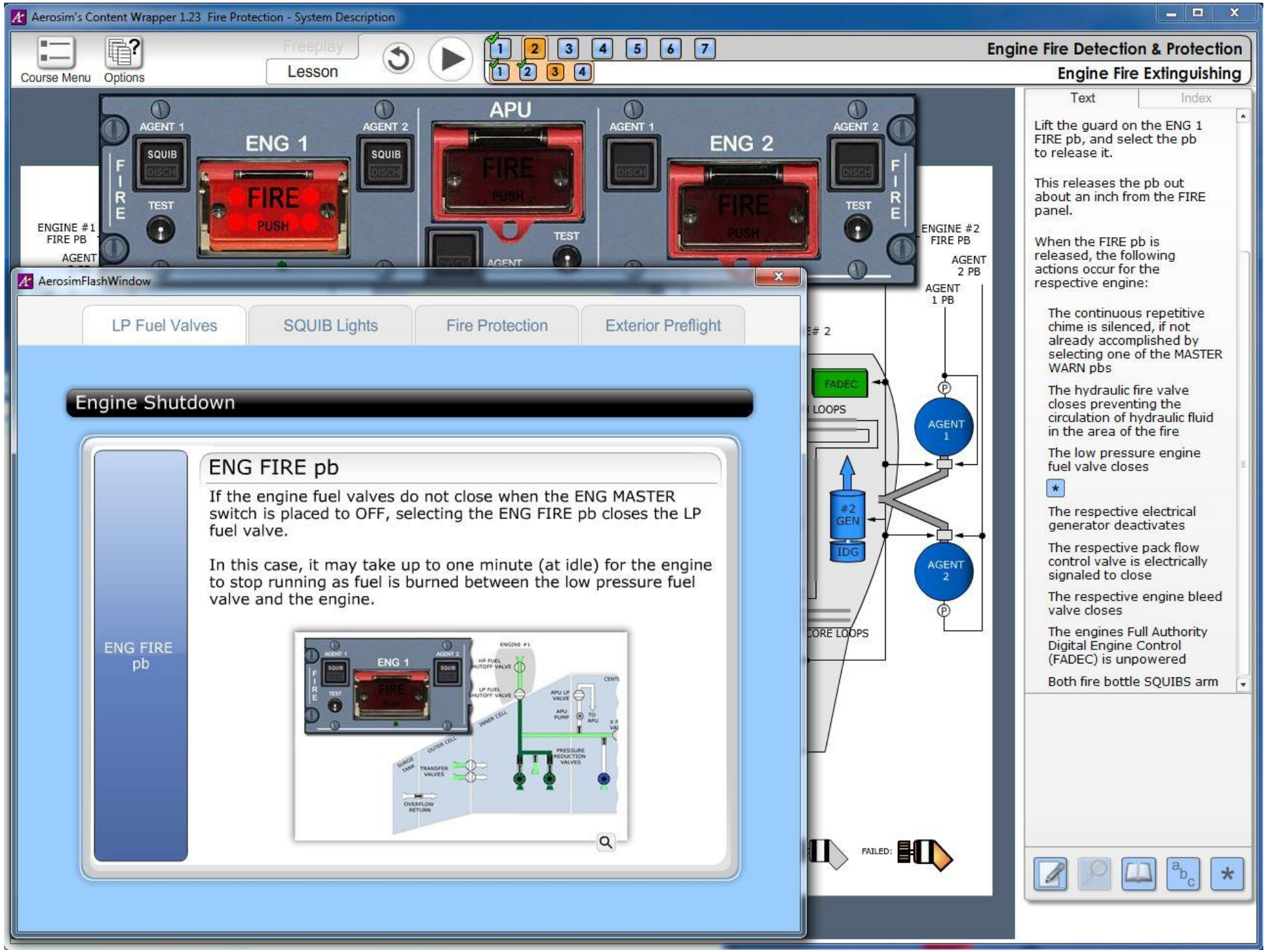

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These bottles are armed when the ENG FIRE pb is pressed.
Lift the guard on the ENG 1 FIRE pb, and select the pb to release it.
This releases the pb out about an inch from the FIRE panel.
When the FIRE pb is released, the following actions occur for the respective engine:
The continuous repetitive chime is silenced, if not already accomplished by selecting one of the MASTER WARN pbs
The hydraulic fire valve closes preventing the circulation of hydraulic fluid in the area of the fire
The low pressure engine fuel valve closes
AGENT 1
AGENT 2
SQUIB
TEST
FIRE
PUSH
ENG 1
APU
ENG 2
AGENT
ENGINE #1 FIRE PB
ENGINE #2 FIRE PB
AGENT 1 PB
AGENT 2 PB
FIRE DETECTION UNIT (FDU)
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
ENGINE# 1
ENGINE# 2
LOOP A
LOOP B
FADEC
FAN SECTION LOOPS
PACK #1 FLOW CONTROL VALVE
PACK#2 FLOW CONTROL VALVE
CROSSBLEED VALVE
ENG BLEED VALVE
#1 GEN
#2 GEN
IDG
PYLON NACELLE LOOPS
HYD FIRE SHUTOFF VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
CORE LOOPS
LP FUEL VALVE
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:

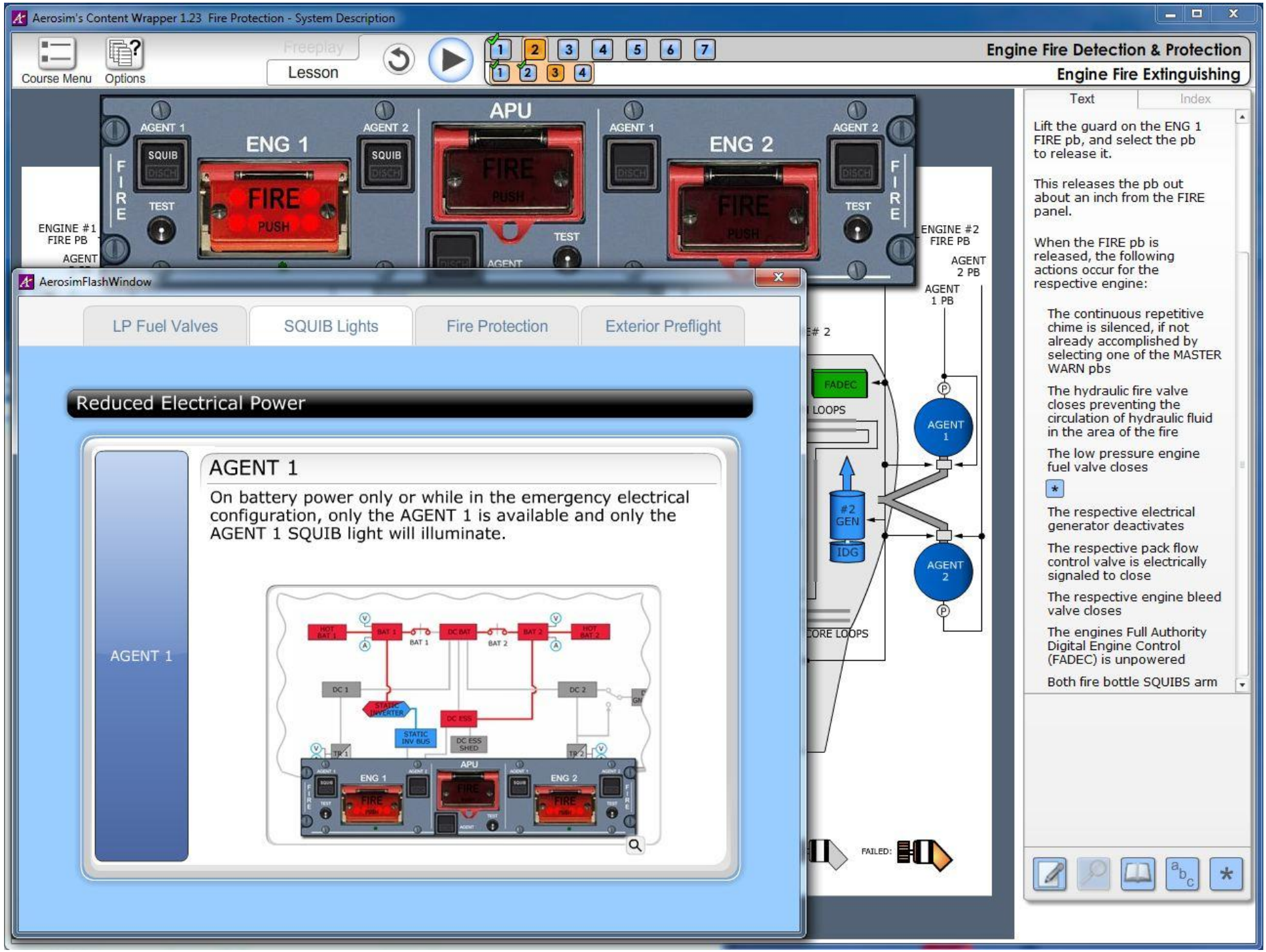

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Course Menu
Options
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Index
Either or both bottles can be discharged into their respective engine.
These bottles are armed when the ENG FIRE pb is pressed.
Lift the guard on the ENG 1 FIRE pb, and select the pb to release it.
This releases the pb out about an inch from the FIRE panel.
When the FIRE pb is released, the following actions occur for the respective engine:
The continuous repetitive chime is silenced, if not already accomplished by selecting one of the MASTER WARN pbs
The hydraulic fire valve closes preventing the circulation of hydraulic fluid in the area of the fire
The low pressure engine fuel valve closes
The respective electrical generator deactivates
The respective pack flow control valve is electrically signaled to close
ENG 1
ENG 2
APU
AGENT 1
AGENT 2
SQUIB
TEST
FIRE
PUSH
AGENT
ENGINE #1 FIRE PB
ENGINE #2 FIRE PB
AGENT 1 PB
AGENT 2 PB
FIRE DETECTION UNIT (FDU)
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
ENGINE# 1
ENGINE# 2
LOOP A
LOOP B
FADEC
FAN SECTION LOOPS
CORE LOOPS
PACK #1 FLOW CONTROL VALVE
PACK#2 FLOW CONTROL VALVE
CROSSBLEED VALVE
ENG BLEED VALVE
HYD FIRE SHUTOFF VALVE
PYLON NACELLE LOOPS
#1 GEN
#2 GEN
IDG
LP FUEL VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:

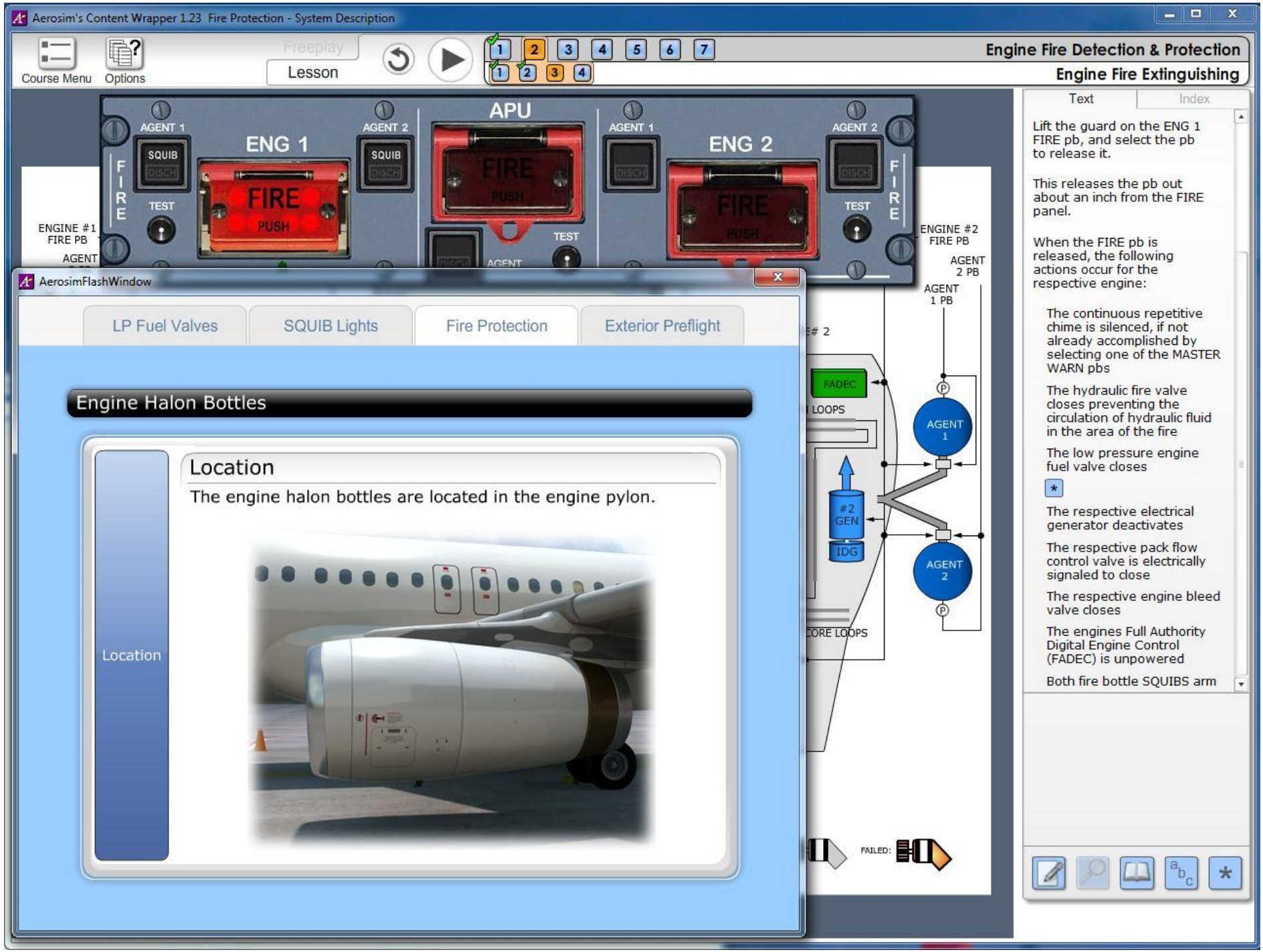

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Extinguishing
Text
Index
These bottles are armed when the ENG FIRE pb is pressed.
Lift the guard on the ENG 1 FIRE pb, and select the pb to release it.
This releases the pb out about an inch from the FIRE panel.
When the FIRE pb is released, the following actions occur for the respective engine:
The continuous repetitive chime is silenced, if not already accomplished by selecting one of the MASTER WARN pbs
The hydraulic fire valve closes preventing the circulation of hydraulic fluid in the area of the fire
The low pressure engine fuel valve closes
*
The respective electrical generator deactivates
The respective pack flow control valve is electrically signaled to close
The respective engine bleed valve closes
ENG 1
APU
ENG 2
AGENT 1
AGENT 2
SQUIB
TEST
FIRE
PUSH
AGENT
ENGINE #1 FIRE PB
ENGINE #2 FIRE PB
AGENT 2 PB
AGENT 1 PB
FIRE DETECTION UNIT (FDU)
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
ENGINE# 1
ENGINE# 2
LOOP A
LOOP B
FADEC
FAN SECTION LOOPS
PACK #1 FLOW CONTROL VALVE
PACK#2 FLOW CONTROL VALVE
CROSSBLEED VALVE
ENG BLEED VALVE
#1 GEN
#2 GEN
IDG
PYLON NACELLE LOOPS
HYD FIRE SHUTOFF VALVE
CORE LOOPS
LP FUEL VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU LOOPS
APU BTL
APU GEN
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:

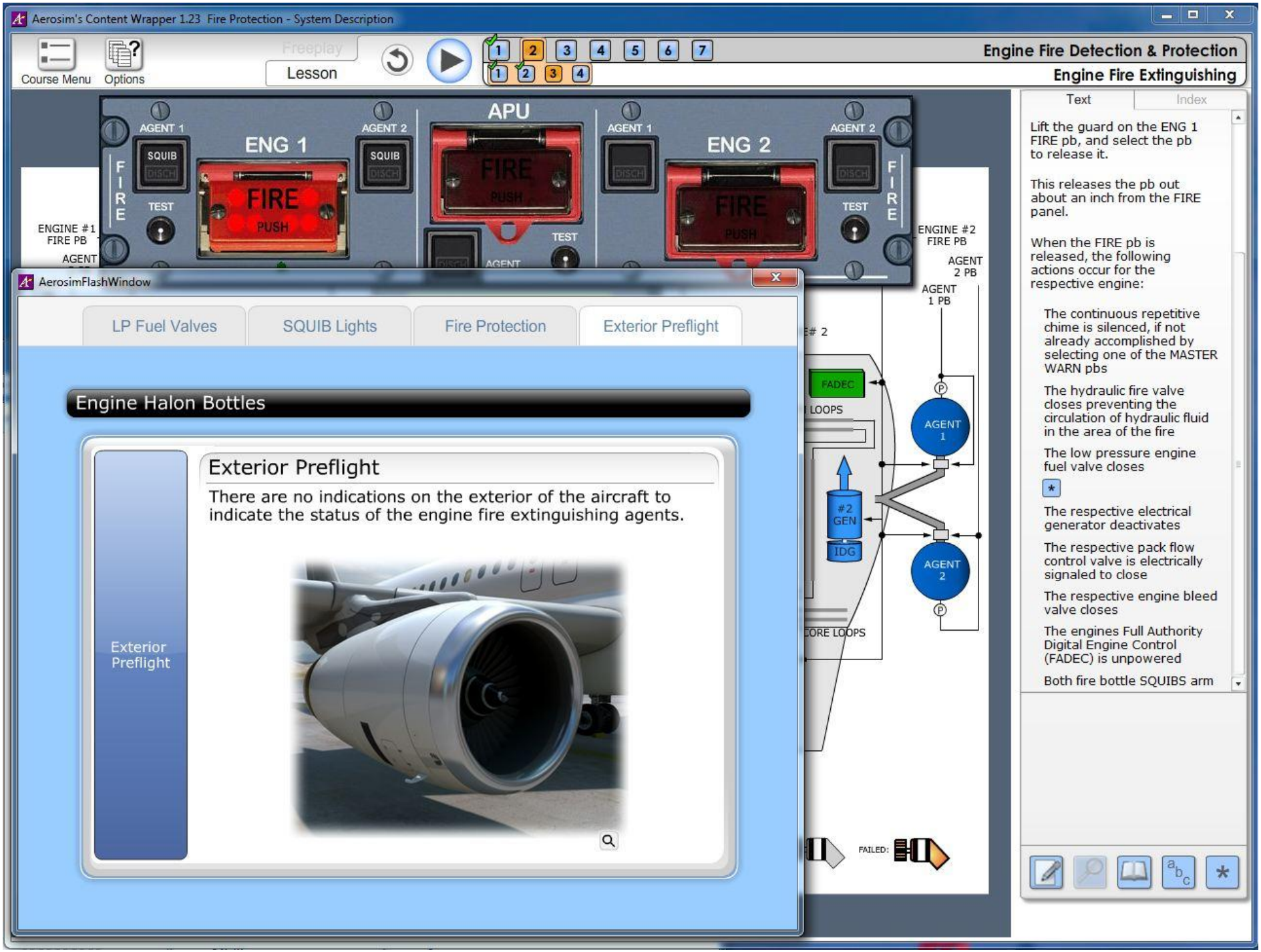

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
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Lesson
Engine Fire Detection & Protection
Engine Fire Extinguishing
Text
Index
pressed.
Lift the guard on the ENG 1 FIRE pb, and select the pb to release it.
This releases the pb out about an inch from the FIRE panel.
When the FIRE pb is released, the following actions occur for the respective engine:
The continuous repetitive chime is silenced, if not already accomplished by selecting one of the MASTER WARN pbs
The hydraulic fire valve closes preventing the circulation of hydraulic fluid in the area of the fire
The low pressure engine fuel valve closes
*
The respective electrical generator deactivates
The respective pack flow control valve is electrically signaled to close
The respective engine bleed valve closes
The engines Full Authority Digital Engine Control (FADEC) is unpowered
AGENT 1
AGENT 2
SQUIB
TEST
ENG 1
APU
ENG 2
FIRE
PUSH
DISCH
AGENT
ENGINE #1 FIRE PB
AGENT 2 PB
AGENT 1 PB
ENGINE #2 FIRE PB
FIRE DETECTION UNIT (FDU)
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
ENGINE# 1
ENGINE# 2
FADEC
LOOP A
LOOP B
FAN SECTION LOOPS
PACK #1 FLOW CONTROL VALVE
PACK#2 FLOW CONTROL VALVE
CROSSBLEED VALVE
ENG BLEED VALVE
#1 GEN
#2 GEN
IDG
PYLON NACELLE LOOPS
HYD FIRE SHUTOFF VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
CORE LOOPS
LP FUEL VALVE
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:

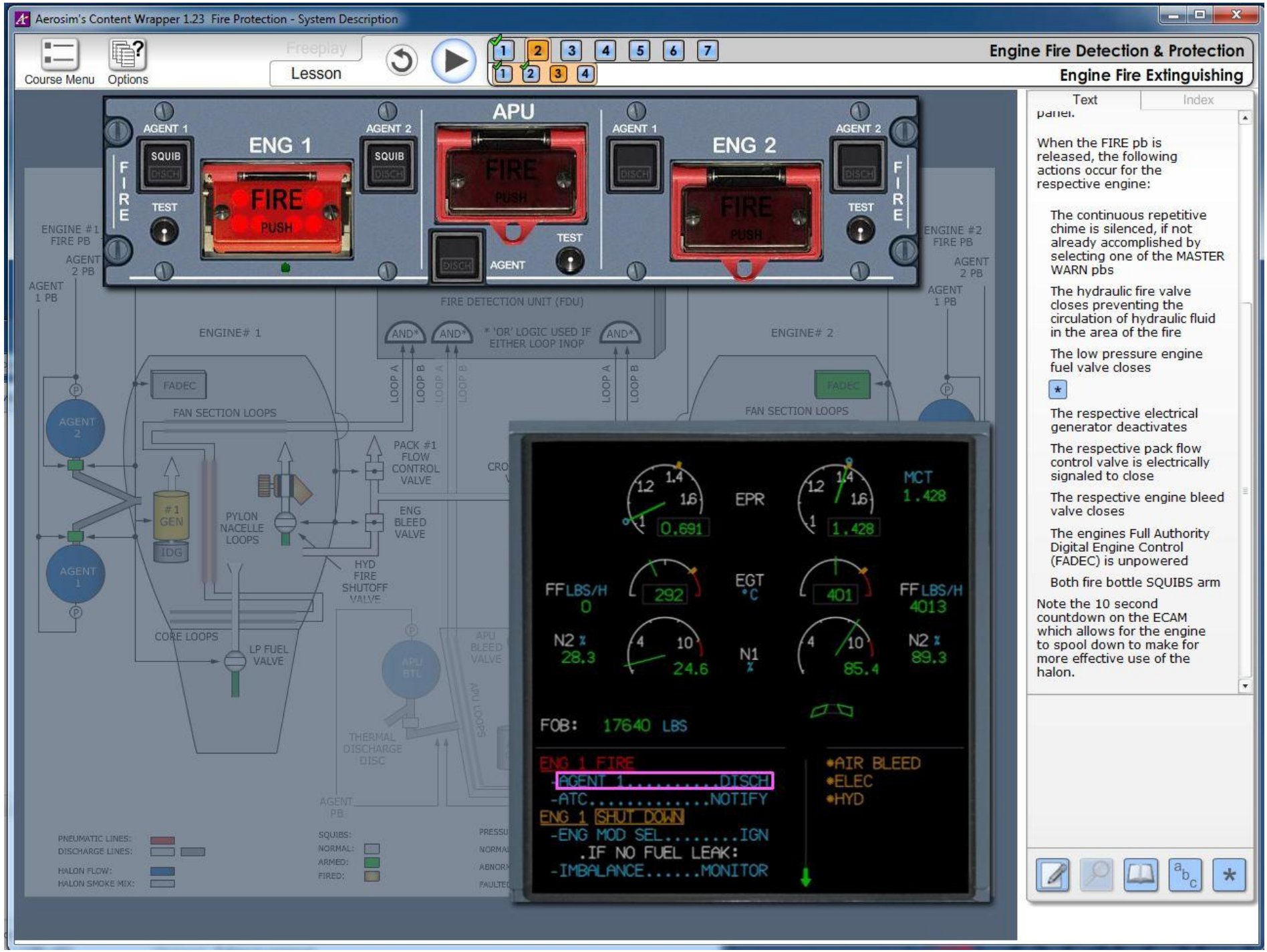

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Extinguishing
Text
Index
Lift the guard on the ENG 1 FIRE pb, and select the pb to release it.
This releases the pb out about an inch from the FIRE panel.
When the FIRE pb is released, the following actions occur for the respective engine:
The continuous repetitive chime is silenced, if not already accomplished by selecting one of the MASTER WARN pbs
The hydraulic fire valve closes preventing the circulation of hydraulic fluid in the area of the fire
The low pressure engine fuel valve closes
*
The respective electrical generator deactivates
The respective pack flow control valve is electrically signaled to close
The respective engine bleed valve closes
The engines Full Authority Digital Engine Control (FADEC) is unpowered
Both fire bottle SQUIBS arm
AGENT 1
AGENT 2
SQUIB
TEST
FIRE
PUSH
ENG 1
APU
ENG 2
AGENT
ENGINE #1 FIRE PB
AGENT 2 PB
AGENT 1 PB
ENGINE #2 FIRE PB
ENGINE# 1
ENGINE# 2
The illuminated SQUIB lights on the AGENT 1 and AGENT 2 pbs are visual indicators that the squibs are armed.
FADEC
FAN SECTION LOOPS
LOOP A
LOOP B
#1 GEN
#2 GEN
IDG
PYLON NACELLE LOOPS
ENG BLEED VALVE
HYD FIRE SHUTOFF VALVE
CORE LOOPS
LP FUEL VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:

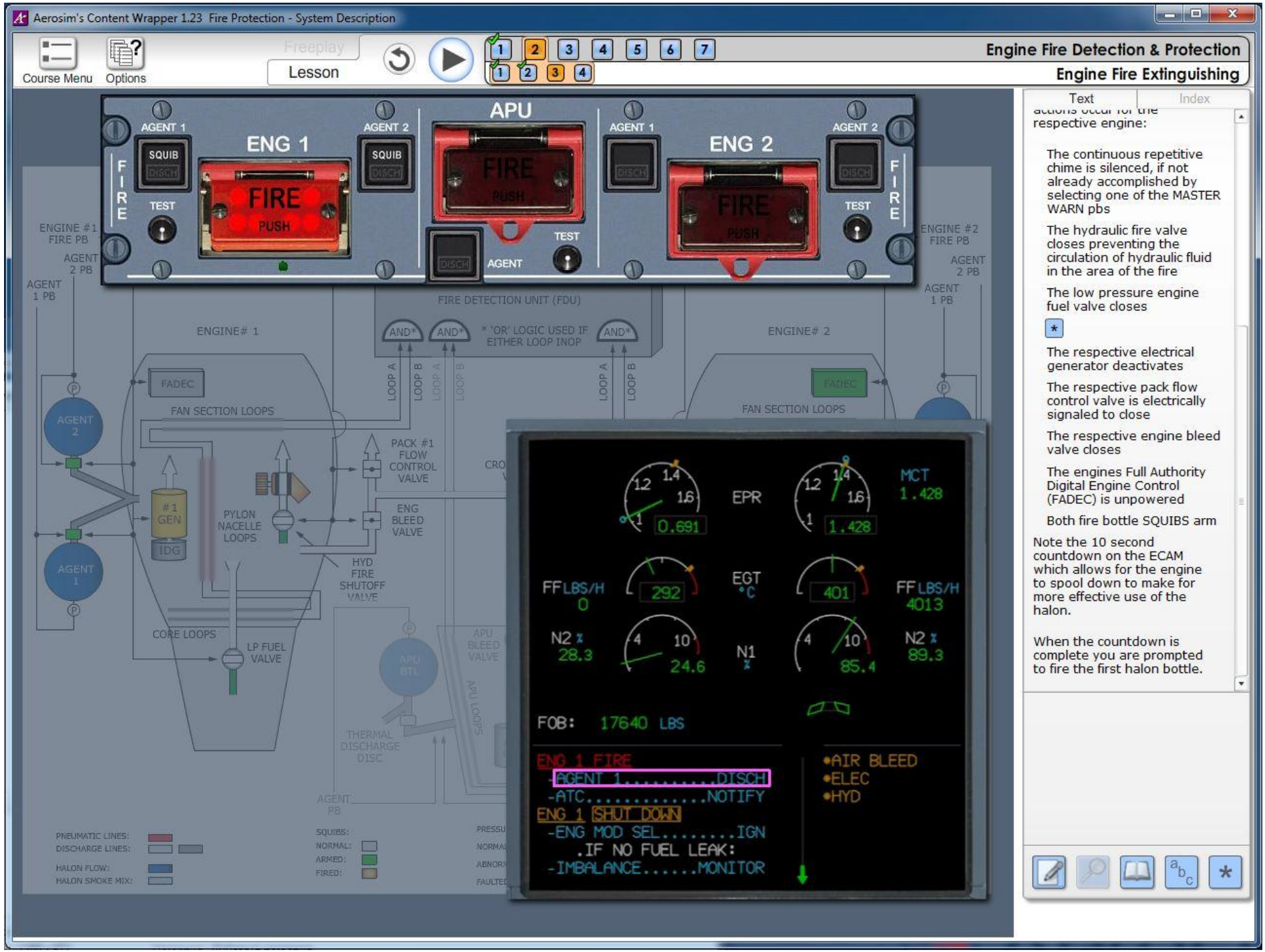

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Extinguishing
AGENT 1
SQUIB
TEST
ENG 1
FIRE
PUSH
AGENT 2
APU
ENG 2
ENGINE #1 FIRE PB
ENGINE #2 FIRE PB
AGENT 2 PB
AGENT 1 PB
AerosimFlashWindow
LP Fuel Valves
SQUIB Lights
Fire Protection
Exterior Preflight
Engine Shutdown
ENG FIRE pb
ENG FIRE pb
If the engine fuel valves do not close when the ENG MASTER switch is placed to OFF, selecting the ENG FIRE pb closes the LP fuel valve.
In this case, it may take up to one minute (at idle) for the engine to stop running as fuel is burned between the low pressure fuel valve and the engine.
FADEC
LOOPS
AGENT 1
#2 GEN
IDG
AGENT 2
FAILED:
Text
Index
Lift the guard on the ENG 1 FIRE pb, and select the pb to release it.
This releases the pb out about an inch from the FIRE panel.
When the FIRE pb is released, the following actions occur for the respective engine:
The continuous repetitive chime is silenced, if not already accomplished by selecting one of the MASTER WARN pbs
The hydraulic fire valve closes preventing the circulation of hydraulic fluid in the area of the fire
The low pressure engine fuel valve closes
*
The respective electrical generator deactivates
The respective pack flow control valve is electrically signaled to close
The respective engine bleed valve closes
The engines Full Authority Digital Engine Control (FADEC) is unpowered
Both fire bottle SQUIBS arm

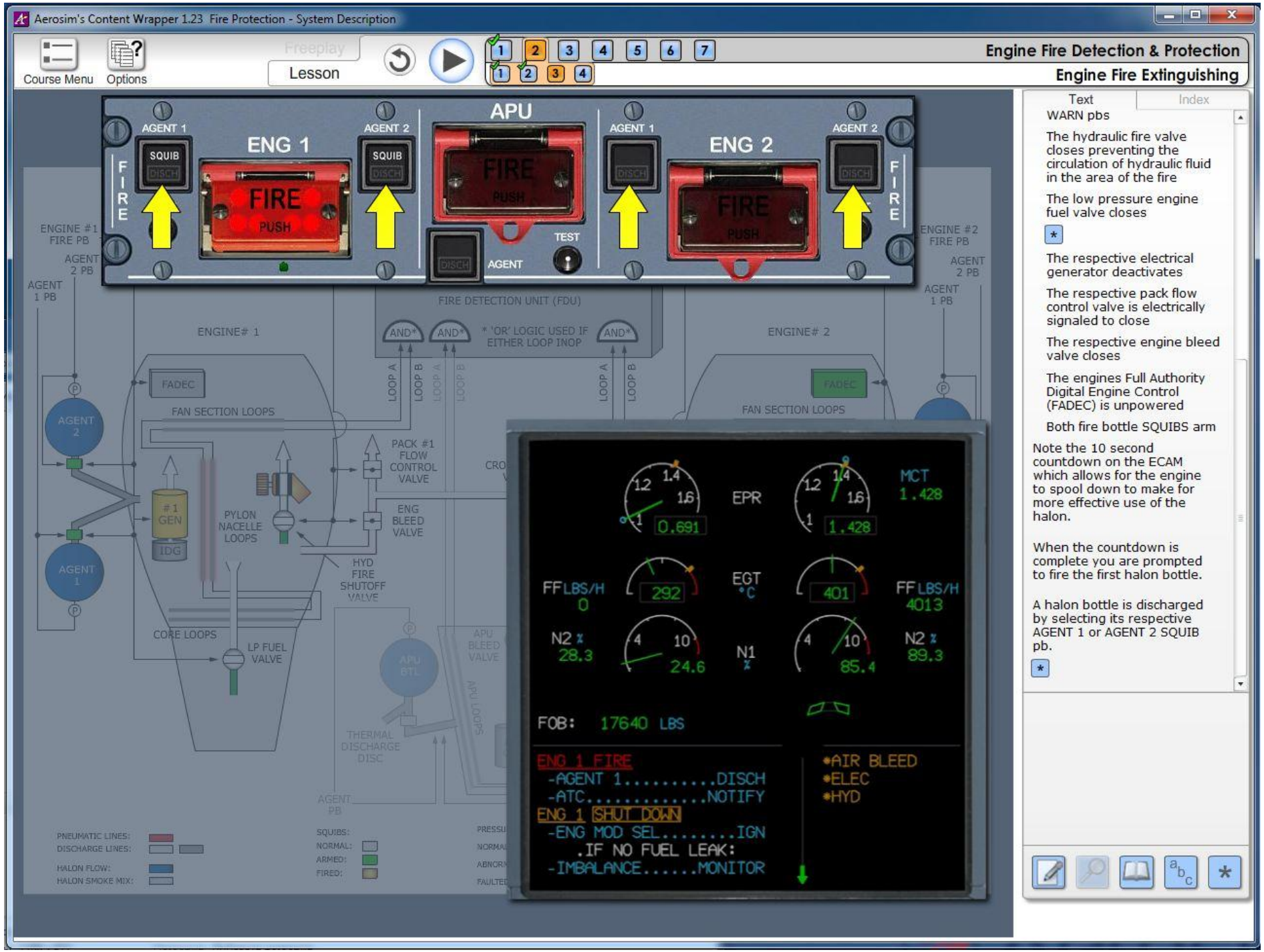

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Extinguishing
AGENT 1
SQUIB
TEST
ENG 1
FIRE
PUSH
AGENT 2
APU
ENG 2
ENGINE #1 FIRE PB
ENGINE #2 FIRE PB
AGENT 2 PB
AGENT 1 PB
AerosimFlashWindow
LP Fuel Valves
SQUIB Lights
Fire Protection
Exterior Preflight
Reduced Electrical Power
AGENT 1
On battery power only or while in the emergency electrical configuration, only the AGENT 1 is available and only the AGENT 1 SQUIB light will illuminate.
FADEC
LOOPS
#2 GEN
IDG
CORE LOOPS
FAILED:
Text
Index
Lift the guard on the ENG 1 FIRE pb, and select the pb to release it.
This releases the pb out about an inch from the FIRE panel.
When the FIRE pb is released, the following actions occur for the respective engine:
The continuous repetitive chime is silenced, if not already accomplished by selecting one of the MASTER WARN pbs
The hydraulic fire valve closes preventing the circulation of hydraulic fluid in the area of the fire
The low pressure engine fuel valve closes
The respective electrical generator deactivates
The respective pack flow control valve is electrically signaled to close
The respective engine bleed valve closes
The engines Full Authority Digital Engine Control (FADEC) is unpowered
Both fire bottle SQUIBS arm

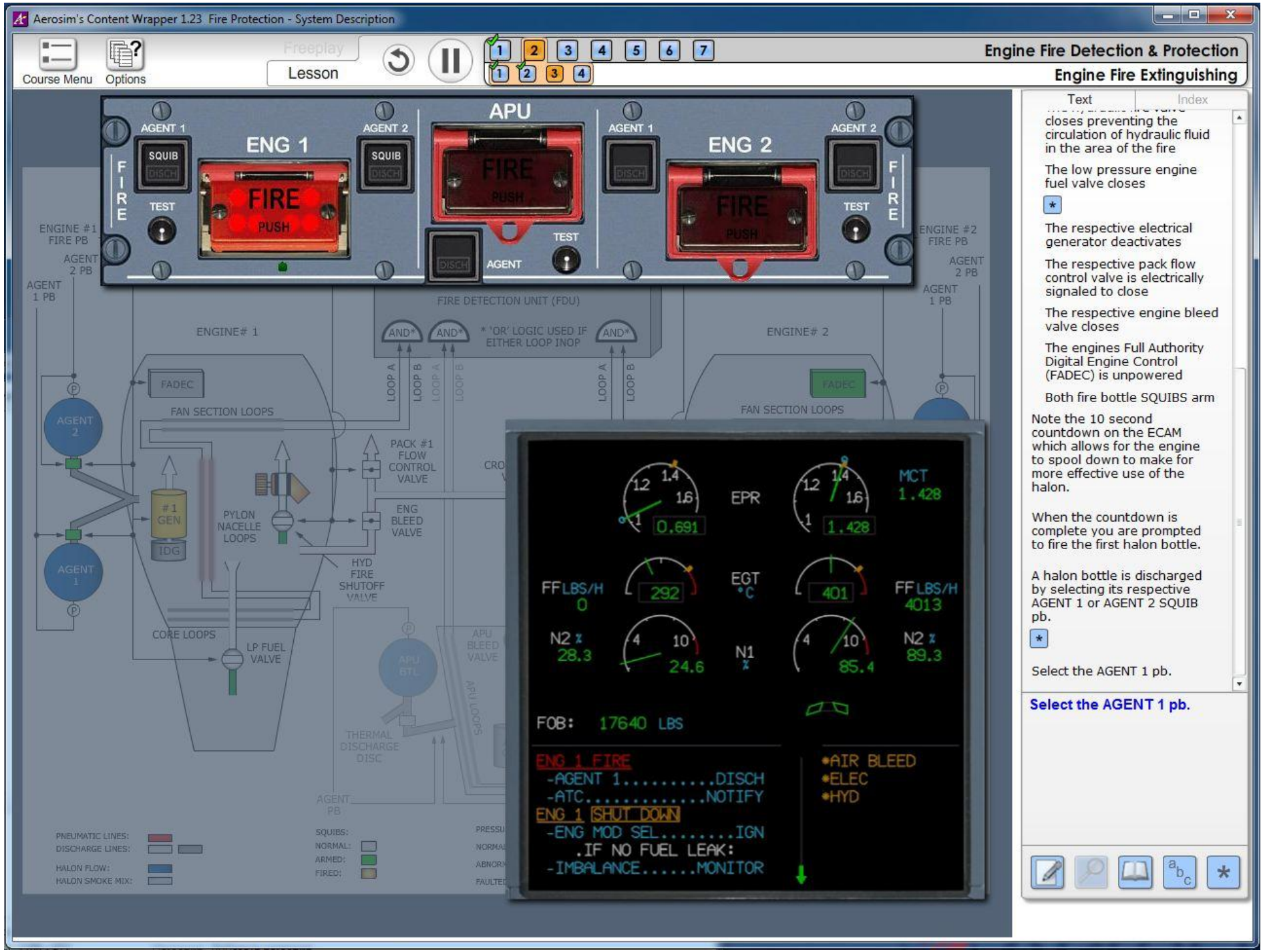

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Extinguishing
AGENT 1
SQUIB
TEST
ENG 1
FIRE
PUSH
AGENT 2
APU
ENG 2
ENGINE #1 FIRE PB
ENGINE #2 FIRE PB
AGENT 1 PB
AGENT 2 PB
AerosimFlashWindow
LP Fuel Valves
SQUIB Lights
Fire Protection
Exterior Preflight
Engine Halon Bottles
Location
The engine halon bottles are located in the engine pylon.
FADEC
#2 GEN
IDG
FAILED:
Text
Index
Lift the guard on the ENG 1 FIRE pb, and select the pb to release it.
This releases the pb out about an inch from the FIRE panel.
When the FIRE pb is released, the following actions occur for the respective engine:
The continuous repetitive chime is silenced, if not already accomplished by selecting one of the MASTER WARN pbs
The hydraulic fire valve closes preventing the circulation of hydraulic fluid in the area of the fire
The low pressure engine fuel valve closes
The respective electrical generator deactivates
The respective pack flow control valve is electrically signaled to close
The respective engine bleed valve closes
The engines Full Authority Digital Engine Control (FADEC) is unpowered
Both fire bottle SQUIBS arm

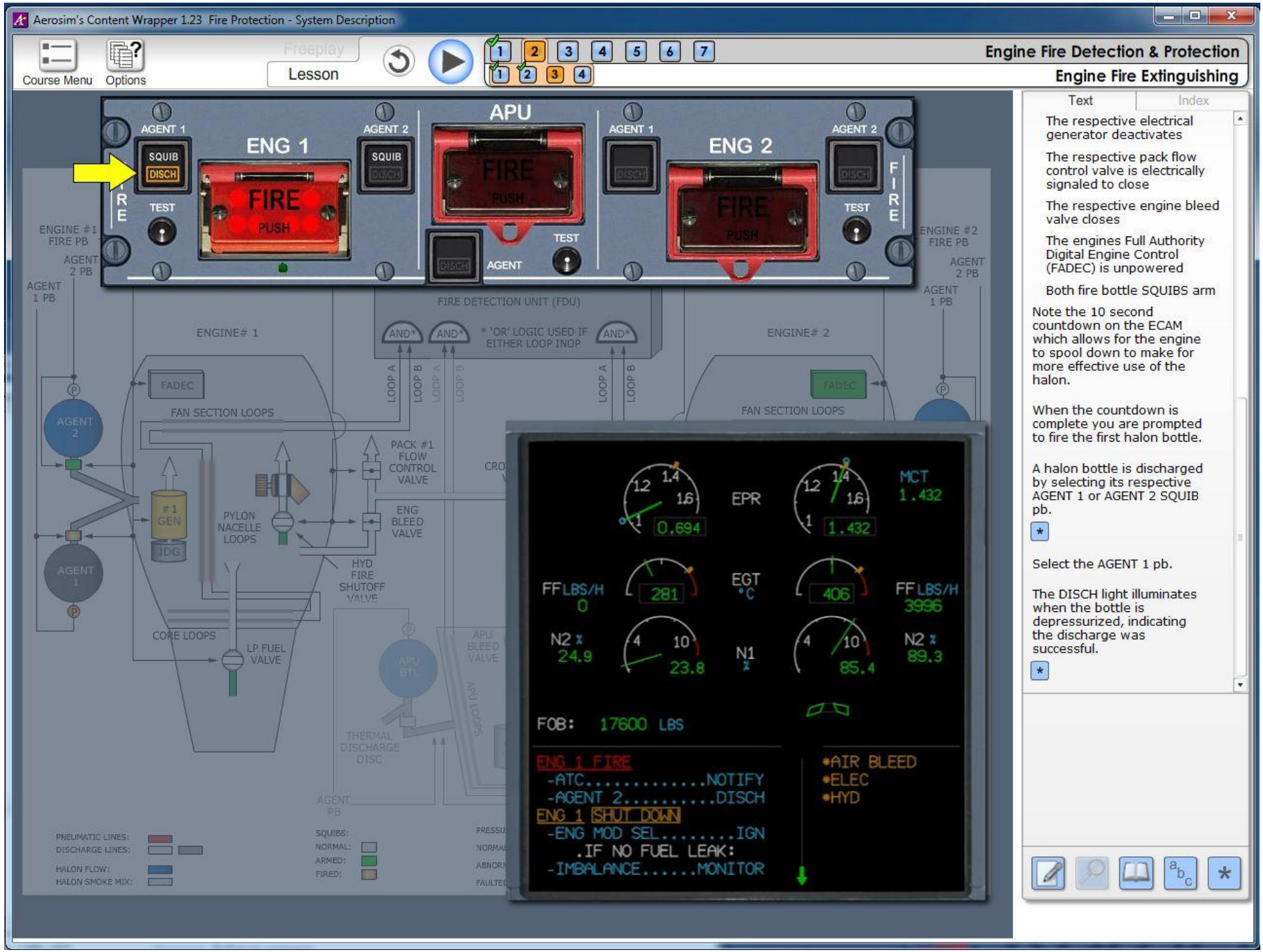

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Extinguishing
AGENT 1
SQUIB
DISCH
TEST
ENG 1
FIRE
PUSH
AGENT 2
APU
ENG 2
ENGINE #1 FIRE PB
ENGINE #2 FIRE PB
AGENT 1 PB
AGENT 2 PB
AerosimFlashWindow
LP Fuel Valves
SQUIB Lights
Fire Protection
Exterior Preflight
Engine Halon Bottles
Exterior Preflight
There are no indications on the exterior of the aircraft to indicate the status of the engine fire extinguishing agents.
Exterior Preflight
FADEC
#2 GEN
IDG
FAILED:
Text
Index
Lift the guard on the ENG 1 FIRE pb, and select the pb to release it.
This releases the pb out about an inch from the FIRE panel.
When the FIRE pb is released, the following actions occur for the respective engine:
The continuous repetitive chime is silenced, if not already accomplished by selecting one of the MASTER WARN pbs
The hydraulic fire valve closes preventing the circulation of hydraulic fluid in the area of the fire
The low pressure engine fuel valve closes
The respective electrical generator deactivates
The respective pack flow control valve is electrically signaled to close
The respective engine bleed valve closes
The engines Full Authority Digital Engine Control (FADEC) is unpowered
Both fire bottle SQUIBS arm

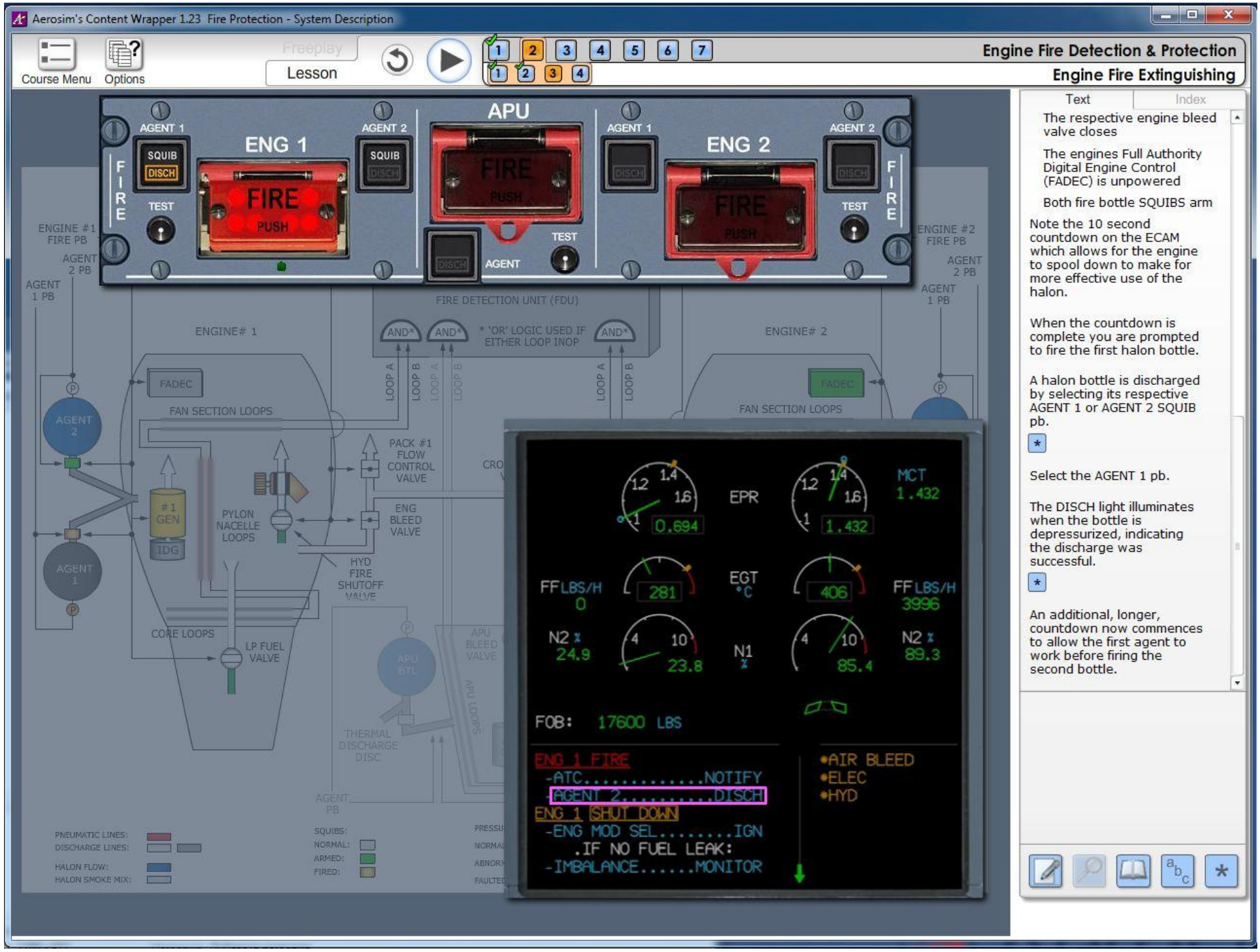

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Extinguishing
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When the FIRE pb is released, the following actions occur for the respective engine:
The continuous repetitive chime is silenced, if not already accomplished by selecting one of the MASTER WARN pbs
The hydraulic fire valve closes preventing the circulation of hydraulic fluid in the area of the fire
The low pressure engine fuel valve closes
*
The respective electrical generator deactivates
The respective pack flow control valve is electrically signaled to close
The respective engine bleed valve closes
The engines Full Authority Digital Engine Control (FADEC) is unpowered
Both fire bottle SQUIBS arm
Note the 10 second countdown on the ECAM which allows for the engine to spool down to make for more effective use of the halon.
AGENT 1
SQUIB
TEST
ENG 1
FIRE
PUSH
AGENT 2
APU
AGENT
ENG 2
ENGINE #1 FIRE PB
ENGINE #2 FIRE PB
FIRE DETECTION UNIT (FDU)
ENGINE# 1
ENGINE# 2
FADEC
FAN SECTION LOOPS
CORE LOOPS
PACK #1 FLOW CONTROL VALVE
ENG BLEED VALVE
HYD FIRE SHUTOFF VALVE
LP FUEL VALVE
PYLON NACELLE LOOPS
#1 GEN
IDG
EPR
0.691
1.428
MCT
1.428
EGT °C
292
401
FF LBS/H
0
4013
N2 %
28.3
89.3
N1 %
24.6
85.4
FOB: 17640 LBS
ENG 1 FIRE
AGENT 1.....DISCH
-ATC.....NOTIFY
ENG 1 SHUT DOWN
-ENG MOD SEL.....IGN
.IF NO FUEL LEAK:
-IMBALANCE.....MONITOR
•AIR BLEED
•ELEC
•HYD

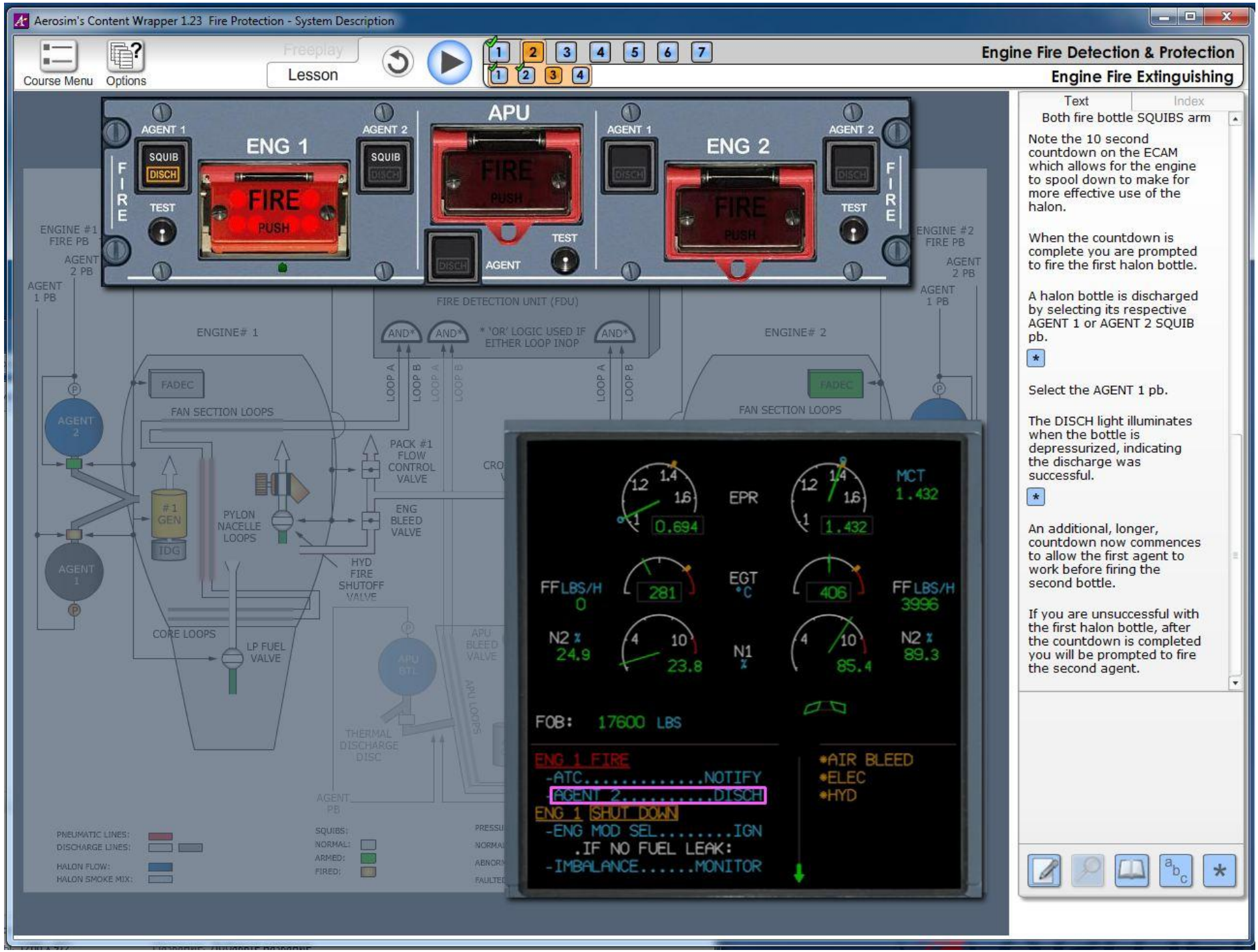

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Extinguishing
Text
Index
respective engine:
The continuous repetitive chime is silenced, if not already accomplished by selecting one of the MASTER WARN pbs
The hydraulic fire valve closes preventing the circulation of hydraulic fluid in the area of the fire
The low pressure engine fuel valve closes
*
The respective electrical generator deactivates
The respective pack flow control valve is electrically signaled to close
The respective engine bleed valve closes
The engines Full Authority Digital Engine Control (FADEC) is unpowered
Both fire bottle SQUIBS arm
Note the 10 second countdown on the ECAM which allows for the engine to spool down to make for more effective use of the halon.
When the countdown is complete you are prompted to fire the first halon bottle.
AGENT 1
SQUIB
TEST
ENG 1
FIRE
PUSH
AGENT 2
APU
AGENT
ENG 2
ENGINE #1 FIRE PB
AGENT 2 PB
AGENT 1 PB
ENGINE #2 FIRE PB
FIRE DETECTION UNIT (FDU)
* 'OR' LOGIC USED IF EITHER LOOP INOP
ENGINE# 1
ENGINE# 2
FADEC
FAN SECTION LOOPS
PACK #1 FLOW CONTROL VALVE
ENG BLEED VALVE
#1 GEN
IDG
PYLON NACELLE LOOPS
HYD FIRE SHUTOFF VALVE
CORE LOOPS
LP FUEL VALVE
APU BLEED VALVE
THERMAL DISCHARGE DISC
EPR
0.691
1.428
MCT
1.428
FF LBS/H
0
292
EGT °C
401
FF LBS/H
4013
N2 %
28.3
24.6
N1 %
85.4
N2 %
89.3
FOB: 17640 LBS
ENG 1 FIRE
AGENT 1.....DISCH
-ATC.....NOTIFY
ENG 1 SHUT DOWN
-ENG MOD SEL.....IGN
.IF NO FUEL LEAK:
-IMBALANCE.....MONITOR
•AIR BLEED
•ELEC
•HYD
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:

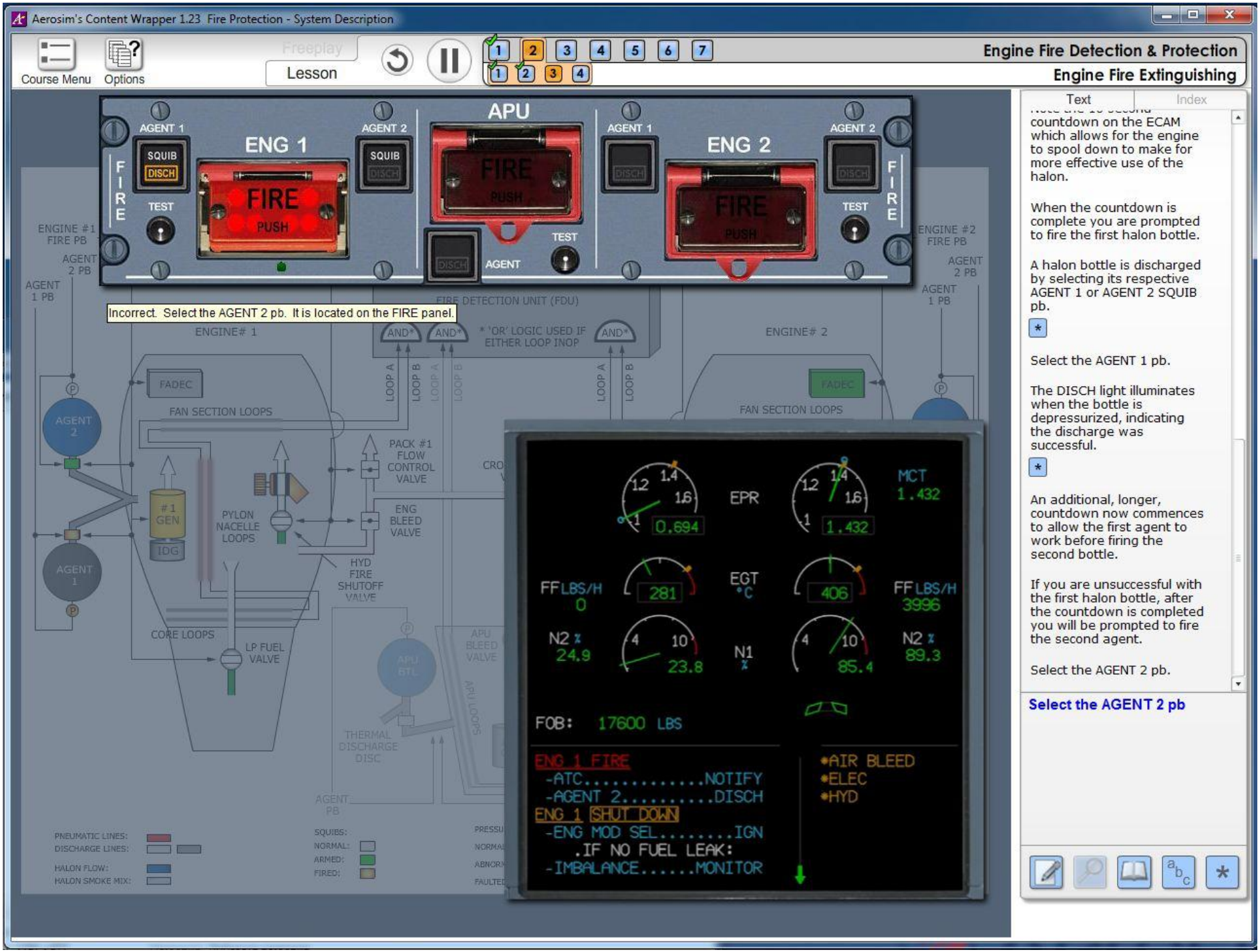

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Extinguishing
Text
Index
WARN pbs
The hydraulic fire valve closes preventing the circulation of hydraulic fluid in the area of the fire
The low pressure engine fuel valve closes
The respective electrical generator deactivates
The respective pack flow control valve is electrically signaled to close
The respective engine bleed valve closes
The engines Full Authority Digital Engine Control (FADEC) is unpowered
Both fire bottle SQUIBS arm
Note the 10 second countdown on the ECAM which allows for the engine to spool down to make for more effective use of the halon.
When the countdown is complete you are prompted to fire the first halon bottle.
A halon bottle is discharged by selecting its respective AGENT 1 or AGENT 2 SQUIB pb.
AGENT 1
SQUIB
ENG 1
FIRE
PUSH
AGENT 2
APU
TEST
AGENT
ENG 2
ENGINE #1 FIRE PB
ENGINE #2 FIRE PB
FIRE DETECTION UNIT (FDU)
ENGINE# 1
ENGINE# 2
FADEC
FAN SECTION LOOPS
PACK #1 FLOW CONTROL VALVE
ENG BLEED VALVE
HYD FIRE SHUTOFF VALVE
LP FUEL VALVE
EPR
MCT
1.428
0.691
EGT
°C
FF LBS/H
0
292
401
4013
N2 %
28.3
24.6
N1
85.4
89.3
FOB: 17640 LBS
ENG 1 FIRE
-AGENT 1.....DISCH
-ATC.....NOTIFY
ENG 1 SHUT DOWN
-ENG MOD SEL.....IGN
.IF NO FUEL LEAK:
-IMBALANCE.....MONITOR
*AIR BLEED
*ELEC
*HYD

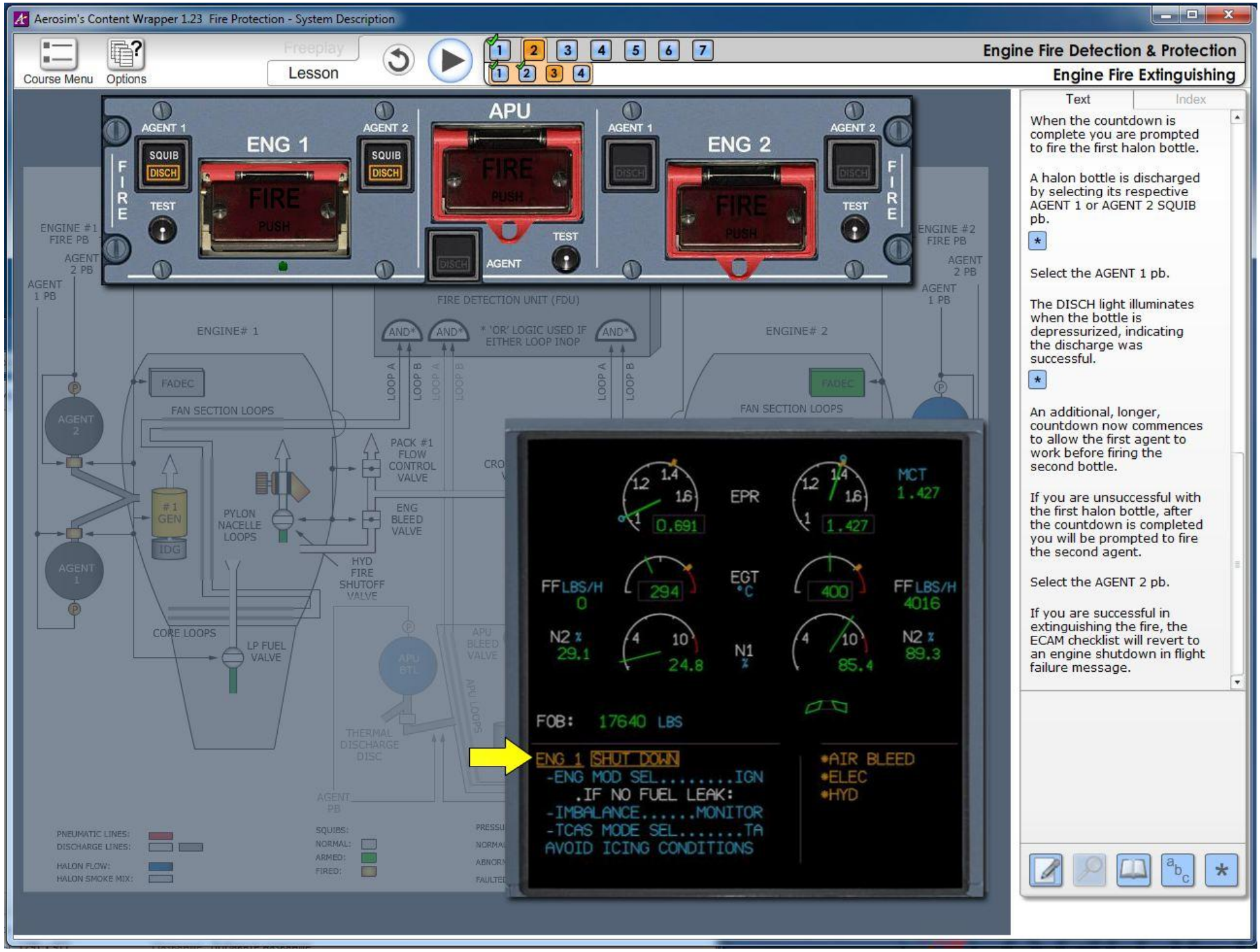

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Extinguishing
Text
Index
AGENT 1
AGENT 2
SQUIB
DISCH
TEST
ENG 1
APU
ENG 2
FIRE
PUSH
AGENT
ENGINE #1 FIRE PB
ENGINE #2 FIRE PB
AGENT 2 PB
AGENT 1 PB
FIRE DETECTION UNIT (FDU)
* 'OR' LOGIC USED IF EITHER LOOP INOP
ENGINE# 1
ENGINE# 2
FADEC
FAN SECTION LOOPS
LOOP A
LOOP B
PACK #1 FLOW CONTROL VALVE
ENG BLEED VALVE
#1 GEN
IDG
PYLON NACELLE LOOPS
HYD FIRE SHUTOFF VALVE
CORE LOOPS
LP FUEL VALVE
APU BLEED VALVE
APU LOOPS
THERMAL DISCHARGE DISC
EPR
MCT
1.428
0.691
1.428
FF LBS/H
0
292
EGT °C
401
FF LBS/H
4013
N2 %
28.3
24.6
N1 %
85.4
N2 %
89.3
FOB: 17640 LBS
ENG 1 FIRE
-AGENT 1.....DISCH
-ATC.....NOTIFY
ENG 1 SHUT DOWN
-ENG MOD SEL.....IGN
.IF NO FUEL LEAK:
-IMBALANCE.....MONITOR
•AIR BLEED
•ELEC
•HYD
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
closes preventing the circulation of hydraulic fluid in the area of the fire
The low pressure engine fuel valve closes
*
The respective electrical generator deactivates
The respective pack flow control valve is electrically signaled to close
The respective engine bleed valve closes
The engines Full Authority Digital Engine Control (FADEC) is unpowered
Both fire bottle SQUIBS arm
Note the 10 second countdown on the ECAM which allows for the engine to spool down to make for more effective use of the halon.
When the countdown is complete you are prompted to fire the first halon bottle.
A halon bottle is discharged by selecting its respective AGENT 1 or AGENT 2 SQUIB pb.
*
Select the AGENT 1 pb.
Select the AGENT 1 pb.

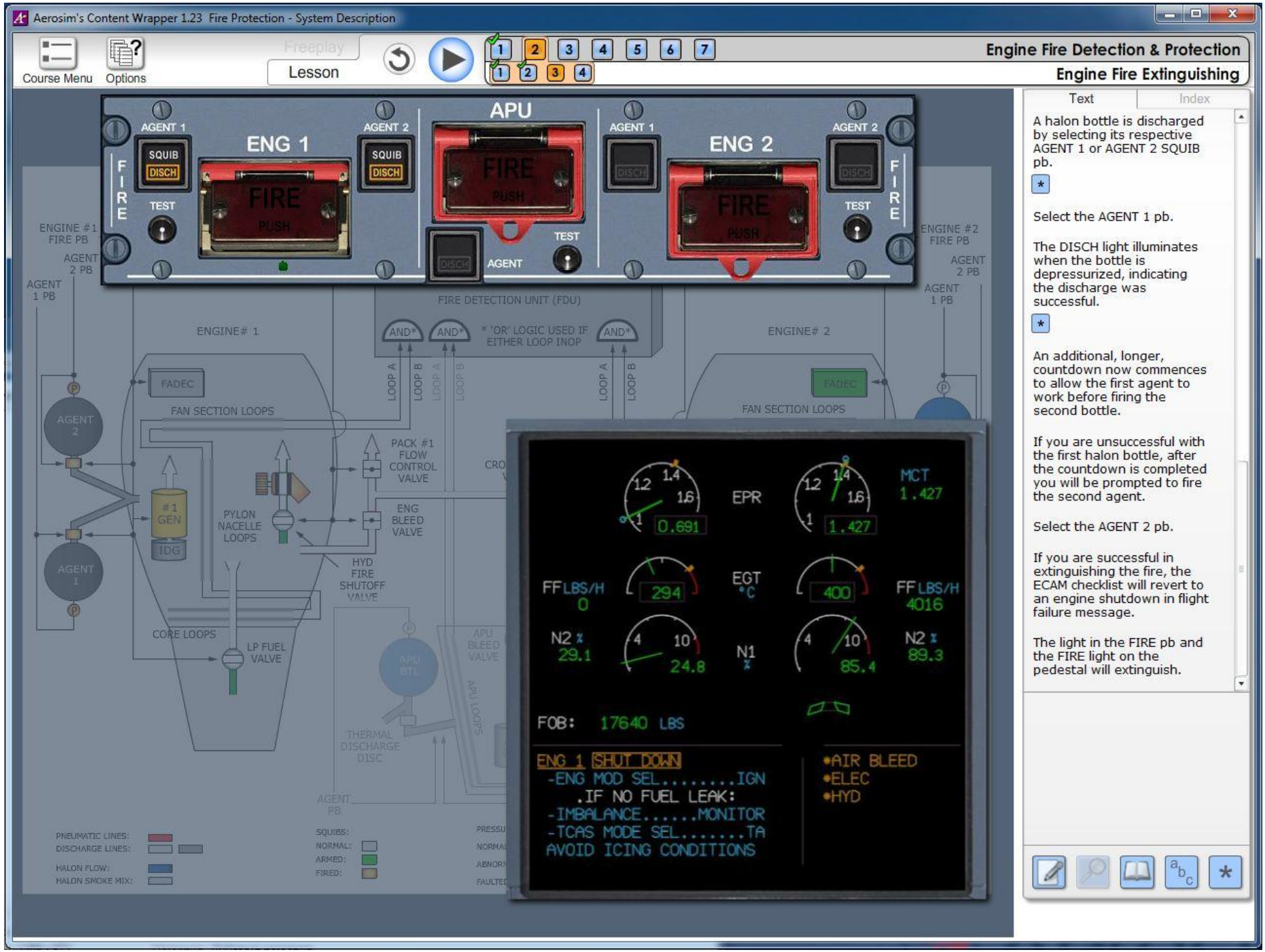

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
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Lesson
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Engine Fire Extinguishing
Text
Index
The respective electrical generator deactivates
The respective pack flow control valve is electrically signaled to close
The respective engine bleed valve closes
The engines Full Authority Digital Engine Control (FADEC) is unpowered
Both fire bottle SQUIBS arm
Note the 10 second countdown on the ECAM which allows for the engine to spool down to make for more effective use of the halon.
When the countdown is complete you are prompted to fire the first halon bottle.
A halon bottle is discharged by selecting its respective AGENT 1 or AGENT 2 SQUIB pb.
Select the AGENT 1 pb.
The DISCH light illuminates when the bottle is depressurized, indicating the discharge was successful.
AGENT 1
AGENT 2
SQUIB
DISCH
TEST
ENG 1
APU
ENG 2
FIRE
PUSH
ENGINE #1 FIRE PB
ENGINE #2 FIRE PB
FIRE DETECTION UNIT (FDU)
ENGINE# 1
ENGINE# 2
FADEC
FAN SECTION LOOPS
PACK #1 FLOW CONTROL VALVE
ENG BLEED VALVE
HYD FIRE SHUTOFF VALVE
PYLON NACELLE LOOPS
CORE LOOPS
LP FUEL VALVE
THERMAL DISCHARGE DISC
EPR
MCT
1.432
0.694
FF LBS/H
0
281
406
3996
EGT °C
N2 %
24.9
23.8
N1 %
85.4
89.3
FOB: 17600 LBS
ENG 1 FIRE
-ATC.....NOTIFY
-AGENT 2.....DISCH
ENG 1 SHUT DOWN
-ENG MOD SEL.....IGN
.IF NO FUEL LEAK:
-IMBALANCE.....MONITOR
•AIR BLEED
•ELEC
•HYD

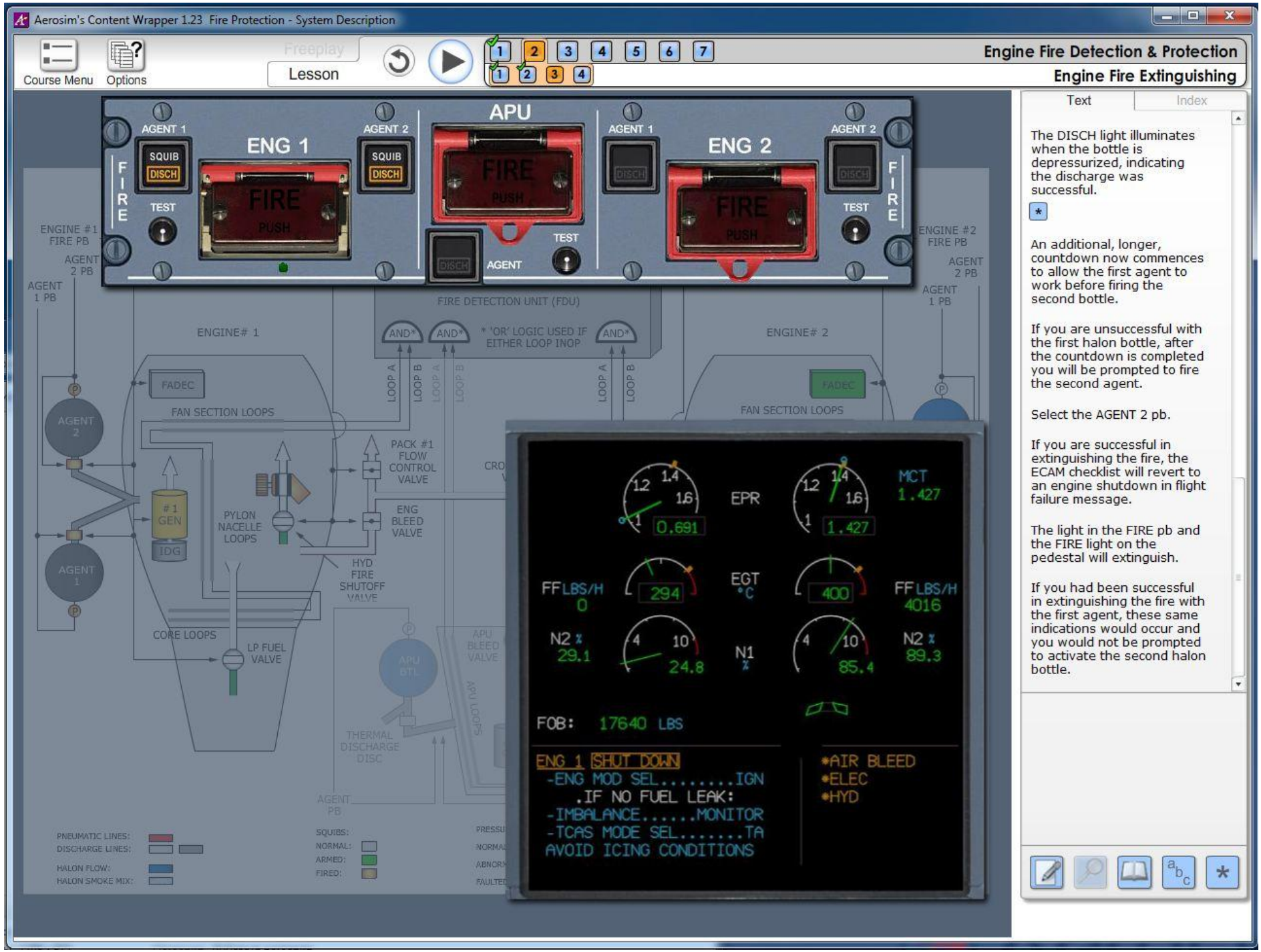

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Extinguishing
Text
Index
The respective engine bleed valve closes
The engines Full Authority Digital Engine Control (FADEC) is unpowered
Both fire bottle SQUIBS arm
Note the 10 second countdown on the ECAM which allows for the engine to spool down to make for more effective use of the halon.
When the countdown is complete you are prompted to fire the first halon bottle.
A halon bottle is discharged by selecting its respective AGENT 1 or AGENT 2 SQUIB pb.
Select the AGENT 1 pb.
The DISCH light illuminates when the bottle is depressurized, indicating the discharge was successful.
An additional, longer, countdown now commences to allow the first agent to work before firing the second bottle.
AGENT 1
SQUIB
DISCH
TEST
ENG 1
FIRE
PUSH
AGENT 2
APU
ENG 2
ENGINE #1 FIRE PB
ENGINE #2 FIRE PB
AGENT 2 PB
AGENT 1 PB
FIRE DETECTION UNIT (FDU)
* 'OR' LOGIC USED IF EITHER LOOP INOP
ENGINE# 1
ENGINE# 2
FADEC
FAN SECTION LOOPS
PACK #1 FLOW CONTROL VALVE
ENG BLEED VALVE
HYD FIRE SHUTOFF VALVE
PYLON NACELLE LOOPS
CORE LOOPS
LP FUEL VALVE
#1 GEN
IDG
APU BLEED VALVE
THERMAL DISCHARGE DISC
EPR
MCT
1.432
0.694
FF LBS/H
0
281
EGT °C
406
3996
N2 %
24.9
23.8
N1 %
85.4
89.3
FOB: 17600 LBS
ENG 1 FIRE
-ATC.....NOTIFY
-AGENT 2.....DISCH
ENG 1 SHUT DOWN
-ENG MOD SEL.....IGN
.IF NO FUEL LEAK:
-IMBALANCE.....MONITOR
•AIR BLEED
•ELEC
•HYD
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
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Engine Fire Detection & Protection
Engine Fire Extinguishing
Text
Index
Both fire bottle SQUIBS arm
Note the 10 second countdown on the ECAM which allows for the engine to spool down to make for more effective use of the halon.
When the countdown is complete you are prompted to fire the first halon bottle.
A halon bottle is discharged by selecting its respective AGENT 1 or AGENT 2 SQUIB pb.
Select the AGENT 1 pb.
The DISCH light illuminates when the bottle is depressurized, indicating the discharge was successful.
An additional, longer, countdown now commences to allow the first agent to work before firing the second bottle.
If you are unsuccessful with the first halon bottle, after the countdown is completed you will be prompted to fire the second agent.
AGENT 1
SQUIB
DISCH
TEST
ENG 1
FIRE
PUSH
AGENT 2
APU
ENG 2
AGENT
FIRE DETECTION UNIT (FDU)
* 'OR' LOGIC USED IF EITHER LOOP INOP
ENGINE# 1
ENGINE# 2
FADEC
FAN SECTION LOOPS
PACK #1 FLOW CONTROL VALVE
ENG BLEED VALVE
HYD FIRE SHUTOFF VALVE
LP FUEL VALVE
CORE LOOPS
PYLON NACELLE LOOPS
THERMAL DISCHARGE DISC
EPR
0.694
1.432
MCT
1.432
EGT °C
281
406
FF LBS/H
0
FF LBS/H
3996
N2 %
24.9
N1 %
23.8
85.4
N2 %
89.3
FOB: 17600 LBS
ENG 1 FIRE
-ATC.....NOTIFY
-AGENT 2.....DISCH
ENG 1 SHUT DOWN
-ENG MOD SEL.....IGN
.IF NO FUEL LEAK:
-IMBALANCE.....MONITOR
•AIR BLEED
•ELEC
•HYD


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Extinguishing
Text
Index
AGENT 1
AGENT 2
SQUIB
DISCH
TEST
FIRE
PUSH
ENG 1
APU
ENG 2
Incorrect. Select the AGENT 2 pb. It is located on the FIRE panel.
countdown on the ECAM which allows for the engine to spool down to make for more effective use of the halon.
When the countdown is complete you are prompted to fire the first halon bottle.
A halon bottle is discharged by selecting its respective AGENT 1 or AGENT 2 SQUIB pb.
Select the AGENT 1 pb.
The DISCH light illuminates when the bottle is depressurized, indicating the discharge was successful.
An additional, longer, countdown now commences to allow the first agent to work before firing the second bottle.
If you are unsuccessful with the first halon bottle, after the countdown is completed you will be prompted to fire the second agent.
Select the AGENT 2 pb.
Select the AGENT 2 pb
EPR
MCT
1.432
0.694
1.432
FF LBS/H
0
281
406
FF LBS/H
3996
EGT °C
N2 %
24.9
23.8
N1 %
85.4
N2 %
89.3
FOB: 17600 LBS
ENG 1 FIRE
-ATC.....NOTIFY
-AGENT 2.....DISCH
ENG 1 SHUT DOWN
-ENG MOD SEL.....IGN
.IF NO FUEL LEAK:
-IMBALANCE.....MONITOR
•AIR BLEED
•ELEC
•HYD
FADEC
FAN SECTION LOOPS
PACK #1 FLOW CONTROL VALVE
ENG BLEED VALVE
HYD FIRE SHUTOFF VALVE
LP FUEL VALVE
CORE LOOPS
PYLON NACELLE LOOPS
#1 GEN
IDG
FIRE DETECTION UNIT (FDU)
ENGINE# 1
ENGINE# 2
ENGINE #1 FIRE PB
ENGINE #2 FIRE PB
AGENT 1 PB
AGENT 2 PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Extinguishing
Text
Index
When the countdown is complete you are prompted to fire the first halon bottle.
A halon bottle is discharged by selecting its respective AGENT 1 or AGENT 2 SQUIB pb.
Select the AGENT 1 pb.
The DISCH light illuminates when the bottle is depressurized, indicating the discharge was successful.
An additional, longer, countdown now commences to allow the first agent to work before firing the second bottle.
If you are unsuccessful with the first halon bottle, after the countdown is completed you will be prompted to fire the second agent.
Select the AGENT 2 pb.
If you are successful in extinguishing the fire, the ECAM checklist will revert to an engine shutdown in flight failure message.
APU
ENG 1
ENG 2
AGENT 1
AGENT 2
SQUIB
DISCH
TEST
FIRE
PUSH
AGENT
FIRE DETECTION UNIT (FDU)
* 'OR' LOGIC USED IF EITHER LOOP INOP
ENGINE# 1
ENGINE# 2
FADEC
FAN SECTION LOOPS
CORE LOOPS
PACK #1 FLOW CONTROL VALVE
ENG BLEED VALVE
PYLON NACELLE LOOPS
HYD FIRE SHUTOFF VALVE
LP FUEL VALVE
APU BLEED VALVE
THERMAL DISCHARGE DISC
EPR
MCT
1.427
0.691
1.427
EGT °C
FF LBS/H
0
294
400
4016
N2 %
29.1
24.8
N1 %
85.4
89.3
FOB: 17640 LBS
ENG 1 SHUT DOWN
-ENG MOD SEL.....IGN
.IF NO FUEL LEAK:
-IMBALANCE.....MONITOR
-TCAS MODE SEL.....TA
AVOID ICING CONDITIONS
•AIR BLEED
•ELEC
•HYD


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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Engine Fire Detection & Protection
Engine Fire Extinguishing
Text
Index
A halon bottle is discharged by selecting its respective AGENT 1 or AGENT 2 SQUIB pb.
Select the AGENT 1 pb.
The DISCH light illuminates when the bottle is depressurized, indicating the discharge was successful.
An additional, longer, countdown now commences to allow the first agent to work before firing the second bottle.
If you are unsuccessful with the first halon bottle, after the countdown is completed you will be prompted to fire the second agent.
Select the AGENT 2 pb.
If you are successful in extinguishing the fire, the ECAM checklist will revert to an engine shutdown in flight failure message.
The light in the FIRE pb and the FIRE light on the pedestal will extinguish.
AGENT 1
AGENT 2
SQUIB
DISCH
TEST
FIRE
PUSH
ENG 1
APU
ENG 2
AGENT
ENGINE #1 FIRE PB
ENGINE #2 FIRE PB
AGENT 1 PB
AGENT 2 PB
FIRE DETECTION UNIT (FDU)
ENGINE# 1
ENGINE# 2
FADEC
FAN SECTION LOOPS
PACK #1 FLOW CONTROL VALVE
ENG BLEED VALVE
PYLON NACELLE LOOPS
HYD FIRE SHUTOFF VALVE
CORE LOOPS
LP FUEL VALVE
THERMAL DISCHARGE DISC
EPR
0.691
1.427
MCT
1.427
FF LBS/H
0
294
EGT °C
400
FF LBS/H
4016
N2 %
29.1
24.8
N1 %
85.4
N2 %
89.3
FOB: 17640 LBS
ENG 1 SHUT DOWN
-ENG MOD SEL.....IGN
.IF NO FUEL LEAK:
-IMBALANCE.....MONITOR
-TCAS MODE SEL.....TA
AVOID ICING CONDITIONS
•AIR BLEED
•ELEC
•HYD

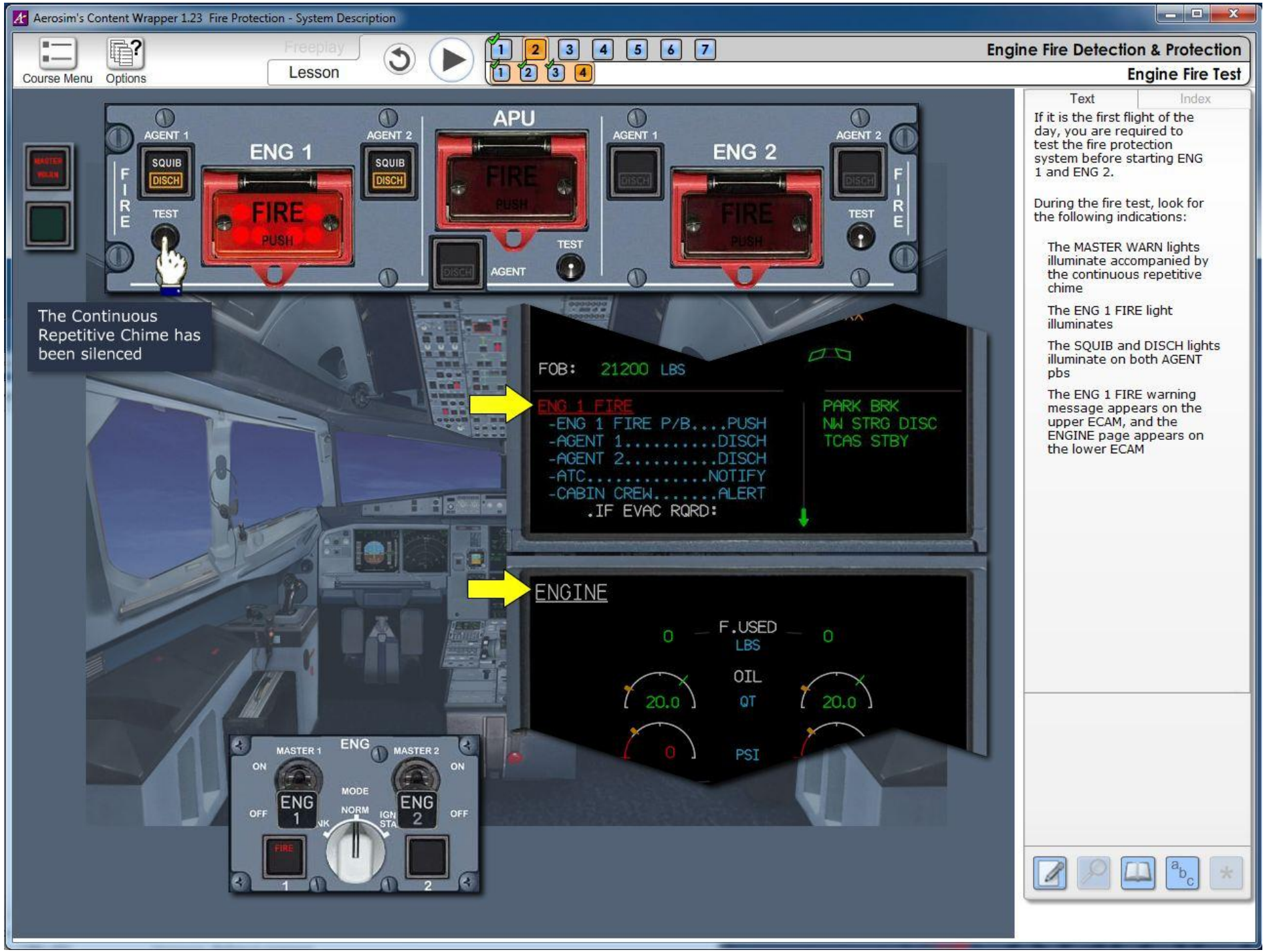

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Extinguishing
Text
Index
The DISCH light illuminates when the bottle is depressurized, indicating the discharge was successful.
An additional, longer, countdown now commences to allow the first agent to work before firing the second bottle.
If you are unsuccessful with the first halon bottle, after the countdown is completed you will be prompted to fire the second agent.
Select the AGENT 2 pb.
If you are successful in extinguishing the fire, the ECAM checklist will revert to an engine shutdown in flight failure message.
The light in the FIRE pb and the FIRE light on the pedestal will extinguish.
If you had been successful in extinguishing the fire with the first agent, these same indications would occur and you would not be prompted to activate the second halon bottle.
AGENT 1
AGENT 2
SQUIB
DISCH
TEST
FIRE
PUSH
ENG 1
APU
ENG 2
AGENT
ENGINE #1 FIRE PB
ENGINE #2 FIRE PB
AGENT 2 PB
AGENT 1 PB
FIRE DETECTION UNIT (FDU)
* 'OR' LOGIC USED IF EITHER LOOP INOP
ENGINE# 1
ENGINE# 2
FADEC
FAN SECTION LOOPS
LOOP A
LOOP B
PACK #1 FLOW CONTROL VALVE
ENG BLEED VALVE
HYD FIRE SHUTOFF VALVE
PYLON NACELLE LOOPS
#1 GEN
IDG
CORE LOOPS
LP FUEL VALVE
APU BLEED VALVE
APU LOOPS
THERMAL DISCHARGE DISC
EPR
MCT
1.427
0.691
1.427
FF LBS/H
0
EGT °C
294
400
FF LBS/H
4016
N2 %
29.1
24.8
N1 %
85.4
N2 %
89.3
FOB: 17640 LBS
ENG 1 SHUT DOWN
-ENG MOD SEL.....IGN
.IF NO FUEL LEAK:
-IMBALANCE.....MONITOR
-TCAS MODE SEL.....TA
AVOID ICING CONDITIONS
•AIR BLEED
•ELEC
•HYD
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Test
Text
Index
If it is the first flight of the day, you are required to test the fire protection system before starting ENG 1 and ENG 2.
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
DISCH
AGENT
FOB: 21200 LBS
PARK BRK
NW STRG DISC
TCAS STBY
STS
DOOR/OXY
OXY 1850 PSI
REGUL LO PR
CABIN
ENG
MASTER 1
MASTER 2
ON
OFF
MODE
NORM
IGN STA

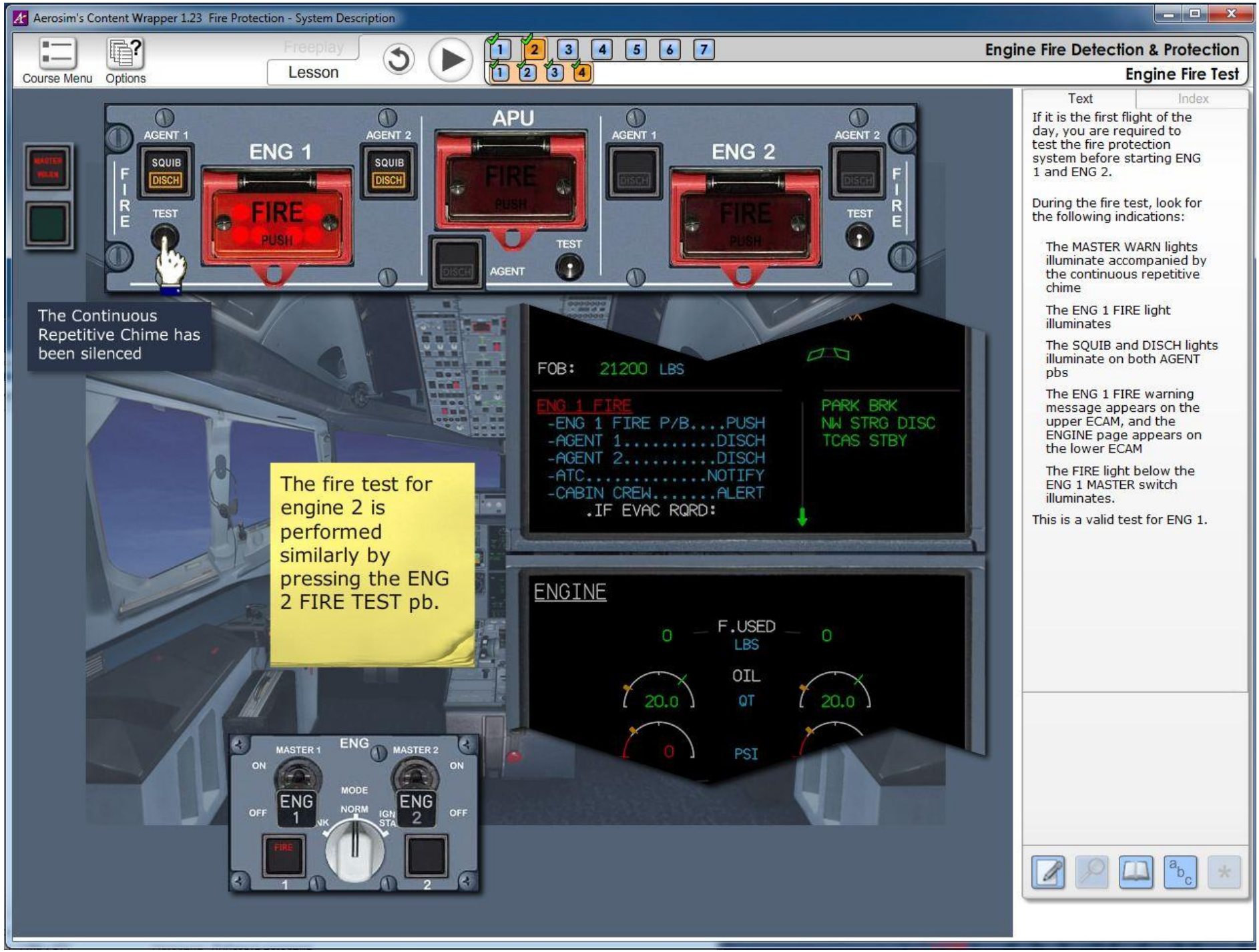

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Test
Text
Index
If it is the first flight of the day, you are required to test the fire protection system before starting ENG 1 and ENG 2.
During the fire test, look for the following indications:
The MASTER WARN lights illuminate accompanied by the continuous repetitive chime
AGENT 1
SQUIB
DISCH
TEST
ENG 1
FIRE
PUSH
AGENT 2
APU
AGENT
ENG 2
The Continuous Repetitive Chime has been silenced
FOB: 21200 LBS
ENG 1 FIRE
-ENG 1 FIRE P/B....PUSH
-AGENT 1.....DISCH
-AGENT 2.....DISCH
-ATC.....NOTIFY
-CABIN CREW.....ALERT
.IF EVAC RQRD:
PARK BRK
NW STRG DISC
TCAS STBY
ENGINE
F.USED
LBS
OIL
QT
PSI
20.0
MASTER 1
MASTER 2
ON
OFF
MODE
NORM
ENG

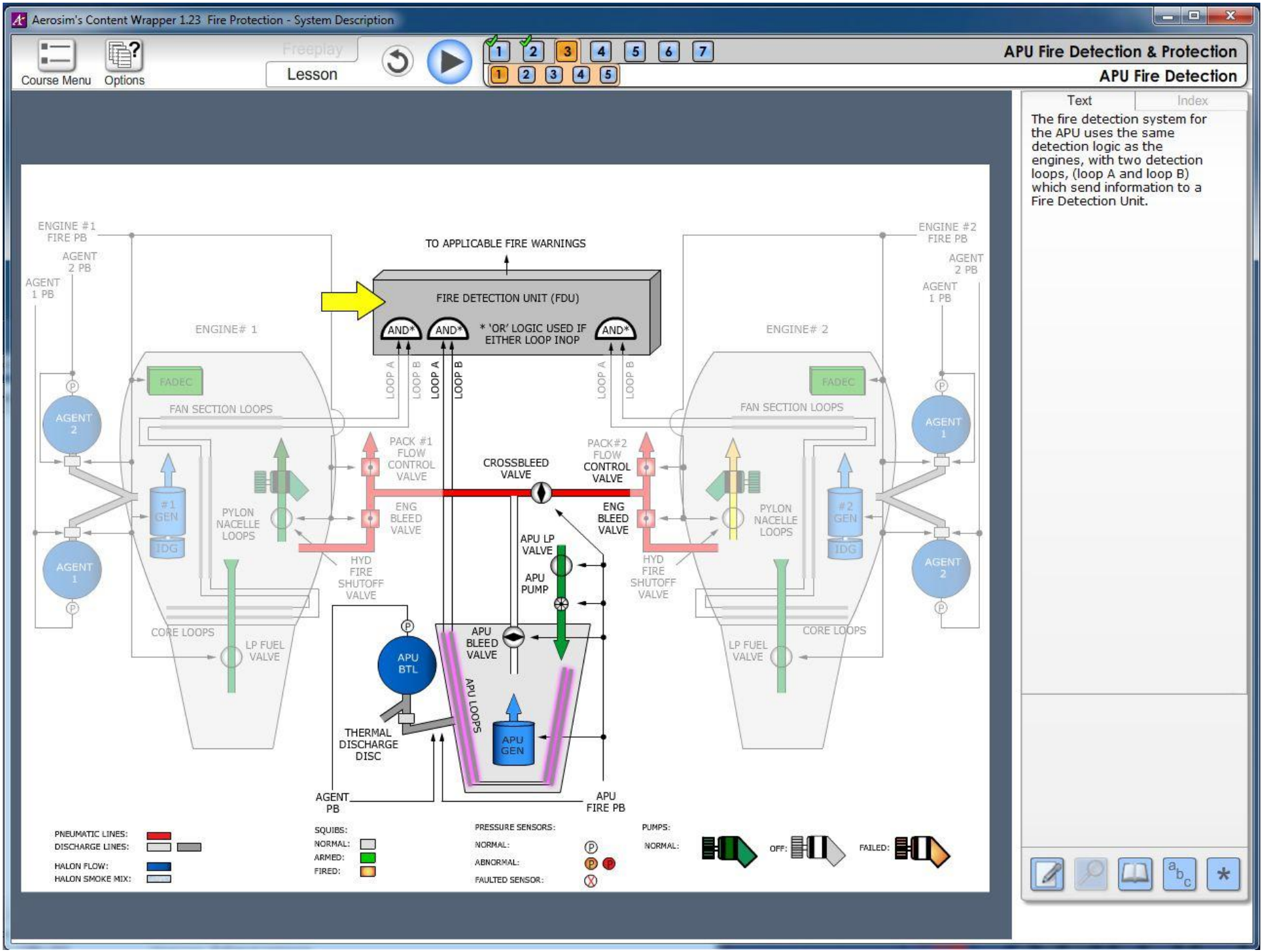

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Test
Text
Index
If it is the first flight of the day, you are required to test the fire protection system before starting ENG 1 and ENG 2.
During the fire test, look for the following indications:
The MASTER WARN lights illuminate accompanied by the continuous repetitive chime
The ENG 1 FIRE light illuminates
AGENT 1
SQUIB
DISCH
TEST
ENG 1
FIRE
PUSH
AGENT 2
APU
AGENT
ENG 2
The Continuous Repetitive Chime has been silenced
FOB: 21200 LBS
ENG 1 FIRE
-ENG 1 FIRE P/B....PUSH
-AGENT 1.....DISCH
-AGENT 2.....DISCH
-ATC.....NOTIFY
-CABIN CREW.....ALERT
.IF EVAC RQRD:
PARK BRK
NW STRG DISC
TCAS STBY
ENGINE
F.USED
LBS
OIL
QT
PSI
20.0
ENG
MASTER 1
MASTER 2
ON
OFF
MODE
NORM
IGN STA

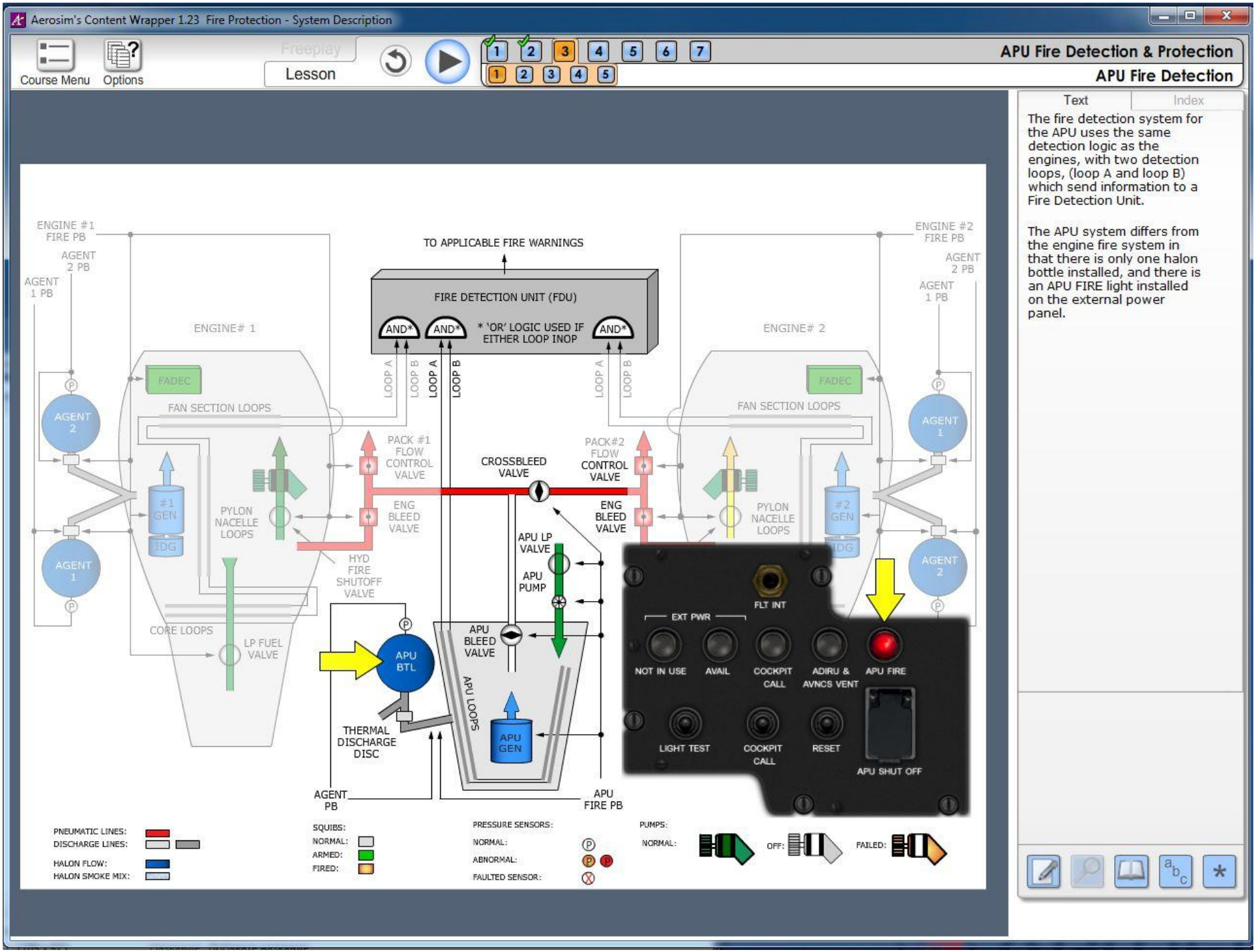

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Test
Text
Index
If it is the first flight of the day, you are required to test the fire protection system before starting ENG 1 and ENG 2.
During the fire test, look for the following indications:
The MASTER WARN lights illuminate accompanied by the continuous repetitive chime
The ENG 1 FIRE light illuminates
The SQUIB and DISCH lights illuminate on both AGENT pbs
AGENT 1
SQUIB
DISCH
TEST
ENG 1
FIRE
PUSH
AGENT 2
APU
AGENT
ENG 2
The Continuous Repetitive Chime has been silenced
FOB: 21200 LBS
ENG 1 FIRE
-ENG 1 FIRE P/B....PUSH
-AGENT 1.....DISCH
-AGENT 2.....DISCH
-ATC.....NOTIFY
-CABIN CREW.....ALERT
.IF EVAC RQRD:
PARK BRK
NW STRG DISC
TCAS STBY
ENGINE
F.USED
LBS
OIL
QT
PSI
20.0
MASTER 1
MASTER 2
ON
OFF
ENG
MODE
NORM
IGN
STA

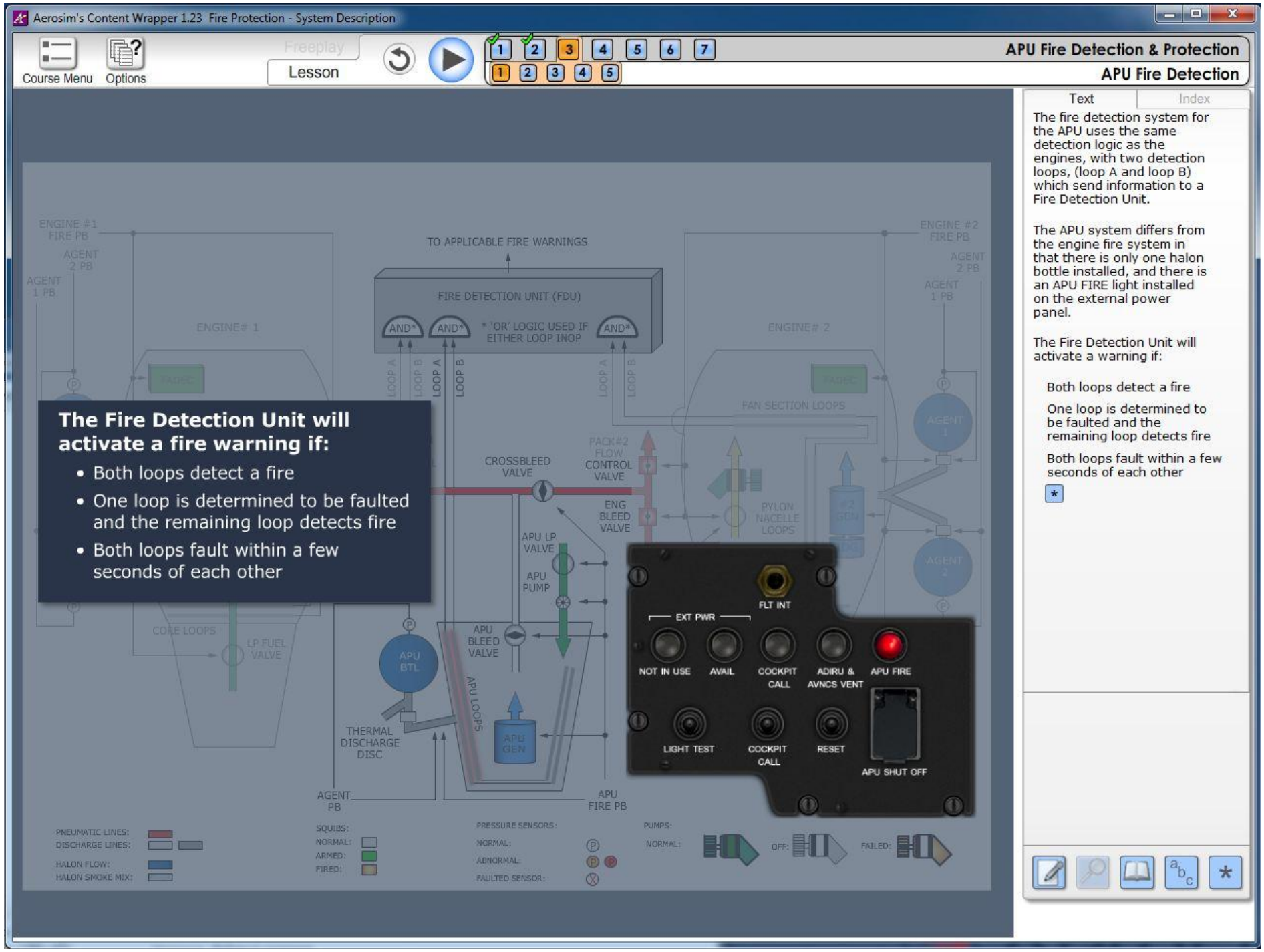

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Test
Text
Index
If it is the first flight of the day, you are required to test the fire protection system before starting ENG 1 and ENG 2.
During the fire test, look for the following indications:
The MASTER WARN lights illuminate accompanied by the continuous repetitive chime
The ENG 1 FIRE light illuminates
The SQUIB and DISCH lights illuminate on both AGENT pbs
The ENG 1 FIRE warning message appears on the upper ECAM, and the ENGINE page appears on the lower ECAM
AGENT 1
SQUIB
DISCH
TEST
ENG 1
FIRE
PUSH
AGENT 2
APU
AGENT
ENG 2
The Continuous Repetitive Chime has been silenced
FOB: 21200 LBS
ENG 1 FIRE
-ENG 1 FIRE P/B....PUSH
-AGENT 1.....DISCH
-AGENT 2.....DISCH
-ATC.....NOTIFY
-CABIN CREW.....ALERT
.IF EVAC RQRD:
PARK BRK
NW STRG DISC
TCAS STBY
ENGINE
F.USED
LBS
OIL
QT
PSI
20.0
ENG
MASTER 1
MASTER 2
ON
OFF
MODE
NORM
IGN STA

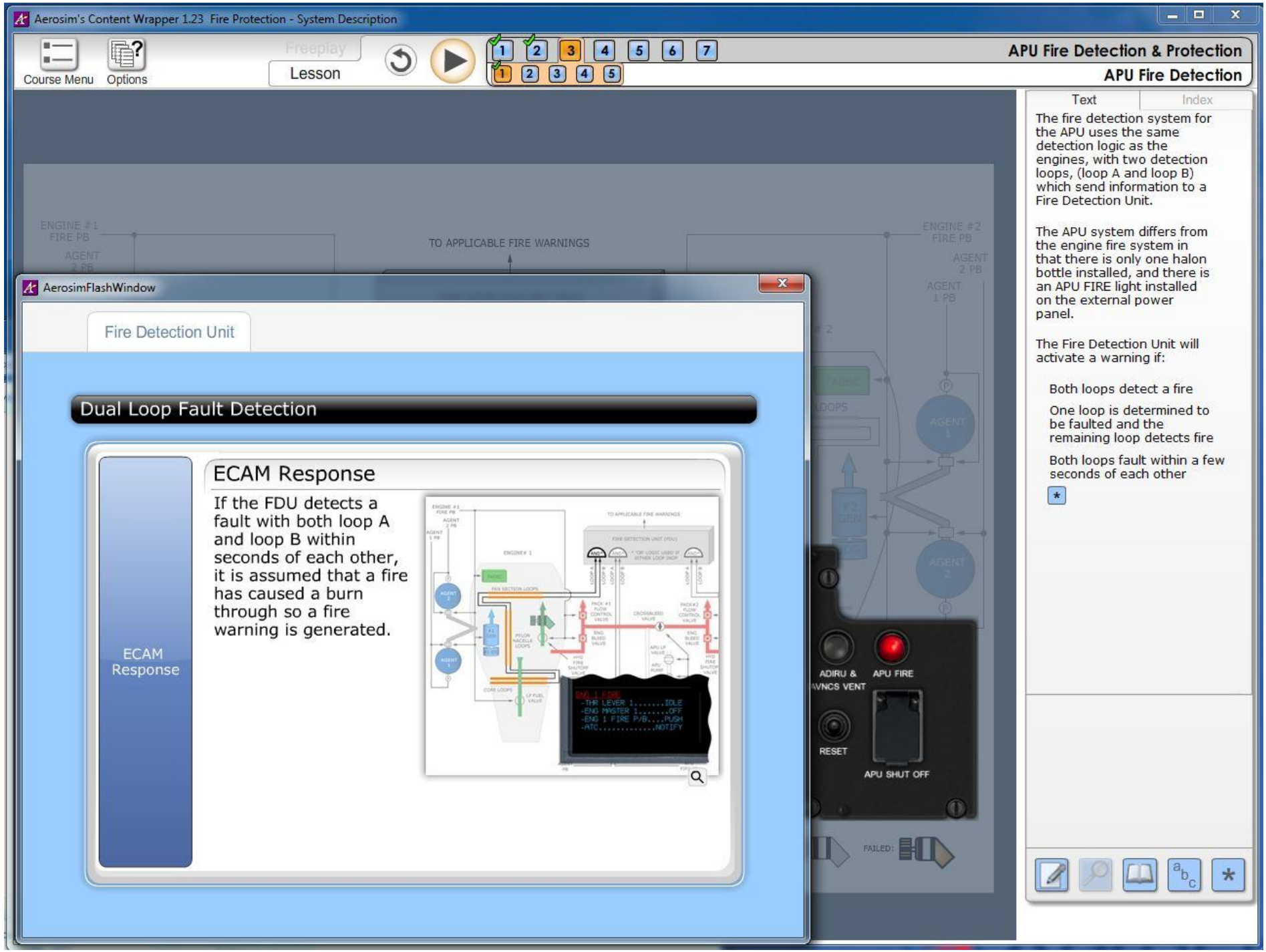

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Test
Text
Index
If it is the first flight of the day, you are required to test the fire protection system before starting ENG 1 and ENG 2.
During the fire test, look for the following indications:
The MASTER WARN lights illuminate accompanied by the continuous repetitive chime
The ENG 1 FIRE light illuminates
The SQUIB and DISCH lights illuminate on both AGENT pbs
The ENG 1 FIRE warning message appears on the upper ECAM, and the ENGINE page appears on the lower ECAM
The FIRE light below the ENG 1 MASTER switch illuminates.
AGENT 1
SQUIB
DISCH
TEST
ENG 1
FIRE
PUSH
AGENT 2
APU
AGENT
ENG 2
The Continuous Repetitive Chime has been silenced
FOB: 21200 LBS
ENG 1 FIRE
-ENG 1 FIRE P/B....PUSH
-AGENT 1.....DISCH
-AGENT 2.....DISCH
-ATC.....NOTIFY
-CABIN CREW.....ALERT
.IF EVAC RQRD:
PARK BRK
NW STRG DISC
TCAS STBY
ENGINE
F.USED
LBS
OIL
QT
PSI
20.0
MASTER 1
MASTER 2
ON
OFF
ENG
MODE
NORM
IGN
STA

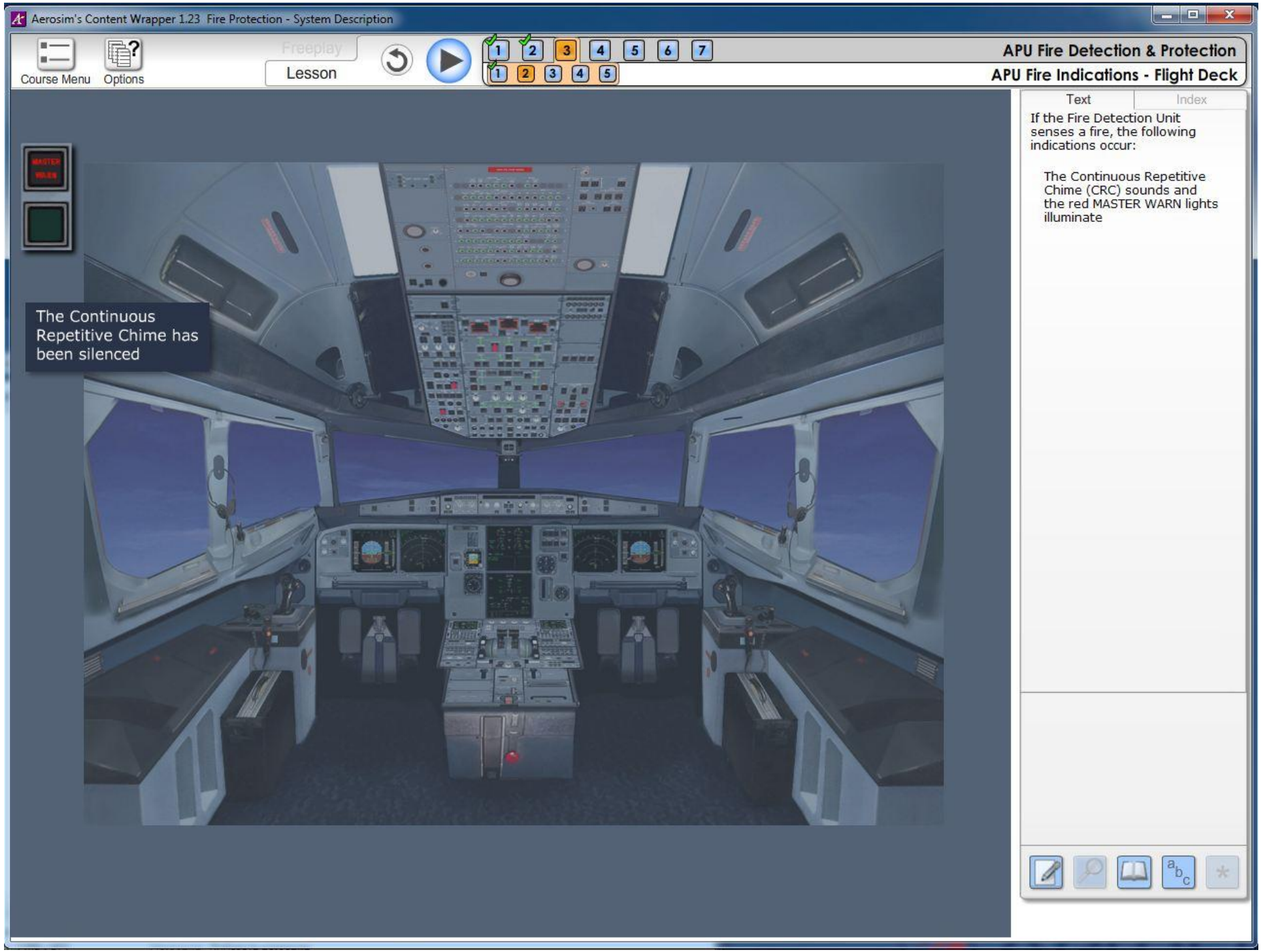

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Engine Fire Detection & Protection
Engine Fire Test
Text
Index
If it is the first flight of the day, you are required to test the fire protection system before starting ENG 1 and ENG 2.
During the fire test, look for the following indications:
The MASTER WARN lights illuminate accompanied by the continuous repetitive chime
The ENG 1 FIRE light illuminates
The SQUIB and DISCH lights illuminate on both AGENT pbs
The ENG 1 FIRE warning message appears on the upper ECAM, and the ENGINE page appears on the lower ECAM
The FIRE light below the ENG 1 MASTER switch illuminates.
This is a valid test for ENG 1.
AGENT 1
SQUIB
DISCH
TEST
ENG 1
FIRE
PUSH
AGENT 2
APU
AGENT
ENG 2
The Continuous Repetitive Chime has been silenced
FOB: 21200 LBS
ENG 1 FIRE
-ENG 1 FIRE P/B....PUSH
-AGENT 1.....DISCH
-AGENT 2.....DISCH
-ATC.....NOTIFY
-CABIN CREW.....ALERT
.IF EVAC RQRD:
PARK BRK
NW STRG DISC
TCAS STBY
The fire test for engine 2 is performed similarly by pressing the ENG 2 FIRE TEST pb.
ENGINE
F.USED
LBS
OIL
QT
PSI
20.0
MASTER 1
MASTER 2
ON
OFF
MODE
NORM
ENG


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
APU Fire Detection & Protection
APU Fire Detection
Text
Index
The fire detection system for the APU uses the same detection logic as the engines, with two detection loops, (loop A and loop B) which send information to a Fire Detection Unit.
TO APPLICABLE FIRE WARNINGS
FIRE DETECTION UNIT (FDU)
AND*
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
AND*
ENGINE #1 FIRE PB
AGENT 2 PB
AGENT 1 PB
ENGINE# 1
FADEC
FAN SECTION LOOPS
AGENT 2
AGENT 1
#1 GEN
IDG
PYLON NACELLE LOOPS
HYD FIRE SHUTOFF VALVE
CORE LOOPS
LP FUEL VALVE
LOOP A
LOOP B
LOOP A
LOOP B
PACK #1 FLOW CONTROL VALVE
CROSSBLEED VALVE
ENG BLEED VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
LOOP A
LOOP B
PACK#2 FLOW CONTROL VALVE
ENG BLEED VALVE
ENGINE# 2
FADEC
FAN SECTION LOOPS
AGENT 1
AGENT 2
#2 GEN
IDG
PYLON NACELLE LOOPS
HYD FIRE SHUTOFF VALVE
CORE LOOPS
LP FUEL VALVE
ENGINE #2 FIRE PB
AGENT 2 PB
AGENT 1 PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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The fire detection system for the APU uses the same detection logic as the engines, with two detection loops, (loop A and loop B) which send information to a Fire Detection Unit.
The APU system differs from the engine fire system in that there is only one halon bottle installed, and there is an APU FIRE light installed on the external power panel.
TO APPLICABLE FIRE WARNINGS
FIRE DETECTION UNIT (FDU)
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
ENGINE #1 FIRE PB
AGENT 2 PB
AGENT 1 PB
ENGINE# 1
FADEC
FAN SECTION LOOPS
AGENT 2
AGENT 1
#1 GEN
IDG
PYLON NACELLE LOOPS
HYD FIRE SHUTOFF VALVE
CORE LOOPS
LP FUEL VALVE
PACK #1 FLOW CONTROL VALVE
ENG BLEED VALVE
CROSSBLEED VALVE
PACK#2 FLOW CONTROL VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
LOOP A
LOOP B
ENGINE #2 FIRE PB
ENGINE# 2
#2 GEN
FLT INT
EXT PWR
NOT IN USE
AVAIL
COCKPIT CALL
ADIRU & AVNCS VENT
APU FIRE
LIGHT TEST
RESET
APU SHUT OFF
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:


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The fire detection system for the APU uses the same detection logic as the engines, with two detection loops, (loop A and loop B) which send information to a Fire Detection Unit.
The APU system differs from the engine fire system in that there is only one halon bottle installed, and there is an APU FIRE light installed on the external power panel.
The Fire Detection Unit will activate a warning if:
Both loops detect a fire
One loop is determined to be faulted and the remaining loop detects fire
Both loops fault within a few seconds of each other
*
The Fire Detection Unit will activate a fire warning if:
• Both loops detect a fire
• One loop is determined to be faulted and the remaining loop detects fire
• Both loops fault within a few seconds of each other
TO APPLICABLE FIRE WARNINGS
FIRE DETECTION UNIT (FDU)
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
LOOP A
LOOP B
ENGINE #1 FIRE PB
ENGINE #2 FIRE PB
AGENT 1 PB
AGENT 2 PB
ENGINE# 1
ENGINE# 2
FADEC
FAN SECTION LOOPS
CROSSBLEED VALVE
PACK#2 FLOW CONTROL VALVE
ENG BLEED VALVE
PYLON NACELLE LOOPS
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
CORE LOOPS
LP FUEL VALVE
AGENT PB
APU FIRE PB
FLT INT
EXT PWR
NOT IN USE
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COCKPIT CALL
ADIRU & AVNCS VENT
APU FIRE
LIGHT TEST
COCKPIT CALL
RESET
APU SHUT OFF
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:


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The fire detection system for the APU uses the same detection logic as the engines, with two detection loops, (loop A and loop B) which send information to a Fire Detection Unit.
The APU system differs from the engine fire system in that there is only one halon bottle installed, and there is an APU FIRE light installed on the external power panel.
The Fire Detection Unit will activate a warning if:
Both loops detect a fire
One loop is determined to be faulted and the remaining loop detects fire
Both loops fault within a few seconds of each other
AerosimFlashWindow
Fire Detection Unit
Dual Loop Fault Detection
ECAM Response
ECAM Response
If the FDU detects a fault with both loop A and loop B within seconds of each other, it is assumed that a fire has caused a burn through so a fire warning is generated.
TO APPLICABLE FIRE WARNINGS
ADIRU & WNCS VENT
APU FIRE
RESET
APU SHUT OFF

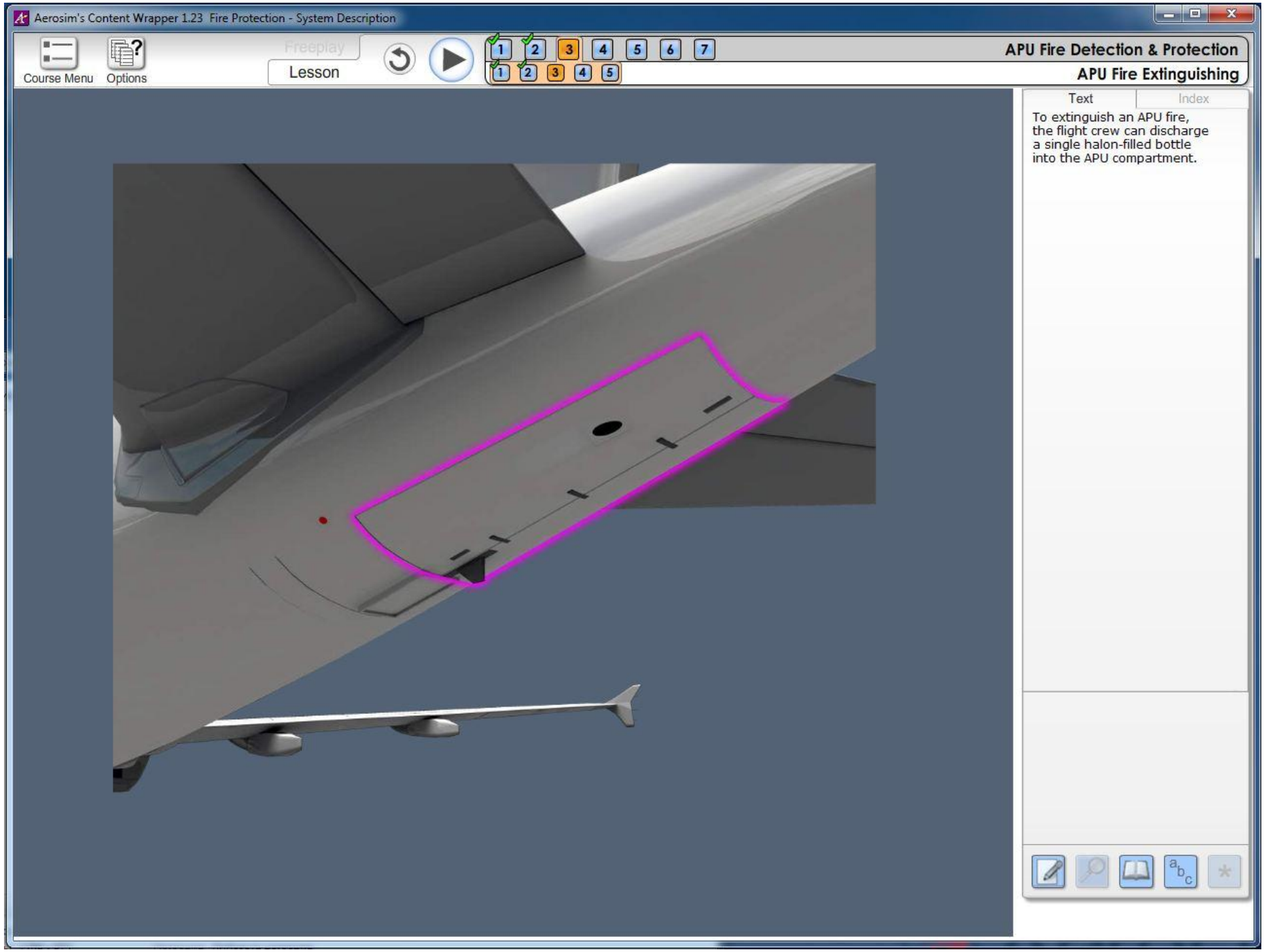

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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APU Fire Detection & Protection
APU Fire Indications - Flight Deck
Text
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If the Fire Detection Unit senses a fire, the following indications occur:
The Continuous Repetitive Chime (CRC) sounds and the red MASTER WARN lights illuminate
The Continuous Repetitive Chime has been silenced

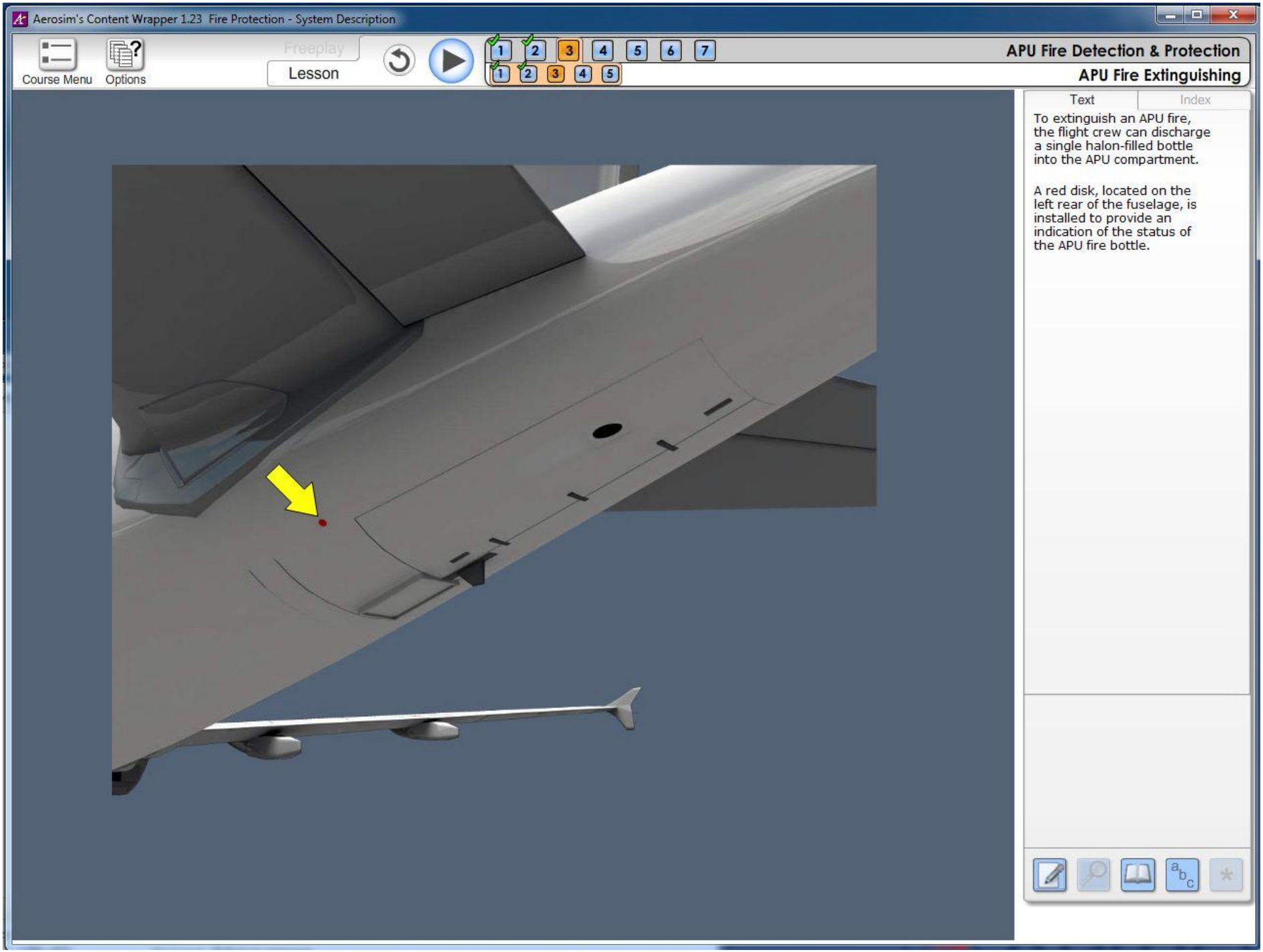

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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APU Fire Indications - Flight Deck
Text
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If the Fire Detection Unit senses a fire, the following indications occur:
The Continuous Repetitive Chime (CRC) sounds and the red MASTER WARN lights illuminate
A red failure message appears on the upper ECAM
The Continuous Repetitive Chime has been silenced
FOB: 20240 LBS
APU FIRE
-APU FIRE P/B.....PUSH
-MASTER SW.....OFF
LAND ASAP
APU AVAIL
LDG LT

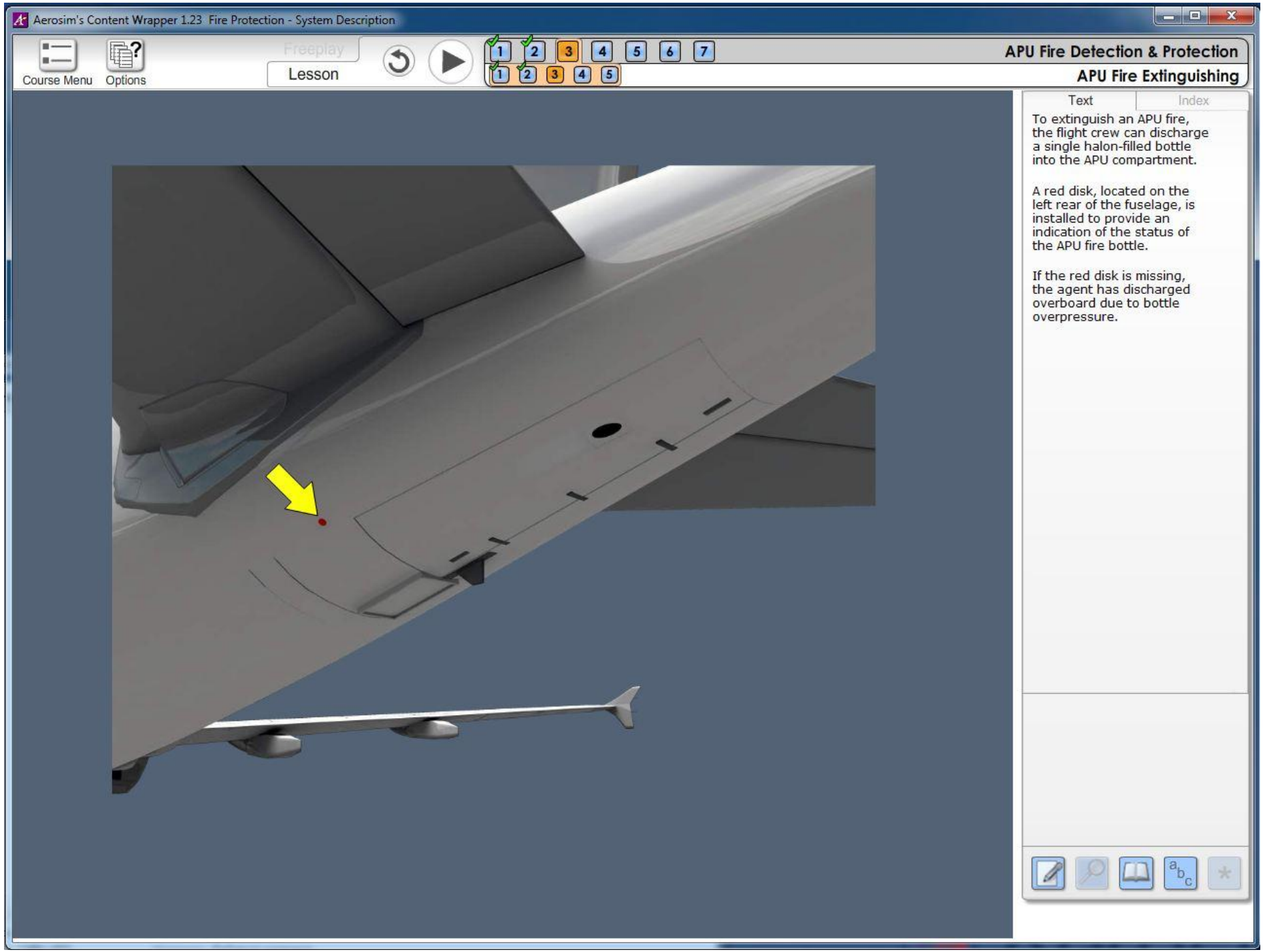

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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APU Fire Indications - Flight Deck
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Index
If the Fire Detection Unit senses a fire, the following indications occur:
The Continuous Repetitive Chime (CRC) sounds and the red MASTER WARN lights illuminate
A red failure message appears on the upper ECAM
The APU system page displays on the lower ECAM
The Continuous Repetitive Chime has been silenced
FOB: 20240 LBS
APU FIRE
-APU FIRE P/B.....PUSH
-MASTER SW.....OFF
LAND ASAP
APU AVAIL
LDG LT
APU
AVAIL
APU GEN
0 %
115 V
400 HZ
BLEED
0 PSI
N

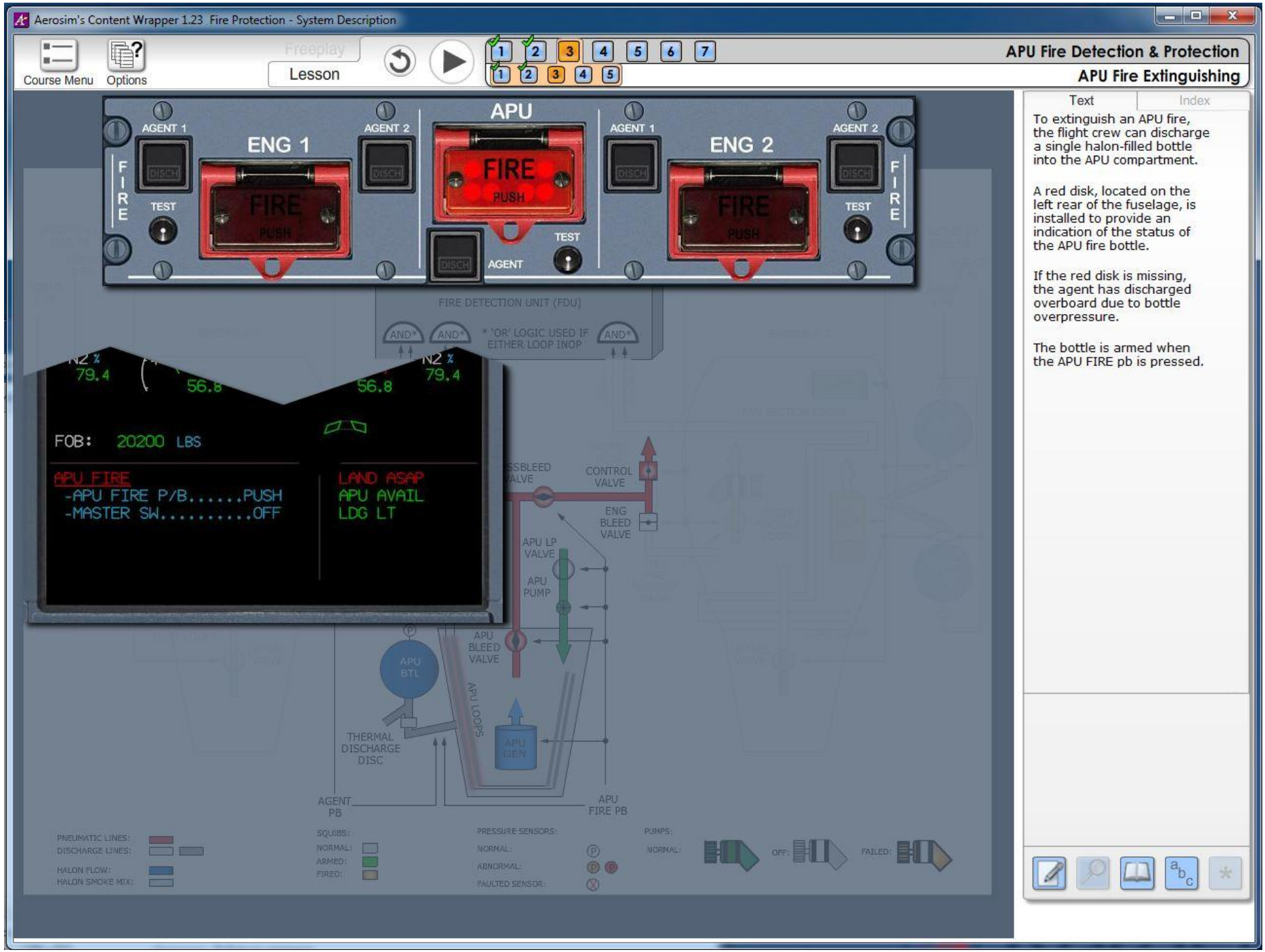

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If the Fire Detection Unit senses a fire, the following indications occur:
The Continuous Repetitive Chime (CRC) sounds and the red MASTER WARN lights illuminate
A red failure message appears on the upper ECAM
The APU system page displays on the lower ECAM
The APU FIRE pb illuminates on the overhead FIRE panel
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
DISCH
AGENT
The Continuous Repetitive Chime has been silenced
FOB: 20240 LBS
APU FIRE
-APU FIRE P/B.....PUSH
-MASTER SW.....OFF
LAND ASAP
APU AVAIL
LDG LT
APU
AVAIL
APU GEN
0 %
115 V
400 HZ
BLEED
0 PSI

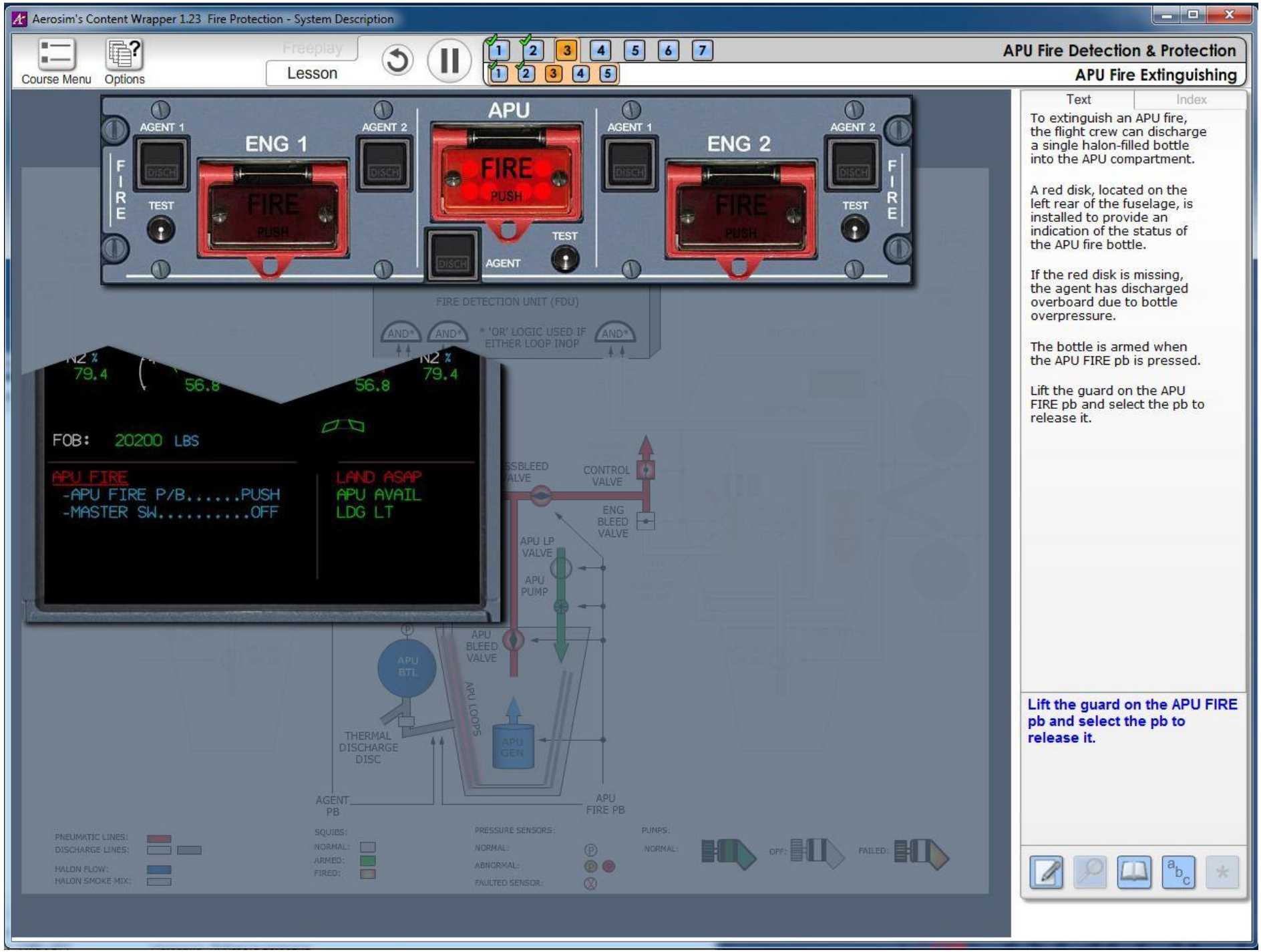

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APU Fire Detection & Protection
APU Fire Indications - Flight Deck
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If the Fire Detection Unit senses a fire, the following indications occur:
The Continuous Repetitive Chime (CRC) sounds and the red MASTER WARN lights illuminate
A red failure message appears on the upper ECAM
The APU system page displays on the lower ECAM
The APU FIRE pb illuminates on the overhead FIRE panel
These indications will remain on as long as a fire is detected.
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
DISCH
AGENT
The Continuous Repetitive Chime has been silenced
FOB: 20240 LBS
APU FIRE
-APU FIRE P/B.....PUSH
-MASTER SW.....OFF
LAND ASAP
APU AVAIL
LDG LT
APU
AVAIL
APU GEN
0 %
115 V
400 HZ
BLEED
0 PSI
N

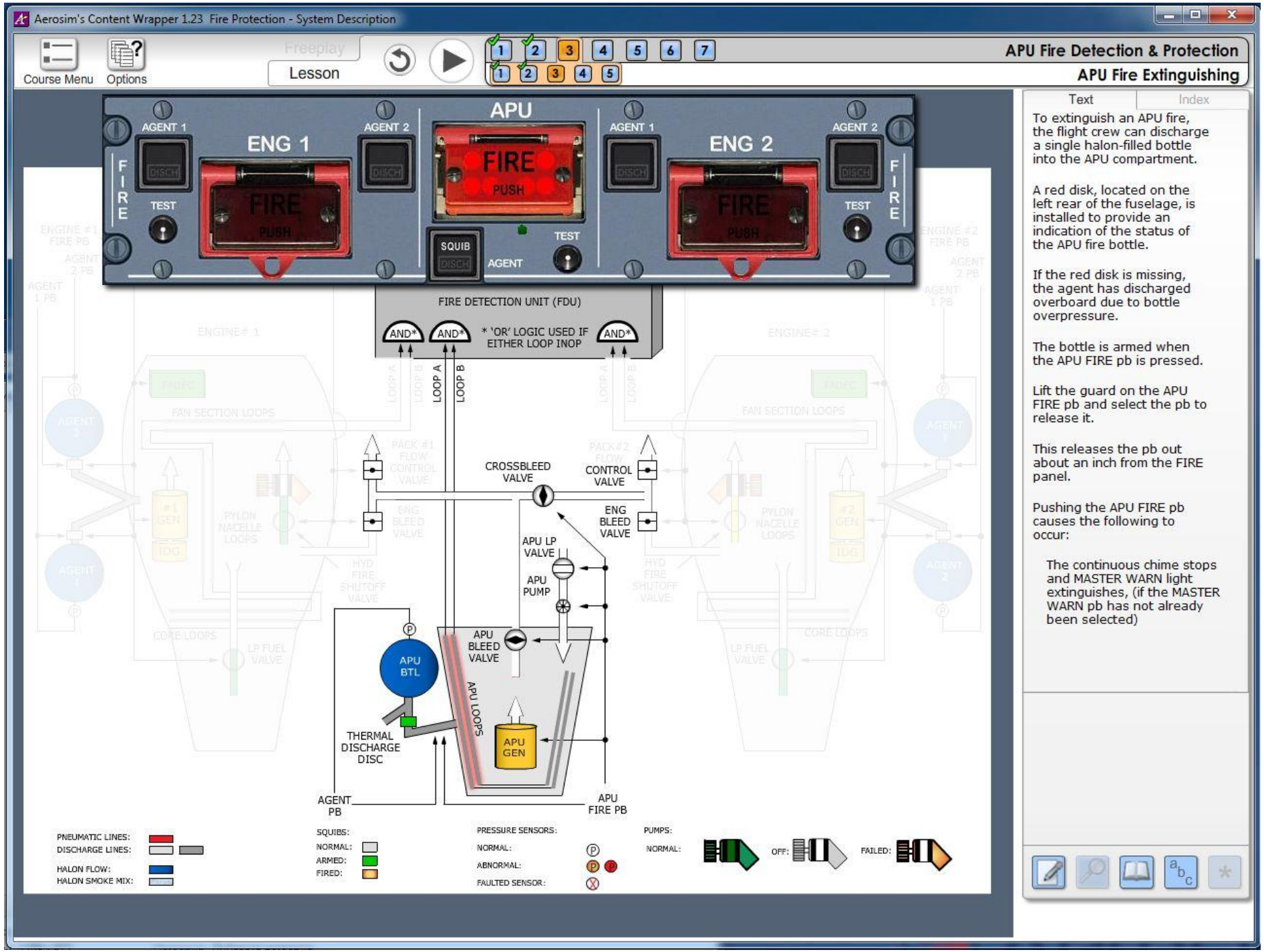

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Course Menu
Options
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1 2 3 4 5 6 7
1 2 3 4 5
APU Fire Detection & Protection
APU Fire Extinguishing
Text
Index
To extinguish an APU fire, the flight crew can discharge a single halon-filled bottle into the APU compartment.

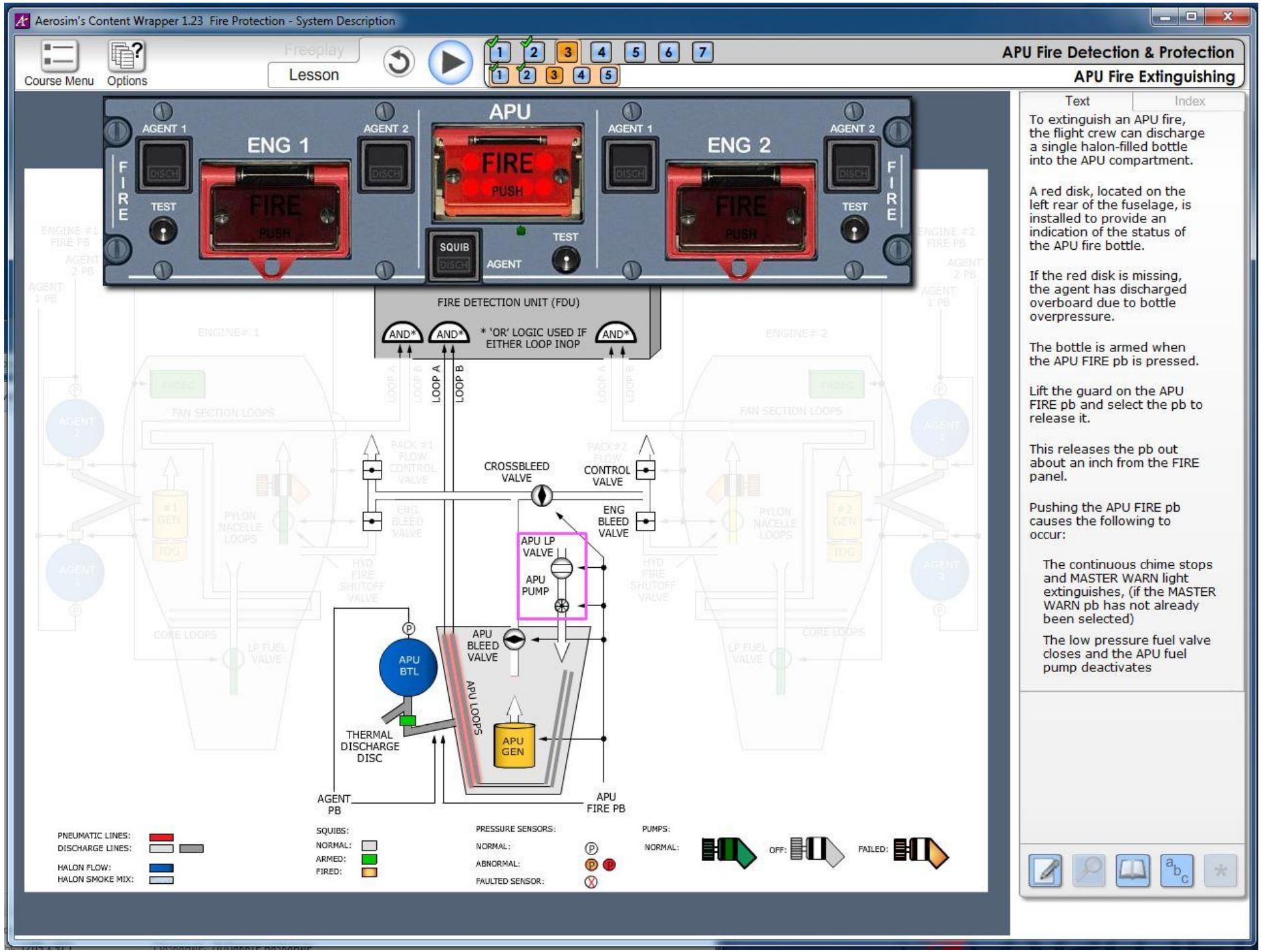

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
1 2 3 4 5 6 7
1 2 3 4 5
APU Fire Detection & Protection
APU Fire Extinguishing
Text
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To extinguish an APU fire, the flight crew can discharge a single halon-filled bottle into the APU compartment.
A red disk, located on the left rear of the fuselage, is installed to provide an indication of the status of the APU fire bottle.

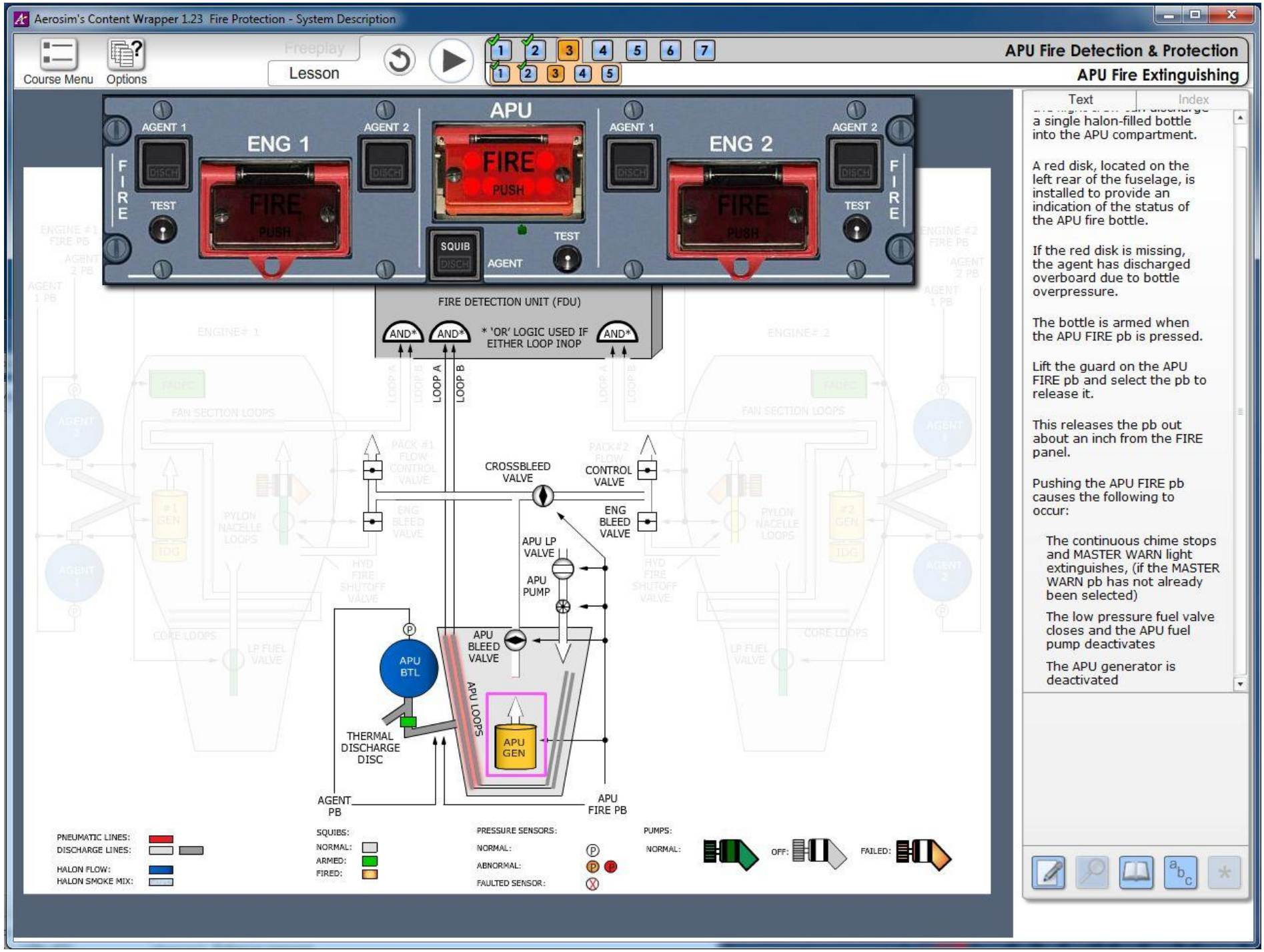

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
1 2 3 4 5 6 7
1 2 3 4 5
APU Fire Detection & Protection
APU Fire Extinguishing
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To extinguish an APU fire, the flight crew can discharge a single halon-filled bottle into the APU compartment.
A red disk, located on the left rear of the fuselage, is installed to provide an indication of the status of the APU fire bottle.
If the red disk is missing, the agent has discharged overboard due to bottle overpressure.

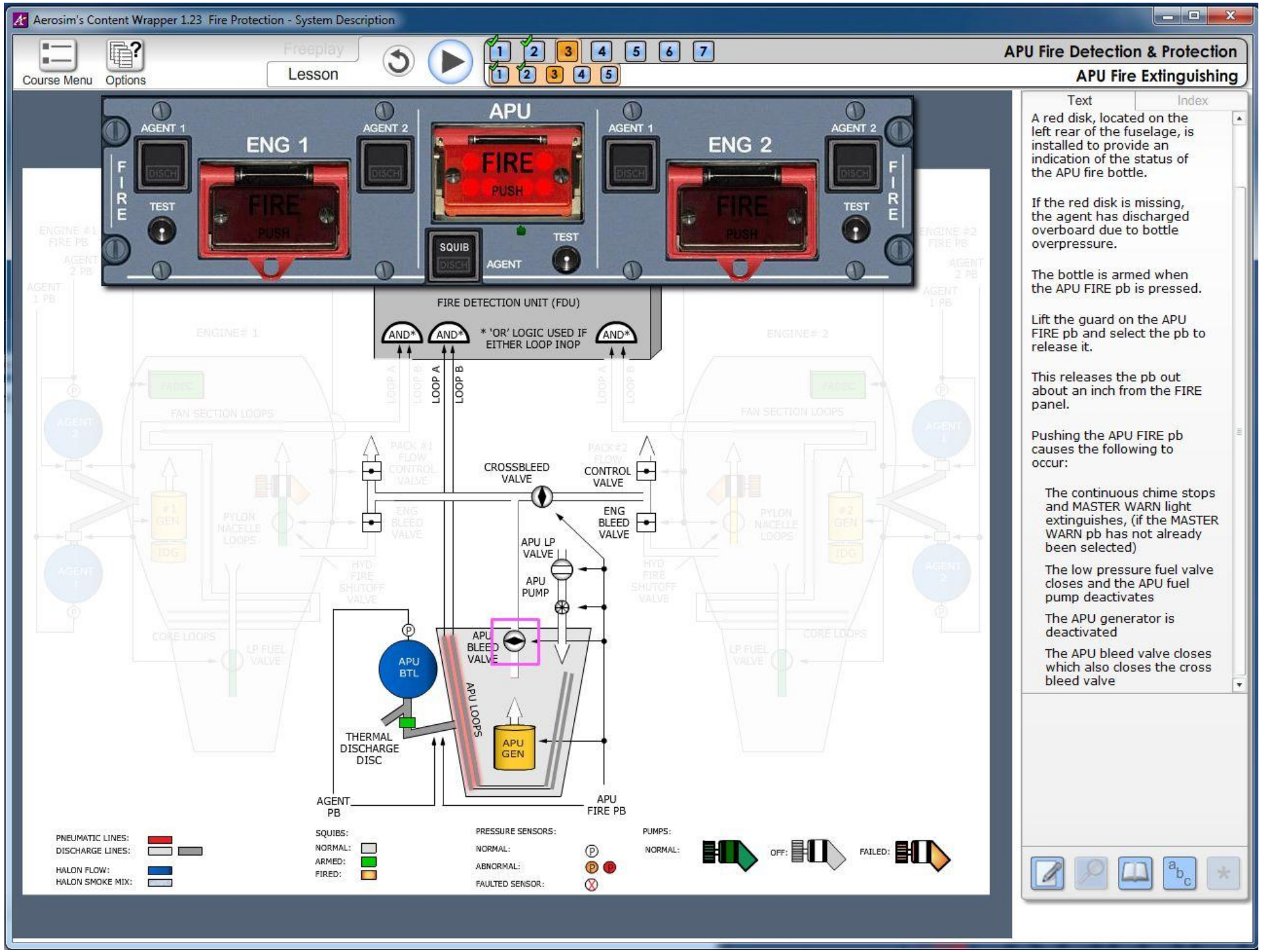

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To extinguish an APU fire, the flight crew can discharge a single halon-filled bottle into the APU compartment.
A red disk, located on the left rear of the fuselage, is installed to provide an indication of the status of the APU fire bottle.
If the red disk is missing, the agent has discharged overboard due to bottle overpressure.
The bottle is armed when the APU FIRE pb is pressed.
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
DISCH
TEST
AGENT
FIRE DETECTION UNIT (FDU)
* 'OR' LOGIC USED IF EITHER LOOP INOP
N2 %
79.4
56.8
FOB: 20200 LBS
APU FIRE
-APU FIRE P/B.....PUSH
-MASTER SW.....OFF
LAND ASAP
APU AVAIL
LDG LT
CONTROL VALVE
ENG BLEED VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:

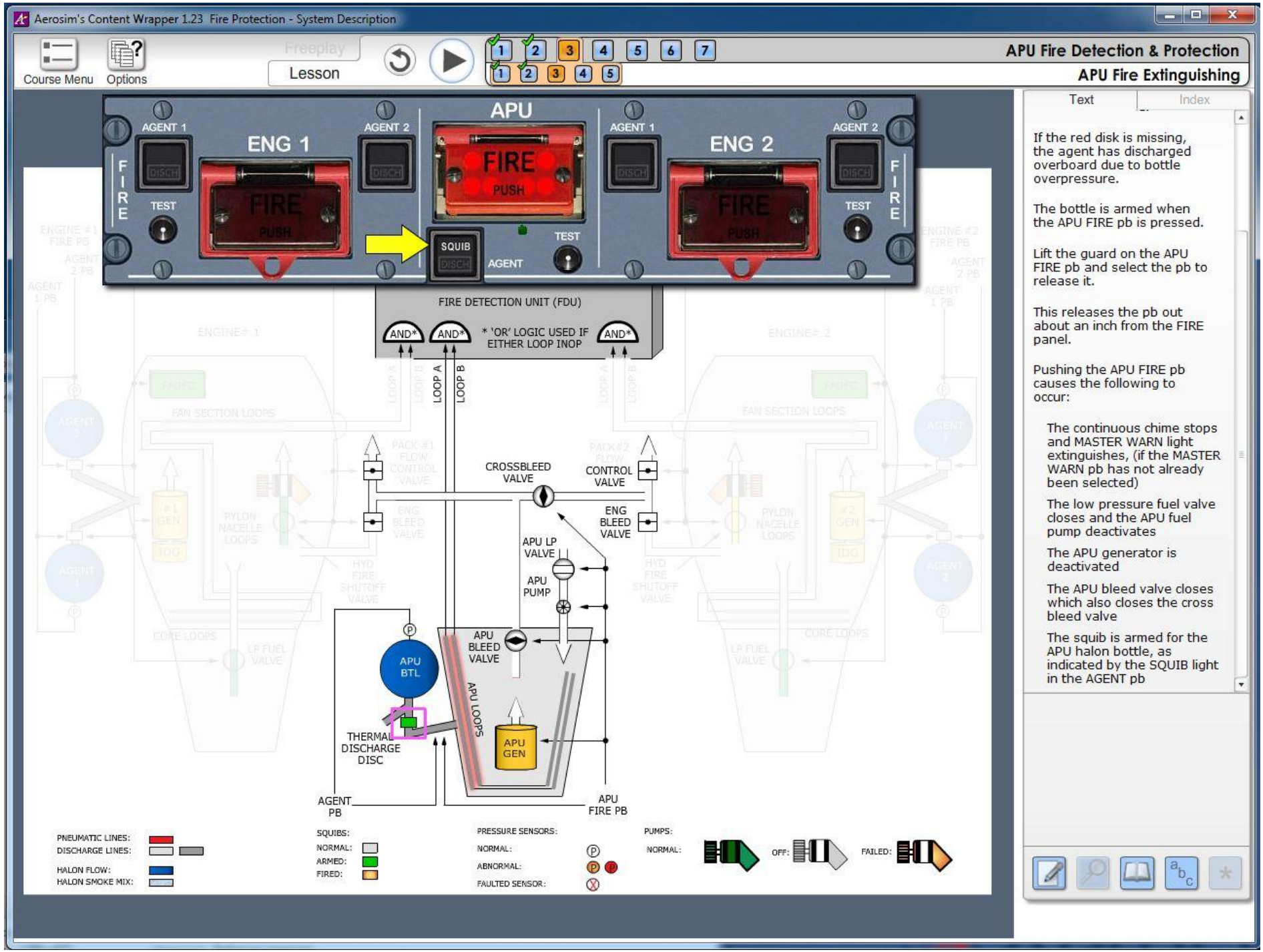

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To extinguish an APU fire, the flight crew can discharge a single halon-filled bottle into the APU compartment.
A red disk, located on the left rear of the fuselage, is installed to provide an indication of the status of the APU fire bottle.
If the red disk is missing, the agent has discharged overboard due to bottle overpressure.
The bottle is armed when the APU FIRE pb is pressed.
Lift the guard on the APU FIRE pb and select the pb to release it.
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AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
DISCH
AGENT
FIRE DETECTION UNIT (FDU)
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
N2 %
79.4
56.8
FOB: 20200 LBS
APU FIRE
-APU FIRE P/B.....PUSH
-MASTER SW.....OFF
LAND ASAP
APU AVAIL
LDG LT
CONTROL VALVE
ENG BLEED VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:

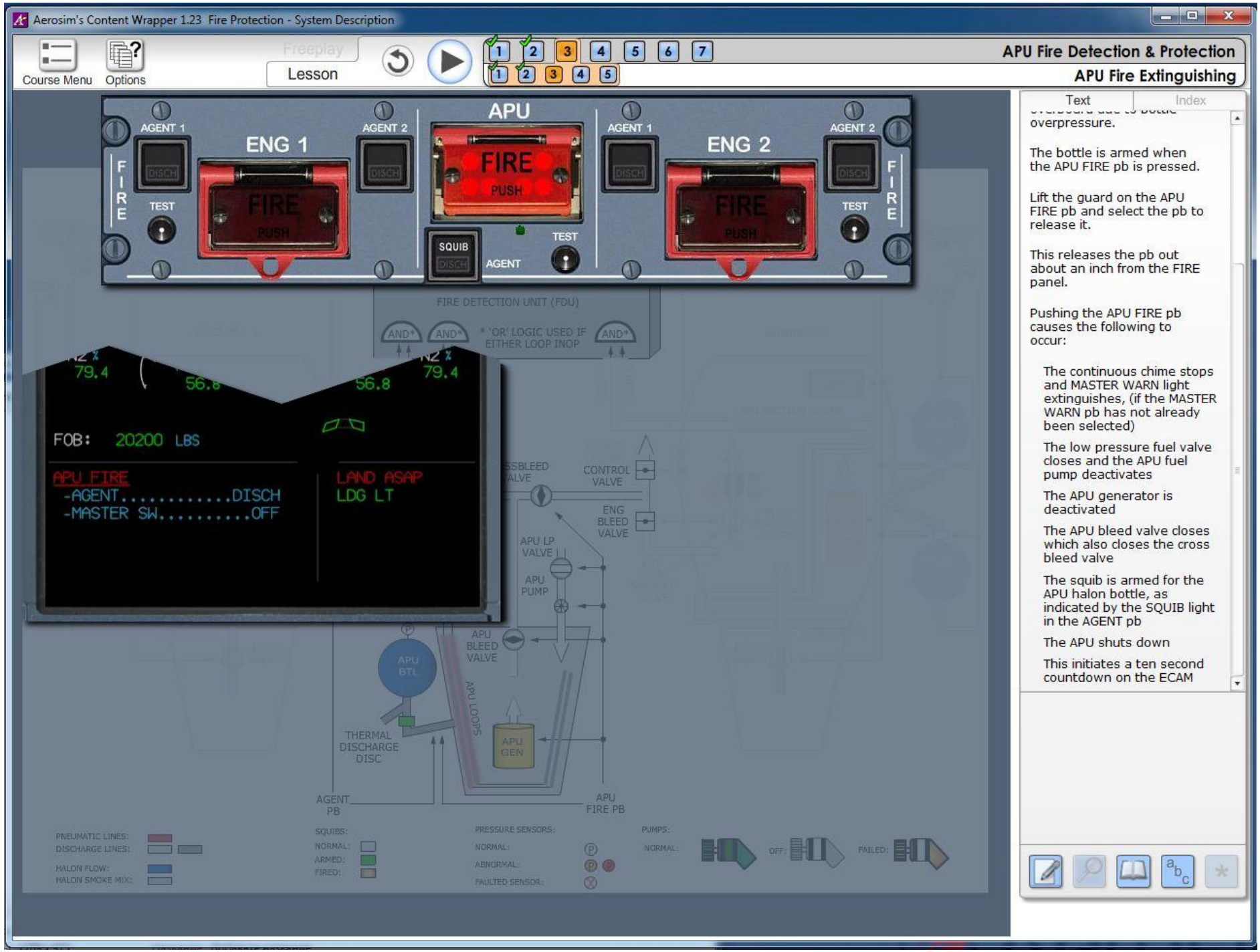

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A red disk, located on the left rear of the fuselage, is installed to provide an indication of the status of the APU fire bottle.
If the red disk is missing, the agent has discharged overboard due to bottle overpressure.
The bottle is armed when the APU FIRE pb is pressed.
Lift the guard on the APU FIRE pb and select the pb to release it.
This releases the pb out about an inch from the FIRE panel.
Pushing the APU FIRE pb causes the following to occur:
The continuous chime stops and MASTER WARN light extinguishes, (if the MASTER WARN pb has not already been selected)
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
DISCH
SQUIB
AGENT
FIRE DETECTION UNIT (FDU)
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
LOOP A
LOOP B
CROSSBLEED VALVE
CONTROL VALVE
ENG BLEED VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:

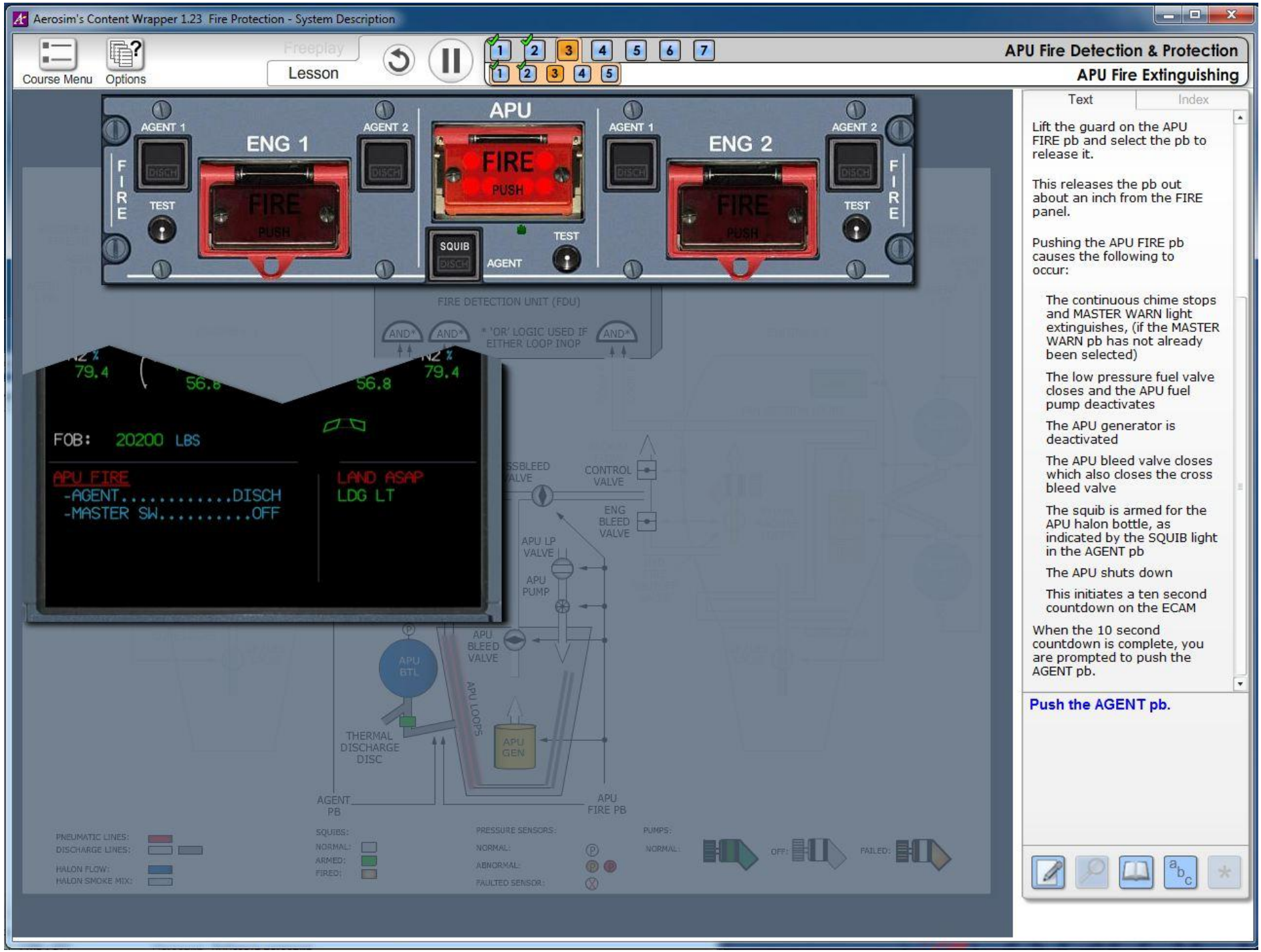

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A red disk, located on the left rear of the fuselage, is installed to provide an indication of the status of the APU fire bottle.
If the red disk is missing, the agent has discharged overboard due to bottle overpressure.
The bottle is armed when the APU FIRE pb is pressed.
Lift the guard on the APU FIRE pb and select the pb to release it.
This releases the pb out about an inch from the FIRE panel.
Pushing the APU FIRE pb causes the following to occur:
The continuous chime stops and MASTER WARN light extinguishes, (if the MASTER WARN pb has not already been selected)
The low pressure fuel valve closes and the APU fuel pump deactivates
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
DISCH
SQUIB
AGENT
FIRE DETECTION UNIT (FDU)
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
LOOP A
LOOP B
CROSSBLEED VALVE
CONTROL VALVE
ENG BLEED VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:

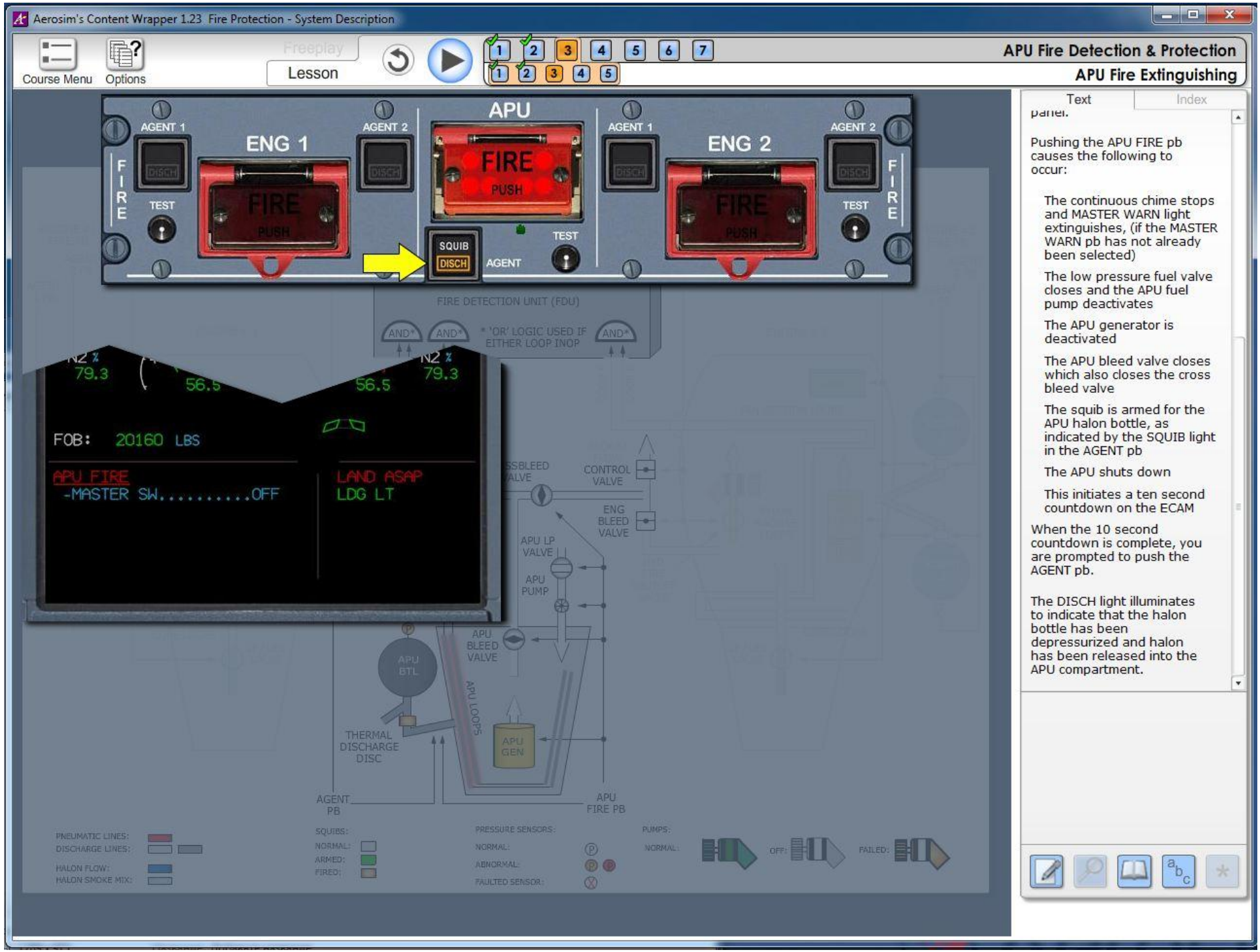

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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a single halon-filled bottle into the APU compartment.
A red disk, located on the left rear of the fuselage, is installed to provide an indication of the status of the APU fire bottle.
If the red disk is missing, the agent has discharged overboard due to bottle overpressure.
The bottle is armed when the APU FIRE pb is pressed.
Lift the guard on the APU FIRE pb and select the pb to release it.
This releases the pb out about an inch from the FIRE panel.
Pushing the APU FIRE pb causes the following to occur:
The continuous chime stops and MASTER WARN light extinguishes, (if the MASTER WARN pb has not already been selected)
The low pressure fuel valve closes and the APU fuel pump deactivates
The APU generator is deactivated
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
DISCH
SQUIB
AGENT
FIRE DETECTION UNIT (FDU)
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
LOOP A
LOOP B
CROSSBLEED VALVE
CONTROL VALVE
ENG BLEED VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:

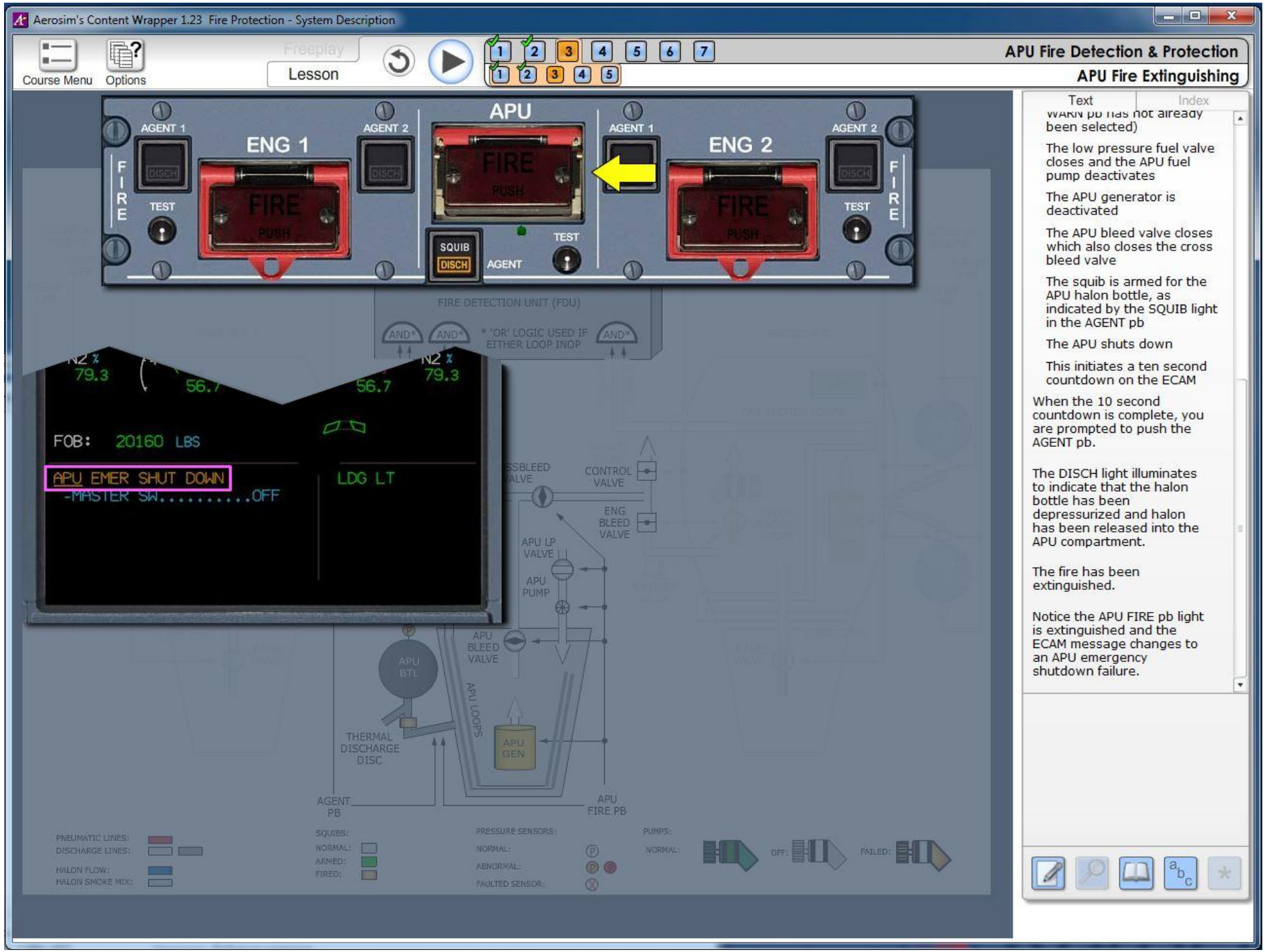

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A red disk, located on the left rear of the fuselage, is installed to provide an indication of the status of the APU fire bottle.
If the red disk is missing, the agent has discharged overboard due to bottle overpressure.
The bottle is armed when the APU FIRE pb is pressed.
Lift the guard on the APU FIRE pb and select the pb to release it.
This releases the pb out about an inch from the FIRE panel.
Pushing the APU FIRE pb causes the following to occur:
The continuous chime stops and MASTER WARN light extinguishes, (if the MASTER WARN pb has not already been selected)
The low pressure fuel valve closes and the APU fuel pump deactivates
The APU generator is deactivated
The APU bleed valve closes which also closes the cross bleed valve
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
DISCH
SQUIB
AGENT
FIRE DETECTION UNIT (FDU)
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
LOOP A
LOOP B
CROSSBLEED VALVE
CONTROL VALVE
ENG BLEED VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:

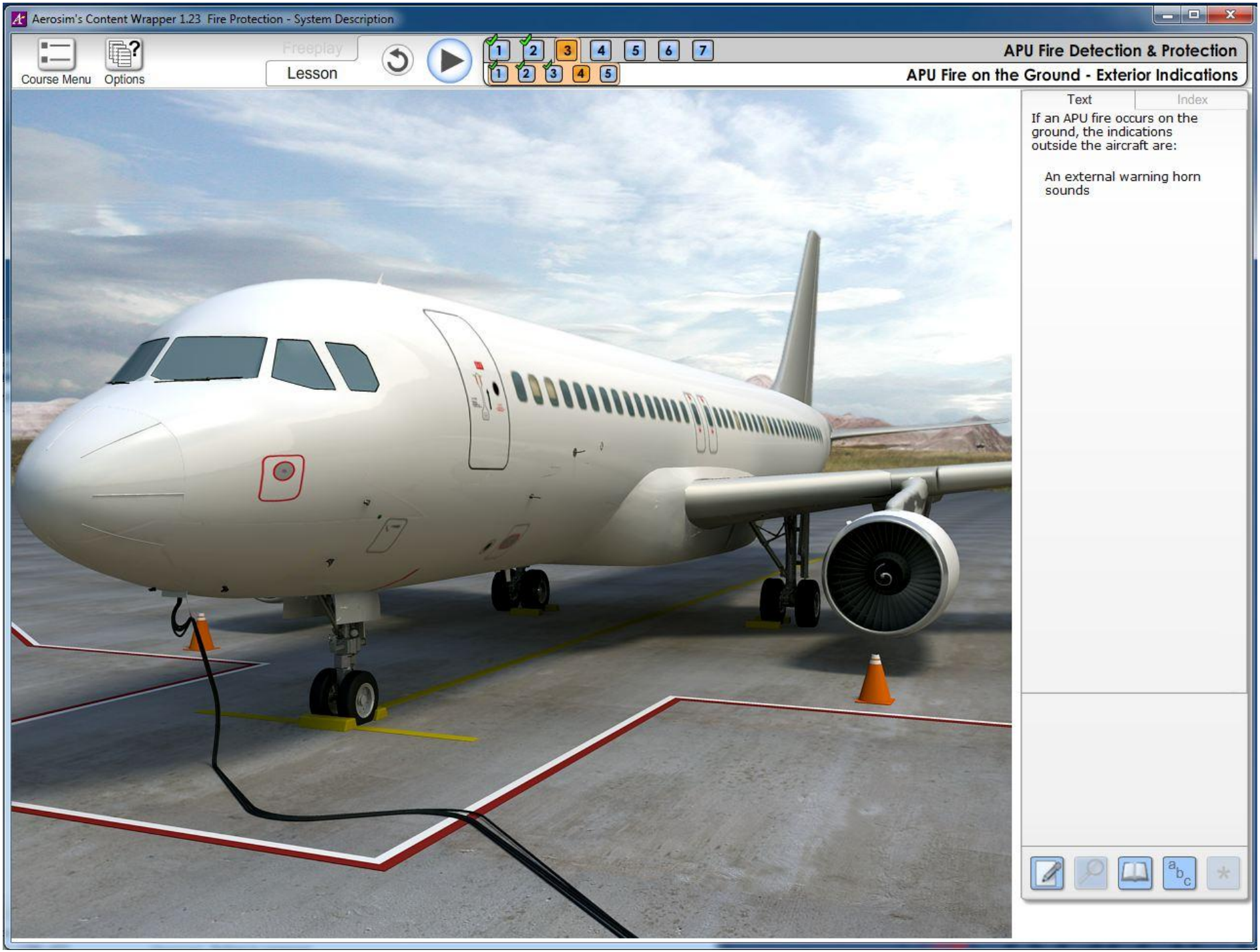

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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Options
Freeplay
Lesson
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APU Fire Extinguishing
Text
Index
If the red disk is missing, the agent has discharged overboard due to bottle overpressure.
The bottle is armed when the APU FIRE pb is pressed.
Lift the guard on the APU FIRE pb and select the pb to release it.
This releases the pb out about an inch from the FIRE panel.
Pushing the APU FIRE pb causes the following to occur:
The continuous chime stops and MASTER WARN light extinguishes, (if the MASTER WARN pb has not already been selected)
The low pressure fuel valve closes and the APU fuel pump deactivates
The APU generator is deactivated
The APU bleed valve closes which also closes the cross bleed valve
The squib is armed for the APU halon bottle, as indicated by the SQUIB light in the AGENT pb
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
DISCH
SQUIB
AGENT
FIRE DETECTION UNIT (FDU)
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
LOOP A
LOOP B
CROSSBLEED VALVE
CONTROL VALVE
ENG BLEED VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:

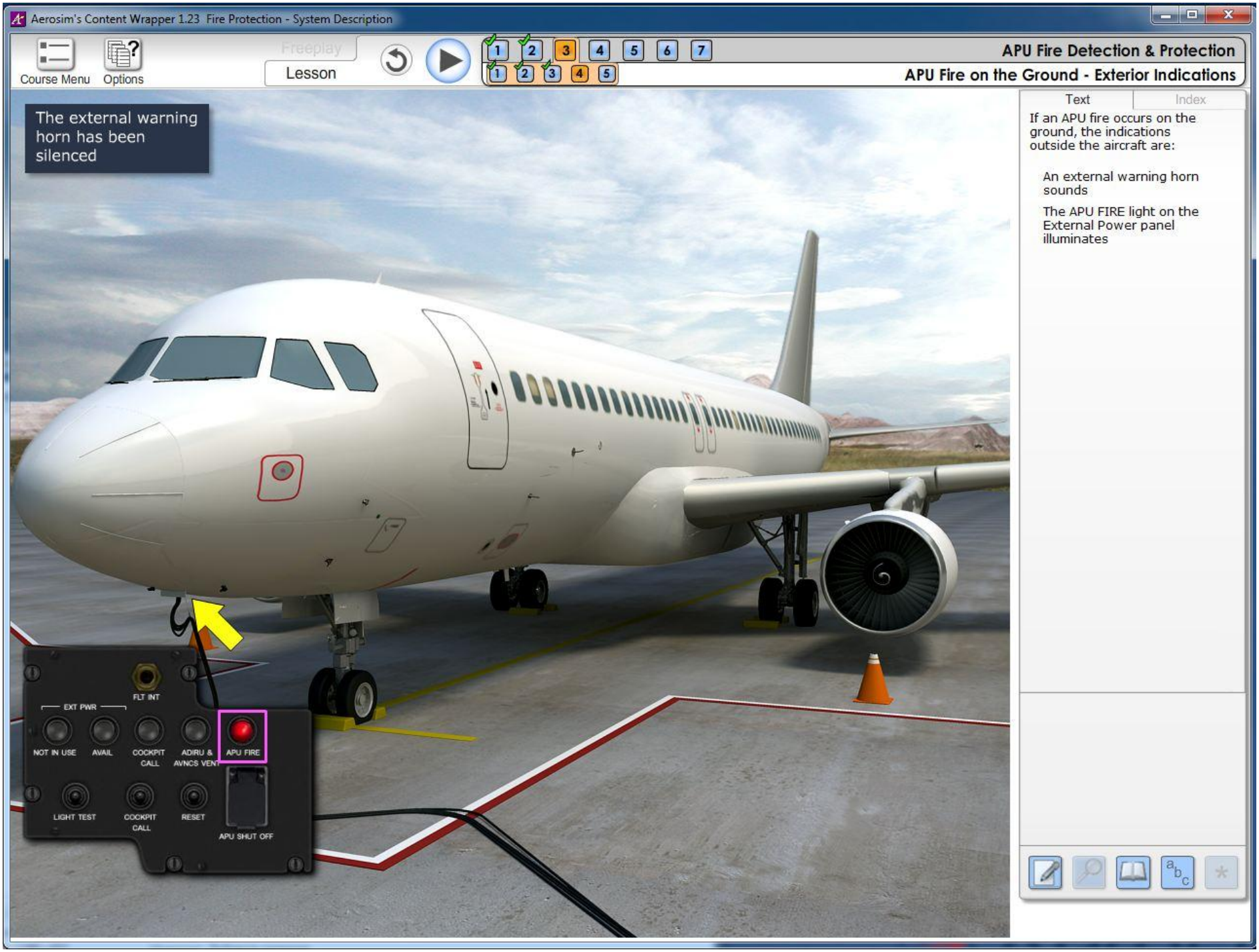

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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Freeplay
Lesson
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APU Fire Extinguishing
Text
Index
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
SQUIB
DISCH
AGENT
FIRE DETECTION UNIT (FDU)
* 'OR' LOGIC USED IF EITHER LOOP INOP
AND*
79.4
56.8
FOB: 20200 LBS
APU FIRE
-AGENT.....DISCH
-MASTER SW.....OFF
LAND ASAP
LDG LT
CONTROL VALVE
ENG BLEED VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
overpressure.
The bottle is armed when the APU FIRE pb is pressed.
Lift the guard on the APU FIRE pb and select the pb to release it.
This releases the pb out about an inch from the FIRE panel.
Pushing the APU FIRE pb causes the following to occur:
The continuous chime stops and MASTER WARN light extinguishes, (if the MASTER WARN pb has not already been selected)
The low pressure fuel valve closes and the APU fuel pump deactivates
The APU generator is deactivated
The APU bleed valve closes which also closes the cross bleed valve
The squib is armed for the APU halon bottle, as indicated by the SQUIB light in the AGENT pb
The APU shuts down
This initiates a ten second countdown on the ECAM

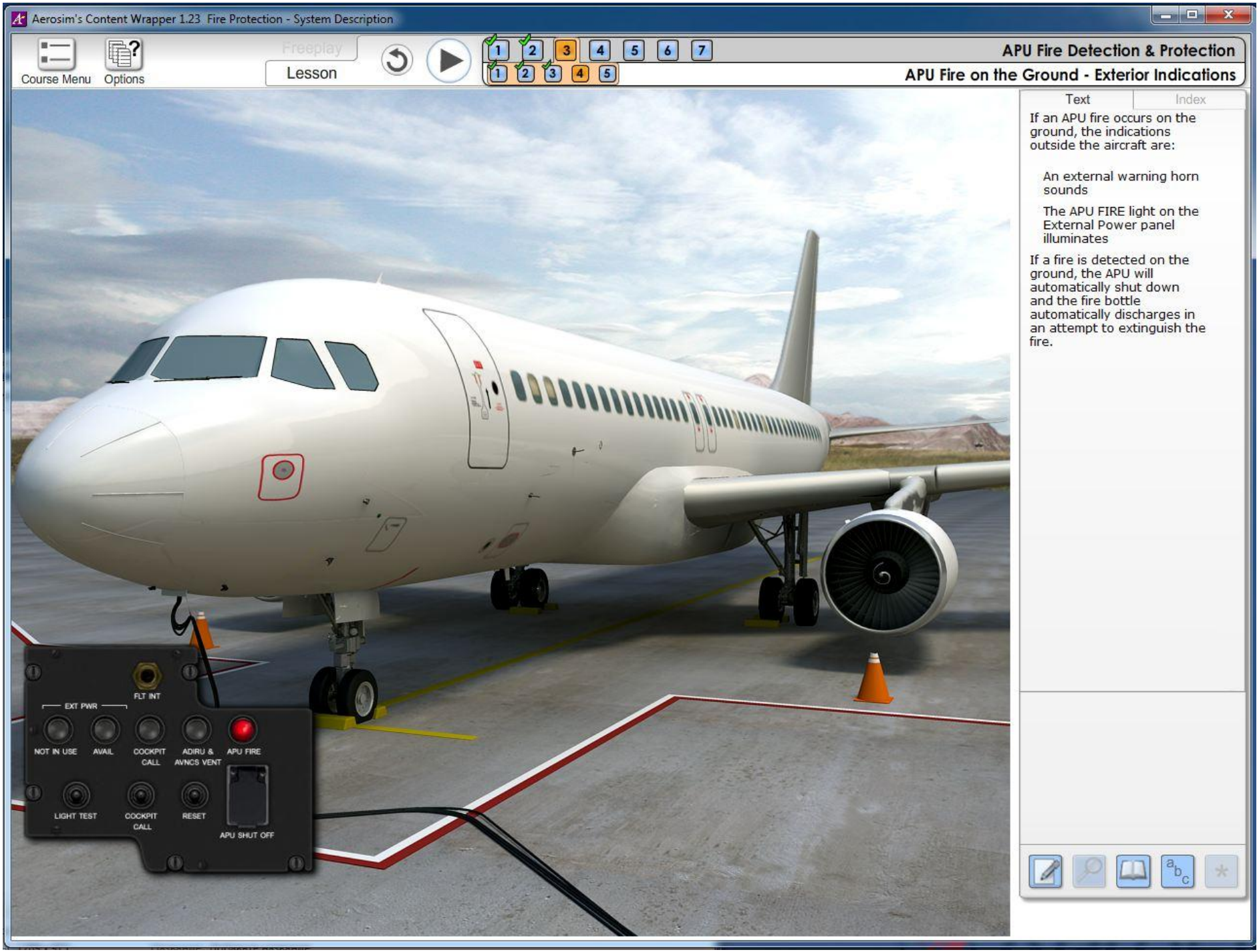

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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APU Fire Extinguishing
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Lift the guard on the APU FIRE pb and select the pb to release it.
This releases the pb out about an inch from the FIRE panel.
Pushing the APU FIRE pb causes the following to occur:
The continuous chime stops and MASTER WARN light extinguishes, (if the MASTER WARN pb has not already been selected)
The low pressure fuel valve closes and the APU fuel pump deactivates
The APU generator is deactivated
The APU bleed valve closes which also closes the cross bleed valve
The squib is armed for the APU halon bottle, as indicated by the SQUIB light in the AGENT pb
The APU shuts down
This initiates a ten second countdown on the ECAM
When the 10 second countdown is complete, you are prompted to push the AGENT pb.
Push the AGENT pb.
AGENT 1
AGENT 2
ENG 1
ENG 2
APU
FIRE
PUSH
TEST
SQUIB
AGENT
FIRE DETECTION UNIT (FDU)
FOB: 20200 LBS
APU FIRE
-AGENT.....DISCH
-MASTER SW.....OFF
LAND ASAP
LDG LT
CONTROL VALVE
ENG BLEED VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB

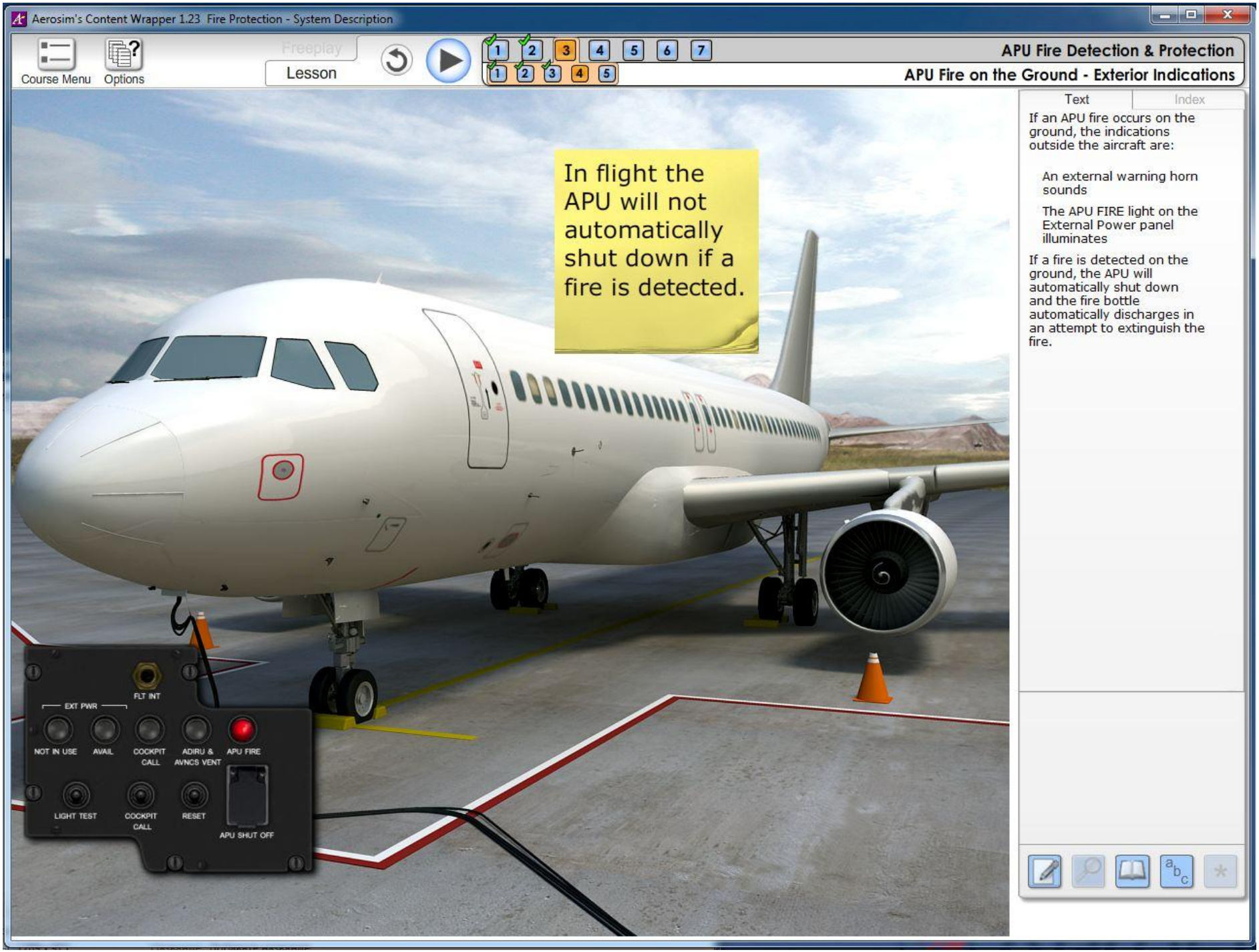

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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APU Fire Extinguishing
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AGENT 1
ENG 1
AGENT 2
APU
ENG 2
FIRE
PUSH
TEST
SQUIB
DISCH
AGENT
FIRE DETECTION UNIT (FDU)
* 'OR' LOGIC USED IF EITHER LOOP INOP
N2 %
79.3
56.5
FOB: 20160 LBS
APU FIRE
-MASTER SW.....OFF
LAND ASAP
LDG LT
CONTROL VALVE
ENG BLEED VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:
Pushing the APU FIRE pb causes the following to occur:
The continuous chime stops and MASTER WARN light extinguishes, (if the MASTER WARN pb has not already been selected)
The low pressure fuel valve closes and the APU fuel pump deactivates
The APU generator is deactivated
The APU bleed valve closes which also closes the cross bleed valve
The squib is armed for the APU halon bottle, as indicated by the SQUIB light in the AGENT pb
The APU shuts down
This initiates a ten second countdown on the ECAM
When the 10 second countdown is complete, you are prompted to push the AGENT pb.
The DISCH light illuminates to indicate that the halon bottle has been depressurized and halon has been released into the APU compartment.

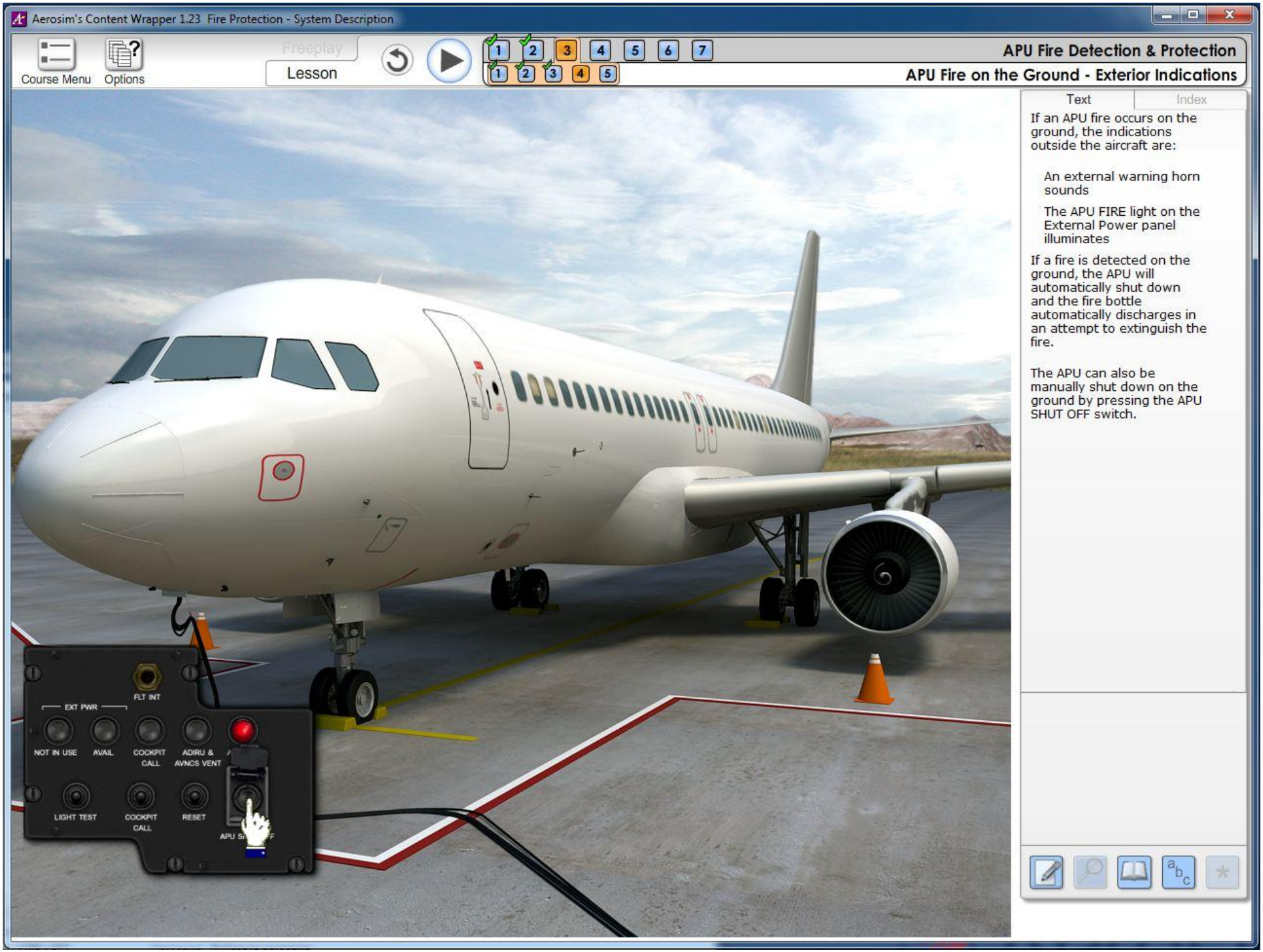

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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APU Fire Detection & Protection
APU Fire Extinguishing
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Index
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
SQUIB
DISCH
AGENT
FIRE DETECTION UNIT (FDU)
* 'OR' LOGIC USED IF EITHER LOOP INOP
N2 %
79.3
56.7
FOB: 20160 LBS
APU EMER SHUT DOWN
-MASTER SW.....OFF
LDG LT
CONTROL VALVE
ENG BLEED VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:
been selected)
The low pressure fuel valve closes and the APU fuel pump deactivates
The APU generator is deactivated
The APU bleed valve closes which also closes the cross bleed valve
The squib is armed for the APU halon bottle, as indicated by the SQUIB light in the AGENT pb
The APU shuts down
This initiates a ten second countdown on the ECAM
When the 10 second countdown is complete, you are prompted to push the AGENT pb.
The DISCH light illuminates to indicate that the halon bottle has been depressurized and halon has been released into the APU compartment.
The fire has been extinguished.
Notice the APU FIRE pb light is extinguished and the ECAM message changes to an APU emergency shutdown failure.

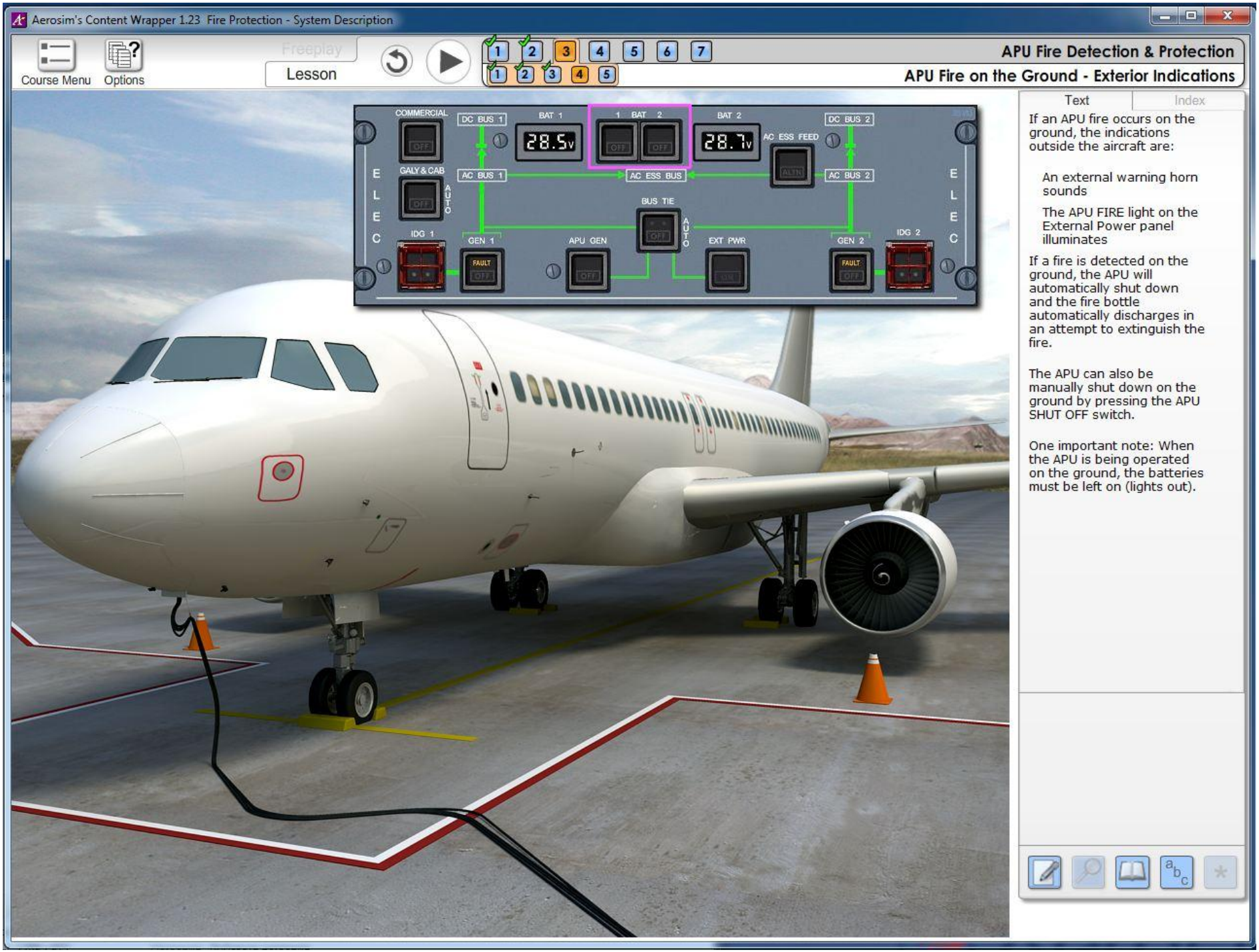

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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1 2 3 4 5 6 7
1 2 3 4 5
APU Fire Detection & Protection
APU Fire on the Ground - Exterior Indications
Text
Index
If an APU fire occurs on the ground, the indications outside the aircraft are:
An external warning horn sounds

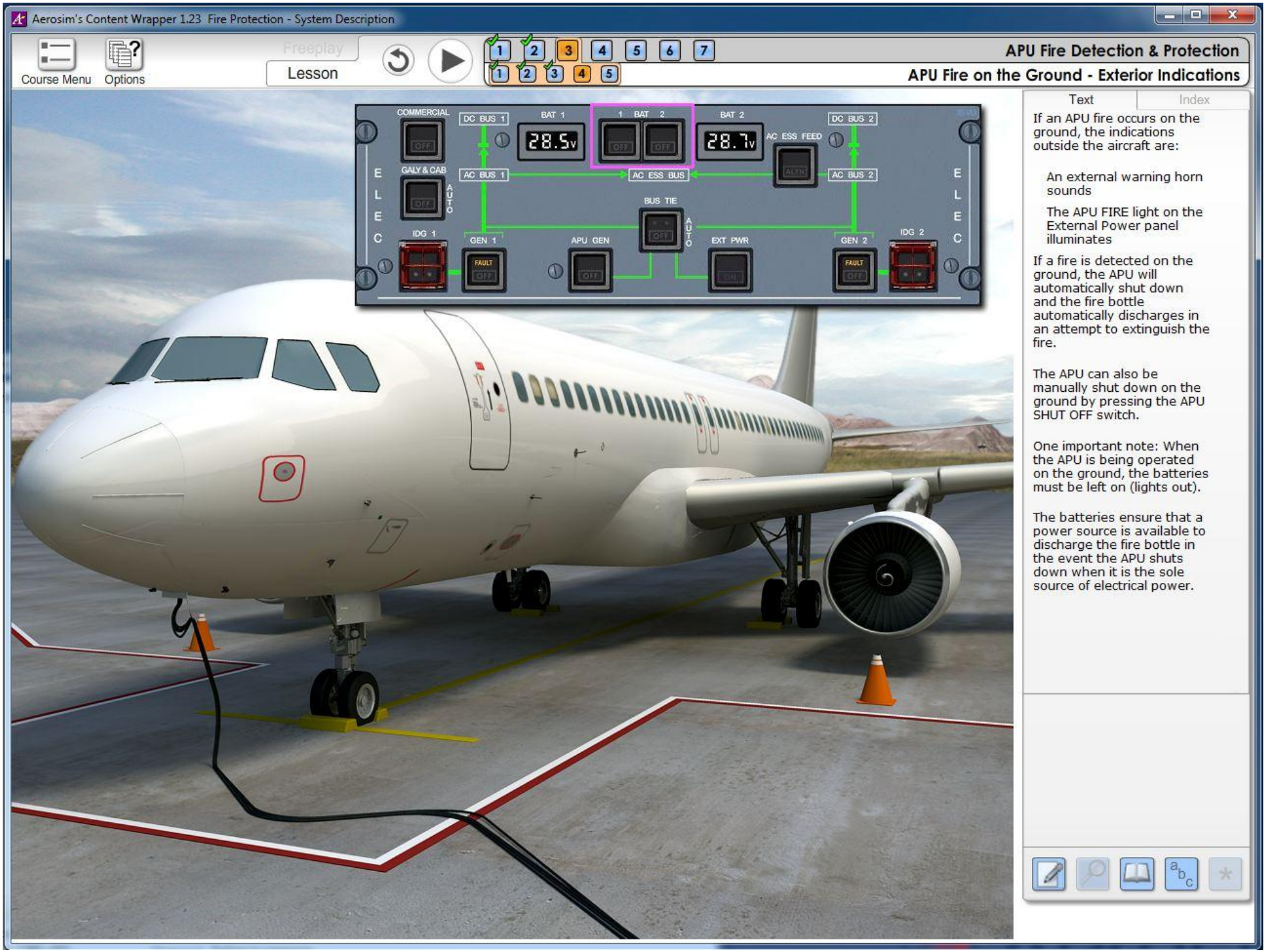

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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Options
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Lesson
APU Fire Detection & Protection
APU Fire on the Ground - Exterior Indications
The external warning horn has been silenced
Text
Index
If an APU fire occurs on the ground, the indications outside the aircraft are:
An external warning horn sounds
The APU FIRE light on the External Power panel illuminates
FLT INT
EXT PWR
NOT IN USE
AVAIL
COCKPIT CALL
ADIRU & AVNCS VENT
APU FIRE
LIGHT TEST
COCKPIT CALL
RESET
APU SHUT OFF


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APU Fire Detection & Protection
APU Fire on the Ground - Exterior Indications
Text
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If an APU fire occurs on the ground, the indications outside the aircraft are:
An external warning horn sounds
The APU FIRE light on the External Power panel illuminates
If a fire is detected on the ground, the APU will automatically shut down and the fire bottle automatically discharges in an attempt to extinguish the fire.
FLT INT
EXT PWR
NOT IN USE
AVAIL
COCKPIT CALL
ADIRU & AVNCS VENT
APU FIRE
LIGHT TEST
COCKPIT CALL
RESET
APU SHUT OFF


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APU Fire Detection & Protection
APU Fire on the Ground - Exterior Indications
In flight the APU will not automatically shut down if a fire is detected.
Text
Index
If an APU fire occurs on the ground, the indications outside the aircraft are:
An external warning horn sounds
The APU FIRE light on the External Power panel illuminates
If a fire is detected on the ground, the APU will automatically shut down and the fire bottle automatically discharges in an attempt to extinguish the fire.
FLT INT
EXT PWR
NOT IN USE
AVAIL
COCKPIT CALL
ADIRU & AVNCS VENT
APU FIRE
LIGHT TEST
COCKPIT CALL
RESET
APU SHUT OFF


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APU Fire Detection & Protection
APU Fire on the Ground - Exterior Indications
Text
Index
If an APU fire occurs on the ground, the indications outside the aircraft are:
An external warning horn sounds
The APU FIRE light on the External Power panel illuminates
If a fire is detected on the ground, the APU will automatically shut down and the fire bottle automatically discharges in an attempt to extinguish the fire.
The APU can also be manually shut down on the ground by pressing the APU SHUT OFF switch.
FLT INT
EXT PWR
NOT IN USE
AVAIL
COCKPIT CALL
ADIRU & AVNCS VENT
LIGHT TEST
COCKPIT CALL
RESET


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APU Fire Detection & Protection
APU Fire on the Ground - Exterior Indications
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If an APU fire occurs on the ground, the indications outside the aircraft are:
An external warning horn sounds
The APU FIRE light on the External Power panel illuminates
If a fire is detected on the ground, the APU will automatically shut down and the fire bottle automatically discharges in an attempt to extinguish the fire.
The APU can also be manually shut down on the ground by pressing the APU SHUT OFF switch.
One important note: When the APU is being operated on the ground, the batteries must be left on (lights out).
COMMERCIAL
DC BUS 1
BAT 1
BAT 2
DC BUS 2
AC ESS FEED
GALY & CAB
AC BUS 1
AC ESS BUS
AC BUS 2
BUS TIE
IDG 1
GEN 1
APU GEN
EXT PWR
GEN 2
IDG 2
FAULT
ELEC


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APU Fire Detection & Protection
APU Fire on the Ground - Exterior Indications
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If an APU fire occurs on the ground, the indications outside the aircraft are:
An external warning horn sounds
The APU FIRE light on the External Power panel illuminates
If a fire is detected on the ground, the APU will automatically shut down and the fire bottle automatically discharges in an attempt to extinguish the fire.
The APU can also be manually shut down on the ground by pressing the APU SHUT OFF switch.
One important note: When the APU is being operated on the ground, the batteries must be left on (lights out).
The batteries ensure that a power source is available to discharge the fire bottle in the event the APU shuts down when it is the sole source of electrical power.
COMMERCIAL
GALY & CAB
DC BUS 1
BAT 1
BAT 2
DC BUS 2
AC ESS FEED
AC BUS 1
AC ESS BUS
AC BUS 2
BUS TIE
IDG 1
GEN 1
APU GEN
EXT PWR
GEN 2
IDG 2
ELEC

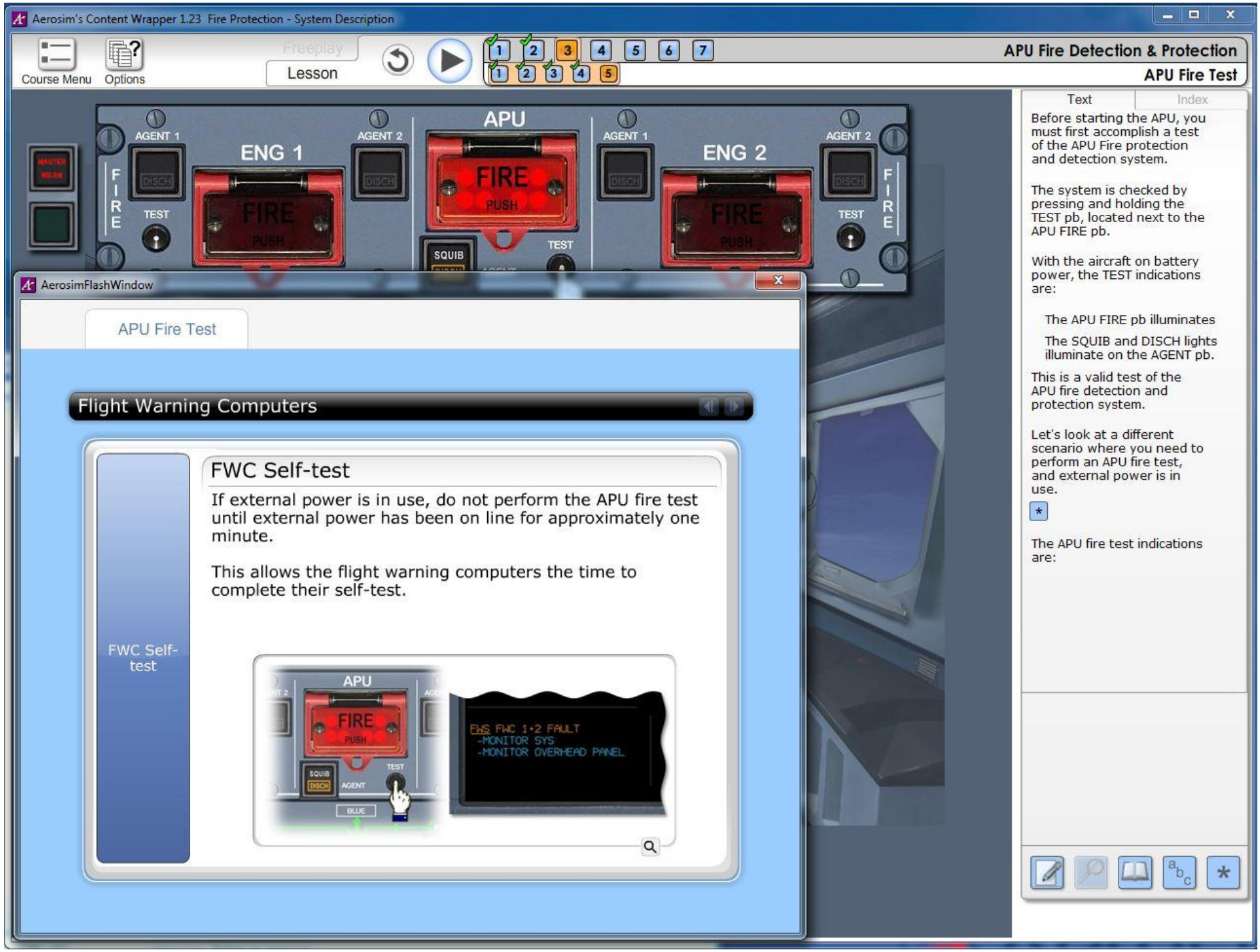

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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APU Fire Detection & Protection
APU Fire Test
Text
Index
Before starting the APU, you must first accomplish a test of the APU Fire protection and detection system.
AGENT 1
ENG 1
AGENT 2
APU
ENG 2
FIRE
PUSH
TEST
DISCH
AGENT
FIRE


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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APU Fire Detection & Protection
APU Fire Test
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Before starting the APU, you must first accomplish a test of the APU Fire protection and detection system.
The system is checked by pressing and holding the TEST pb, located next to the APU FIRE pb.
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
SQUIB
DISCH
AGENT

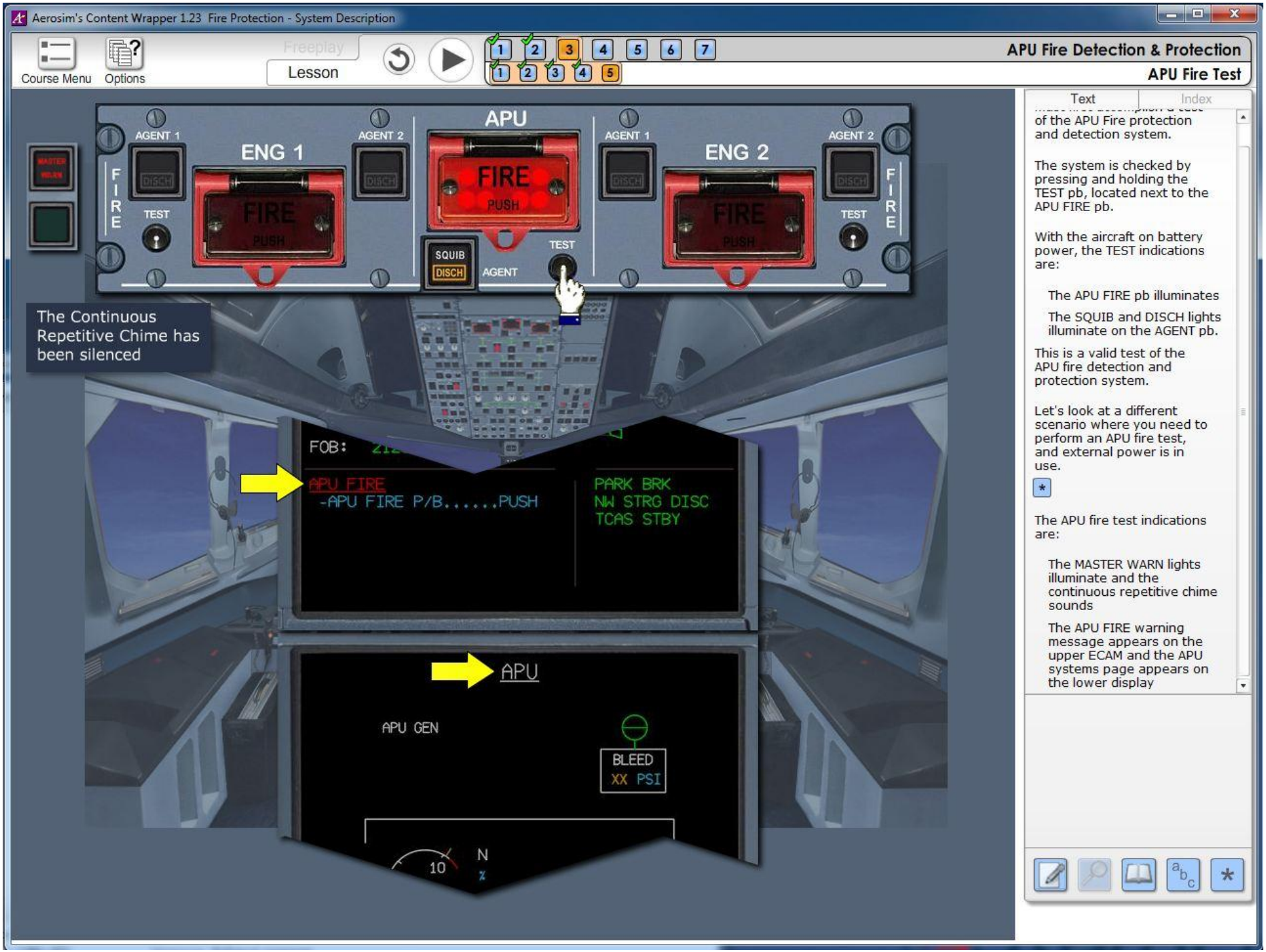

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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APU Fire Detection & Protection
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Before starting the APU, you must first accomplish a test of the APU Fire protection and detection system.
The system is checked by pressing and holding the TEST pb, located next to the APU FIRE pb.
With the aircraft on battery power, the TEST indications are:
The APU FIRE pb illuminates
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
SQUIB
DISCH
AGENT


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Before starting the APU, you must first accomplish a test of the APU Fire protection and detection system.
The system is checked by pressing and holding the TEST pb, located next to the APU FIRE pb.
With the aircraft on battery power, the TEST indications are:
The APU FIRE pb illuminates
The SQUIB and DISCH lights illuminate on the AGENT pb.
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
SQUIB
DISCH
AGENT


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Before starting the APU, you must first accomplish a test of the APU Fire protection and detection system.
The system is checked by pressing and holding the TEST pb, located next to the APU FIRE pb.
With the aircraft on battery power, the TEST indications are:
The APU FIRE pb illuminates
The SQUIB and DISCH lights illuminate on the AGENT pb.
This is a valid test of the APU fire detection and protection system.
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
SQUIB
DISCH
AGENT

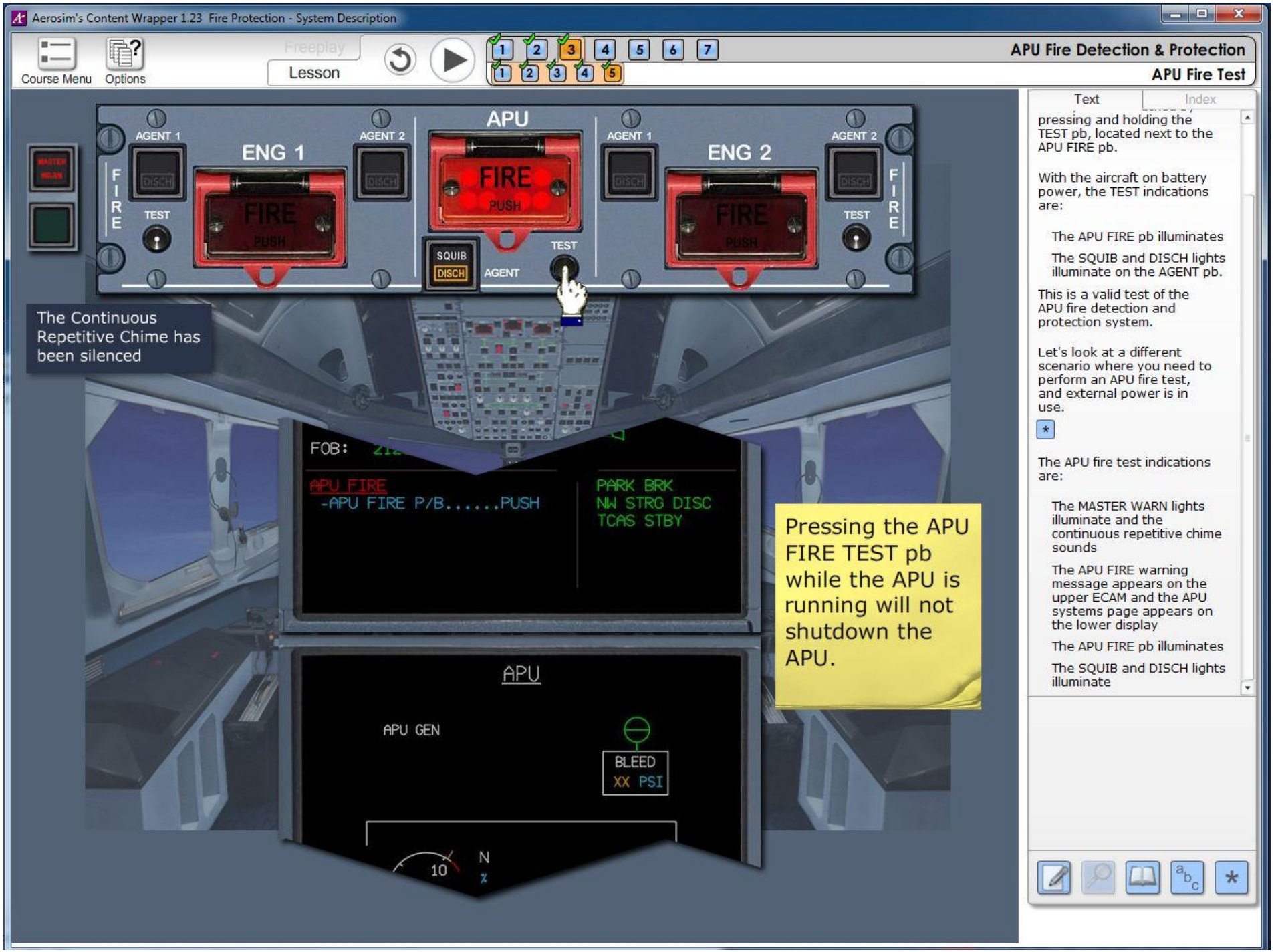

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APU Fire Test
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Before starting the APU, you must first accomplish a test of the APU Fire protection and detection system.
The system is checked by pressing and holding the TEST pb, located next to the APU FIRE pb.
With the aircraft on battery power, the TEST indications are:
The APU FIRE pb illuminates
The SQUIB and DISCH lights illuminate on the AGENT pb.
This is a valid test of the APU fire detection and protection system.
Let's look at a different scenario where you need to perform an APU fire test, and external power is in use.
The APU fire test indications are:
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
SQUIB
DISCH
AerosimFlashWindow
APU Fire Test
Flight Warning Computers
FWC Self-test
FWC Self-test
If external power is in use, do not perform the APU fire test until external power has been on line for approximately one minute.
This allows the flight warning computers the time to complete their self-test.
AGENT
BLUE
FWS FWC 1+2 FAULT
-MONITOR SYS
-MONITOR OVERHEAD PANEL

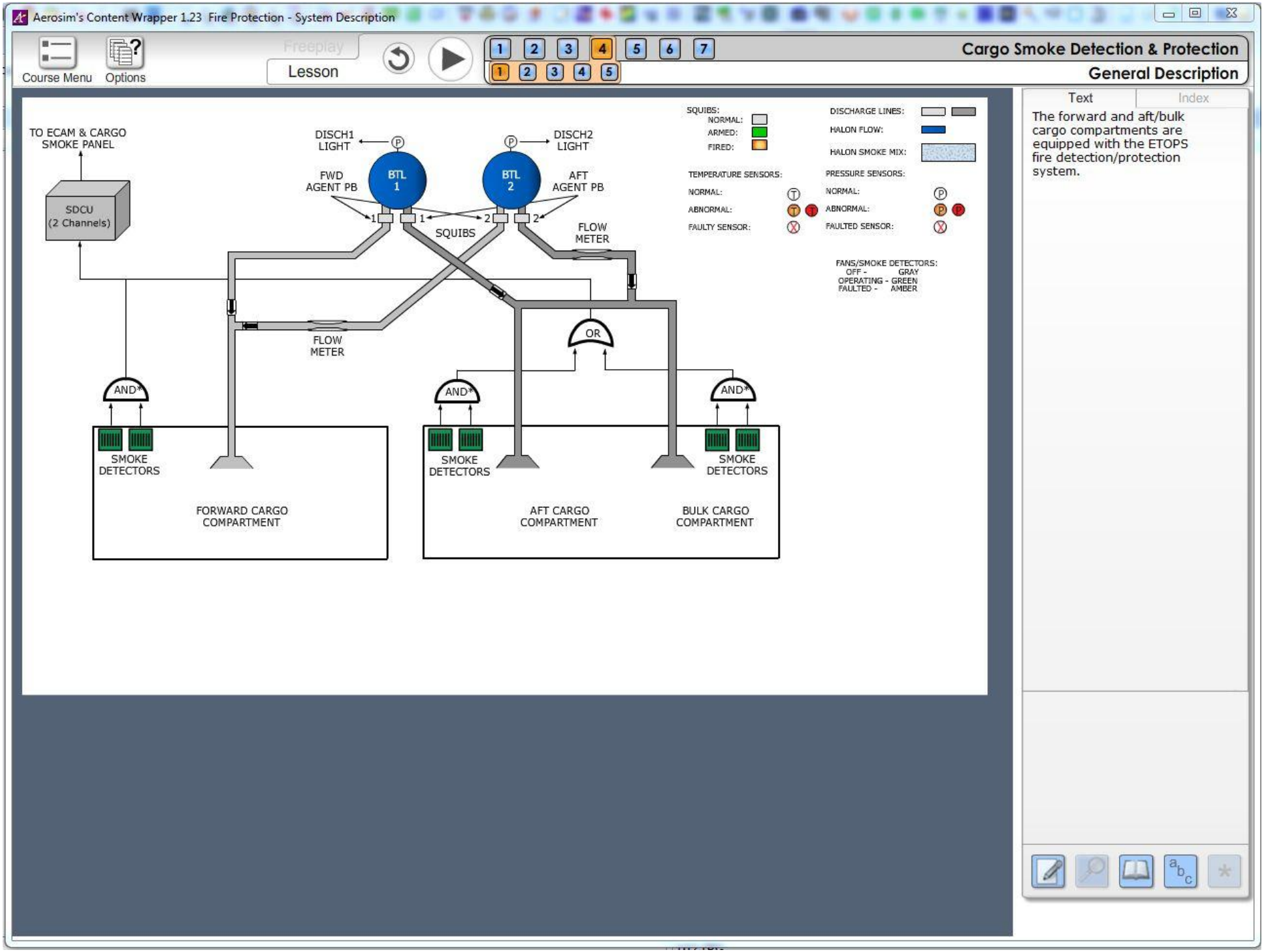

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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APU Fire Detection & Protection
APU Fire Test
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Before starting the APU, you must first accomplish a test of the APU Fire protection and detection system.
The system is checked by pressing and holding the TEST pb, located next to the APU FIRE pb.
With the aircraft on battery power, the TEST indications are:
The APU FIRE pb illuminates
The SQUIB and DISCH lights illuminate on the AGENT pb.
This is a valid test of the APU fire detection and protection system.
Let's look at a different scenario where you need to perform an APU fire test, and external power is in use.
The APU fire test indications are:
The MASTER WARN lights illuminate and the continuous repetitive chime sounds
The Continuous Repetitive Chime has been silenced
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
SQUIB DISCH
AGENT
APU FIRE
-APU FIRE P/B.....PUSH
PARK BRK
NW STRG DISC
TCAS STBY
APU
APU GEN
BLEED
XX PSI
N

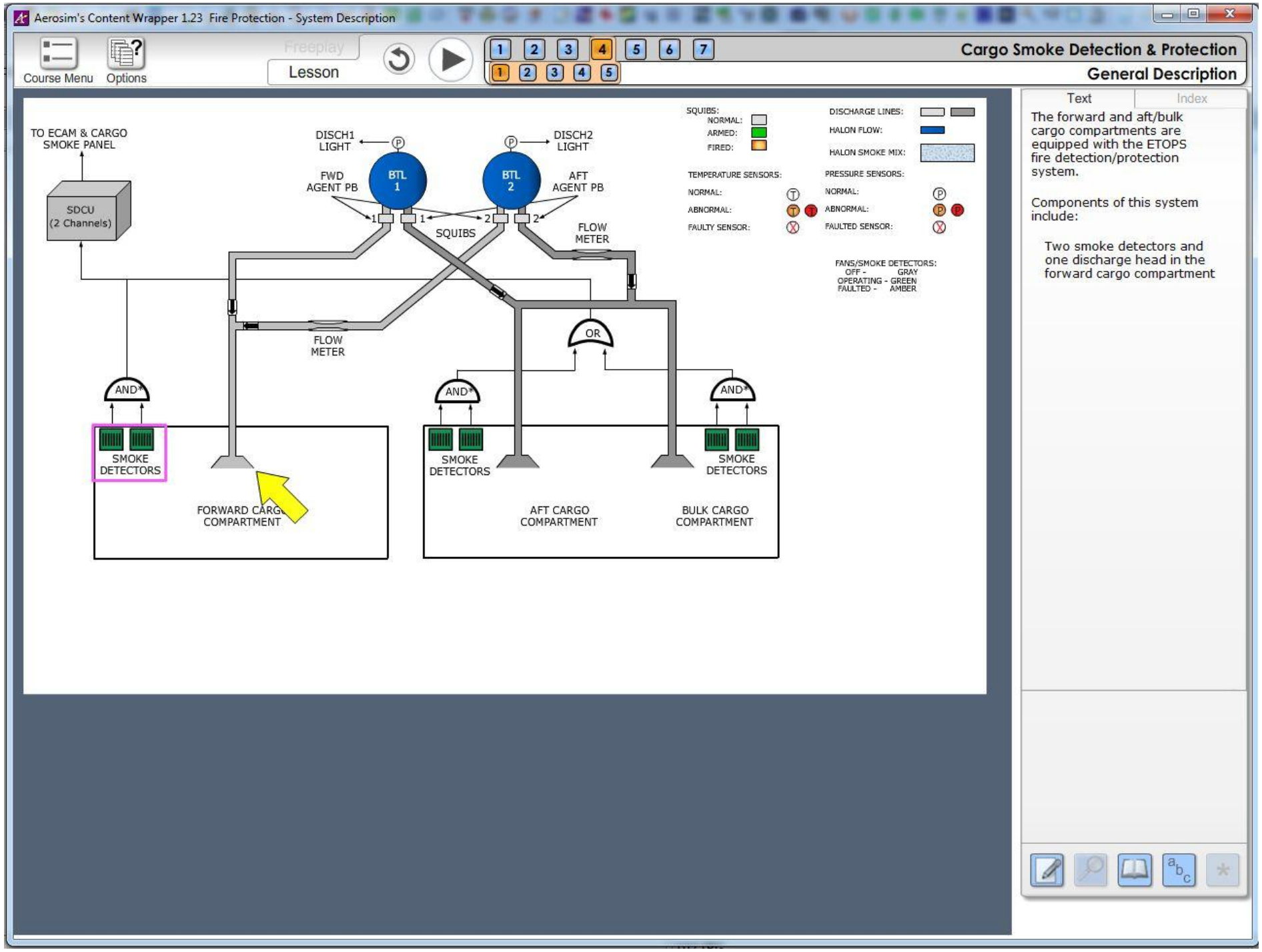

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APU Fire Test
Text
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of the APU Fire protection and detection system.
The system is checked by pressing and holding the TEST pb, located next to the APU FIRE pb.
With the aircraft on battery power, the TEST indications are:
The APU FIRE pb illuminates
The SQUIB and DISCH lights illuminate on the AGENT pb.
This is a valid test of the APU fire detection and protection system.
Let's look at a different scenario where you need to perform an APU fire test, and external power is in use.
The APU fire test indications are:
The MASTER WARN lights illuminate and the continuous repetitive chime sounds
The APU FIRE warning message appears on the upper ECAM and the APU systems page appears on the lower display
The Continuous Repetitive Chime has been silenced
AGENT 1
AGENT 2
ENG 1
APU
ENG 2
FIRE
PUSH
TEST
SQUIB
DISCH
AGENT
APU FIRE
-APU FIRE P/B.....PUSH
PARK BRK
NW STRG DISC
TCAS STBY
APU
APU GEN
BLEED
XX PSI

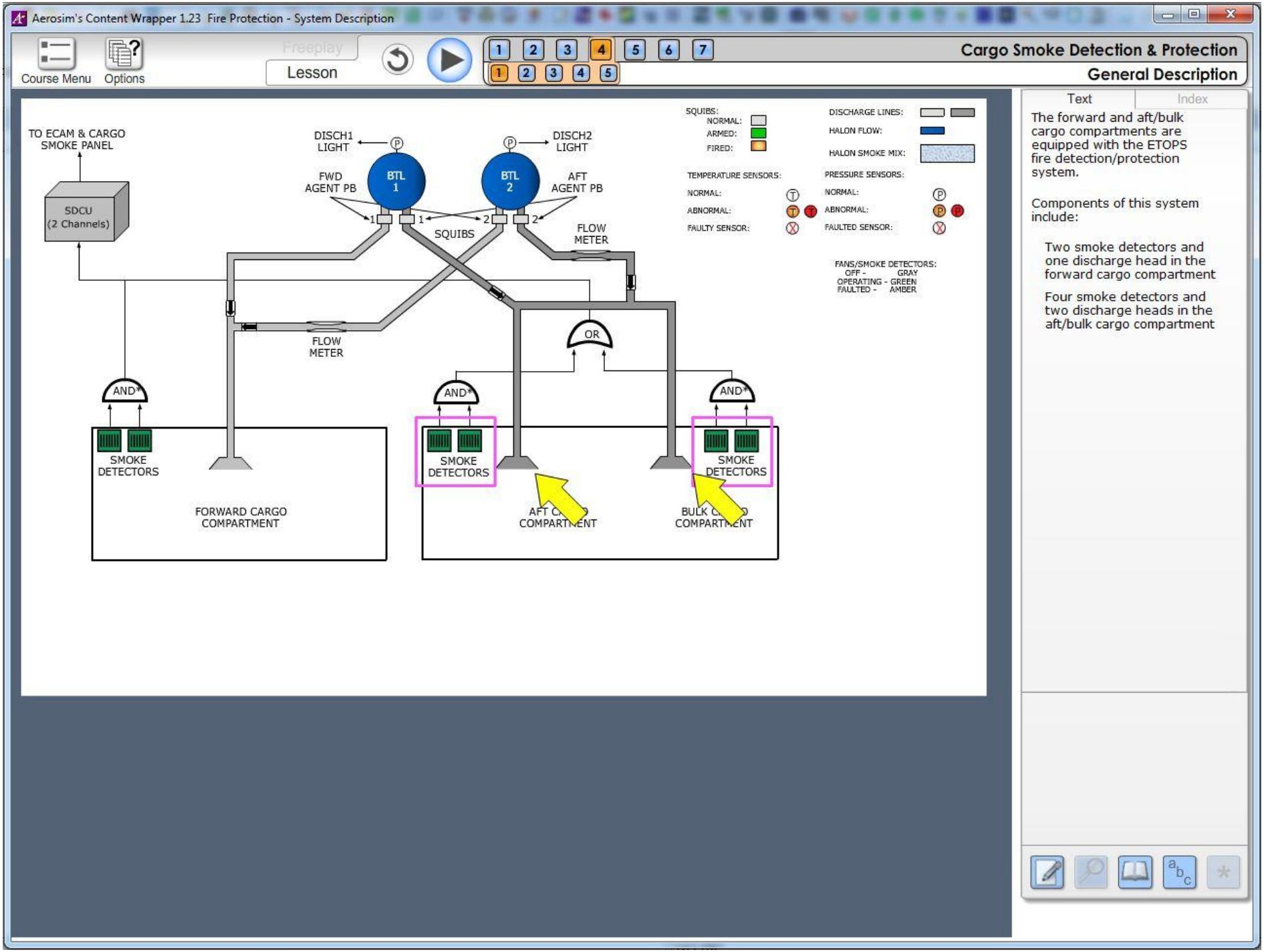

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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APU Fire Test
Text
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The system is checked by pressing and holding the TEST pb, located next to the APU FIRE pb.
With the aircraft on battery power, the TEST indications are:
The APU FIRE pb illuminates
The SQUIB and DISCH lights illuminate on the AGENT pb.
This is a valid test of the APU fire detection and protection system.
Let's look at a different scenario where you need to perform an APU fire test, and external power is in use.
The APU fire test indications are:
The MASTER WARN lights illuminate and the continuous repetitive chime sounds
The APU FIRE warning message appears on the upper ECAM and the APU systems page appears on the lower display
The APU FIRE pb illuminates
The Continuous Repetitive Chime has been silenced
APU
ENG 1
ENG 2
AGENT 1
AGENT 2
FIRE
PUSH
TEST
SQUIB
DISCH
AGENT
APU FIRE
-APU FIRE P/B.....PUSH
PARK BRK
NW STRG DISC
TCAS STBY
APU GEN
BLEED
XX PSI

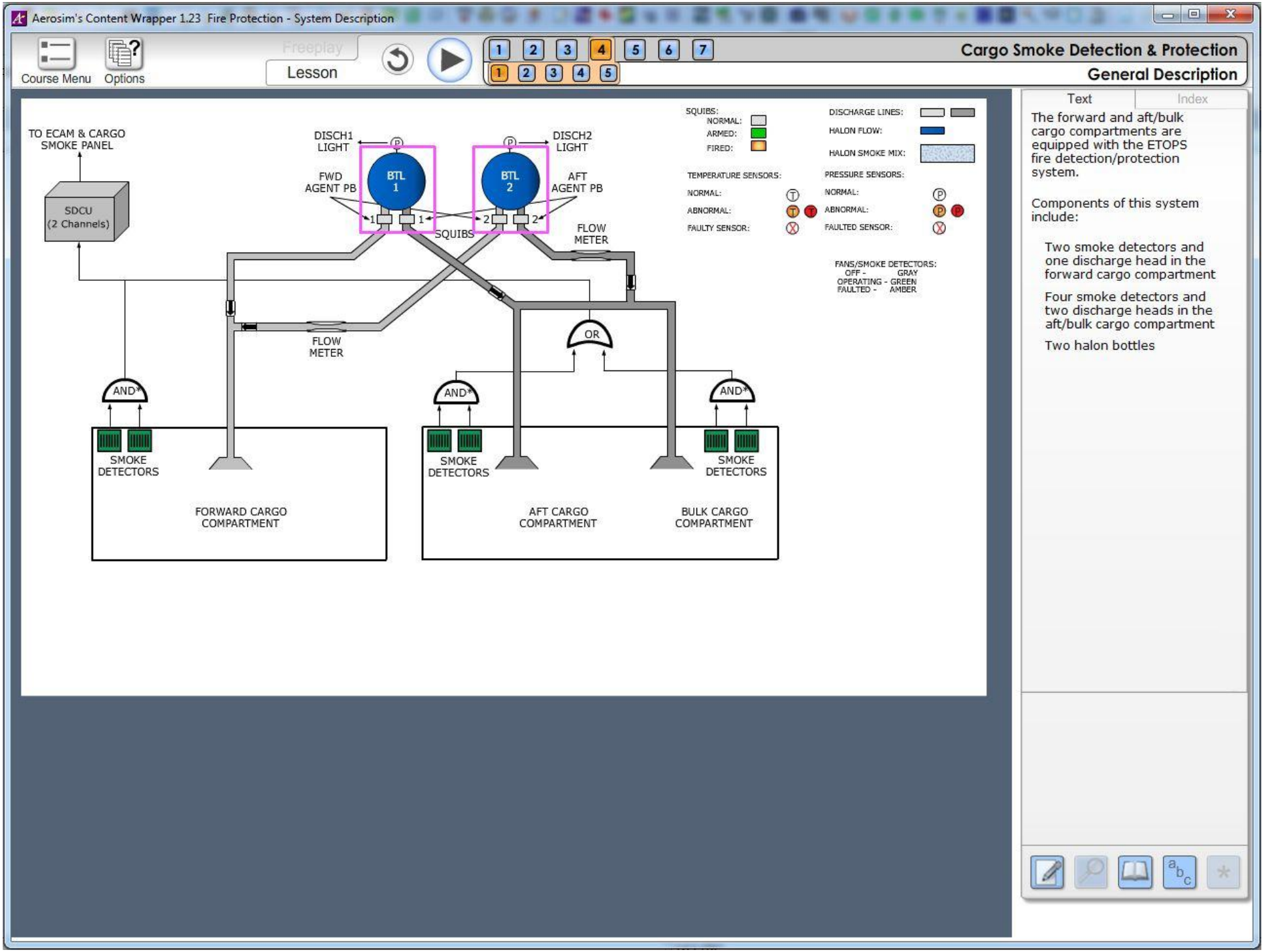

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APU Fire Test
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pressing and holding the TEST pb, located next to the APU FIRE pb.
With the aircraft on battery power, the TEST indications are:
The APU FIRE pb illuminates
The SQUIB and DISCH lights illuminate on the AGENT pb.
This is a valid test of the APU fire detection and protection system.
Let's look at a different scenario where you need to perform an APU fire test, and external power is in use.
The APU fire test indications are:
The MASTER WARN lights illuminate and the continuous repetitive chime sounds
The APU FIRE warning message appears on the upper ECAM and the APU systems page appears on the lower display
The APU FIRE pb illuminates
The SQUIB and DISCH lights illuminate
The Continuous Repetitive Chime has been silenced
APU
ENG 1
ENG 2
AGENT 1
AGENT 2
FIRE
PUSH
TEST
SQUIB
DISCH
AGENT
APU FIRE
-APU FIRE P/B.....PUSH
PARK BRK
NW STRG DISC
TCAS STBY
APU GEN
BLEED
XX PSI

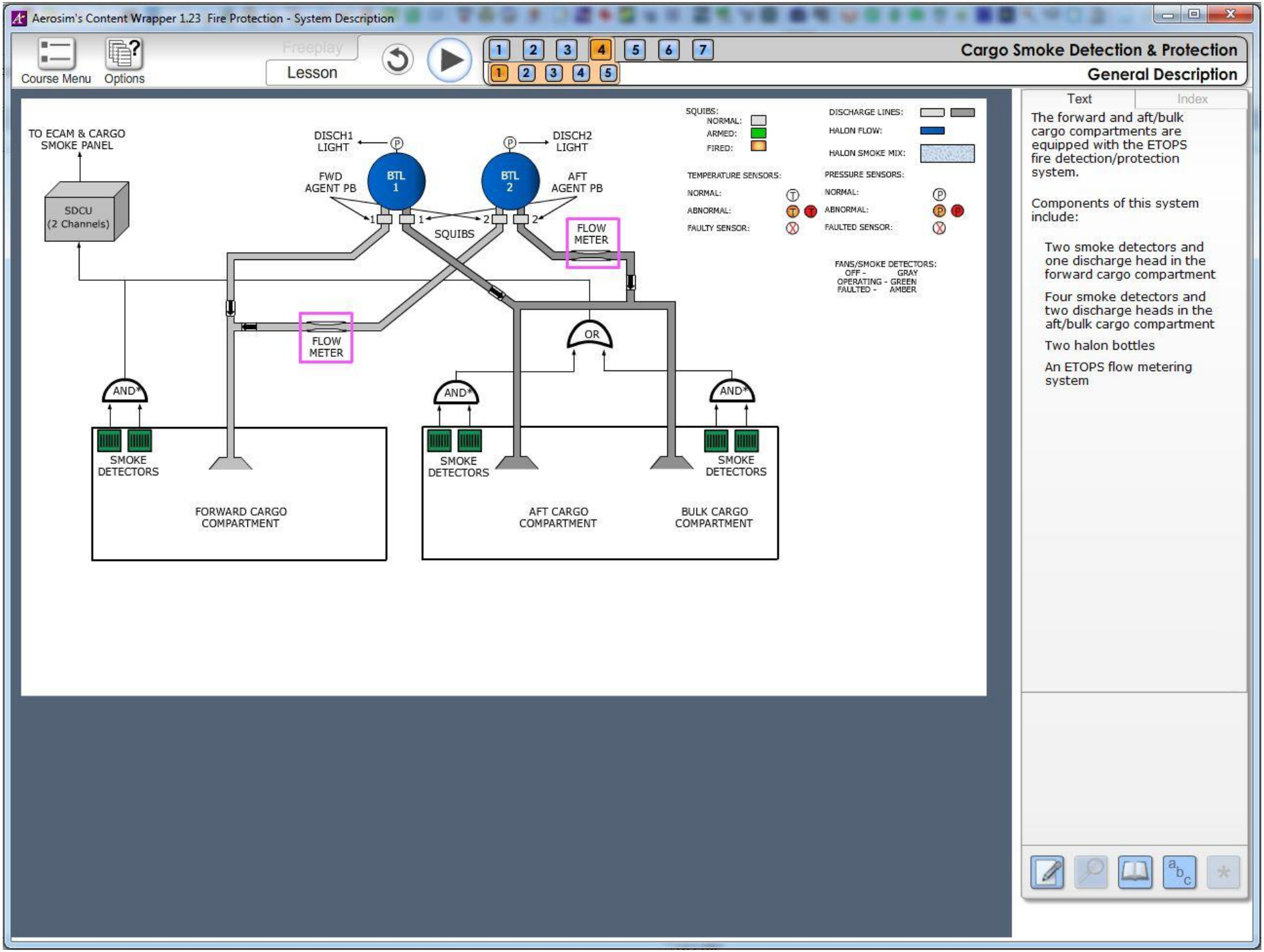

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
APU Fire Detection & Protection
APU Fire Test
Text
Index
pressing and holding the TEST pb, located next to the APU FIRE pb.
With the aircraft on battery power, the TEST indications are:
The APU FIRE pb illuminates
The SQUIB and DISCH lights illuminate on the AGENT pb.
This is a valid test of the APU fire detection and protection system.
Let's look at a different scenario where you need to perform an APU fire test, and external power is in use.
The APU fire test indications are:
The MASTER WARN lights illuminate and the continuous repetitive chime sounds
The APU FIRE warning message appears on the upper ECAM and the APU systems page appears on the lower display
The APU FIRE pb illuminates
The SQUIB and DISCH lights illuminate
APU
ENG 1
ENG 2
AGENT 1
AGENT 2
FIRE
PUSH
TEST
SQUIB
DISCH
AGENT
The Continuous Repetitive Chime has been silenced
APU FIRE
-APU FIRE P/B.....PUSH
PARK BRK
NW STRG DISC
TCAS STBY
Pressing the APU FIRE TEST pb while the APU is running will not shutdown the APU.
APU GEN
BLEED
XX PSI
N
%

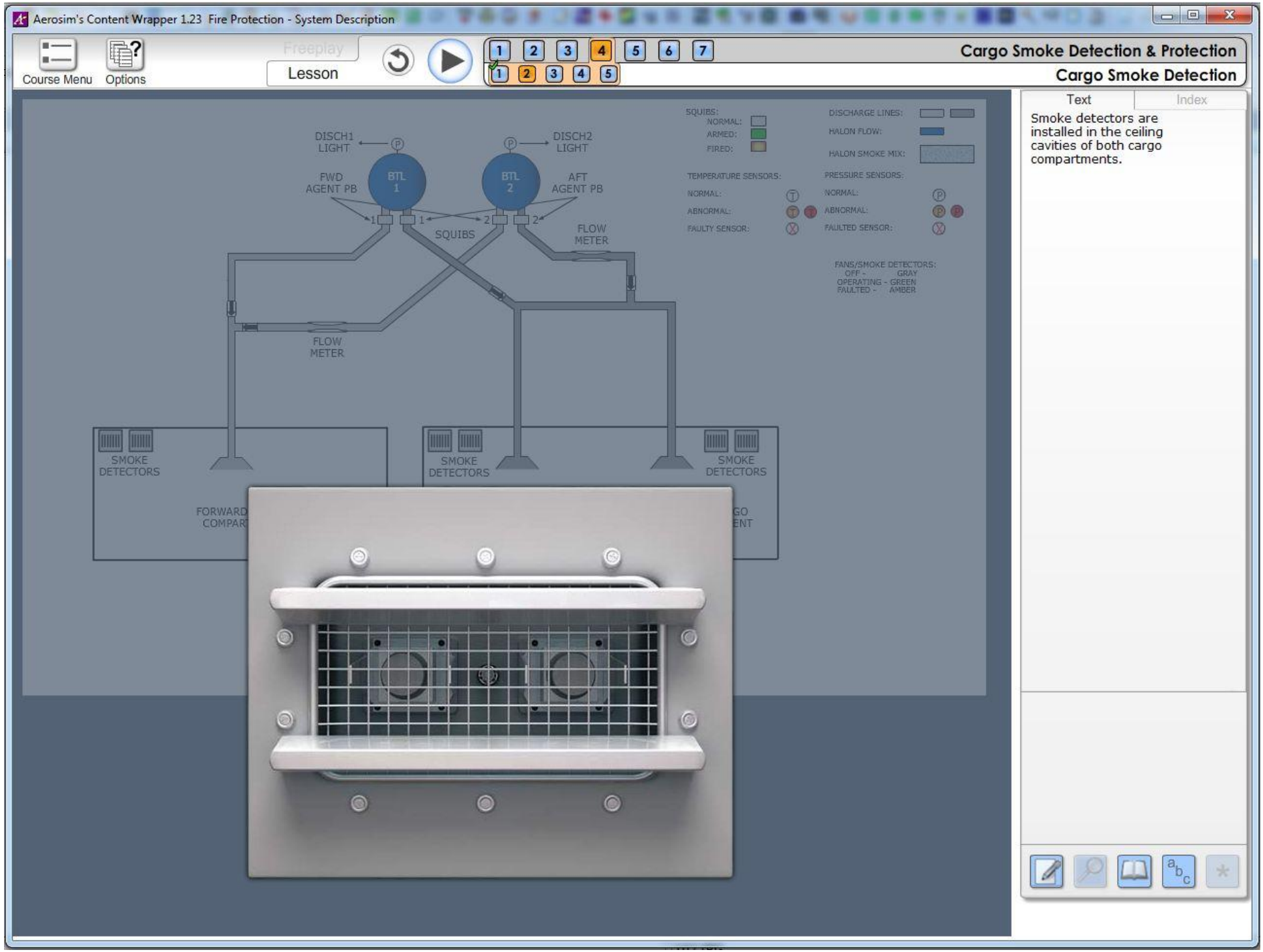

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
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Lesson
Cargo Smoke Detection & Protection
General Description
Text
Index
The forward and aft/bulk cargo compartments are equipped with the ETOPS fire detection/protection system.
TO ECAM & CARGO SMOKE PANEL
SDCU (2 Channels)
DISCH1 LIGHT
DISCH2 LIGHT
FWD AGENT PB
AFT AGENT PB
BTL 1
BTL 2
SQUIBS
FLOW METER
FLOW METER
OR
AND*
AND*
AND*
SMOKE DETECTORS
SMOKE DETECTORS
SMOKE DETECTORS
FORWARD CARGO COMPARTMENT
AFT CARGO COMPARTMENT
BULK CARGO COMPARTMENT
SQUIBS:
NORMAL:
ARMED:
FIRED:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
FANS/SMOKE DETECTORS:
OFF - GRAY
OPERATING - GREEN
FAULTED - AMBER

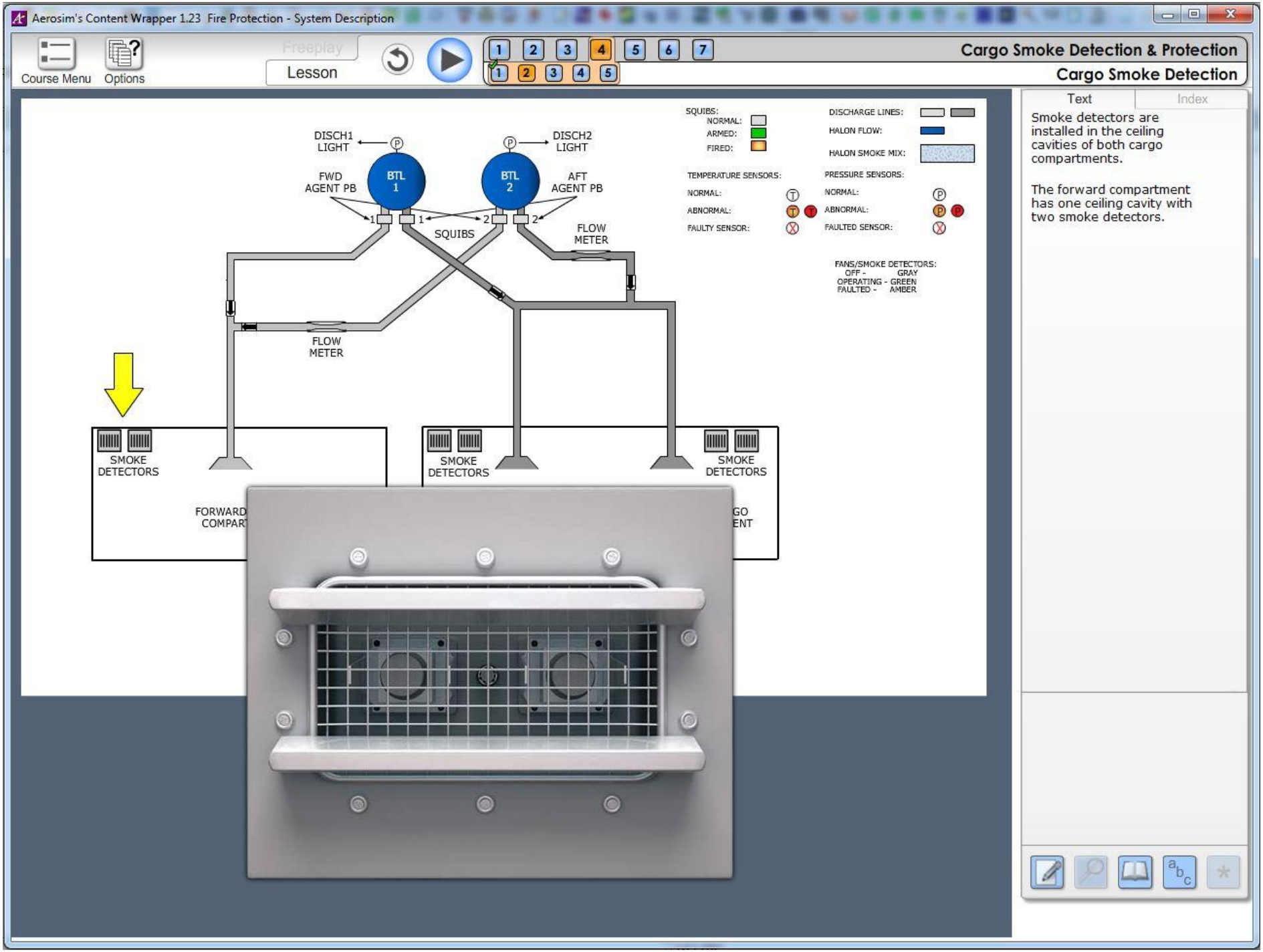

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Cargo Smoke Detection & Protection
General Description
TO ECAM & CARGO SMOKE PANEL
SDCU (2 Channels)
DISCH1 LIGHT
DISCH2 LIGHT
FWD AGENT PB
AFT AGENT PB
BTL 1
BTL 2
SQUIBS
FLOW METER
FLOW METER
OR
AND*
AND*
AND*
SMOKE DETECTORS
SMOKE DETECTORS
SMOKE DETECTORS
FORWARD CARGO COMPARTMENT
AFT CARGO COMPARTMENT
BULK CARGO COMPARTMENT
SQUIBS:
NORMAL:
ARMED:
FIRED:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
FANS/SMOKE DETECTORS:
OFF - GRAY
OPERATING - GREEN
FAULTED - AMBER
Text
Index
The forward and aft/bulk cargo compartments are equipped with the ETOPS fire detection/protection system.
Components of this system include:
Two smoke detectors and one discharge head in the forward cargo compartment

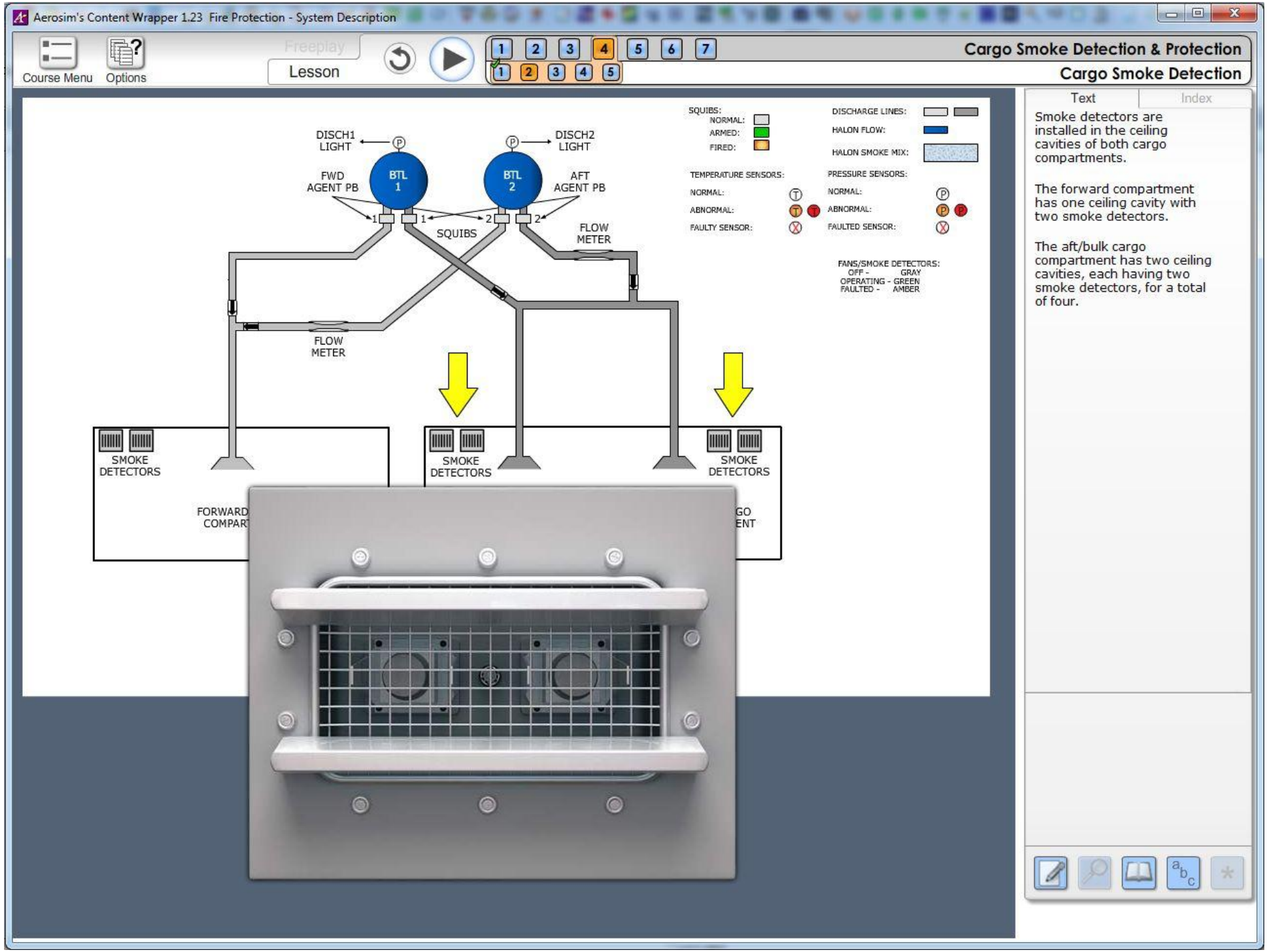

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Cargo Smoke Detection & Protection
General Description
TO ECAM & CARGO SMOKE PANEL
SDCU (2 Channels)
DISCH1 LIGHT
DISCH2 LIGHT
FWD AGENT PB
AFT AGENT PB
BTL 1
BTL 2
SQUIBS
FLOW METER
FLOW METER
OR
AND*
AND*
AND*
SMOKE DETECTORS
SMOKE DETECTORS
SMOKE DETECTORS
FORWARD CARGO COMPARTMENT
SQUIBS:
NORMAL:
ARMED:
FIRED:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
FANS/SMOKE DETECTORS:
OFF - GRAY
OPERATING - GREEN
FAULTED - AMBER
Text
Index
The forward and aft/bulk cargo compartments are equipped with the ETOPS fire detection/protection system.
Components of this system include:
Two smoke detectors and one discharge head in the forward cargo compartment
Four smoke detectors and two discharge heads in the aft/bulk cargo compartment

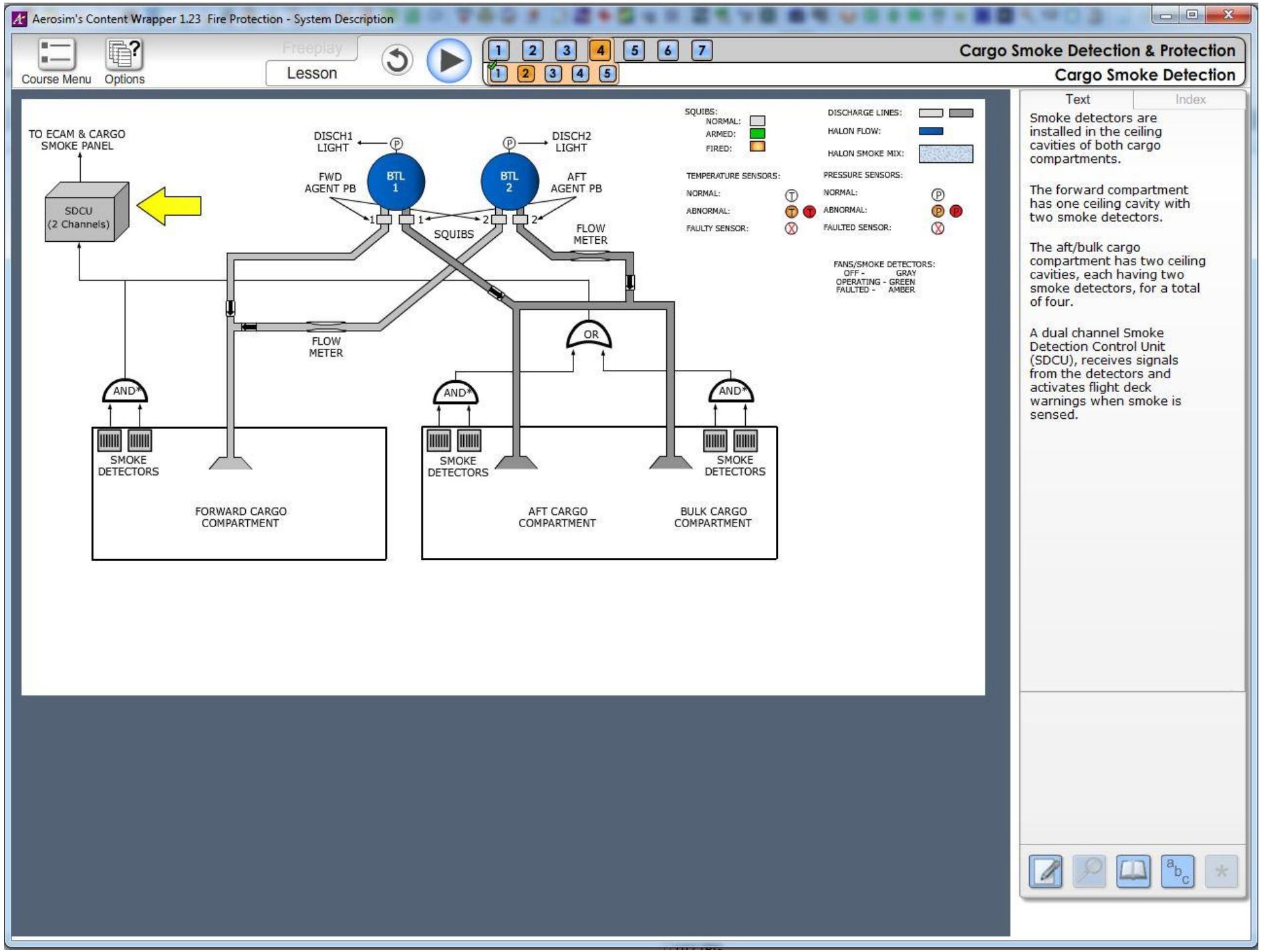

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
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Cargo Smoke Detection & Protection
General Description
Text
Index
The forward and aft/bulk cargo compartments are equipped with the ETOPS fire detection/protection system.
Components of this system include:
Two smoke detectors and one discharge head in the forward cargo compartment
Four smoke detectors and two discharge heads in the aft/bulk cargo compartment
Two halon bottles
TO ECAM & CARGO SMOKE PANEL
SDCU (2 Channels)
DISCH1 LIGHT
DISCH2 LIGHT
FWD AGENT PB
AFT AGENT PB
BTL 1
BTL 2
SQUIBS
FLOW METER
FLOW METER
OR
AND*
AND*
AND*
SMOKE DETECTORS
SMOKE DETECTORS
SMOKE DETECTORS
FORWARD CARGO COMPARTMENT
AFT CARGO COMPARTMENT
BULK CARGO COMPARTMENT
SQUIBS:
NORMAL:
ARMED:
FIRED:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
FANS/SMOKE DETECTORS:
OFF - GRAY
OPERATING - GREEN
FAULTED - AMBER

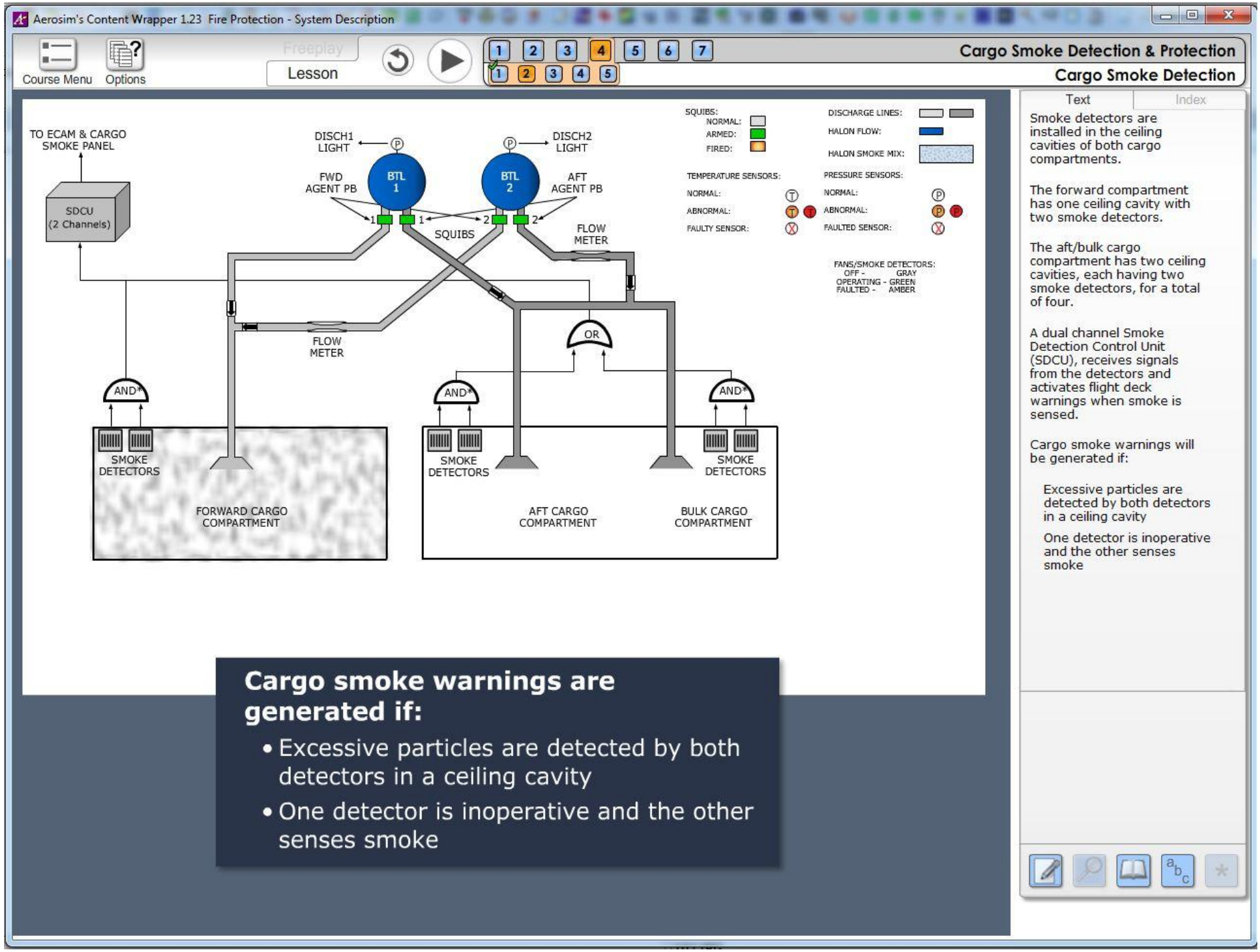

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Cargo Smoke Detection & Protection
General Description
TO ECAM & CARGO SMOKE PANEL
SDCU (2 Channels)
DISCH1 LIGHT
DISCH2 LIGHT
FWD AGENT PB
AFT AGENT PB
BTL 1
BTL 2
SQUIBS
FLOW METER
FLOW METER
OR
AND*
AND*
AND*
SMOKE DETECTORS
SMOKE DETECTORS
SMOKE DETECTORS
FORWARD CARGO COMPARTMENT
AFT CARGO COMPARTMENT
BULK CARGO COMPARTMENT
SQUIBS:
NORMAL:
ARMED:
FIRED:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
FANS/SMOKE DETECTORS:
OFF - GRAY
OPERATING - GREEN
FAULTED - AMBER
Text
Index
The forward and aft/bulk cargo compartments are equipped with the ETOPS fire detection/protection system.
Components of this system include:
Two smoke detectors and one discharge head in the forward cargo compartment
Four smoke detectors and two discharge heads in the aft/bulk cargo compartment
Two halon bottles
An ETOPS flow metering system

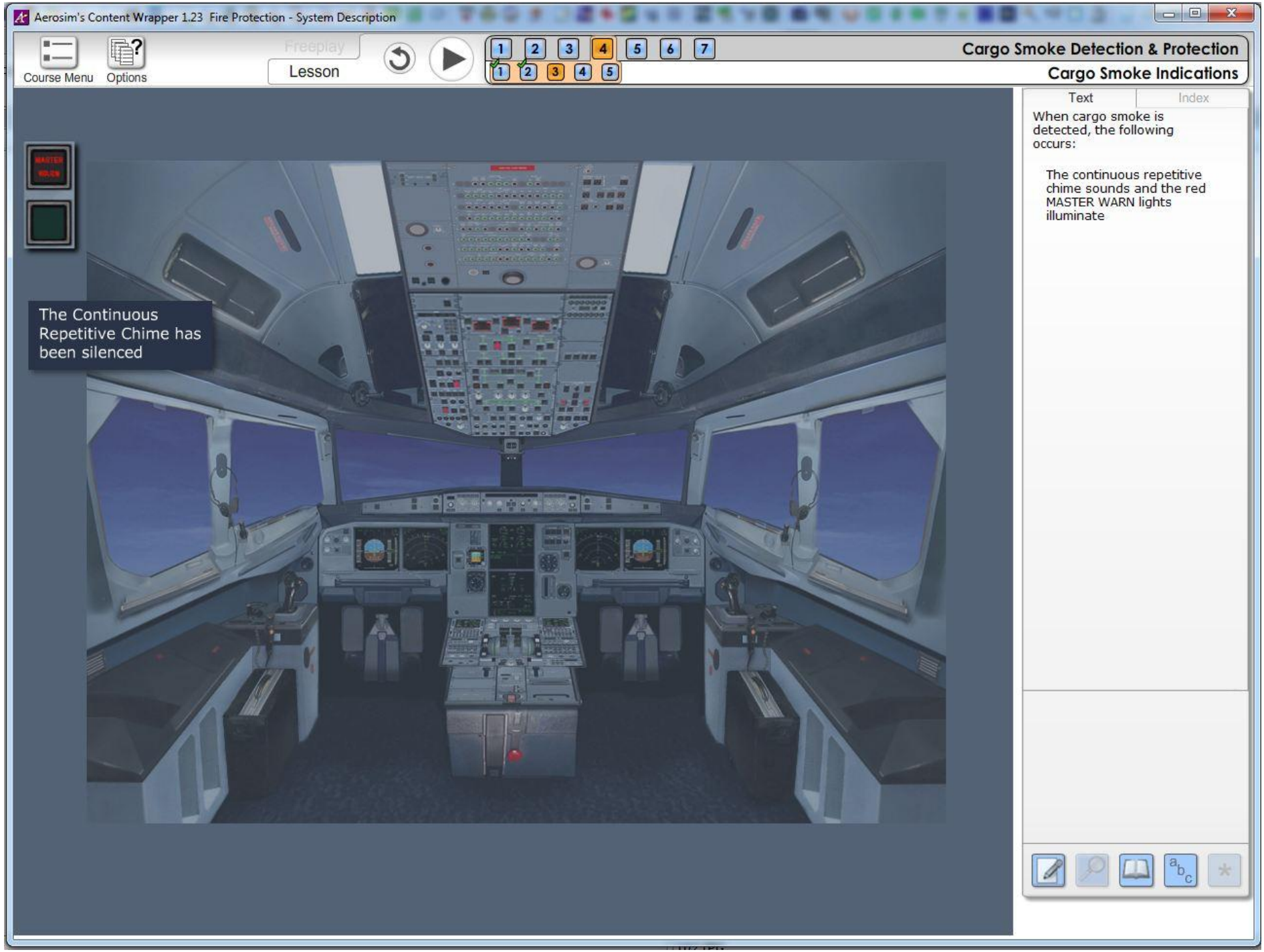

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Cargo Smoke Detection & Protection
Cargo Smoke Detection
Text
Index
Smoke detectors are installed in the ceiling cavities of both cargo compartments.
DISCH1 LIGHT
DISCH2 LIGHT
FWD AGENT PB
AFT AGENT PB
BTL 1
BTL 2
SQUIBS
FLOW METER
SMOKE DETECTORS
SQUIBS:
NORMAL:
ARMED:
FIRED:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
TEMPERATURE SENSORS:
PRESSURE SENSORS:
ABNORMAL:
FAULTY SENSOR:
FAULTED SENSOR:
FANS/SMOKE DETECTORS:
OFF - GRAY
OPERATING - GREEN
FAULTED - AMBER


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Cargo Smoke Detection & Protection
Cargo Smoke Detection
DISCH1 LIGHT
DISCH2 LIGHT
FWD AGENT PB
AFT AGENT PB
BTL 1
BTL 2
SQUIBS
FLOW METER
FLOW METER
SMOKE DETECTORS
SMOKE DETECTORS
SMOKE DETECTORS
SQUIBS:
NORMAL:
ARMED:
FIRED:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
FANS/SMOKE DETECTORS:
OFF - GRAY
OPERATING - GREEN
FAULTED - AMBER
Text
Index
Smoke detectors are installed in the ceiling cavities of both cargo compartments.
The forward compartment has one ceiling cavity with two smoke detectors.

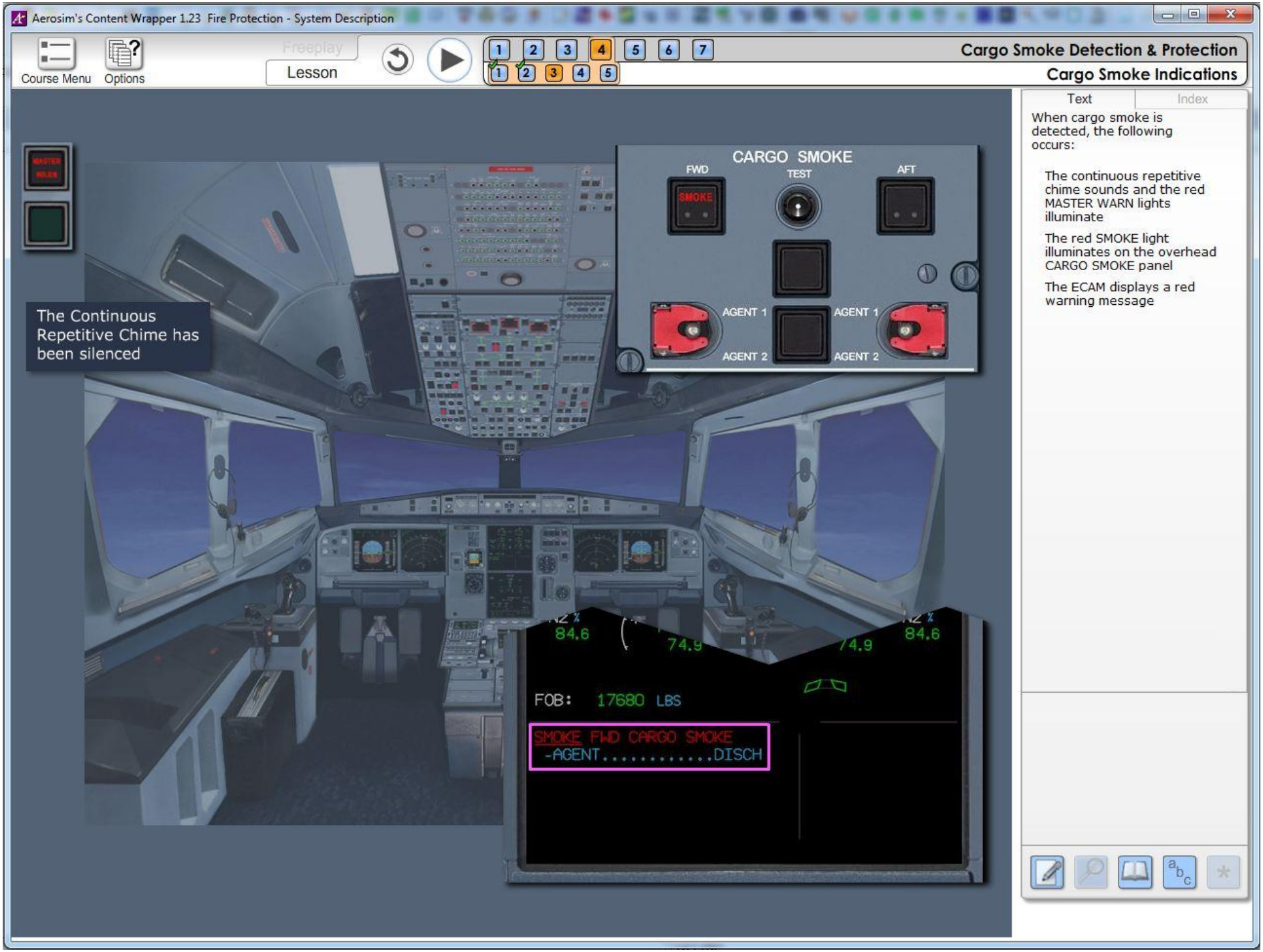

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Cargo Smoke Detection & Protection
Cargo Smoke Detection
DISCH1 LIGHT
DISCH2 LIGHT
FWD AGENT PB
AFT AGENT PB
BTL 1
BTL 2
SQUIBS
FLOW METER
FLOW METER
SMOKE DETECTORS
SMOKE DETECTORS
SMOKE DETECTORS
SQUIBS:
NORMAL:
ARMED:
FIRED:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
FANS/SMOKE DETECTORS:
OFF - GRAY
OPERATING - GREEN
FAULTED - AMBER
Text
Index
Smoke detectors are installed in the ceiling cavities of both cargo compartments.
The forward compartment has one ceiling cavity with two smoke detectors.
The aft/bulk cargo compartment has two ceiling cavities, each having two smoke detectors, for a total of four.

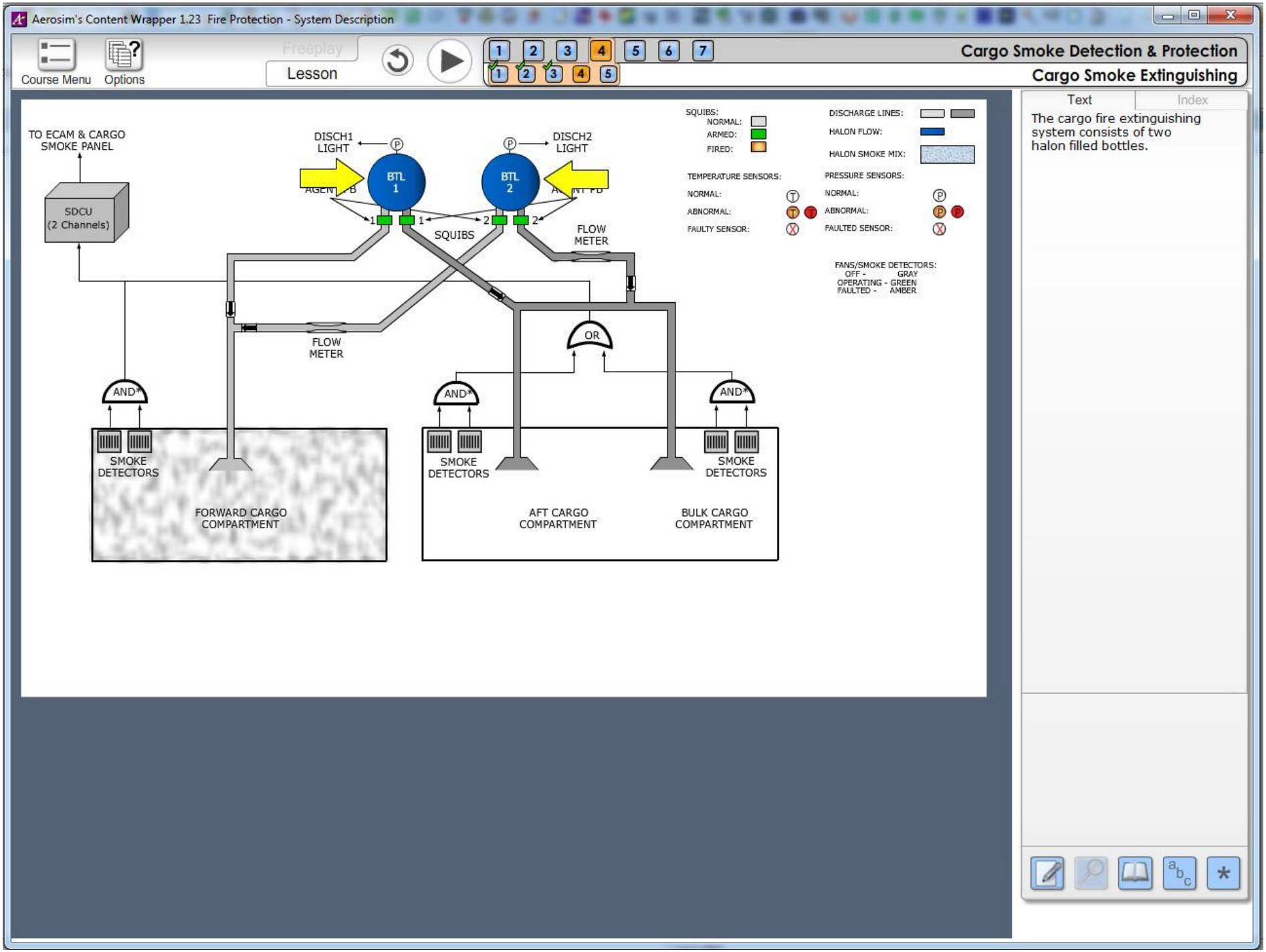

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Cargo Smoke Detection & Protection
Cargo Smoke Detection
TO ECAM & CARGO SMOKE PANEL
SDCU (2 Channels)
DISCH1 LIGHT
DISCH2 LIGHT
FWD AGENT PB
AFT AGENT PB
BTL 1
BTL 2
SQUIBS
FLOW METER
FLOW METER
OR
AND*
AND*
AND*
SMOKE DETECTORS
SMOKE DETECTORS
SMOKE DETECTORS
FORWARD CARGO COMPARTMENT
AFT CARGO COMPARTMENT
BULK CARGO COMPARTMENT
SQUIBS:
NORMAL:
ARMED:
FIRED:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
FANS/SMOKE DETECTORS:
OFF - GRAY
OPERATING - GREEN
FAULTED - AMBER
Text
Index
Smoke detectors are installed in the ceiling cavities of both cargo compartments.
The forward compartment has one ceiling cavity with two smoke detectors.
The aft/bulk cargo compartment has two ceiling cavities, each having two smoke detectors, for a total of four.
A dual channel Smoke Detection Control Unit (SDCU), receives signals from the detectors and activates flight deck warnings when smoke is sensed.

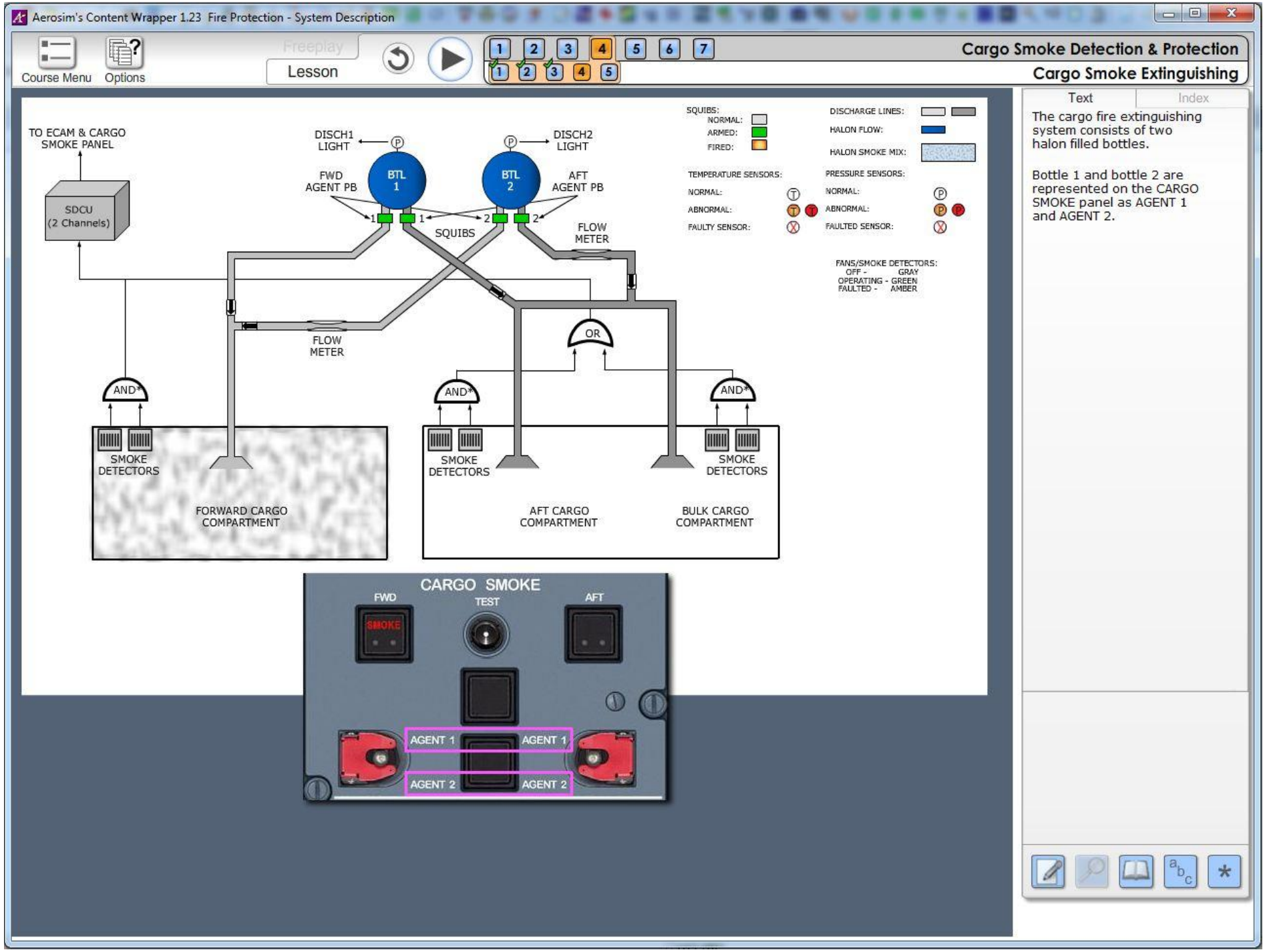

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Cargo Smoke Detection & Protection
Cargo Smoke Detection
TO ECAM & CARGO SMOKE PANEL
SDCU (2 Channels)
DISCH1 LIGHT
DISCH2 LIGHT
FWD AGENT PB
AFT AGENT PB
BTL 1
BTL 2
SQUIBS
FLOW METER
FLOW METER
OR
AND*
AND*
AND*
SMOKE DETECTORS
SMOKE DETECTORS
SMOKE DETECTORS
FORWARD CARGO COMPARTMENT
AFT CARGO COMPARTMENT
BULK CARGO COMPARTMENT
SQUIBS:
NORMAL:
ARMED:
FIRED:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
FANS/SMOKE DETECTORS:
OFF - GRAY
OPERATING - GREEN
FAULTED - AMBER
Text
Index
Smoke detectors are installed in the ceiling cavities of both cargo compartments.
The forward compartment has one ceiling cavity with two smoke detectors.
The aft/bulk cargo compartment has two ceiling cavities, each having two smoke detectors, for a total of four.
A dual channel Smoke Detection Control Unit (SDCU), receives signals from the detectors and activates flight deck warnings when smoke is sensed.
Cargo smoke warnings will be generated if:
Excessive particles are detected by both detectors in a ceiling cavity
One detector is inoperative and the other senses smoke
Cargo smoke warnings are generated if:
• Excessive particles are detected by both detectors in a ceiling cavity
• One detector is inoperative and the other senses smoke

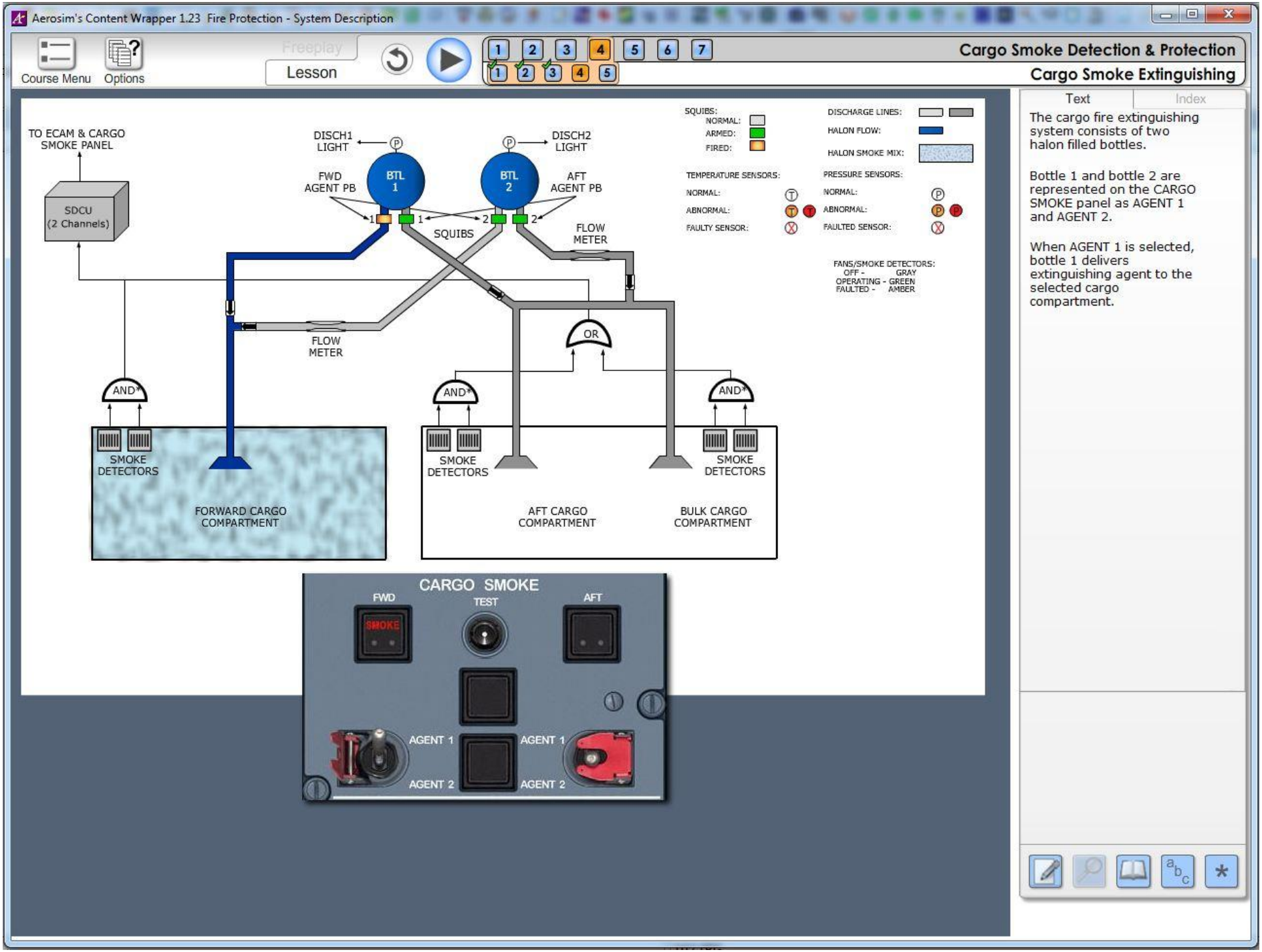

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
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Cargo Smoke Detection & Protection
Cargo Smoke Indications
Text
Index
When cargo smoke is detected, the following occurs:
The continuous repetitive chime sounds and the red MASTER WARN lights illuminate
The Continuous Repetitive Chime has been silenced

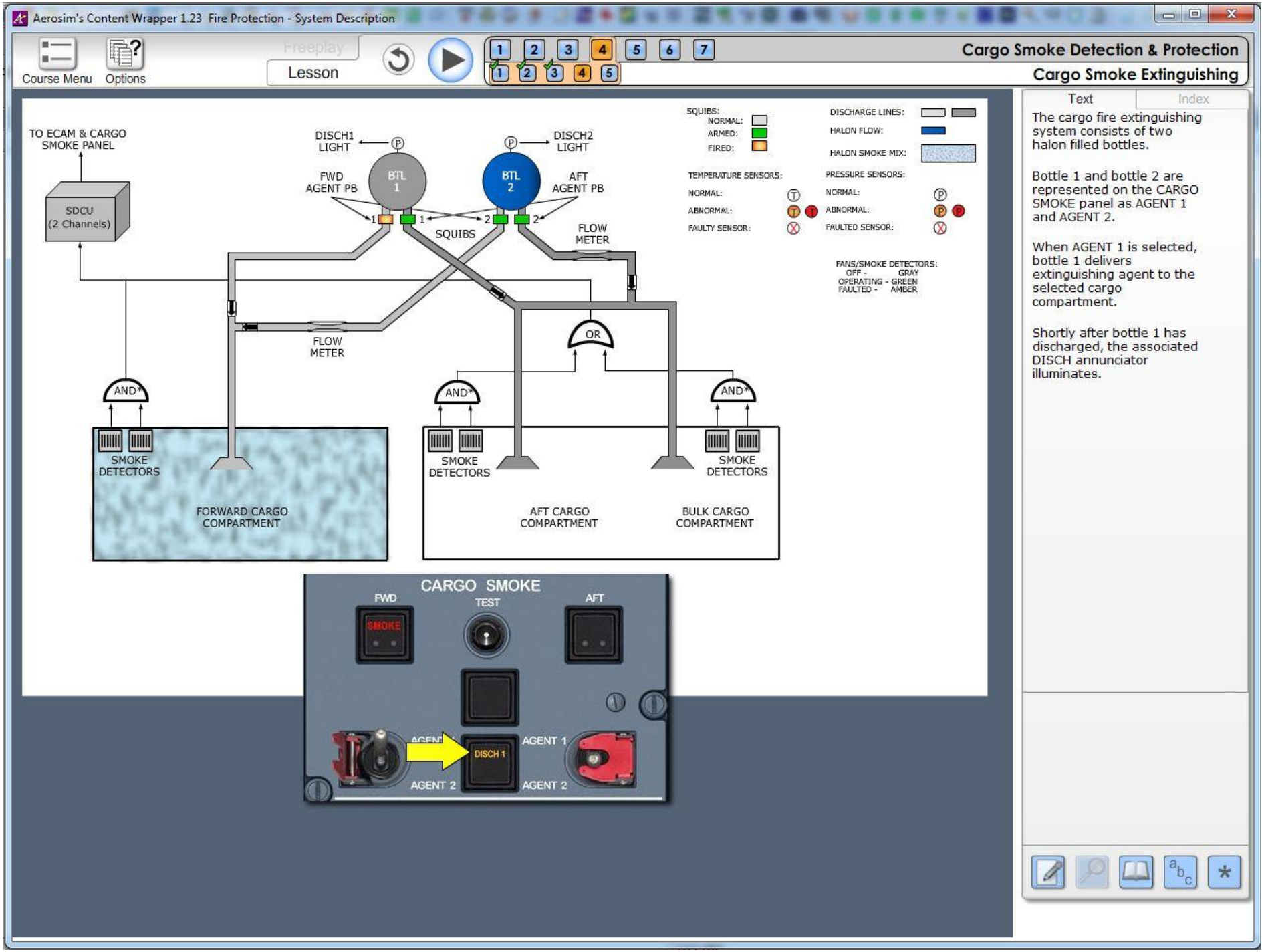

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
1 2 3 4 5 6 7
1 2 3 4 5
Cargo Smoke Detection & Protection
Cargo Smoke Indications
Text
Index
When cargo smoke is detected, the following occurs:
The continuous repetitive chime sounds and the red MASTER WARN lights illuminate
The red SMOKE light illuminates on the overhead CARGO SMOKE panel
CARGO SMOKE
FWD
TEST
AFT
SMOKE
AGENT 1
AGENT 1
AGENT 2
AGENT 2
The Continuous Repetitive Chime has been silenced

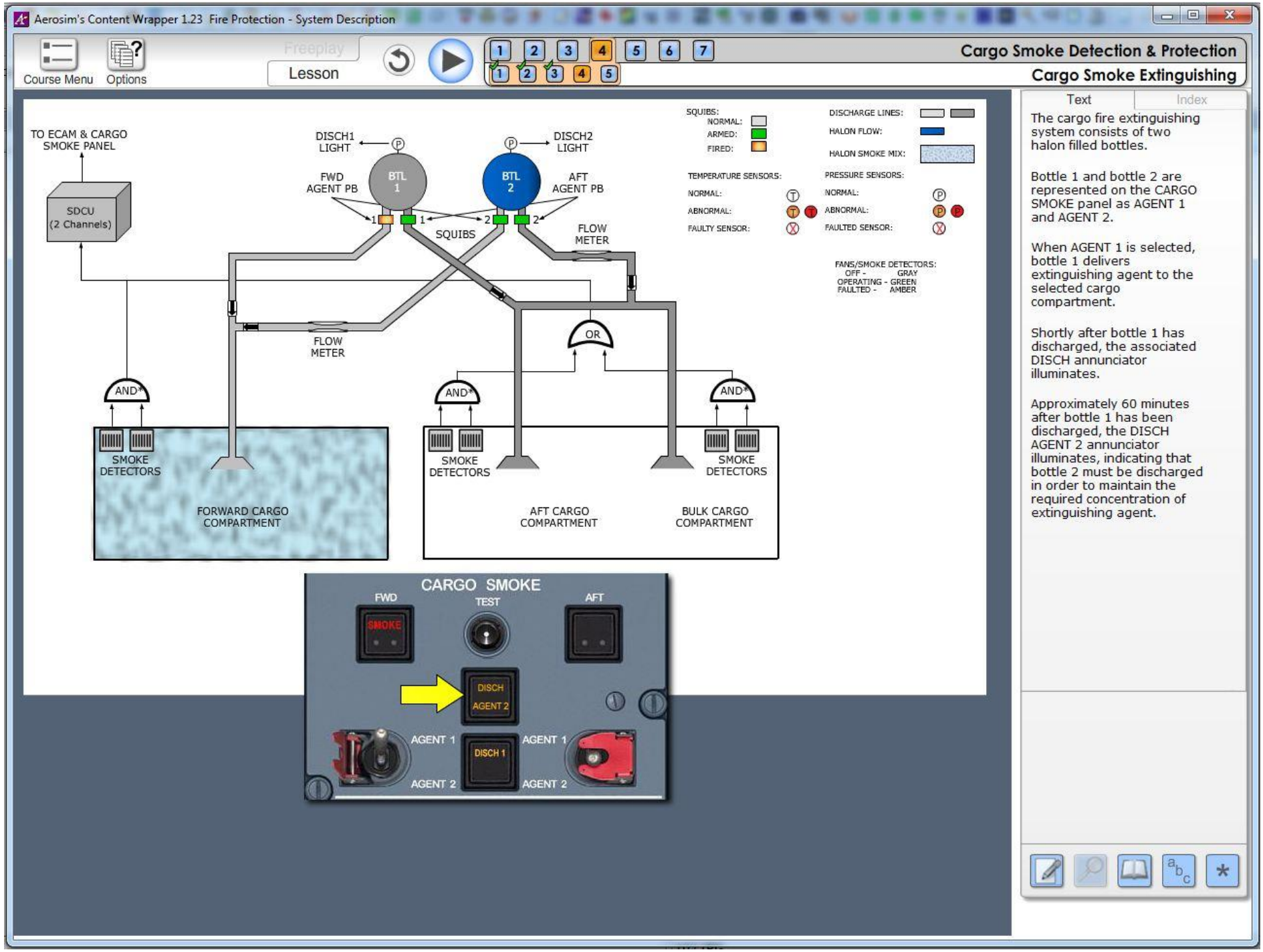

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Cargo Smoke Detection & Protection
Cargo Smoke Indications
Text
Index
When cargo smoke is detected, the following occurs:
The continuous repetitive chime sounds and the red MASTER WARN lights illuminate
The red SMOKE light illuminates on the overhead CARGO SMOKE panel
The ECAM displays a red warning message
The Continuous Repetitive Chime has been silenced
CARGO SMOKE
FWD
TEST
AFT
SMOKE
AGENT 1
AGENT 2
AGENT 1
AGENT 2
84.6
74.9
74.9
84.6
FOB: 17680 LBS
SMOKE FWD CARGO SMOKE
-AGENT.....DISCH

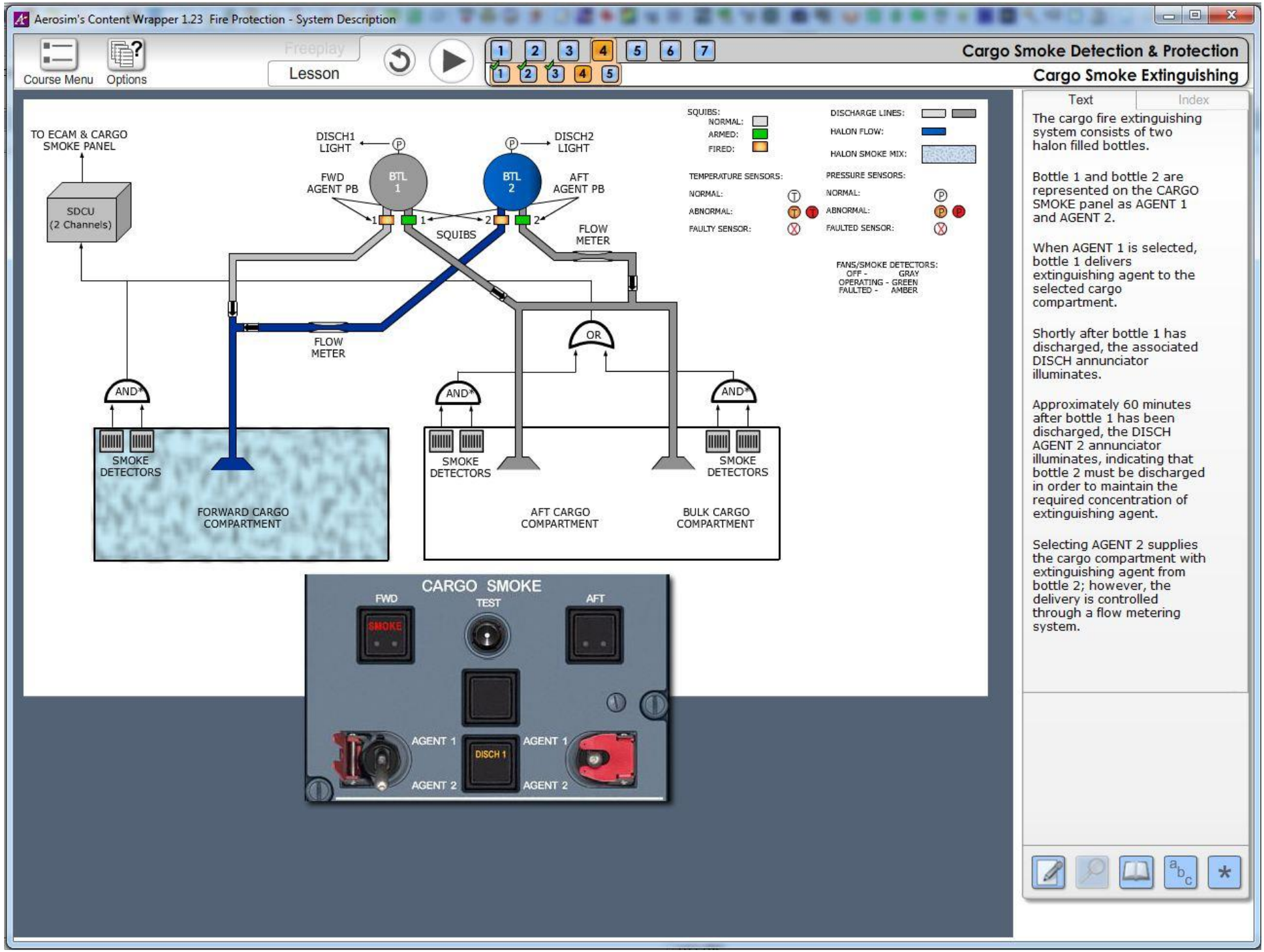

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Cargo Smoke Detection & Protection
Cargo Smoke Extinguishing
TO ECAM & CARGO SMOKE PANEL
SDCU (2 Channels)
DISCH1 LIGHT
DISCH2 LIGHT
BTL 1
BTL 2
SQUIBS
FLOW METER
FLOW METER
OR
AND*
AND*
AND*
SMOKE DETECTORS
SMOKE DETECTORS
SMOKE DETECTORS
FORWARD CARGO COMPARTMENT
AFT CARGO COMPARTMENT
BULK CARGO COMPARTMENT
SQUIBS:
NORMAL:
ARMED:
FIRED:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
FANS/SMOKE DETECTORS:
OFF - GRAY
OPERATING - GREEN
FAULTED - AMBER
Text
Index
The cargo fire extinguishing system consists of two halon filled bottles.

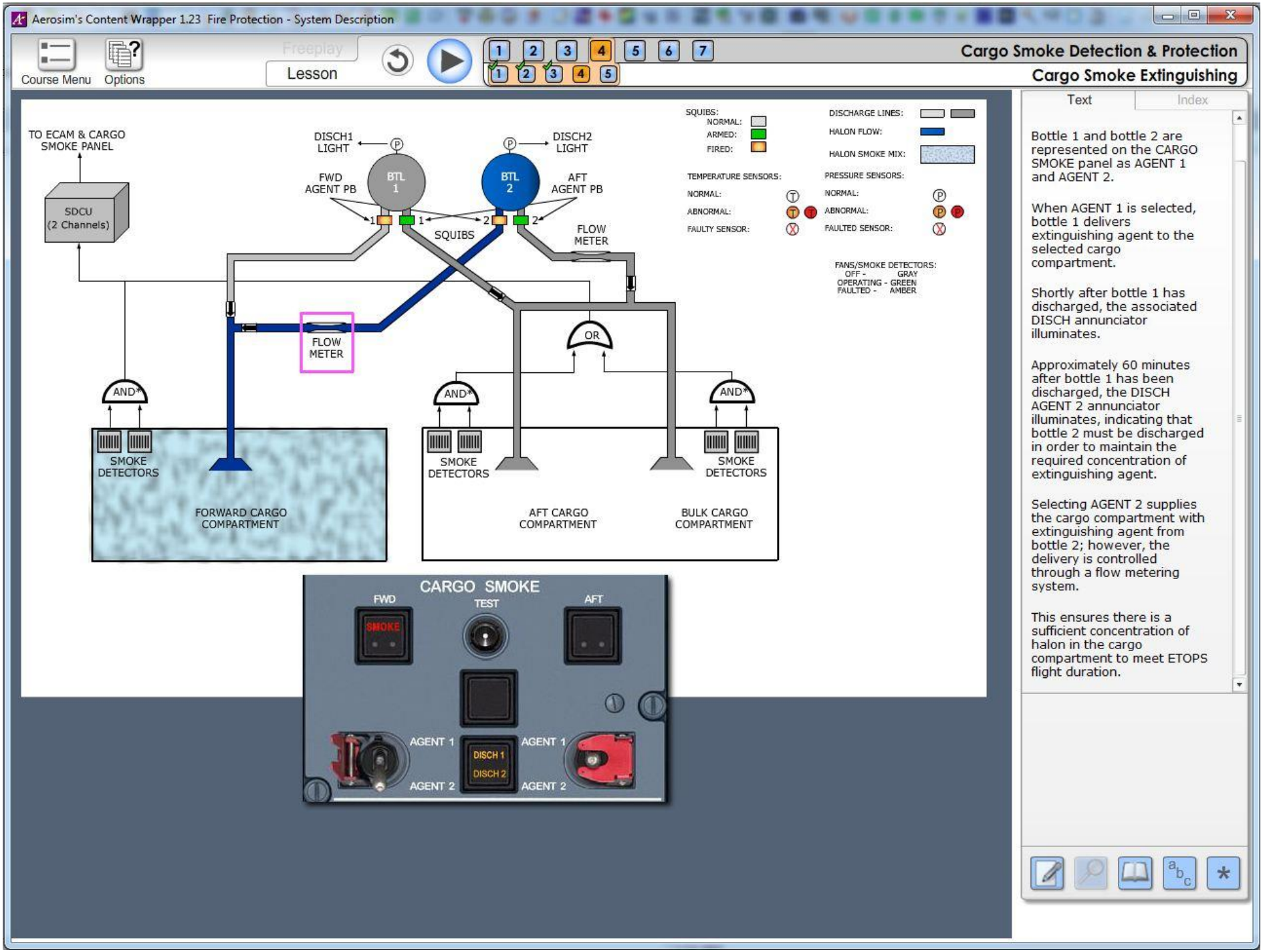

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Cargo Smoke Detection & Protection
Cargo Smoke Extinguishing
Text
Index
The cargo fire extinguishing system consists of two halon filled bottles.
Bottle 1 and bottle 2 are represented on the CARGO SMOKE panel as AGENT 1 and AGENT 2.
TO ECAM & CARGO SMOKE PANEL
SDCU (2 Channels)
DISCH1 LIGHT
DISCH2 LIGHT
FWD AGENT PB
AFT AGENT PB
BTL 1
BTL 2
SQUIBS
FLOW METER
OR
AND*
SMOKE DETECTORS
FORWARD CARGO COMPARTMENT
AFT CARGO COMPARTMENT
BULK CARGO COMPARTMENT
SQUIBS:
NORMAL:
ARMED:
FIRED:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
TEMPERATURE SENSORS:
PRESSURE SENSORS:
FANS/SMOKE DETECTORS:
OFF - GRAY
OPERATING - GREEN
FAULTED - AMBER
CARGO SMOKE
FWD
TEST
AFT
SMOKE
AGENT 1
AGENT 2

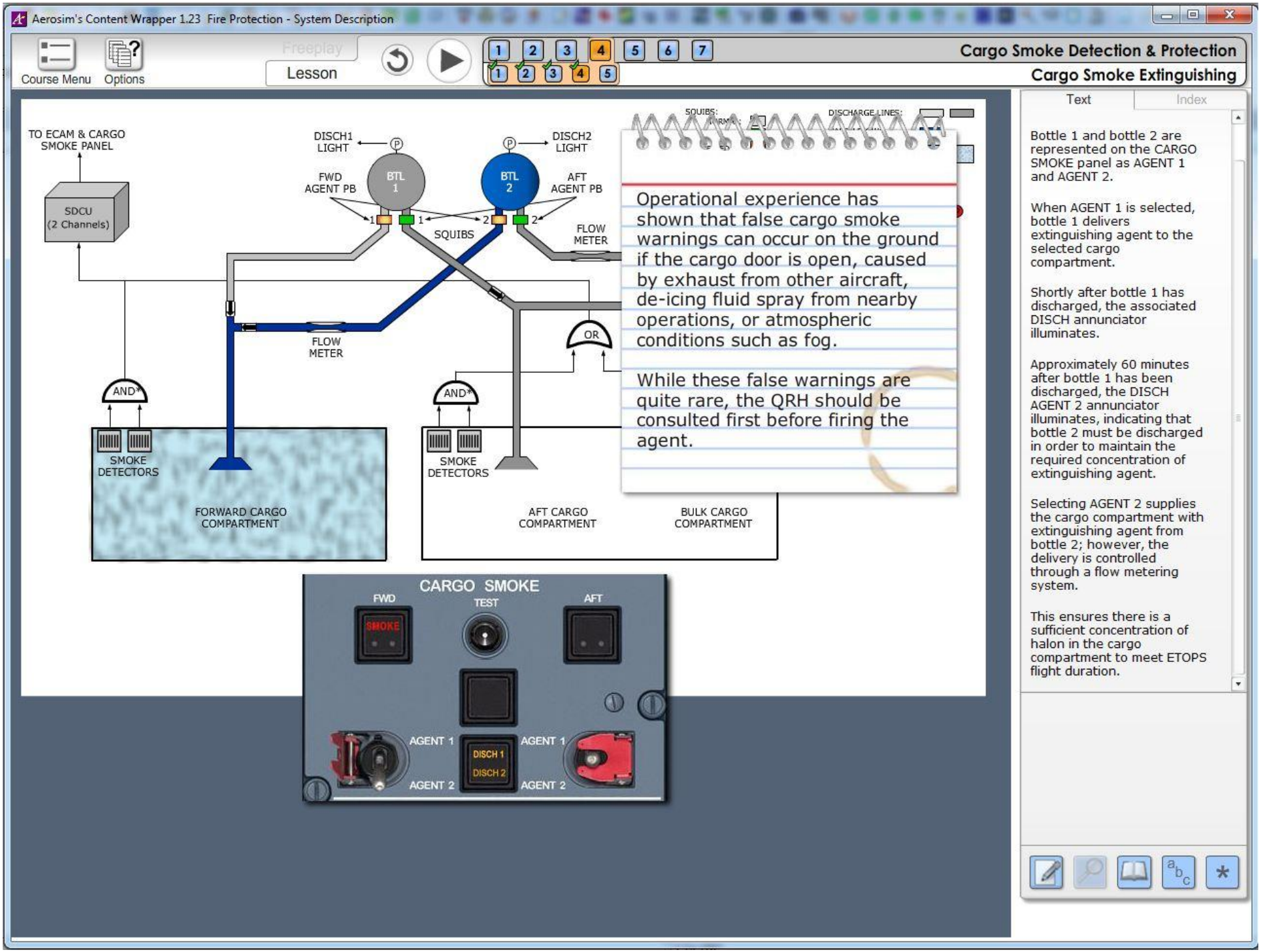

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
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Cargo Smoke Detection & Protection
Cargo Smoke Extinguishing
Text
Index
The cargo fire extinguishing system consists of two halon filled bottles.
Bottle 1 and bottle 2 are represented on the CARGO SMOKE panel as AGENT 1 and AGENT 2.
When AGENT 1 is selected, bottle 1 delivers extinguishing agent to the selected cargo compartment.
TO ECAM & CARGO SMOKE PANEL
SDCU (2 Channels)
DISCH1 LIGHT
DISCH2 LIGHT
FWD AGENT PB
AFT AGENT PB
BTL 1
BTL 2
SQUIBS
FLOW METER
OR
AND*
SMOKE DETECTORS
FORWARD CARGO COMPARTMENT
AFT CARGO COMPARTMENT
BULK CARGO COMPARTMENT
SQUIBS: NORMAL: ARMED: FIRED:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
TEMPERATURE SENSORS: NORMAL: ABNORMAL: FAULTY SENSOR:
PRESSURE SENSORS: NORMAL: ABNORMAL: FAULTED SENSOR:
FANS/SMOKE DETECTORS: OFF - GRAY OPERATING - GREEN FAULTED - AMBER
CARGO SMOKE
FWD
TEST
AFT
SMOKE
AGENT 1
AGENT 2

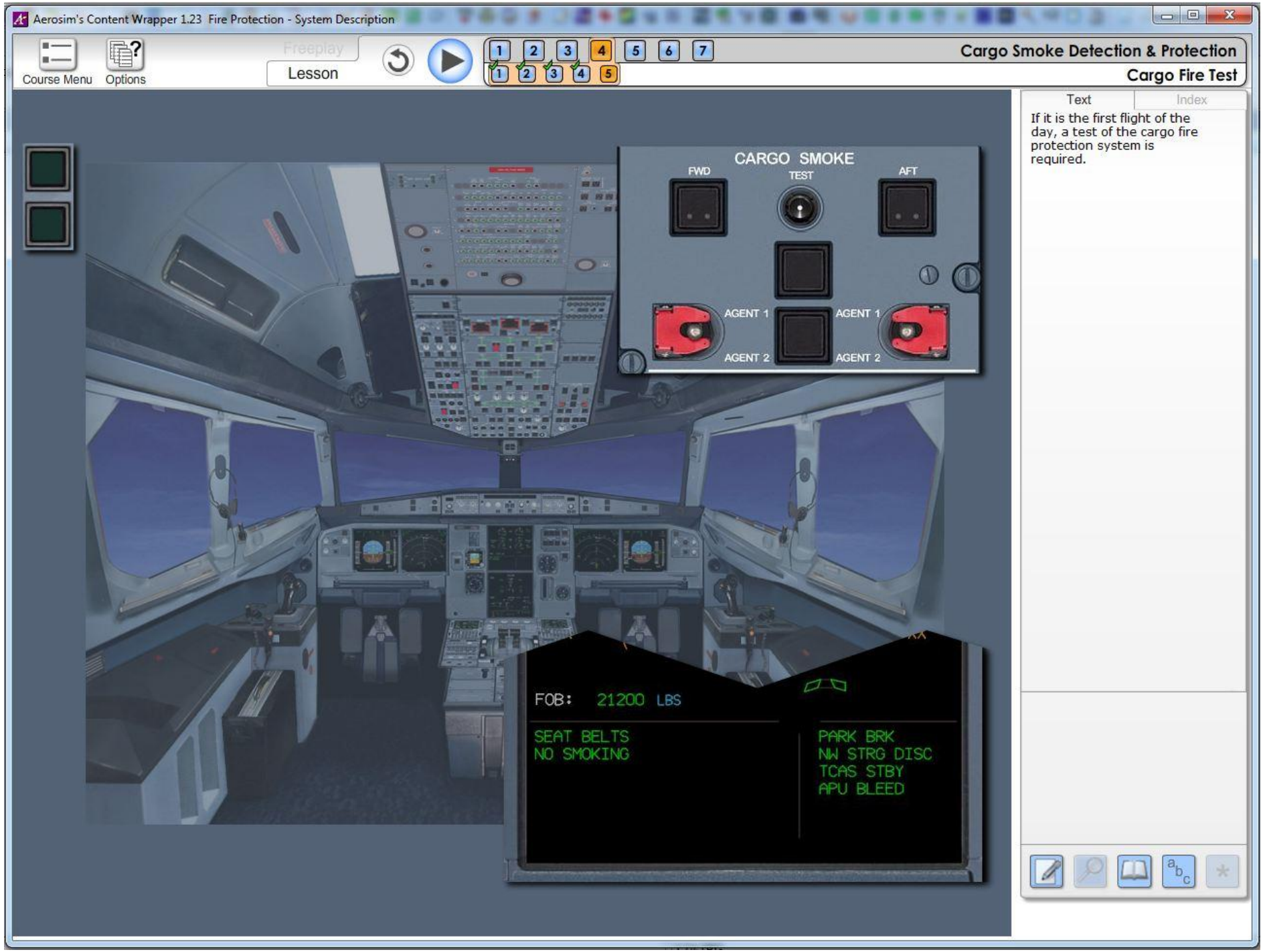

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Cargo Smoke Detection & Protection
Cargo Smoke Extinguishing
TO ECAM & CARGO SMOKE PANEL
SDCU (2 Channels)
DISCH1 LIGHT
DISCH2 LIGHT
FWD AGENT PB
AFT AGENT PB
BTL 1
BTL 2
SQUIBS
FLOW METER
FLOW METER
OR
AND*
AND*
AND*
SMOKE DETECTORS
SMOKE DETECTORS
SMOKE DETECTORS
FORWARD CARGO COMPARTMENT
AFT CARGO COMPARTMENT
BULK CARGO COMPARTMENT
SQUIBS:
NORMAL:
ARMED:
FIRED:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
FANS/SMOKE DETECTORS:
OFF - GRAY
OPERATING - GREEN
FAULTED - AMBER
CARGO SMOKE
FWD
TEST
AFT
SMOKE
DISCH 1
AGENT 1
AGENT 2
AGENT 2
AGENT 2
Text
Index
The cargo fire extinguishing system consists of two halon filled bottles.
Bottle 1 and bottle 2 are represented on the CARGO SMOKE panel as AGENT 1 and AGENT 2.
When AGENT 1 is selected, bottle 1 delivers extinguishing agent to the selected cargo compartment.
Shortly after bottle 1 has discharged, the associated DISCH annunciator illuminates.

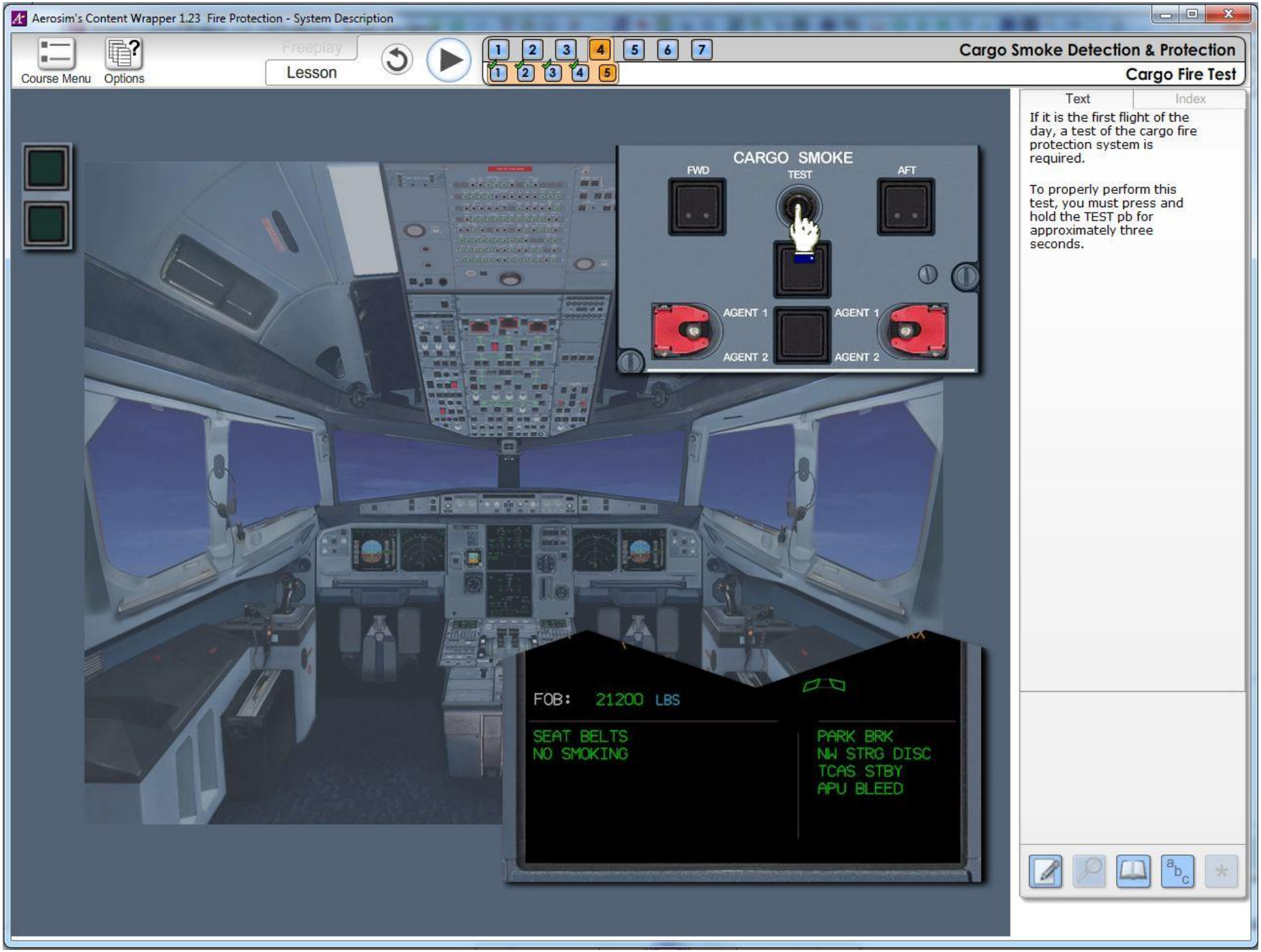

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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Cargo Smoke Extinguishing
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DISCH2 LIGHT
FWD AGENT PB
AFT AGENT PB
BTL 1
BTL 2
SQUIBS
FLOW METER
FLOW METER
OR
AND*
AND*
AND*
SMOKE DETECTORS
SMOKE DETECTORS
SMOKE DETECTORS
FORWARD CARGO COMPARTMENT
AFT CARGO COMPARTMENT
BULK CARGO COMPARTMENT
SQUIBS:
NORMAL:
ARMED:
FIRED:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
FANS/SMOKE DETECTORS:
OFF - GRAY
OPERATING - GREEN
FAULTED - AMBER
CARGO SMOKE
FWD
TEST
AFT
SMOKE
DISCH AGENT 2
AGENT 1
DISCH 1
AGENT 1
AGENT 2
AGENT 2
Text
Index
The cargo fire extinguishing system consists of two halon filled bottles.
Bottle 1 and bottle 2 are represented on the CARGO SMOKE panel as AGENT 1 and AGENT 2.
When AGENT 1 is selected, bottle 1 delivers extinguishing agent to the selected cargo compartment.
Shortly after bottle 1 has discharged, the associated DISCH annunciator illuminates.
Approximately 60 minutes after bottle 1 has been discharged, the DISCH AGENT 2 annunciator illuminates, indicating that bottle 2 must be discharged in order to maintain the required concentration of extinguishing agent.


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AFT AGENT PB
BTL 1
BTL 2
SQUIBS
FLOW METER
OR
AND*
SMOKE DETECTORS
FORWARD CARGO COMPARTMENT
AFT CARGO COMPARTMENT
BULK CARGO COMPARTMENT
SQUIBS:
NORMAL:
ARMED:
FIRED:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
TEMPERATURE SENSORS:
PRESSURE SENSORS:
FANS/SMOKE DETECTORS:
OFF - GRAY
OPERATING - GREEN
FAULTED - AMBER
CARGO SMOKE
FWD
TEST
AFT
SMOKE
AGENT 1
AGENT 2
DISCH 1
Text
Index
The cargo fire extinguishing system consists of two halon filled bottles.
Bottle 1 and bottle 2 are represented on the CARGO SMOKE panel as AGENT 1 and AGENT 2.
When AGENT 1 is selected, bottle 1 delivers extinguishing agent to the selected cargo compartment.
Shortly after bottle 1 has discharged, the associated DISCH annunciator illuminates.
Approximately 60 minutes after bottle 1 has been discharged, the DISCH AGENT 2 annunciator illuminates, indicating that bottle 2 must be discharged in order to maintain the required concentration of extinguishing agent.
Selecting AGENT 2 supplies the cargo compartment with extinguishing agent from bottle 2; however, the delivery is controlled through a flow metering system.


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DISCH2 LIGHT
FWD AGENT PB
AFT AGENT PB
BTL 1
BTL 2
SQUIBS
FLOW METER
OR
AND*
SMOKE DETECTORS
FORWARD CARGO COMPARTMENT
AFT CARGO COMPARTMENT
BULK CARGO COMPARTMENT
SQUIBS:
NORMAL:
ARMED:
FIRED:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
TEMPERATURE SENSORS:
PRESSURE SENSORS:
FANS/SMOKE DETECTORS:
OFF - GRAY
OPERATING - GREEN
FAULTED - AMBER
CARGO SMOKE
FWD
TEST
AFT
SMOKE
AGENT 1
AGENT 2
DISCH 1
DISCH 2
Text
Index
Bottle 1 and bottle 2 are represented on the CARGO SMOKE panel as AGENT 1 and AGENT 2.
When AGENT 1 is selected, bottle 1 delivers extinguishing agent to the selected cargo compartment.
Shortly after bottle 1 has discharged, the associated DISCH annunciator illuminates.
Approximately 60 minutes after bottle 1 has been discharged, the DISCH AGENT 2 annunciator illuminates, indicating that bottle 2 must be discharged in order to maintain the required concentration of extinguishing agent.
Selecting AGENT 2 supplies the cargo compartment with extinguishing agent from bottle 2; however, the delivery is controlled through a flow metering system.
This ensures there is a sufficient concentration of halon in the cargo compartment to meet ETOPS flight duration.


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Bottle 1 and bottle 2 are represented on the CARGO SMOKE panel as AGENT 1 and AGENT 2.
When AGENT 1 is selected, bottle 1 delivers extinguishing agent to the selected cargo compartment.
Shortly after bottle 1 has discharged, the associated DISCH annunciator illuminates.
Approximately 60 minutes after bottle 1 has been discharged, the DISCH AGENT 2 annunciator illuminates, indicating that bottle 2 must be discharged in order to maintain the required concentration of extinguishing agent.
Selecting AGENT 2 supplies the cargo compartment with extinguishing agent from bottle 2; however, the delivery is controlled through a flow metering system.
This ensures there is a sufficient concentration of halon in the cargo compartment to meet ETOPS flight duration.
TO ECAM & CARGO SMOKE PANEL
SDCU (2 Channels)
DISCH1 LIGHT
DISCH2 LIGHT
FWD AGENT PB
AFT AGENT PB
BTL 1
BTL 2
SQUIBS
FLOW METER
OR
AND*
SMOKE DETECTORS
FORWARD CARGO COMPARTMENT
AFT CARGO COMPARTMENT
BULK CARGO COMPARTMENT
Operational experience has shown that false cargo smoke warnings can occur on the ground if the cargo door is open, caused by exhaust from other aircraft, de-icing fluid spray from nearby operations, or atmospheric conditions such as fog.
While these false warnings are quite rare, the QRH should be consulted first before firing the agent.
CARGO SMOKE
FWD
TEST
AFT
SMOKE
AGENT 1
AGENT 2
DISCH 1
DISCH 2


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Cargo Fire Test
Text
Index
If it is the first flight of the day, a test of the cargo fire protection system is required.
CARGO SMOKE
FWD
TEST
AFT
AGENT 1
AGENT 2
AGENT 1
AGENT 2
FOB: 21200 LBS
SEAT BELTS
NO SMOKING
PARK BRK
NW STRG DISC
TCAS STBY
APU BLEED


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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Index
If it is the first flight of the day, a test of the cargo fire protection system is required.
To properly perform this test, you must press and hold the TEST pb for approximately three seconds.
CARGO SMOKE
FWD
TEST
AFT
AGENT 1
AGENT 2
AGENT 1
AGENT 2
FOB: 21200 LBS
SEAT BELTS
NO SMOKING
PARK BRK
NW STRG DISC
TCAS STBY
APU BLEED


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
1 2 3 4 5 6 7
Cargo Smoke Detection & Protection
Cargo Fire Test
Text
Index
If it is the first flight of the day, a test of the cargo fire protection system is required.
To properly perform this test, you must press and hold the TEST pb for approximately three seconds.
The following indications appear:
Both DISCH lights illuminate
CARGO SMOKE
FWD
TEST
AFT
SMOKE
SMOKE
AGENT 1
DISCH 1
DISCH 2
AGENT 2
FOB: 21200 LBS
SMOKE FWD CARGO SMOKE
.IF FWD CRG CLOSED:
-AGENT.....DISCH
AFT CARGO SMOKE
.IF AFT CRG CLOSED:
-AGENT.....DISCH
PARK BRK
NW STRG DISC
TCAS STBY
APU BLEED


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Text
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If it is the first flight of the day, a test of the cargo fire protection system is required.
To properly perform this test, you must press and hold the TEST pb for approximately three seconds.
The following indications appear:
Both DISCH lights illuminate
The MASTER WARN lights illuminate accompanied by the continuous repetitive chime
CARGO SMOKE
FWD
TEST
AFT
SMOKE
SMOKE
AGENT 1
AGENT 2
DISCH 1
DISCH 2
AGENT 1
AGENT 2
FOB: 21200 LBS
SMOKE FWD CARGO SMOKE
.IF FWD CRG CLOSED:
-AGENT.....DISCH
AFT CARGO SMOKE
.IF AFT CRG CLOSED:
-AGENT.....DISCH
PARK BRK
NW STRG DISC
TCAS STBY
APU BLEED

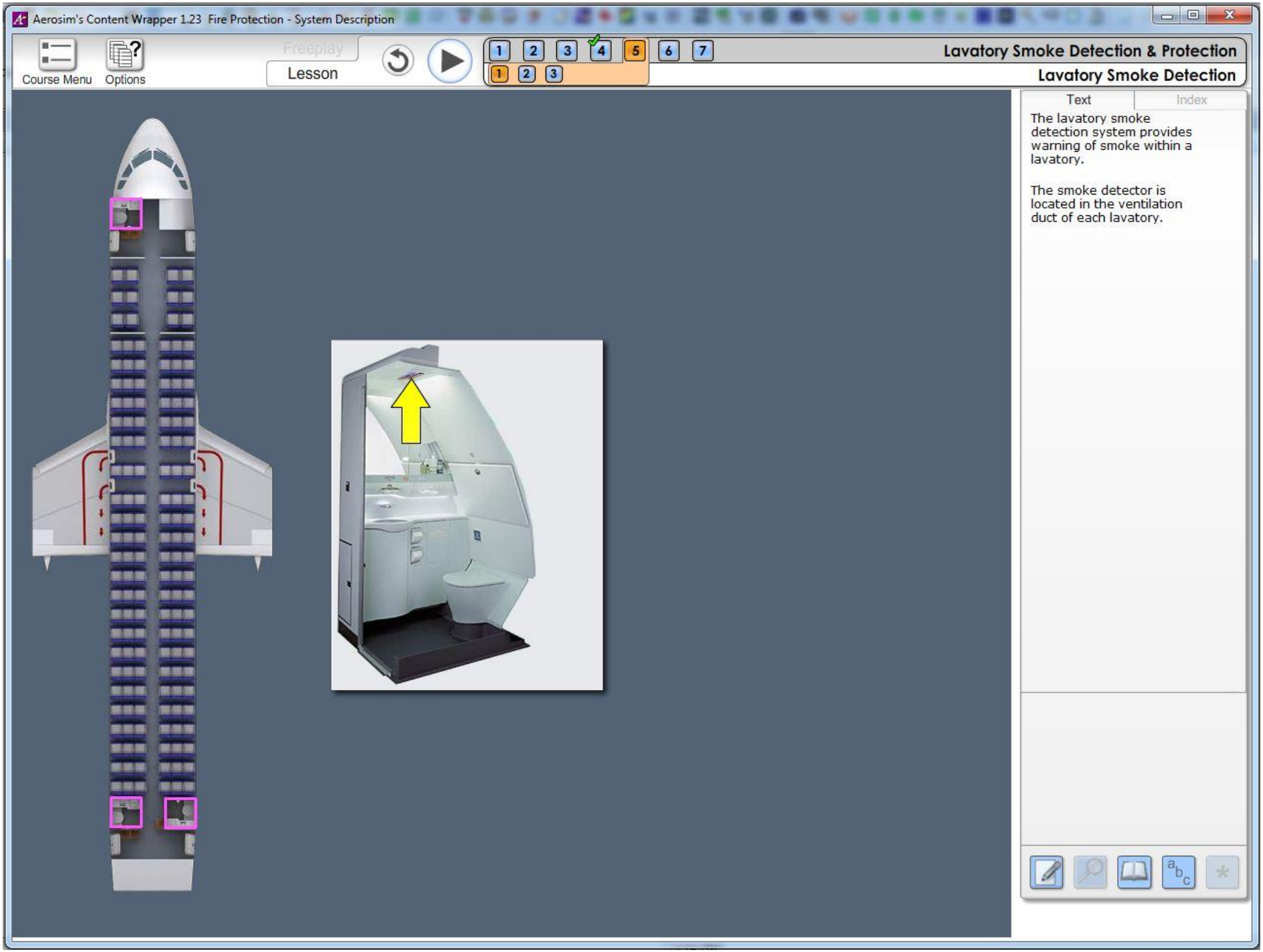

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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If it is the first flight of the day, a test of the cargo fire protection system is required.
To properly perform this test, you must press and hold the TEST pb for approximately three seconds.
The following indications appear:
Both DISCH lights illuminate
The MASTER WARN lights illuminate accompanied by the continuous repetitive chime
The FWD and AFT SMOKE lights illuminate
The Continuous Repetitive Chime has been silenced
CARGO SMOKE
FWD
TEST
AFT
SMOKE
SMOKE
AGENT 1
AGENT 2
DISCH 1
DISCH 2
AGENT 1
AGENT 2
FOB: 21200 LBS
SMOKE FWD CARGO SMOKE
.IF FWD CRG CLOSED:
-AGENT.....DISCH
AFT CARGO SMOKE
.IF AFT CRG CLOSED:
-AGENT.....DISCH
PARK BRK
NW STRG DISC
TCAS STBY
APU BLEED

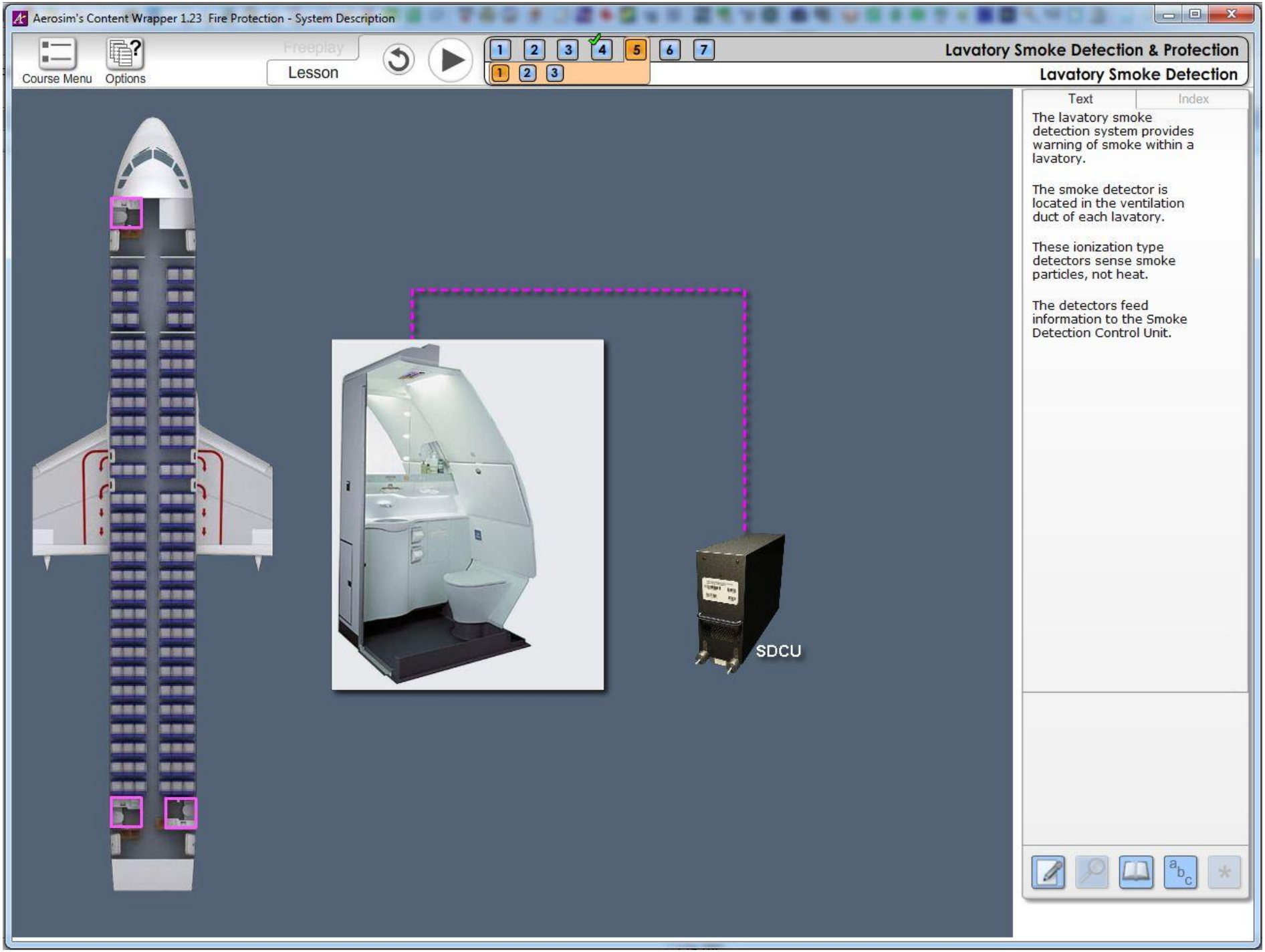

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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If it is the first flight of the day, a test of the cargo fire protection system is required.
To properly perform this test, you must press and hold the TEST pb for approximately three seconds.
The following indications appear:
Both DISCH lights illuminate
The MASTER WARN lights illuminate accompanied by the continuous repetitive chime
The FWD and AFT SMOKE lights illuminate
The FWD and AFT CARGO SMOKE warning messages appear on the upper ECAM
CARGO SMOKE
FWD
TEST
AFT
SMOKE
SMOKE
AGENT 1
AGENT 2
DISCH 1
DISCH 2
AGENT 1
AGENT 2
FOB: 21200 LBS
SMOKE FWD CARGO SMOKE
.IF FWD CRG CLOSED:
-AGENT.....DISCH
AFT CARGO SMOKE
.IF AFT CRG CLOSED:
-AGENT.....DISCH
PARK BRK
NW STRG DISC
TCAS STBY
APU BLEED

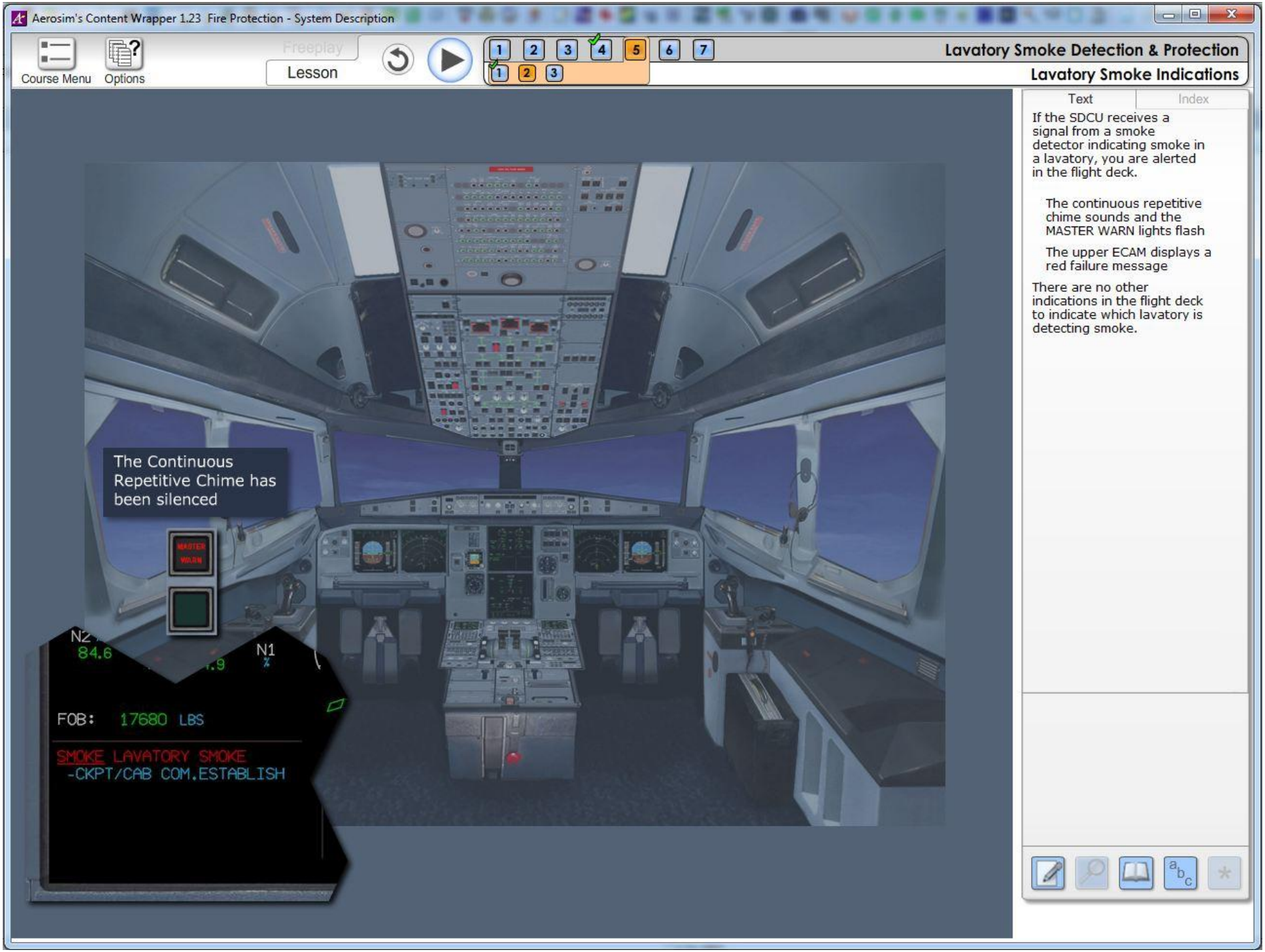

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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If it is the first flight of the day, a test of the cargo fire protection system is required.
To properly perform this test, you must press and hold the TEST pb for approximately three seconds.
The following indications appear:
Both DISCH lights illuminate
The MASTER WARN lights illuminate accompanied by the continuous repetitive chime
The FWD and AFT SMOKE lights illuminate
The FWD and AFT CARGO SMOKE warning messages appear on the upper ECAM
Both Smoke Detection Control Unit channels are tested separately; therefore, a short pause will occur after the first test completes before the second channel tests.
CARGO SMOKE
FWD
TEST
AFT
AGENT 1
AGENT 1
AGENT 2
AGENT 2
FOB: 21200 LBS
SEAT BELTS
NO SMOKING
PARK BRK
NW STRG DISC
TCAS STBY
APU BLEED

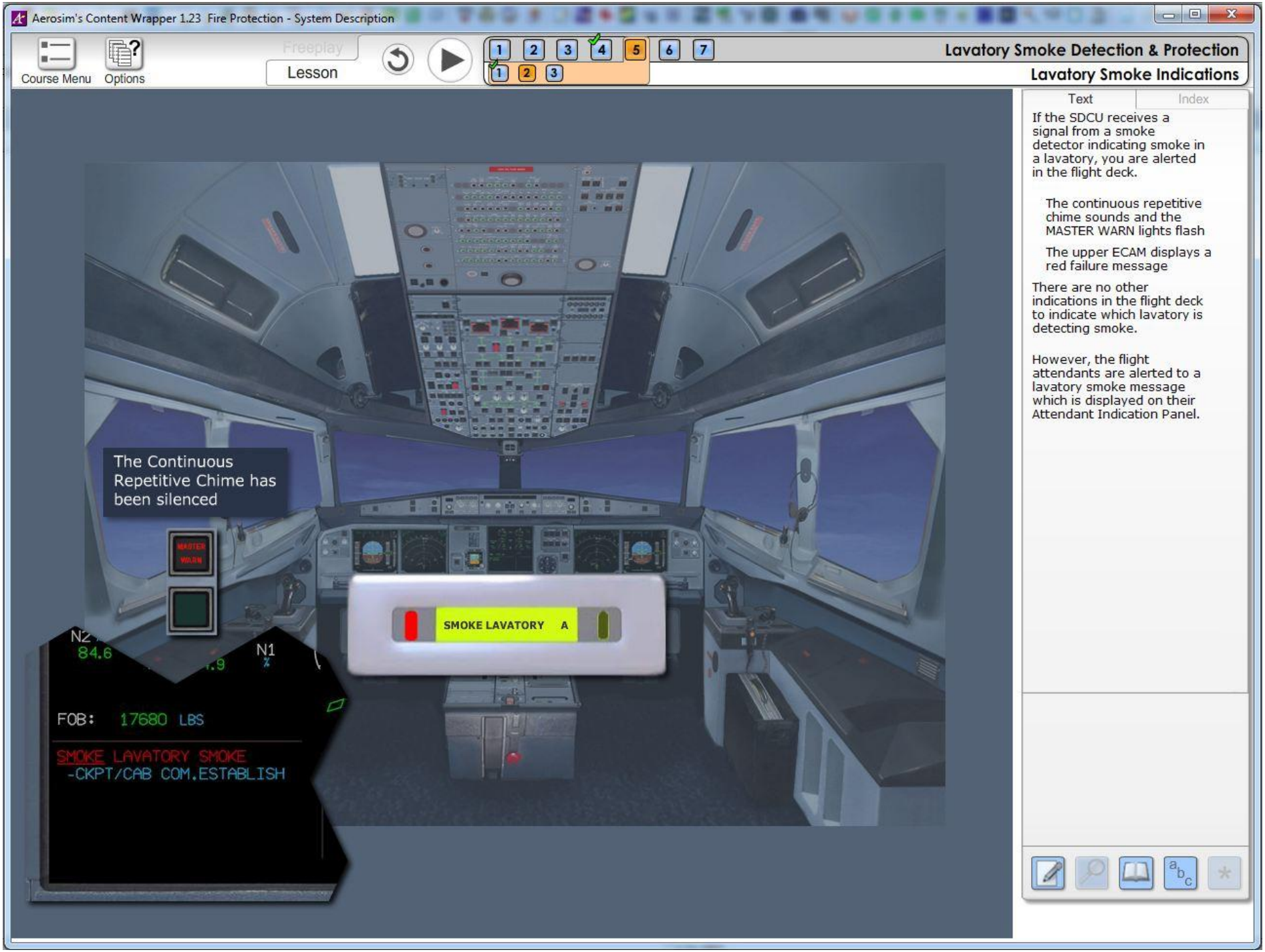

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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If it is the first flight of the day, a test of the cargo fire protection system is required.
To properly perform this test, you must press and hold the TEST pb for approximately three seconds.
The following indications appear:
Both DISCH lights illuminate
The MASTER WARN lights illuminate accompanied by the continuous repetitive chime
The FWD and AFT SMOKE lights illuminate
The FWD and AFT CARGO SMOKE warning messages appear on the upper ECAM
Both Smoke Detection Control Unit channels are tested separately; therefore, a short pause will occur after the first test completes before the second channel tests.
The Continuous Repetitive Chime has been silenced
CARGO SMOKE
FWD
TEST
AFT
SMOKE
SMOKE
AGENT 1
AGENT 2
DISCH 1
DISCH 2
AGENT 1
AGENT 2
FOB: 21200 LBS
SMOKE FWD CARGO SMOKE
.IF FWD CRG CLOSED:
-AGENT.....DISCH
AFT CARGO SMOKE
.IF AFT CRG CLOSED:
-AGENT.....DISCH
PARK BRK
NW STRG DISC
TCAS STBY
APU BLEED


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If it is the first flight of the day, a test of the cargo fire protection system is required.
To properly perform this test, you must press and hold the TEST pb for approximately three seconds.
The following indications appear:
Both DISCH lights illuminate
The MASTER WARN lights illuminate accompanied by the continuous repetitive chime
The FWD and AFT SMOKE lights illuminate
The FWD and AFT CARGO SMOKE warning messages appear on the upper ECAM
Both Smoke Detection Control Unit channels are tested separately; therefore, a short pause will occur after the first test completes before the second channel tests.
This indicates a valid test of the cargo smoke detection system.
CARGO SMOKE
FWD
TEST
AFT
AGENT 1
AGENT 1
AGENT 2
AGENT 2
FOB: 21200 LBS
SEAT BELTS
NO SMOKING
PARK BRK
NW STRG DISC
TCAS STBY
APU BLEED

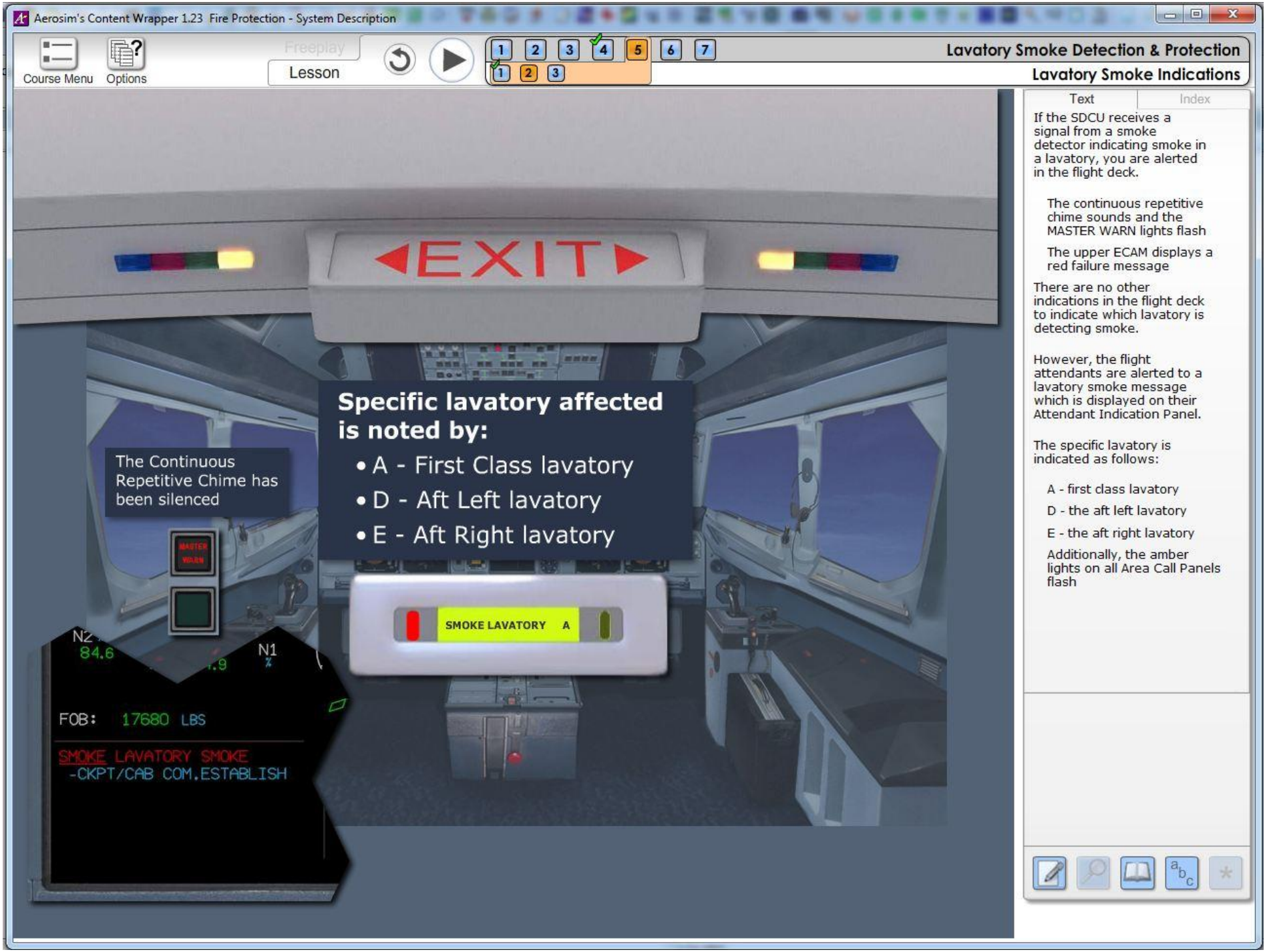

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
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1 2 3 4 5 6 7
1 2 3
Lavatory Smoke Detection & Protection
Lavatory Smoke Detection
Text
Index
The lavatory smoke detection system provides warning of smoke within a lavatory.
The smoke detector is located in the ventilation duct of each lavatory.

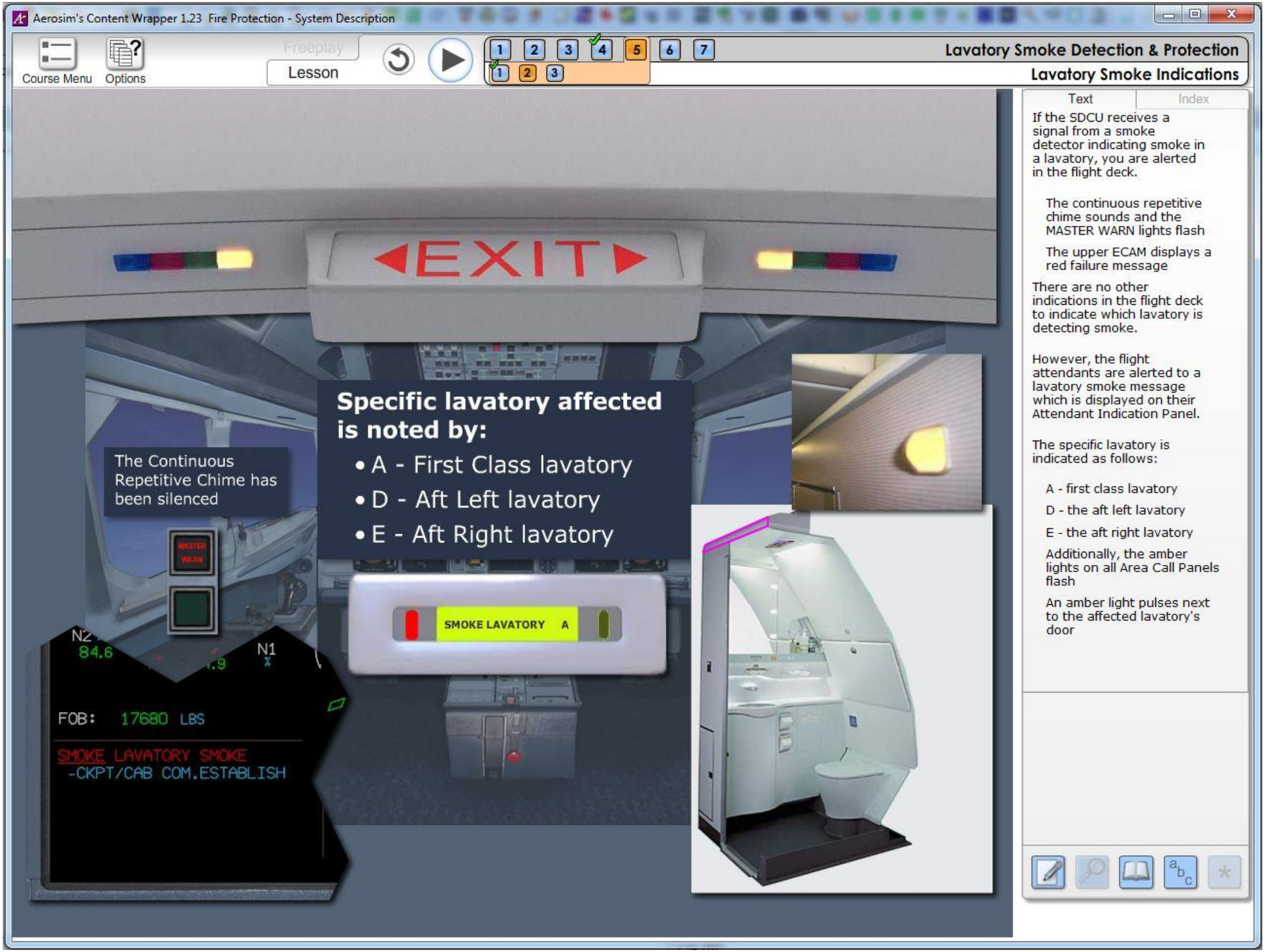

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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1 2 3
Lavatory Smoke Detection & Protection
Lavatory Smoke Detection
Text
Index
The lavatory smoke detection system provides warning of smoke within a lavatory.
The smoke detector is located in the ventilation duct of each lavatory.
These ionization type detectors sense smoke particles, not heat.
The detectors feed information to the Smoke Detection Control Unit.
SDCU

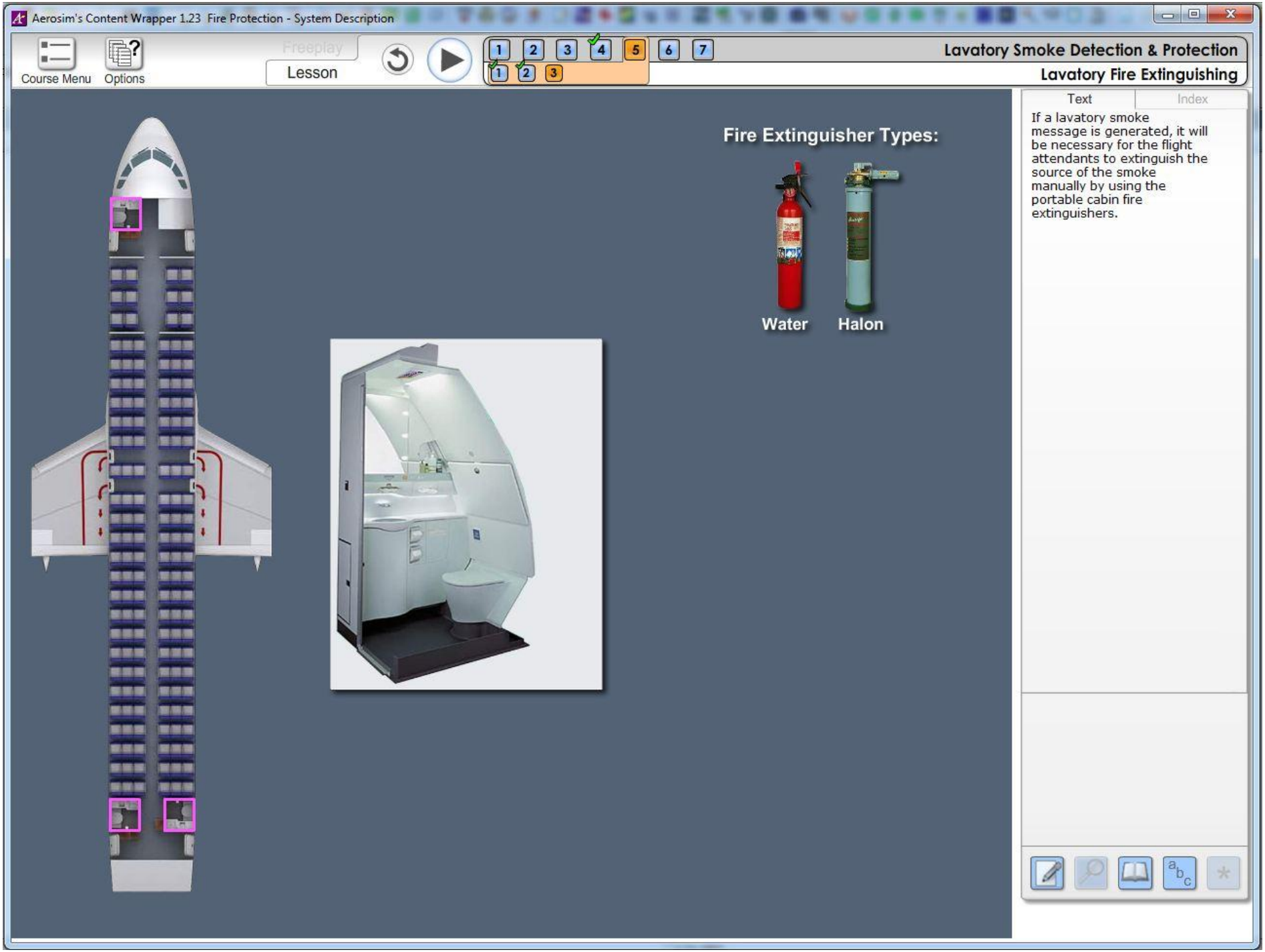

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
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1 2 3 4 5 6 7
1 2 3
Lavatory Smoke Detection & Protection
Lavatory Smoke Indications
Text
Index
If the SDCU receives a signal from a smoke detector indicating smoke in a lavatory, you are alerted in the flight deck.
The continuous repetitive chime sounds and the MASTER WARN lights flash
The upper ECAM displays a red failure message
There are no other indications in the flight deck to indicate which lavatory is detecting smoke.
The Continuous Repetitive Chime has been silenced
MASTER WARN
N2
84.6
N1
%
FOB: 17680 LBS
SMOKE LAVATORY SMOKE
-CKPT/CAB COM.ESTABLISH

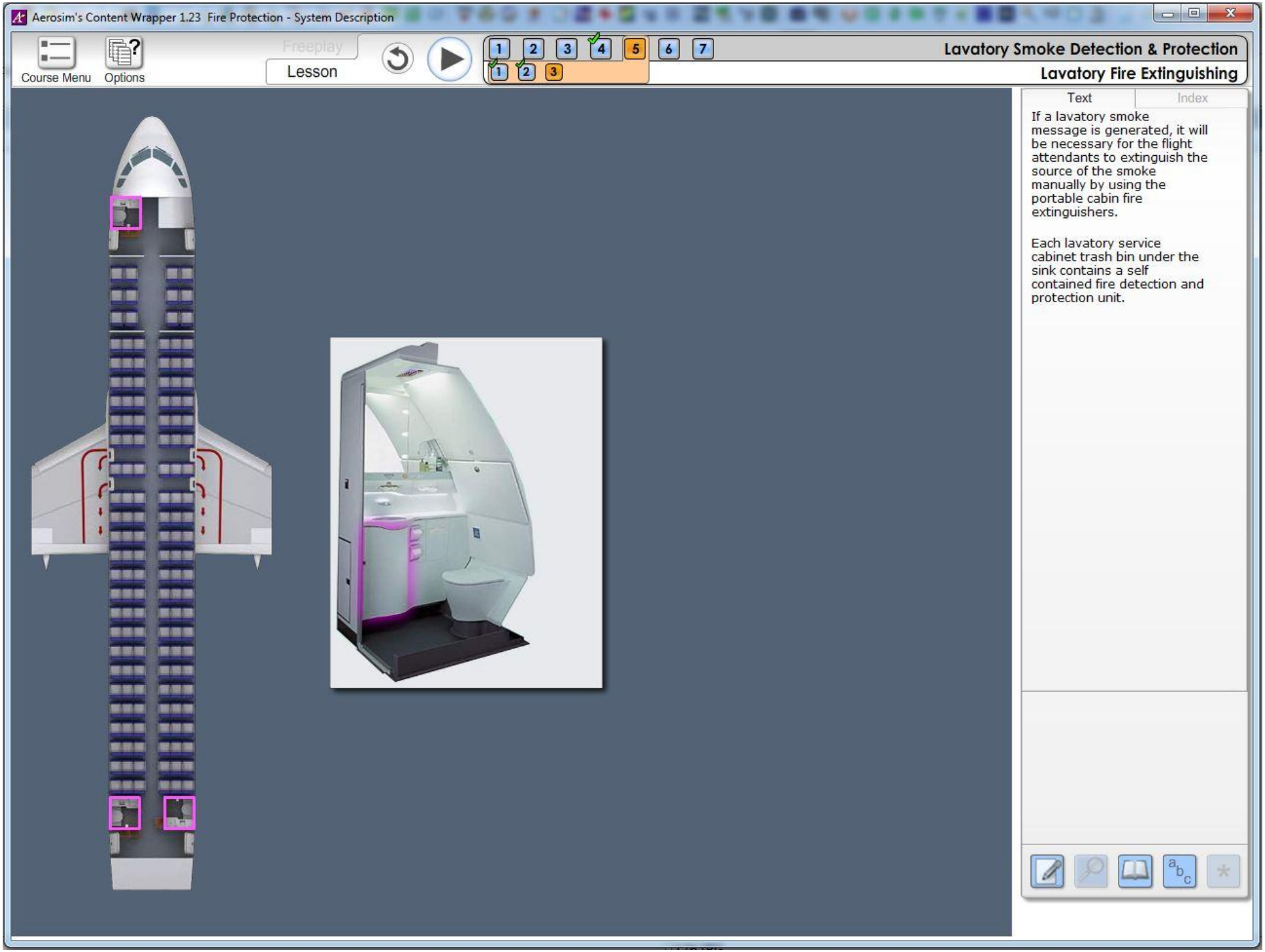

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
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Lesson
1 2 3 4 5 6 7
1 2 3
Lavatory Smoke Detection & Protection
Lavatory Smoke Indications
Text
Index
If the SDCU receives a signal from a smoke detector indicating smoke in a lavatory, you are alerted in the flight deck.
The continuous repetitive chime sounds and the MASTER WARN lights flash
The upper ECAM displays a red failure message
There are no other indications in the flight deck to indicate which lavatory is detecting smoke.
However, the flight attendants are alerted to a lavatory smoke message which is displayed on their Attendant Indication Panel.
The Continuous Repetitive Chime has been silenced
MASTER WARN
SMOKE LAVATORY A
N2
84.6
N1
%
FOB: 17680 LBS
SMOKE LAVATORY SMOKE
-CKPT/CAB COM.ESTABLISH

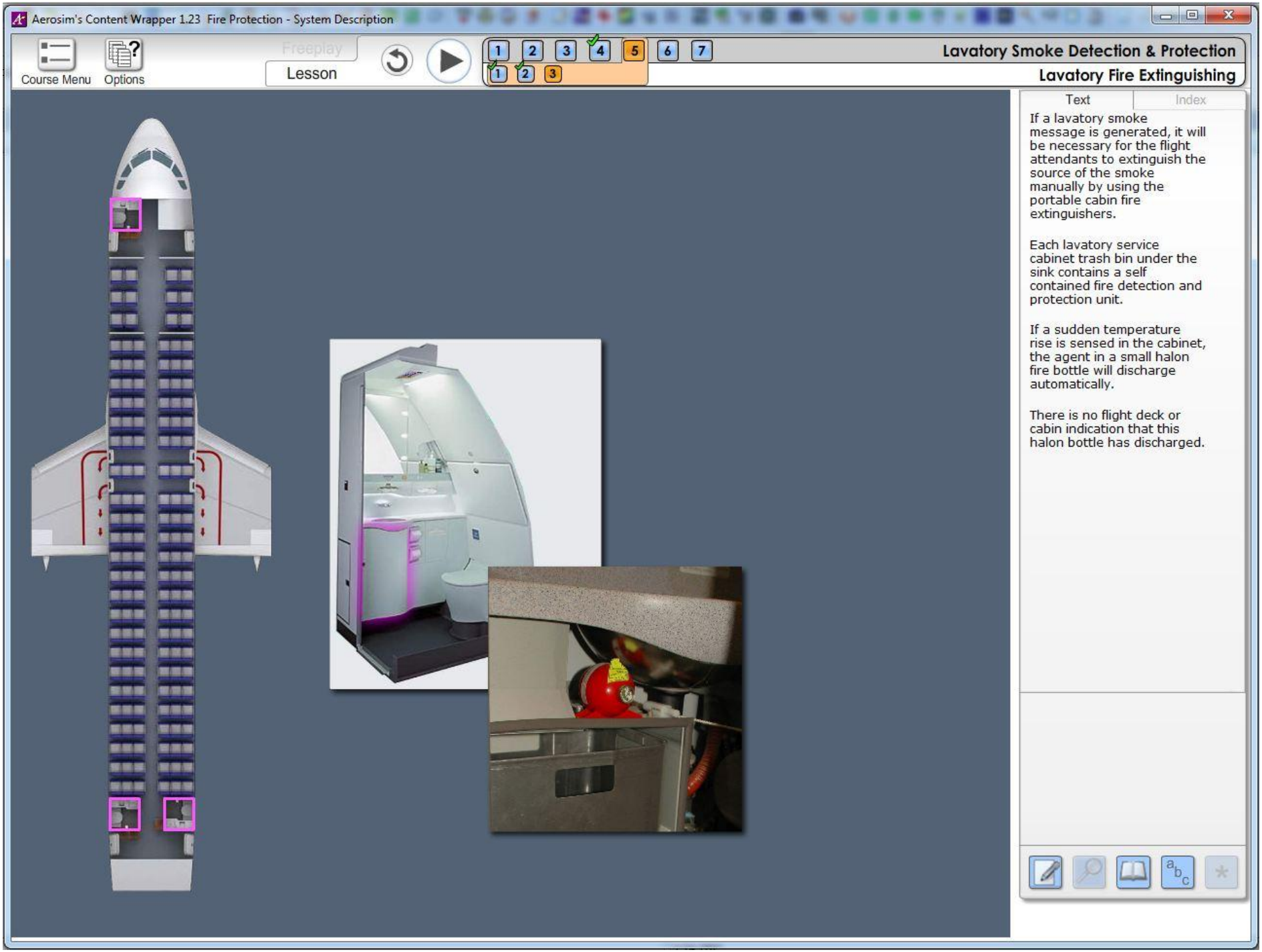

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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Lavatory Smoke Indications
Text
Index
If the SDCU receives a signal from a smoke detector indicating smoke in a lavatory, you are alerted in the flight deck.
The continuous repetitive chime sounds and the MASTER WARN lights flash
The upper ECAM displays a red failure message
There are no other indications in the flight deck to indicate which lavatory is detecting smoke.
However, the flight attendants are alerted to a lavatory smoke message which is displayed on their Attendant Indication Panel.
The specific lavatory is indicated as follows:
A - first class lavatory
D - the aft left lavatory
E - the aft right lavatory
The Continuous Repetitive Chime has been silenced
Specific lavatory affected is noted by:
• A - First Class lavatory
• D - Aft Left lavatory
• E - Aft Right lavatory
SMOKE LAVATORY A
N2
84.6
N1
FOB: 17680 LBS
SMOKE LAVATORY SMOKE
-CKPT/CAB COM.ESTABLISH

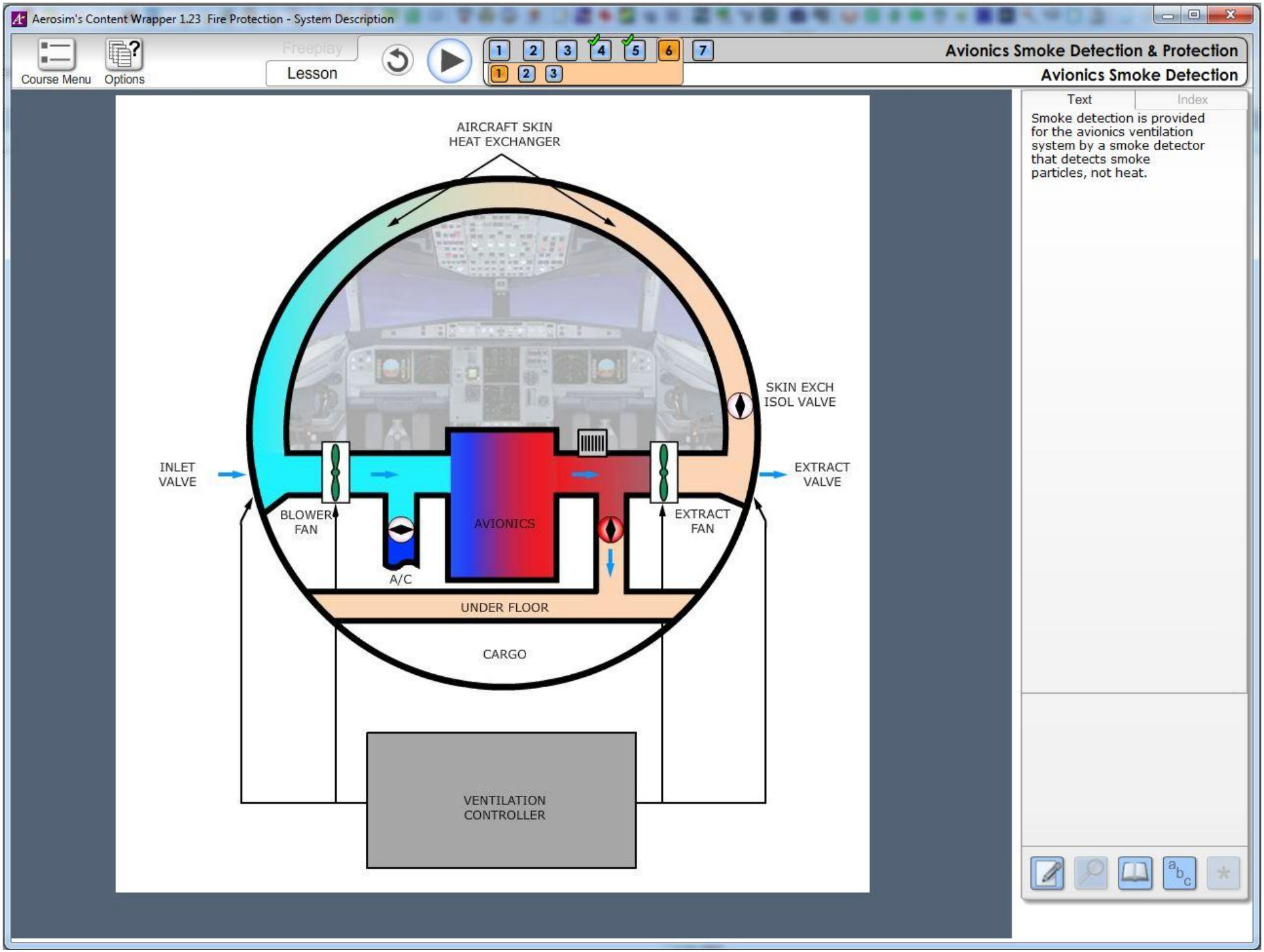

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
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Lavatory Smoke Detection & Protection
Lavatory Smoke Indications
Text
Index
If the SDCU receives a signal from a smoke detector indicating smoke in a lavatory, you are alerted in the flight deck.
The continuous repetitive chime sounds and the MASTER WARN lights flash
The upper ECAM displays a red failure message
There are no other indications in the flight deck to indicate which lavatory is detecting smoke.
However, the flight attendants are alerted to a lavatory smoke message which is displayed on their Attendant Indication Panel.
The specific lavatory is indicated as follows:
A - first class lavatory
D - the aft left lavatory
E - the aft right lavatory
Additionally, the amber lights on all Area Call Panels flash
EXIT
The Continuous Repetitive Chime has been silenced
Specific lavatory affected is noted by:
• A - First Class lavatory
• D - Aft Left lavatory
• E - Aft Right lavatory
SMOKE LAVATORY A
N2
84.6
N1
FOB: 17680 LBS
SMOKE LAVATORY SMOKE
-CKPT/CAB COM.ESTABLISH

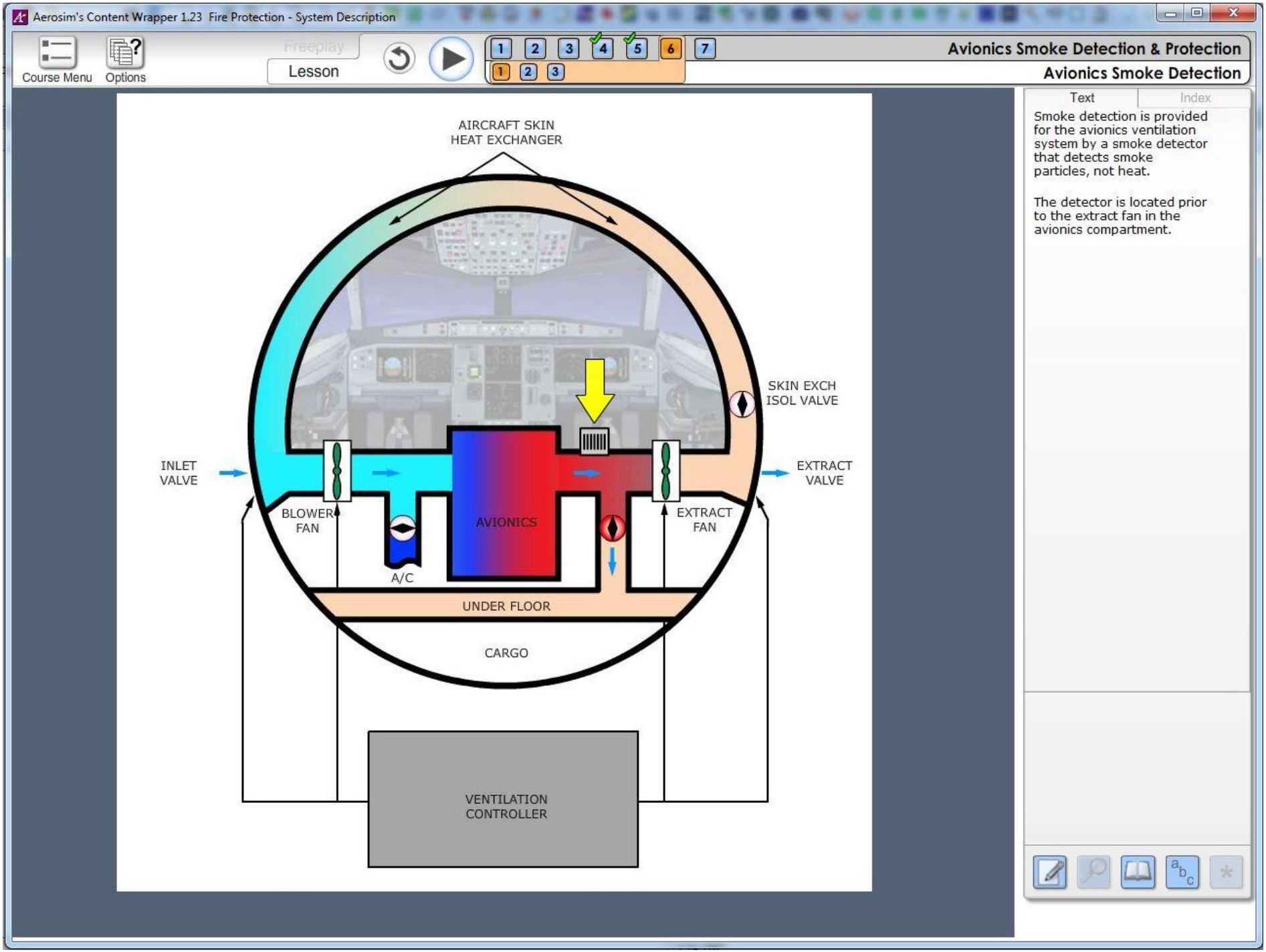

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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Lavatory Smoke Indications
Text
Index
If the SDCU receives a signal from a smoke detector indicating smoke in a lavatory, you are alerted in the flight deck.
The continuous repetitive chime sounds and the MASTER WARN lights flash
The upper ECAM displays a red failure message
There are no other indications in the flight deck to indicate which lavatory is detecting smoke.
However, the flight attendants are alerted to a lavatory smoke message which is displayed on their Attendant Indication Panel.
The specific lavatory is indicated as follows:
A - first class lavatory
D - the aft left lavatory
E - the aft right lavatory
Additionally, the amber lights on all Area Call Panels flash
An amber light pulses next to the affected lavatory's door
EXIT
Specific lavatory affected is noted by:
• A - First Class lavatory
• D - Aft Left lavatory
• E - Aft Right lavatory
The Continuous Repetitive Chime has been silenced
SMOKE LAVATORY A
N1
FOB: 17680 LBS
SMOKE LAVATORY SMOKE
-CKPT/CAB COM.ESTABLISH

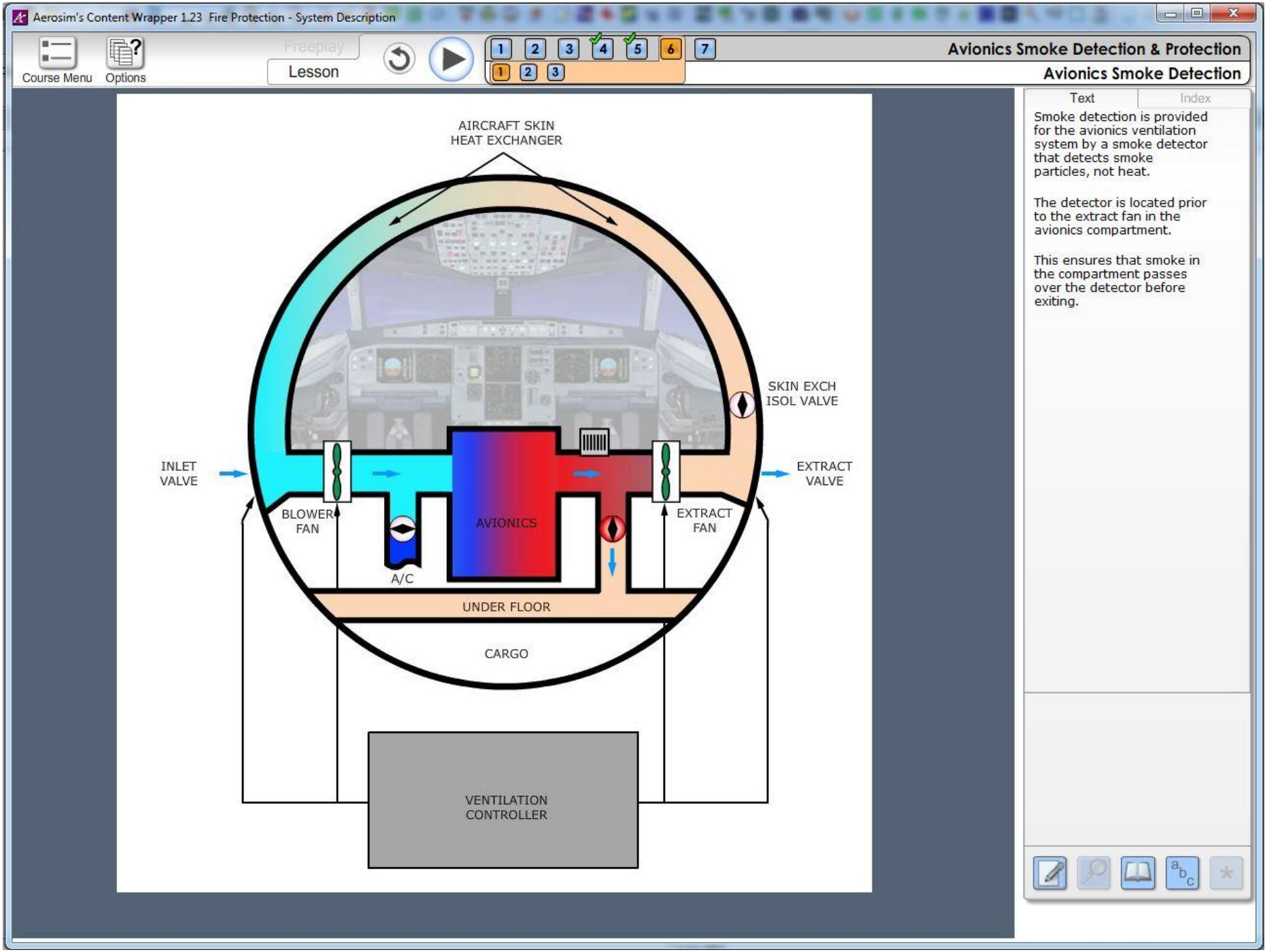

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
1 2 3 4 5 6 7
1 2 3
Lavatory Smoke Detection & Protection
Lavatory Fire Extinguishing
Text
Index
If a lavatory smoke message is generated, it will be necessary for the flight attendants to extinguish the source of the smoke manually by using the portable cabin fire extinguishers.
Fire Extinguisher Types:
Water
Halon

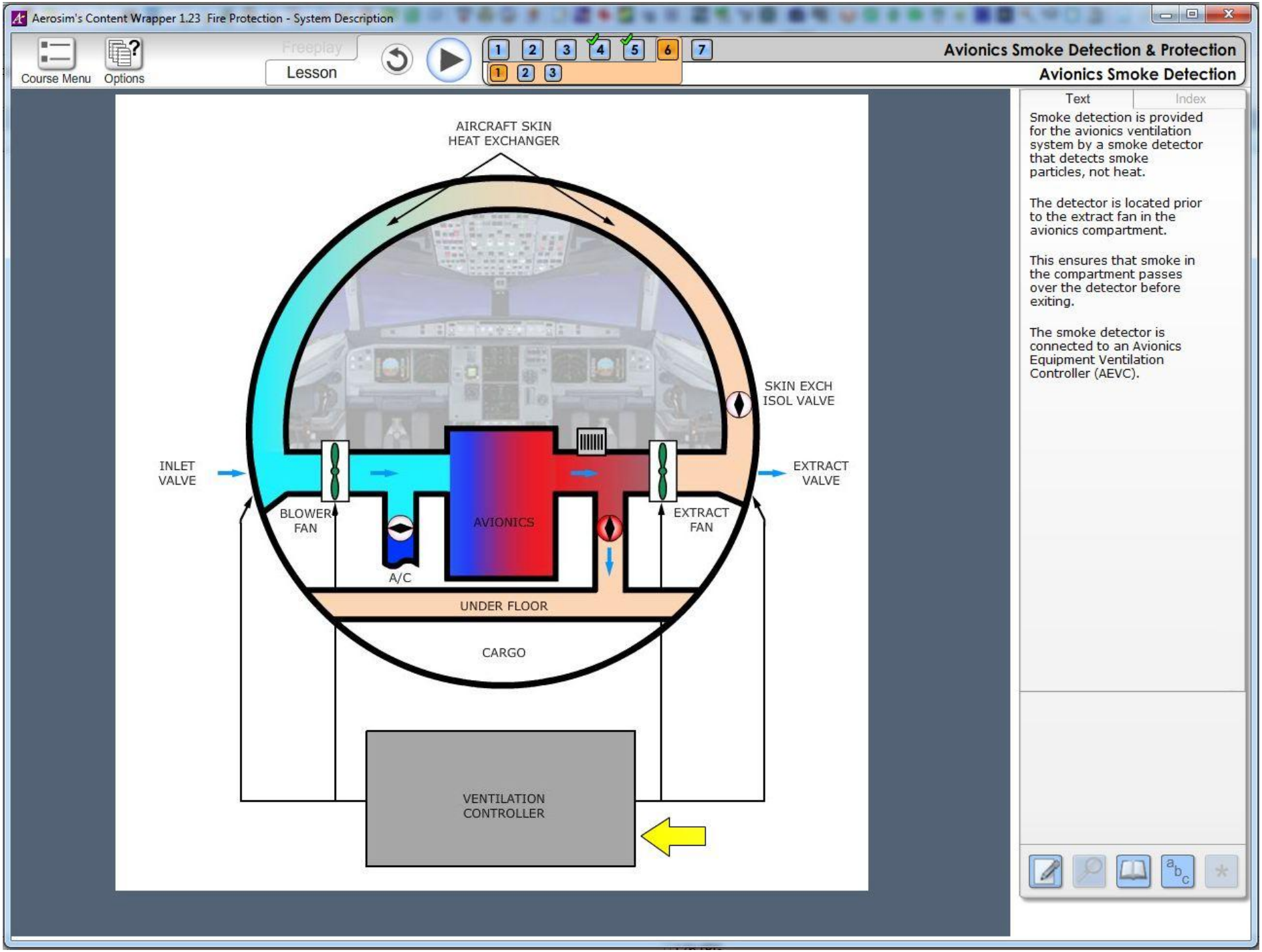

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
1 2 3 4 5 6 7
1 2 3
Lavatory Smoke Detection & Protection
Lavatory Fire Extinguishing
Text
Index
If a lavatory smoke message is generated, it will be necessary for the flight attendants to extinguish the source of the smoke manually by using the portable cabin fire extinguishers.
Each lavatory service cabinet trash bin under the sink contains a self contained fire detection and protection unit.

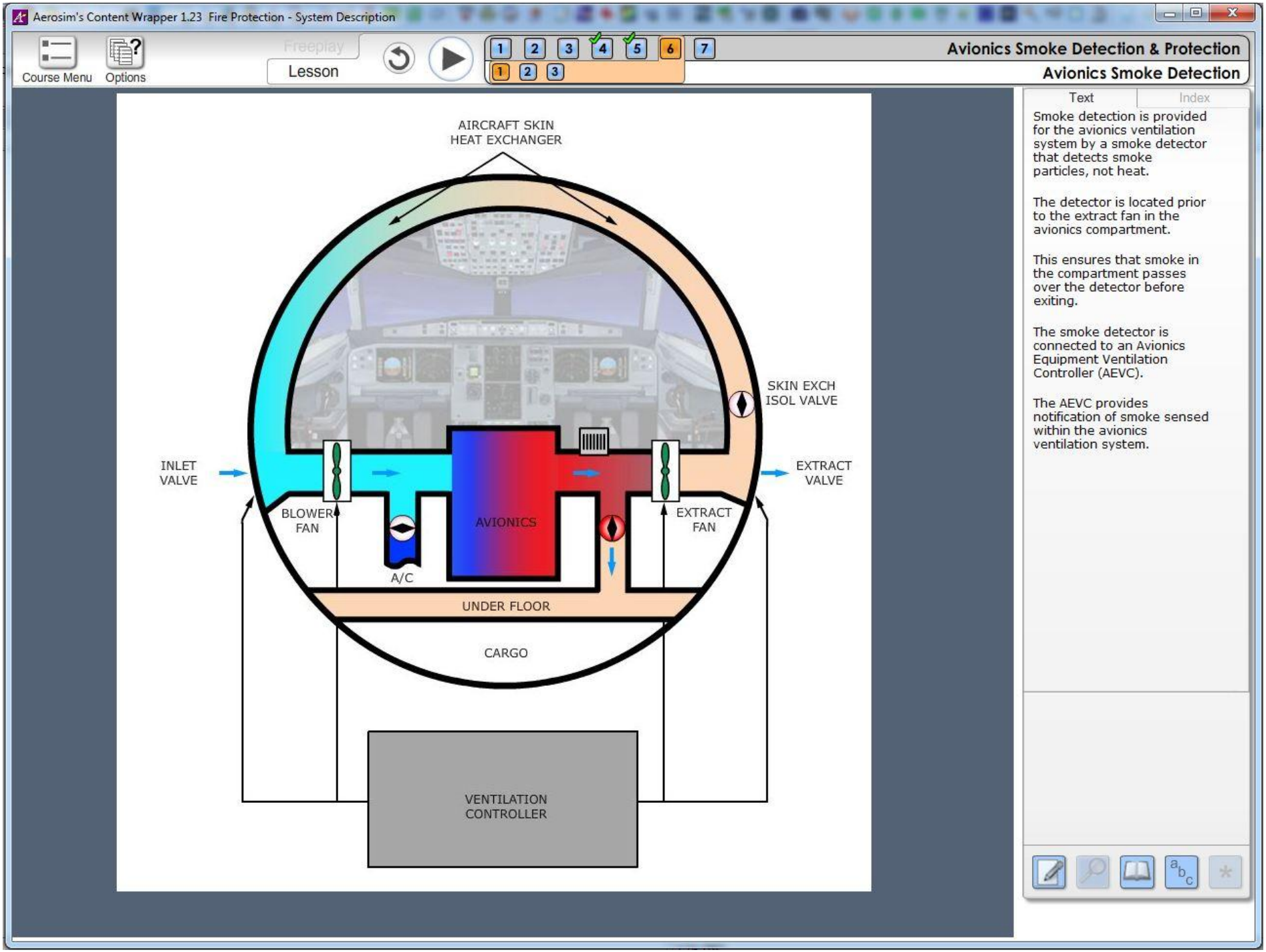

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
1 2 3 4 5 6 7
1 2 3
Lavatory Smoke Detection & Protection
Lavatory Fire Extinguishing
Text
Index
If a lavatory smoke message is generated, it will be necessary for the flight attendants to extinguish the source of the smoke manually by using the portable cabin fire extinguishers.
Each lavatory service cabinet trash bin under the sink contains a self contained fire detection and protection unit.
If a sudden temperature rise is sensed in the cabinet, the agent in a small halon fire bottle will discharge automatically.
There is no flight deck or cabin indication that this halon bottle has discharged.

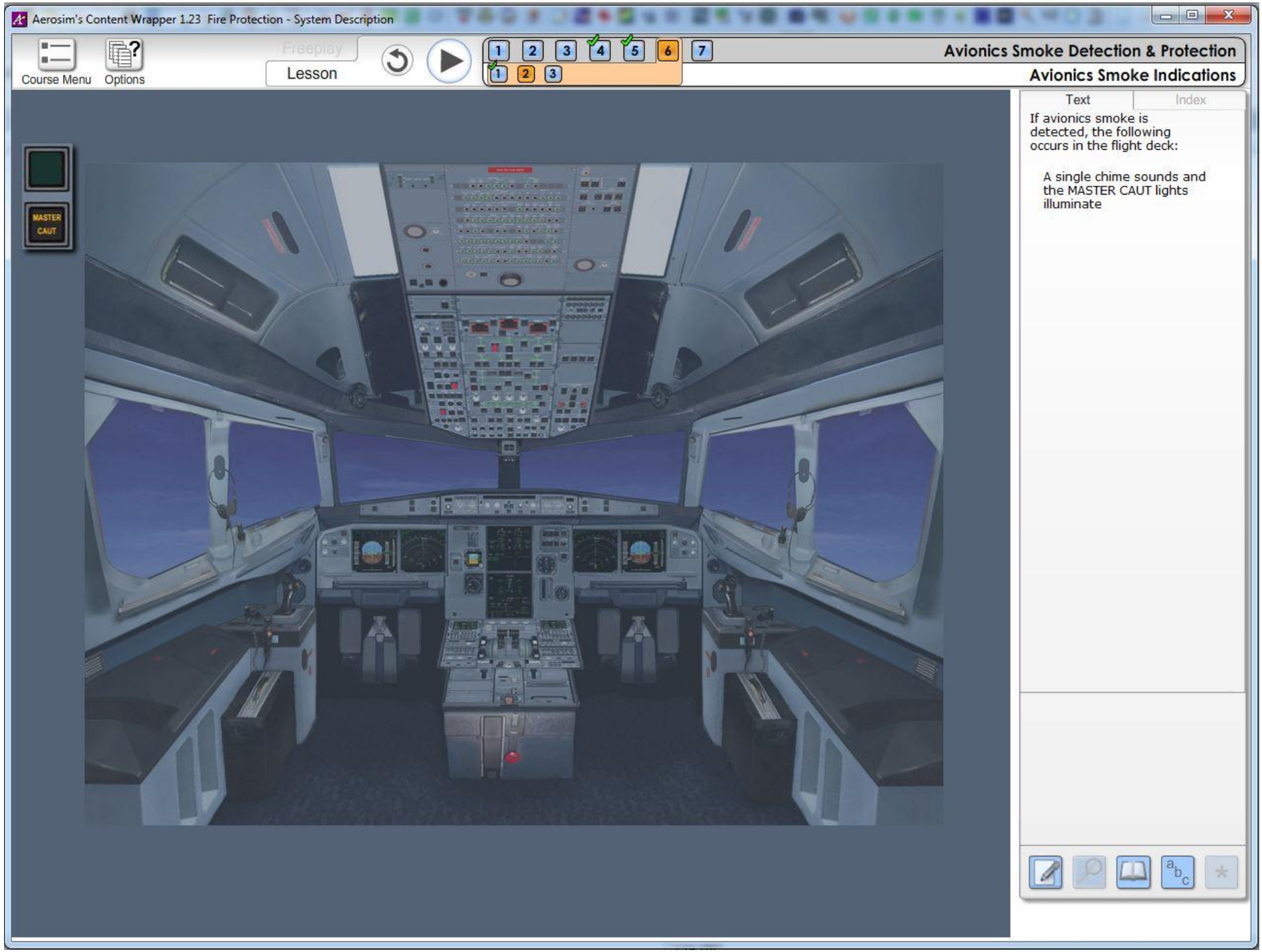

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Avionics Smoke Detection & Protection
Avionics Smoke Detection
Text
Index
Smoke detection is provided for the avionics ventilation system by a smoke detector that detects smoke particles, not heat.
AIRCRAFT SKIN
HEAT EXCHANGER
SKIN EXCH
ISOL VALVE
INLET
VALVE
EXTRACT
VALVE
BLOWER
FAN
AVIONICS
EXTRACT
FAN
A/C
UNDER FLOOR
CARGO
VENTILATION
CONTROLLER

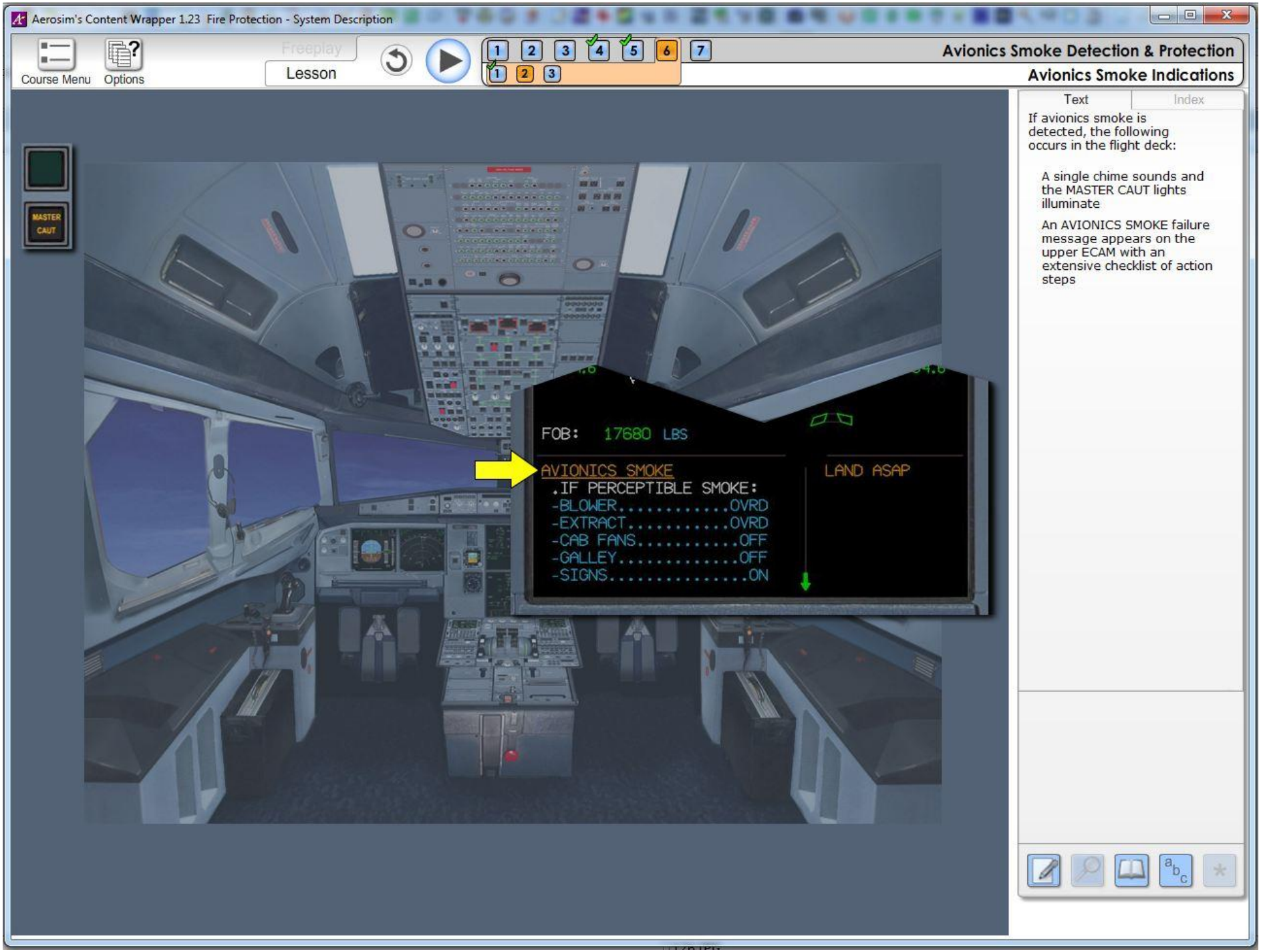

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
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Avionics Smoke Detection & Protection
Avionics Smoke Detection
Text
Index
Smoke detection is provided for the avionics ventilation system by a smoke detector that detects smoke particles, not heat.
The detector is located prior to the extract fan in the avionics compartment.
AIRCRAFT SKIN
HEAT EXCHANGER
SKIN EXCH
ISOL VALVE
INLET
VALVE
EXTRACT
VALVE
BLOWER
FAN
AVIONICS
EXTRACT
FAN
A/C
UNDER FLOOR
CARGO
VENTILATION
CONTROLLER

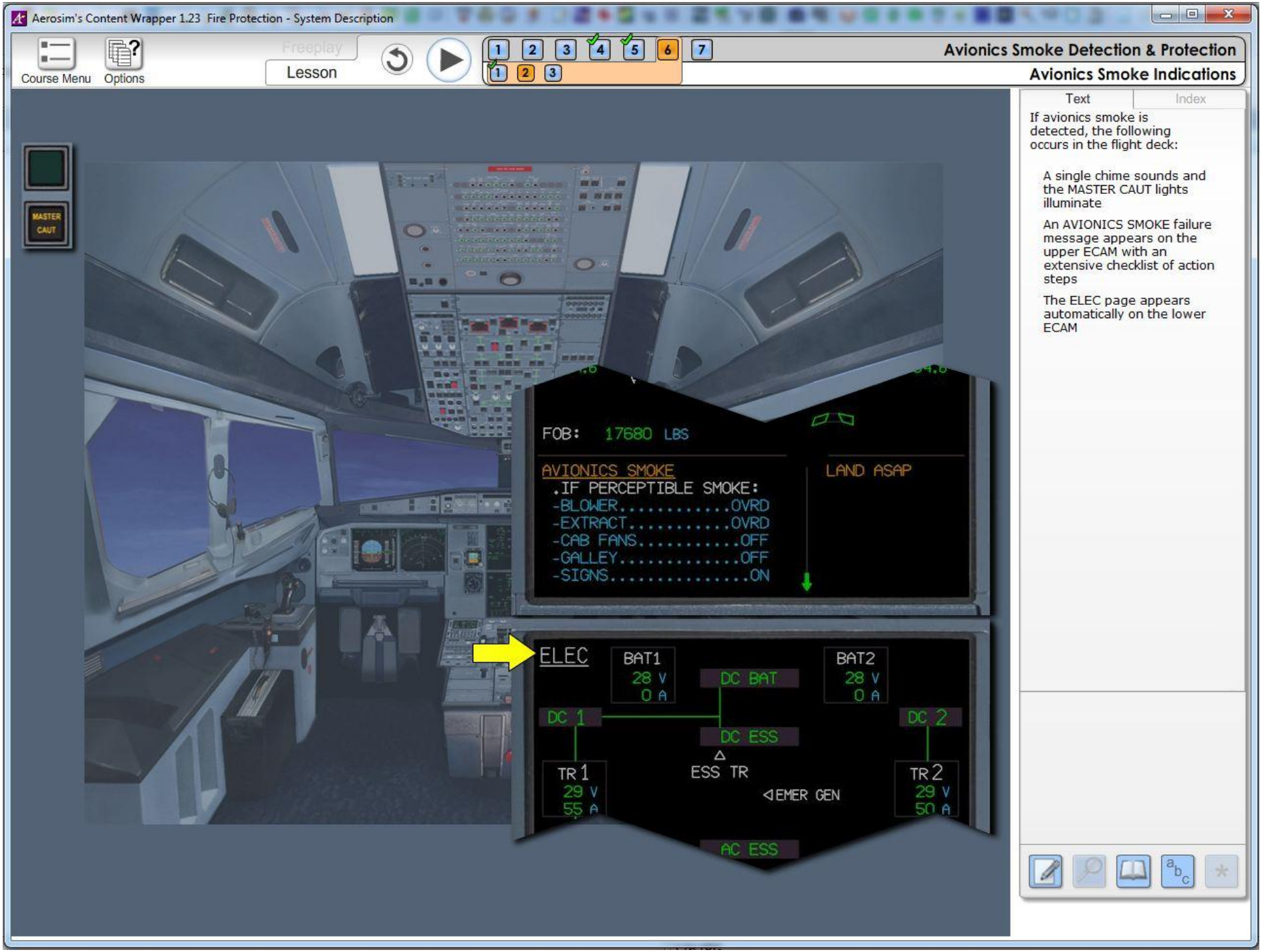

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Avionics Smoke Detection & Protection
Avionics Smoke Detection
Text
Index
Smoke detection is provided for the avionics ventilation system by a smoke detector that detects smoke particles, not heat.
The detector is located prior to the extract fan in the avionics compartment.
This ensures that smoke in the compartment passes over the detector before exiting.
AIRCRAFT SKIN
HEAT EXCHANGER
SKIN EXCH
ISOL VALVE
INLET
VALVE
EXTRACT
VALVE
BLOWER
FAN
AVIONICS
EXTRACT
FAN
A/C
UNDER FLOOR
CARGO
VENTILATION
CONTROLLER

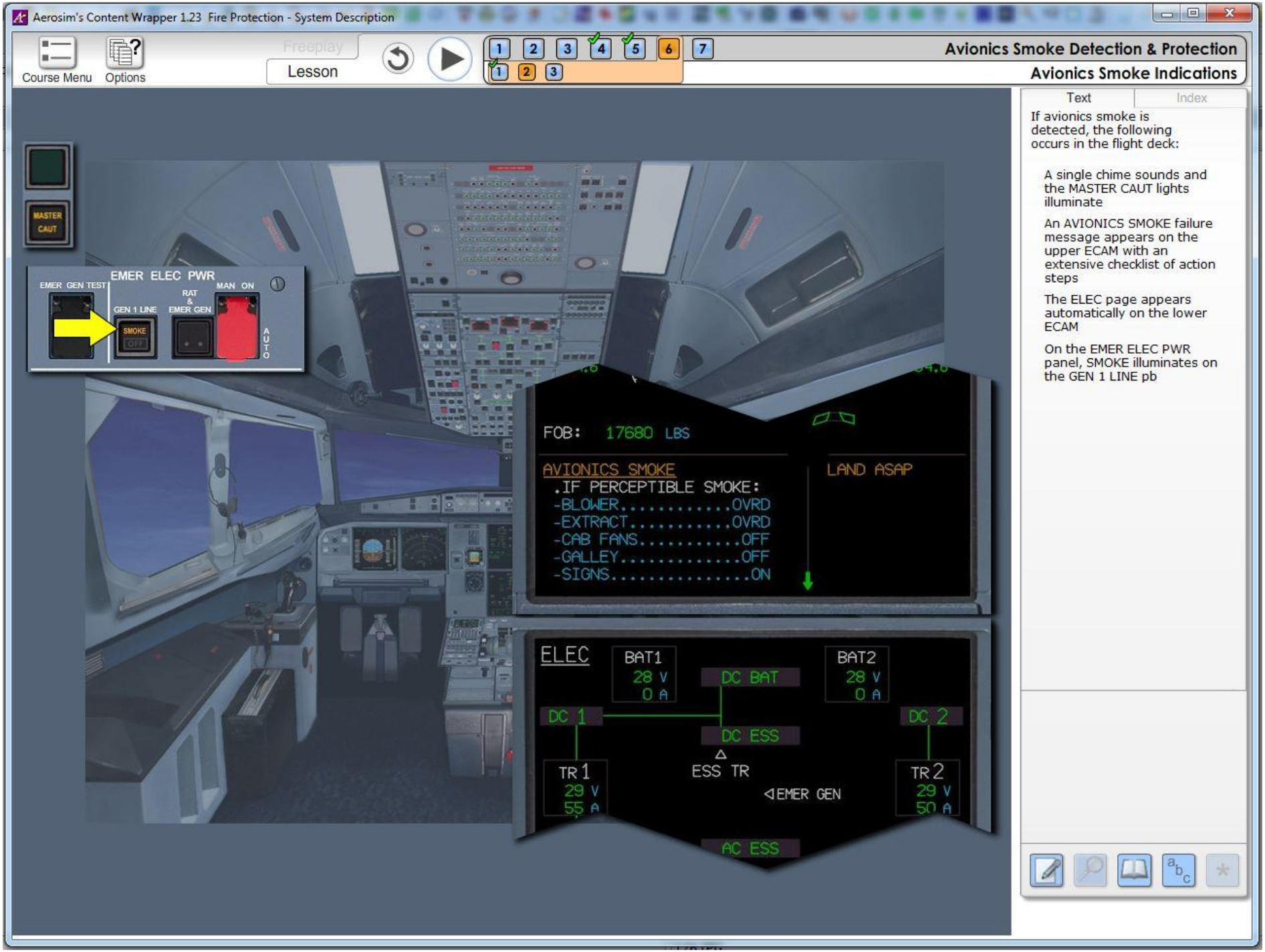

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
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Avionics Smoke Detection & Protection
Avionics Smoke Detection
Text
Index
Smoke detection is provided for the avionics ventilation system by a smoke detector that detects smoke particles, not heat.
The detector is located prior to the extract fan in the avionics compartment.
This ensures that smoke in the compartment passes over the detector before exiting.
The smoke detector is connected to an Avionics Equipment Ventilation Controller (AEVC).
AIRCRAFT SKIN
HEAT EXCHANGER
SKIN EXCH
ISOL VALVE
INLET
VALVE
EXTRACT
VALVE
BLOWER
FAN
AVIONICS
EXTRACT
FAN
A/C
UNDER FLOOR
CARGO
VENTILATION
CONTROLLER


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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Avionics Smoke Detection & Protection
Avionics Smoke Detection
Text
Index
Smoke detection is provided for the avionics ventilation system by a smoke detector that detects smoke particles, not heat.
The detector is located prior to the extract fan in the avionics compartment.
This ensures that smoke in the compartment passes over the detector before exiting.
The smoke detector is connected to an Avionics Equipment Ventilation Controller (AEVC).
The AEVC provides notification of smoke sensed within the avionics ventilation system.
AIRCRAFT SKIN
HEAT EXCHANGER
SKIN EXCH
ISOL VALVE
INLET
VALVE
EXTRACT
VALVE
BLOWER
FAN
AVIONICS
EXTRACT
FAN
A/C
UNDER FLOOR
CARGO
VENTILATION
CONTROLLER

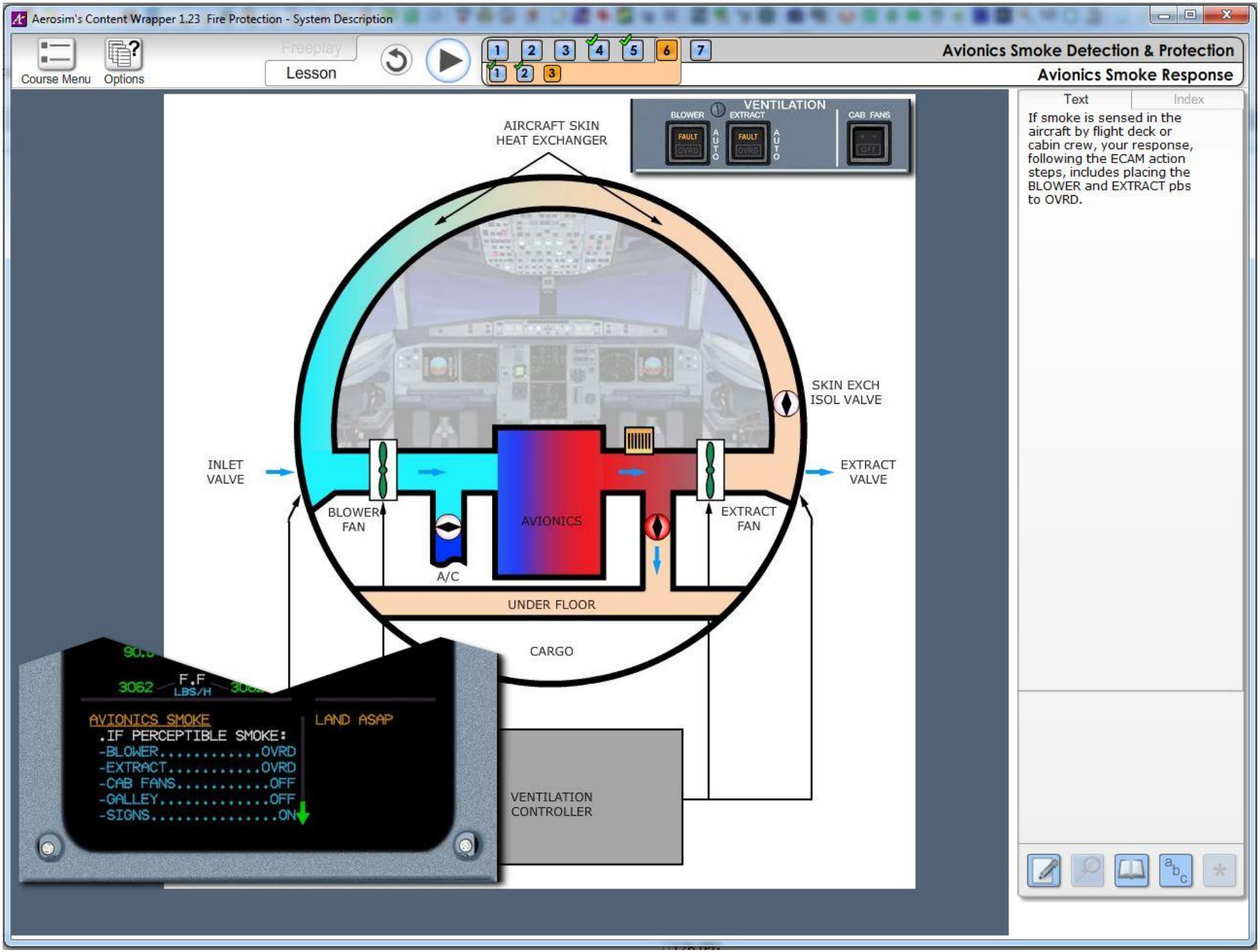

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
1 2 3 4 5 6 7
1 2 3
Avionics Smoke Detection & Protection
Avionics Smoke Indications
Text
Index
If avionics smoke is detected, the following occurs in the flight deck:
A single chime sounds and the MASTER CAUT lights illuminate
MASTER CAUT

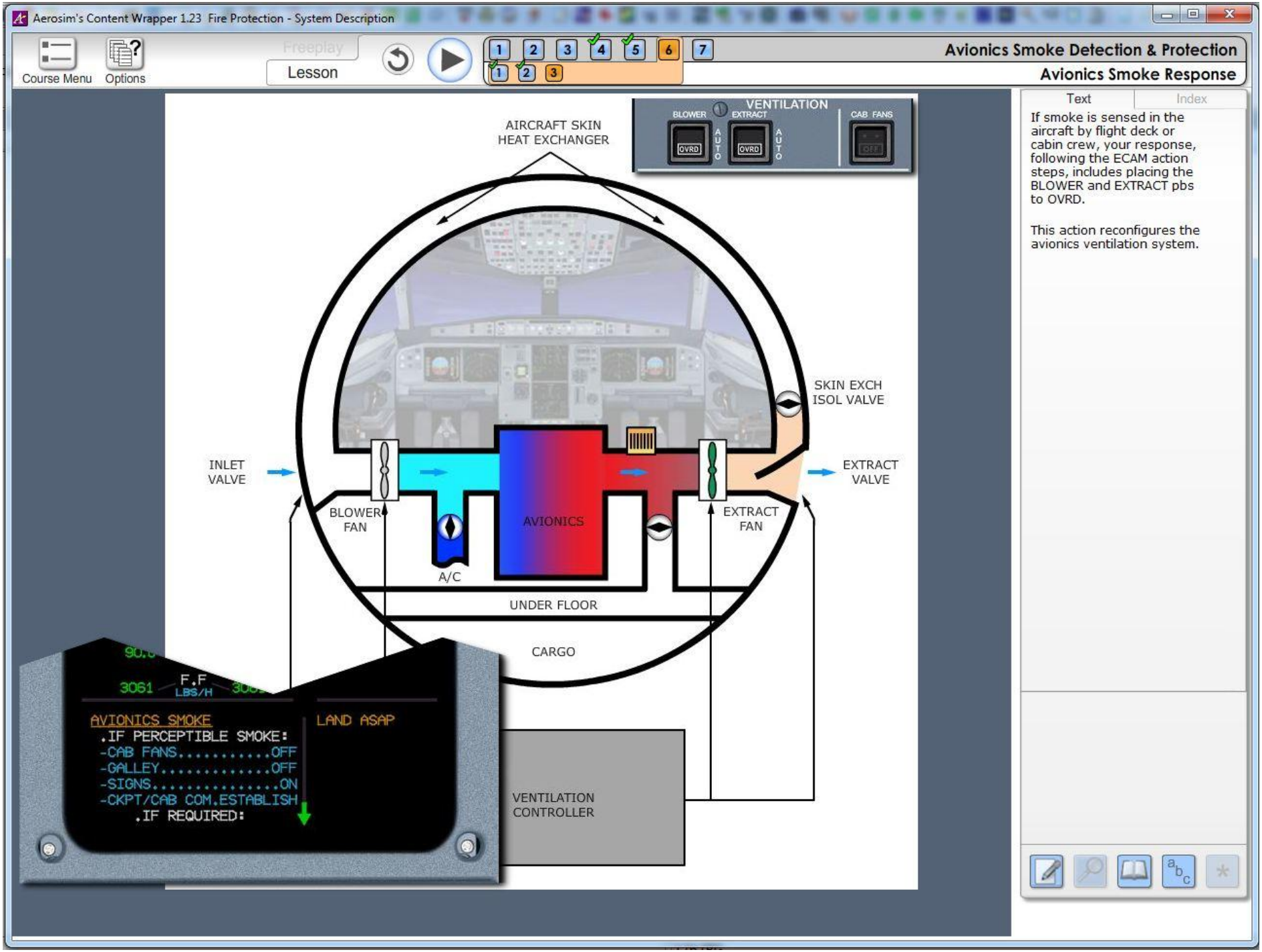

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
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Avionics Smoke Detection & Protection
Avionics Smoke Indications
Text
Index
If avionics smoke is detected, the following occurs in the flight deck:
A single chime sounds and the MASTER CAUT lights illuminate
An AVIONICS SMOKE failure message appears on the upper ECAM with an extensive checklist of action steps
MASTER CAUT
FOB: 17680 LBS
AVIONICS SMOKE
LAND ASAP
.IF PERCEPTIBLE SMOKE:
-BLOWER.....OVRD
-EXTRACT.....OVRD
-CAB FANS.....OFF
-GALLEY.....OFF
-SIGNS.....ON

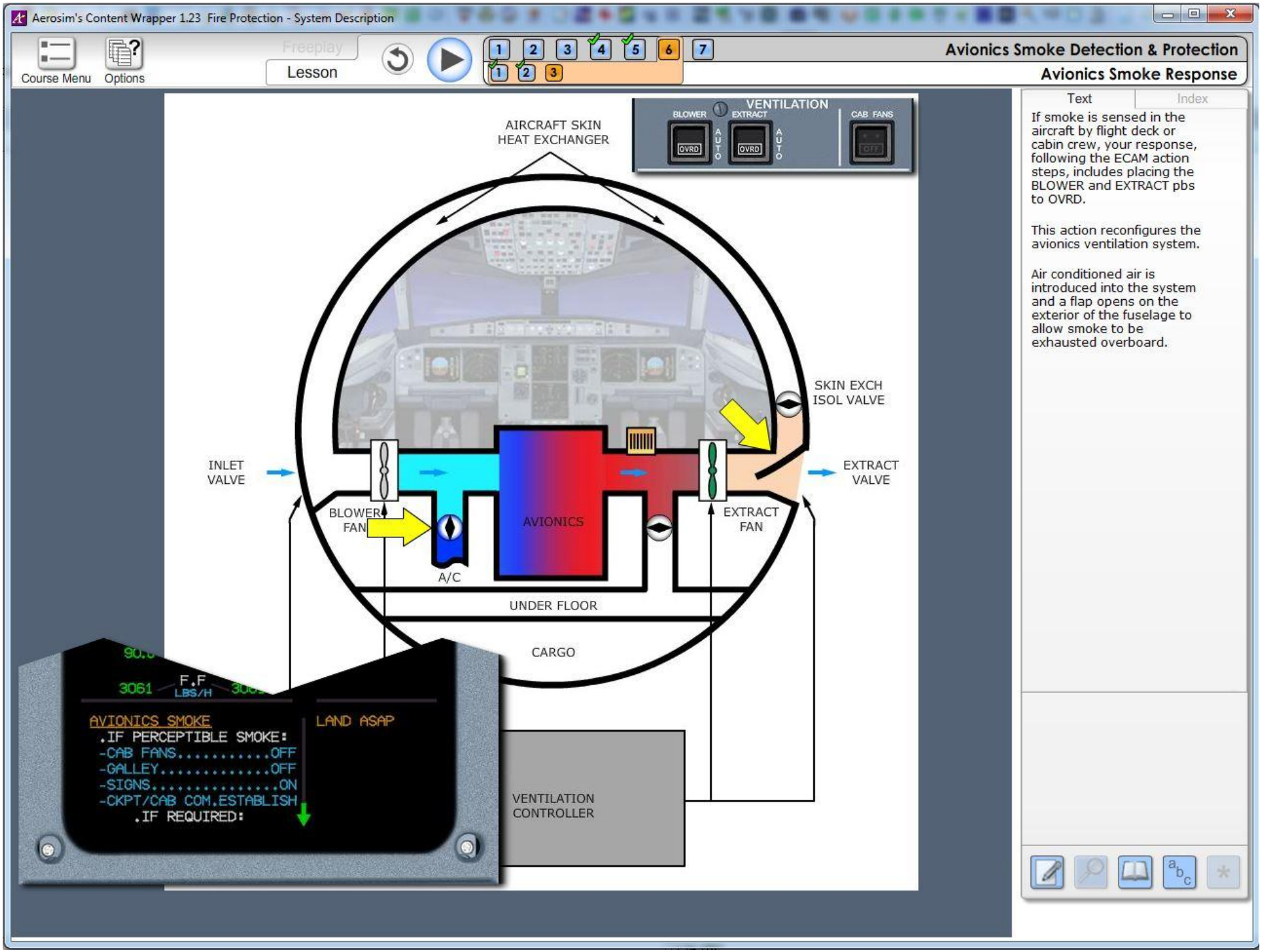

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Avionics Smoke Detection & Protection
Avionics Smoke Indications
Text
Index
If avionics smoke is detected, the following occurs in the flight deck:
A single chime sounds and the MASTER CAUT lights illuminate
An AVIONICS SMOKE failure message appears on the upper ECAM with an extensive checklist of action steps
The ELEC page appears automatically on the lower ECAM
MASTER CAUT
FOB: 17680 LBS
AVIONICS SMOKE
.IF PERCEPTIBLE SMOKE:
-BLOWER.....OVRD
-EXTRACT.....OVRD
-CAB FANS.....OFF
-GALLEY.....OFF
-SIGNS.....ON
LAND ASAP
ELEC
BAT1
28 V
0 A
DC BAT
BAT2
28 V
0 A
DC 1
DC 2
DC ESS
ESS TR
TR 1
29 V
55 A
EMER GEN
TR 2
29 V
50 A
AC ESS

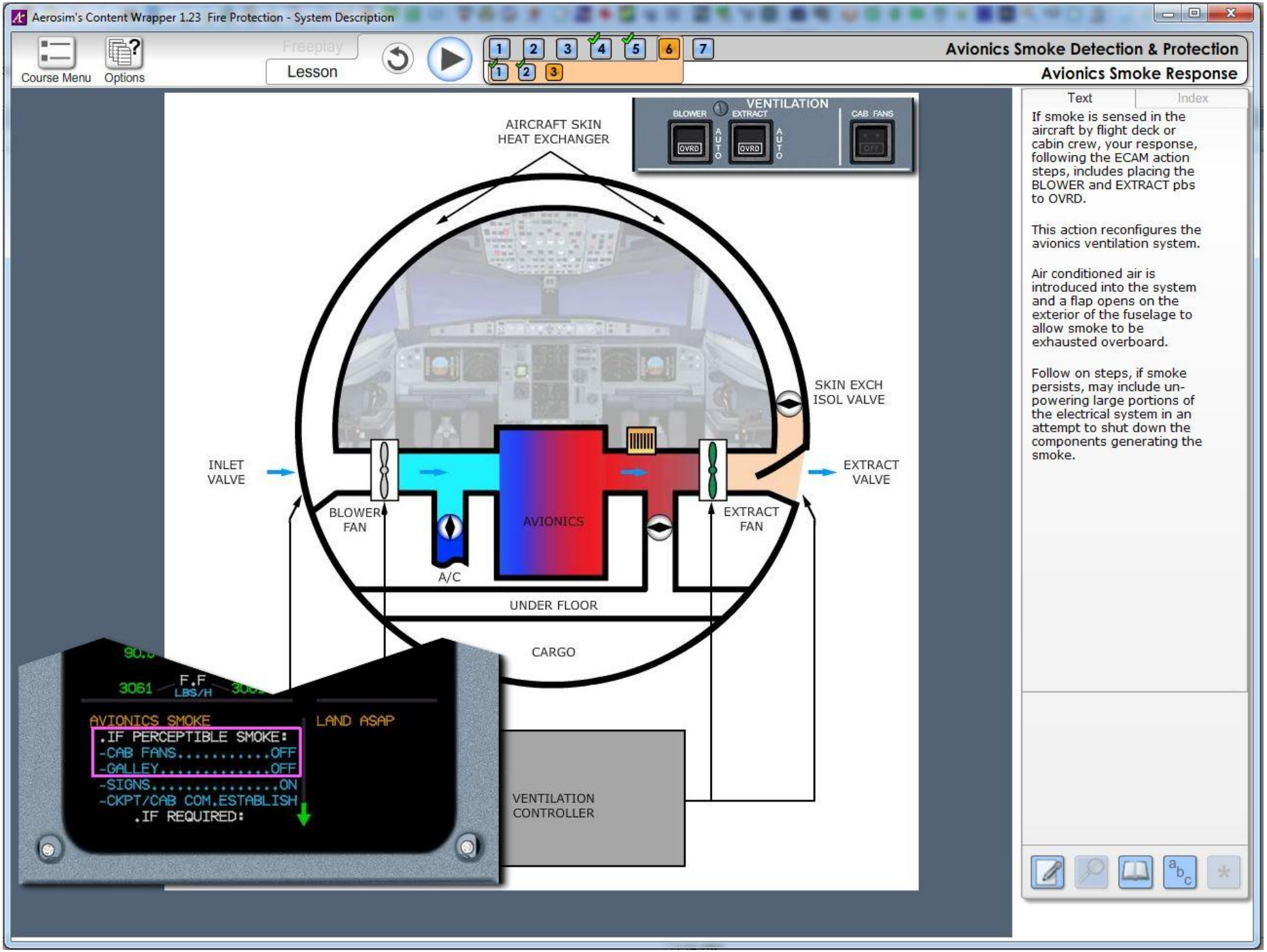

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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Avionics Smoke Detection & Protection
Avionics Smoke Indications
Text
Index
If avionics smoke is detected, the following occurs in the flight deck:
A single chime sounds and the MASTER CAUT lights illuminate
An AVIONICS SMOKE failure message appears on the upper ECAM with an extensive checklist of action steps
The ELEC page appears automatically on the lower ECAM
On the EMER ELEC PWR panel, SMOKE illuminates on the GEN 1 LINE pb
MASTER CAUT
EMER ELEC PWR
EMER GEN TEST
GEN 1 LINE
RAT & EMER GEN
MAN ON
SMOKE
OFF
AUTO
FOB: 17680 LBS
AVIONICS SMOKE
LAND ASAP
.IF PERCEPTIBLE SMOKE:
-BLOWER.....OVRD
-EXTRACT.....OVRD
-CAB FANS.....OFF
-GALLEY.....OFF
-SIGNS.....ON
ELEC
BAT1
28 V
0 A
BAT2
28 V
0 A
DC BAT
DC 1
DC 2
DC ESS
ESS TR
EMER GEN
TR 1
29 V
55 A
TR 2
29 V
50 A
AC ESS

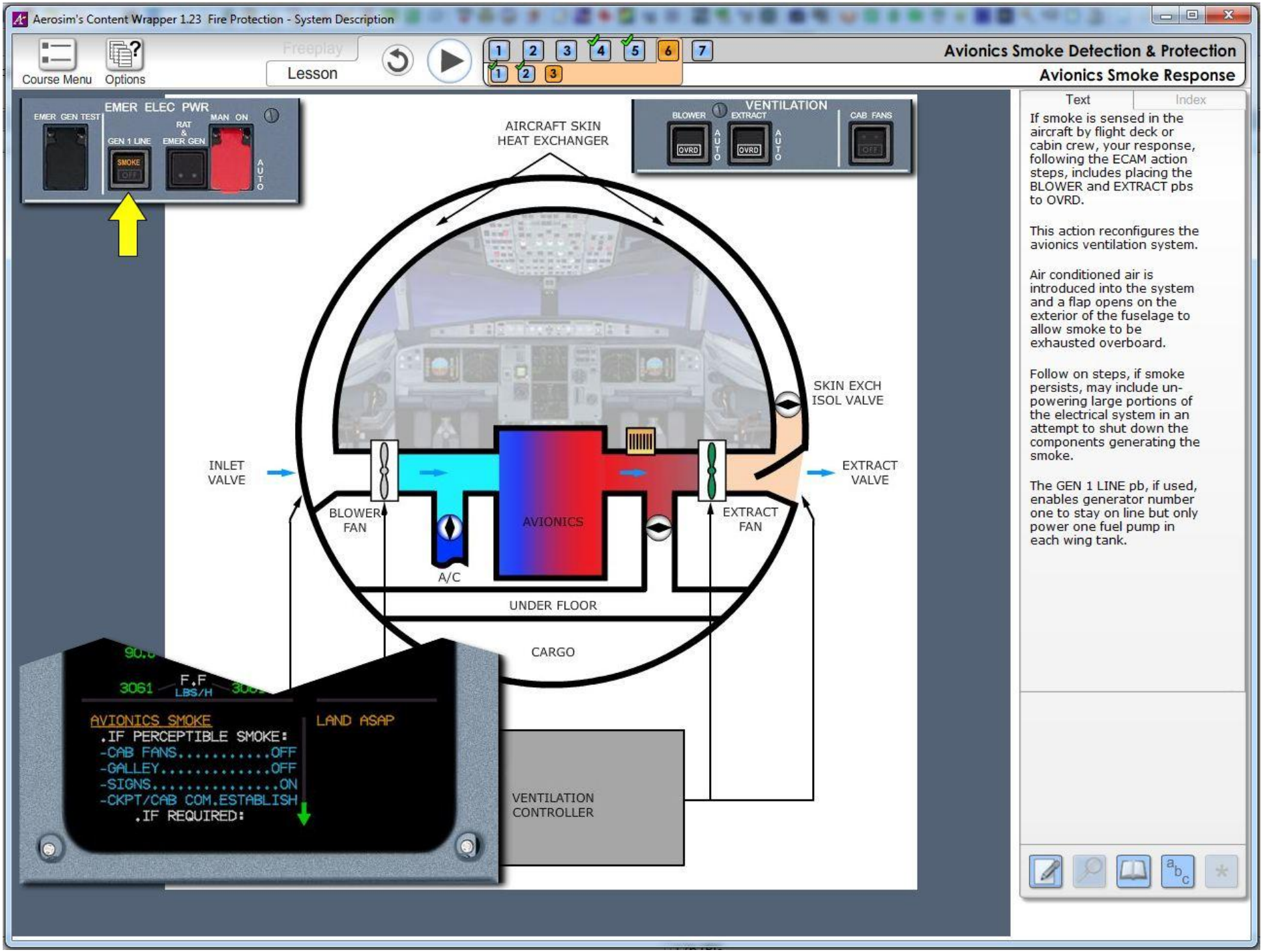

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
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Freeplay
Lesson
Avionics Smoke Detection & Protection
Avionics Smoke Indications
Text
Index
If avionics smoke is detected, the following occurs in the flight deck:
A single chime sounds and the MASTER CAUT lights illuminate
An AVIONICS SMOKE failure message appears on the upper ECAM with an extensive checklist of action steps
The ELEC page appears automatically on the lower ECAM
On the EMER ELEC PWR panel, SMOKE illuminates on the GEN 1 LINE pb
On the VENTILATION panel, FAULT lights illuminate on both the BLOWER and EXTRACT pbs
MASTER CAUT
EMER ELEC PWR
EMER GEN TEST
GEN 1 LINE
RAT & EMER GEN
MAN ON
SMOKE
VENTILATION
BLOWER
EXTRACT
CAB FANS
FAULT
OVRD
FOB: 17680 LBS
AVIONICS SMOKE
.IF PERCEPTIBLE SMOKE:
-BLOWER.....OVRD
-EXTRACT.....OVRD
-CAB FANS.....OFF
-GALLEY.....OFF
-SIGNS.....ON
LAND ASAP
ELEC
BAT1
28 V
0 A
BAT2
28 V
0 A
DC BAT
DC 1
DC 2
DC ESS
ESS TR
TR 1
29 V
55 A
TR 2
29 V
50 A
EMER GEN
AC ESS

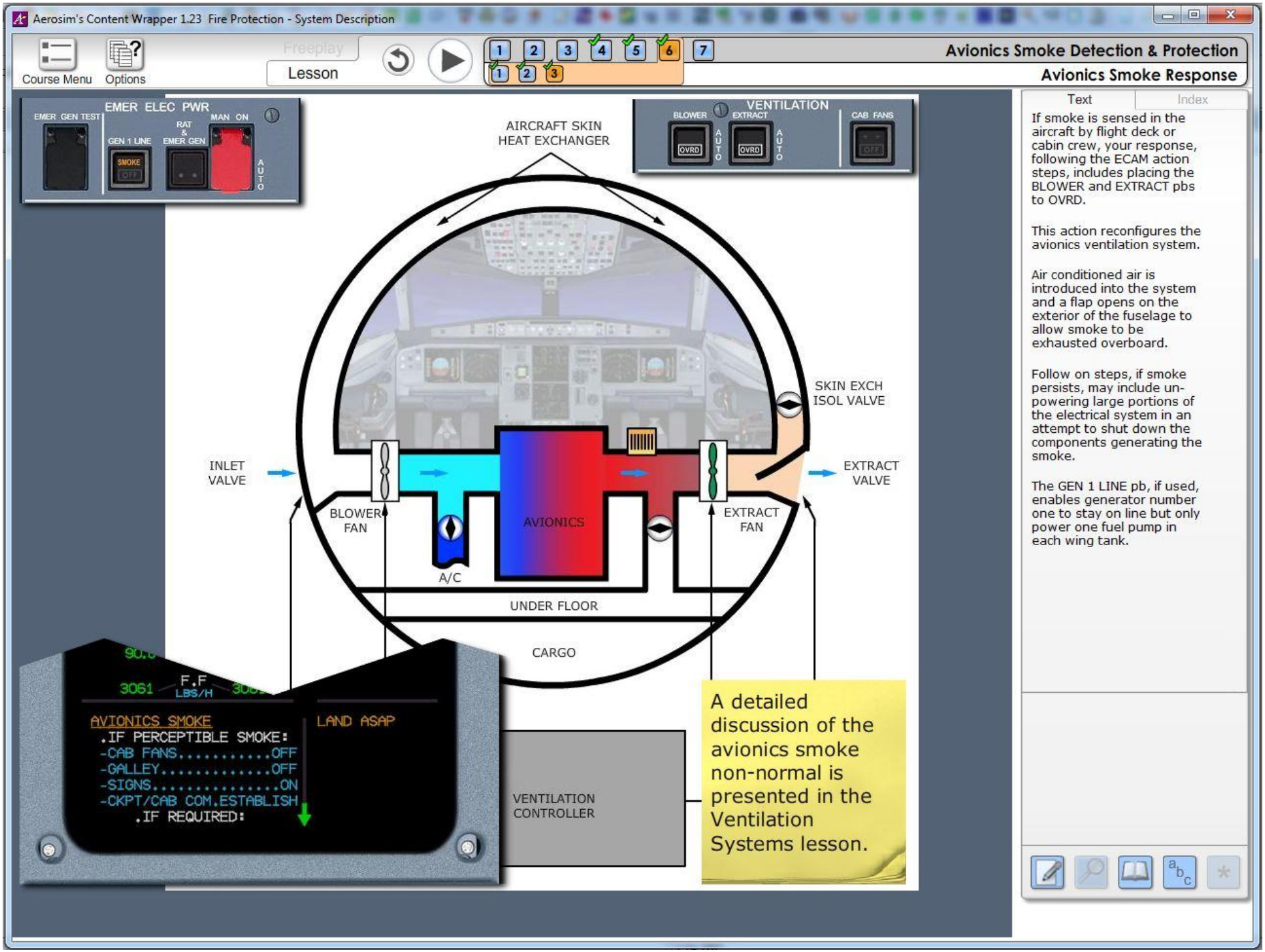

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Avionics Smoke Detection & Protection
Avionics Smoke Response
Text
Index
If smoke is sensed in the aircraft by flight deck or cabin crew, your response, following the ECAM action steps, includes placing the BLOWER and EXTRACT pbs to OVRD.
AIRCRAFT SKIN HEAT EXCHANGER
VENTILATION
BLOWER
EXTRACT
CAB FANS
FAULT
OVRD
AUTO
OFF
SKIN EXCH ISOL VALVE
INLET VALVE
EXTRACT VALVE
BLOWER FAN
AVIONICS
EXTRACT FAN
A/C
UNDER FLOOR
CARGO
F.F
LBS/H
3062
AVIONICS SMOKE
LAND ASAP
.IF PERCEPTIBLE SMOKE:
-BLOWER.....OVRD
-EXTRACT.....OVRD
-CAB FANS.....OFF
-GALLEY.....OFF
-SIGNS.....ON
VENTILATION CONTROLLER

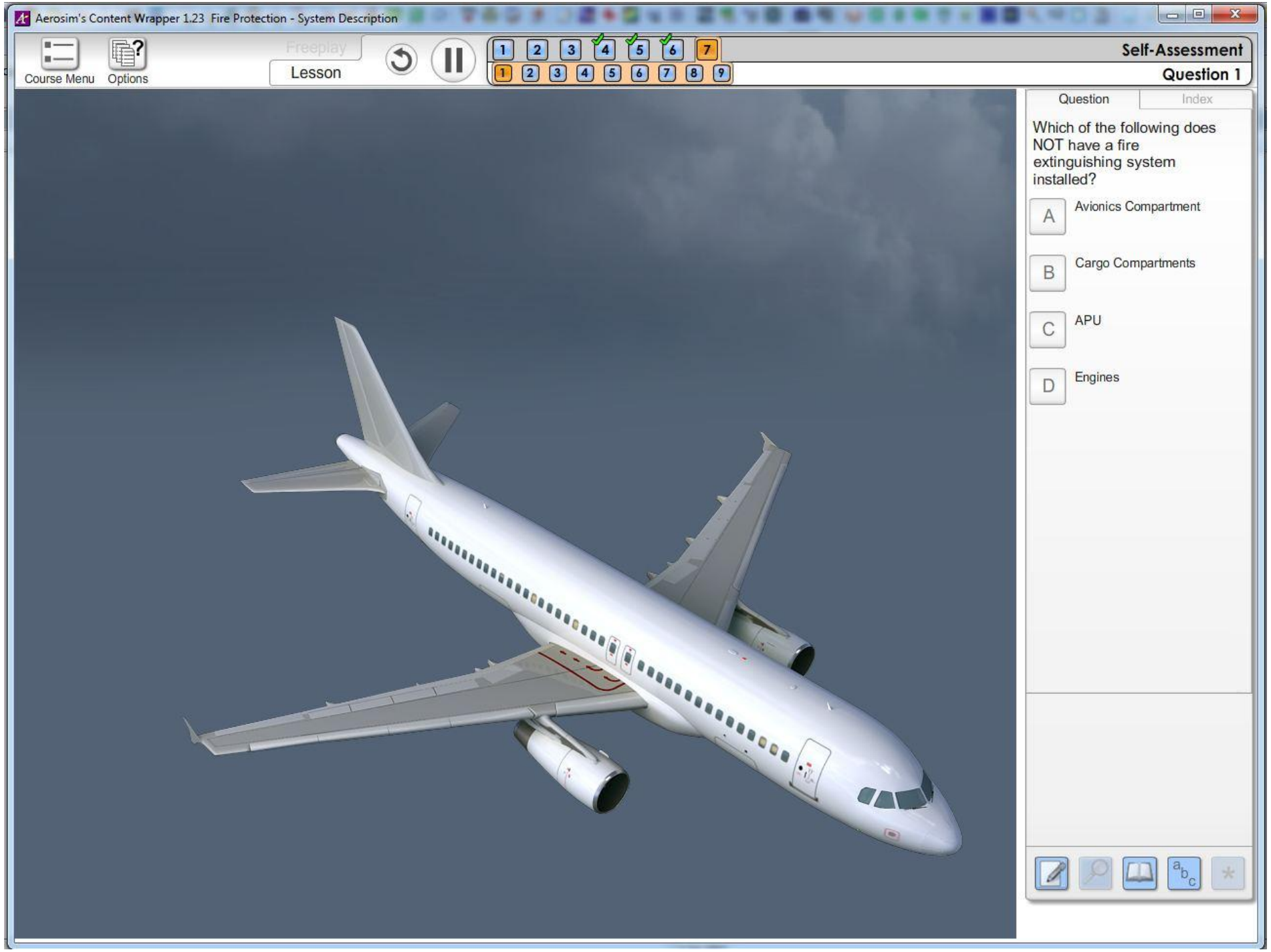

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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Freeplay
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Avionics Smoke Detection & Protection
Avionics Smoke Response
Text
Index
If smoke is sensed in the aircraft by flight deck or cabin crew, your response, following the ECAM action steps, includes placing the BLOWER and EXTRACT pbs to OVRD.
This action reconfigures the avionics ventilation system.
AIRCRAFT SKIN HEAT EXCHANGER
VENTILATION
BLOWER
EXTRACT
CAB FANS
OVRD
AUTO
OFF
SKIN EXCH ISOL VALVE
INLET VALVE
EXTRACT VALVE
BLOWER FAN
AVIONICS
EXTRACT FAN
A/C
UNDER FLOOR
CARGO
VENTILATION CONTROLLER
F.F
LBS/H
3061
AVIONICS SMOKE
LAND ASAP
.IF PERCEPTIBLE SMOKE:
-CAB FANS.....OFF
-GALLEY.....OFF
-SIGNS.....ON
-CKPT/CAB COM.ESTABLISH
.IF REQUIRED:

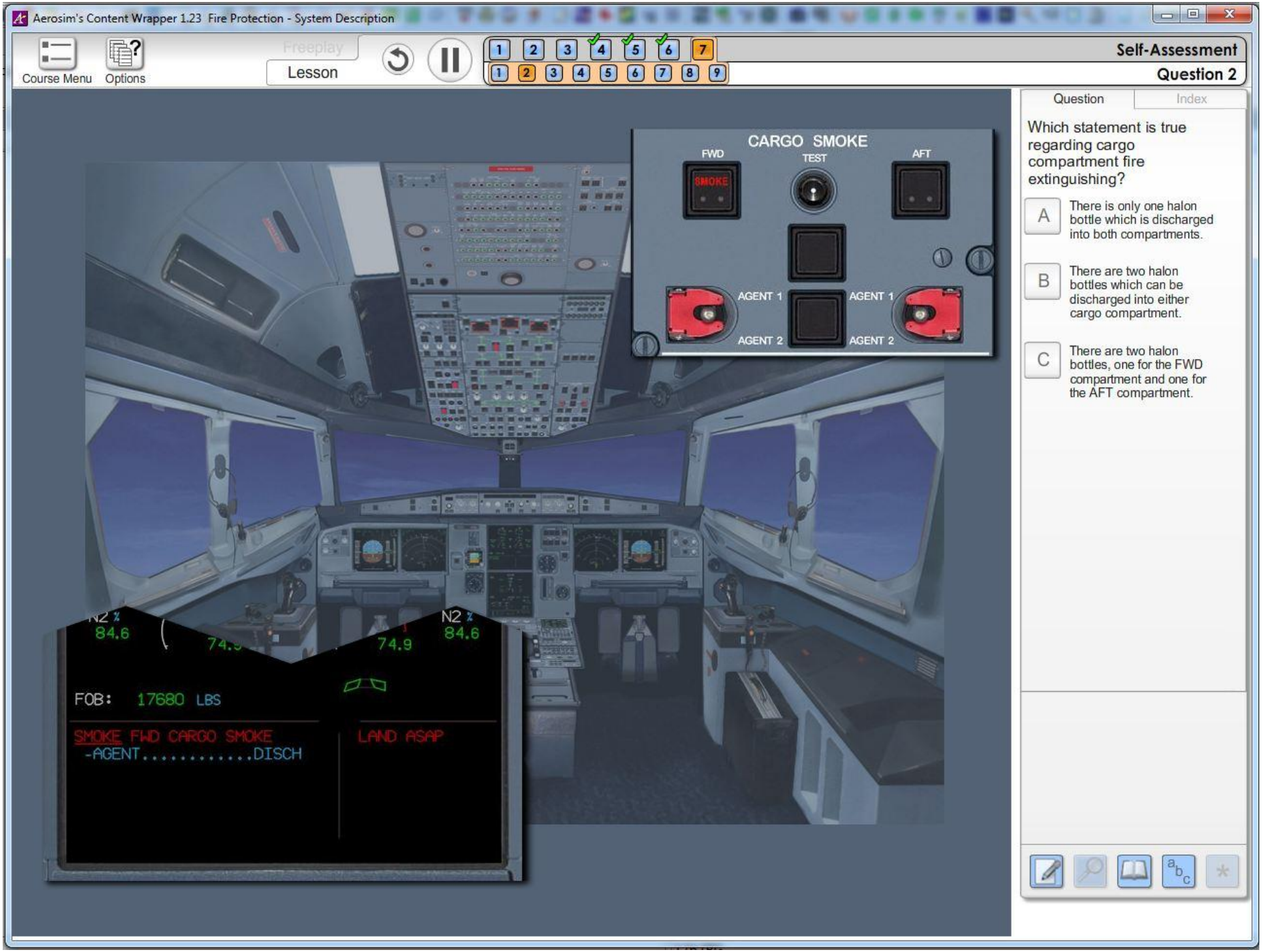

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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Options
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Avionics Smoke Detection & Protection
Avionics Smoke Response
Text
Index
If smoke is sensed in the aircraft by flight deck or cabin crew, your response, following the ECAM action steps, includes placing the BLOWER and EXTRACT pbs to OVRD.
This action reconfigures the avionics ventilation system.
Air conditioned air is introduced into the system and a flap opens on the exterior of the fuselage to allow smoke to be exhausted overboard.
AIRCRAFT SKIN HEAT EXCHANGER
VENTILATION
BLOWER
EXTRACT
CAB FANS
OVRD
AUTO
OFF
SKIN EXCH ISOL VALVE
INLET VALVE
EXTRACT VALVE
BLOWER FAN
AVIONICS
EXTRACT FAN
A/C
UNDER FLOOR
CARGO
VENTILATION CONTROLLER
F.F
LBS/H
3061
AVIONICS SMOKE
LAND ASAP
.IF PERCEPTIBLE SMOKE:
-CAB FANS.....OFF
-GALLEY.....OFF
-SIGNS.....ON
-CKPT/CAB COM.ESTABLISH
.IF REQUIRED:

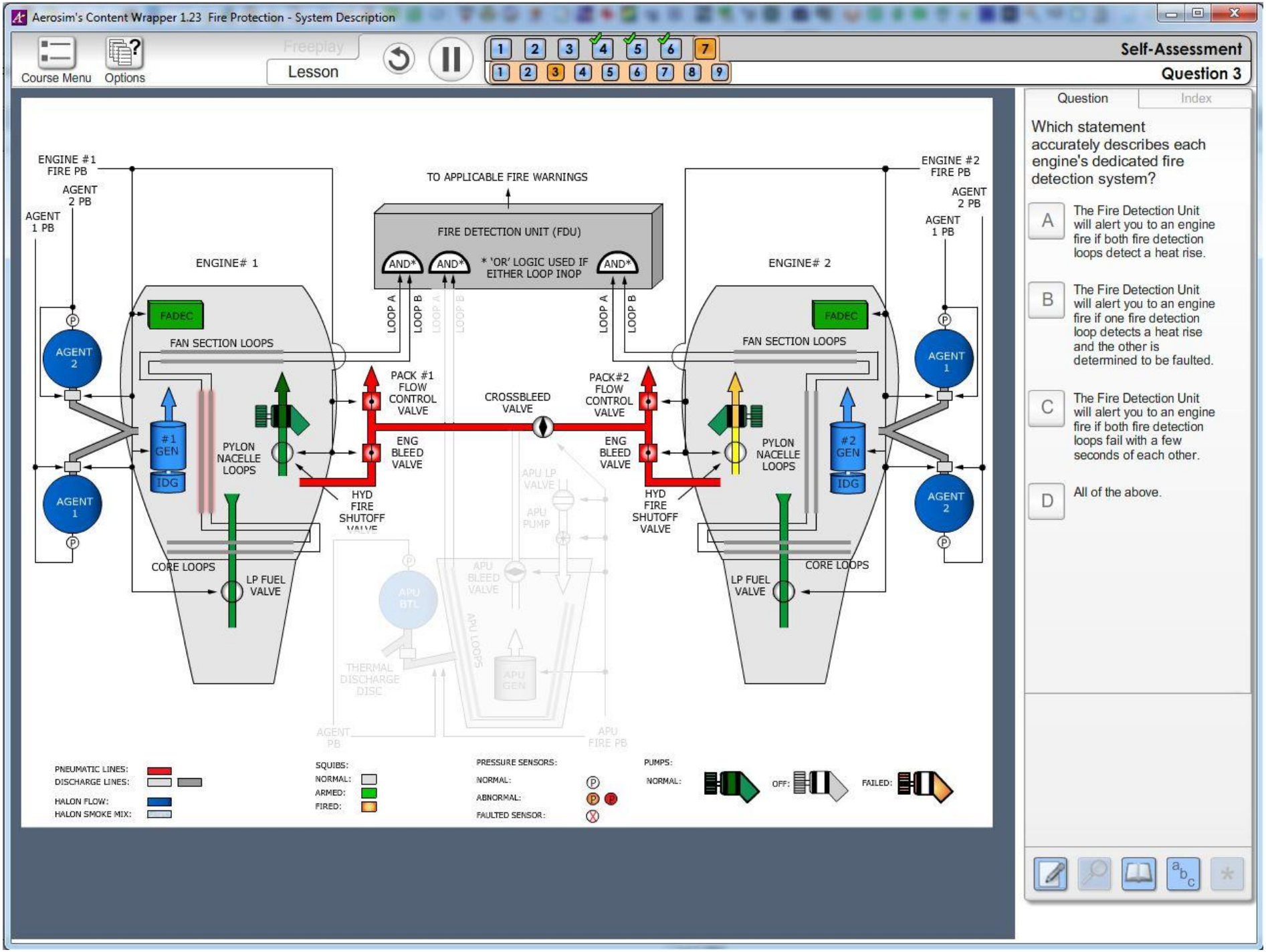

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
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Options
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Avionics Smoke Detection & Protection
Avionics Smoke Response
Text
Index
If smoke is sensed in the aircraft by flight deck or cabin crew, your response, following the ECAM action steps, includes placing the BLOWER and EXTRACT pbs to OVRD.
This action reconfigures the avionics ventilation system.
Air conditioned air is introduced into the system and a flap opens on the exterior of the fuselage to allow smoke to be exhausted overboard.
Follow on steps, if smoke persists, may include un-powering large portions of the electrical system in an attempt to shut down the components generating the smoke.
VENTILATION
BLOWER
EXTRACT
CAB FANS
OVRD
AUTO
OFF
AIRCRAFT SKIN HEAT EXCHANGER
SKIN EXCH ISOL VALVE
INLET VALVE
EXTRACT VALVE
BLOWER FAN
EXTRACT FAN
AVIONICS
A/C
UNDER FLOOR
CARGO
VENTILATION CONTROLLER
F.F
LBS/H
3061
AVIONICS SMOKE
LAND ASAP
.IF PERCEPTIBLE SMOKE:
-CAB FANS.....OFF
-GALLEY.....OFF
-SIGNS.....ON
-CKPT/CAB COM.ESTABLISH
.IF REQUIRED:


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Avionics Smoke Detection & Protection
Avionics Smoke Response
EMER ELEC PWR
EMER GEN TEST
GEN 1 LINE
RAT & EMER GEN
MAN ON
SMOKE
OFF
AUTO
VENTILATION
BLOWER
EXTRACT
CAB FANS
OVRD
AUTO
OFF
AIRCRAFT SKIN HEAT EXCHANGER
SKIN EXCH ISOL VALVE
INLET VALVE
EXTRACT VALVE
BLOWER FAN
EXTRACT FAN
AVIONICS
A/C
UNDER FLOOR
CARGO
VENTILATION CONTROLLER
F.F
LBS/H
3061
AVIONICS SMOKE
.IF PERCEPTIBLE SMOKE:
-CAB FANS.....OFF
-GALLEY.....OFF
-SIGNS.....ON
-CKPT/CAB COM.ESTABLISH
.IF REQUIRED:
LAND ASAP
Text
Index
If smoke is sensed in the aircraft by flight deck or cabin crew, your response, following the ECAM action steps, includes placing the BLOWER and EXTRACT pbs to OVRD.
This action reconfigures the avionics ventilation system.
Air conditioned air is introduced into the system and a flap opens on the exterior of the fuselage to allow smoke to be exhausted overboard.
Follow on steps, if smoke persists, may include un-powering large portions of the electrical system in an attempt to shut down the components generating the smoke.
The GEN 1 LINE pb, if used, enables generator number one to stay on line but only power one fuel pump in each wing tank.


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Avionics Smoke Detection & Protection
Avionics Smoke Response
EMER ELEC PWR
EMER GEN TEST
GEN 1 LINE
RAT & EMER GEN
MAN ON
SMOKE
OFF
AUTO
VENTILATION
BLOWER
EXTRACT
CAB FANS
OVRD
AUTO
OFF
AIRCRAFT SKIN HEAT EXCHANGER
SKIN EXCH ISOL VALVE
INLET VALVE
EXTRACT VALVE
BLOWER FAN
EXTRACT FAN
AVIONICS
A/C
UNDER FLOOR
CARGO
F.F
LBS/H
3061
AVIONICS SMOKE
LAND ASAP
.IF PERCEPTIBLE SMOKE:
-CAB FANS.....OFF
-GALLEY.....OFF
-SIGNS.....ON
-CKPT/CAB COM.ESTABLISH
.IF REQUIRED:
VENTILATION CONTROLLER
A detailed discussion of the avionics smoke non-normal is presented in the Ventilation Systems lesson.
Text
Index
If smoke is sensed in the aircraft by flight deck or cabin crew, your response, following the ECAM action steps, includes placing the BLOWER and EXTRACT pbs to OVRD.
This action reconfigures the avionics ventilation system.
Air conditioned air is introduced into the system and a flap opens on the exterior of the fuselage to allow smoke to be exhausted overboard.
Follow on steps, if smoke persists, may include un-powering large portions of the electrical system in an attempt to shut down the components generating the smoke.
The GEN 1 LINE pb, if used, enables generator number one to stay on line but only power one fuel pump in each wing tank.

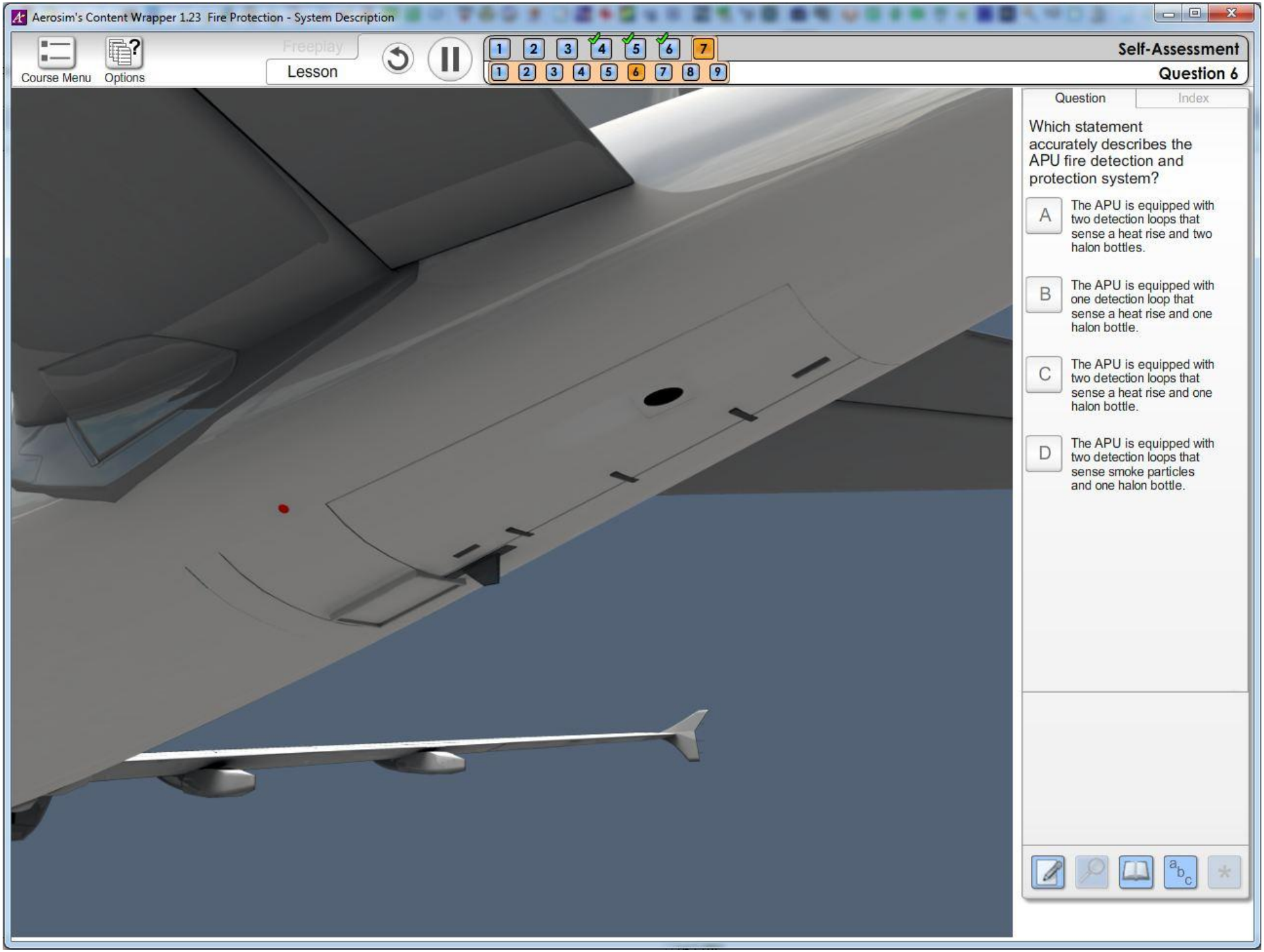

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Self-Assessment
Question 1
Question
Index
Which of the following does NOT have a fire extinguishing system installed?
A
Avionics Compartment
B
Cargo Compartments
C
APU
D
Engines

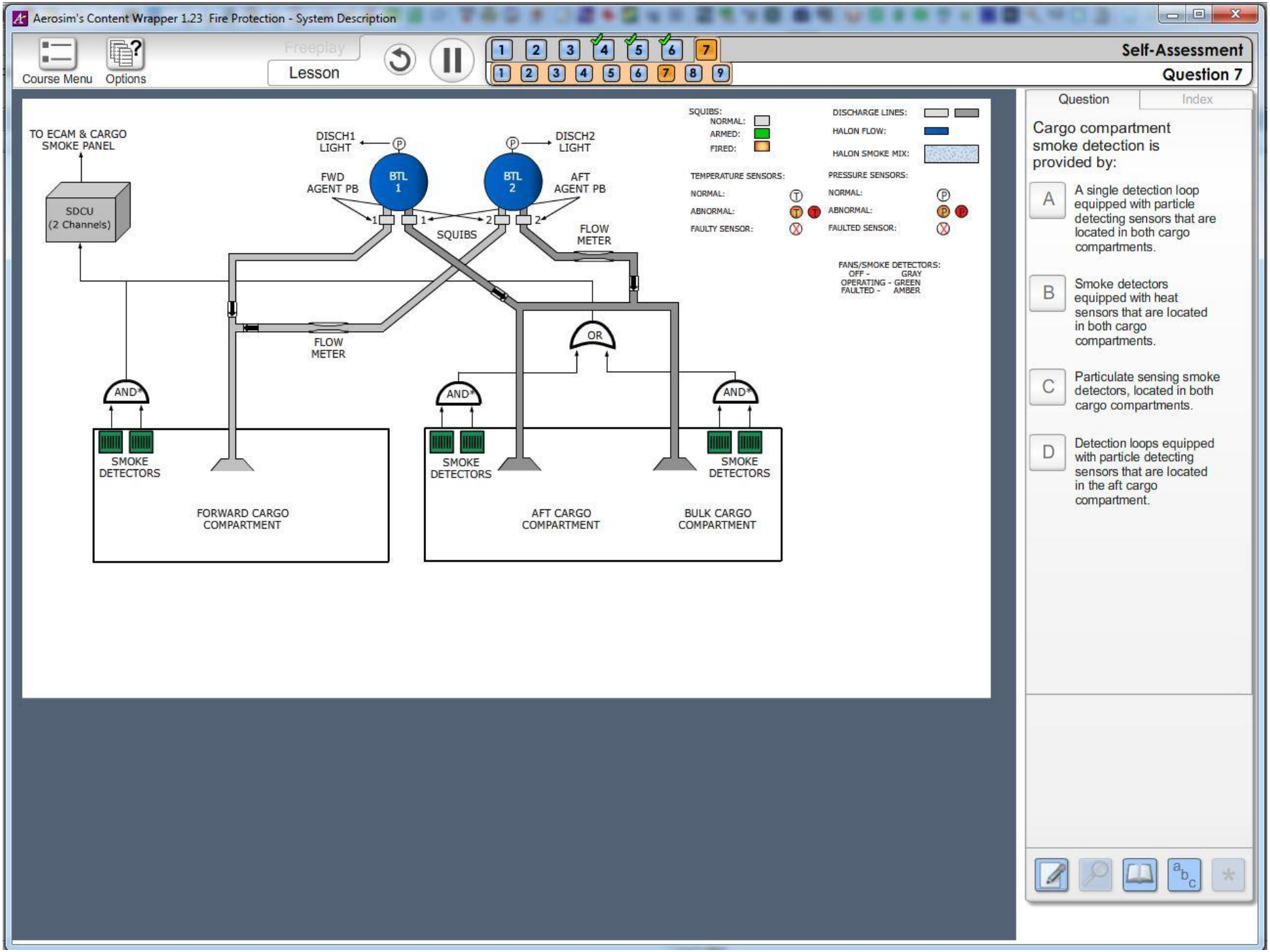

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Self-Assessment
Question 2
Question
Index
Which statement is true regarding cargo compartment fire extinguishing?
A
There is only one halon bottle which is discharged into both compartments.
B
There are two halon bottles which can be discharged into either cargo compartment.
C
There are two halon bottles, one for the FWD compartment and one for the AFT compartment.
CARGO SMOKE
FWD
TEST
AFT
SMOKE
AGENT 1
AGENT 1
AGENT 2
AGENT 2
N2 %
84.6
74.9
N2 %
84.6
FOB: 17680 LBS
SMOKE FWD CARGO SMOKE
-AGENT.....DISCH
LAND ASAP

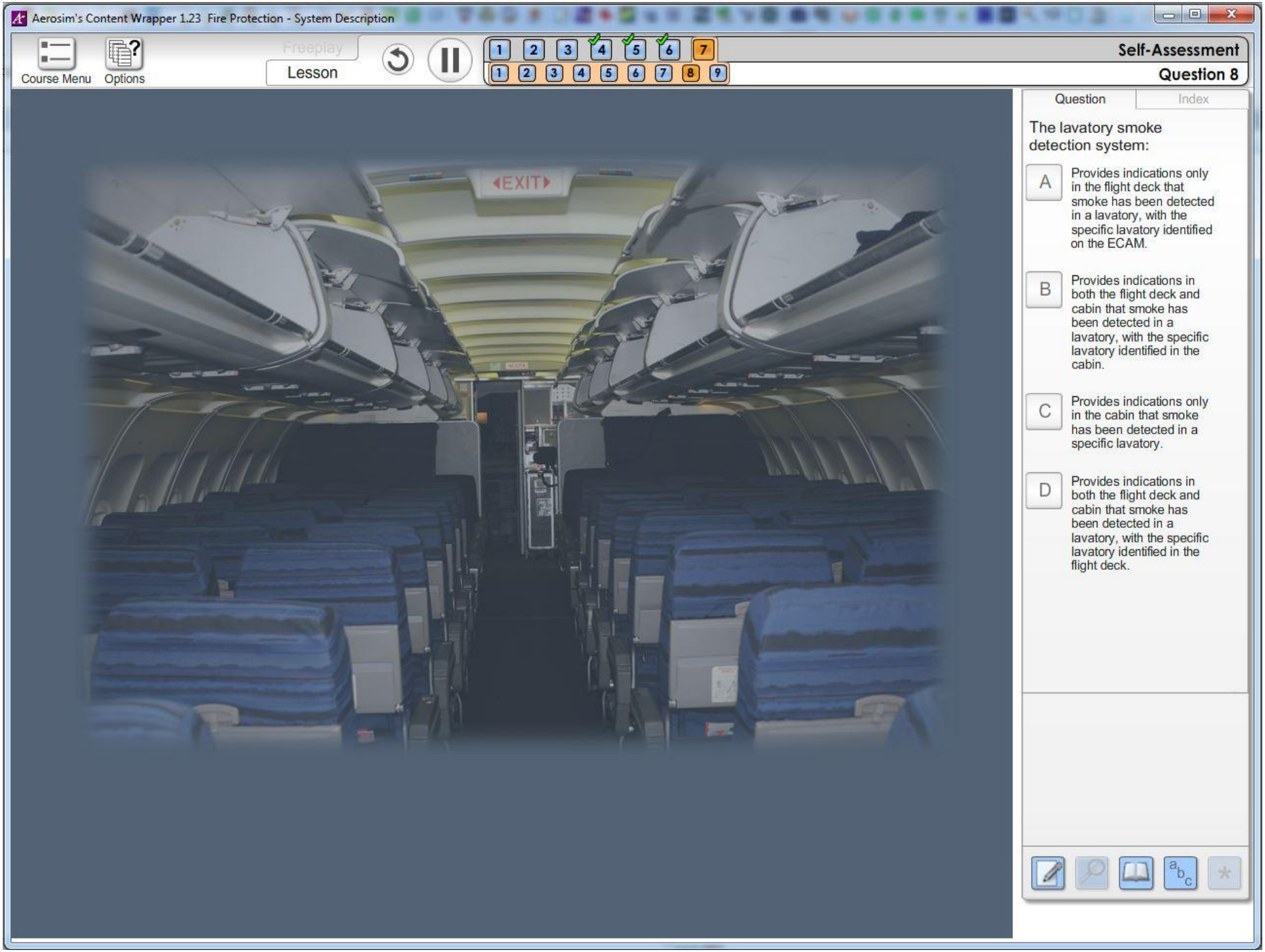

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Self-Assessment
Question 3
Question
Index
Which statement accurately describes each engine's dedicated fire detection system?
A
The Fire Detection Unit will alert you to an engine fire if both fire detection loops detect a heat rise.
B
The Fire Detection Unit will alert you to an engine fire if one fire detection loop detects a heat rise and the other is determined to be faulted.
C
The Fire Detection Unit will alert you to an engine fire if both fire detection loops fail with a few seconds of each other.
D
All of the above.
ENGINE #1 FIRE PB
AGENT 2 PB
AGENT 1 PB
TO APPLICABLE FIRE WARNINGS
FIRE DETECTION UNIT (FDU)
AND*
* 'OR' LOGIC USED IF EITHER LOOP INOP
ENGINE #2 FIRE PB
ENGINE# 1
ENGINE# 2
FADEC
FAN SECTION LOOPS
LOOP A
LOOP B
AGENT 2
AGENT 1
#1 GEN
#2 GEN
IDG
PACK #1 FLOW CONTROL VALVE
PACK#2 FLOW CONTROL VALVE
CROSSBLEED VALVE
ENG BLEED VALVE
PYLON NACELLE LOOPS
HYD FIRE SHUTOFF VALVE
CORE LOOPS
LP FUEL VALVE
APU LP VALVE
APU PUMP
APU BLEED VALVE
APU BTL
APU LOOPS
APU GEN
THERMAL DISCHARGE DISC
AGENT PB
APU FIRE PB
PNEUMATIC LINES:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
SQUIBS:
NORMAL:
ARMED:
FIRED:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
PUMPS:
NORMAL:
OFF:
FAILED:

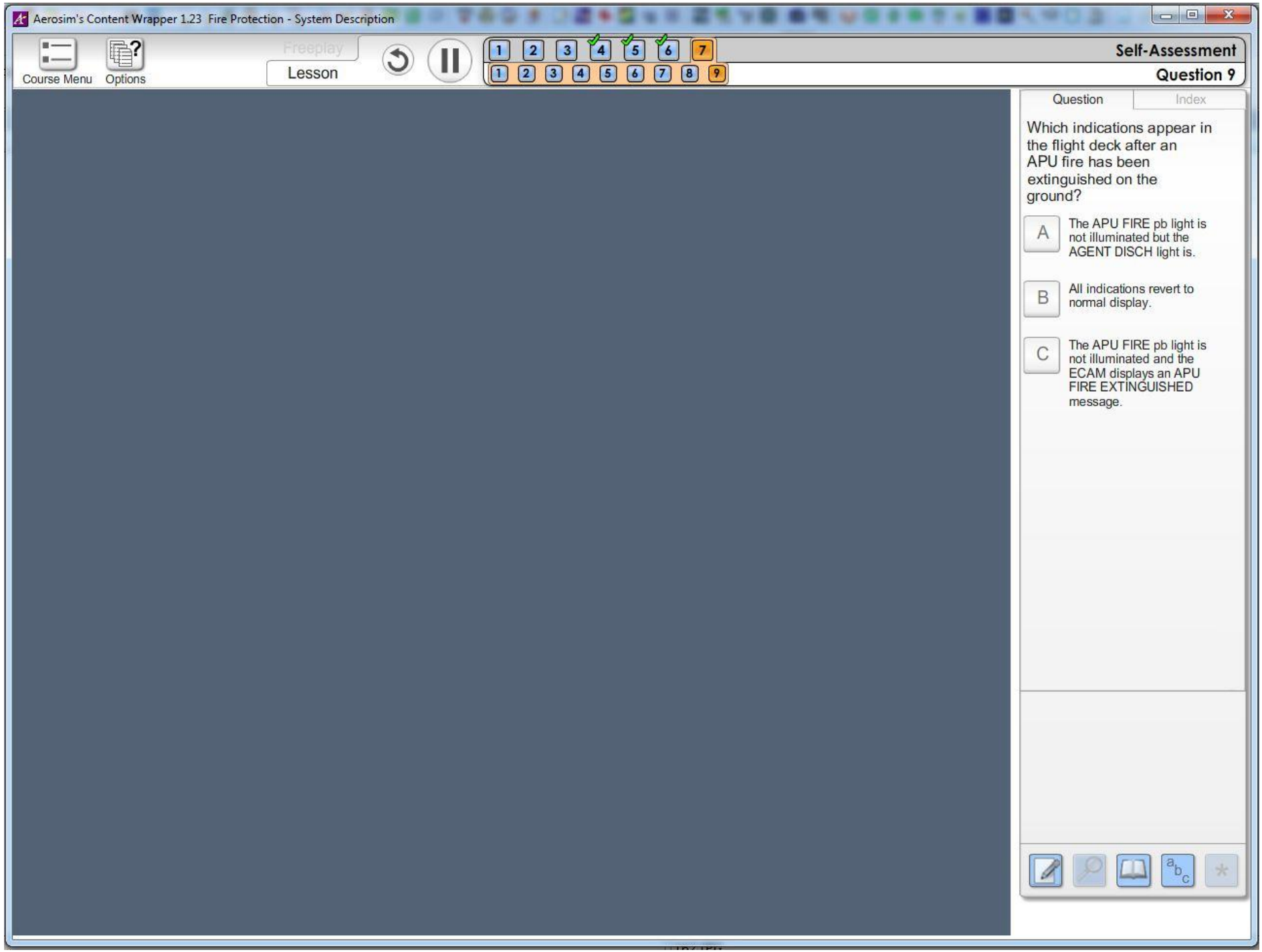

Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Self-Assessment
Question 4
Question
Index
The illuminated SQUIB lights for engine 1 on this FIRE panel indicate that:
A
You are being prompted to raise the guard and push the ENG 1 FIRE pb to release it out.
B
Both squibs for the two halon bottles have been discharged.
C
AGENT 1 and AGENT 2 are not available.
D
Both squibs for the two halon bottles are armed.
AGENT 1
SQUIB
TEST
ENG 1
FIRE
PUSH
AGENT 2
APU
AGENT
ENG 2
FIRE


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Self-Assessment
Question 5
Question
Index
The illuminated DISCH light on the AGENT 1 pb on this FIRE panel indicates that:
A
The # 1 halon bottle is armed.
B
The # 1 halon bottle has faulted.
C
The # 1 halon bottle has been discharged and is depressurized.
AGENT 1
SQUIB
DISCH
TEST
ENG 1
FIRE
PUSH
AGENT 2
APU
AGENT
ENG 2
FIRE


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Self-Assessment
Question 6
Question
Index
Which statement accurately describes the APU fire detection and protection system?
A
The APU is equipped with two detection loops that sense a heat rise and two halon bottles.
B
The APU is equipped with one detection loop that sense a heat rise and one halon bottle.
C
The APU is equipped with two detection loops that sense a heat rise and one halon bottle.
D
The APU is equipped with two detection loops that sense smoke particles and one halon bottle.


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Self-Assessment
Question 7
TO ECAM & CARGO SMOKE PANEL
SDCU (2 Channels)
DISCH1 LIGHT
DISCH2 LIGHT
FWD AGENT PB
AFT AGENT PB
BTL 1
BTL 2
SQUIBS
FLOW METER
FLOW METER
OR
AND*
AND*
AND*
SMOKE DETECTORS
SMOKE DETECTORS
SMOKE DETECTORS
FORWARD CARGO COMPARTMENT
AFT CARGO COMPARTMENT
BULK CARGO COMPARTMENT
SQUIBS:
NORMAL:
ARMED:
FIRED:
DISCHARGE LINES:
HALON FLOW:
HALON SMOKE MIX:
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
PRESSURE SENSORS:
NORMAL:
ABNORMAL:
FAULTED SENSOR:
FANS/SMOKE DETECTORS:
OFF - GRAY
OPERATING - GREEN
FAULTED - AMBER
Question
Index
Cargo compartment smoke detection is provided by:
A
A single detection loop equipped with particle detecting sensors that are located in both cargo compartments.
B
Smoke detectors equipped with heat sensors that are located in both cargo compartments.
C
Particulate sensing smoke detectors, located in both cargo compartments.
D
Detection loops equipped with particle detecting sensors that are located in the aft cargo compartment.


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Self-Assessment
Question 8
Question
Index
The lavatory smoke detection system:
A
Provides indications only in the flight deck that smoke has been detected in a lavatory, with the specific lavatory identified on the ECAM.
B
Provides indications in both the flight deck and cabin that smoke has been detected in a lavatory, with the specific lavatory identified in the cabin.
C
Provides indications only in the cabin that smoke has been detected in a specific lavatory.
D
Provides indications in both the flight deck and cabin that smoke has been detected in a lavatory, with the specific lavatory identified in the flight deck.
EXIT


Aerosim's Content Wrapper 1.23 Fire Protection - System Description
Course Menu
Options
Freeplay
Lesson
Self-Assessment
Question 9
Question
Index
Which indications appear in the flight deck after an APU fire has been extinguished on the ground?
A
The APU FIRE pb light is not illuminated but the AGENT DISCH light is.
B
All indications revert to normal display.
C
The APU FIRE pb light is not illuminated and the ECAM displays an APU FIRE EXTINGUISHED message.

Перечень контрольных вопросов по противопожарной системе самолёта А-320

1. В каких зонах самолёта система обнаруживает пожар?
2. На какой фактор реагирует система в отсеках двигателей?
3. Какой огнегасящий состав используется в системе?
4. На какой фактор реагирует система в багажных отсеках?
5. Где расположены датчики дыма?
6. Где (на каком пульте) расположены индикаторы пожара и органы управления системой?
7. Где размещены огнетушители для подавления пожара в отсеке оборудования?
8. На какой странице нижнего (ECAM) дисплея выдаётся информация о пожаре?
9. Опишите систему обнаружения пожара двигателя.
10. В каких случаях генерируется сигнал пожара двигателя?
11. Горит или нет лампа FIRE после тушения пожара двигателя? Почему?
12. Что происходит в кабине экипажа, когда FDU генерирует сигнал пожара двигателя?
13. Как лётчики определяют загоревшийся двигатель?
14. Когда лётчикам показывается температура в мотогондолах?
15. Сколько баллонов огнегасящего состава (какого?) приходится на каждый двигатель? Где они расположены?
16. Как привести в готовность систему тушения пожара двигателя?
17. Что происходит в системе тушения пожара двигателя, когда она приведена в готовность?
18. Зачем обесточивается система управления двигателем (FADEC) при обнаружении в нём пожара?
19. Как разрядить баллоны с огнегасящим составом в двигатель?
20. Какая индикация у лётчиков в случае успешного тушения пожара двигателя?
21. Как на земле при осмотре самолёта определить есть ли огнегасящий состав в баллонах тушения пожара двигателей?
22. Как провести тестирование системы пожаротушения двигателей перед первым вылетом в течение дня?
23. Опишите систему пожаротушения вспомогательной силовой установки (ВСУ): сколько баллонов, где установлены, когда система активируется, как и где происходит индикация пожара и управление системой?
24. Как при внешнем осмотре определить состояние баллонов системы пожаротушения ВСУ?
25. Как потушить пожар в отсеке ВСУ? Что при этом происходит в системе?
26. Что происходит, если пожар ВСУ случится на земле, во время её запуска? Что надо делать обслуживающему персоналу в этом случае?
27. Что надо сделать перед запуском ВСУ?
28. Как следует выполнять тест противопожарной систему ВСУ при подключённом наземном источнике электроэнергии? Почему?

29. Приведёт ли выполнение теста противопожарной системы ВСУ к отключению ВСУ?
30. Что такое ETOPS система? Что она включает в себя?
31. Когда генерируется сигнал обнаружения дыма в грузовом (багажном) отсеке?
32. Из чего состоит и как работает система тушения пожара в грузовом (багажном) отсеке?
33. По каким сигналам и как приводится в действие система пожаротушения в грузовом (багажном) отсеке?
34. Как происходит опорожнение второй очереди тушения пожара в грузовом (багажном) отсеке? Почему?
35. Может ли случиться ложное срабатывание системы обнаружения пожара в грузовом (багажном) отсеке? При каких ситуациях? Почему?
36. Когда следует выполнять тест системы пожаротушения в грузовом (багажном) отсеке? Что происходит при его выполнении?
37. Что происходит при обнаружении дыма в туалете?
38. Как определить задымлённый туалет?
39. Где расположены туалеты, обозначенные буквами A,D,E ?
40. Как нужно тушить пожар в туалете?
41. Как отличить огнетушитель с водой от огнетушителя с газом халоном?
42. Есть ли в туалете собственная система пожаротушения? Если «да», то как она работает?
43. Как обнаруживается пожар в отсеке оборудования?
44. Что происходит в кабине лётчиков при обнаружении пожара в отсеке оборудования?
45. Что обычно делает экипаж, если дым чувствуется в кабине и отсеке бортпроводников?
46. Что происходит в системе вентиляции при переводе клавиш BLOWER и EXTRACT в положение OVRD ?
47. Если это не помогает и дым чувствуется, то какие ещё меры можно принять?
48. См. вопросы на страницах 161…169 «Инструкции по изучению противопожарной системы самолёта Эрбас А320 на тренажёре AEROSIM».

Составители: А.И.Данилин, А.Н.Тихонов.

МИНИСТЕРСТВО ОБРАЗОВАНИЯ И НАУКИ
РОССИЙСКОЙ ФЕДЕРАЦИИ

ФЕДЕРАЛЬНОЕ ГОСУДАРСТВЕННОЕ БЮДЖЕТНОЕ
ОБРАЗОВАТЕЛЬНОЕ УЧРЕЖДЕНИЕ ВЫСШЕГО
ПРОФЕССИОНАЛЬНОГО ОБРАЗОВАНИЯ «САМАРСКИЙ
ГОСУДАРСТВЕННЫЙ АЭРОКОСМИЧЕСКИЙ УНИВЕРСИТЕТ ИМЕНИ
АКАДЕМИКА С.П. КОРОЛЕВА (НАЦИОНАЛЬНЫЙ
ИССЛЕДОВАТЕЛЬСКИЙ УНИВЕРСИТЕТ)» (СГАУ)

СИСТЕМА КОНДИЦИОНИРОВАНИЯ ВОЗДУХА САМОЛЕТА А320

Комплект учебно-методической документации

Работа выполнена по мероприятию блока 1 «Совершенствование образовательной деятельности» Программы развития СГАУ на 2009-2018 годы по проекту «Разработка образовательных программ по образовательным направлениям факультета инженеров воздушного транспорта»

Соглашение №1/7 от 03.06.2013 г.

САМАРА 2013

УДК 629.7.02
П 384
Автор-составитель: Тихонов Алексей Николаевич

Система кондиционирования воздуха самолета А320: [Электронный ресурс] : комплект учебно-методической документации /М-во образования и науки РФ, Самар. гос. аэрокосм. ун-т. им. С.П. Королева (нац. исслед. ун-т); авт.- сост. А. Н. Тихонов.- Электорон. текстовые и граф. данные.(103,0 МбБ.) – Самара, 2013. – 1 эл. оптич. диск (CD – ROM)

В состав комплекта учебно-методической документации входят:

1.Программы обучения бакалавров техническому обслуживанию системы

кондиционирования воздуха самолета Эрбас А320 на виртуальном тренажере фирмы

Aerosim.

2. Инструкции по изучению системы кондиционирования воздуха самолета Эрбас Ф

320(на русском и английском языке)

3. Перечни контрольных вопросов по системе кондиционирования воздуха самолета

А320.

Комплект учебно-методической документации предназначен для студентов факультета инженеров воздушного транспорта, обучающихся по направлению подготовки бакалавров 162300.62 « Техническая эксплуатация летательных аппаратов и двигателей», дисциплина « Конструкция и техническое обслуживание самолетов с газотурбинными двигателями (на примере конкретной авиационной технике), семестры 5,6.

Комплект разработан на кафедре эксплуатации авиационной техники.

Самарский государственный

МИНИСТЕРСТВО ОБРАЗОВАНИЯ И НАУКИ РОССИЙСКОЙ ФЕДЕРАЦИИ

ФЕДЕРАЛЬНОЕ ГОСУДАРСТВЕННОЕ
БЮДЖЕТНОЕ ОБРАЗОВАТЕЛЬНОЕ УЧРЕЖДЕНИЕ
ВЫСШЕГО ПРОФЕССИОНАЛЬНОГО ОБРАЗОВАНИЯ
«САМАРСКИЙ ГОСУДАРСТВЕННЫЙ АЭРОКОСМИЧЕСКИЙ
УНИВЕРСИТЕТ ИМЕНИ АКАДЕМИКА С.П. КОРОЛЕВА
(НАЦИОНАЛЬНЫЙ ИССЛЕДОВАТЕЛЬСКИЙ УНИВЕРСИТЕТ)»

А.И. ДАНИЛИН, А.Н.ТИХОНОВ

ПРОГРАММА

обучения бакалавров техническому обслуживанию системы кондиционирования воздуха самолёта Эрбас А320 на виртуальном тренажёре фирмы Aerosim

САМАРА

2013

ПРОГРАММА
изучения системы кондиционирования воздуха
самолёта Эрбас А320 на виртуальном
тренажёре фирмы Aerosim

№	Тема	Часы	Примечание
1	Общие сведения о составе и функциях системы.	1	8 слайдов
2	Назначение и функции регуляторов блоков. Работа при отказах блоков.	1	10 слайдов
3	Краны управления расходом блока. Назначение и работа.	1.5	17 слайдов
4	Селектор расхода воздуха блока. Ручное управление.	0.5	6 слайдов
5	Работа блоков в штатном режиме.	1	10 слайдов
6	Мониторинг и управление блоками. Индикация в кабине экипажа.	1	10 слайдов
7	Устройство смешивания: назначение и работа. Вентиляция салона.	1	8 слайдов
8	Кондиционированный воздух от внешнего источника низкого давления.	0.5	6 слайдов
9	Аварийный воздухозаборник набегающего потока.	0.5	5 слайдов
10	Зональный регулятор системы кондиционирования воздуха. Отказы зонального регулятора.	1	9 слайдов
11	Система выравнивания температуры. Работа при отказах.	1	9 слайдов
12	Селекторы зон салона и температурных зон.	0.5	6 слайдов
13	Тесты проверки знаний	1.5	11 слайдов
	Итого часов:	**12**	115 слайдов

МЕТОДИКА И ТЕХНОЛОГИЯ
обучения техническому обслуживанию системы кондиционирования воздуха самолёта Эрбас А320 на виртуальном тренажёре фирмы Aerosim

Этап 1. (12 часов). Изучение состава и принципов функционирования системы кондиционирования воздуха с использованием обучающей системы тренажёра, см. Приложение 1.

На этом этапе основное внимание уделяется двум равнозначным дидактическим моментам.

Во-первых, студенты должны освоить специфический английский язык (терминология плюс аббревиатуры) до уровня свободного распознавания аббревиатур и чёткого понимания сообщений системных дисплеев.

Во-вторых, студенты должны понять и надёжно запомнить строение, функционирование, состав и назначение отдельных устройств системы кондиционирования воздуха. Особое внимание на этом шаге уделяется работе системы в нештатных, аварийных ситуациях.

Обучение на данном этапе строится по следующей схеме.

1. Студенты получают русско-англо-язычный бумажный экземпляр кадров обучающей системы и работают с обучающей системой, используя бумажный экземпляр в качестве справочника.
2. Затем преподаватель проводит опрос по каждой теме (см. Программу) обучающей системы без использования бумажного экземпляра. В качестве подсказки студент видит только английский текст. По результатам опроса студент допускается к тестированию.
3. Завершающим этапом является тестирование внутри обучающей системы. Признаком прохождения теста являются правильные ответы на ВСЕ вопросы. Любой неправильный ответ возвращает студента к пункту 1.

Этап 2. (4 часов). Изучение размещения на самолёте оборудования системы кондиционирования воздуха.

Этот этап проводится с помощью виртуального тренажёра А320. Студент работает с Руководством пользователя виртуального тренажёра по технической эксплуатации А320.

Указав обозначение прибора и нажав кнопку Search (Поиск), студент получает изображение прибора на самолёте. Если прибор находится в отсеке за крышкой лючка или съёмной панелью, то щёлкнув левой кнопкой мыши по лючку или панели и выбрав пункт Remove (Снять), можно заглянуть внутрь отсека и увидеть прибор.

После обнаружения всех необходимых агрегатов студент готов к контрольному опросу, который проводит преподаватель.

Этап 3. (12 часов). Изучение регламента технического обслуживания системы кондиционирования воздуха.

Проводится с помощью документа по техническому регламенту, входящему в базу данных тренажёра.

Здесь ключевыми знаниями являются знания периодичности технического обслуживания, маршрута осмотра, номенклатуры необходимого инструмента и размещения обслуживаемых агрегатов.

В конце этапа – контрольный опрос преподавателем.

Этап 4. (12 часов). Поиск неисправностей в системе кондиционирования воздуха.

Этот этап проводится с помощью виртуального тренажёра А320. Студент работает с Руководством пользователя виртуального тренажёра по технической эксплуатации А320, раздел 4.3.

Преподаватель задаёт отказ того или иного агрегата, тренажёр моделирует ситуацию в системе, а студент по сообщениям системных дисплеев кабины самолёта должен определить отказавший агрегат, найти его место на самолёте и выполнить виртуальную процедуру его замены.

Фактически данный этап является контрольным испытанием для студентов, на котором они должны показать свою компетенцию по техническому обслуживанию противопожарной системы.

Количество отказов, которые должен устранить студент, определяется преподавателем индивидуально, на основании знаний и компетенций, продемонстрированных на предыдущих этапах.

Успешное выполнение данного этапа завершает освоение системы кондиционирования воздуха самолёта А320.

В случае неуспеха студент может быть возвращён на любой этап обучения, по усмотрению преподавателя.

Суммарный объём аудиторных занятий на тренажёре – 40 часов.

Общие рекомендации.

1. Руководство пользователя виртуального тренажёра по технической эксплуатации А320 подготовлено в двух вариантах, - на русском и на английском языке. Первые два занятия рекомендуется использовать оба варианта. Начиная с третьего занятия на тренажёре, рекомендуется пользоваться только англоязычным вариантом.
2. Рекомендуется на каждом учебном столе виртуального тренажёра иметь распечатку используемых аббревиатур на английском языке.
3. Поскольку языковая подготовка студентов неравномерна, рекомендуется НЕ запрещать студентам во время занятий на тренажёре пользоваться личными планшетами и нетбуками для англо-русского перевода. Предпочтительным является использование переводчика Multitran, поскольку он имеет наиболее широкий авиационно-технический словарный запас, включая аббревиатуры. Multitran имеет бесплатный on-line доступ в интернете по ссылке www.multitran.ru.
4. Во время проведения контрольных опросов пользование личными планшетами и нетбуками категорически НЕ разрешается. За время занятий студенты кроме технических знаний должны также пополнить свой словарный запас английского языка.
5. О правилах работы и оценки освоения отдельных учебных тем и в целом всей программы, студенты должны быть проинформированы до начала занятий.

МИНИСТЕРСТВО ОБРАЗОВАНИЯ И НАУКИ РОССИЙСКОЙ ФЕДЕРАЦИИ

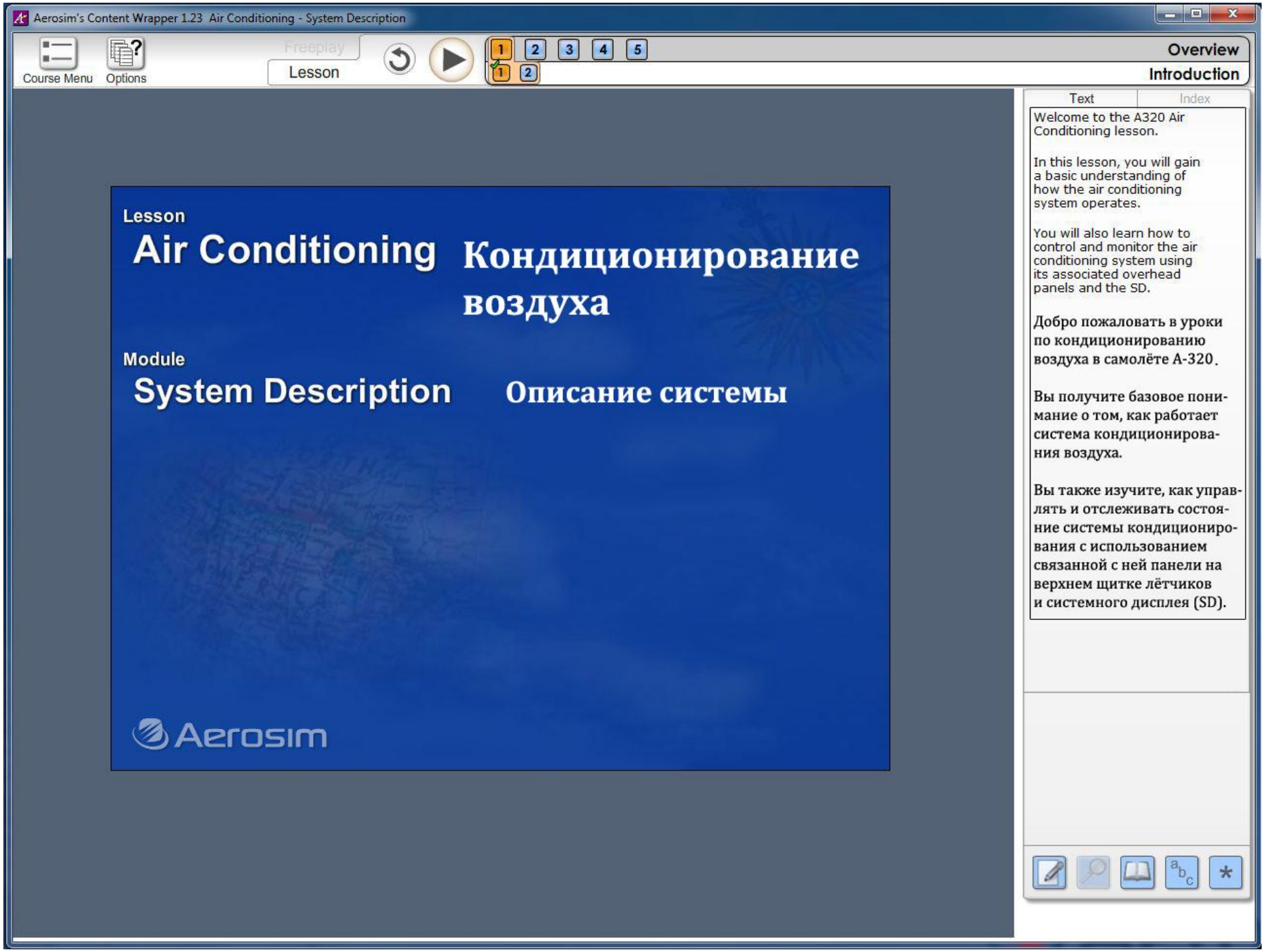
ФЕДЕРАЛЬНОЕ ГОСУДАРСТВЕННОЕ
БЮДЖЕТНОЕ ОБРАЗОВАТЕЛЬНОЕ УЧРЕЖДЕНИЕ
ВЫСШЕГО ПРОФЕССИОНАЛЬНОГО ОБРАЗОВАНИЯ
«САМАРСКИЙ ГОСУДАРСТВЕННЫЙ АЭРОКОСМИЧЕСКИЙ
УНИВЕРСИТЕТ ИМЕНИ АКАДЕМИКА С.П. КОРОЛЕВА
(НАЦИОНАЛЬНЫЙ ИССЛЕДОВАТЕЛЬСКИЙ УНИВЕРСИТЕТ)»

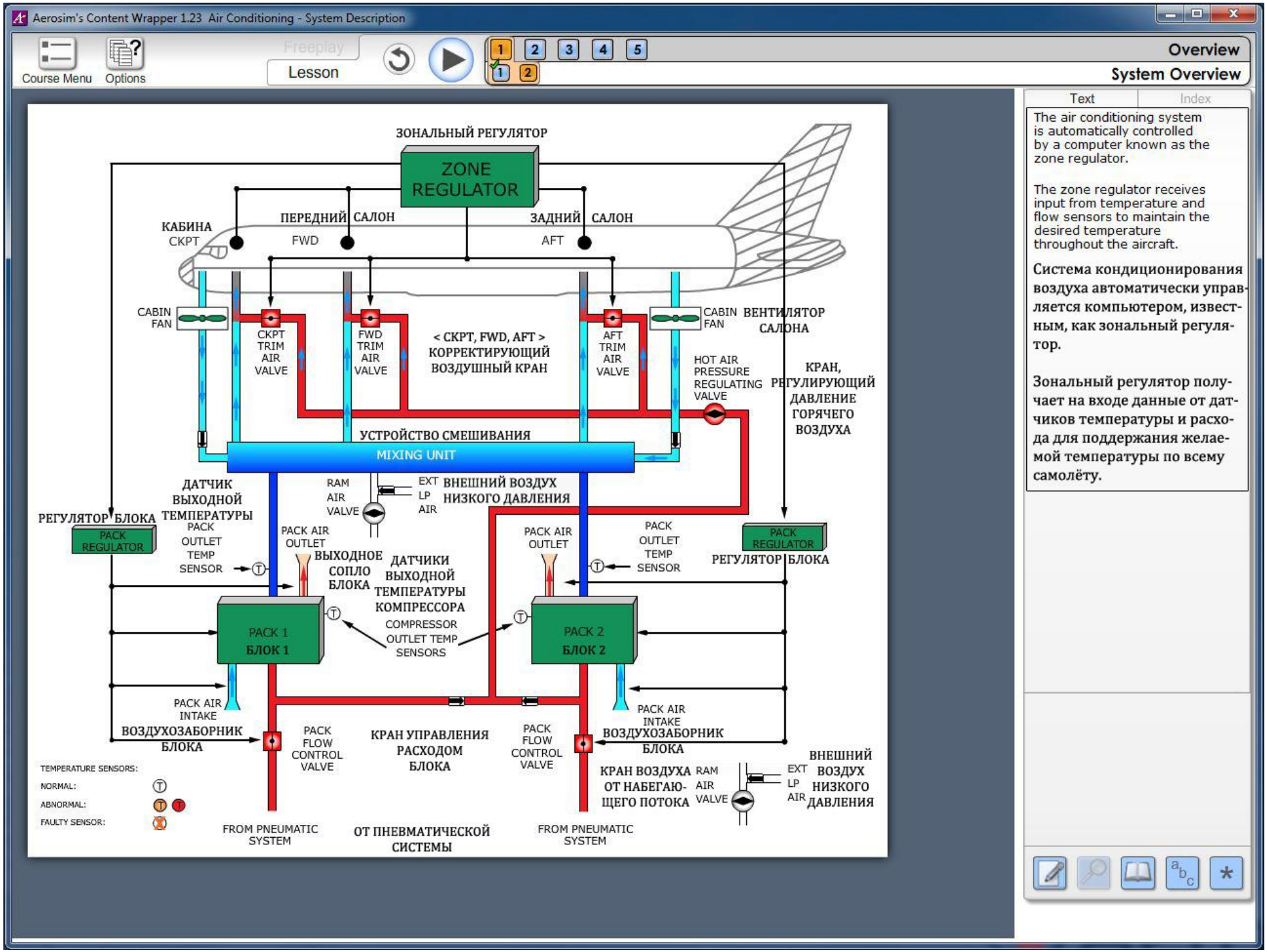
А.И. ДАНИЛИН, А.Н.ТИХОНОВ

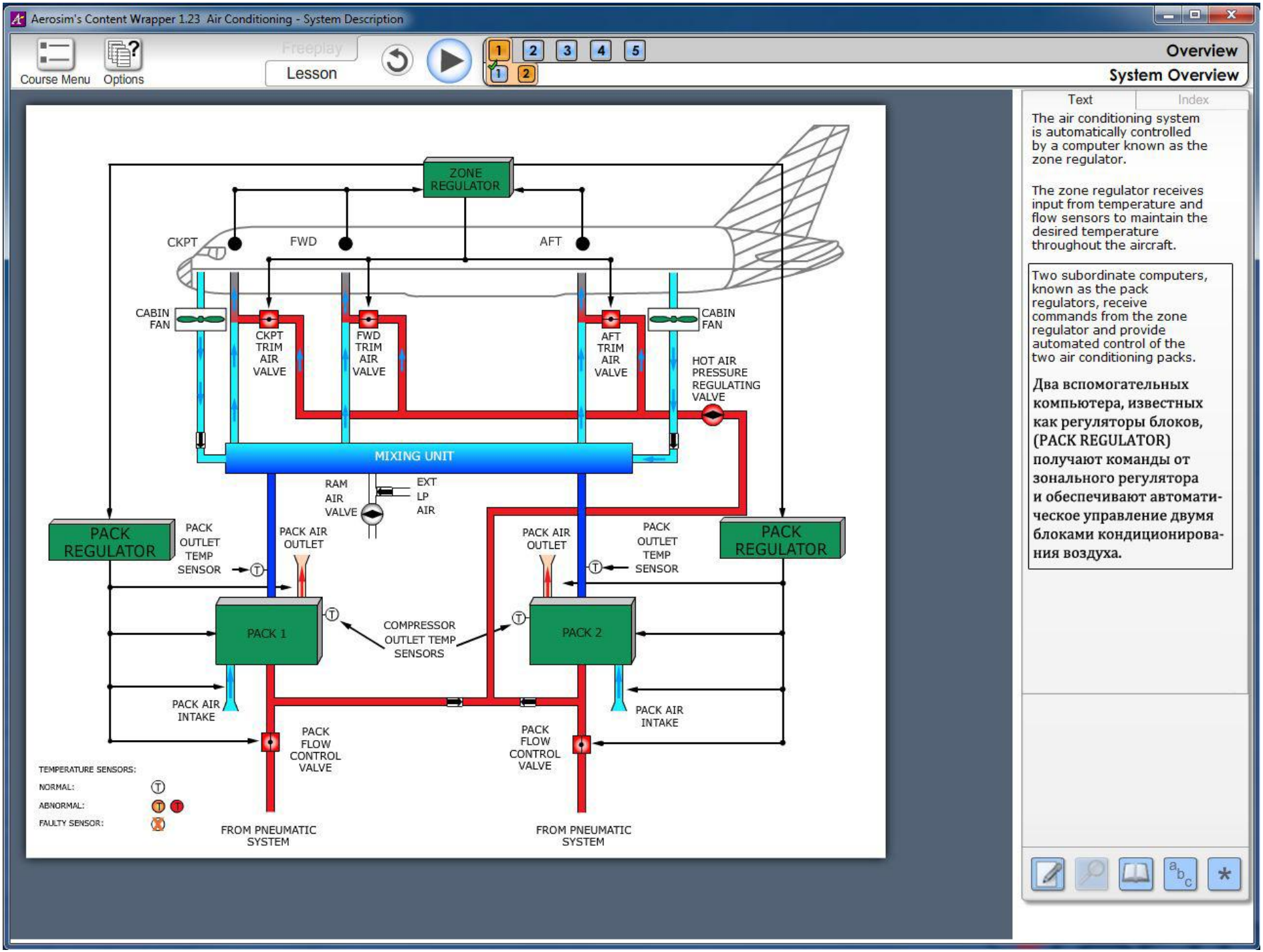
Инструкция по изучению системы кондиционирования воздуха самолёта Эрбас А320 на тренажёре Aerosim

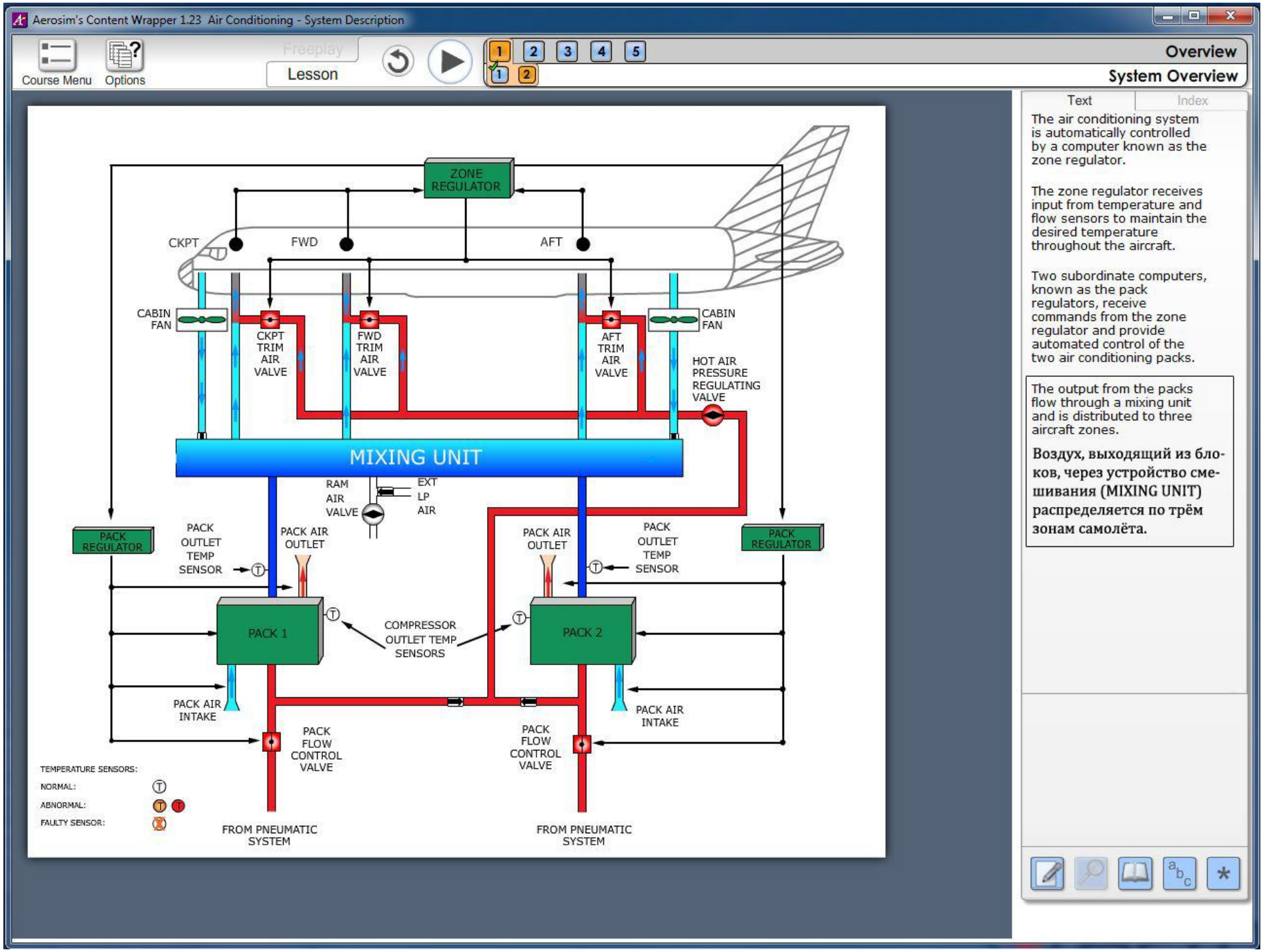
С А М А Р А

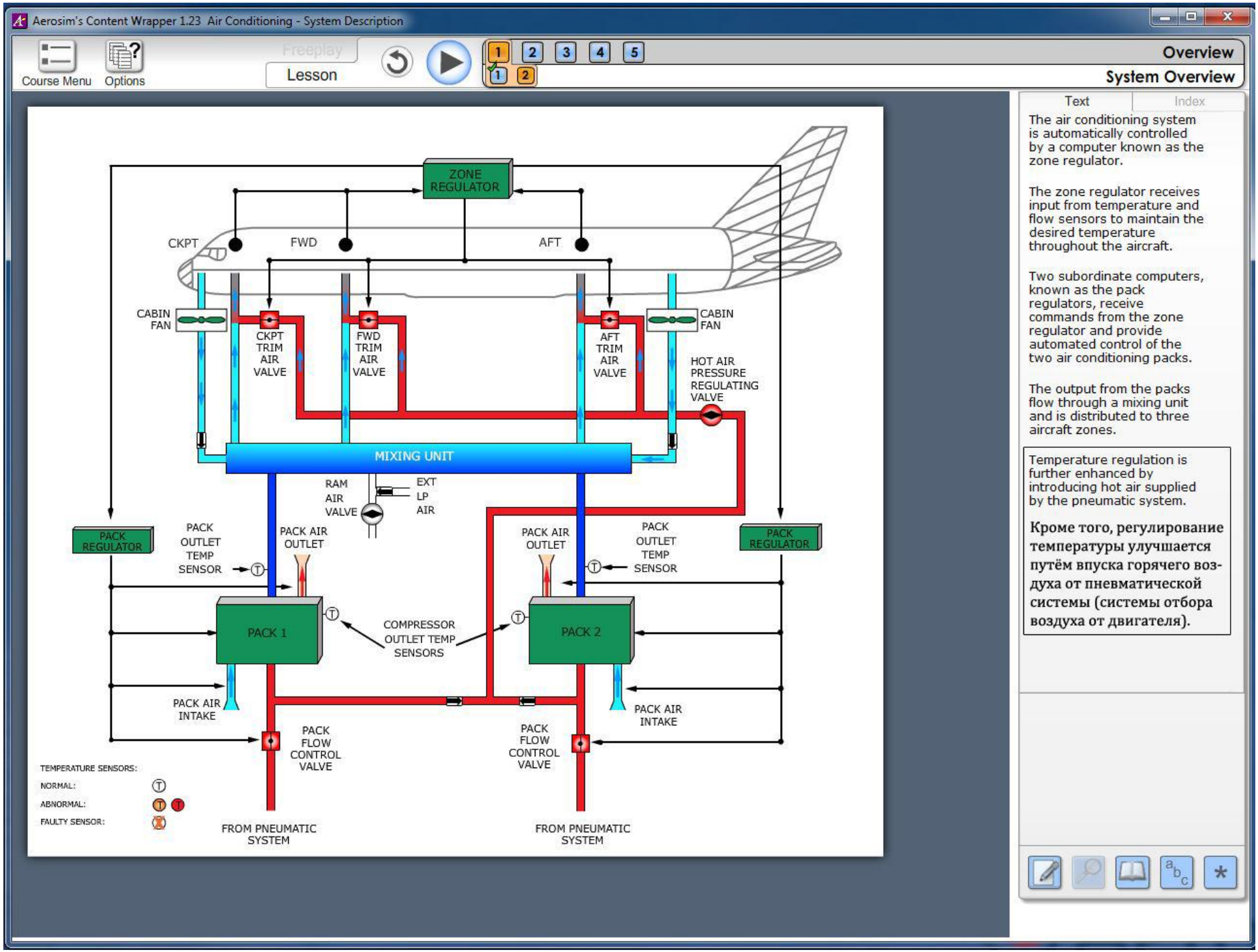
2013

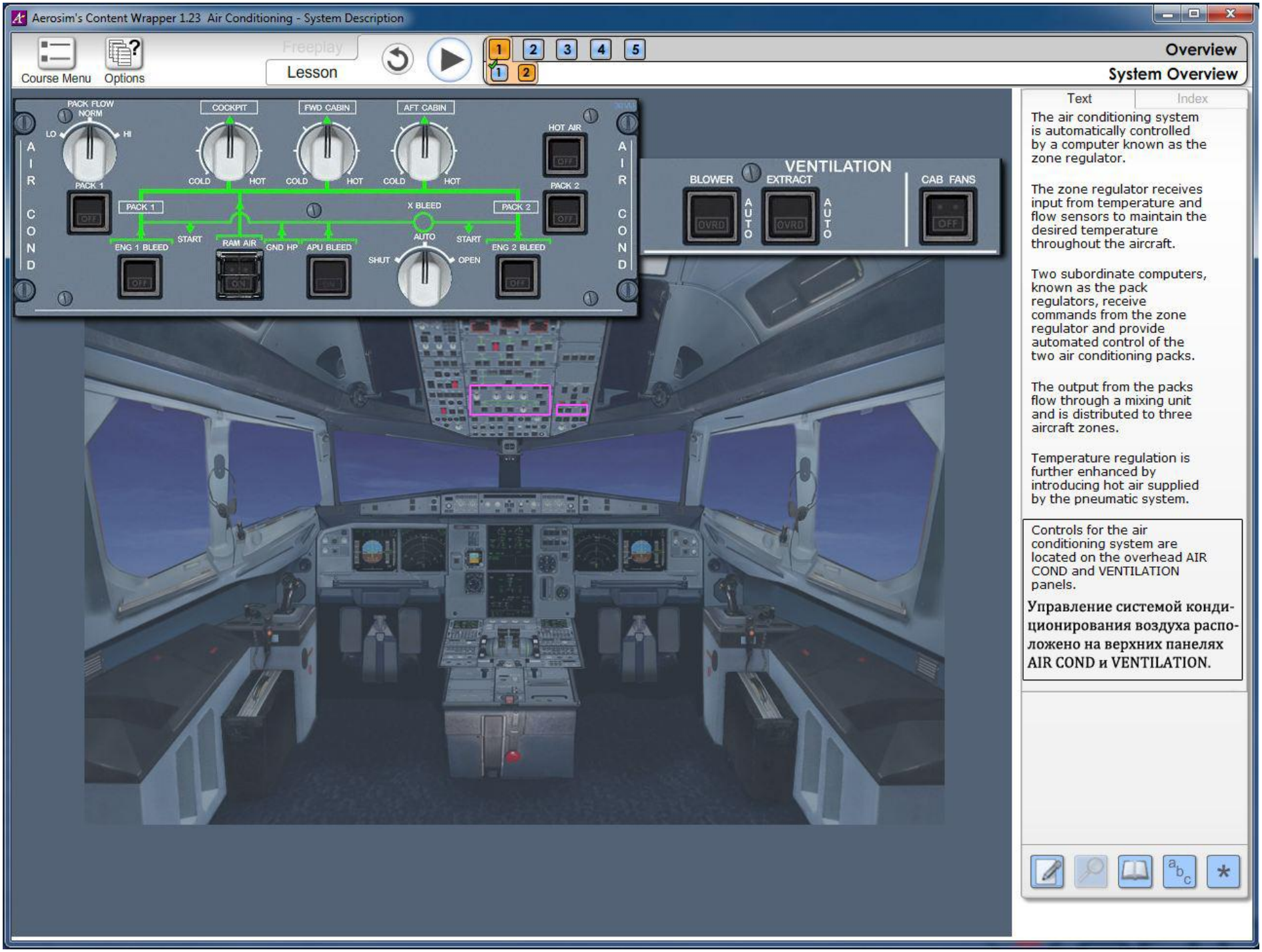

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
1 2 3 4 5
1 2
Overview
Introduction
Text
Index
Welcome to the A320 Air Conditioning lesson.
In this lesson, you will gain a basic understanding of how the air conditioning system operates.
You will also learn how to control and monitor the air conditioning system using its associated overhead panels and the SD.
Добро пожаловать в уроки по кондиционированию воздуха в самолёте А-320.
Вы получите базовое понимание о том, как работает система кондиционирования воздуха.
Вы также изучите, как управлять и отслеживать состояние системы кондиционирования с использованием связанной с ней панели на верхнем щитке лётчиков и системного дисплея (SD).
Lesson
Air Conditioning
Кондиционирование воздуха
Module
System Description
Описание системы
Aerosim

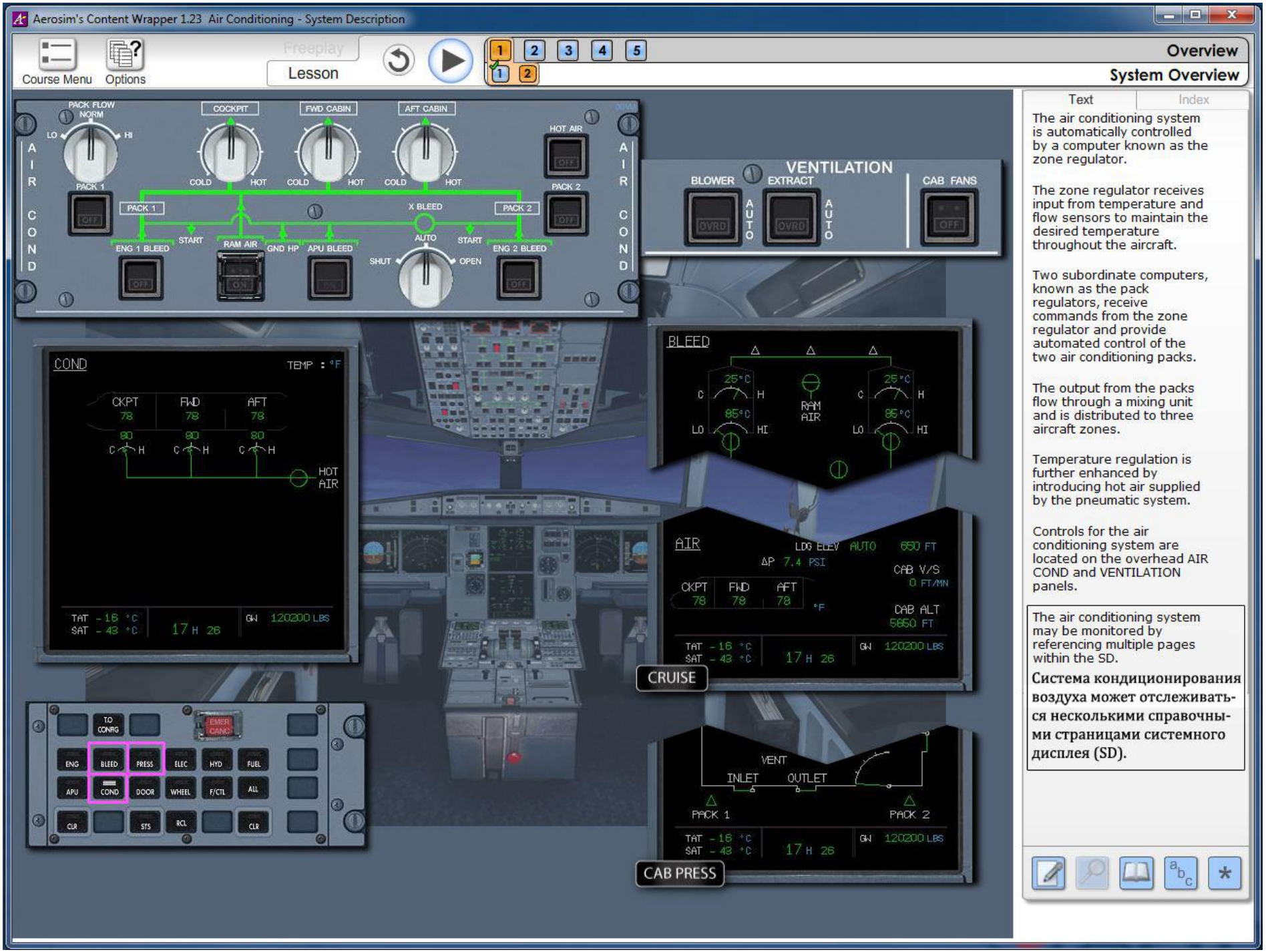

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Overview
System Overview
Text
Index
The air conditioning system is automatically controlled by a computer known as the zone regulator.
The zone regulator receives input from temperature and flow sensors to maintain the desired temperature throughout the aircraft.
Система кондиционирования воздуха автоматически управляется компьютером, известным, как зональный регулятор.
Зональный регулятор получает на входе данные от датчиков температуры и расхода для поддержания желаемой температуры по всему самолёту.
ЗОНАЛЬНЫЙ РЕГУЛЯТОР
ZONE REGULATOR
КАБИНА CKPT
ПЕРЕДНИЙ САЛОН FWD
ЗАДНИЙ САЛОН AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
< CKPT, FWD, AFT > КОРРЕКТИРУЮЩИЙ ВОЗДУШНЫЙ КРАН
AFT TRIM AIR VALVE
CABIN FAN ВЕНТИЛЯТОР САЛОНА
HOT AIR PRESSURE REGULATING VALVE
КРАН, РЕГУЛИРУЮЩИЙ ДАВЛЕНИЕ ГОРЯЧЕГО ВОЗДУХА
УСТРОЙСТВО СМЕШИВАНИЯ
MIXING UNIT
RAM AIR VALVE
EXT LP AIR ВНЕШНИЙ ВОЗДУХ НИЗКОГО ДАВЛЕНИЯ
ДАТЧИК ВЫХОДНОЙ ТЕМПЕРАТУРЫ
РЕГУЛЯТОР БЛОКА
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
ВЫХОДНОЕ СОПЛО БЛОКА
ДАТЧИКИ ВЫХОДНОЙ ТЕМПЕРАТУРЫ КОМПРЕССОРА
COMPRESSOR OUTLET TEMP SENSORS
PACK 1 БЛОК 1
PACK 2 БЛОК 2
PACK AIR INTAKE
ВОЗДУХОЗАБОРНИК БЛОКА
PACK FLOW CONTROL VALVE
КРАН УПРАВЛЕНИЯ РАСХОДОМ БЛОКА
КРАН ВОЗДУХА ОТ НАБЕГАЮЩЕГО ПОТОКА
ВНЕШНИЙ ВОЗДУХ НИЗКОГО ДАВЛЕНИЯ
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
ОТ ПНЕВМАТИЧЕСКОЙ СИСТЕМЫ

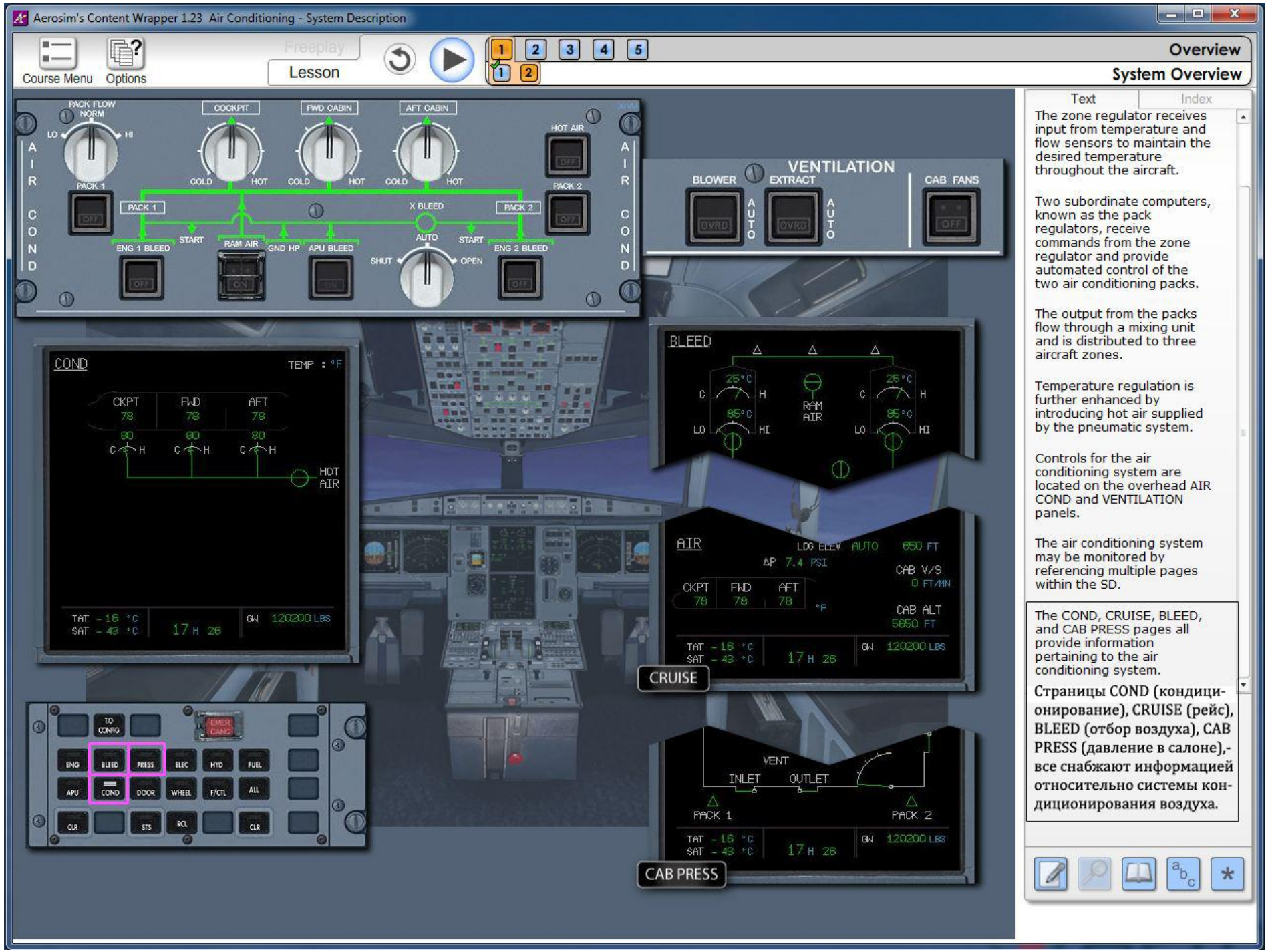

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
1
2
3
4
5
Overview
System Overview
Text
Index
The air conditioning system is automatically controlled by a computer known as the zone regulator.
The zone regulator receives input from temperature and flow sensors to maintain the desired temperature throughout the aircraft.
Two subordinate computers, known as the pack regulators, receive commands from the zone regulator and provide automated control of the two air conditioning packs.
Два вспомогательных компьютера, известных как регуляторы блоков, (PACK REGULATOR) получают команды от зонального регулятора и обеспечивают автоматическое управление двумя блоками кондиционирования воздуха.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

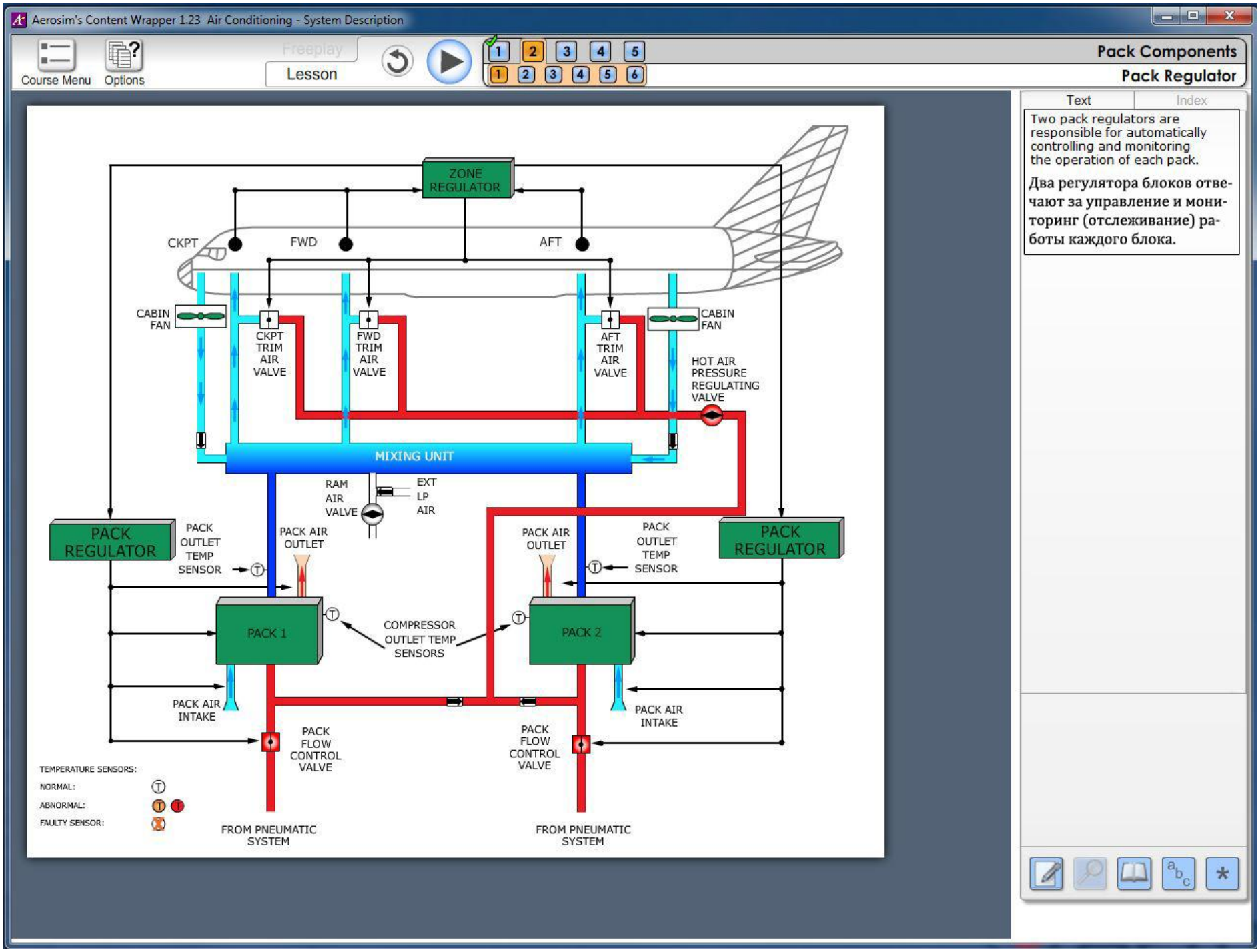

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
1
2
3
4
5
Overview
System Overview
Text
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The zone regulator receives input from temperature and flow sensors to maintain the desired temperature throughout the aircraft.
Two subordinate computers, known as the pack regulators, receive commands from the zone regulator and provide automated control of the two air conditioning packs.
The output from the packs flow through a mixing unit and is distributed to three aircraft zones.
Воздух, выходящий из блоков, через устройство смешивания (MIXING UNIT) распределяется по трём зонам самолёта.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

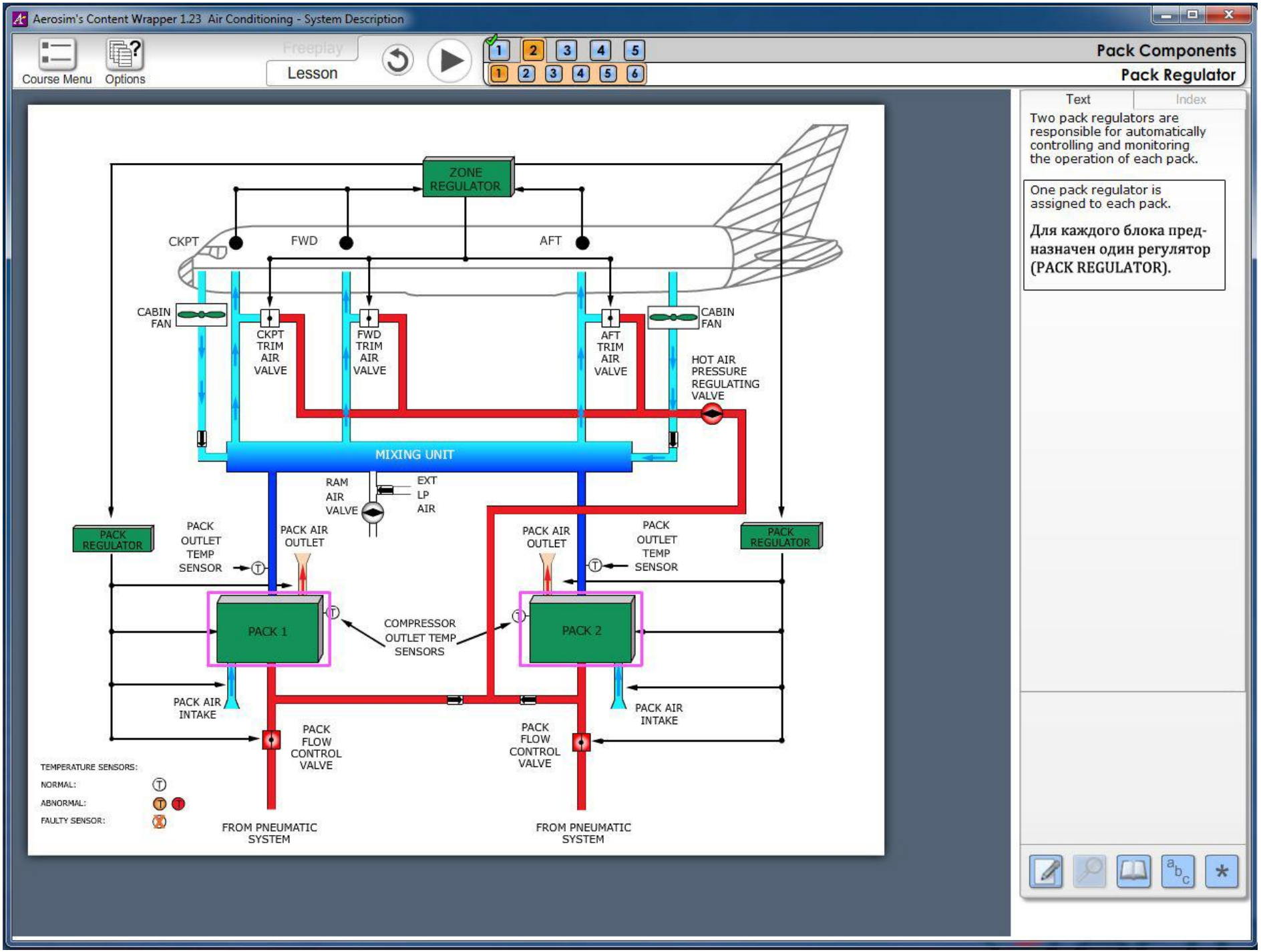

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
1 2 3 4 5
Overview
System Overview
Text
Index
The air conditioning system is automatically controlled by a computer known as the zone regulator.
The zone regulator receives input from temperature and flow sensors to maintain the desired temperature throughout the aircraft.
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The output from the packs flow through a mixing unit and is distributed to three aircraft zones.
Temperature regulation is further enhanced by introducing hot air supplied by the pneumatic system.
Кроме того, регулирование температуры улучшается путём впуска горячего воздуха от пневматической системы (системы отбора воздуха от двигателя).
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

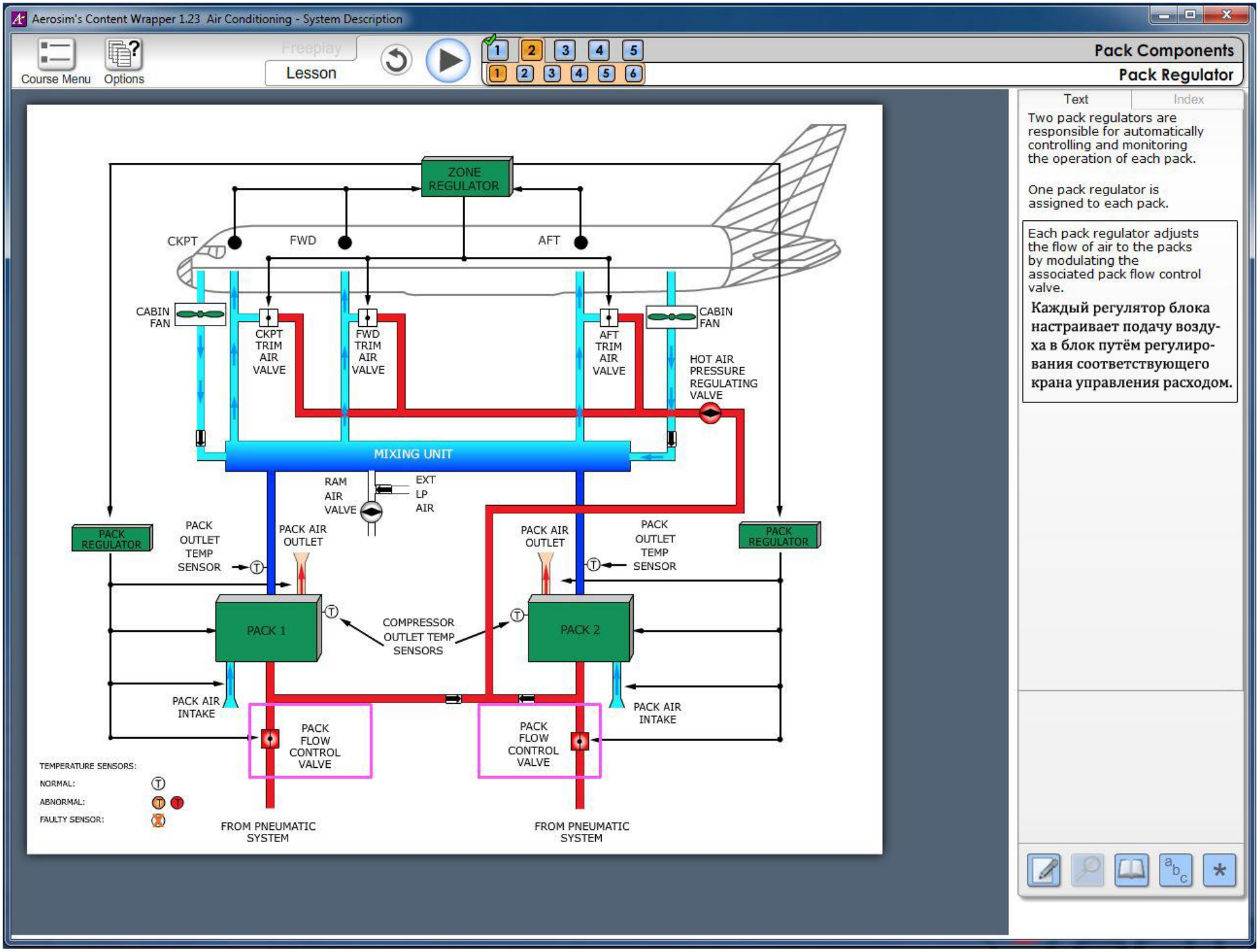

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
1 2 3 4 5
Overview
System Overview
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
HOT AIR
COLD
HOT
PACK 1
PACK 2
X BLEED
AUTO
SHUT
OPEN
START
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
ENG 2 BLEED
AIR COND
VENTILATION
BLOWER
EXTRACT
CAB FANS
OVRD
OFF
Text
Index
The air conditioning system is automatically controlled by a computer known as the zone regulator.
The zone regulator receives input from temperature and flow sensors to maintain the desired temperature throughout the aircraft.
Two subordinate computers, known as the pack regulators, receive commands from the zone regulator and provide automated control of the two air conditioning packs.
The output from the packs flow through a mixing unit and is distributed to three aircraft zones.
Temperature regulation is further enhanced by introducing hot air supplied by the pneumatic system.
Controls for the air conditioning system are located on the overhead AIR COND and VENTILATION panels.
Управление системой кондиционирования воздуха расположено на верхних панелях AIR COND и VENTILATION.

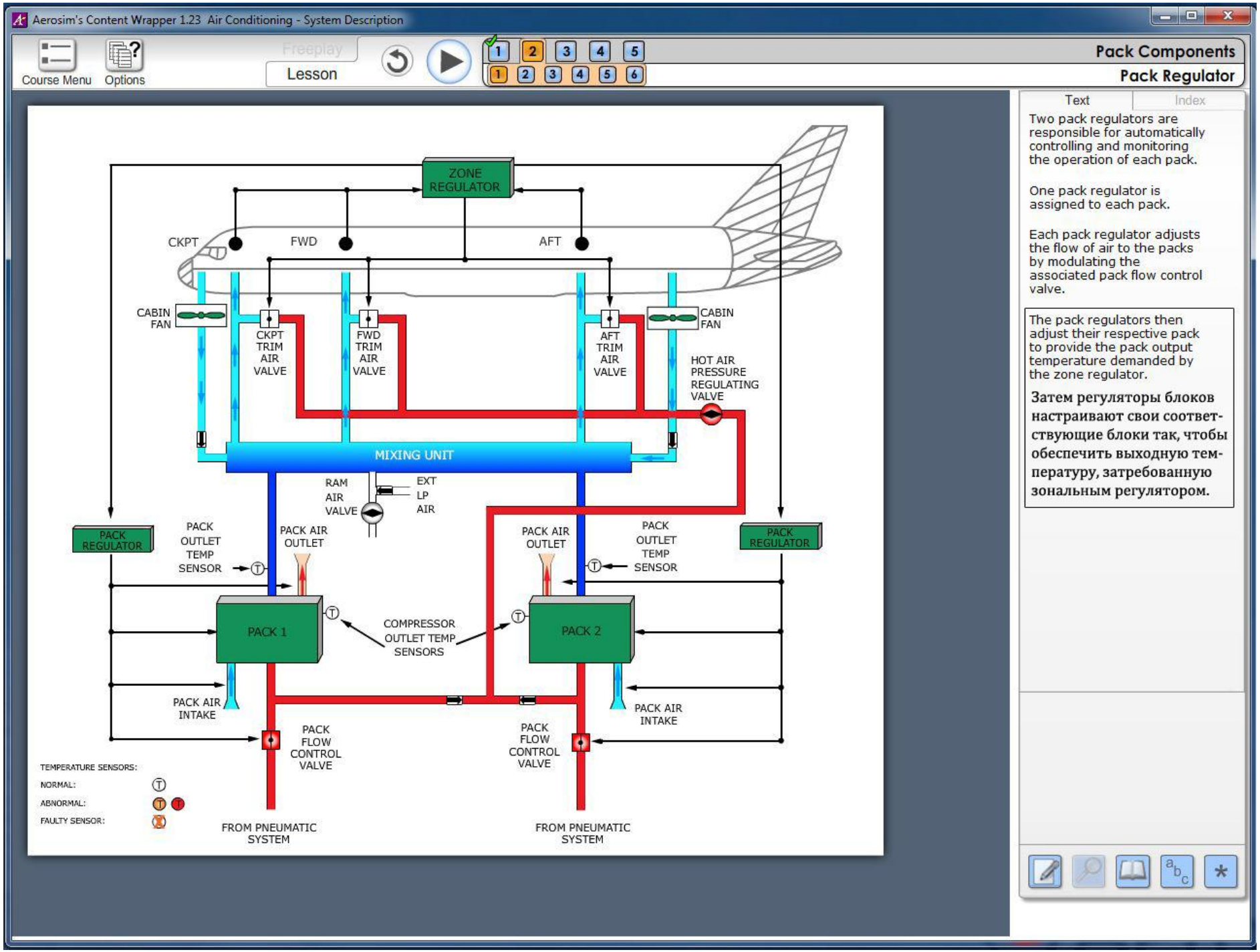

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Overview
System Overview
Text
Index
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The output from the packs flow through a mixing unit and is distributed to three aircraft zones.
Temperature regulation is further enhanced by introducing hot air supplied by the pneumatic system.
Controls for the air conditioning system are located on the overhead AIR COND and VENTILATION panels.
The air conditioning system may be monitored by referencing multiple pages within the SD.
Система кондиционирования воздуха может отслеживаться несколькими справочными страницами системного дисплея (SD).
PACK FLOW
COCKPIT
FWD CABIN
AFT CABIN
HOT AIR
PACK 1
PACK 2
X BLEED
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
ENG 2 BLEED
VENTILATION
BLOWER
EXTRACT
CAB FANS
COND
BLEED
AIR
CRUISE
CAB PRESS
VENT
INLET
OUTLET

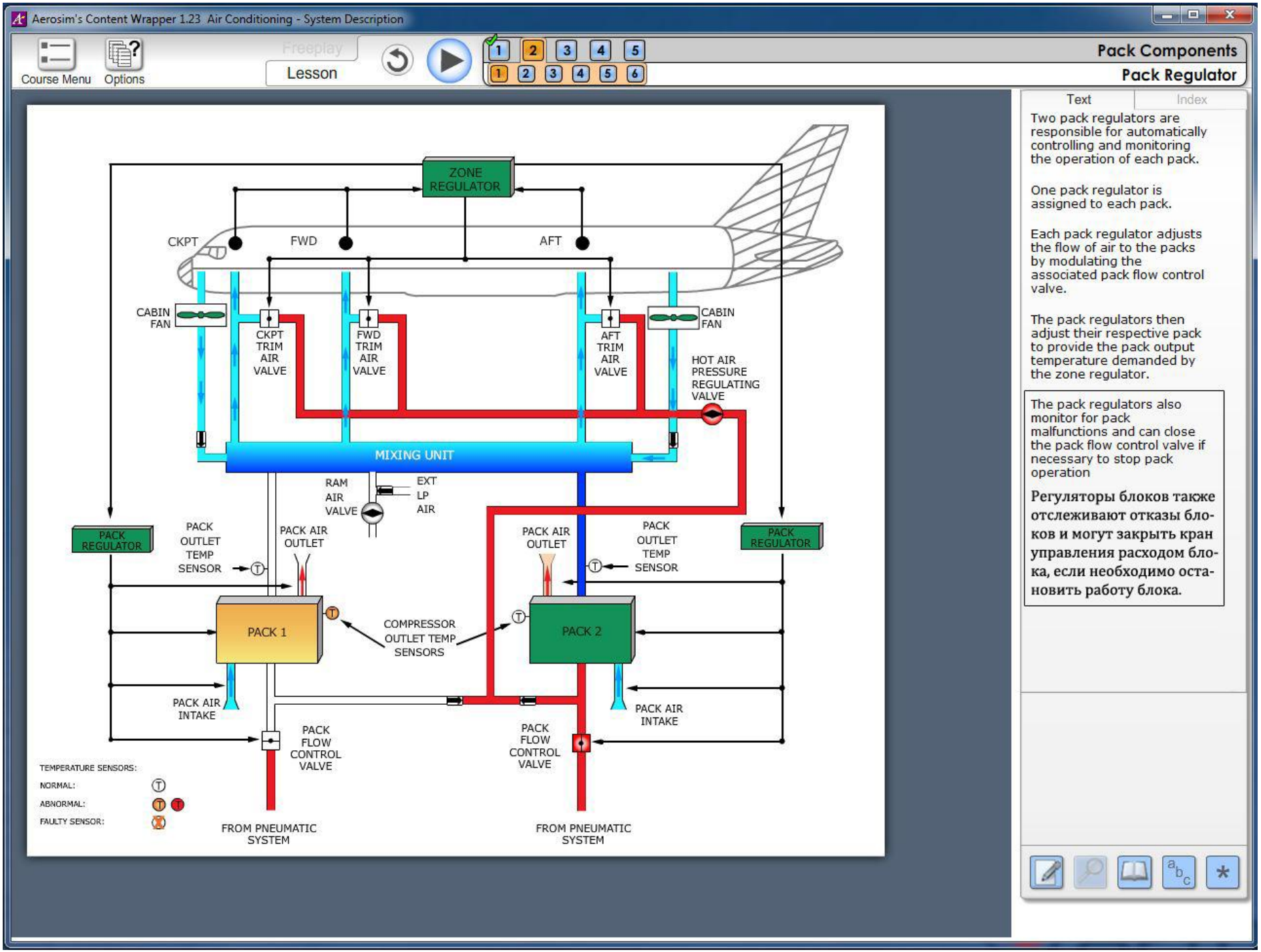

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Overview
System Overview
Text
Index
The zone regulator receives input from temperature and flow sensors to maintain the desired temperature throughout the aircraft.
Two subordinate computers, known as the pack regulators, receive commands from the zone regulator and provide automated control of the two air conditioning packs.
The output from the packs flow through a mixing unit and is distributed to three aircraft zones.
Temperature regulation is further enhanced by introducing hot air supplied by the pneumatic system.
Controls for the air conditioning system are located on the overhead AIR COND and VENTILATION panels.
The air conditioning system may be monitored by referencing multiple pages within the SD.
The COND, CRUISE, BLEED, and CAB PRESS pages all provide information pertaining to the air conditioning system.
Страницы COND (кондиционирование), CRUISE (рейс), BLEED (отбор воздуха), CAB PRESS (давление в салоне),- все снабжают информацией относительно системы кондиционирования воздуха.
PACK FLOW
COCKPIT
FWD CABIN
AFT CABIN
HOT AIR
PACK 1
PACK 2
X BLEED
ENG 1 BLEED
ENG 2 BLEED
RAM AIR
GND HP
APU BLEED
VENTILATION
BLOWER
EXTRACT
CAB FANS
COND
BLEED
AIR
CRUISE
CAB PRESS
VENT
INLET
OUTLET

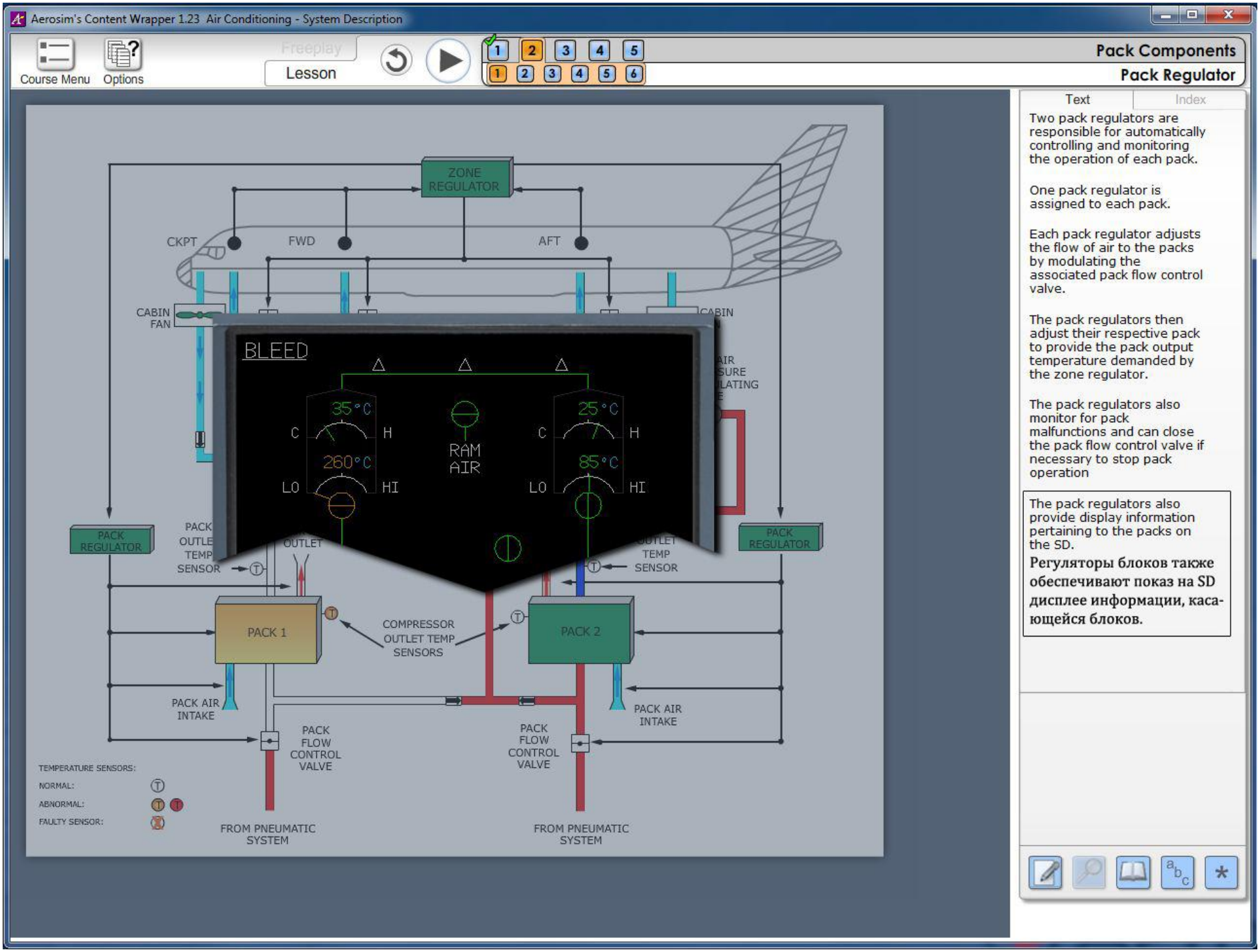

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Regulator
Text
Index
Two pack regulators are responsible for automatically controlling and monitoring the operation of each pack.
Два регулятора блоков отвечают за управление и мониторинг (отслеживание) работы каждого блока.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

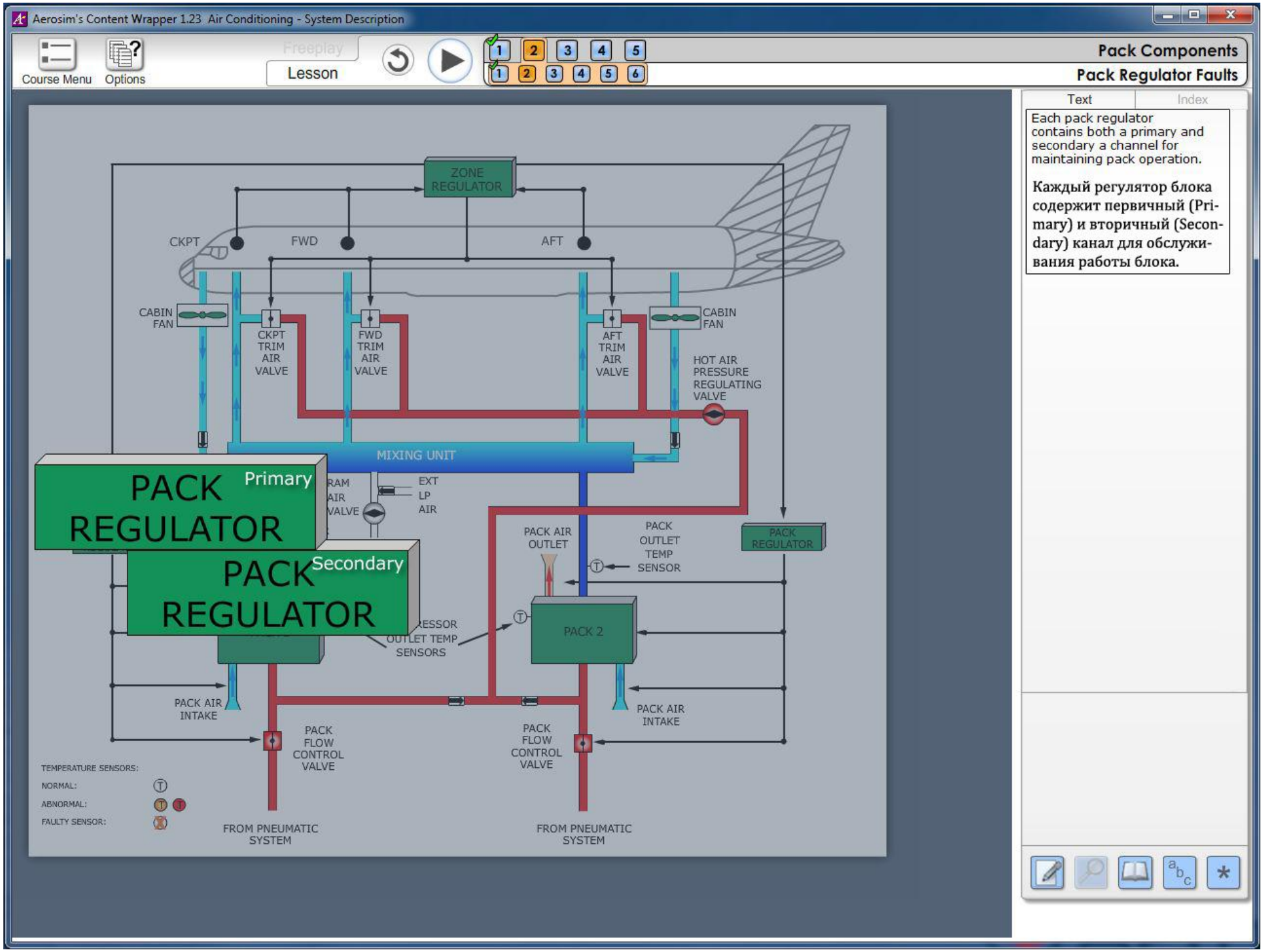

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Regulator
Text
Index
Two pack regulators are responsible for automatically controlling and monitoring the operation of each pack.
One pack regulator is assigned to each pack.
Для каждого блока предназначен один регулятор (PACK REGULATOR).
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

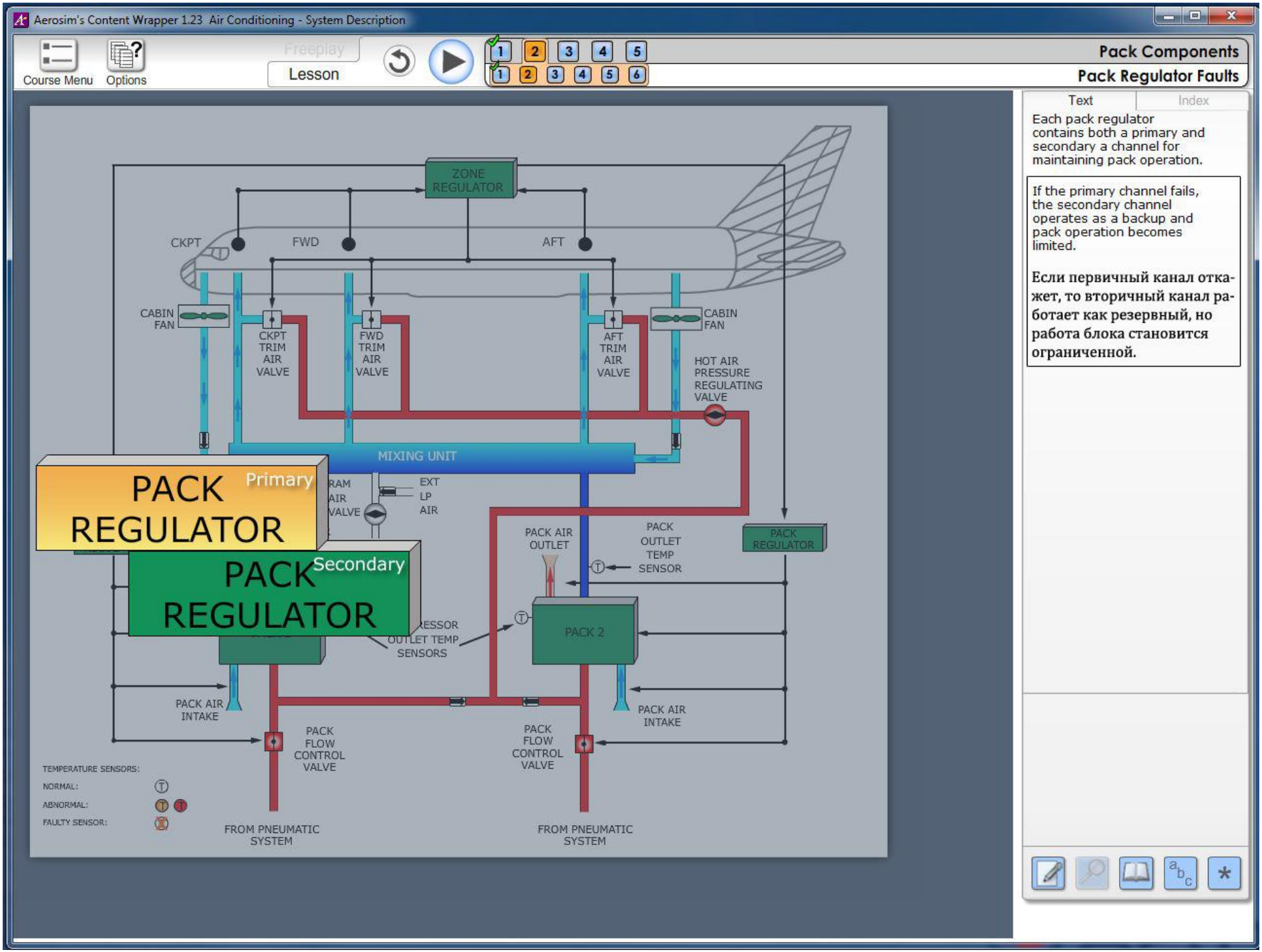

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Regulator
Text
Index
Two pack regulators are responsible for automatically controlling and monitoring the operation of each pack.
One pack regulator is assigned to each pack.
Each pack regulator adjusts the flow of air to the packs by modulating the associated pack flow control valve.
Каждый регулятор блока настраивает подачу воздуха в блок путём регулирования соответствующего крана управления расходом.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

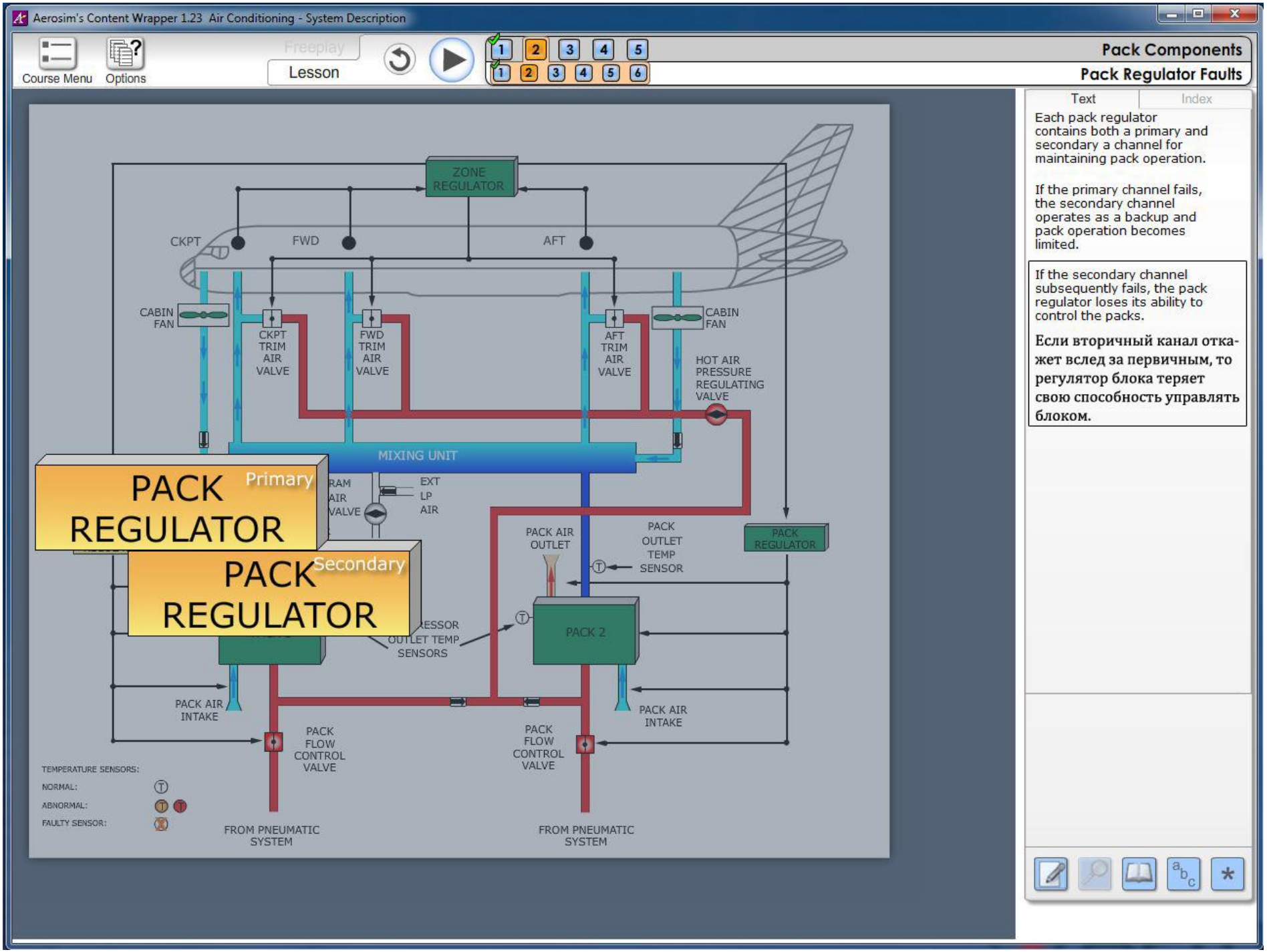

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
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Options
Freeplay
Lesson
Pack Components
Pack Regulator
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Index
Two pack regulators are responsible for automatically controlling and monitoring the operation of each pack.
One pack regulator is assigned to each pack.
Each pack regulator adjusts the flow of air to the packs by modulating the associated pack flow control valve.
The pack regulators then adjust their respective pack to provide the pack output temperature demanded by the zone regulator.
Затем регуляторы блоков настраивают свои соответствующие блоки так, чтобы обеспечить выходную температуру, затребованную зональным регулятором.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

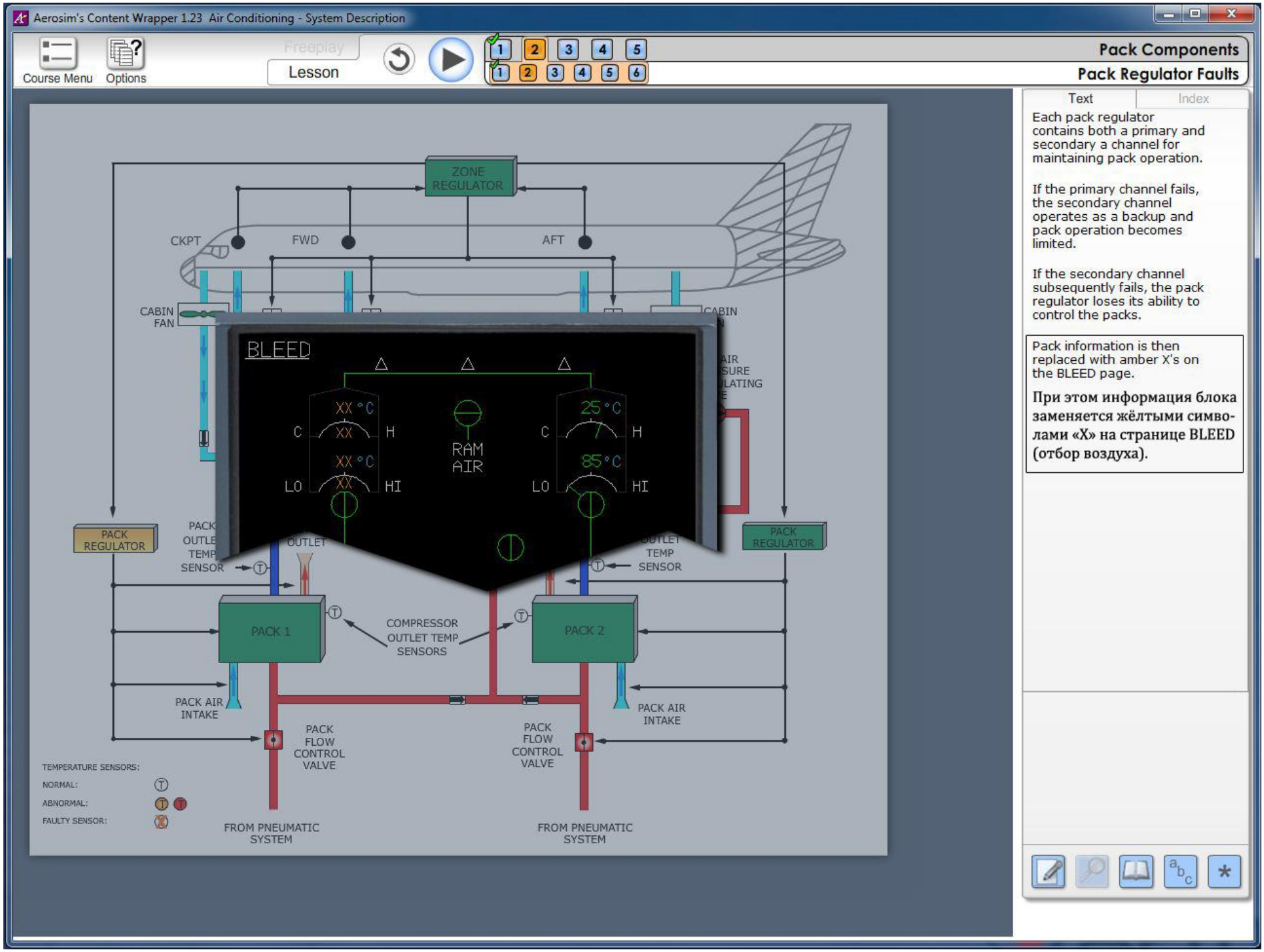

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
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Two pack regulators are responsible for automatically controlling and monitoring the operation of each pack.
One pack regulator is assigned to each pack.
Each pack regulator adjusts the flow of air to the packs by modulating the associated pack flow control valve.
The pack regulators then adjust their respective pack to provide the pack output temperature demanded by the zone regulator.
The pack regulators also monitor for pack malfunctions and can close the pack flow control valve if necessary to stop pack operation
Регуляторы блоков также отслеживают отказы блоков и могут закрыть кран управления расходом блока, если необходимо остановить работу блока.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

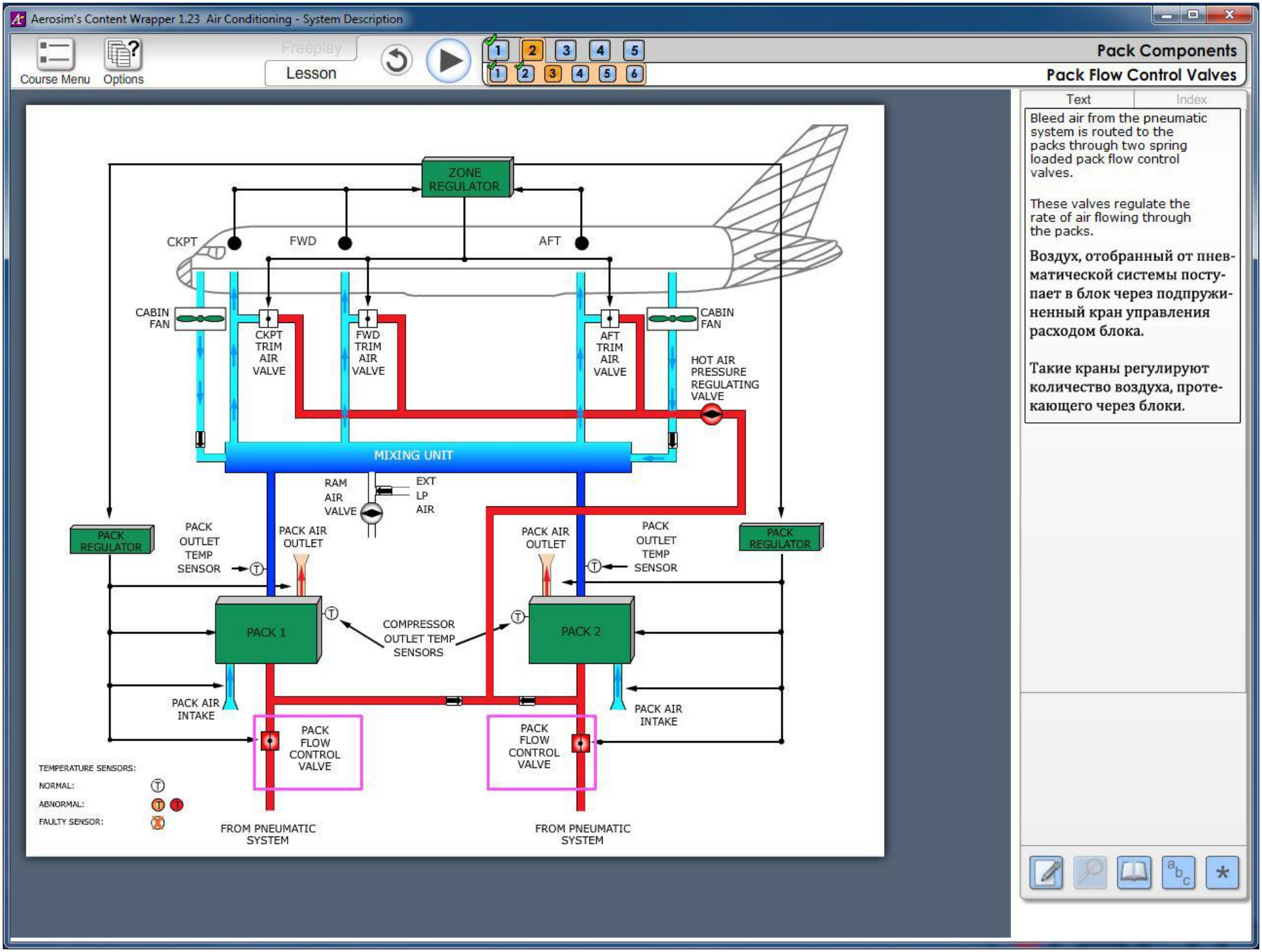

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
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Pack Regulator
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Two pack regulators are responsible for automatically controlling and monitoring the operation of each pack.
One pack regulator is assigned to each pack.
Each pack regulator adjusts the flow of air to the packs by modulating the associated pack flow control valve.
The pack regulators then adjust their respective pack to provide the pack output temperature demanded by the zone regulator.
The pack regulators also monitor for pack malfunctions and can close the pack flow control valve if necessary to stop pack operation
The pack regulators also provide display information pertaining to the packs on the SD.
Регуляторы блоков также обеспечивают показ на SD дисплее информации, касающейся блоков.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
BLEED
35°C
260°C
C
H
LO
HI
RAM AIR
25°C
85°C
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK 1
PACK 2
COMPRESSOR OUTLET TEMP SENSORS
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM

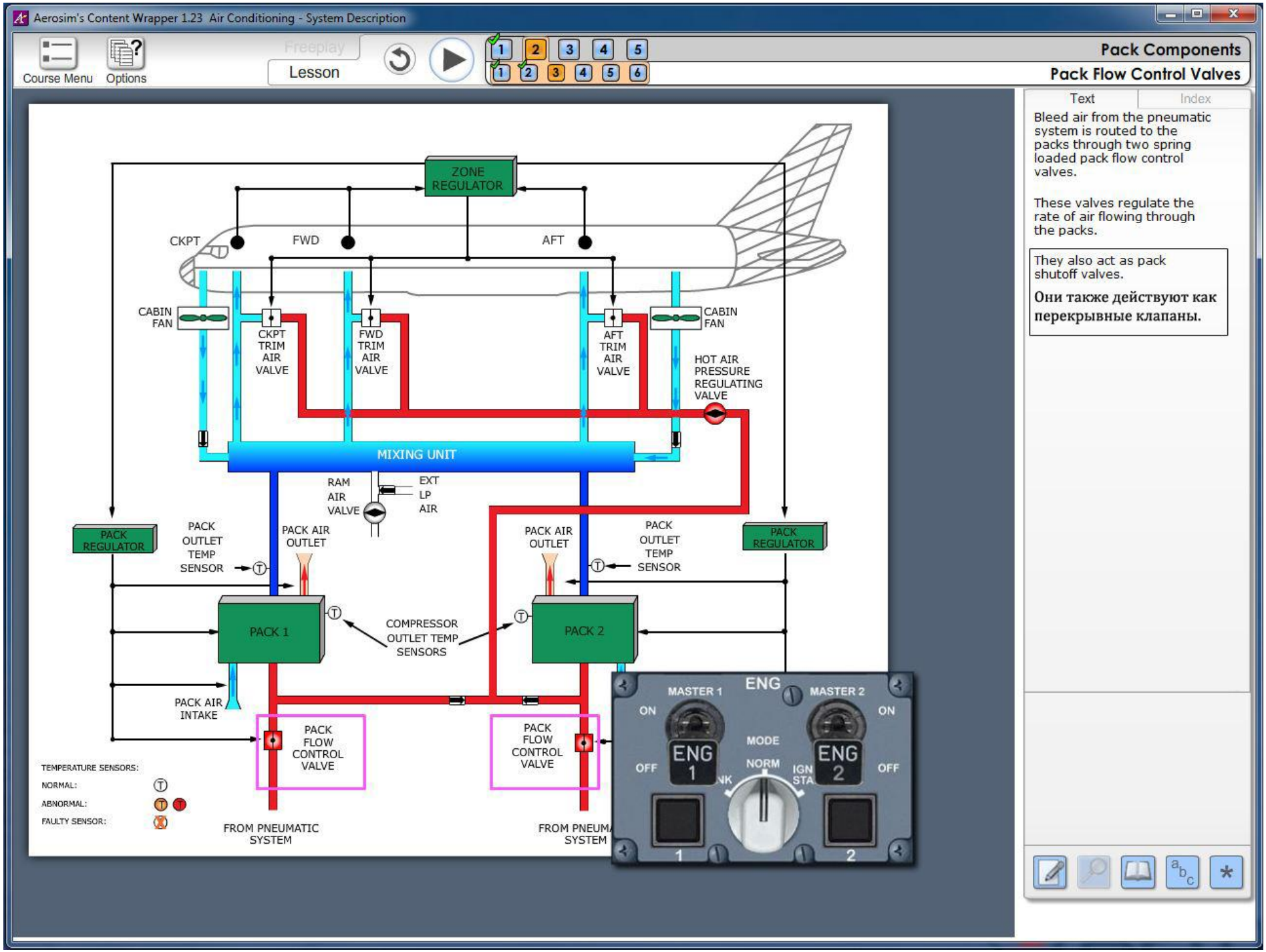

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
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Pack Components
Pack Regulator Faults
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Each pack regulator contains both a primary and secondary a channel for maintaining pack operation.
Каждый регулятор блока содержит первичный (Primary) и вторичный (Secondary) канал для обслуживания работы блока.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
PACK REGULATOR Primary
PACK REGULATOR Secondary
RAM AIR VALVE
EXT LP AIR
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 2
OUTLET TEMP SENSORS
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

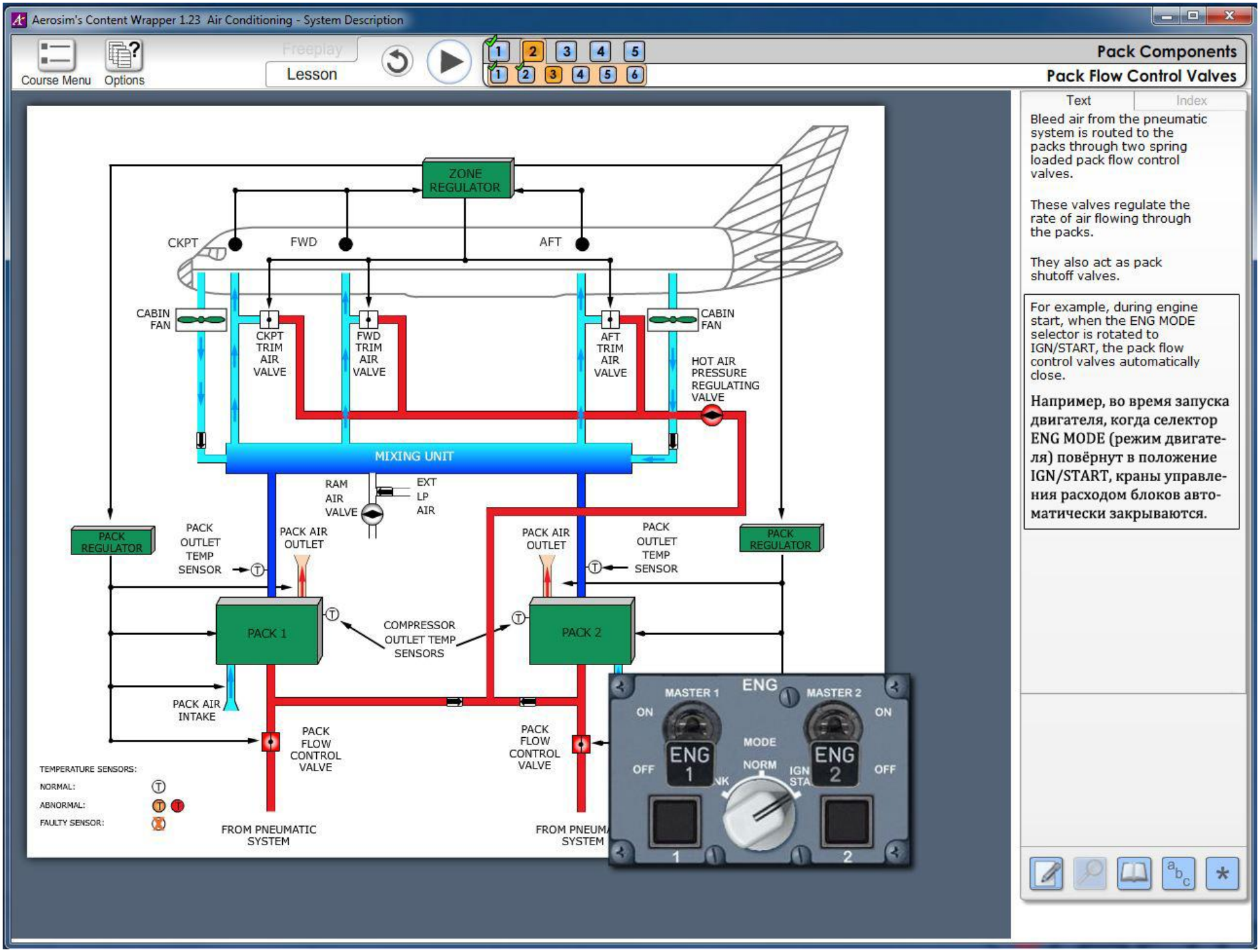

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
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Pack Components
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Index
Each pack regulator contains both a primary and secondary a channel for maintaining pack operation.
If the primary channel fails, the secondary channel operates as a backup and pack operation becomes limited.
Если первичный канал откажет, то вторичный канал работает как резервный, но работа блока становится ограниченной.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
PACK Primary REGULATOR
PACK Secondary REGULATOR
EXT LP AIR
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 2
OUTLET TEMP SENSORS
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

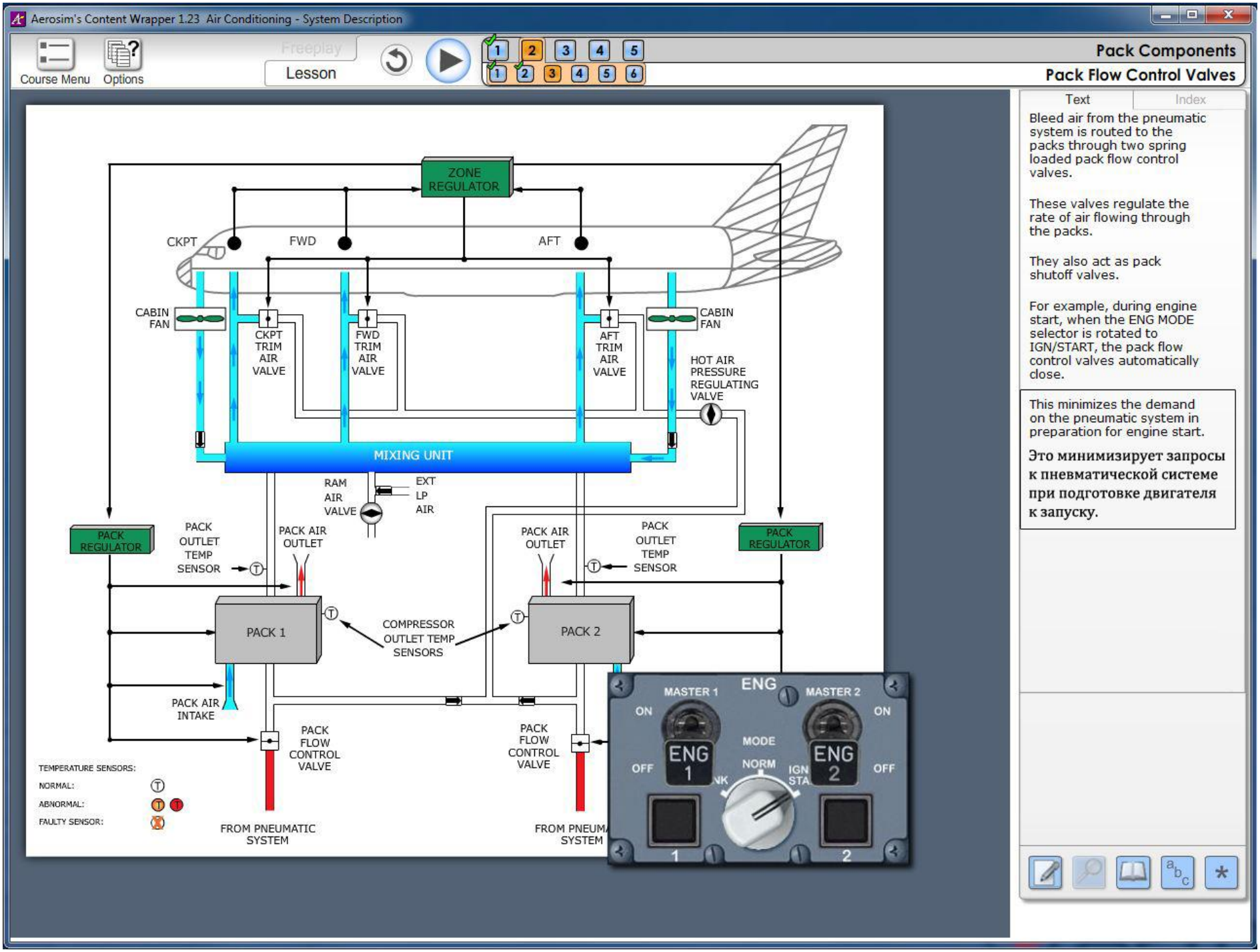

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
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Pack Components
Pack Regulator Faults
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Index
Each pack regulator contains both a primary and secondary a channel for maintaining pack operation.
If the primary channel fails, the secondary channel operates as a backup and pack operation becomes limited.
If the secondary channel subsequently fails, the pack regulator loses its ability to control the packs.
Если вторичный канал откажет вслед за первичным, то регулятор блока теряет свою способность управлять блоком.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
PACK Primary REGULATOR
PACK Secondary REGULATOR
RAM AIR VALVE
EXT LP AIR
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
ESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

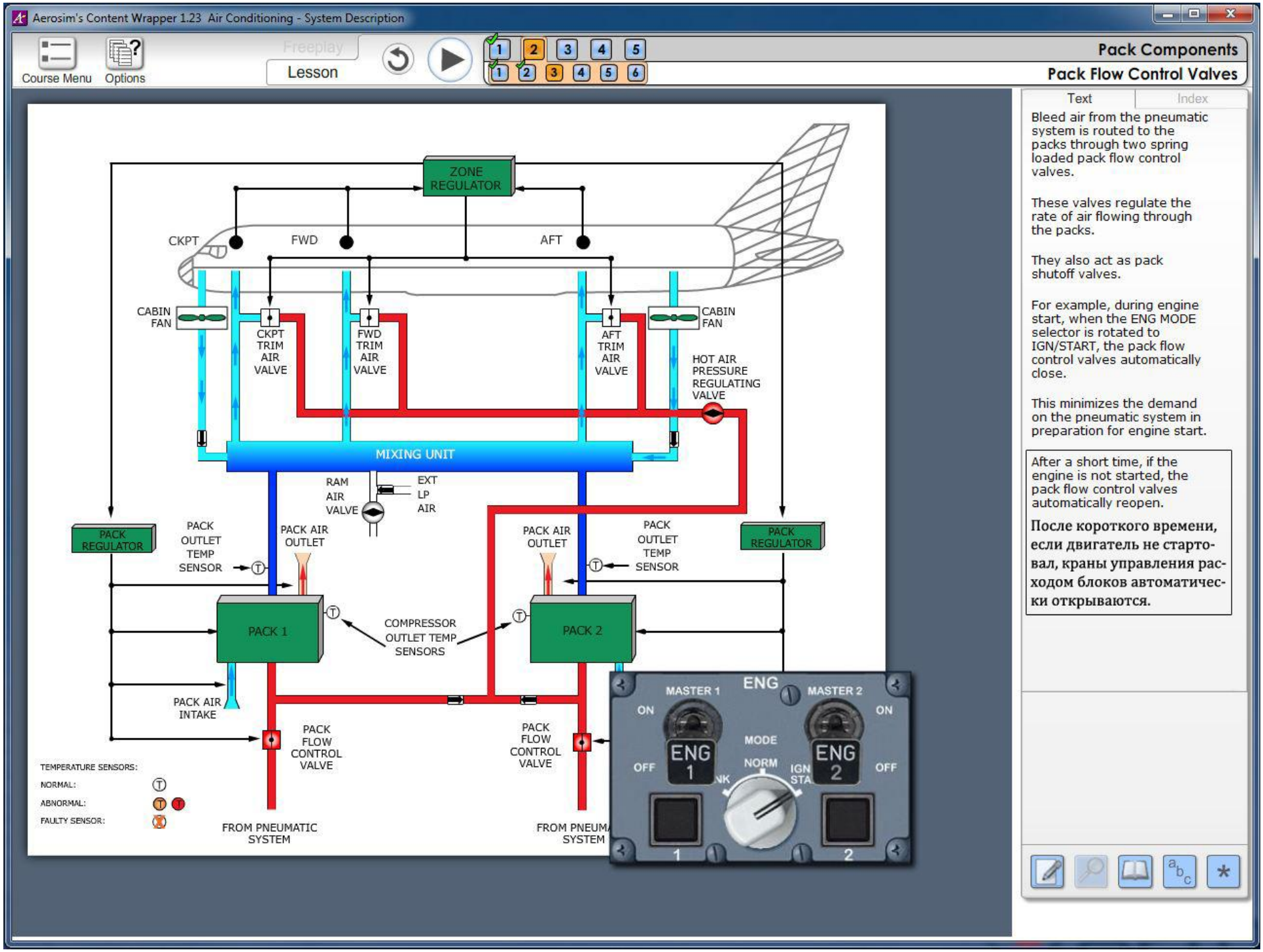

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Regulator Faults
Text
Index
Each pack regulator contains both a primary and secondary a channel for maintaining pack operation.
If the primary channel fails, the secondary channel operates as a backup and pack operation becomes limited.
If the secondary channel subsequently fails, the pack regulator loses its ability to control the packs.
Pack information is then replaced with amber X's on the BLEED page.
При этом информация блока заменяется жёлтыми символами «X» на странице BLEED (отбор воздуха).
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
BLEED
XX °C
C
XX
H
XX °C
LO
XX
HI
RAM AIR
25 °C
C
H
85 °C
LO
HI
PACK REGULATOR
PACK OUTLET TEMP SENSOR
OUTLET
PACK 1
PACK 2
COMPRESSOR OUTLET TEMP SENSORS
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM

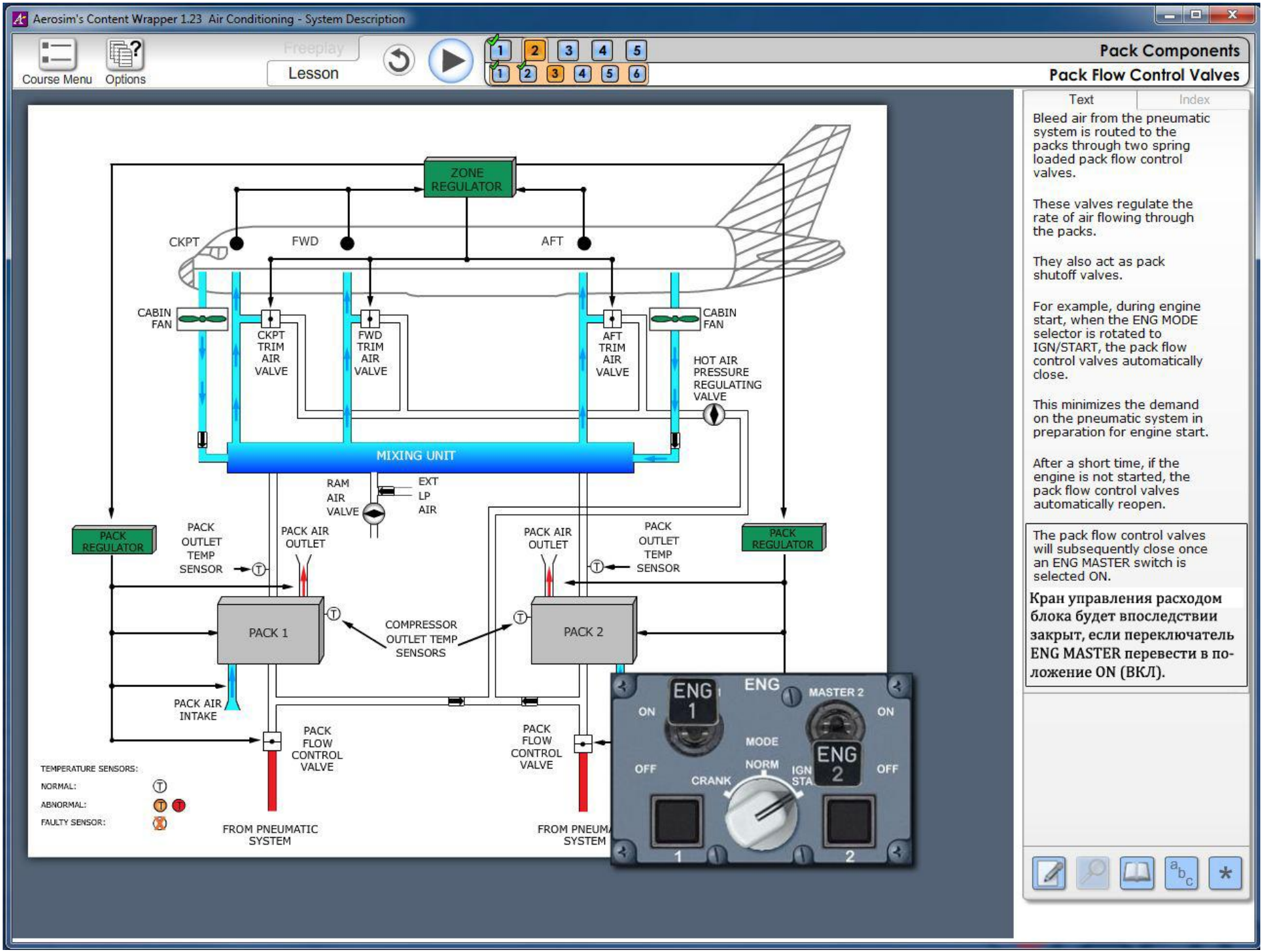

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
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Pack Components
Pack Flow Control Valves
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Bleed air from the pneumatic system is routed to the packs through two spring loaded pack flow control valves.
These valves regulate the rate of air flowing through the packs.
Воздух, отобранный от пневматической системы поступает в блок через подпружиненный кран управления расходом блока.
Такие краны регулируют количество воздуха, протекающего через блоки.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

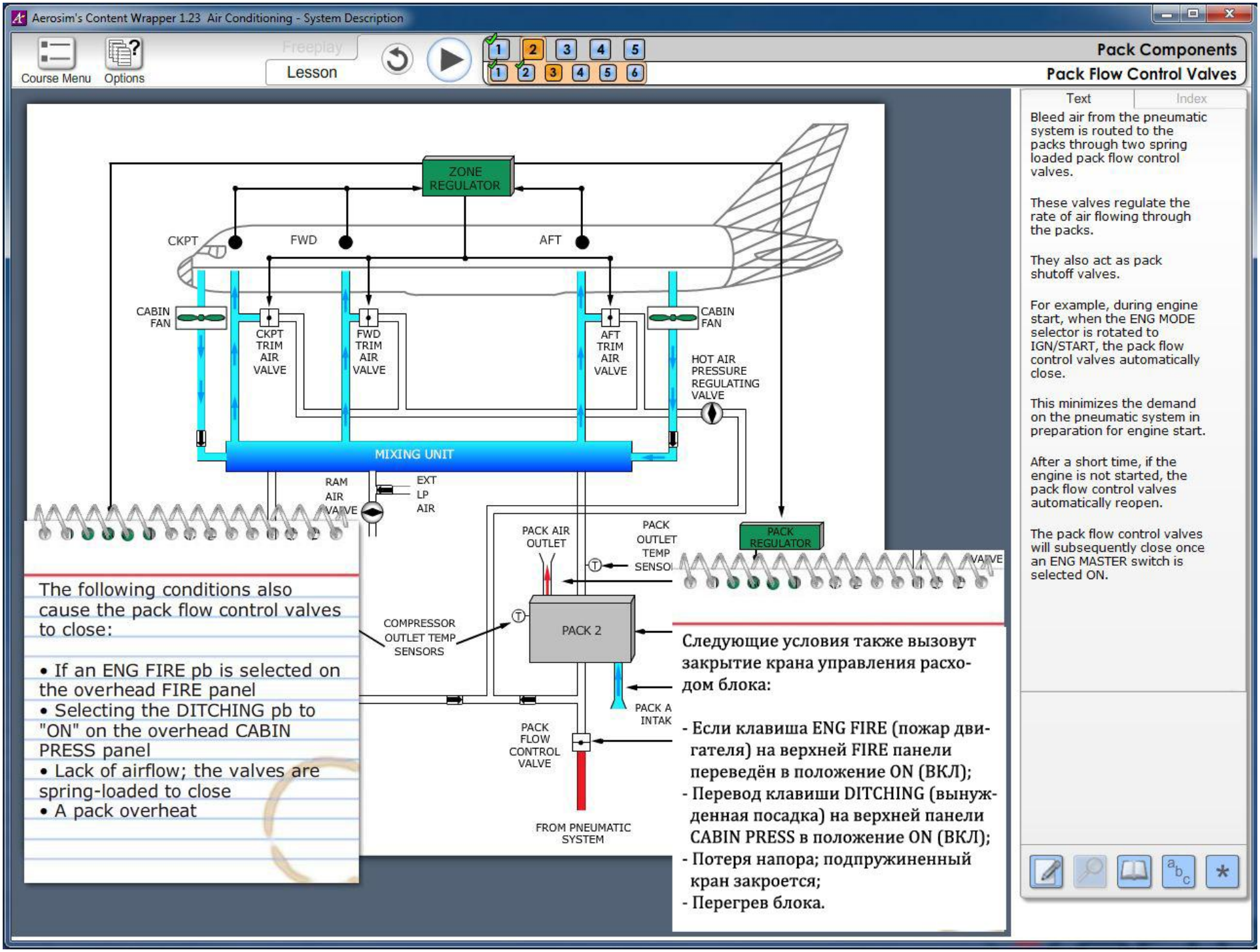

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
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Bleed air from the pneumatic system is routed to the packs through two spring loaded pack flow control valves.
These valves regulate the rate of air flowing through the packs.
They also act as pack shutoff valves.
Они также действуют как перекрывные клапаны.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM
ENG
MASTER 1
MASTER 2
ON
ON
MODE
ENG 1
ENG 2
OFF
OFF
NORM
IGN STA
1
2

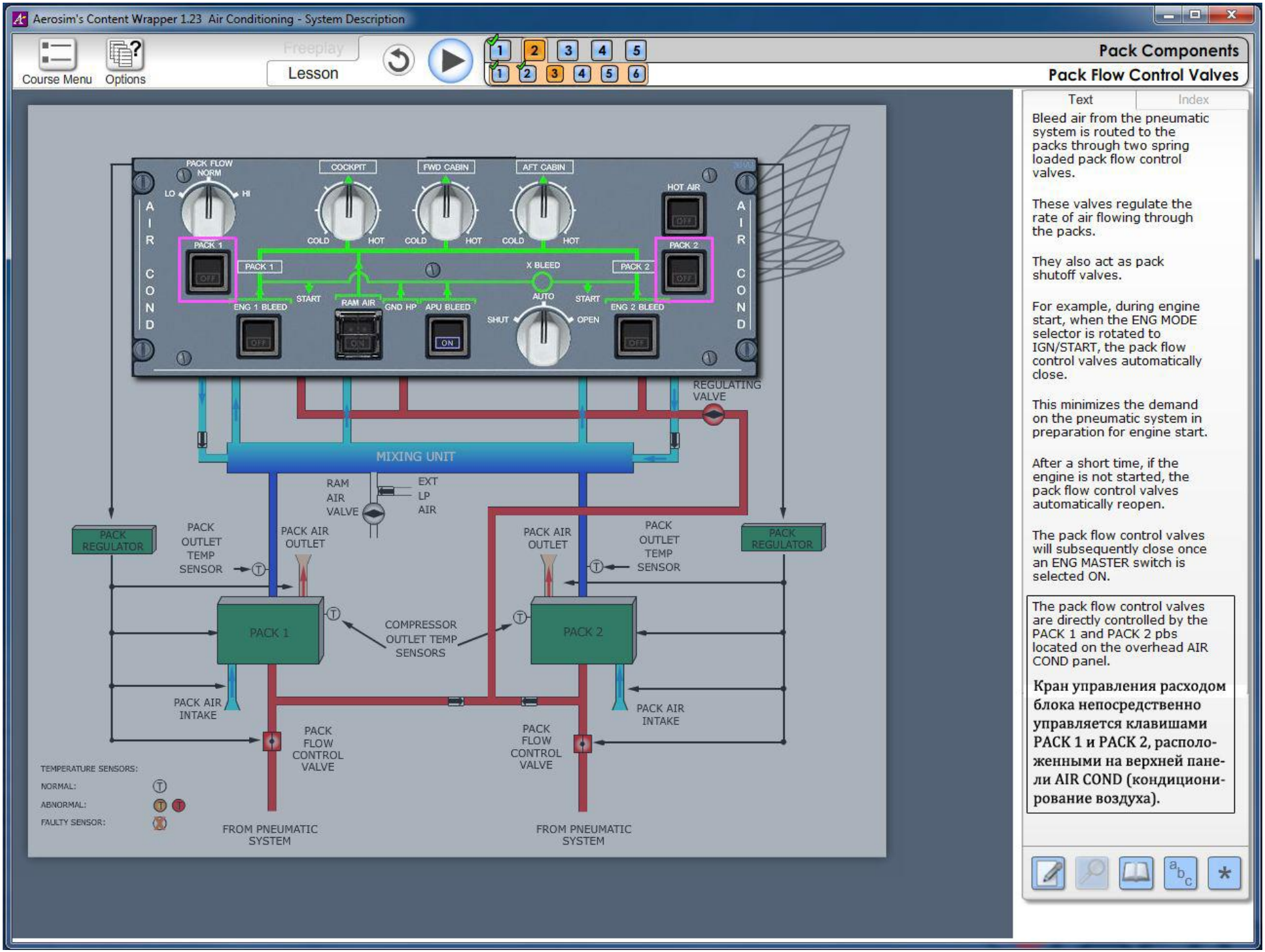

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
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Bleed air from the pneumatic system is routed to the packs through two spring loaded pack flow control valves.
These valves regulate the rate of air flowing through the packs.
They also act as pack shutoff valves.
For example, during engine start, when the ENG MODE selector is rotated to IGN/START, the pack flow control valves automatically close.
Например, во время запуска двигателя, когда селектор ENG MODE (режим двигателя) повёрнут в положение IGN/START, краны управления расходом блоков автоматически закрываются.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMA SYSTEM
ENG
MASTER 1
MASTER 2
ON
ON
OFF
OFF
ENG 1
ENG 2
MODE
NORM
IGN STA
1
2

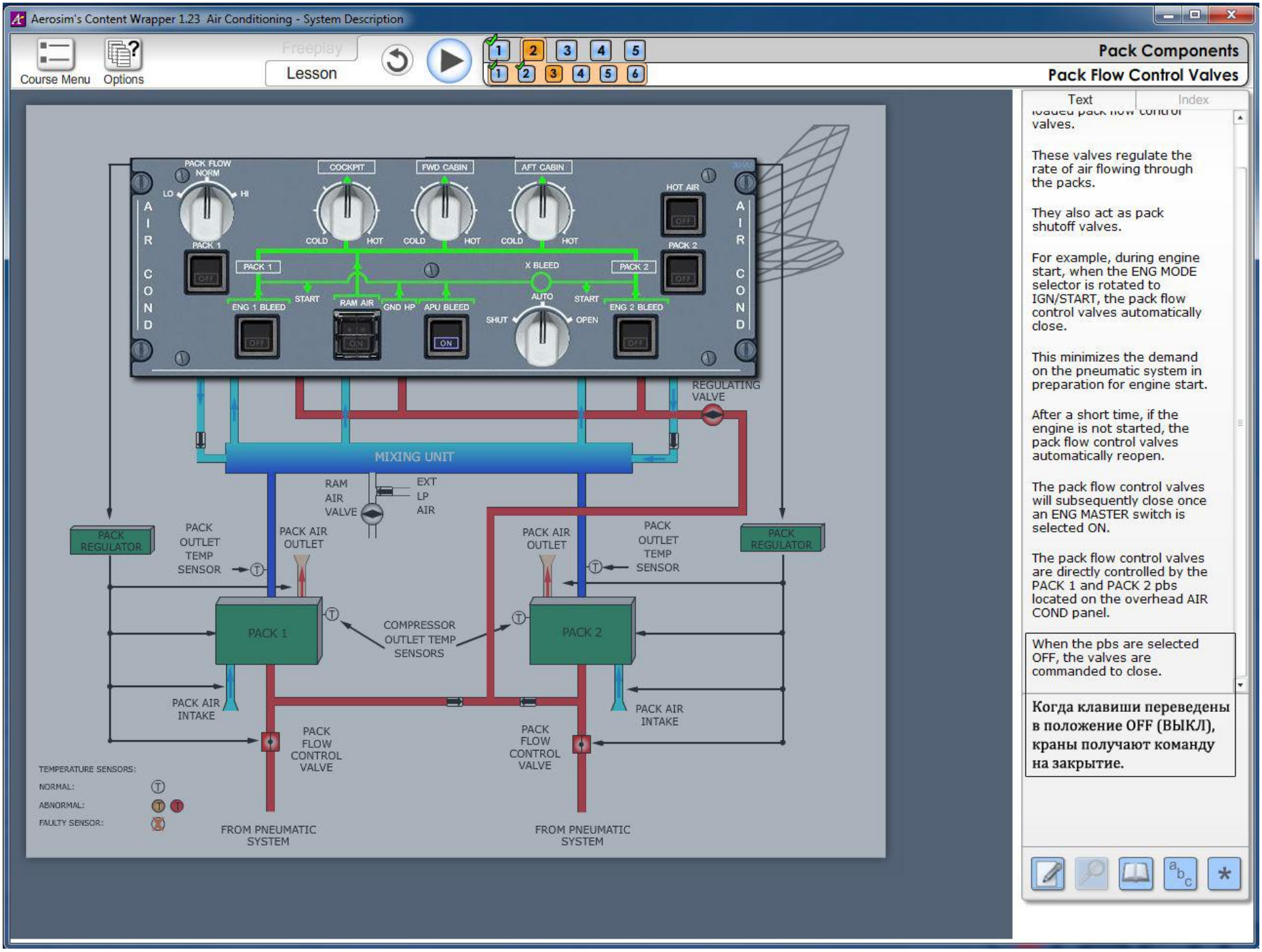

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
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Bleed air from the pneumatic system is routed to the packs through two spring loaded pack flow control valves.
These valves regulate the rate of air flowing through the packs.
They also act as pack shutoff valves.
For example, during engine start, when the ENG MODE selector is rotated to IGN/START, the pack flow control valves automatically close.
This minimizes the demand on the pneumatic system in preparation for engine start.
Это минимизирует запросы к пневматической системе при подготовке двигателя к запуску.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMA SYSTEM
ENG
MASTER 1
MASTER 2
ON
ON
MODE
ENG 1
ENG 2
OFF
OFF
NORM
IGN STA
1
2

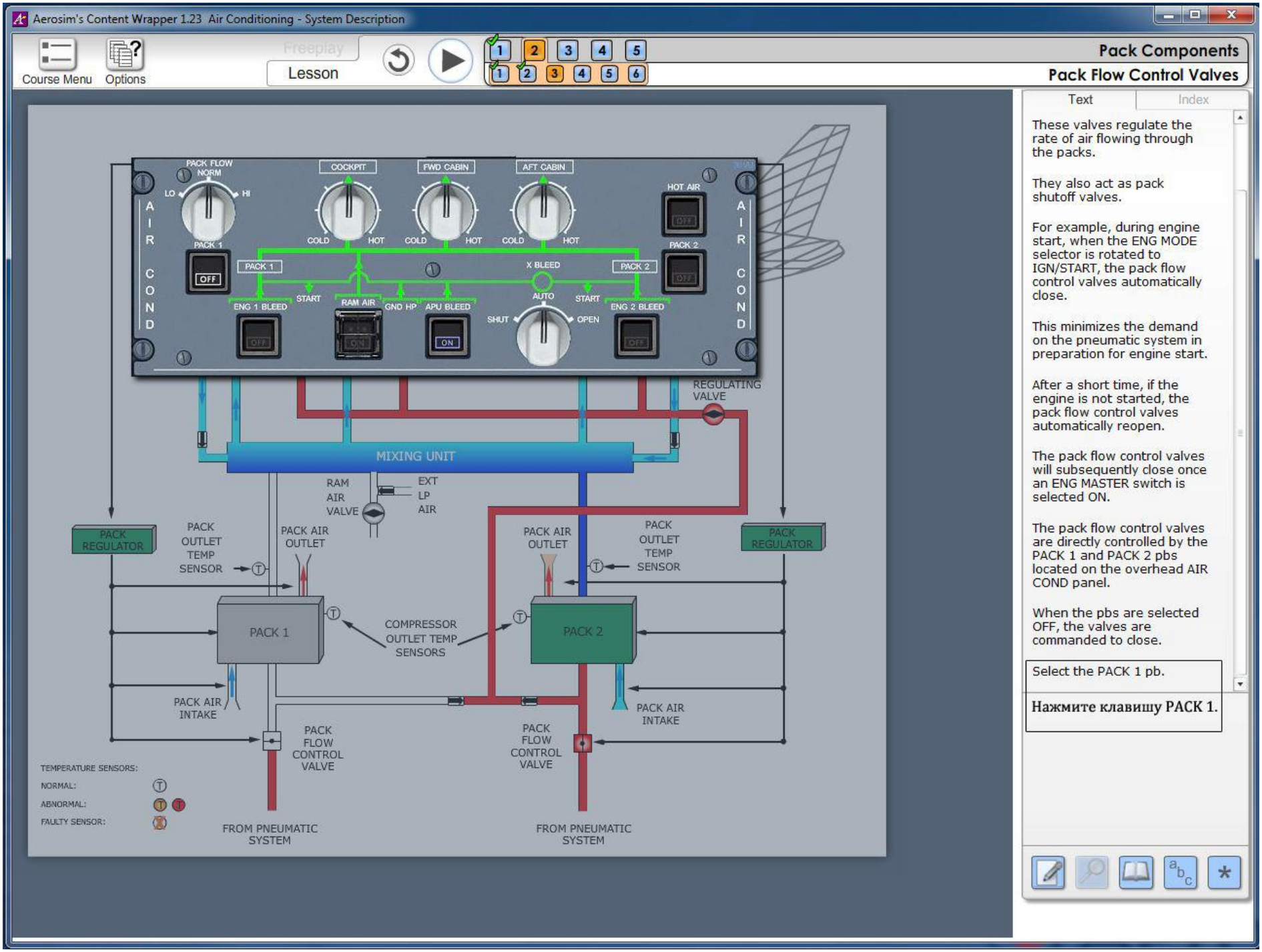

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
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Bleed air from the pneumatic system is routed to the packs through two spring loaded pack flow control valves.
These valves regulate the rate of air flowing through the packs.
They also act as pack shutoff valves.
For example, during engine start, when the ENG MODE selector is rotated to IGN/START, the pack flow control valves automatically close.
This minimizes the demand on the pneumatic system in preparation for engine start.
After a short time, if the engine is not started, the pack flow control valves automatically reopen.
После короткого времени, если двигатель не стартовал, краны управления расходом блоков автоматически открываются.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM
ENG
MASTER 1
MASTER 2
ON
ON
MODE
ENG 1
ENG 2
OFF
OFF
NORM
IGN STA
1
2

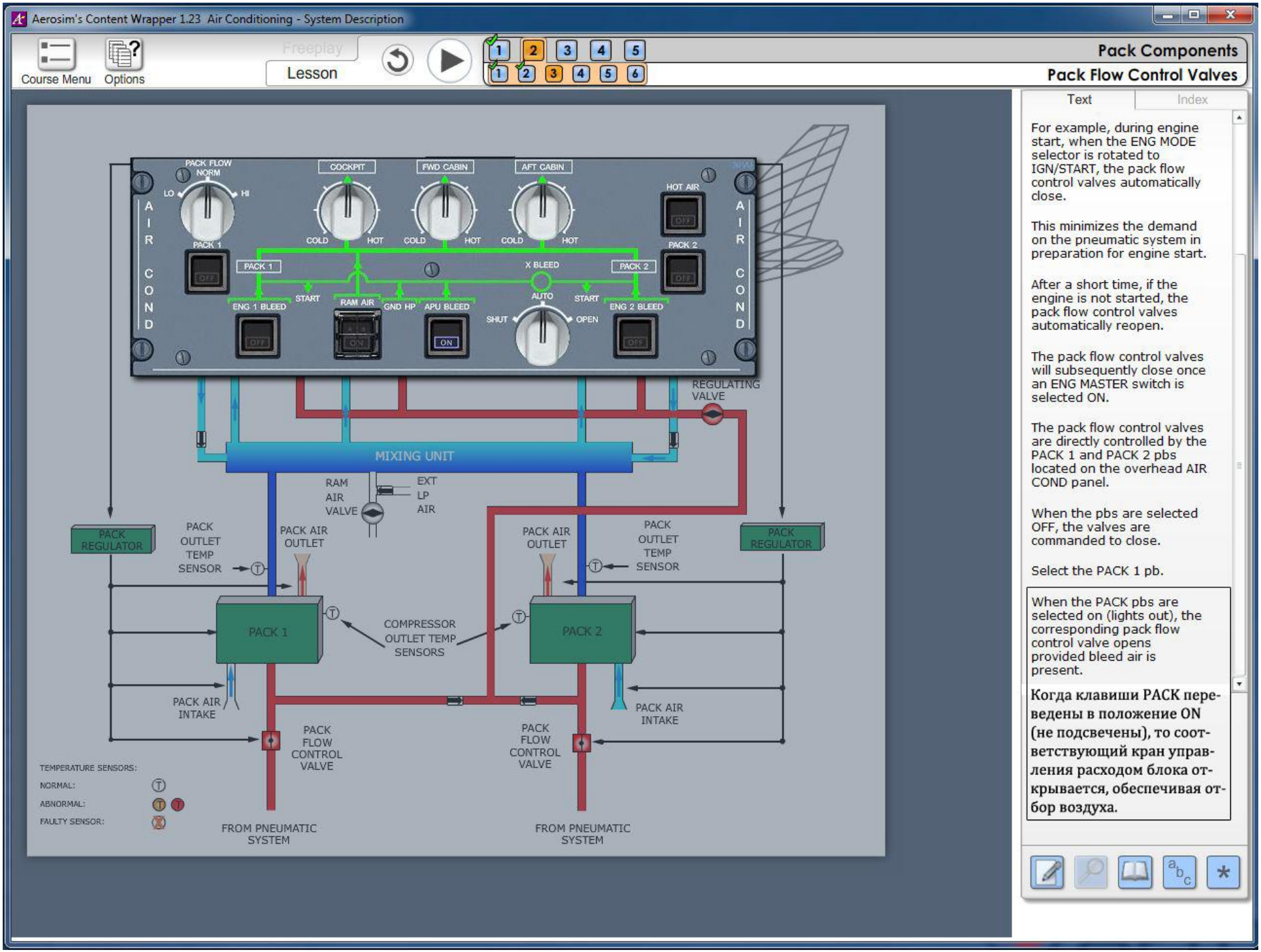

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
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Bleed air from the pneumatic system is routed to the packs through two spring loaded pack flow control valves.
These valves regulate the rate of air flowing through the packs.
They also act as pack shutoff valves.
For example, during engine start, when the ENG MODE selector is rotated to IGN/START, the pack flow control valves automatically close.
This minimizes the demand on the pneumatic system in preparation for engine start.
After a short time, if the engine is not started, the pack flow control valves automatically reopen.
The pack flow control valves will subsequently close once an ENG MASTER switch is selected ON.
Кран управления расходом блока будет впоследствии закрыт, если переключатель ENG MASTER перевести в положение ON (ВКЛ).
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMA SYSTEM
ENG 1
ENG
MASTER 2
ON
ON
MODE
ENG 2
OFF
NORM
IGN STA
OFF
CRANK
1
2

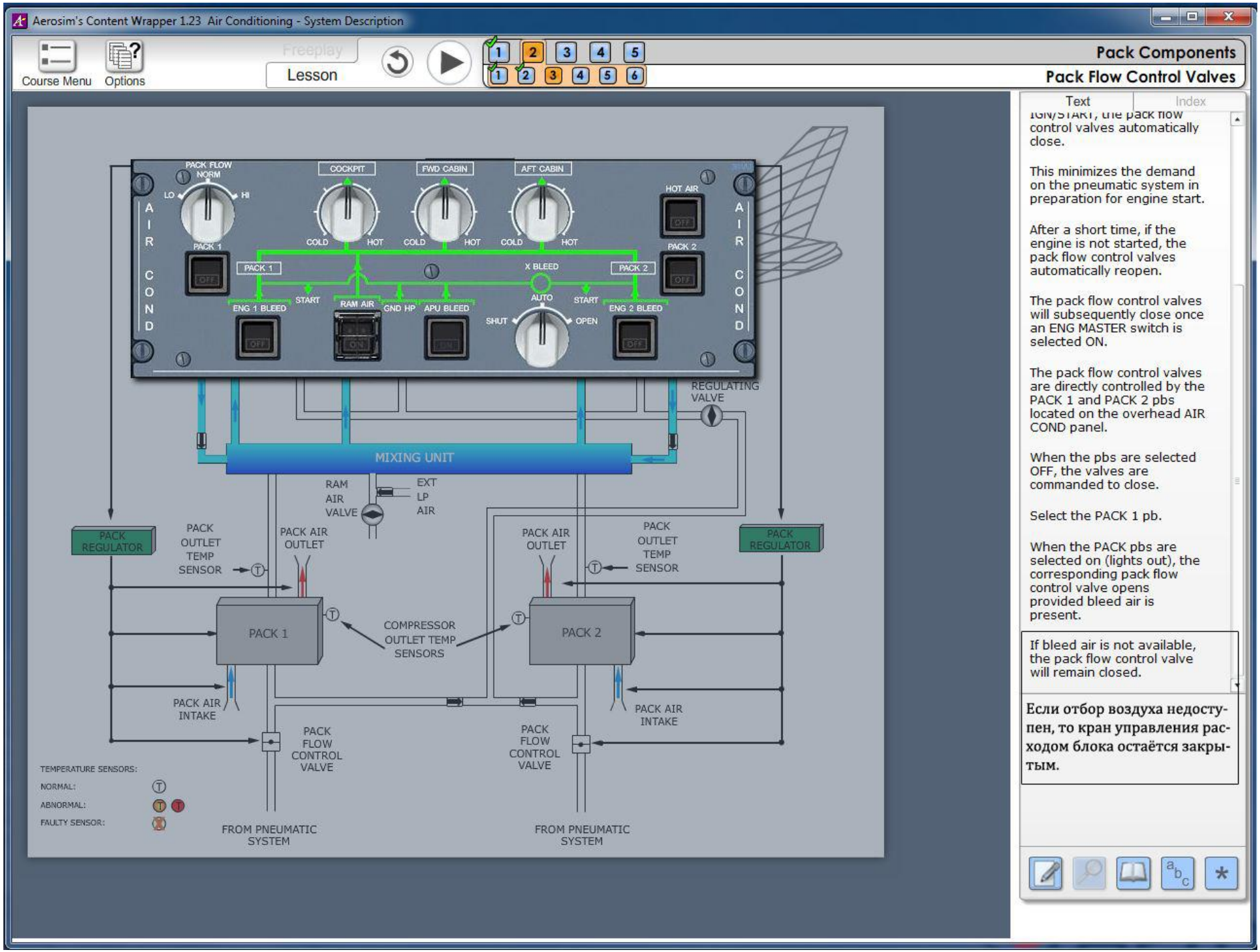

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
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Bleed air from the pneumatic system is routed to the packs through two spring loaded pack flow control valves.
These valves regulate the rate of air flowing through the packs.
They also act as pack shutoff valves.
For example, during engine start, when the ENG MODE selector is rotated to IGN/START, the pack flow control valves automatically close.
This minimizes the demand on the pneumatic system in preparation for engine start.
After a short time, if the engine is not started, the pack flow control valves automatically reopen.
The pack flow control valves will subsequently close once an ENG MASTER switch is selected ON.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK A INTAK
PACK FLOW CONTROL VALVE
FROM PNEUMATIC SYSTEM
The following conditions also cause the pack flow control valves to close:
• If an ENG FIRE pb is selected on the overhead FIRE panel
• Selecting the DITCHING pb to "ON" on the overhead CABIN PRESS panel
• Lack of airflow; the valves are spring-loaded to close
• A pack overheat
Следующие условия также вызовут закрытие крана управления расходом блока:
- Если клавиша ENG FIRE (пожар двигателя) на верхней FIRE панели переведён в положение ON (ВКЛ);
- Перевод клавиши DITCHING (вынужденная посадка) на верхней панели CABIN PRESS в положение ON (ВКЛ);
- Потеря напора; подпружиненный кран закроется;
- Перегрев блока.

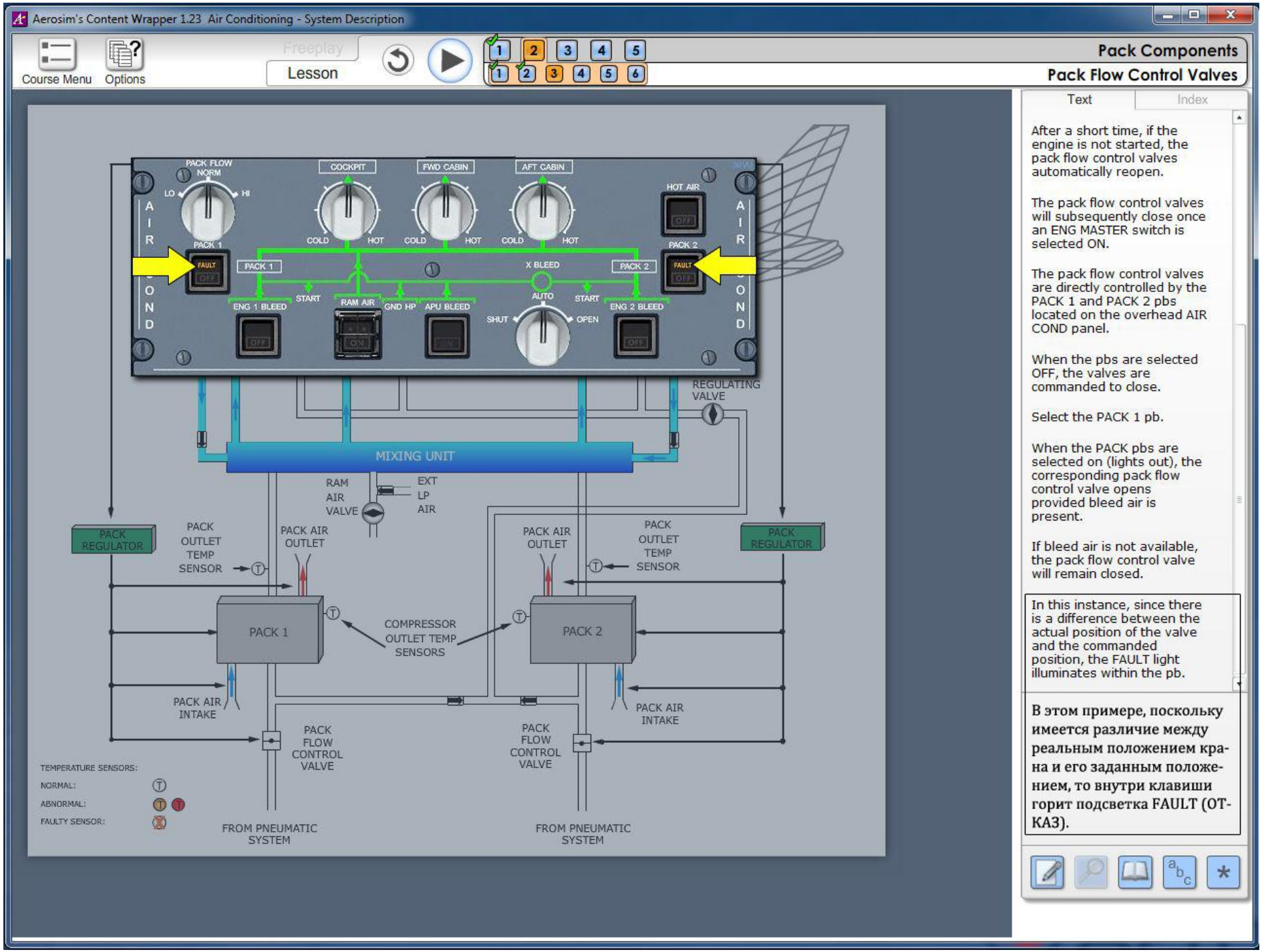

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
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Freeplay
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Pack Components
Pack Flow Control Valves
Text
Index
Bleed air from the pneumatic system is routed to the packs through two spring loaded pack flow control valves.
These valves regulate the rate of air flowing through the packs.
They also act as pack shutoff valves.
For example, during engine start, when the ENG MODE selector is rotated to IGN/START, the pack flow control valves automatically close.
This minimizes the demand on the pneumatic system in preparation for engine start.
After a short time, if the engine is not started, the pack flow control valves automatically reopen.
The pack flow control valves will subsequently close once an ENG MASTER switch is selected ON.
The pack flow control valves are directly controlled by the PACK 1 and PACK 2 pbs located on the overhead AIR COND panel.
Кран управления расходом блока непосредственно управляется клавишами PACK 1 и PACK 2, расположенными на верхней панели AIR COND (кондиционирование воздуха).
PACK FLOW NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
HOT AIR
COLD
HOT
PACK 1
PACK 2
X BLEED
AUTO
SHUT
OPEN
START
ENG 1 BLEED
ENG 2 BLEED
RAM AIR
GND HP
APU BLEED
ON
OFF
REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
COMPRESSOR OUTLET TEMP SENSORS
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
FROM PNEUMATIC SYSTEM
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:

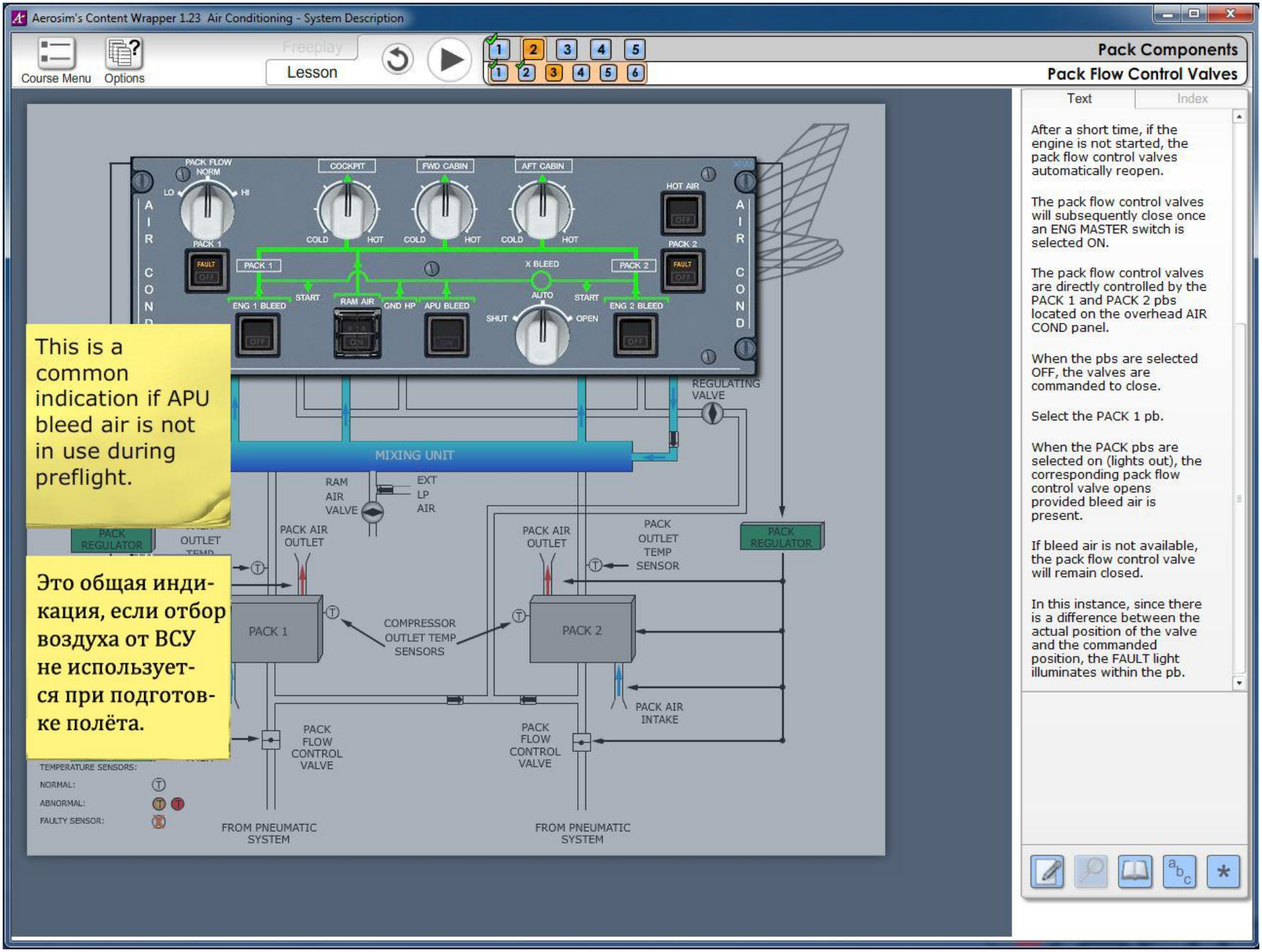

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
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valves.
These valves regulate the rate of air flowing through the packs.
They also act as pack shutoff valves.
For example, during engine start, when the ENG MODE selector is rotated to IGN/START, the pack flow control valves automatically close.
This minimizes the demand on the pneumatic system in preparation for engine start.
After a short time, if the engine is not started, the pack flow control valves automatically reopen.
The pack flow control valves will subsequently close once an ENG MASTER switch is selected ON.
The pack flow control valves are directly controlled by the PACK 1 and PACK 2 pbs located on the overhead AIR COND panel.
When the pbs are selected OFF, the valves are commanded to close.
Когда клавиши переведены в положение OFF (ВЫКЛ), краны получают команду на закрытие.
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
X BLEED
AUTO
SHUT
OPEN
START
ENG 1 BLEED
ENG 2 BLEED
RAM AIR
GND HP
APU BLEED
ON
OFF
AIR COND
REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
COMPRESSOR OUTLET TEMP SENSORS
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
FROM PNEUMATIC SYSTEM
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:

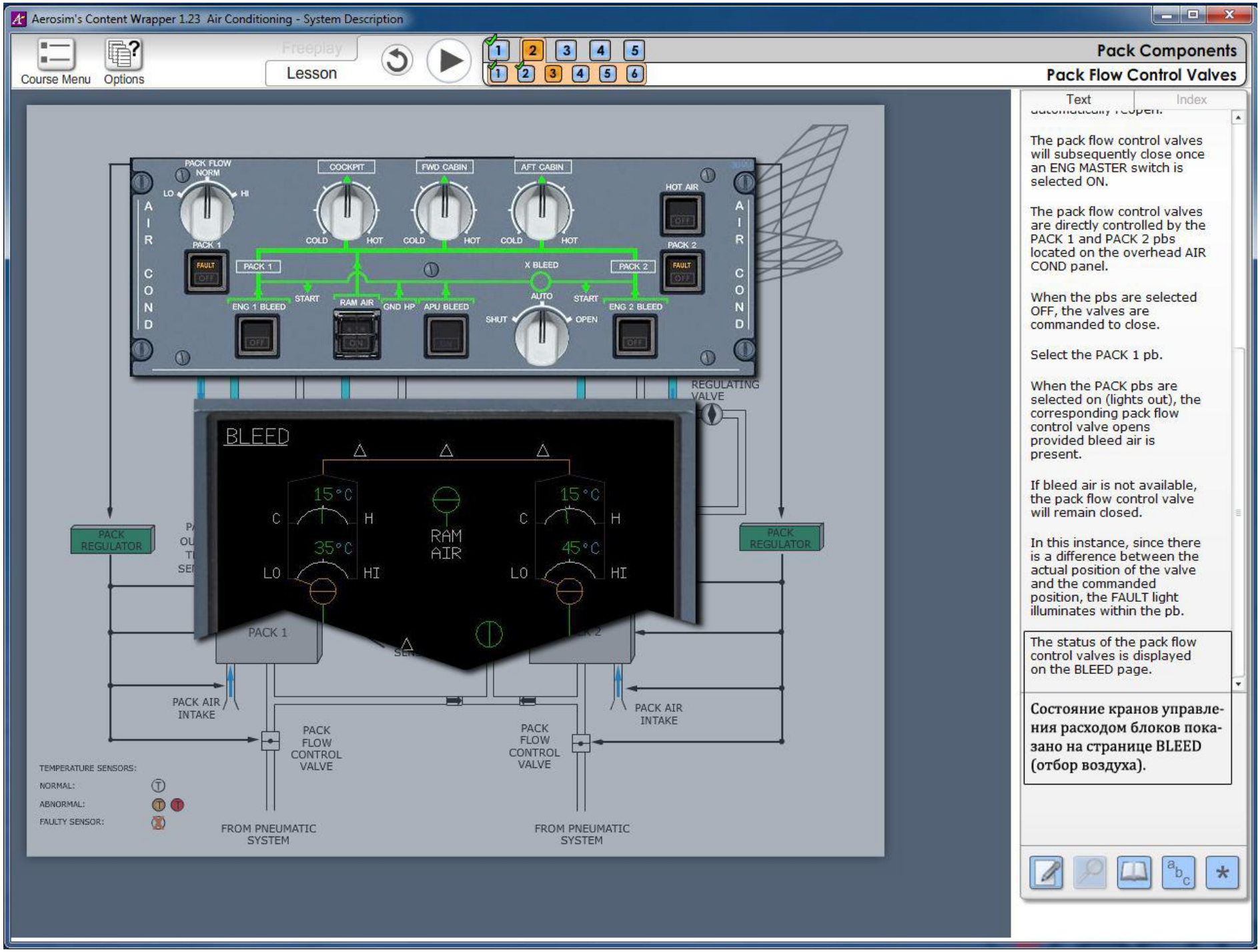

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
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Lesson
Pack Components
Pack Flow Control Valves
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These valves regulate the rate of air flowing through the packs.
They also act as pack shutoff valves.
For example, during engine start, when the ENG MODE selector is rotated to IGN/START, the pack flow control valves automatically close.
This minimizes the demand on the pneumatic system in preparation for engine start.
After a short time, if the engine is not started, the pack flow control valves automatically reopen.
The pack flow control valves will subsequently close once an ENG MASTER switch is selected ON.
The pack flow control valves are directly controlled by the PACK 1 and PACK 2 pbs located on the overhead AIR COND panel.
When the pbs are selected OFF, the valves are commanded to close.
Select the PACK 1 pb.
Нажмите клавишу PACK 1.
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
OFF
X BLEED
AUTO
SHUT
OPEN
START
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
ENG 2 BLEED
ON
AIR COND
REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
COMPRESSOR OUTLET TEMP SENSORS
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
FROM PNEUMATIC SYSTEM
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:

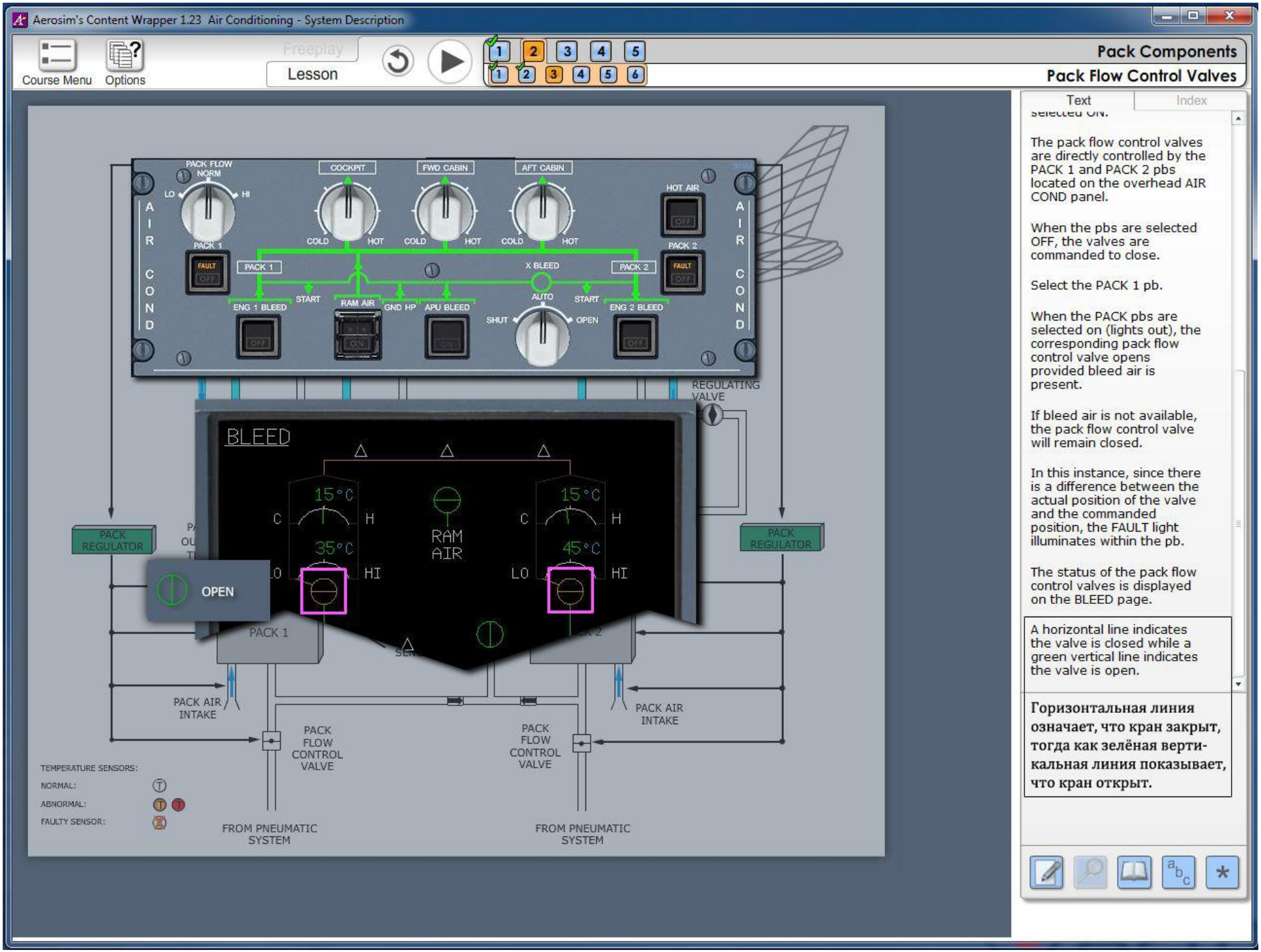

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
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Pack Components
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For example, during engine start, when the ENG MODE selector is rotated to IGN/START, the pack flow control valves automatically close.
This minimizes the demand on the pneumatic system in preparation for engine start.
After a short time, if the engine is not started, the pack flow control valves automatically reopen.
The pack flow control valves will subsequently close once an ENG MASTER switch is selected ON.
The pack flow control valves are directly controlled by the PACK 1 and PACK 2 pbs located on the overhead AIR COND panel.
When the pbs are selected OFF, the valves are commanded to close.
Select the PACK 1 pb.
When the PACK pbs are selected on (lights out), the corresponding pack flow control valve opens provided bleed air is present.
Когда клавиши PACK переведены в положение ON (не подсвечены), то соответствующий кран управления расходом блока открывается, обеспечивая отбор воздуха.
PACK FLOW NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
X BLEED
AUTO
SHUT
OPEN
START
ENG 1 BLEED
ENG 2 BLEED
RAM AIR
GND HP
APU BLEED
ON
OFF
AIR COND
REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
COMPRESSOR OUTLET TEMP SENSORS
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
FROM PNEUMATIC SYSTEM
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:

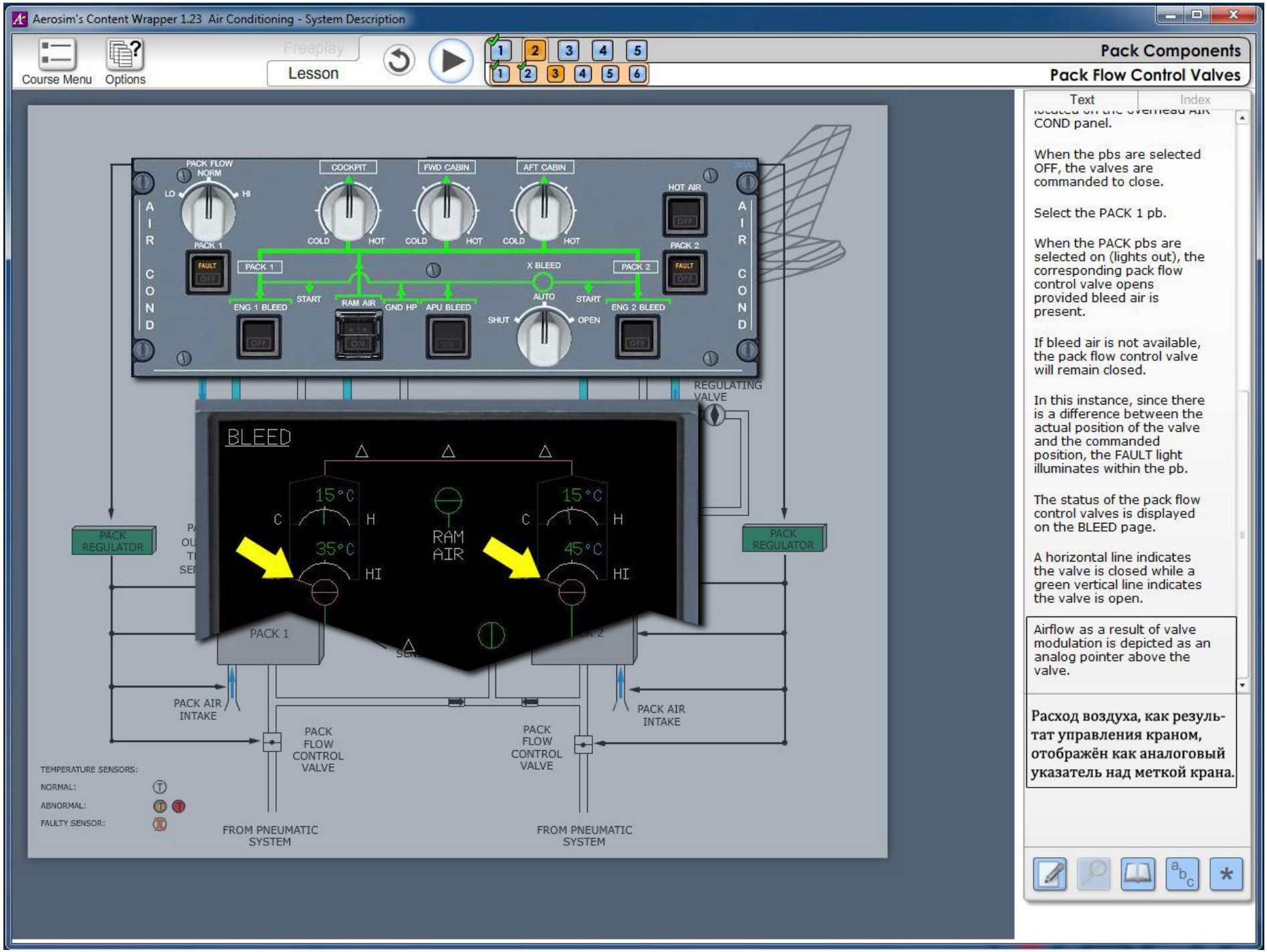

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
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Pack Components
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control valves automatically close.
This minimizes the demand on the pneumatic system in preparation for engine start.
After a short time, if the engine is not started, the pack flow control valves automatically reopen.
The pack flow control valves will subsequently close once an ENG MASTER switch is selected ON.
The pack flow control valves are directly controlled by the PACK 1 and PACK 2 pbs located on the overhead AIR COND panel.
When the pbs are selected OFF, the valves are commanded to close.
Select the PACK 1 pb.
When the PACK pbs are selected on (lights out), the corresponding pack flow control valve opens provided bleed air is present.
If bleed air is not available, the pack flow control valve will remain closed.
Если отбор воздуха недоступен, то кран управления расходом блока остаётся закрытым.
PACK FLOW NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
X BLEED
ENG 1 BLEED
ENG 2 BLEED
START
RAM AIR
GND HP
APU BLEED
AUTO
SHUT
OPEN
REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
COMPRESSOR OUTLET TEMP SENSORS
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM

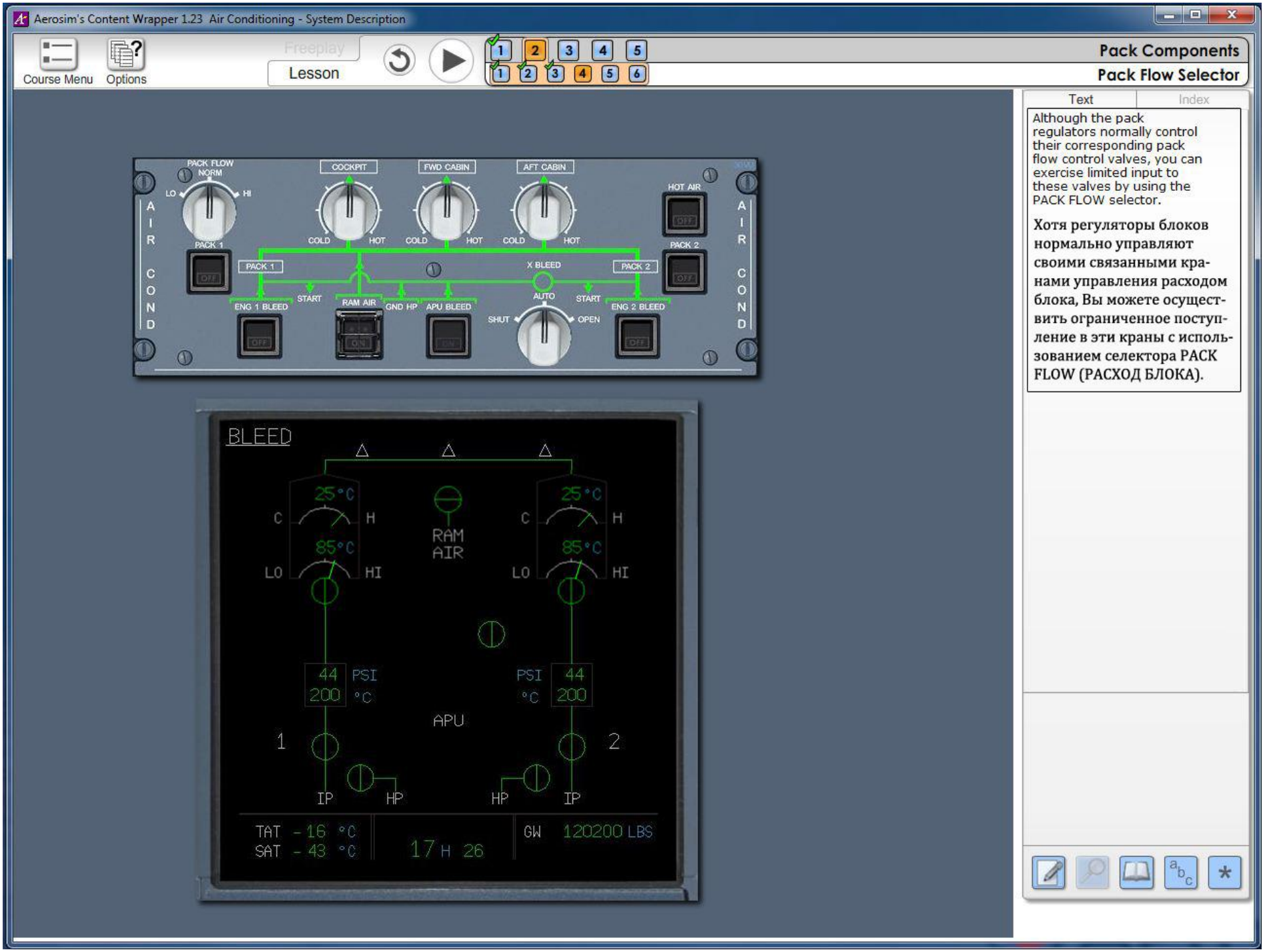

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
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After a short time, if the engine is not started, the pack flow control valves automatically reopen.
The pack flow control valves will subsequently close once an ENG MASTER switch is selected ON.
The pack flow control valves are directly controlled by the PACK 1 and PACK 2 pbs located on the overhead AIR COND panel.
When the pbs are selected OFF, the valves are commanded to close.
Select the PACK 1 pb.
When the PACK pbs are selected on (lights out), the corresponding pack flow control valve opens provided bleed air is present.
If bleed air is not available, the pack flow control valve will remain closed.
In this instance, since there is a difference between the actual position of the valve and the commanded position, the FAULT light illuminates within the pb.
В этом примере, поскольку имеется различие между реальным положением крана и его заданным положением, то внутри клавиши горит подсветка FAULT (ОТКАЗ).
PACK FLOW NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
FAULT
OFF
X BLEED
AUTO
SHUT
OPEN
START
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
ENG 2 BLEED
REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
COMPRESSOR OUTLET TEMP SENSORS
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
FROM PNEUMATIC SYSTEM
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:

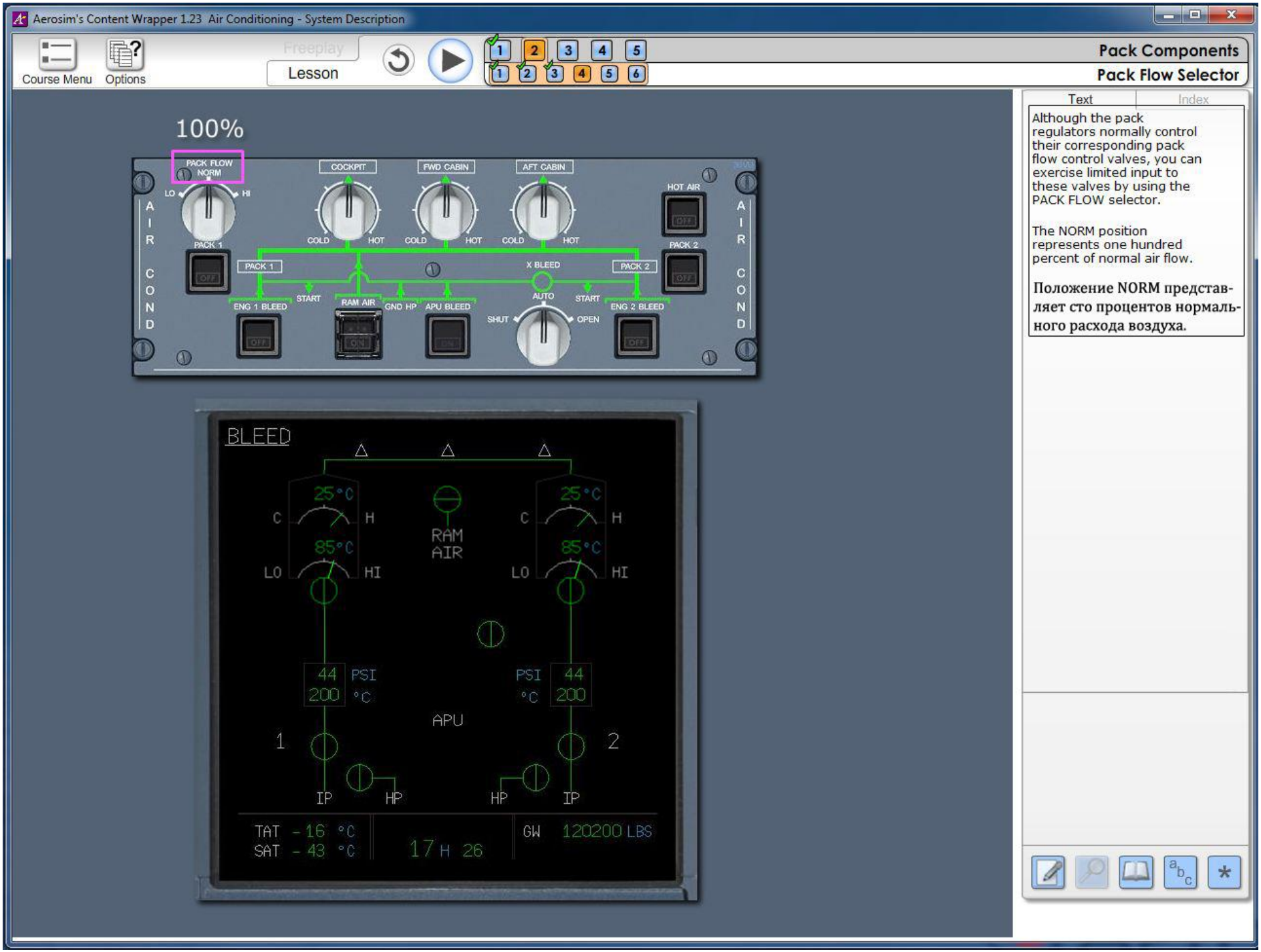

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
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After a short time, if the engine is not started, the pack flow control valves automatically reopen.
The pack flow control valves will subsequently close once an ENG MASTER switch is selected ON.
The pack flow control valves are directly controlled by the PACK 1 and PACK 2 pbs located on the overhead AIR COND panel.
When the pbs are selected OFF, the valves are commanded to close.
Select the PACK 1 pb.
When the PACK pbs are selected on (lights out), the corresponding pack flow control valve opens provided bleed air is present.
If bleed air is not available, the pack flow control valve will remain closed.
In this instance, since there is a difference between the actual position of the valve and the commanded position, the FAULT light illuminates within the pb.
This is a common indication if APU bleed air is not in use during preflight.
Это общая индикация, если отбор воздуха от ВСУ не используется при подготовке полёта.
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
FAULT
OFF
X BLEED
ENG 1 BLEED
ENG 2 BLEED
START
RAM AIR
GND HP
APU BLEED
AUTO
SHUT
OPEN
REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
COMPRESSOR OUTLET TEMP SENSORS
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
FROM PNEUMATIC SYSTEM
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:

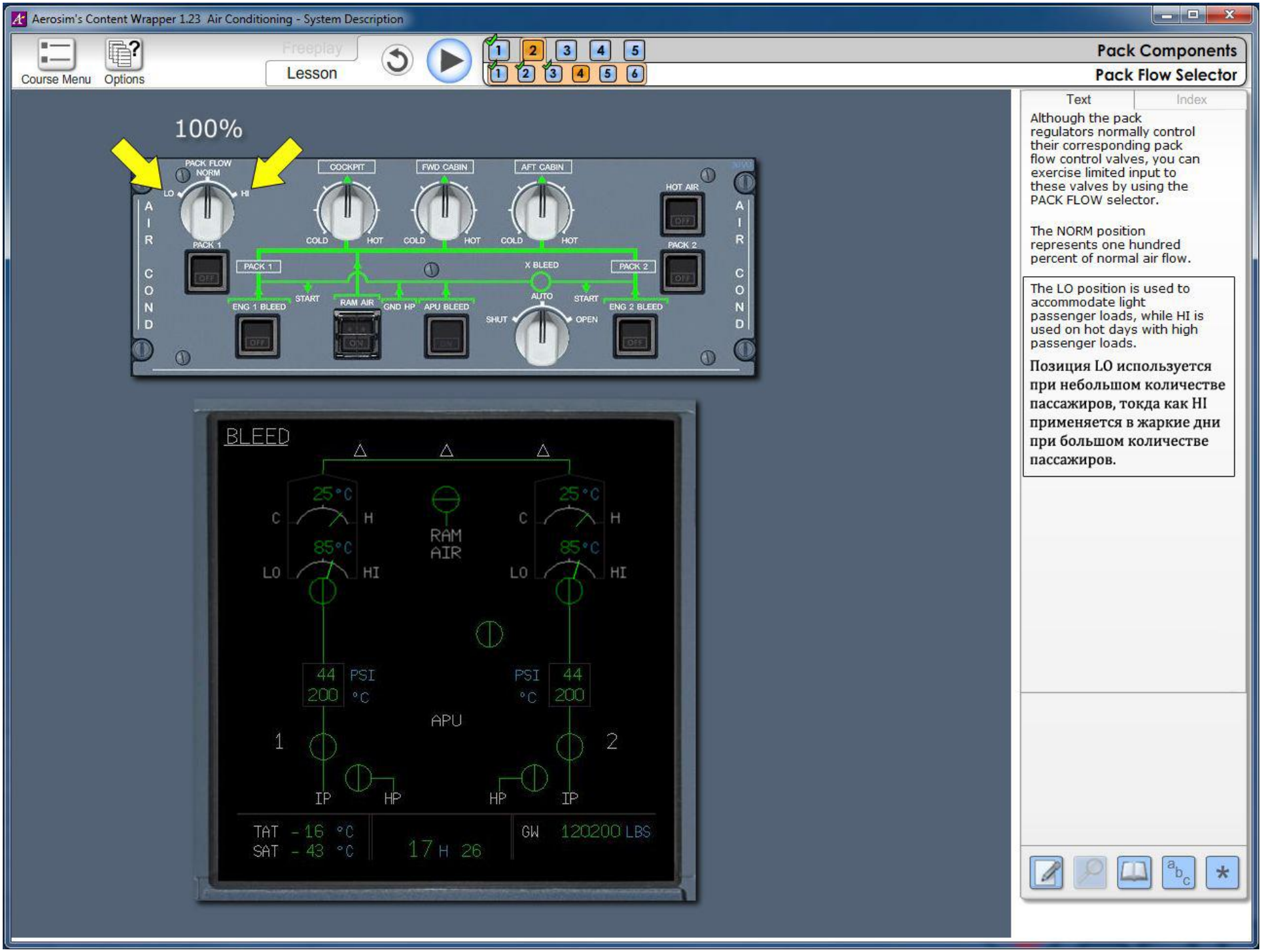

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
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Options
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Pack Components
Pack Flow Control Valves
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The pack flow control valves will subsequently close once an ENG MASTER switch is selected ON.
The pack flow control valves are directly controlled by the PACK 1 and PACK 2 pbs located on the overhead AIR COND panel.
When the pbs are selected OFF, the valves are commanded to close.
Select the PACK 1 pb.
When the PACK pbs are selected on (lights out), the corresponding pack flow control valve opens provided bleed air is present.
If bleed air is not available, the pack flow control valve will remain closed.
In this instance, since there is a difference between the actual position of the valve and the commanded position, the FAULT light illuminates within the pb.
The status of the pack flow control valves is displayed on the BLEED page.
Состояние кранов управления расходом блоков показано на странице BLEED (отбор воздуха).
PACK FLOW
NORM
COCKPIT
FWD CABIN
AFT CABIN
HOT AIR
PACK 1
PACK 2
FAULT
X BLEED
ENG 1 BLEED
ENG 2 BLEED
RAM AIR
GND HP
APU BLEED
AUTO
SHUT
OPEN
START
REGULATING VALVE
BLEED
15°C
35°C
45°C
RAM AIR
PACK REGULATOR
PACK 1
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM

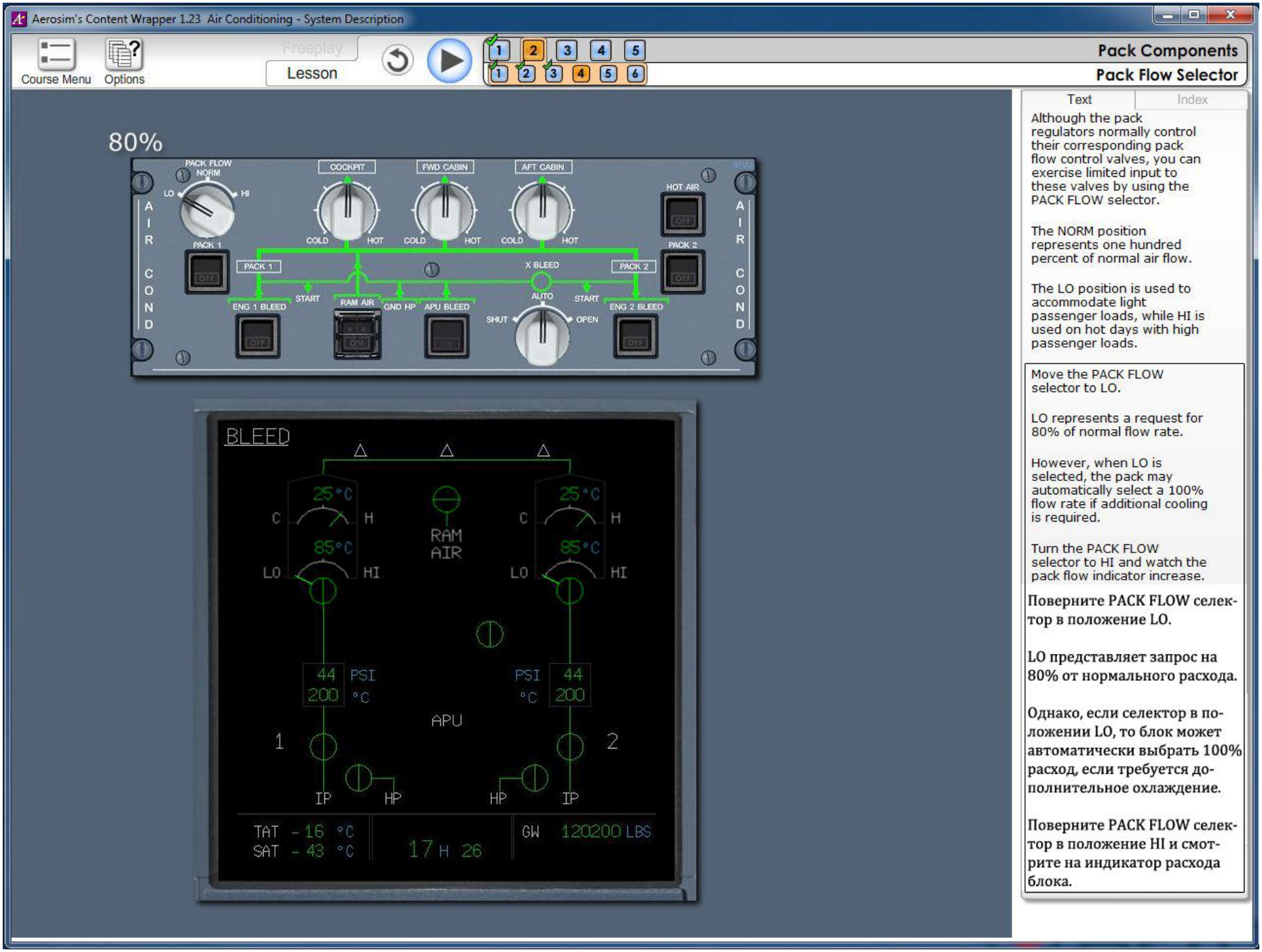

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
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Lesson
Pack Components
Pack Flow Control Valves
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Index
The pack flow control valves are directly controlled by the PACK 1 and PACK 2 pbs located on the overhead AIR COND panel.
When the pbs are selected OFF, the valves are commanded to close.
Select the PACK 1 pb.
When the PACK pbs are selected on (lights out), the corresponding pack flow control valve opens provided bleed air is present.
If bleed air is not available, the pack flow control valve will remain closed.
In this instance, since there is a difference between the actual position of the valve and the commanded position, the FAULT light illuminates within the pb.
The status of the pack flow control valves is displayed on the BLEED page.
A horizontal line indicates the valve is closed while a green vertical line indicates the valve is open.
Горизонтальная линия означает, что кран закрыт, тогда как зелёная вертикальная линия показывает, что кран открыт.
PACK FLOW NORM
COCKPIT
FWD CABIN
AFT CABIN
HOT AIR
PACK 1
PACK 2
X BLEED
ENG 1 BLEED
ENG 2 BLEED
RAM AIR
GND HP
APU BLEED
REGULATING VALVE
BLEED
RAM AIR
OPEN
PACK REGULATOR
PACK 1
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
FROM PNEUMATIC SYSTEM
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:

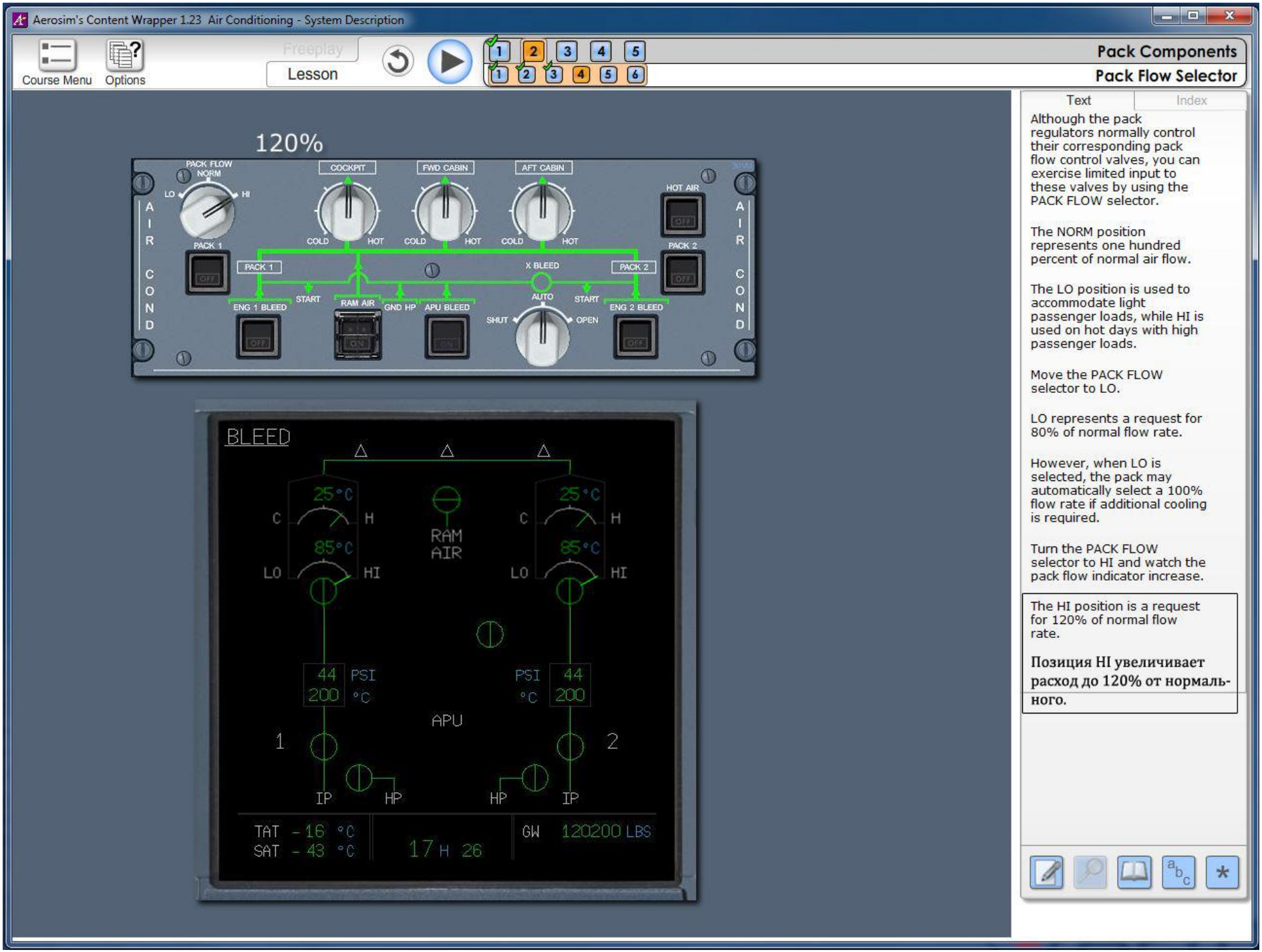

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Flow Control Valves
Text
Index
When the pbs are selected OFF, the valves are commanded to close.
Select the PACK 1 pb.
When the PACK pbs are selected on (lights out), the corresponding pack flow control valve opens provided bleed air is present.
If bleed air is not available, the pack flow control valve will remain closed.
In this instance, since there is a difference between the actual position of the valve and the commanded position, the FAULT light illuminates within the pb.
The status of the pack flow control valves is displayed on the BLEED page.
A horizontal line indicates the valve is closed while a green vertical line indicates the valve is open.
Airflow as a result of valve modulation is depicted as an analog pointer above the valve.
Расход воздуха, как результат управления краном, отображён как аналоговый указатель над меткой крана.
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
FAULT
X BLEED
AUTO
SHUT
OPEN
START
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
ENG 2 BLEED
REGULATING VALVE
BLEED
15°C
35°C
45°C
RAM AIR
PACK REGULATOR
PACK 1
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM

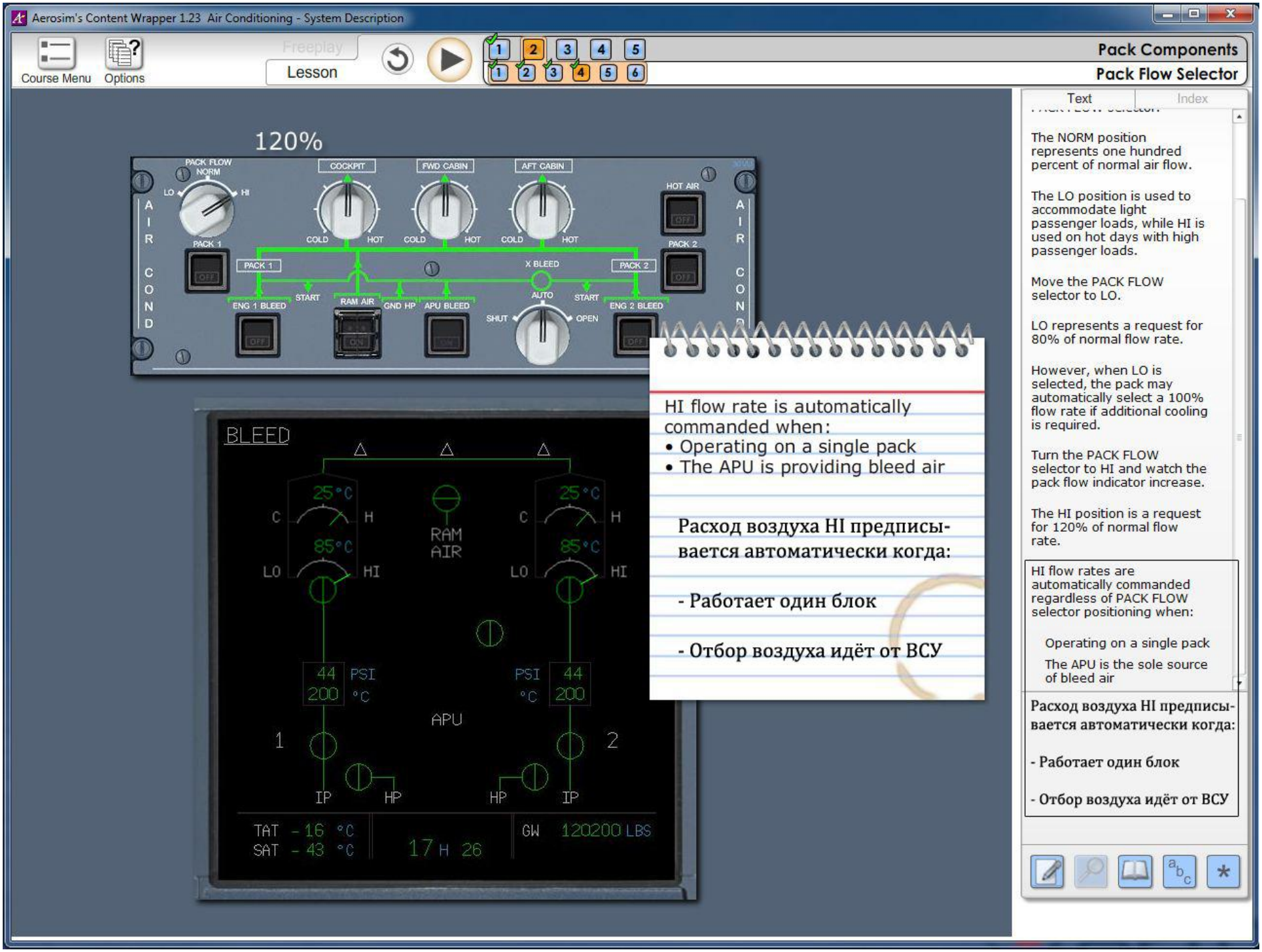

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Flow Selector
Text
Index
Although the pack regulators normally control their corresponding pack flow control valves, you can exercise limited input to these valves by using the PACK FLOW selector.
Хотя регуляторы блоков нормально управляют своими связанными кранами управления расходом блока, Вы можете осуществить ограниченное поступление в эти краны с использованием селектора PACK FLOW (РАСХОД БЛОКА).
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
X BLEED
AUTO
SHUT
OPEN
START
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
ENG 2 BLEED
AIR COND
BLEED
25°C
85°C
C
H
RAM AIR
44
200
PSI
°C
APU
1
2
IP
HP
TAT -16 °C
SAT -43 °C
17 H 26
GW 120200 LBS

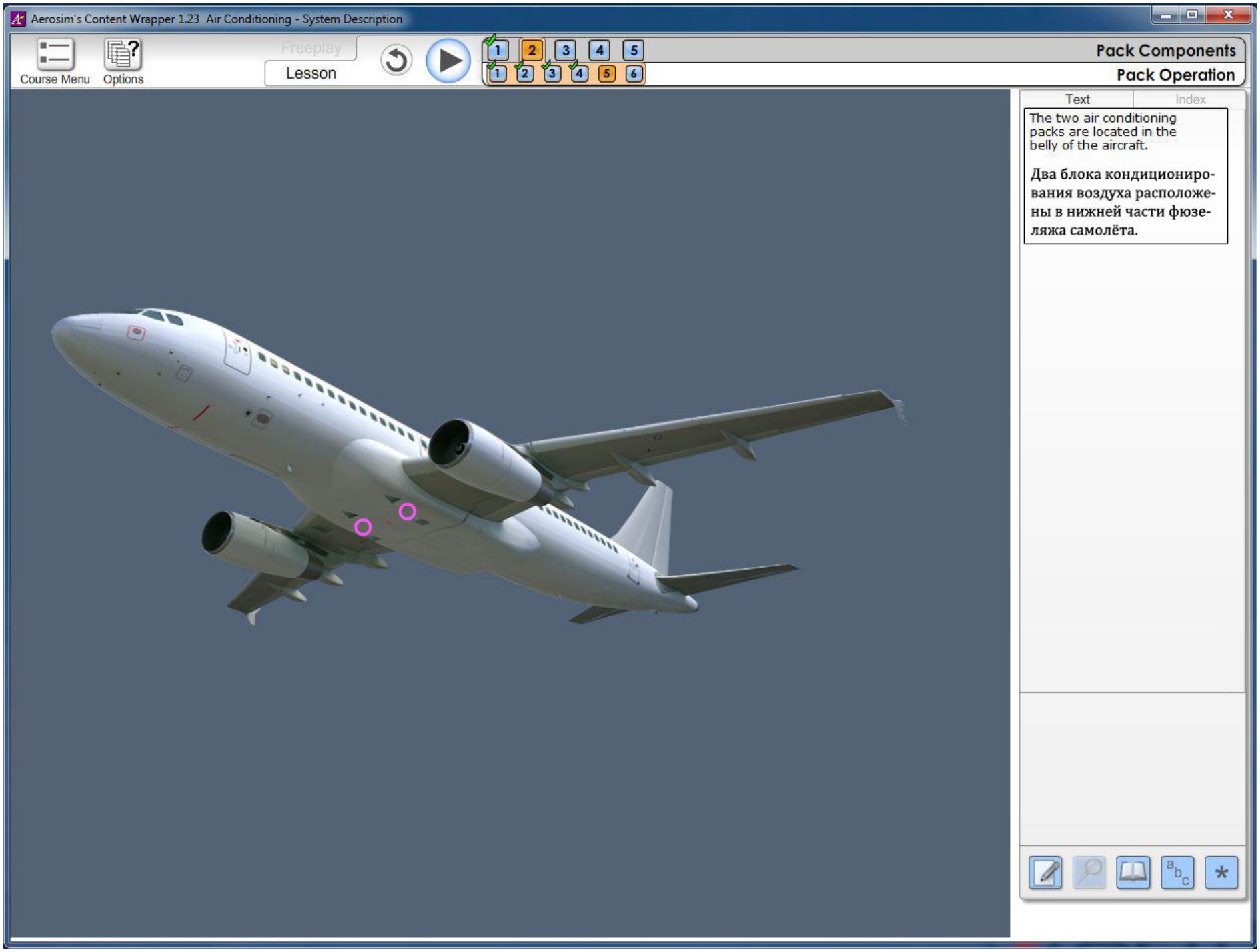

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Flow Selector
Text
Index
Although the pack regulators normally control their corresponding pack flow control valves, you can exercise limited input to these valves by using the PACK FLOW selector.
The NORM position represents one hundred percent of normal air flow.
Положение NORM представляет сто процентов нормального расхода воздуха.
100%
PACK FLOW NORM
COCKPIT
FWD CABIN
AFT CABIN
HOT AIR
PACK 1
PACK 2
X BLEED
ENG 1 BLEED
ENG 2 BLEED
RAM AIR
GND HP
APU BLEED
START
AUTO
SHUT
OPEN
BLEED
RAM AIR
APU
TAT - 16 °C
SAT - 43 °C
17 H 26
GW 120200 LBS

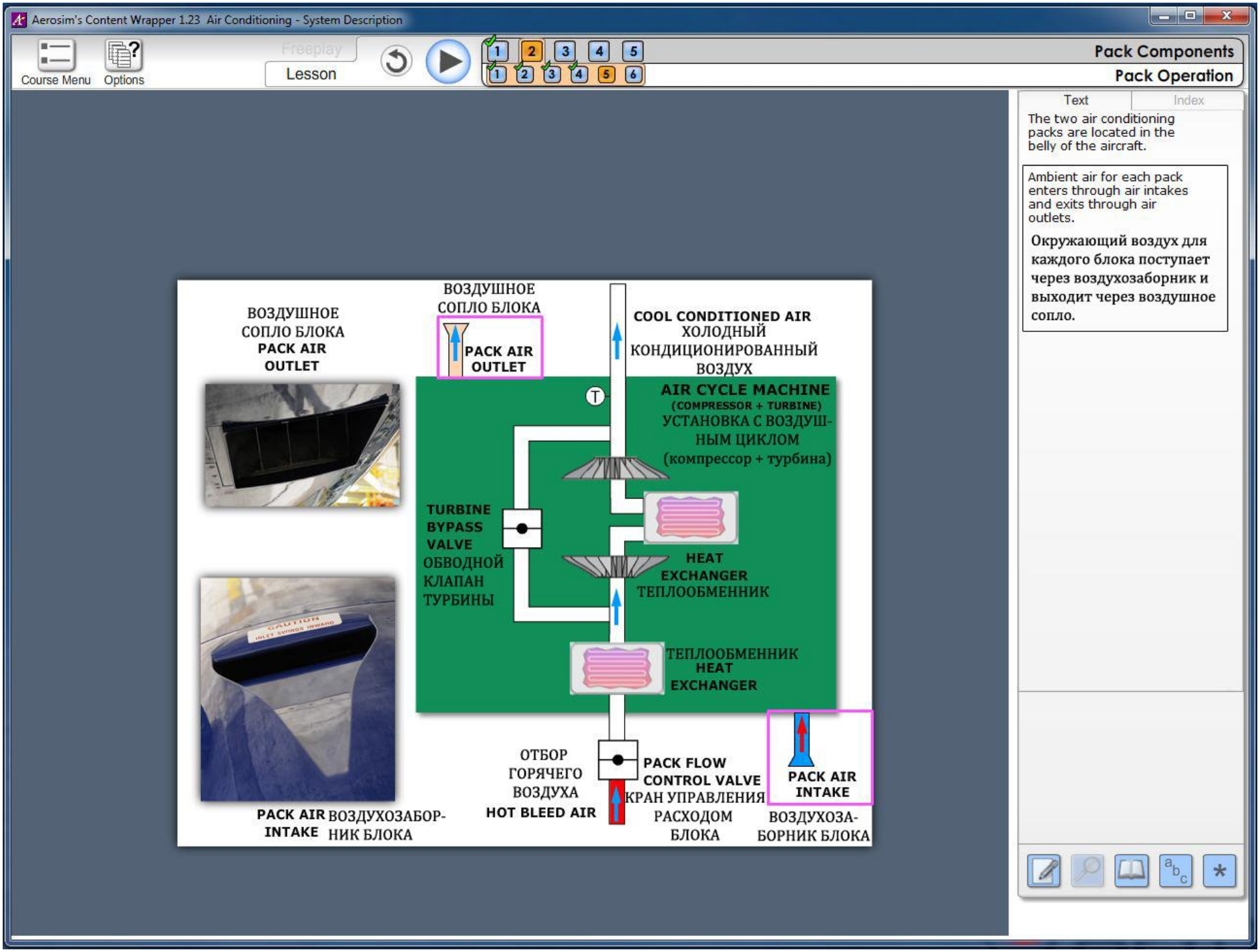

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Flow Selector
Text
Index
Although the pack regulators normally control their corresponding pack flow control valves, you can exercise limited input to these valves by using the PACK FLOW selector.
The NORM position represents one hundred percent of normal air flow.
The LO position is used to accommodate light passenger loads, while HI is used on hot days with high passenger loads.
Позиция LO используется при небольшом количестве пассажиров, тогда как HI применяется в жаркие дни при большом количестве пассажиров.
100%
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
X BLEED
AUTO
SHUT
OPEN
START
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
ENG 2 BLEED
AIR COND
BLEED
25°C
85°C
C
H
LO
HI
RAM AIR
44
200
PSI
°C
APU
1
2
IP
HP
TAT -16 °C
SAT -43 °C
17 H 26
GW 120200 LBS

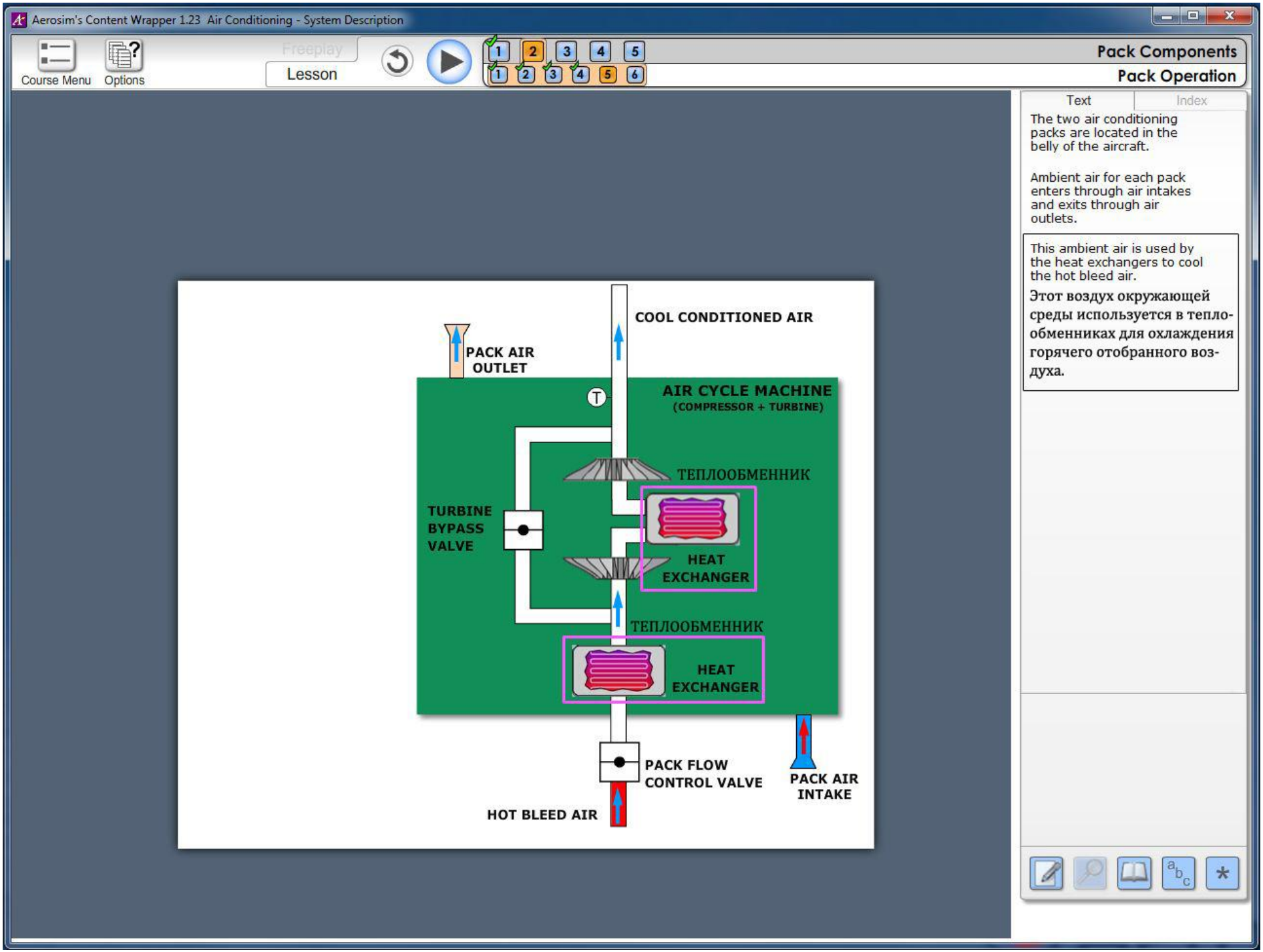

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Flow Selector
80%
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
HOT AIR
COLD
HOT
PACK 1
PACK 2
X BLEED
AUTO
SHUT
OPEN
START
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
ENG 2 BLEED
AIR COND
BLEED
25°C
85°C
RAM AIR
44
200
PSI
°C
APU
1
2
IP
HP
TAT -16 °C
SAT -43 °C
17 H 26
GW 120200 LBS
Text
Index
Although the pack regulators normally control their corresponding pack flow control valves, you can exercise limited input to these valves by using the PACK FLOW selector.
The NORM position represents one hundred percent of normal air flow.
The LO position is used to accommodate light passenger loads, while HI is used on hot days with high passenger loads.
Move the PACK FLOW selector to LO.
LO represents a request for 80% of normal flow rate.
However, when LO is selected, the pack may automatically select a 100% flow rate if additional cooling is required.
Turn the PACK FLOW selector to HI and watch the pack flow indicator increase.
Поверните PACK FLOW селектор в положение LO.
LO представляет запрос на 80% от нормального расхода.
Однако, если селектор в положении LO, то блок может автоматически выбрать 100% расход, если требуется дополнительное охлаждение.
Поверните PACK FLOW селектор в положение HI и смотрите на индикатор расхода блока.

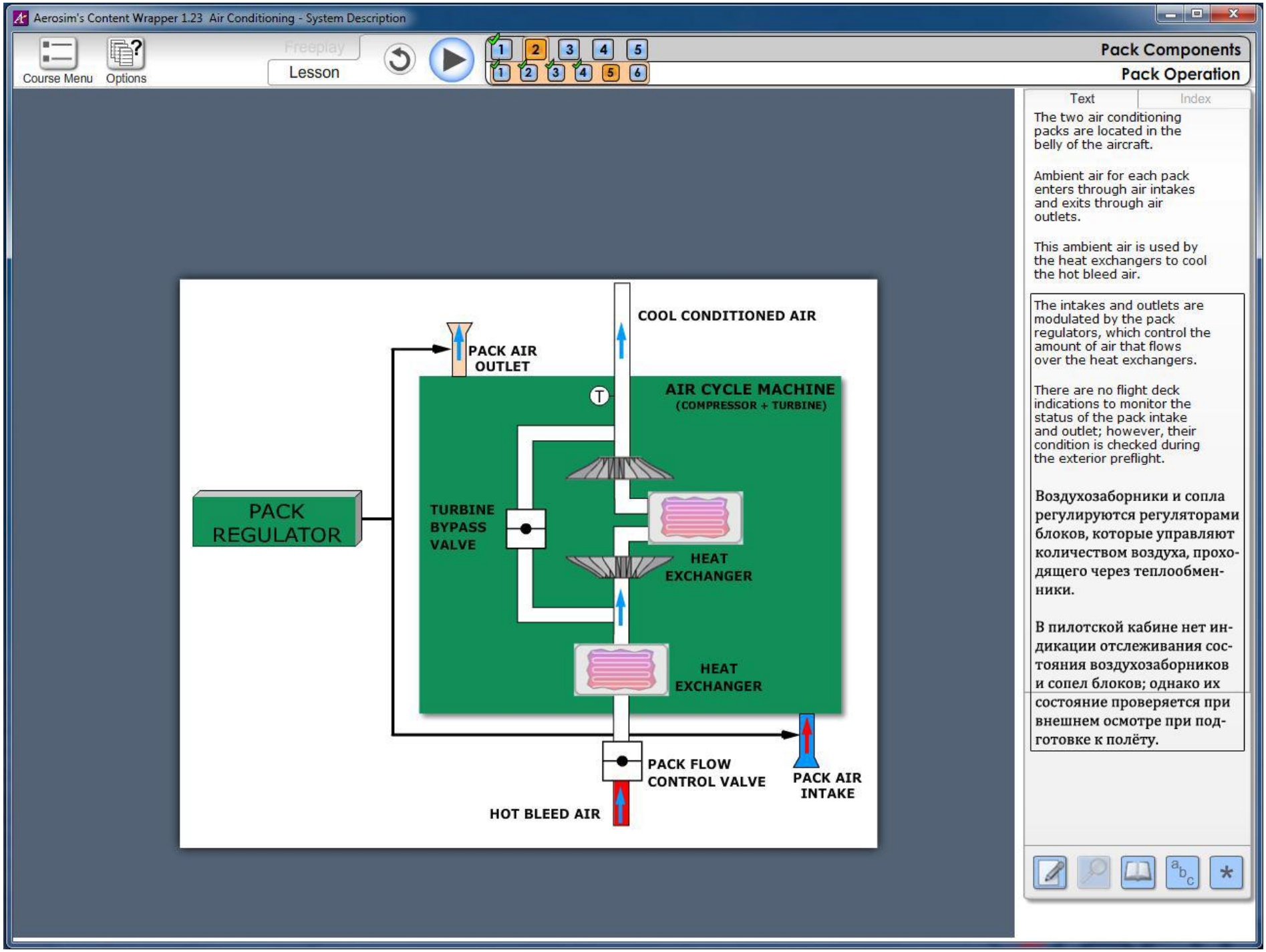

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Flow Selector
120%
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
HOT AIR
COLD
HOT
PACK 1
PACK 2
X BLEED
ENG 1 BLEED
START
RAM AIR
GND HP
APU BLEED
AUTO
SHUT
OPEN
ENG 2 BLEED
AIR COND
BLEED
25°C
85°C
C
H
RAM AIR
44
200
PSI
°C
APU
1
2
IP
HP
TAT -16 °C
SAT -43 °C
17 H 26
GW 120200 LBS
Text
Index
Although the pack regulators normally control their corresponding pack flow control valves, you can exercise limited input to these valves by using the PACK FLOW selector.
The NORM position represents one hundred percent of normal air flow.
The LO position is used to accommodate light passenger loads, while HI is used on hot days with high passenger loads.
Move the PACK FLOW selector to LO.
LO represents a request for 80% of normal flow rate.
However, when LO is selected, the pack may automatically select a 100% flow rate if additional cooling is required.
Turn the PACK FLOW selector to HI and watch the pack flow indicator increase.
The HI position is a request for 120% of normal flow rate.
Позиция HI увеличивает расход до 120% от нормального.

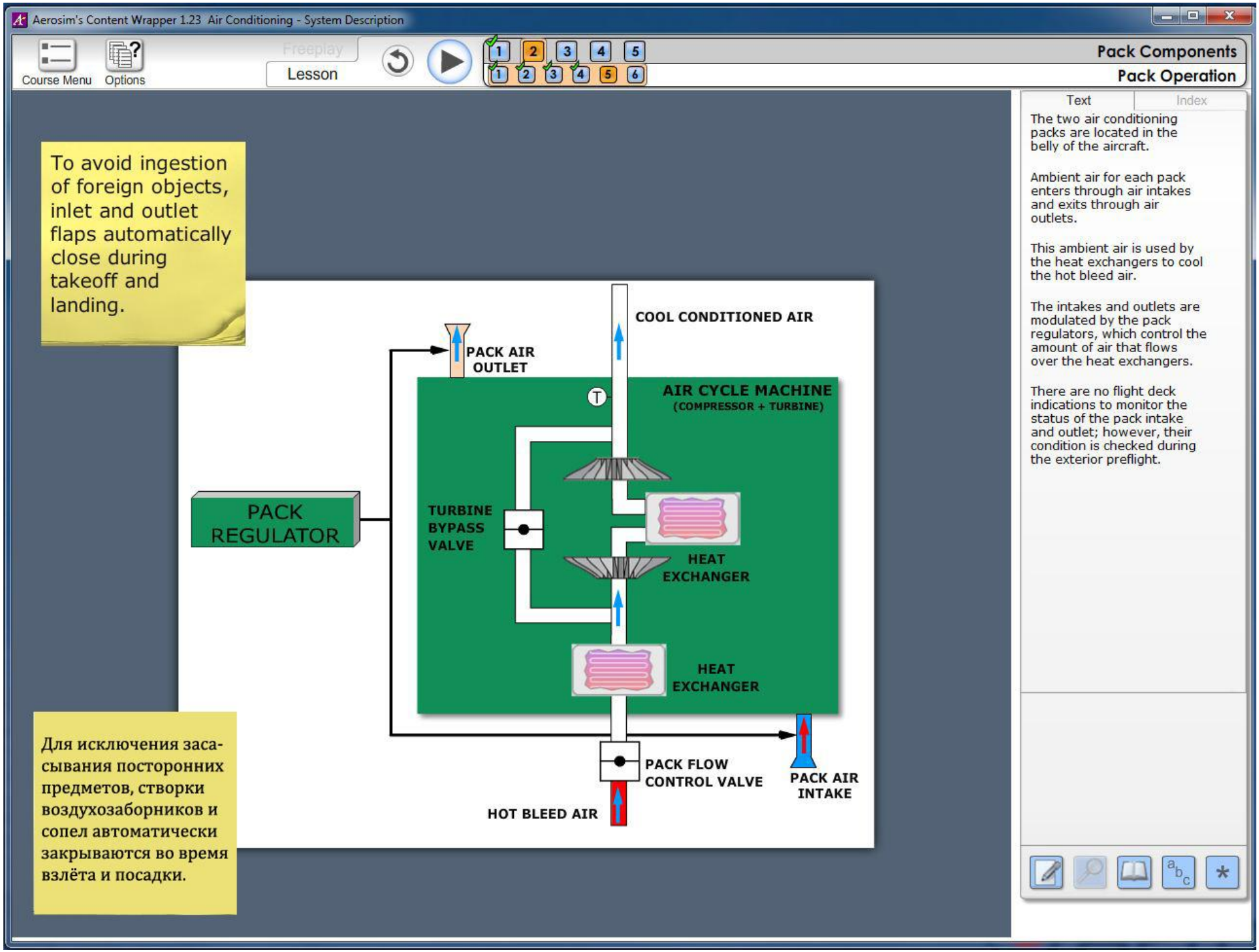

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Flow Selector
120%
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
X BLEED
AUTO
SHUT
OPEN
START
RAM AIR
GND HP
APU BLEED
ENG 1 BLEED
ENG 2 BLEED
AIR COND
BLEED
25°C
85°C
RAM AIR
44
200
PSI
°C
APU
1
2
IP
HP
TAT - 16 °C
SAT - 43 °C
17 H 26
GW 120200 LBS
HI flow rate is automatically commanded when:
• Operating on a single pack
• The APU is providing bleed air
Расход воздуха HI предписывается автоматически когда:
- Работает один блок
- Отбор воздуха идёт от ВСУ
Text
Index
The NORM position represents one hundred percent of normal air flow.
The LO position is used to accommodate light passenger loads, while HI is used on hot days with high passenger loads.
Move the PACK FLOW selector to LO.
LO represents a request for 80% of normal flow rate.
However, when LO is selected, the pack may automatically select a 100% flow rate if additional cooling is required.
Turn the PACK FLOW selector to HI and watch the pack flow indicator increase.
The HI position is a request for 120% of normal flow rate.
HI flow rates are automatically commanded regardless of PACK FLOW selector positioning when:
Operating on a single pack
The APU is the sole source of bleed air
Расход воздуха HI предписывается автоматически когда:
- Работает один блок
- Отбор воздуха идёт от ВСУ

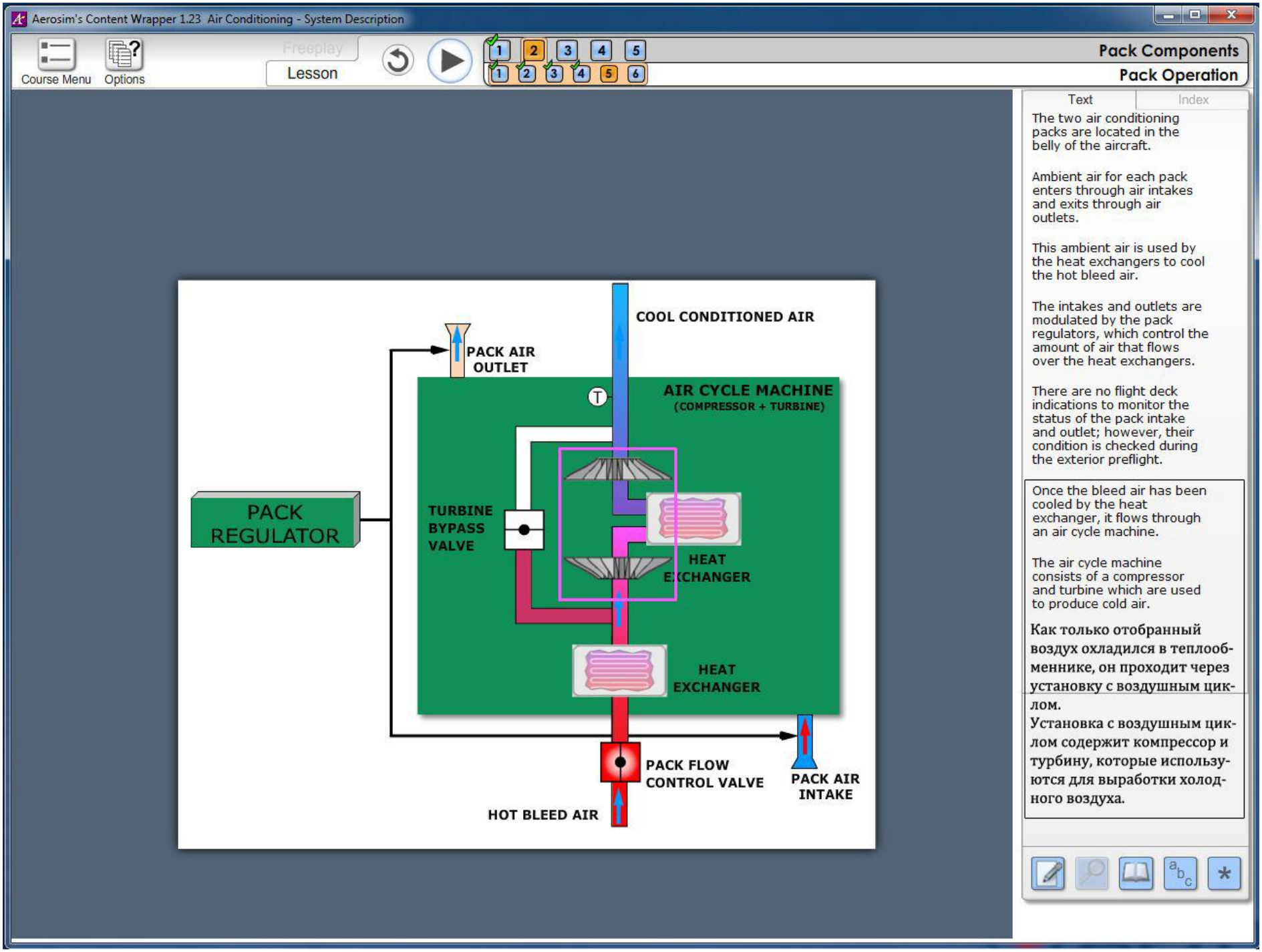

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
1 2 3 4 5
1 2 3 4 5 6
Pack Components
Pack Operation
Text
Index
The two air conditioning packs are located in the belly of the aircraft.
Два блока кондиционирования воздуха расположены в нижней части фюзеляжа самолёта.

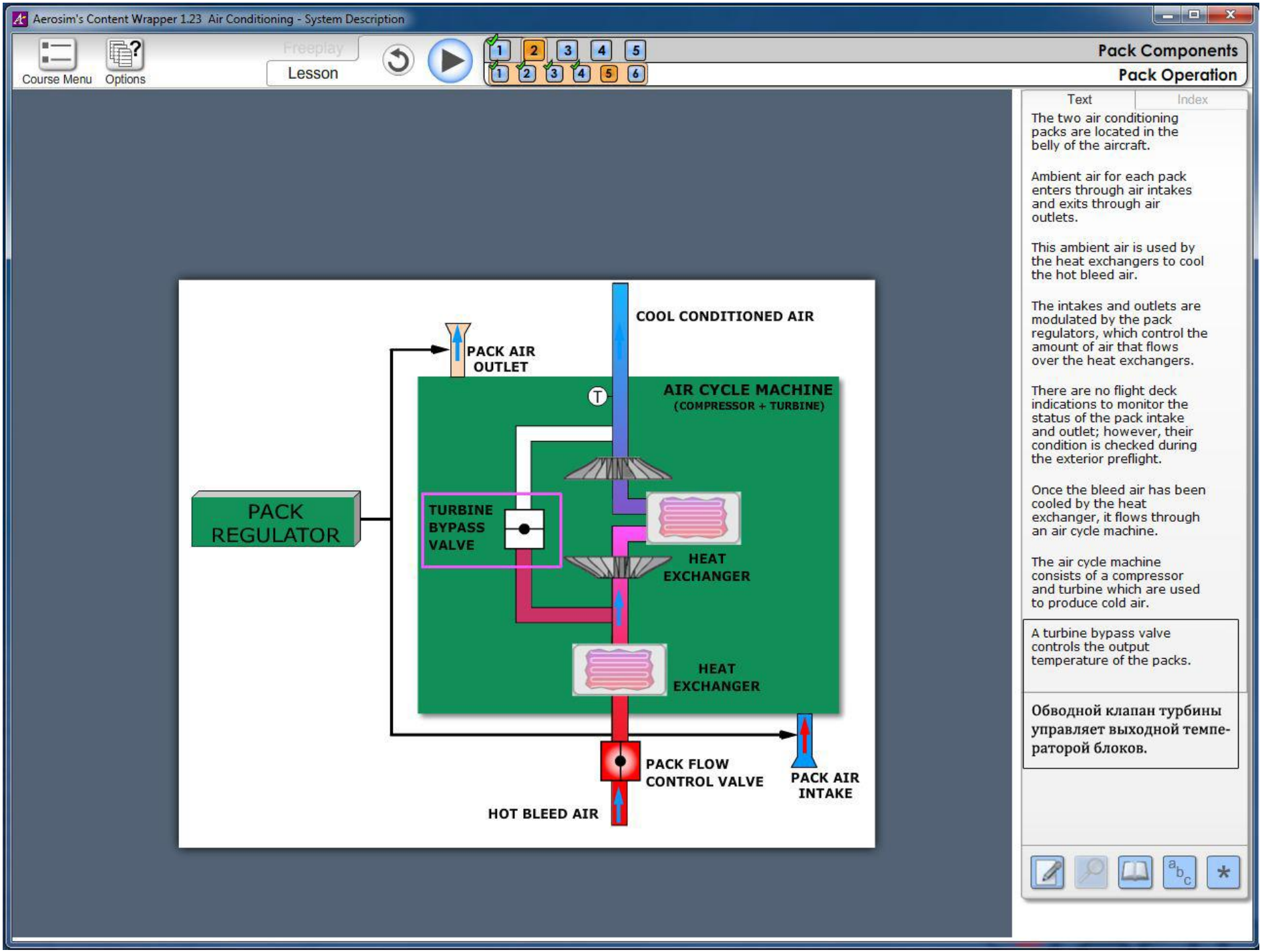

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Operation
Text
Index
The two air conditioning packs are located in the belly of the aircraft.
Ambient air for each pack enters through air intakes and exits through air outlets.
Окружающий воздух для каждого блока поступает через воздухозаборник и выходит через воздушное сопло.
ВОЗДУШНОЕ СОПЛО БЛОКА
PACK AIR OUTLET
ВОЗДУШНОЕ СОПЛО БЛОКА
PACK AIR OUTLET
COOL CONDITIONED AIR
ХОЛОДНЫЙ КОНДИЦИОНИРОВАННЫЙ ВОЗДУХ
AIR CYCLE MACHINE
(COMPRESSOR + TURBINE)
УСТАНОВКА С ВОЗДУШНЫМ ЦИКЛОМ (компрессор + турбина)
T
TURBINE BYPASS VALVE
ОБВОДНОЙ КЛАПАН ТУРБИНЫ
HEAT EXCHANGER
ТЕПЛООБМЕННИК
ТЕПЛООБМЕННИК
HEAT EXCHANGER
ОТБОР ГОРЯЧЕГО ВОЗДУХА
HOT BLEED AIR
PACK FLOW CONTROL VALVE
КРАН УПРАВЛЕНИЯ РАСХОДОМ БЛОКА
PACK AIR INTAKE
ВОЗДУХОЗАБОРНИК БЛОКА
PACK AIR INTAKE ВОЗДУХОЗАБОР-НИК БЛОКА

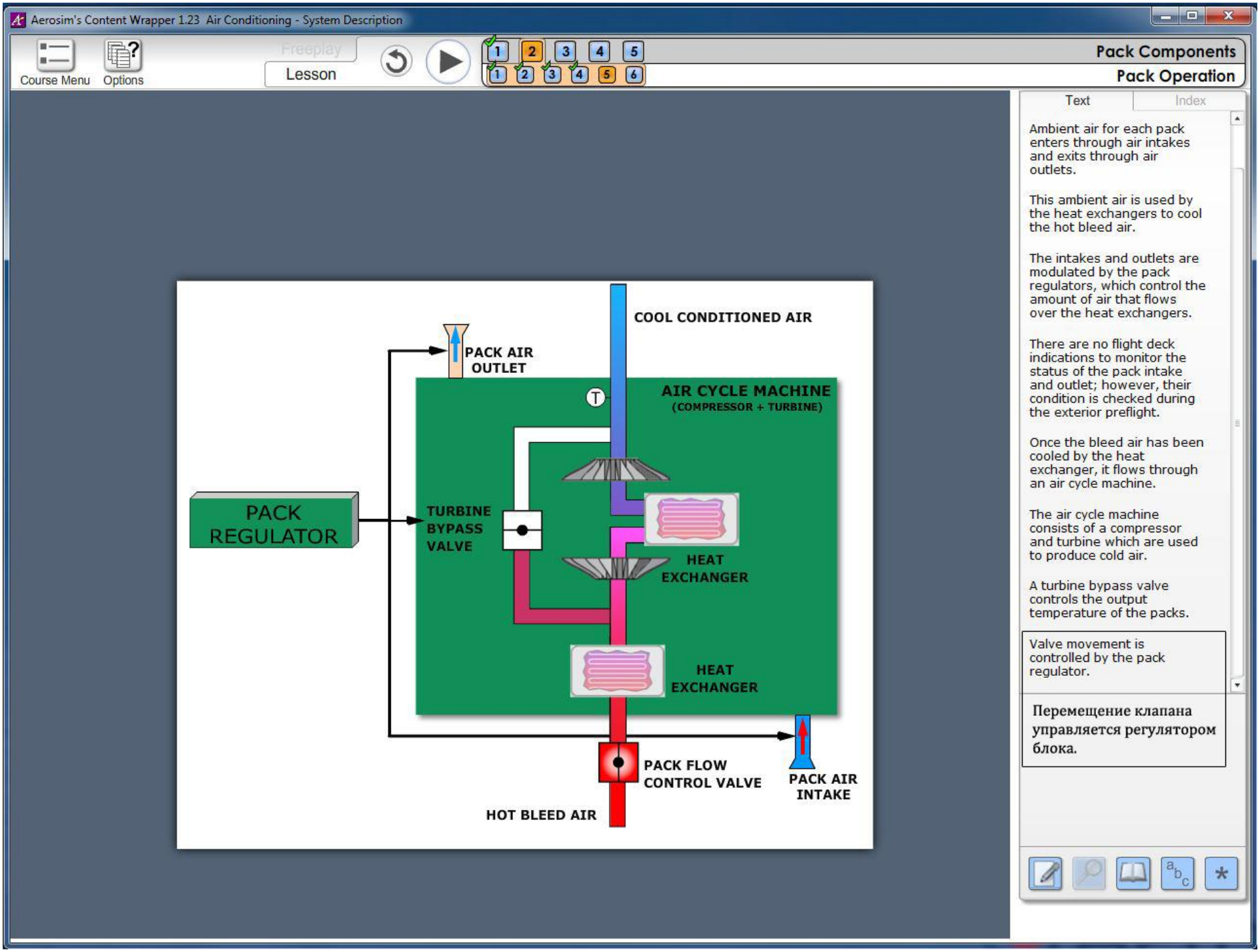

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Operation
Text
Index
The two air conditioning packs are located in the belly of the aircraft.
Ambient air for each pack enters through air intakes and exits through air outlets.
This ambient air is used by the heat exchangers to cool the hot bleed air.
Этот воздух окружающей среды используется в тепло-обменниках для охлаждения горячего отобранного воз-духа.
COOL CONDITIONED AIR
PACK AIR OUTLET
AIR CYCLE MACHINE
(COMPRESSOR + TURBINE)
ТЕПЛООБМЕННИК
TURBINE BYPASS VALVE
HEAT EXCHANGER
ТЕПЛООБМЕННИК
HEAT EXCHANGER
PACK FLOW CONTROL VALVE
PACK AIR INTAKE
HOT BLEED AIR

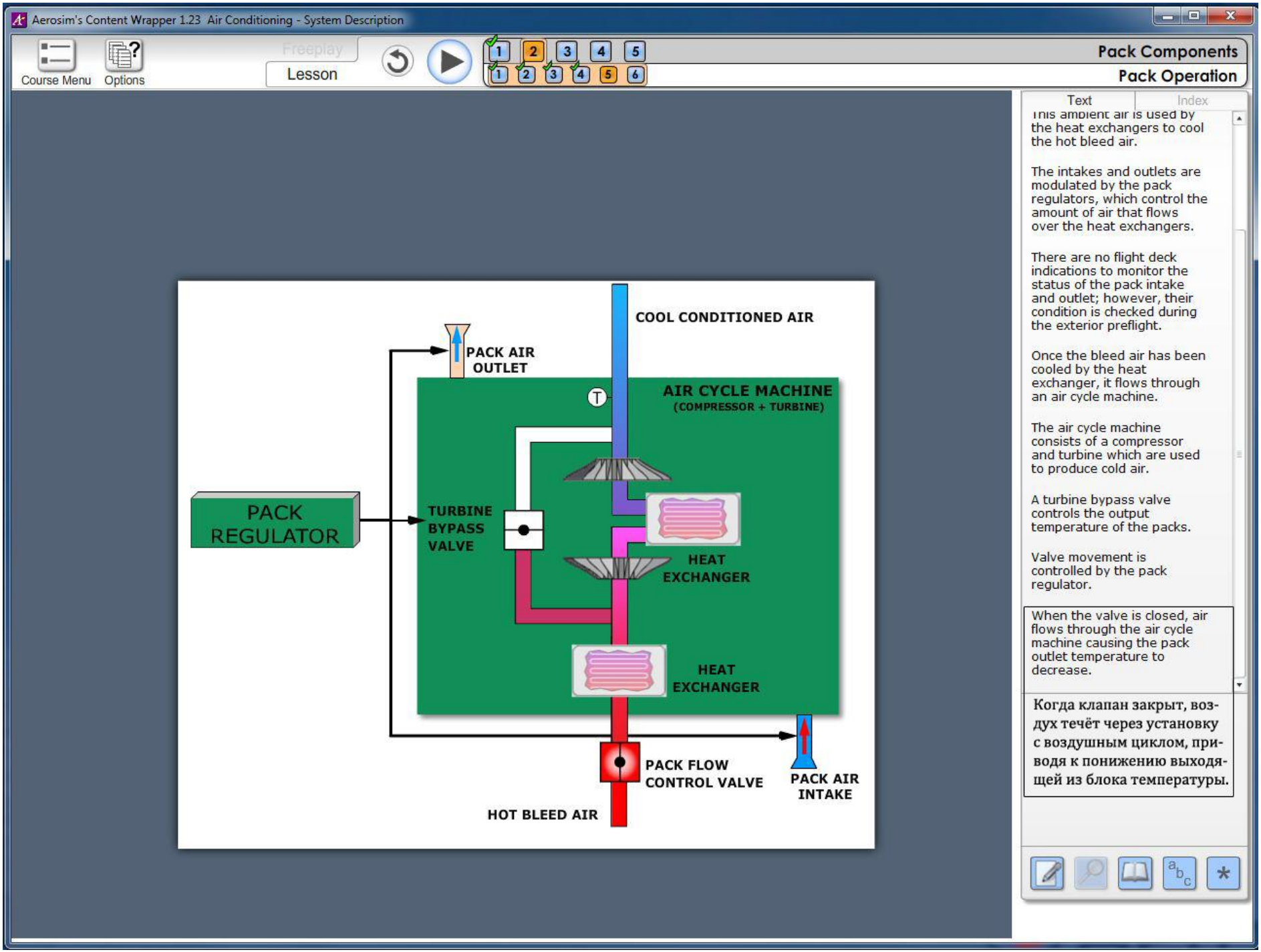

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Operation
Text
Index
The two air conditioning packs are located in the belly of the aircraft.
Ambient air for each pack enters through air intakes and exits through air outlets.
This ambient air is used by the heat exchangers to cool the hot bleed air.
The intakes and outlets are modulated by the pack regulators, which control the amount of air that flows over the heat exchangers.
There are no flight deck indications to monitor the status of the pack intake and outlet; however, their condition is checked during the exterior preflight.
Воздухозаборники и сопла регулируются регуляторами блоков, которые управляют количеством воздуха, проходящего через теплообменники.
В пилотской кабине нет индикации отслеживания состояния воздухозаборников и сопел блоков; однако их состояние проверяется при внешнем осмотре при подготовке к полёту.
COOL CONDITIONED AIR
PACK AIR OUTLET
AIR CYCLE MACHINE
(COMPRESSOR + TURBINE)
T
PACK REGULATOR
TURBINE BYPASS VALVE
HEAT EXCHANGER
HEAT EXCHANGER
PACK FLOW CONTROL VALVE
PACK AIR INTAKE
HOT BLEED AIR

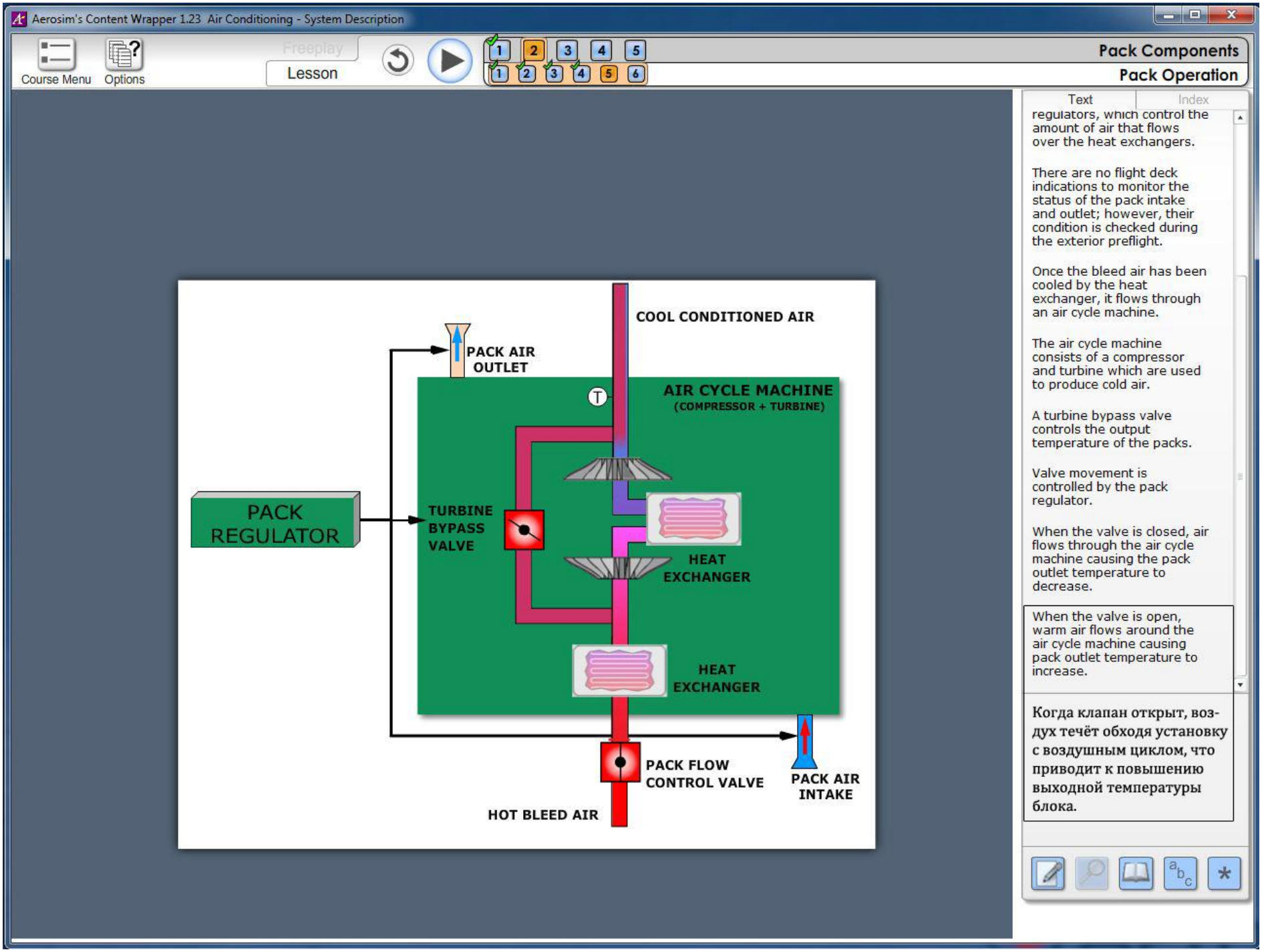

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Operation
Text
Index
The two air conditioning packs are located in the belly of the aircraft.
Ambient air for each pack enters through air intakes and exits through air outlets.
This ambient air is used by the heat exchangers to cool the hot bleed air.
The intakes and outlets are modulated by the pack regulators, which control the amount of air that flows over the heat exchangers.
There are no flight deck indications to monitor the status of the pack intake and outlet; however, their condition is checked during the exterior preflight.
To avoid ingestion of foreign objects, inlet and outlet flaps automatically close during takeoff and landing.
COOL CONDITIONED AIR
PACK AIR OUTLET
AIR CYCLE MACHINE
(COMPRESSOR + TURBINE)
T
PACK REGULATOR
TURBINE BYPASS VALVE
HEAT EXCHANGER
HEAT EXCHANGER
PACK FLOW CONTROL VALVE
PACK AIR INTAKE
HOT BLEED AIR
Для исключения засасывания посторонних предметов, створки воздухозаборников и сопел автоматически закрываются во время взлёта и посадки.

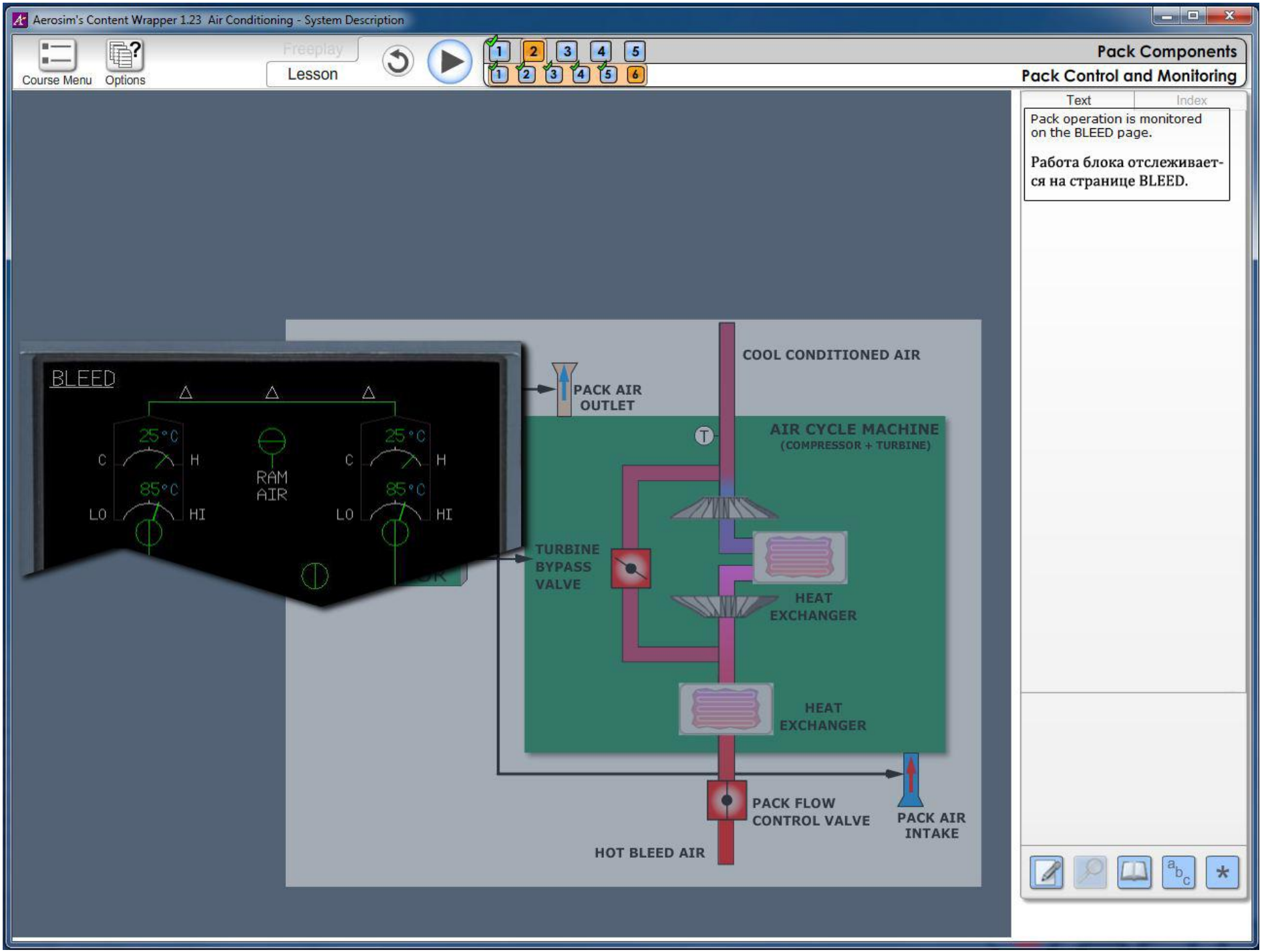

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
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Pack Components
Pack Operation
Text
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The two air conditioning packs are located in the belly of the aircraft.
Ambient air for each pack enters through air intakes and exits through air outlets.
This ambient air is used by the heat exchangers to cool the hot bleed air.
The intakes and outlets are modulated by the pack regulators, which control the amount of air that flows over the heat exchangers.
There are no flight deck indications to monitor the status of the pack intake and outlet; however, their condition is checked during the exterior preflight.
Once the bleed air has been cooled by the heat exchanger, it flows through an air cycle machine.
The air cycle machine consists of a compressor and turbine which are used to produce cold air.
Как только отобранный воздух охладился в теплообменнике, он проходит через установку с воздушным циклом.
Установка с воздушным циклом содержит компрессор и турбину, которые используются для выработки холодного воздуха.
COOL CONDITIONED AIR
PACK AIR OUTLET
AIR CYCLE MACHINE
(COMPRESSOR + TURBINE)
T
PACK REGULATOR
TURBINE BYPASS VALVE
HEAT EXCHANGER
HEAT EXCHANGER
PACK FLOW CONTROL VALVE
PACK AIR INTAKE
HOT BLEED AIR

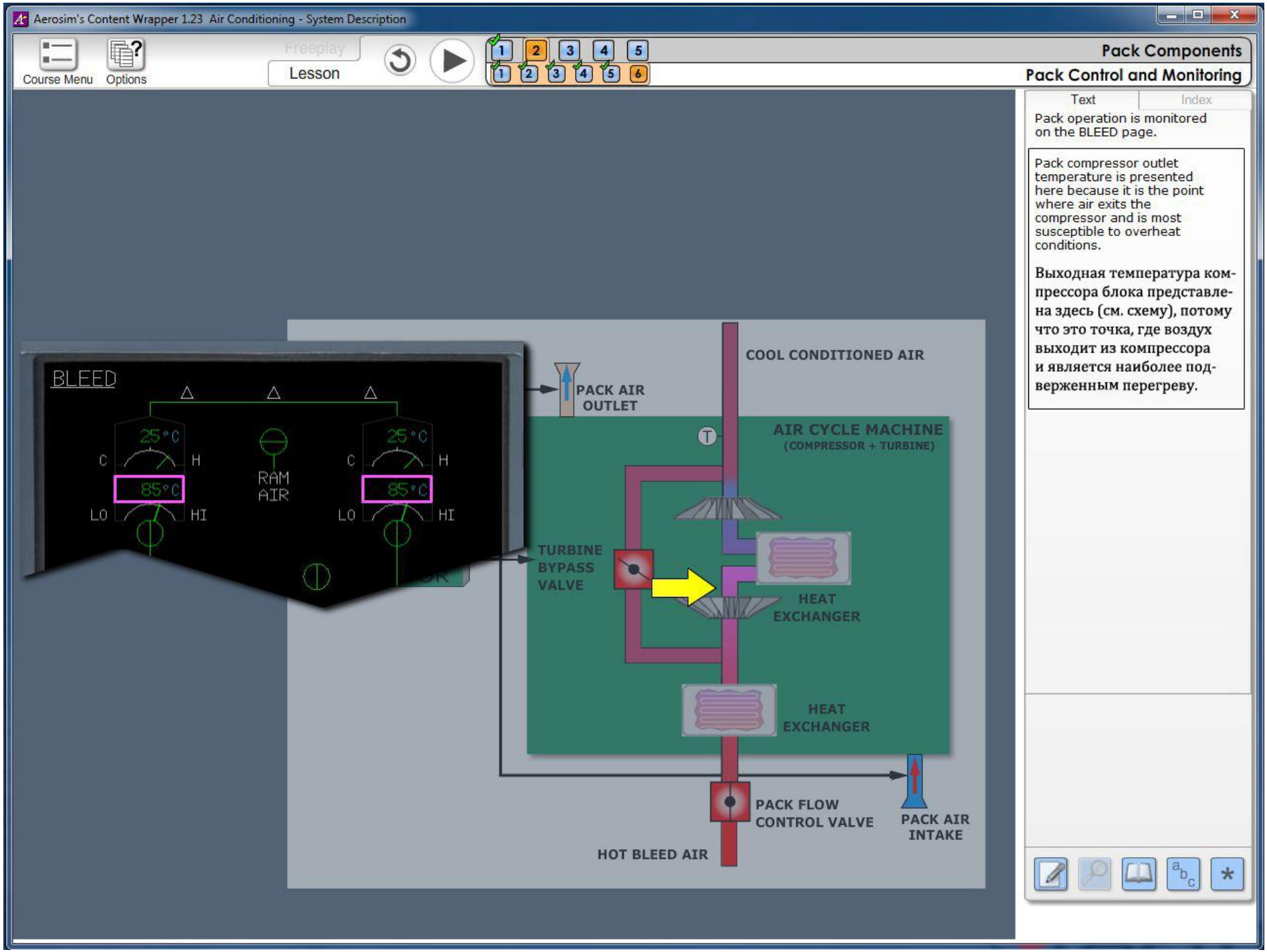

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Operation
Text
Index
The two air conditioning packs are located in the belly of the aircraft.
Ambient air for each pack enters through air intakes and exits through air outlets.
This ambient air is used by the heat exchangers to cool the hot bleed air.
The intakes and outlets are modulated by the pack regulators, which control the amount of air that flows over the heat exchangers.
There are no flight deck indications to monitor the status of the pack intake and outlet; however, their condition is checked during the exterior preflight.
Once the bleed air has been cooled by the heat exchanger, it flows through an air cycle machine.
The air cycle machine consists of a compressor and turbine which are used to produce cold air.
A turbine bypass valve controls the output temperature of the packs.
Обводной клапан турбины управляет выходной температорой блоков.
COOL CONDITIONED AIR
PACK AIR OUTLET
AIR CYCLE MACHINE
(COMPRESSOR + TURBINE)
T
PACK REGULATOR
TURBINE BYPASS VALVE
HEAT EXCHANGER
HEAT EXCHANGER
PACK FLOW CONTROL VALVE
PACK AIR INTAKE
HOT BLEED AIR

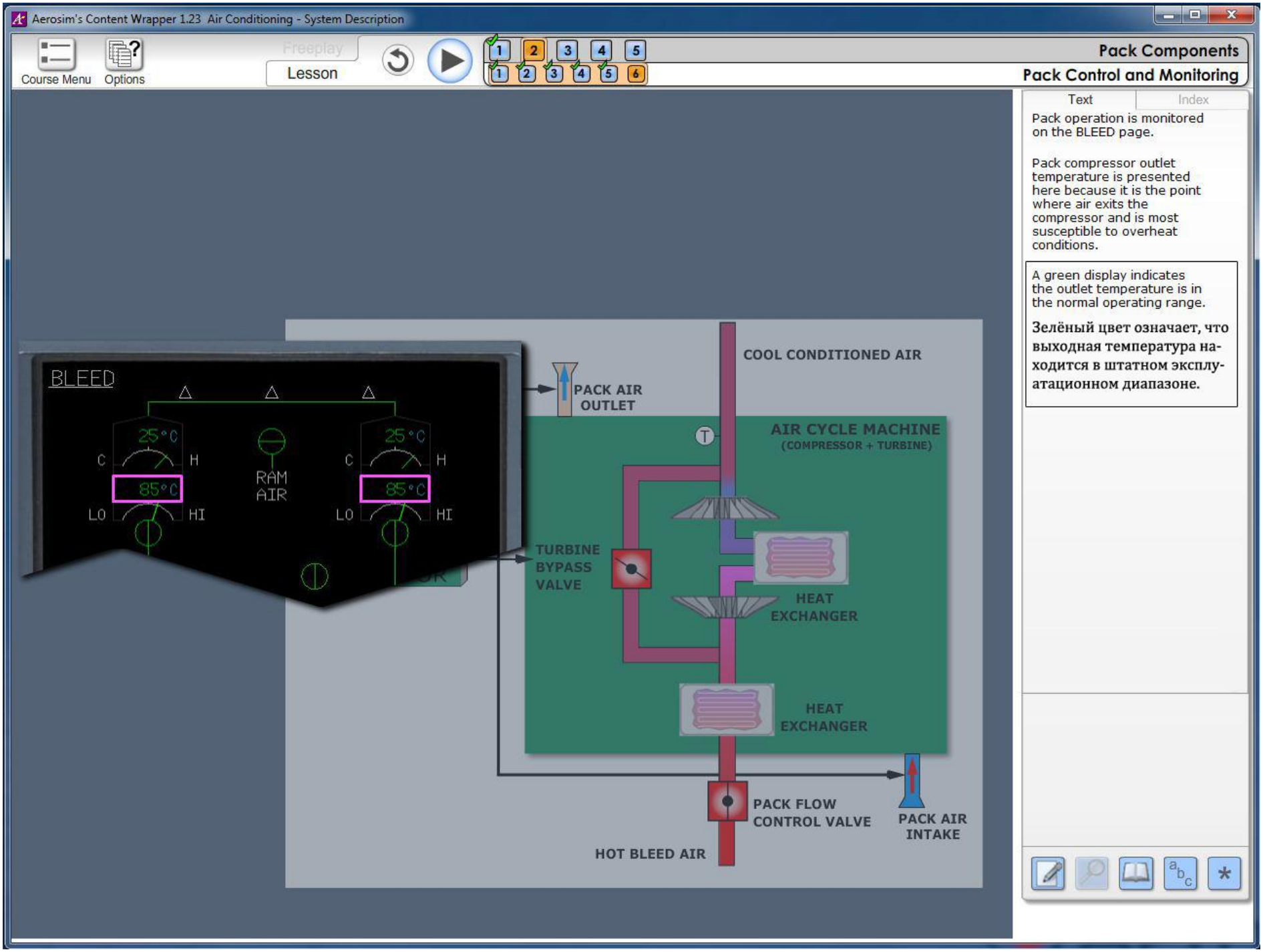

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Operation
Text
Index
Ambient air for each pack enters through air intakes and exits through air outlets.
This ambient air is used by the heat exchangers to cool the hot bleed air.
The intakes and outlets are modulated by the pack regulators, which control the amount of air that flows over the heat exchangers.
There are no flight deck indications to monitor the status of the pack intake and outlet; however, their condition is checked during the exterior preflight.
Once the bleed air has been cooled by the heat exchanger, it flows through an air cycle machine.
The air cycle machine consists of a compressor and turbine which are used to produce cold air.
A turbine bypass valve controls the output temperature of the packs.
Valve movement is controlled by the pack regulator.
Перемещение клапана управляется регулятором блока.
COOL CONDITIONED AIR
PACK AIR OUTLET
AIR CYCLE MACHINE
(COMPRESSOR + TURBINE)
T
PACK REGULATOR
TURBINE BYPASS VALVE
HEAT EXCHANGER
HEAT EXCHANGER
PACK FLOW CONTROL VALVE
PACK AIR INTAKE
HOT BLEED AIR

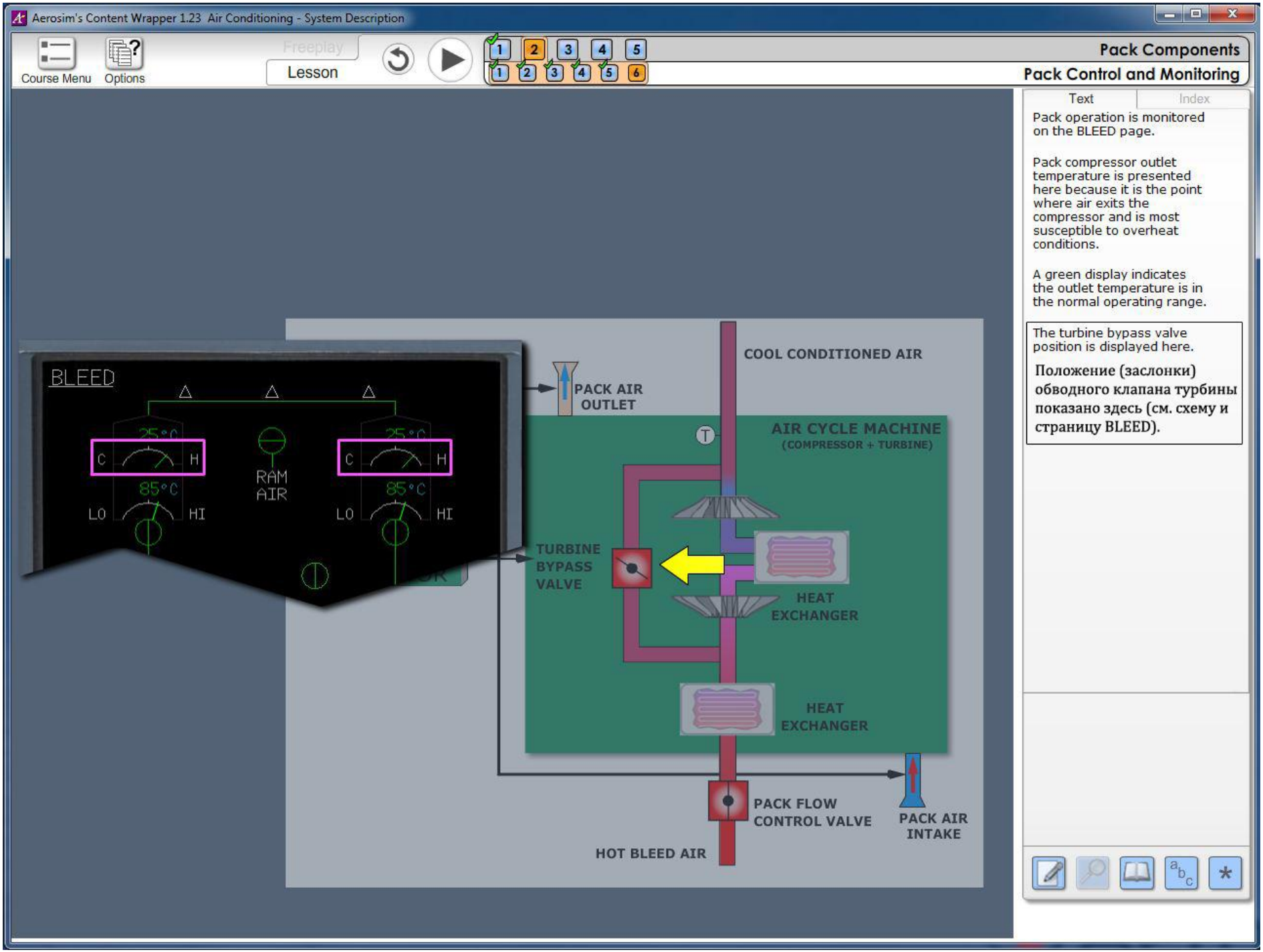

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Operation
Text
Index
This ambient air is used by the heat exchangers to cool the hot bleed air.
The intakes and outlets are modulated by the pack regulators, which control the amount of air that flows over the heat exchangers.
There are no flight deck indications to monitor the status of the pack intake and outlet; however, their condition is checked during the exterior preflight.
Once the bleed air has been cooled by the heat exchanger, it flows through an air cycle machine.
The air cycle machine consists of a compressor and turbine which are used to produce cold air.
A turbine bypass valve controls the output temperature of the packs.
Valve movement is controlled by the pack regulator.
When the valve is closed, air flows through the air cycle machine causing the pack outlet temperature to decrease.
Когда клапан закрыт, воздух течёт через установку с воздушным циклом, приводя к понижению выходящей из блока температуры.
COOL CONDITIONED AIR
PACK AIR OUTLET
AIR CYCLE MACHINE
(COMPRESSOR + TURBINE)
T
PACK REGULATOR
TURBINE BYPASS VALVE
HEAT EXCHANGER
HEAT EXCHANGER
PACK FLOW CONTROL VALVE
PACK AIR INTAKE
HOT BLEED AIR

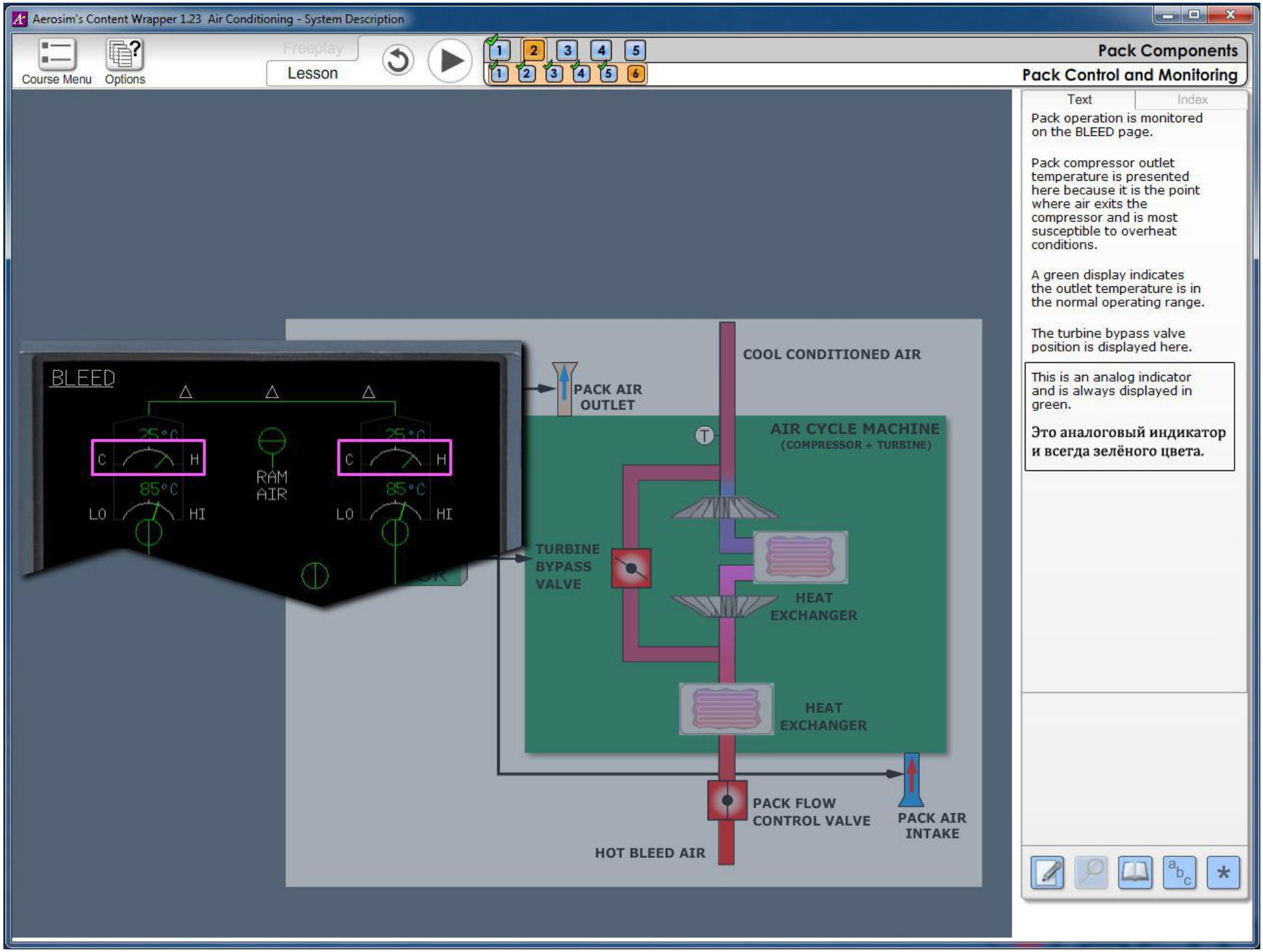

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Operation
Text
Index
regulators, which control the amount of air that flows over the heat exchangers.
There are no flight deck indications to monitor the status of the pack intake and outlet; however, their condition is checked during the exterior preflight.
Once the bleed air has been cooled by the heat exchanger, it flows through an air cycle machine.
The air cycle machine consists of a compressor and turbine which are used to produce cold air.
A turbine bypass valve controls the output temperature of the packs.
Valve movement is controlled by the pack regulator.
When the valve is closed, air flows through the air cycle machine causing the pack outlet temperature to decrease.
When the valve is open, warm air flows around the air cycle machine causing pack outlet temperature to increase.
Когда клапан открыт, воздух течёт обходя установку с воздушным циклом, что приводит к повышению выходной температуры блока.
COOL CONDITIONED AIR
PACK AIR OUTLET
AIR CYCLE MACHINE
(COMPRESSOR + TURBINE)
T
PACK REGULATOR
TURBINE BYPASS VALVE
HEAT EXCHANGER
HEAT EXCHANGER
PACK FLOW CONTROL VALVE
PACK AIR INTAKE
HOT BLEED AIR

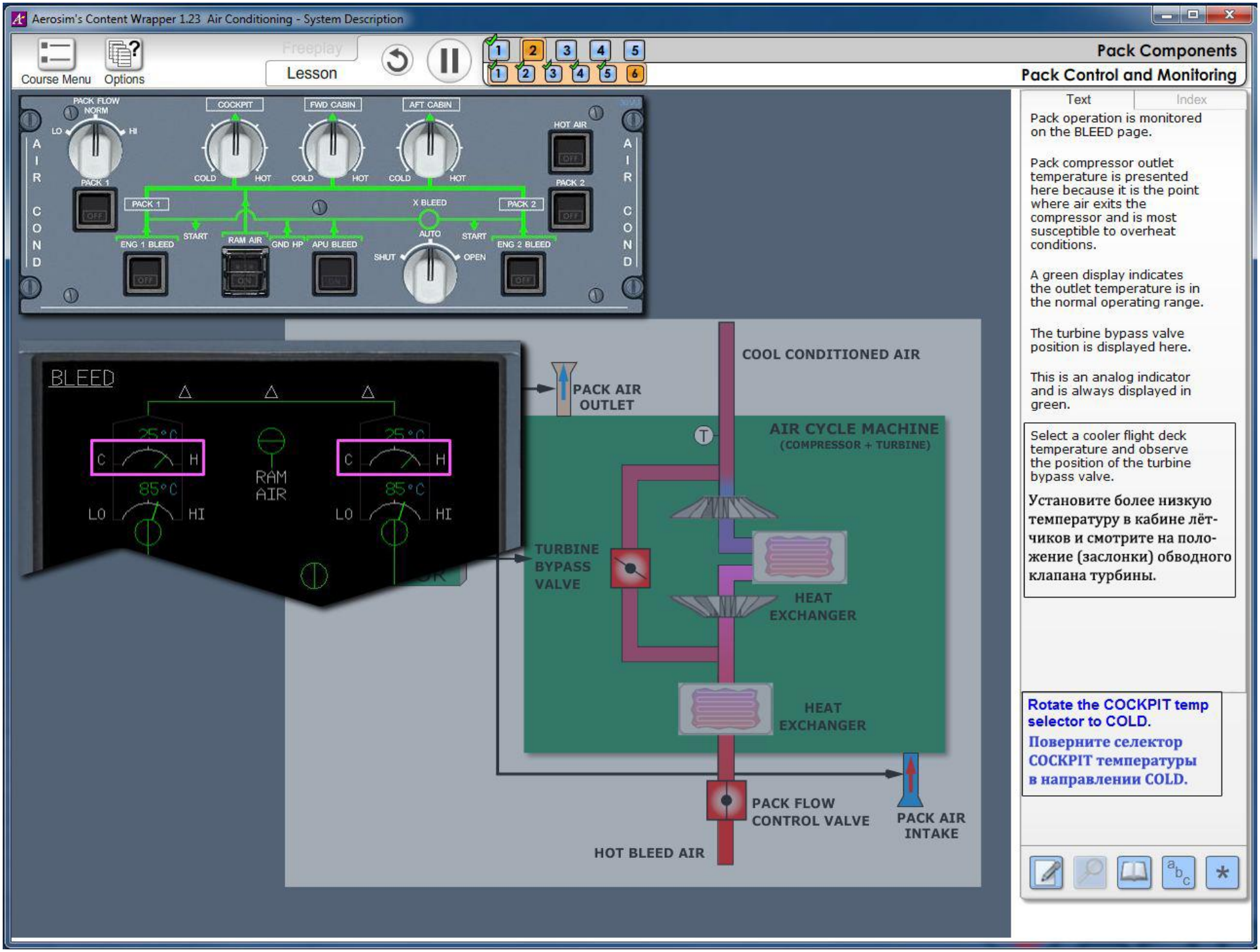

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Control and Monitoring
Text
Index
Pack operation is monitored on the BLEED page.
Работа блока отслеживается на странице BLEED.
BLEED
25 °C
C
H
85 °C
LO
HI
RAM AIR
COOL CONDITIONED AIR
PACK AIR OUTLET
AIR CYCLE MACHINE
(COMPRESSOR + TURBINE)
T
TURBINE BYPASS VALVE
HEAT EXCHANGER
HEAT EXCHANGER
PACK FLOW CONTROL VALVE
PACK AIR INTAKE
HOT BLEED AIR

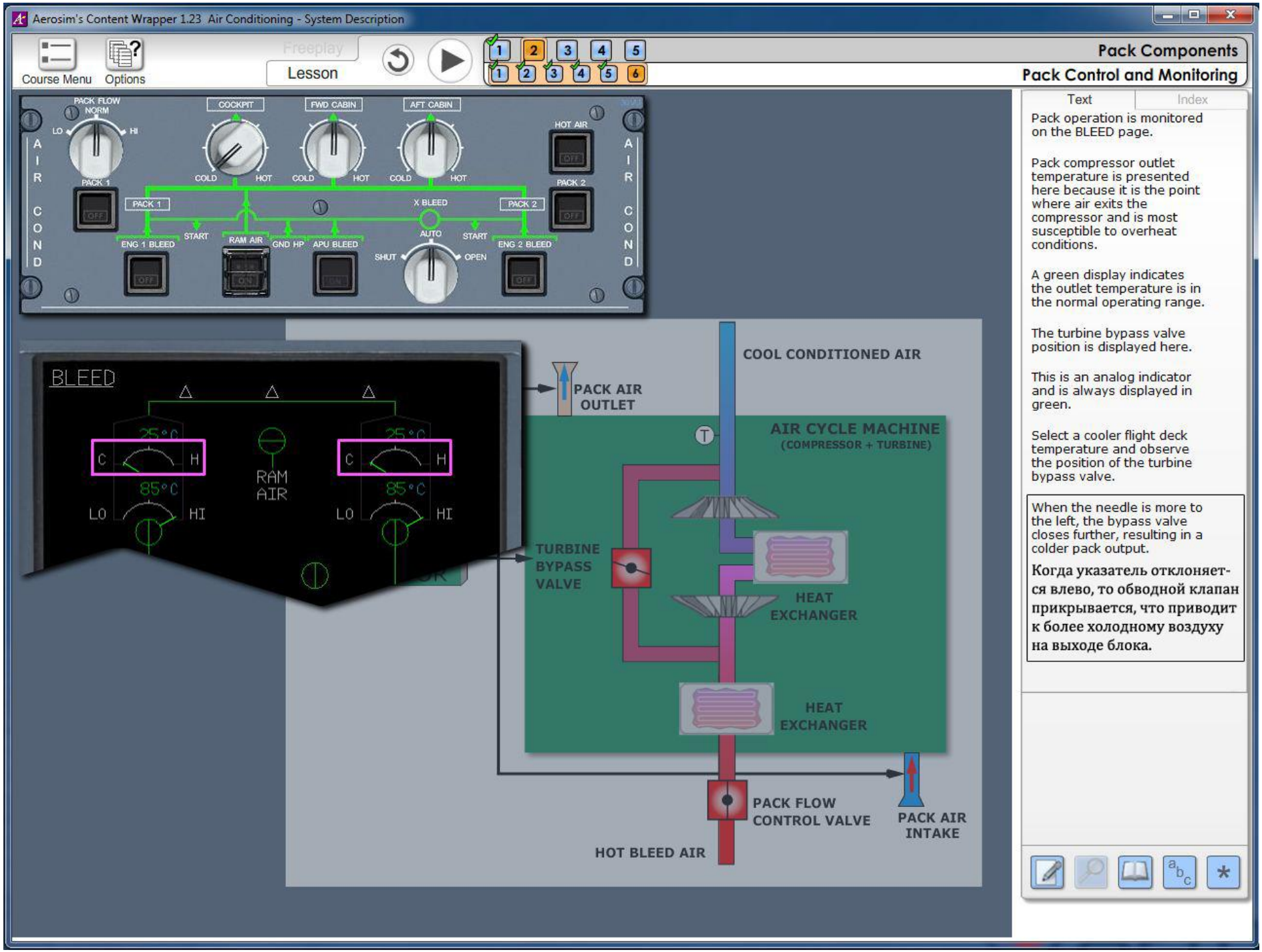

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Control and Monitoring
Text
Index
Pack operation is monitored on the BLEED page.
Pack compressor outlet temperature is presented here because it is the point where air exits the compressor and is most susceptible to overheat conditions.
Выходная температура компрессора блока представлена здесь (см. схему), потому что это точка, где воздух выходит из компрессора и является наиболее подверженным перегреву.
BLEED
25°C
C
H
85°C
LO
HI
RAM AIR
COOL CONDITIONED AIR
PACK AIR OUTLET
AIR CYCLE MACHINE
(COMPRESSOR + TURBINE)
TURBINE BYPASS VALVE
HEAT EXCHANGER
HEAT EXCHANGER
PACK FLOW CONTROL VALVE
PACK AIR INTAKE
HOT BLEED AIR

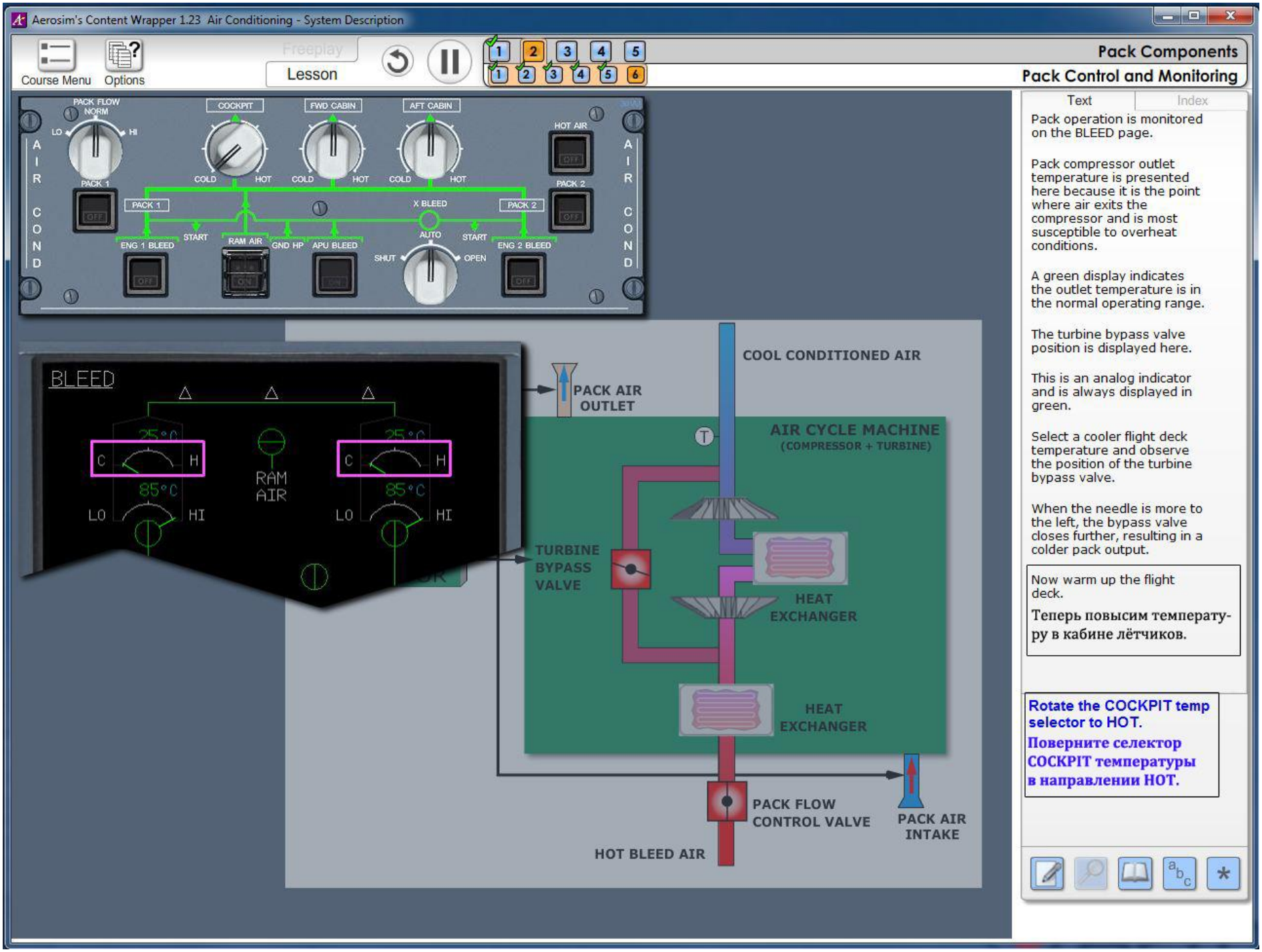

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Control and Monitoring
Text
Index
Pack operation is monitored on the BLEED page.
Pack compressor outlet temperature is presented here because it is the point where air exits the compressor and is most susceptible to overheat conditions.
A green display indicates the outlet temperature is in the normal operating range.
Зелёный цвет означает, что выходная температура находится в штатном эксплуатационном диапазоне.
BLEED
25°C
C
H
85°C
LO
HI
RAM AIR
COOL CONDITIONED AIR
PACK AIR OUTLET
AIR CYCLE MACHINE
(COMPRESSOR + TURBINE)
T
TURBINE BYPASS VALVE
HEAT EXCHANGER
HEAT EXCHANGER
PACK FLOW CONTROL VALVE
PACK AIR INTAKE
HOT BLEED AIR

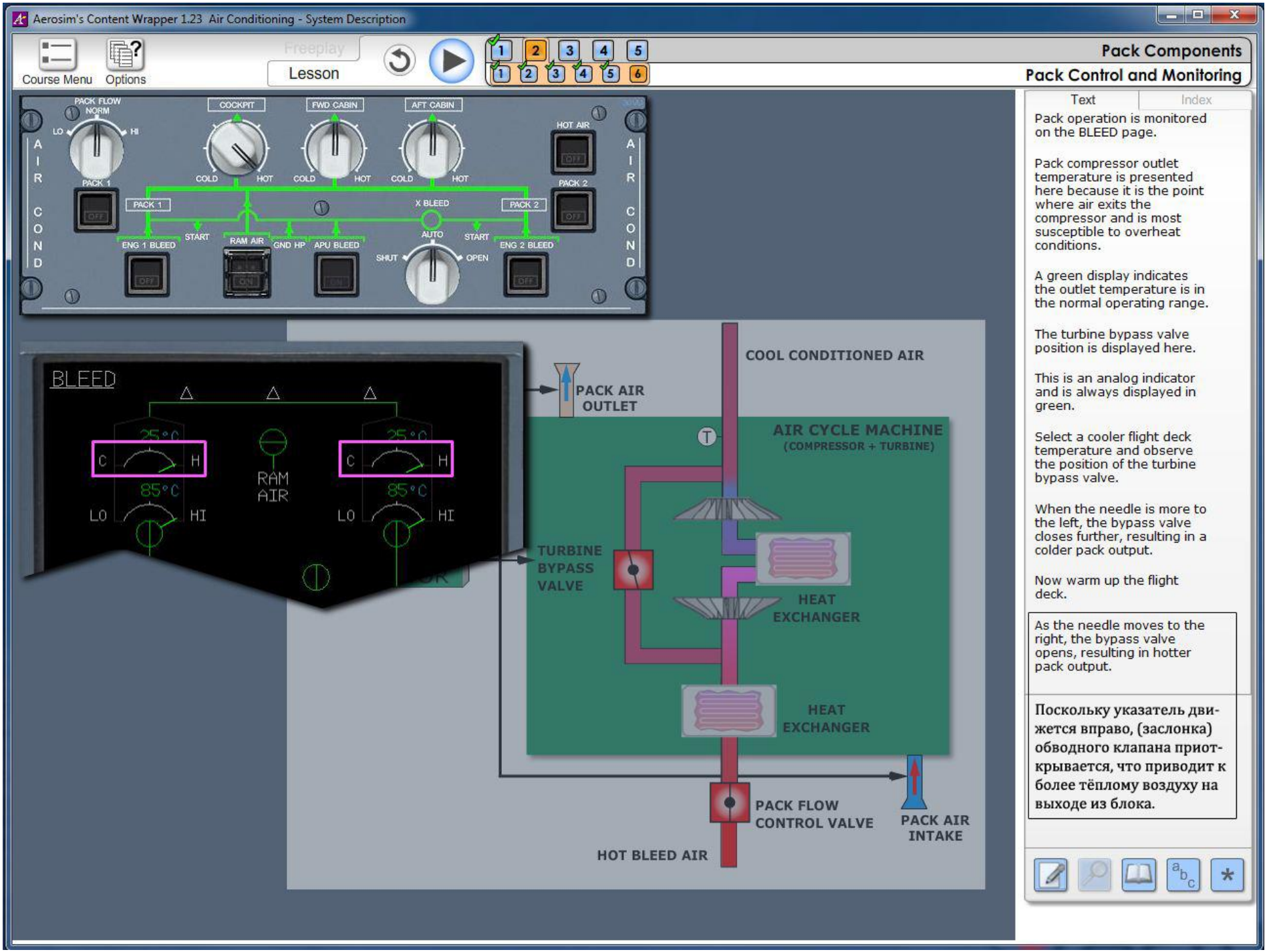

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Control and Monitoring
Text
Index
Pack operation is monitored on the BLEED page.
Pack compressor outlet temperature is presented here because it is the point where air exits the compressor and is most susceptible to overheat conditions.
A green display indicates the outlet temperature is in the normal operating range.
The turbine bypass valve position is displayed here.
Положение (заслонки) обводного клапана турбины показано здесь (см. схему и страницу BLEED).
BLEED
25°C
C
H
85°C
LO
HI
RAM AIR
COOL CONDITIONED AIR
PACK AIR OUTLET
AIR CYCLE MACHINE
(COMPRESSOR + TURBINE)
T
TURBINE BYPASS VALVE
HEAT EXCHANGER
HEAT EXCHANGER
PACK FLOW CONTROL VALVE
PACK AIR INTAKE
HOT BLEED AIR

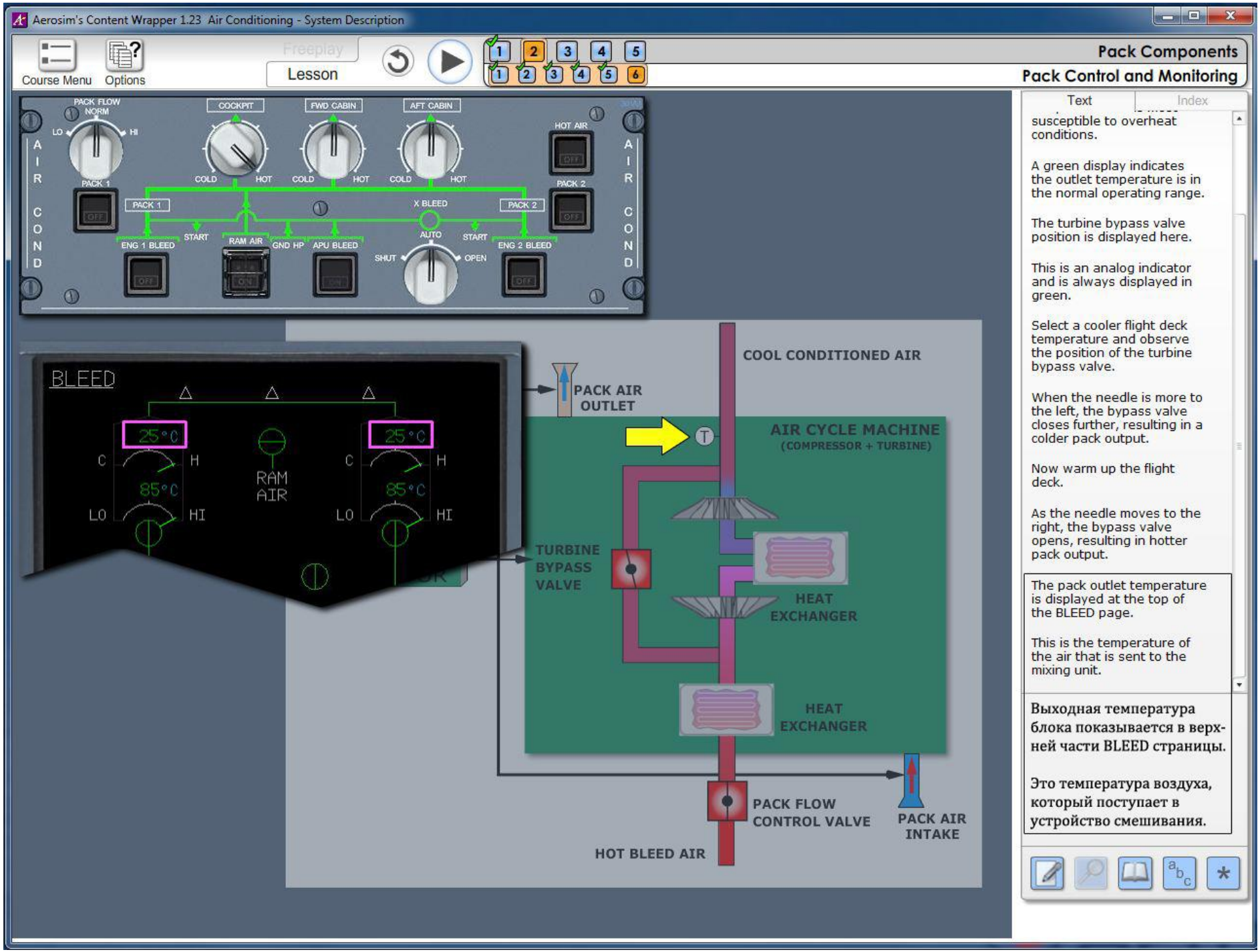

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Control and Monitoring
Text
Index
Pack operation is monitored on the BLEED page.
Pack compressor outlet temperature is presented here because it is the point where air exits the compressor and is most susceptible to overheat conditions.
A green display indicates the outlet temperature is in the normal operating range.
The turbine bypass valve position is displayed here.
This is an analog indicator and is always displayed in green.
Это аналоговый индикатор и всегда зелёного цвета.
BLEED
25°C
C
H
85°C
LO
HI
RAM AIR
COOL CONDITIONED AIR
PACK AIR OUTLET
AIR CYCLE MACHINE
(COMPRESSOR + TURBINE)
T
TURBINE BYPASS VALVE
HEAT EXCHANGER
HEAT EXCHANGER
PACK FLOW CONTROL VALVE
PACK AIR INTAKE
HOT BLEED AIR

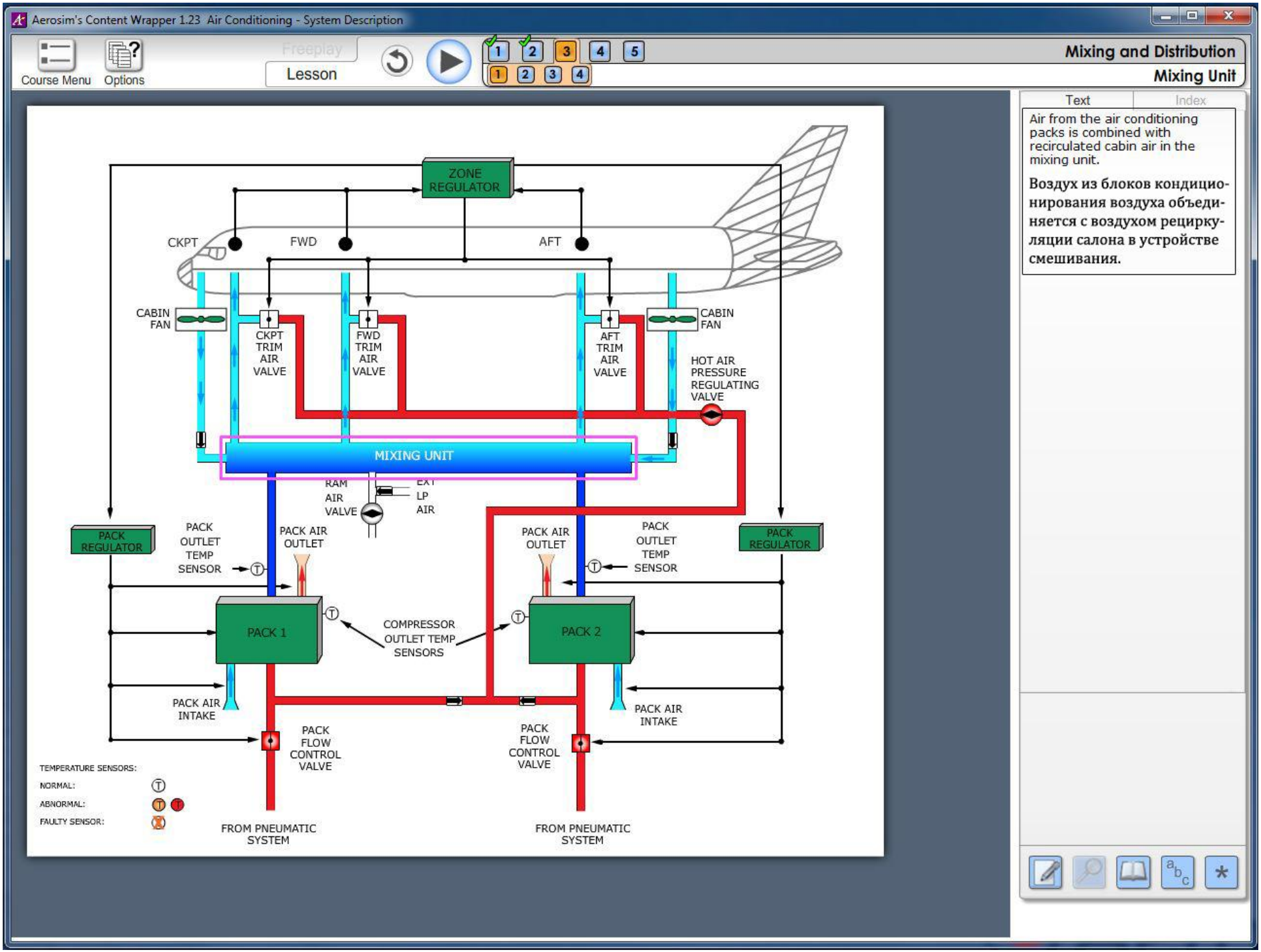

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
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Pack Components
Pack Control and Monitoring
Text
Index
Pack operation is monitored on the BLEED page.
Pack compressor outlet temperature is presented here because it is the point where air exits the compressor and is most susceptible to overheat conditions.
A green display indicates the outlet temperature is in the normal operating range.
The turbine bypass valve position is displayed here.
This is an analog indicator and is always displayed in green.
Select a cooler flight deck temperature and observe the position of the turbine bypass valve.
Установите более низкую температуру в кабине лётчиков и смотрите на положение (заслонки) обводного клапана турбины.
Rotate the COCKPIT temp selector to COLD.
Поверните селектор COCKPIT температуры в направлении COLD.
PACK FLOW NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
X BLEED
AUTO
SHUT
OPEN
START
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
ENG 2 BLEED
AIR COND
BLEED
25°C
85°C
C
H
RAM AIR
COOL CONDITIONED AIR
PACK AIR OUTLET
AIR CYCLE MACHINE
(COMPRESSOR + TURBINE)
TURBINE BYPASS VALVE
HEAT EXCHANGER
HEAT EXCHANGER
PACK FLOW CONTROL VALVE
PACK AIR INTAKE
HOT BLEED AIR

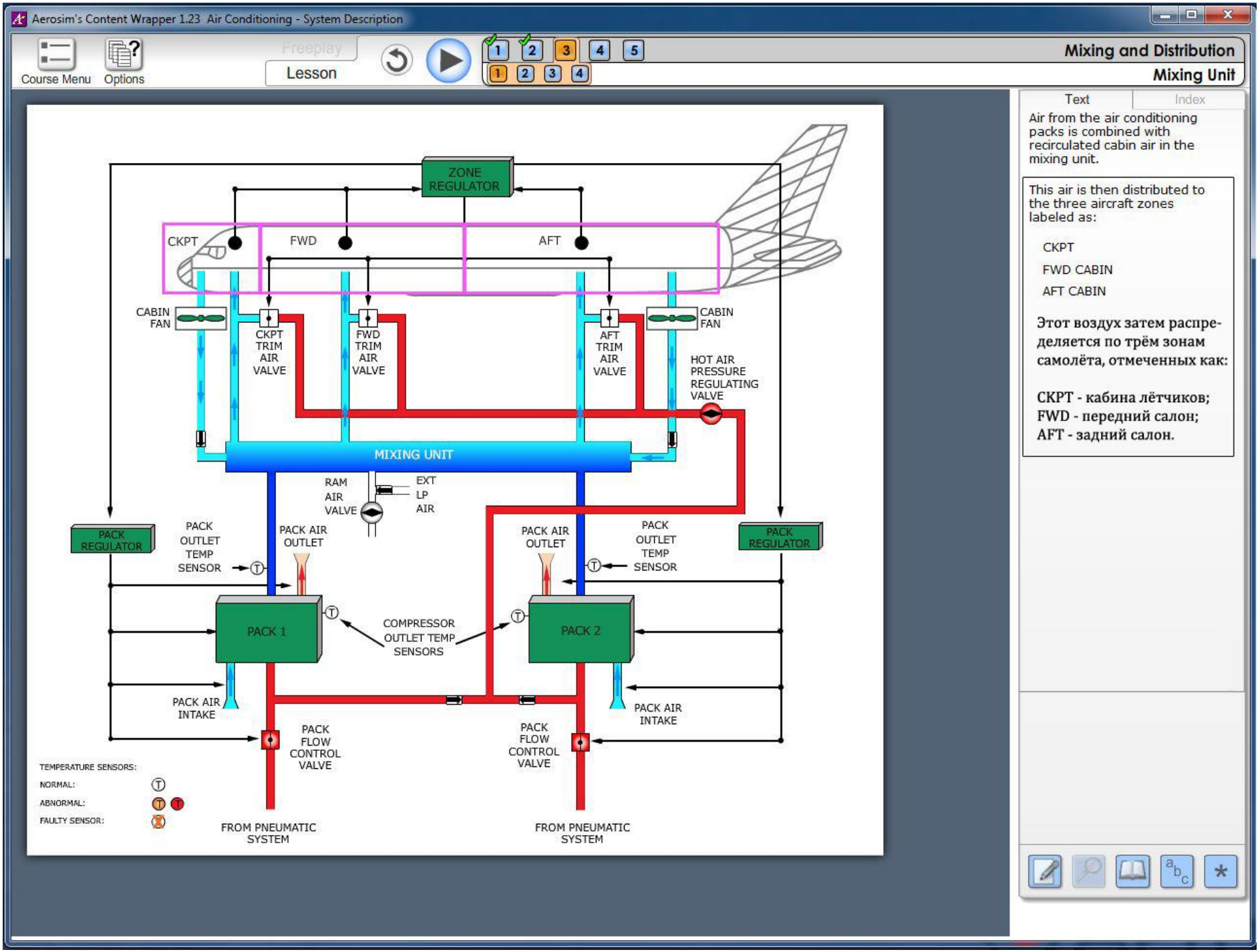

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
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Pack Components
Pack Control and Monitoring
Text
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A green display indicates the outlet temperature is in the normal operating range.
The turbine bypass valve position is displayed here.
This is an analog indicator and is always displayed in green.
Select a cooler flight deck temperature and observe the position of the turbine bypass valve.
When the needle is more to the left, the bypass valve closes further, resulting in a colder pack output.
Когда указатель отклоняется влево, то обводной клапан прикрывается, что приводит к более холодному воздуху на выходе блока.
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
X BLEED
AUTO
SHUT
OPEN
START
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
ENG 2 BLEED
AIR COND
BLEED
25°C
85°C
C
H
RAM AIR
COOL CONDITIONED AIR
PACK AIR OUTLET
AIR CYCLE MACHINE
(COMPRESSOR + TURBINE)
T
TURBINE BYPASS VALVE
HEAT EXCHANGER
HEAT EXCHANGER
PACK FLOW CONTROL VALVE
PACK AIR INTAKE
HOT BLEED AIR

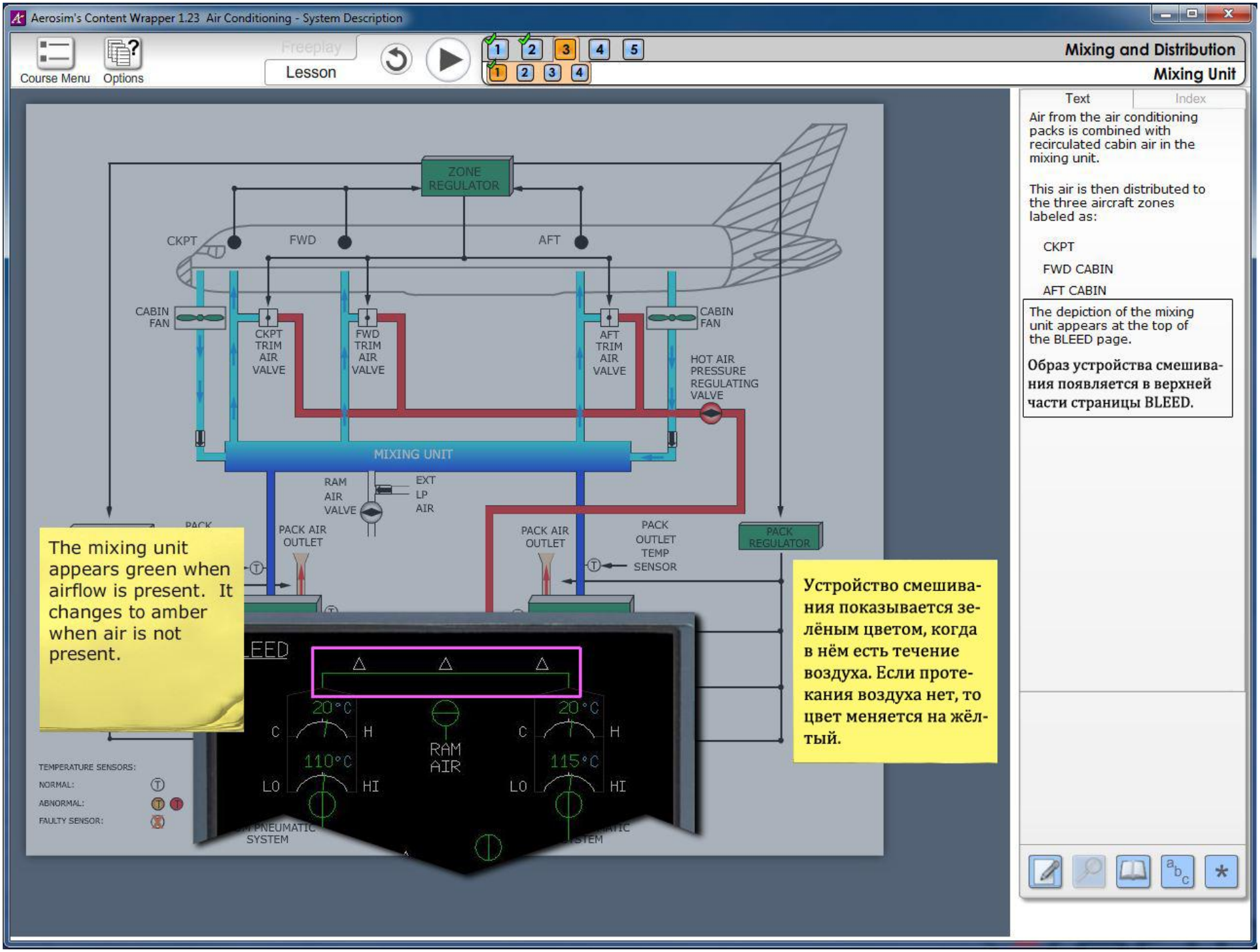

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
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Pack Components
Pack Control and Monitoring
Text
Index
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A green display indicates the outlet temperature is in the normal operating range.
The turbine bypass valve position is displayed here.
This is an analog indicator and is always displayed in green.
Select a cooler flight deck temperature and observe the position of the turbine bypass valve.
When the needle is more to the left, the bypass valve closes further, resulting in a colder pack output.
Now warm up the flight deck.
Теперь повысим температуру в кабине лётчиков.
Rotate the COCKPIT temp selector to HOT.
Поверните селектор COCKPIT температуры в направлении HOT.
PACK FLOW NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
X BLEED
AUTO
SHUT
OPEN
START
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
ENG 2 BLEED
AIR COND
BLEED
25°C
85°C
C
H
RAM AIR
COOL CONDITIONED AIR
PACK AIR OUTLET
AIR CYCLE MACHINE
(COMPRESSOR + TURBINE)
TURBINE BYPASS VALVE
HEAT EXCHANGER
HEAT EXCHANGER
PACK FLOW CONTROL VALVE
PACK AIR INTAKE
HOT BLEED AIR

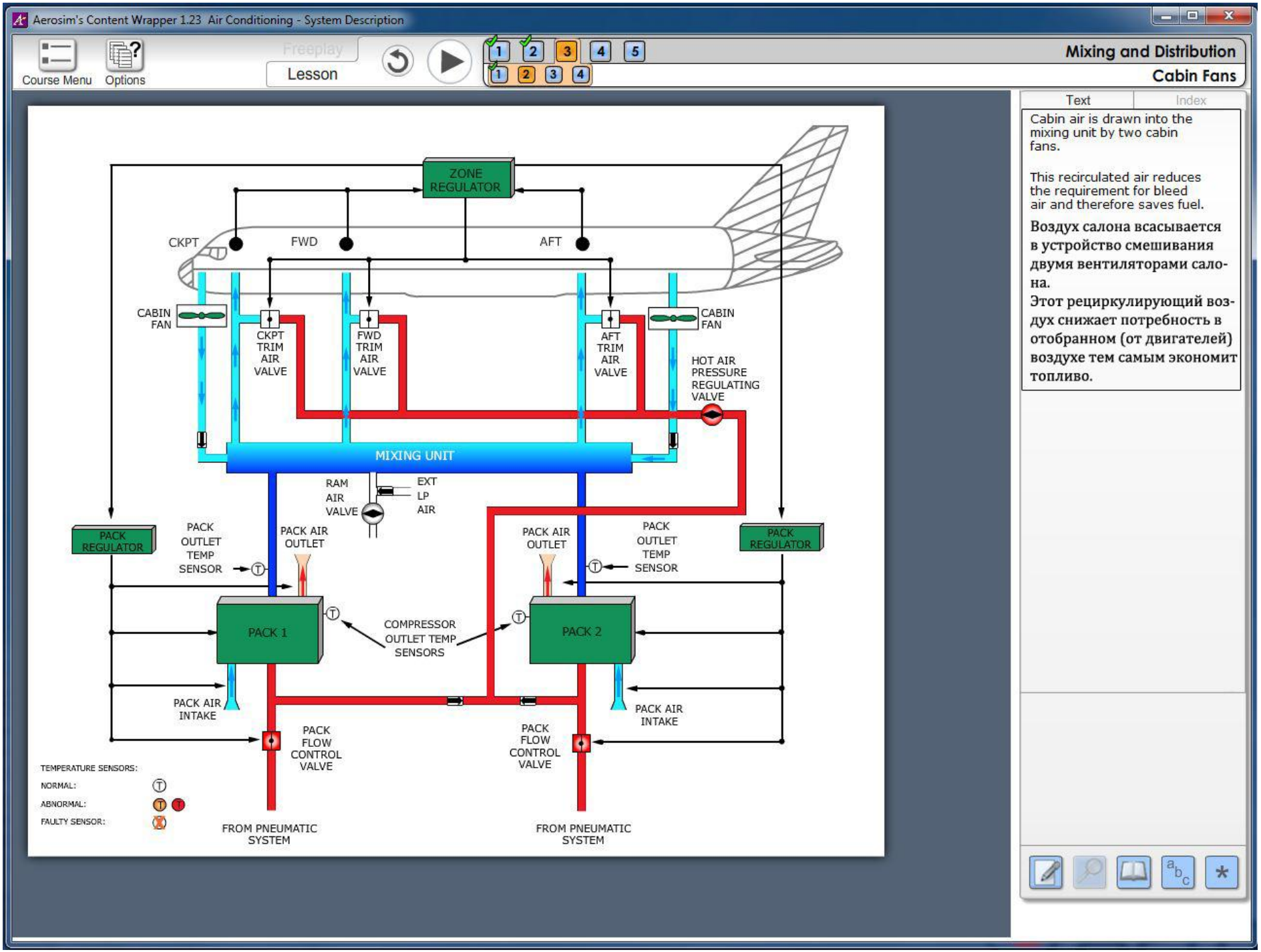

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
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Pack Components
Pack Control and Monitoring
Text
Index
Pack operation is monitored on the BLEED page.
Pack compressor outlet temperature is presented here because it is the point where air exits the compressor and is most susceptible to overheat conditions.
A green display indicates the outlet temperature is in the normal operating range.
The turbine bypass valve position is displayed here.
This is an analog indicator and is always displayed in green.
Select a cooler flight deck temperature and observe the position of the turbine bypass valve.
When the needle is more to the left, the bypass valve closes further, resulting in a colder pack output.
Now warm up the flight deck.
As the needle moves to the right, the bypass valve opens, resulting in hotter pack output.
Поскольку указатель движется вправо, (заслонка) обводного клапана приоткрывается, что приводит к более тёплому воздуху на выходе из блока.
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
X BLEED
ENG 1 BLEED
ENG 2 BLEED
START
RAM AIR
GND HP
APU BLEED
AUTO
SHUT
OPEN
AIR COND
BLEED
25°C
85°C
C
H
RAM AIR
COOL CONDITIONED AIR
PACK AIR OUTLET
AIR CYCLE MACHINE
(COMPRESSOR + TURBINE)
TURBINE BYPASS VALVE
HEAT EXCHANGER
HEAT EXCHANGER
PACK FLOW CONTROL VALVE
PACK AIR INTAKE
HOT BLEED AIR

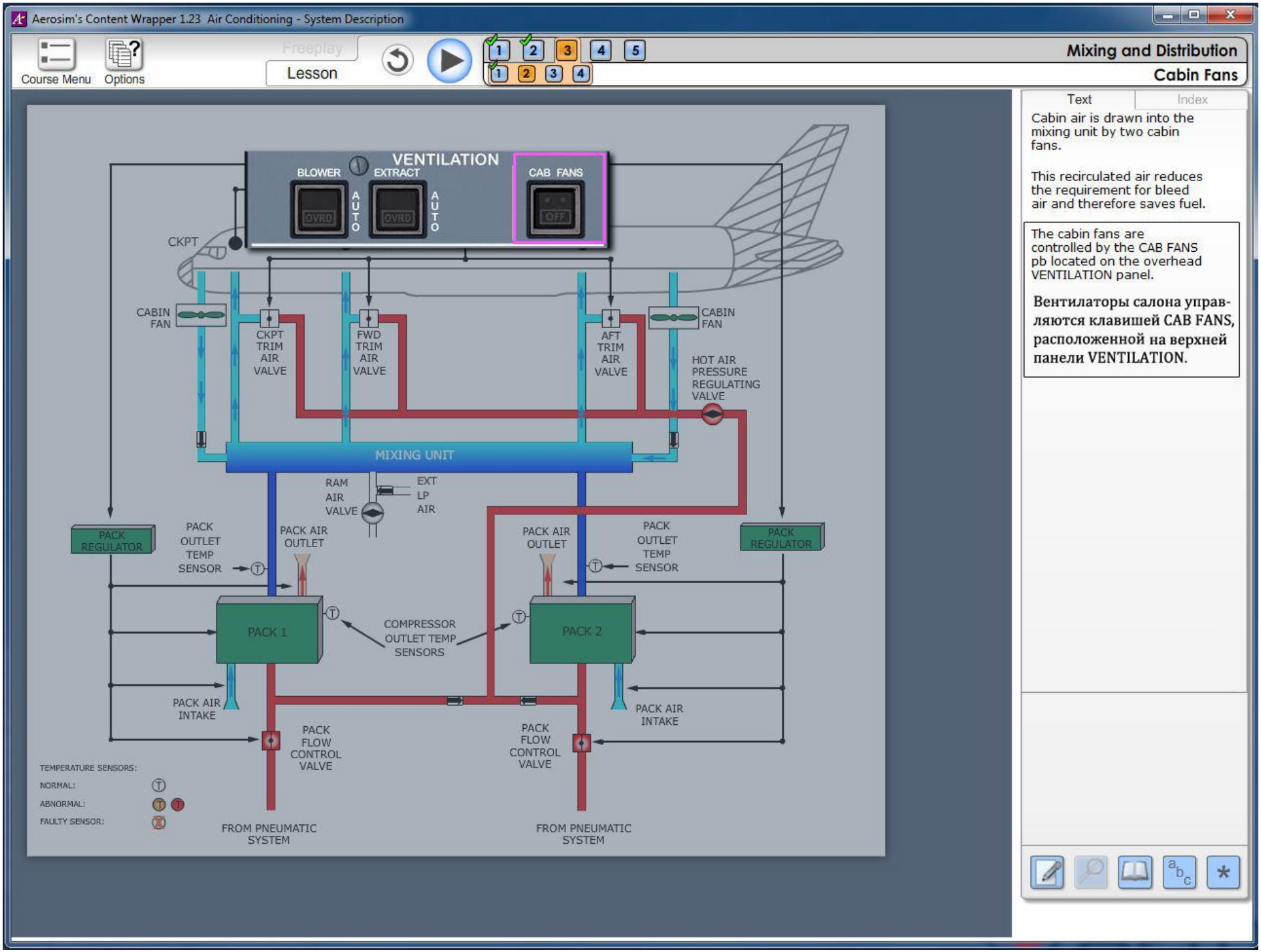

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Control and Monitoring
Text
Index
susceptible to overheat conditions.
A green display indicates the outlet temperature is in the normal operating range.
The turbine bypass valve position is displayed here.
This is an analog indicator and is always displayed in green.
Select a cooler flight deck temperature and observe the position of the turbine bypass valve.
When the needle is more to the left, the bypass valve closes further, resulting in a colder pack output.
Now warm up the flight deck.
As the needle moves to the right, the bypass valve opens, resulting in hotter pack output.
The pack outlet temperature is displayed at the top of the BLEED page.
This is the temperature of the air that is sent to the mixing unit.
Выходная температура блока показывается в верхней части BLEED страницы.
Это температура воздуха, который поступает в устройство смешивания.
PACK FLOW NORM
COCKPIT
FWD CABIN
AFT CABIN
HOT AIR
PACK 1
PACK 2
X BLEED
ENG 1 BLEED
ENG 2 BLEED
RAM AIR
GND HP
APU BLEED
START
AUTO
SHUT
OPEN
COLD
HOT
AIR COND
BLEED
25°C
85°C
RAM AIR
COOL CONDITIONED AIR
PACK AIR OUTLET
AIR CYCLE MACHINE
(COMPRESSOR + TURBINE)
TURBINE BYPASS VALVE
HEAT EXCHANGER
HEAT EXCHANGER
PACK FLOW CONTROL VALVE
PACK AIR INTAKE
HOT BLEED AIR

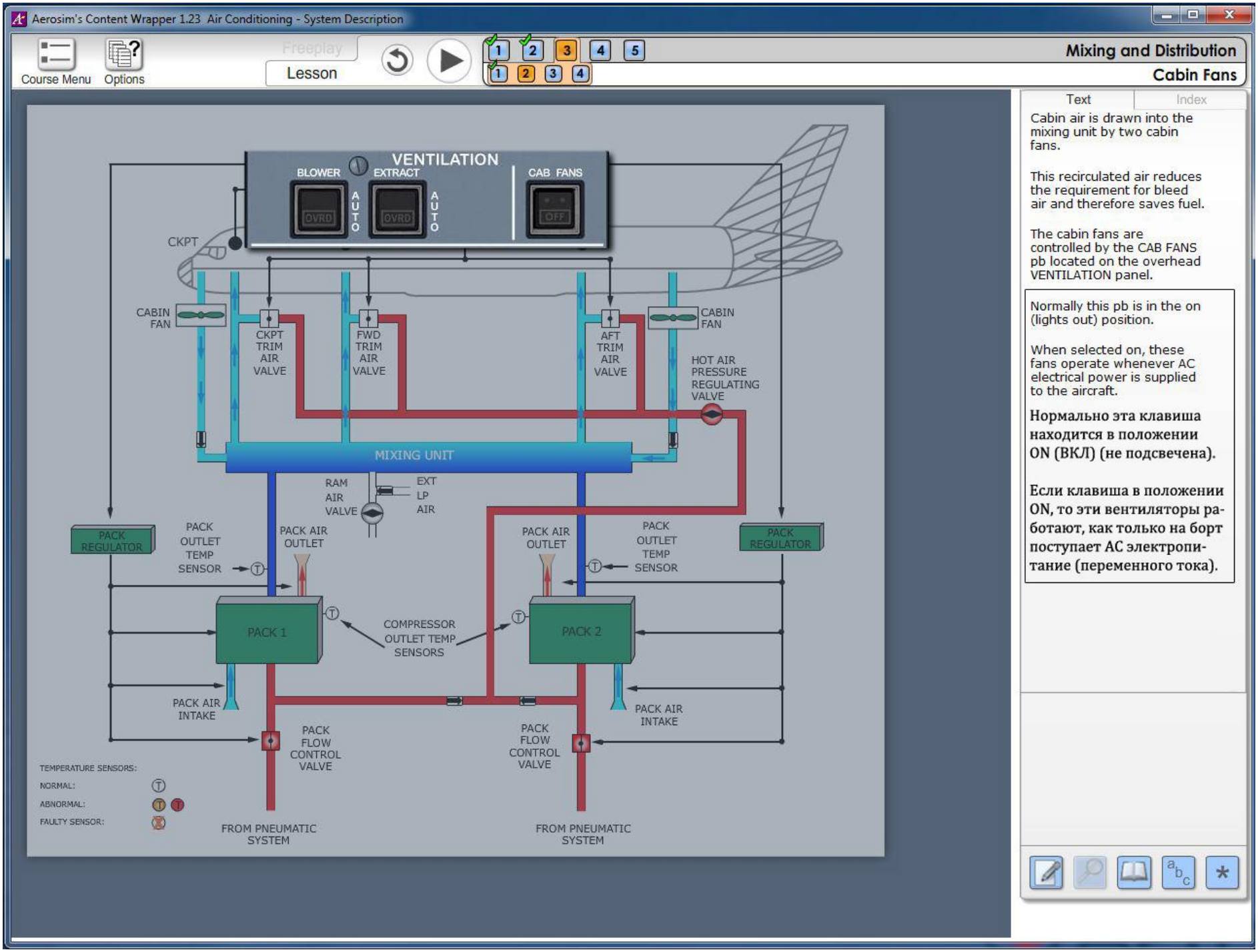

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Mixing and Distribution
Mixing Unit
Text
Index
Air from the air conditioning packs is combined with recirculated cabin air in the mixing unit.
Воздух из блоков кондиционирования воздуха объединяется с воздухом рециркуляции салона в устройстве смешивания.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

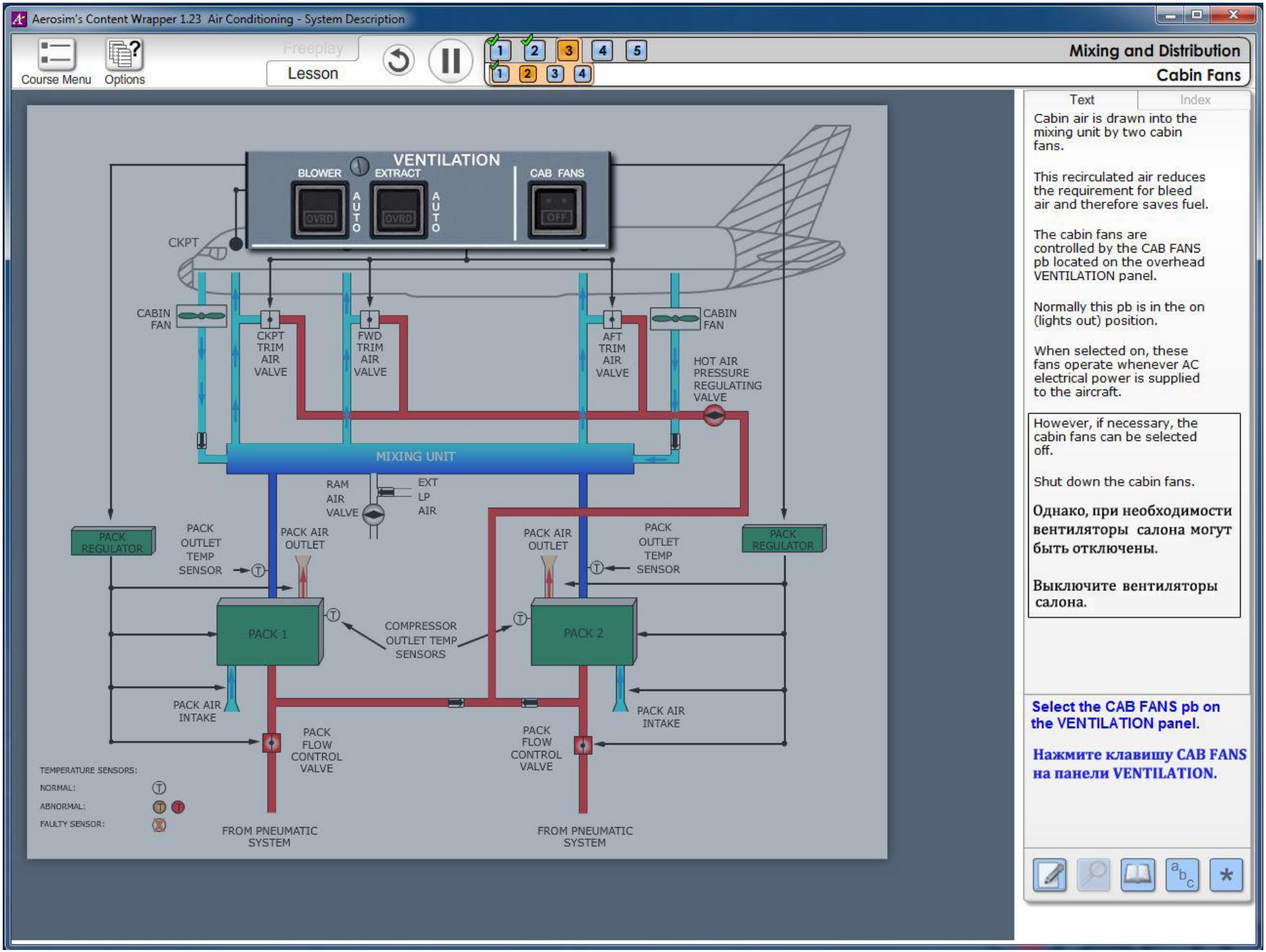

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Mixing and Distribution
Mixing Unit
Text
Index
Air from the air conditioning packs is combined with recirculated cabin air in the mixing unit.
This air is then distributed to the three aircraft zones labeled as:
CKPT
FWD CABIN
AFT CABIN
Этот воздух затем распределяется по трём зонам самолёта, отмеченных как:
CKPT - кабина лётчиков;
FWD - передний салон;
AFT - задний салон.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

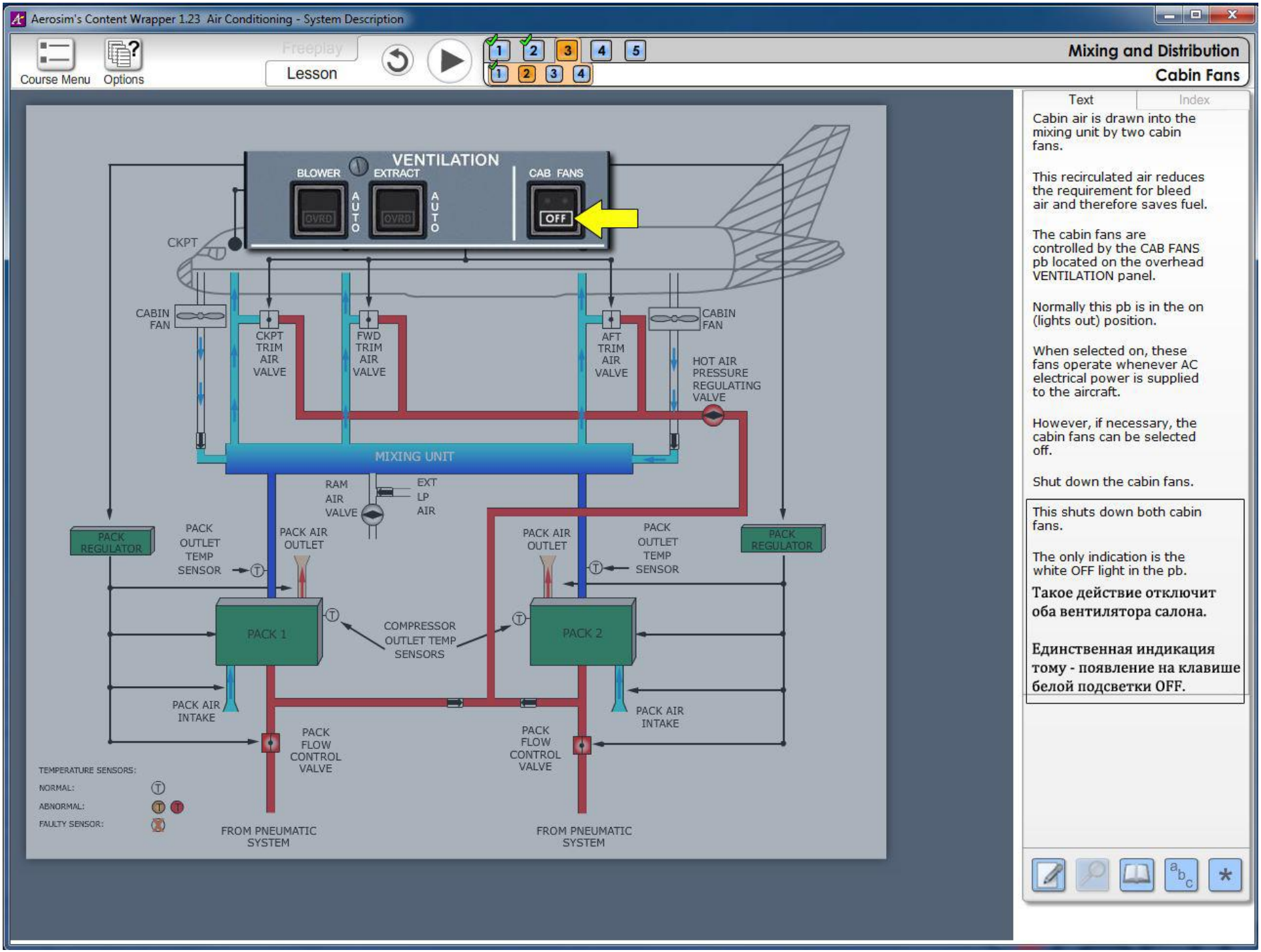

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Mixing and Distribution
Mixing Unit
Text
Index
Air from the air conditioning packs is combined with recirculated cabin air in the mixing unit.
This air is then distributed to the three aircraft zones labeled as:
CKPT
FWD CABIN
AFT CABIN
The depiction of the mixing unit appears at the top of the BLEED page.
Образ устройства смешивания появляется в верхней части страницы BLEED.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
The mixing unit appears green when airflow is present. It changes to amber when air is not present.
Устройство смешивания показывается зелёным цветом, когда в нём есть течение воздуха. Если протекания воздуха нет, то цвет меняется на жёлтый.
20°C
110°C
115°C
C
H
LO
HI
RAM AIR
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:

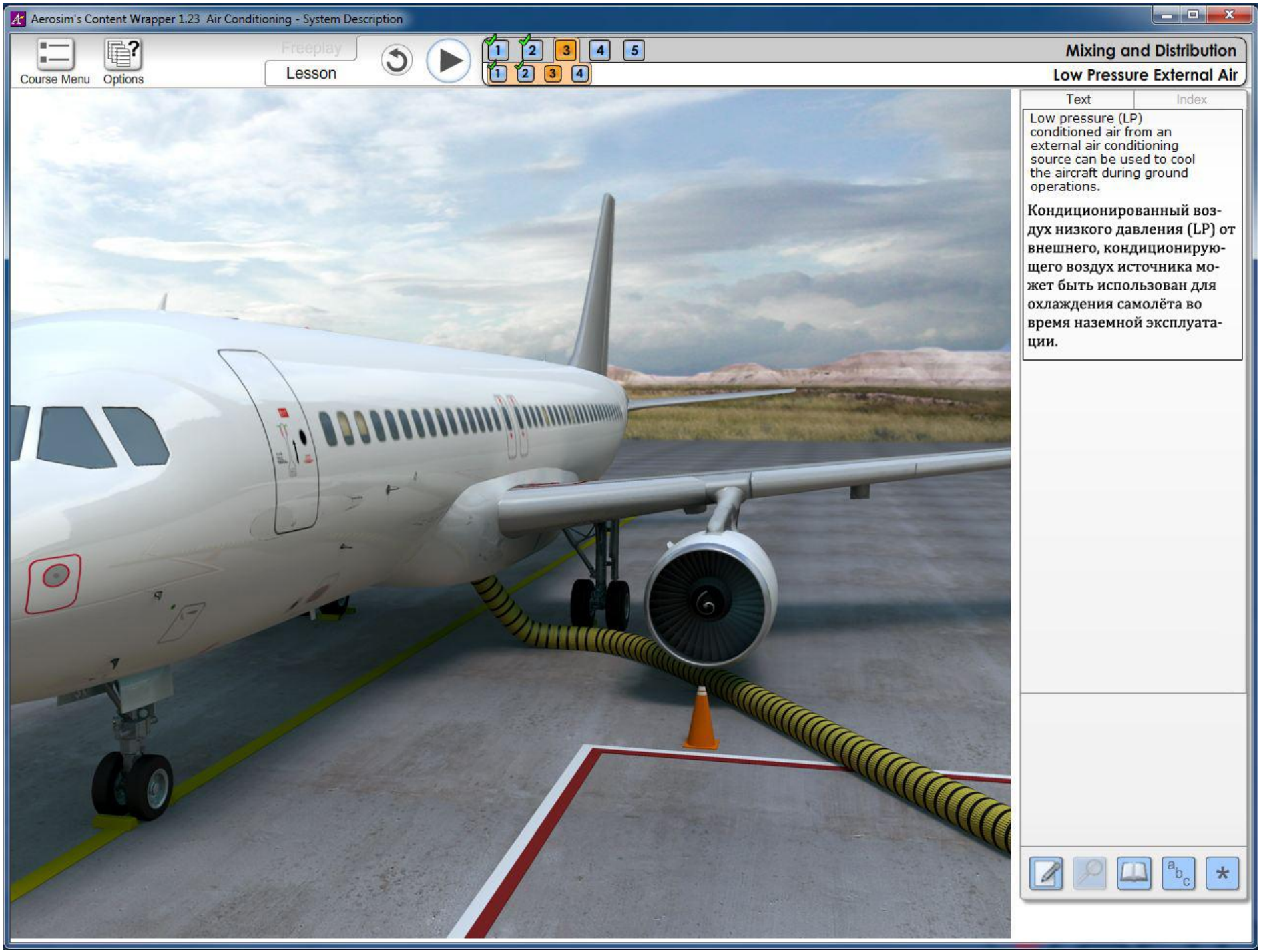

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Mixing and Distribution
Cabin Fans
Text
Index
Cabin air is drawn into the mixing unit by two cabin fans.
This recirculated air reduces the requirement for bleed air and therefore saves fuel.
Воздух салона всасывается в устройство смешивания двумя вентиляторами салона.
Этот рециркулирующий воздух снижает потребность в отобранном (от двигателей) воздухе тем самым экономит топливо.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

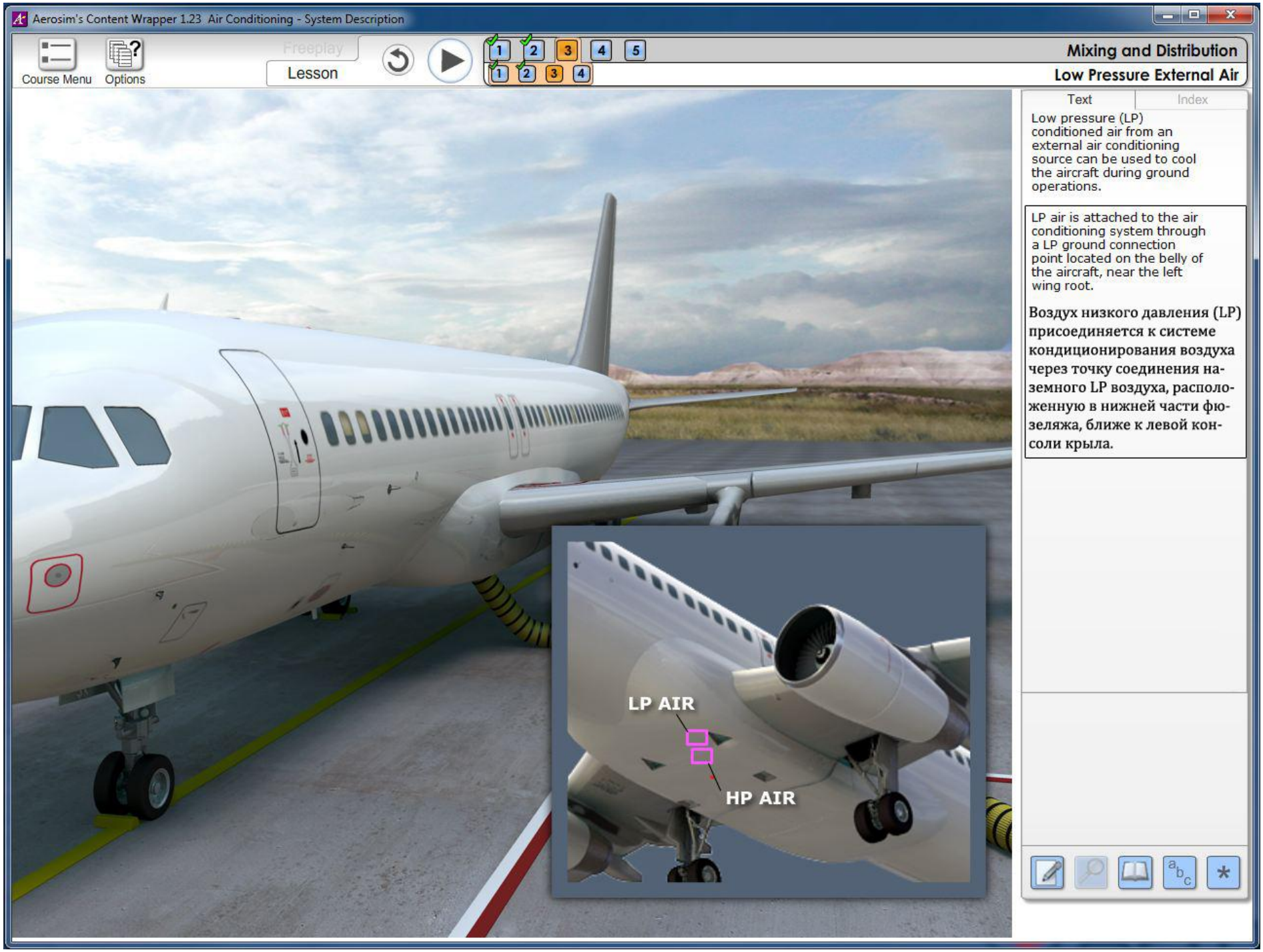

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Mixing and Distribution
Cabin Fans
Text
Index
Cabin air is drawn into the mixing unit by two cabin fans.
This recirculated air reduces the requirement for bleed air and therefore saves fuel.
The cabin fans are controlled by the CAB FANS pb located on the overhead VENTILATION panel.
Вентиляторы салона управляются клавишей CAB FANS, расположенной на верхней панели VENTILATION.
VENTILATION
BLOWER
EXTRACT
CAB FANS
AUTO
OVRD
OFF
CKPT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK 1
PACK 2
COMPRESSOR OUTLET TEMP SENSORS
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM

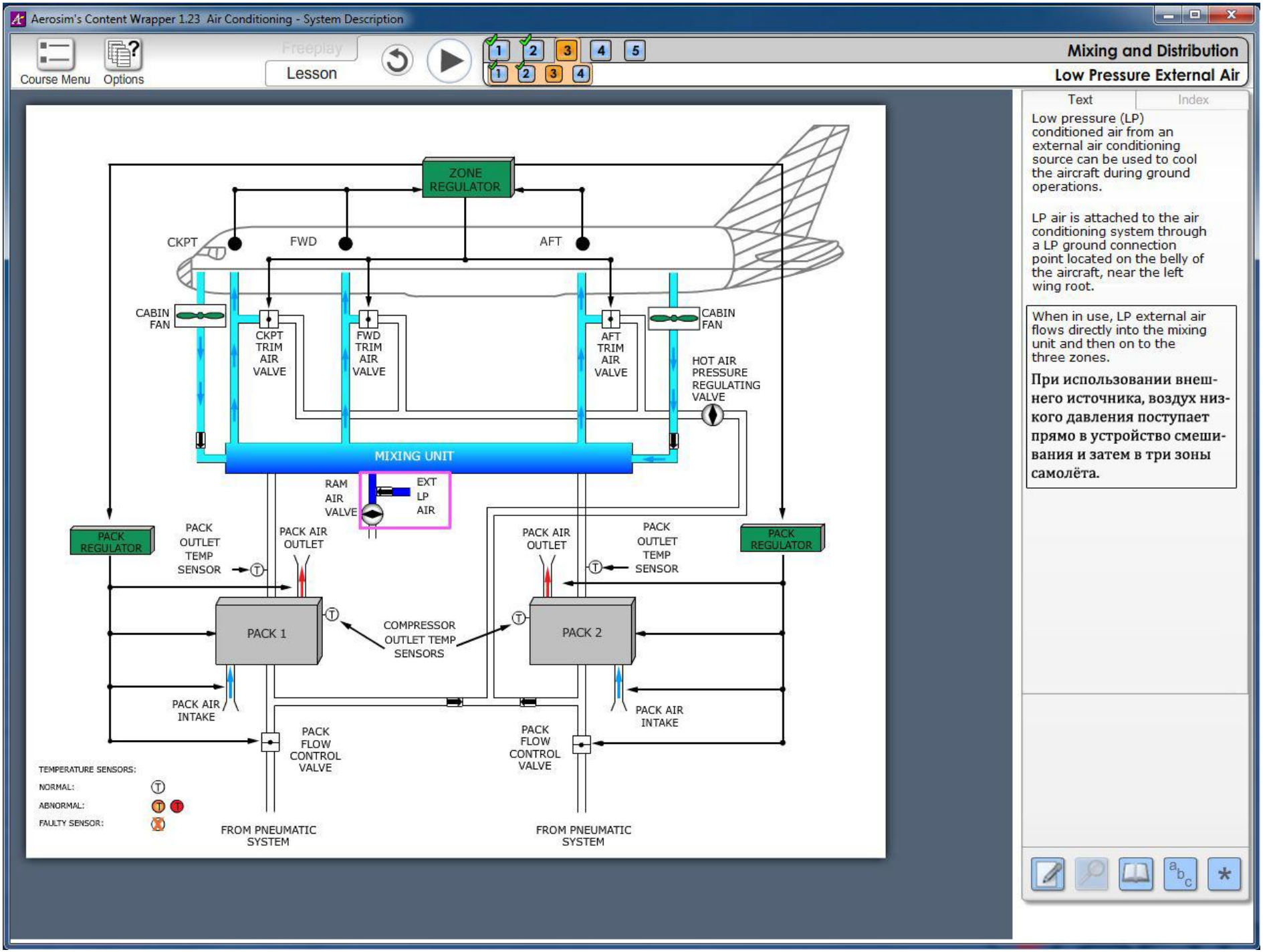

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Mixing and Distribution
Cabin Fans
Text
Index
Cabin air is drawn into the mixing unit by two cabin fans.
This recirculated air reduces the requirement for bleed air and therefore saves fuel.
The cabin fans are controlled by the CAB FANS pb located on the overhead VENTILATION panel.
Normally this pb is in the on (lights out) position.
When selected on, these fans operate whenever AC electrical power is supplied to the aircraft.
Нормально эта клавиша находится в положении ON (ВКЛ) (не подсвечена).
Если клавиша в положении ON, то эти вентиляторы работают, как только на борт поступает АС электропитание (переменного тока).
VENTILATION
BLOWER
EXTRACT
CAB FANS
AUTO
OVRD
OFF
CKPT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK 1
PACK 2
COMPRESSOR OUTLET TEMP SENSORS
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM

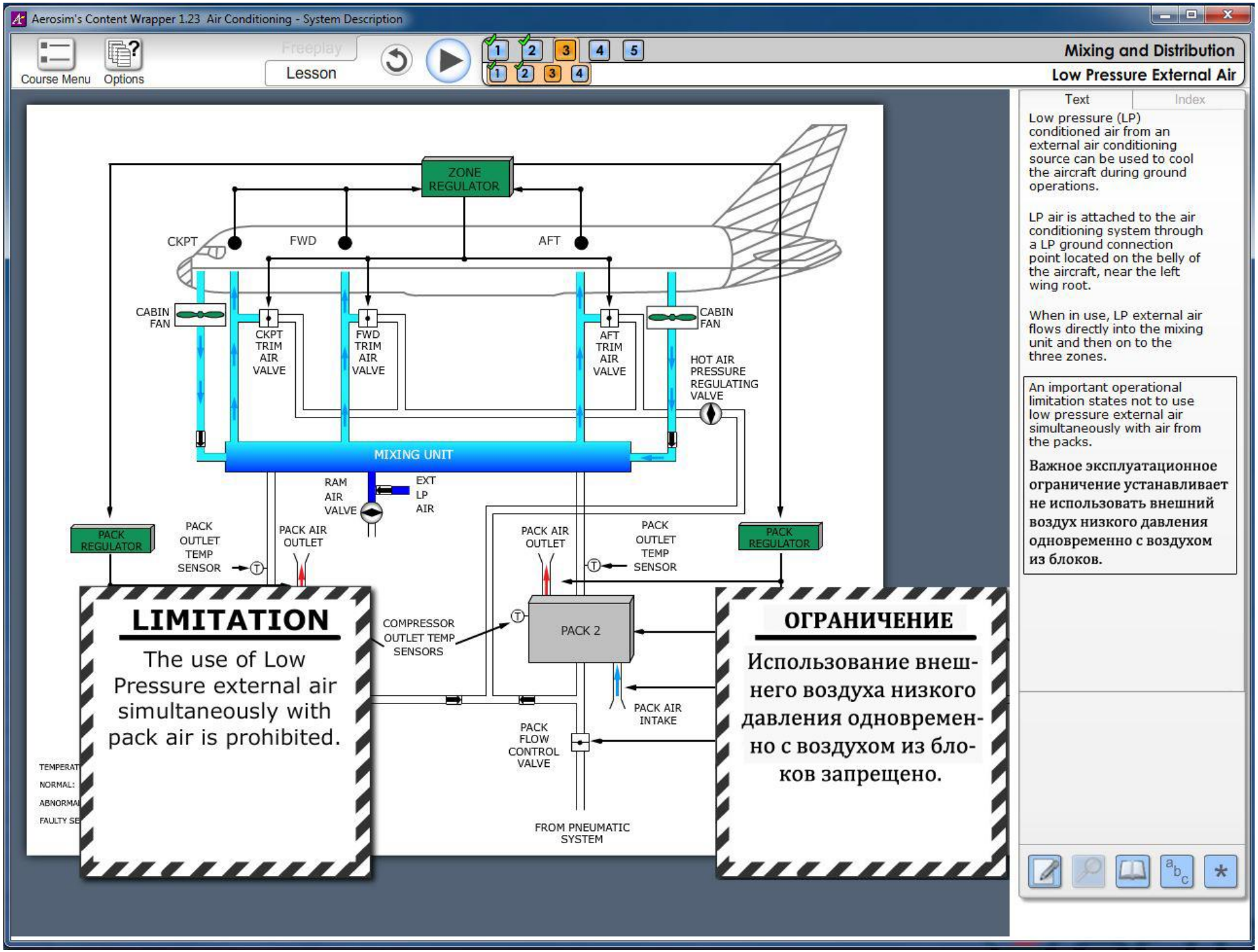

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Mixing and Distribution
Cabin Fans
Text
Index
Cabin air is drawn into the mixing unit by two cabin fans.
This recirculated air reduces the requirement for bleed air and therefore saves fuel.
The cabin fans are controlled by the CAB FANS pb located on the overhead VENTILATION panel.
Normally this pb is in the on (lights out) position.
When selected on, these fans operate whenever AC electrical power is supplied to the aircraft.
However, if necessary, the cabin fans can be selected off.
Shut down the cabin fans.
Однако, при необходимости вентиляторы салона могут быть отключены.
Выключите вентиляторы салона.
Select the CAB FANS pb on the VENTILATION panel.
Нажмите клавишу CAB FANS на панели VENTILATION.
VENTILATION
BLOWER
EXTRACT
CAB FANS
AUTO
OVRD
OFF
CKPT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK 1
PACK 2
COMPRESSOR OUTLET TEMP SENSORS
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
FROM PNEUMATIC SYSTEM
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:

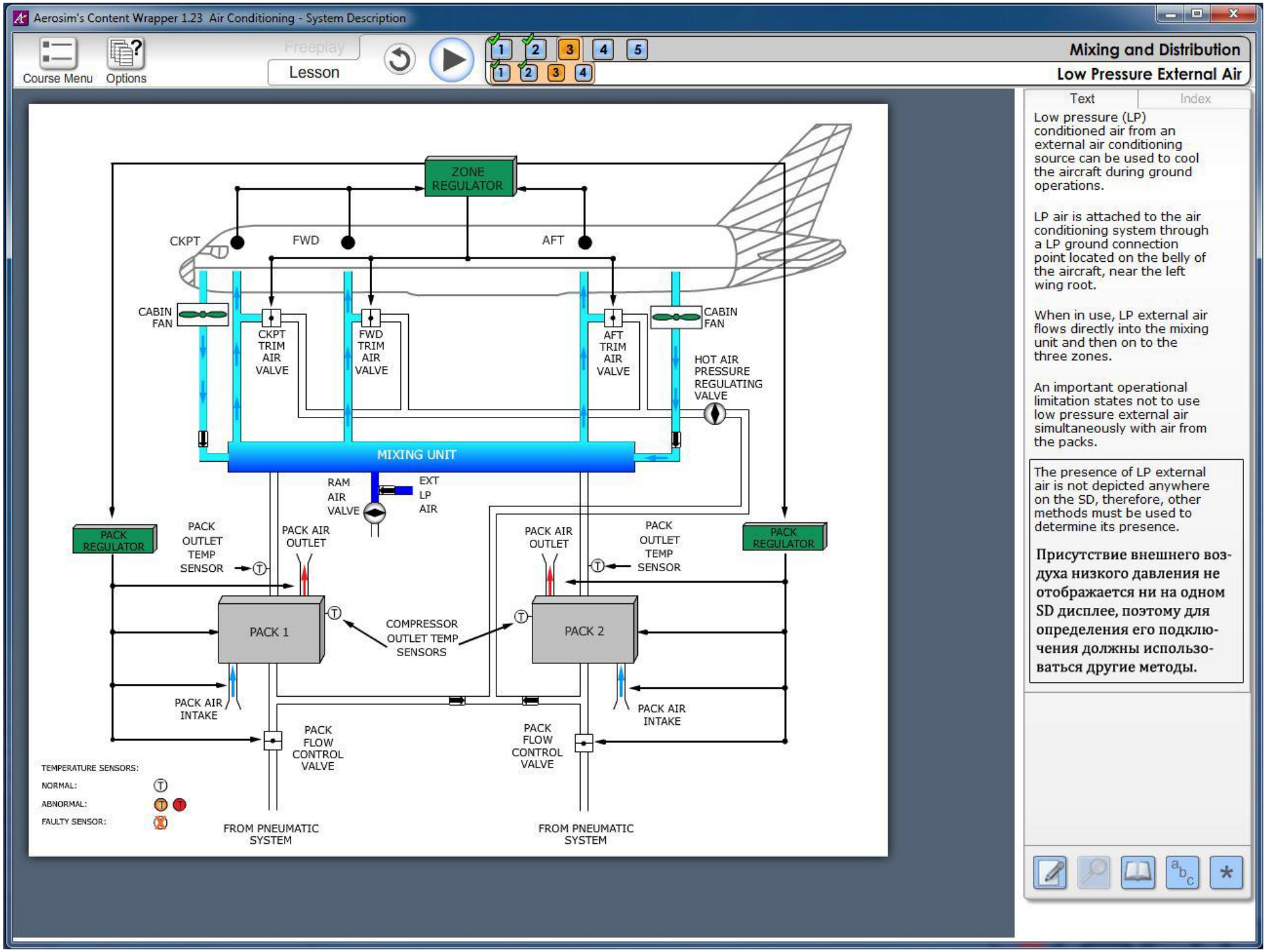

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Mixing and Distribution
Cabin Fans
Text
Index
Cabin air is drawn into the mixing unit by two cabin fans.
This recirculated air reduces the requirement for bleed air and therefore saves fuel.
The cabin fans are controlled by the CAB FANS pb located on the overhead VENTILATION panel.
Normally this pb is in the on (lights out) position.
When selected on, these fans operate whenever AC electrical power is supplied to the aircraft.
However, if necessary, the cabin fans can be selected off.
Shut down the cabin fans.
This shuts down both cabin fans.
The only indication is the white OFF light in the pb.
Такое действие отключит оба вентилятора салона.
Единственная индикация тому - появление на клавише белой подсветки OFF.
VENTILATION
BLOWER
EXTRACT
CAB FANS
AUTO
OVRD
OFF
CKPT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK 1
PACK 2
COMPRESSOR OUTLET TEMP SENSORS
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
FROM PNEUMATIC SYSTEM
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:

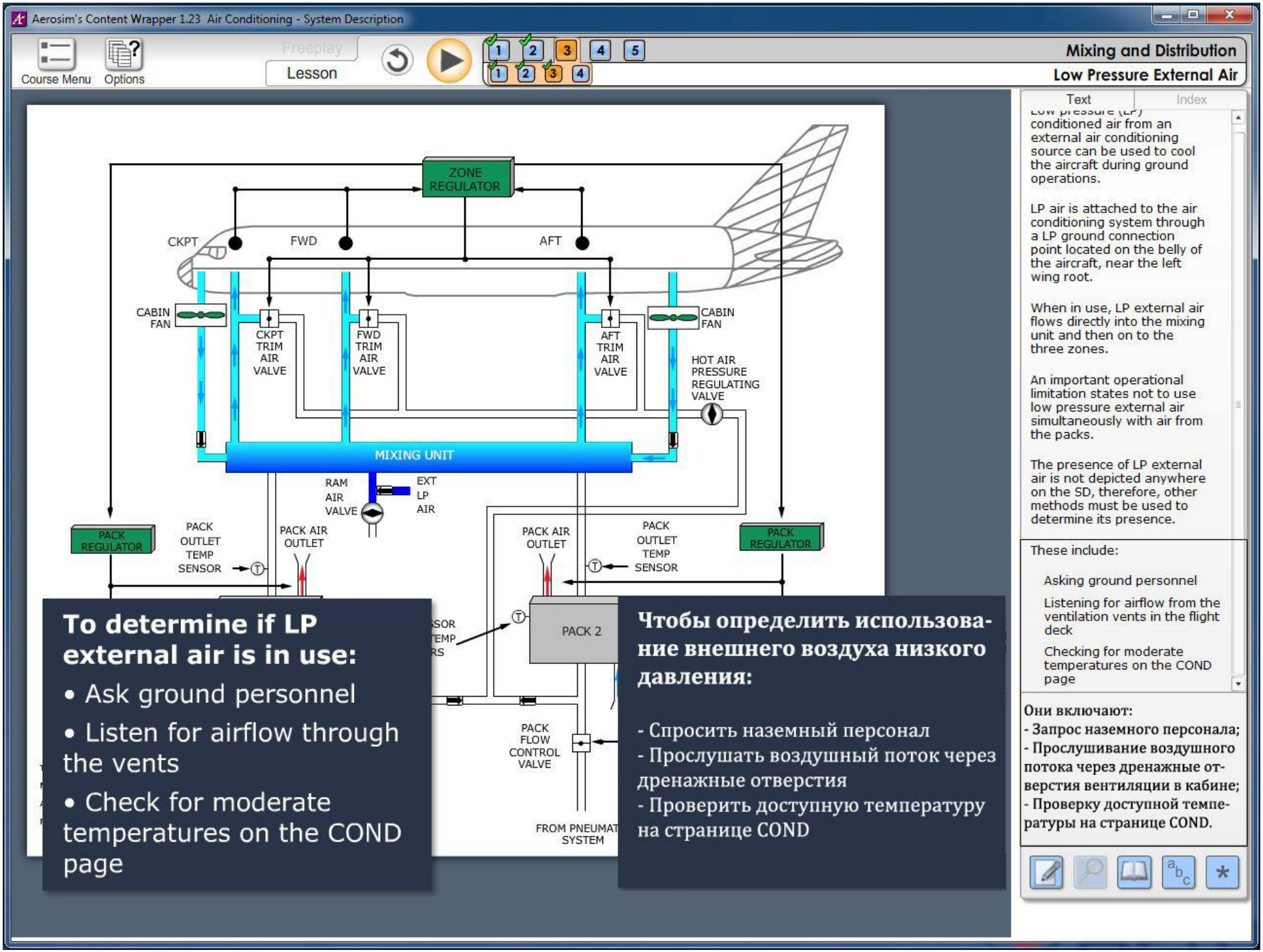

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Mixing and Distribution
Low Pressure External Air
Text
Index
Low pressure (LP) conditioned air from an external air conditioning source can be used to cool the aircraft during ground operations.
Кондиционированный воздух низкого давления (LP) от внешнего, кондиционирующего воздух источника может быть использован для охлаждения самолёта во время наземной эксплуатации.

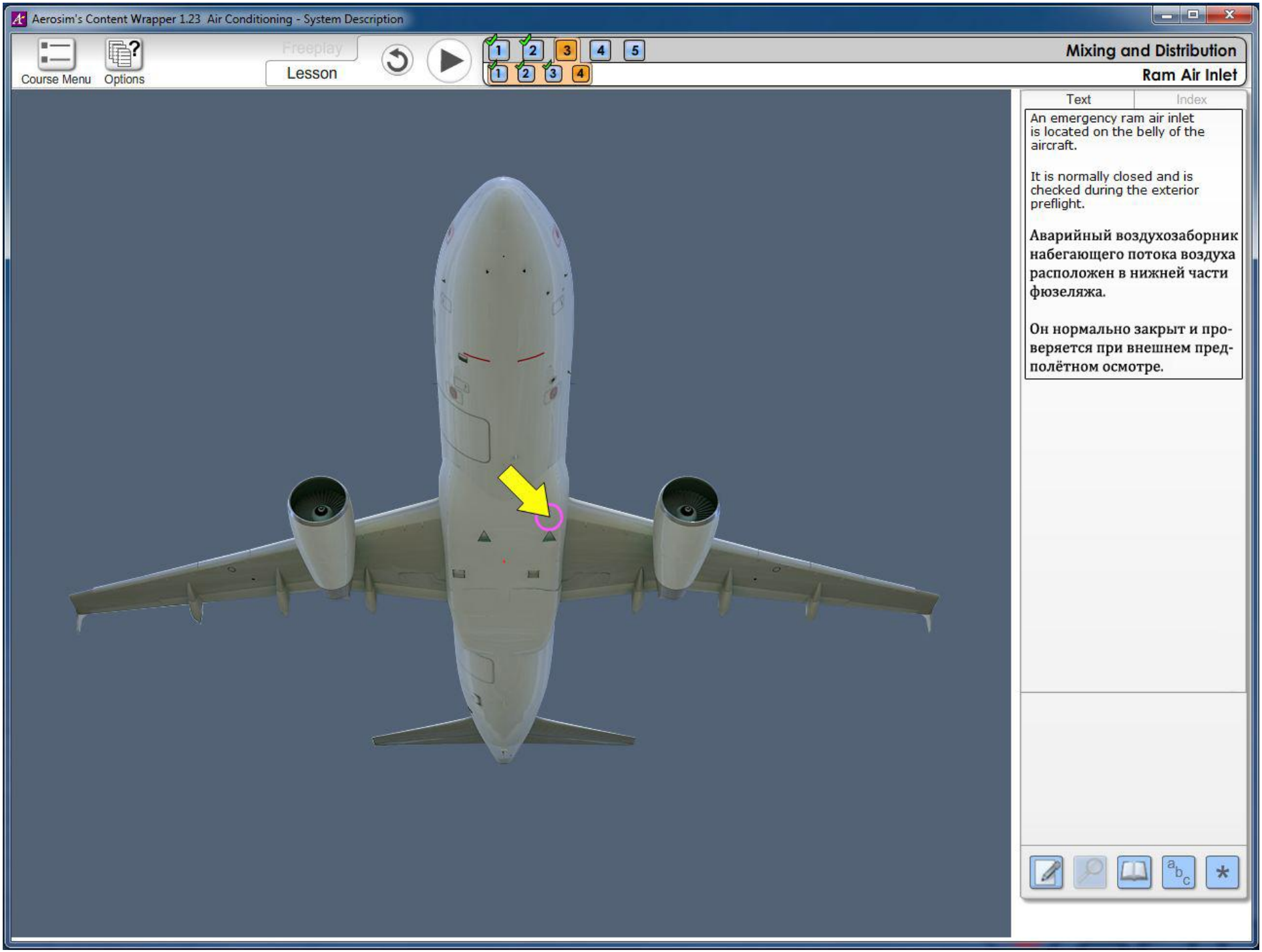

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Mixing and Distribution
Low Pressure External Air
Text
Index
Low pressure (LP) conditioned air from an external air conditioning source can be used to cool the aircraft during ground operations.
LP air is attached to the air conditioning system through a LP ground connection point located on the belly of the aircraft, near the left wing root.
Воздух низкого давления (LP) присоединяется к системе кондиционирования воздуха через точку соединения наземного LP воздуха, расположенную в нижней части фюзеляжа, ближе к левой консоли крыла.
LP AIR
HP AIR

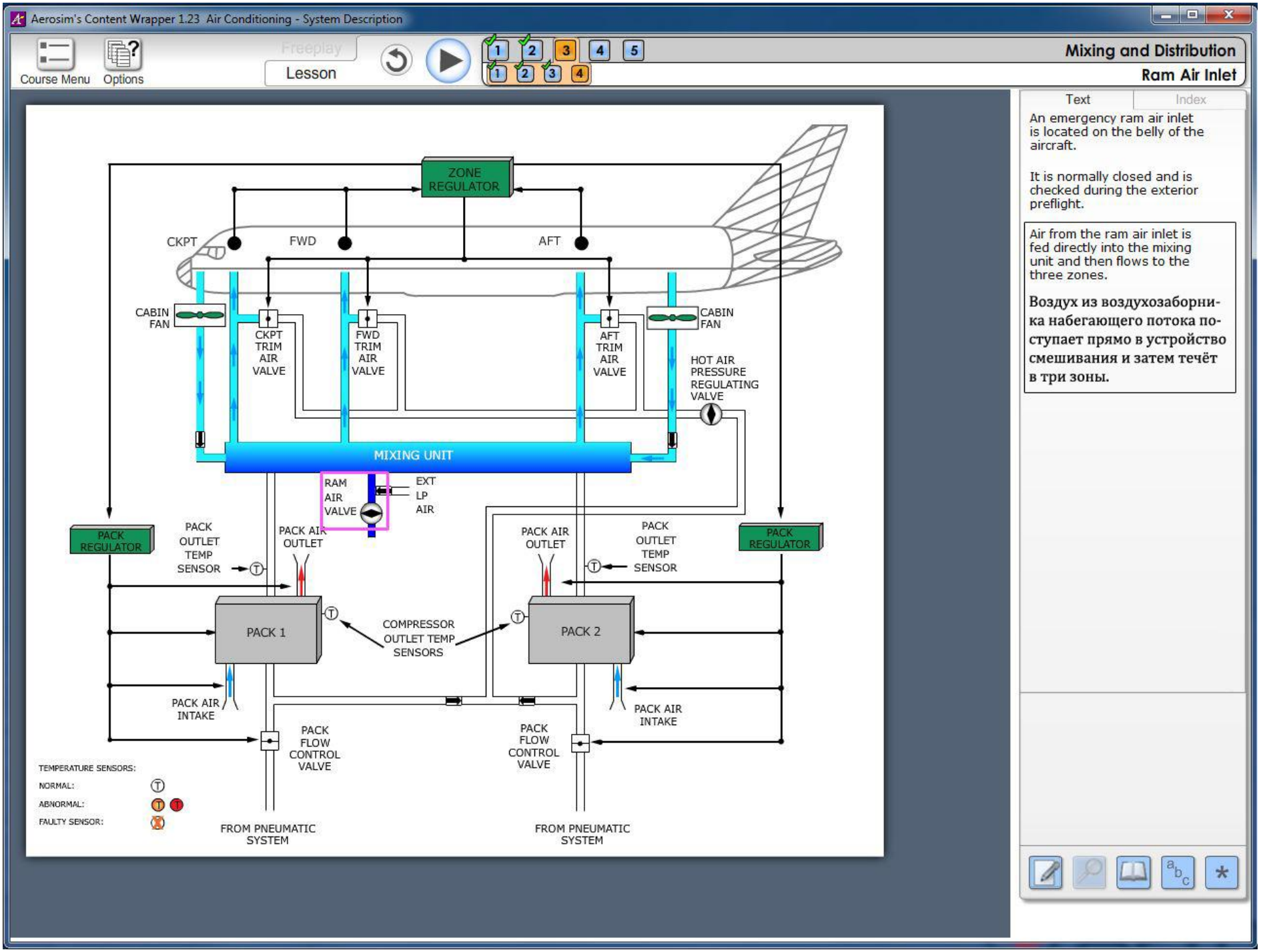

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Mixing and Distribution
Low Pressure External Air
Text
Index
Low pressure (LP) conditioned air from an external air conditioning source can be used to cool the aircraft during ground operations.
LP air is attached to the air conditioning system through a LP ground connection point located on the belly of the aircraft, near the left wing root.
When in use, LP external air flows directly into the mixing unit and then on to the three zones.
При использовании внешнего источника, воздух низкого давления поступает прямо в устройство смешивания и затем в три зоны самолёта.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

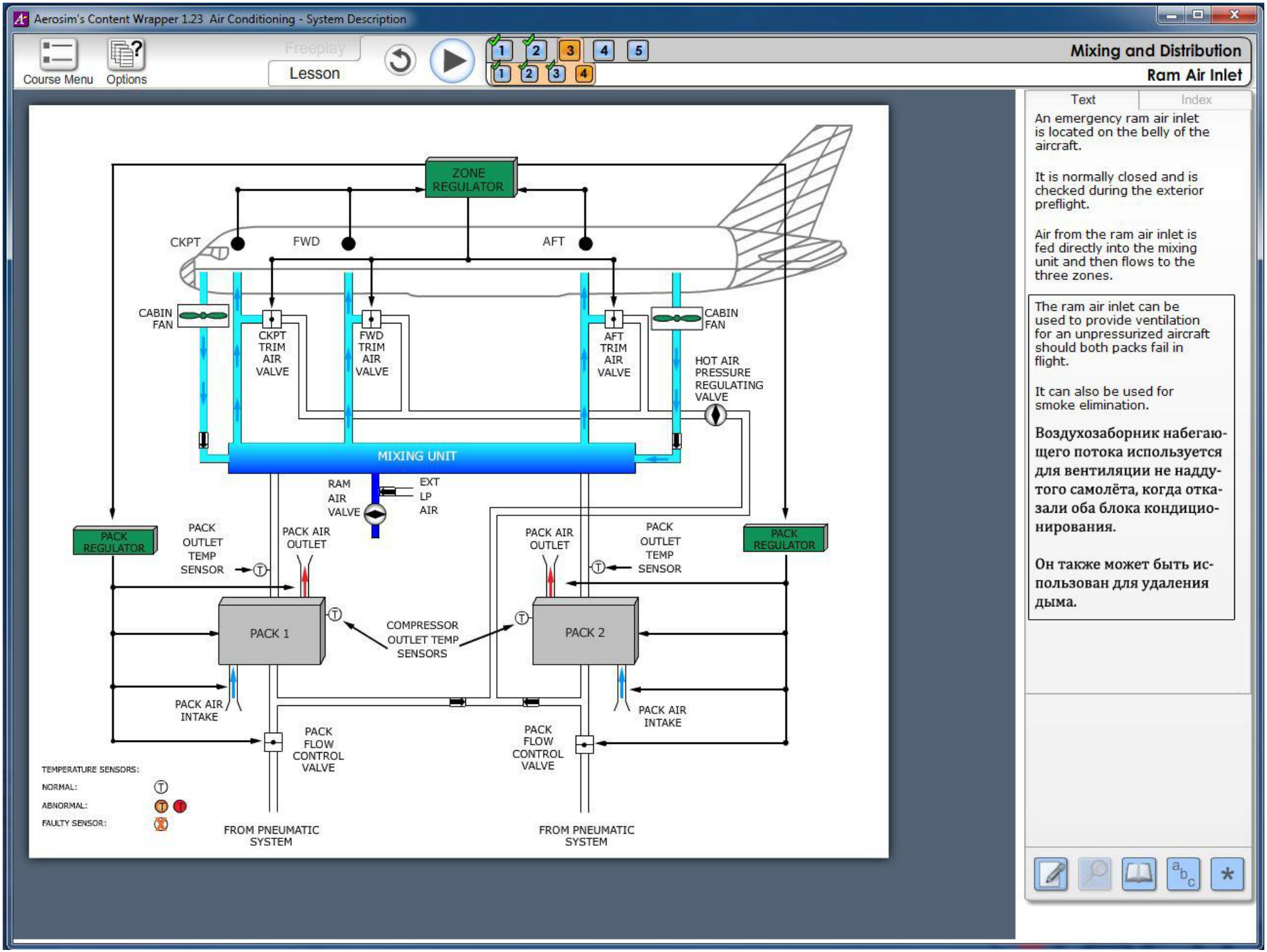

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Mixing and Distribution
Low Pressure External Air
Text
Index
Low pressure (LP) conditioned air from an external air conditioning source can be used to cool the aircraft during ground operations.
LP air is attached to the air conditioning system through a LP ground connection point located on the belly of the aircraft, near the left wing root.
When in use, LP external air flows directly into the mixing unit and then on to the three zones.
An important operational limitation states not to use low pressure external air simultaneously with air from the packs.
Важное эксплуатационное ограничение устанавливает не использовать внешний воздух низкого давления одновременно с воздухом из блоков.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
LIMITATION
The use of Low Pressure external air simultaneously with pack air is prohibited.
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
FROM PNEUMATIC SYSTEM
ОГРАНИЧЕНИЕ
Использование внешнего воздуха низкого давления одновременно с воздухом из блоков запрещено.

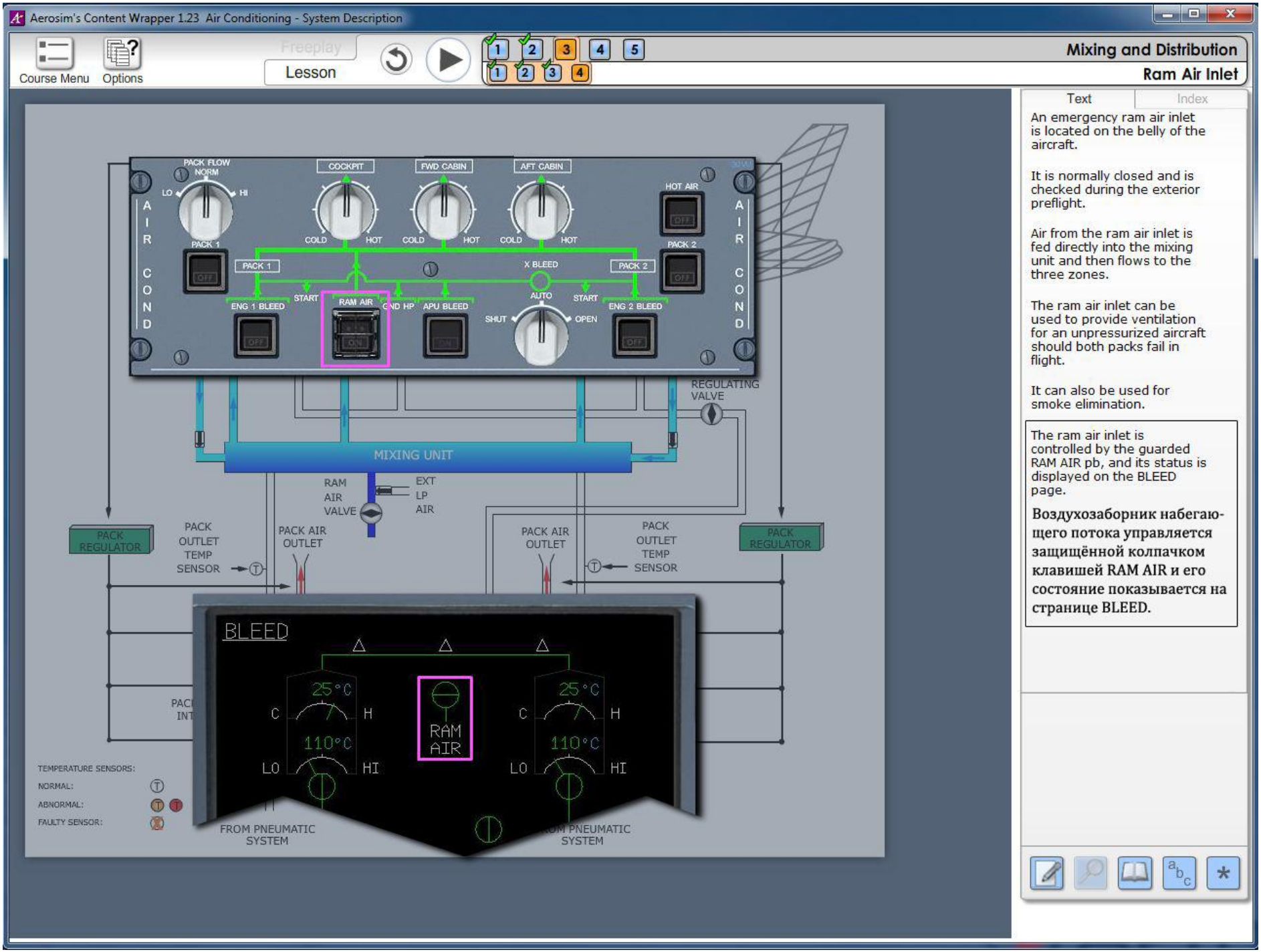

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
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Low Pressure External Air
Text
Index
Low pressure (LP) conditioned air from an external air conditioning source can be used to cool the aircraft during ground operations.
LP air is attached to the air conditioning system through a LP ground connection point located on the belly of the aircraft, near the left wing root.
When in use, LP external air flows directly into the mixing unit and then on to the three zones.
An important operational limitation states not to use low pressure external air simultaneously with air from the packs.
The presence of LP external air is not depicted anywhere on the SD, therefore, other methods must be used to determine its presence.
Присутствие внешнего воздуха низкого давления не отображается ни на одном SD дисплее, поэтому для определения его подключения должны использоваться другие методы.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

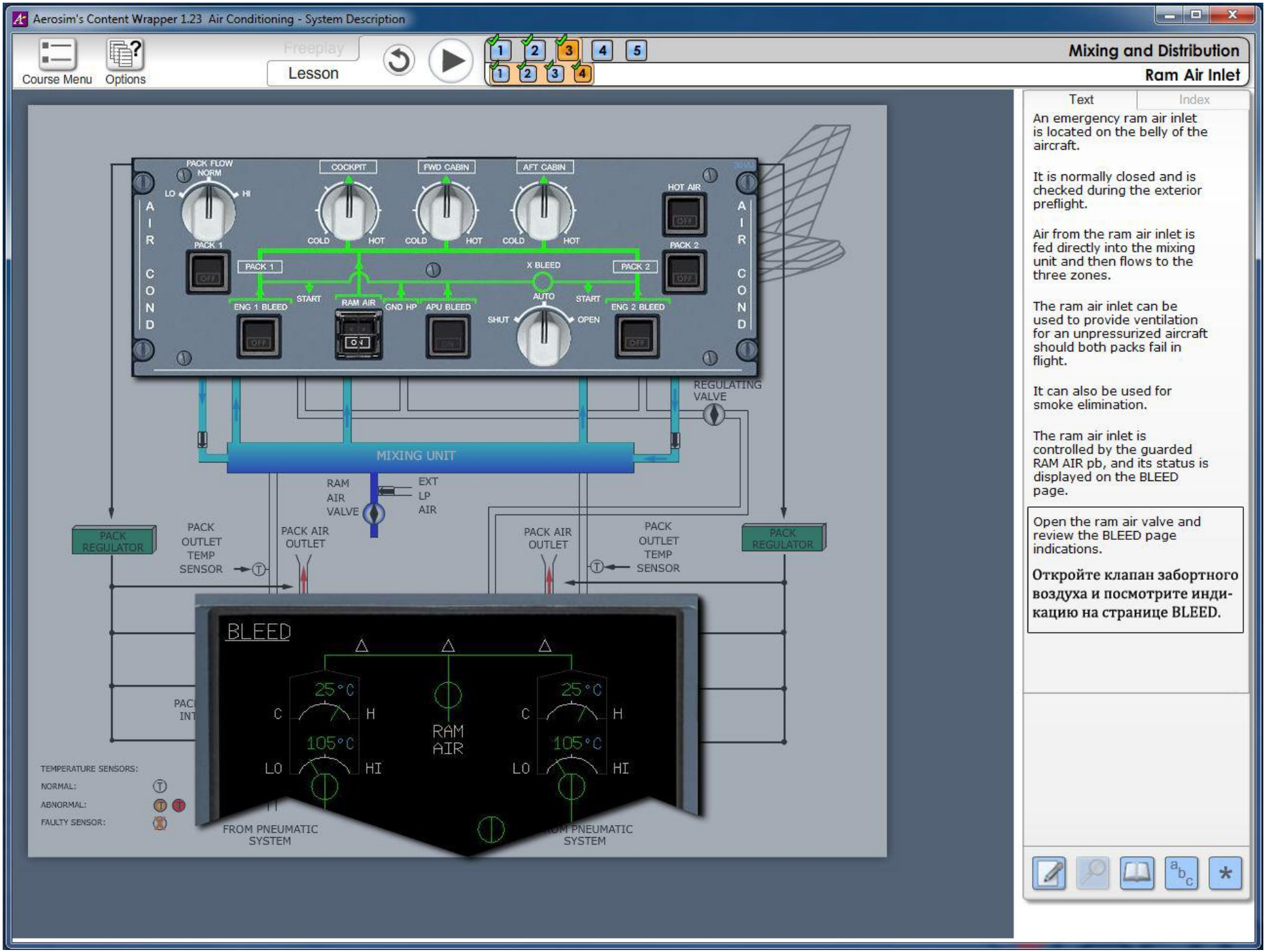

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Mixing and Distribution
Low Pressure External Air
Text
Index
conditioned air from an external air conditioning source can be used to cool the aircraft during ground operations.
LP air is attached to the air conditioning system through a LP ground connection point located on the belly of the aircraft, near the left wing root.
When in use, LP external air flows directly into the mixing unit and then on to the three zones.
An important operational limitation states not to use low pressure external air simultaneously with air from the packs.
The presence of LP external air is not depicted anywhere on the SD, therefore, other methods must be used to determine its presence.
These include:
Asking ground personnel
Listening for airflow from the ventilation vents in the flight deck
Checking for moderate temperatures on the COND page
Они включают:
- Запрос наземного персонала;
- Прослушивание воздушного потока через дренажные отверстия вентиляции в кабине;
- Проверку доступной температуры на странице COND.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 2
PACK FLOW CONTROL VALVE
FROM PNEUMAT SYSTEM
To determine if LP external air is in use:
• Ask ground personnel
• Listen for airflow through the vents
• Check for moderate temperatures on the COND page
Чтобы определить использование внешнего воздуха низкого давления:
- Спросить наземный персонал
- Прослушать воздушный поток через дренажные отверстия
- Проверить доступную температуру на странице COND

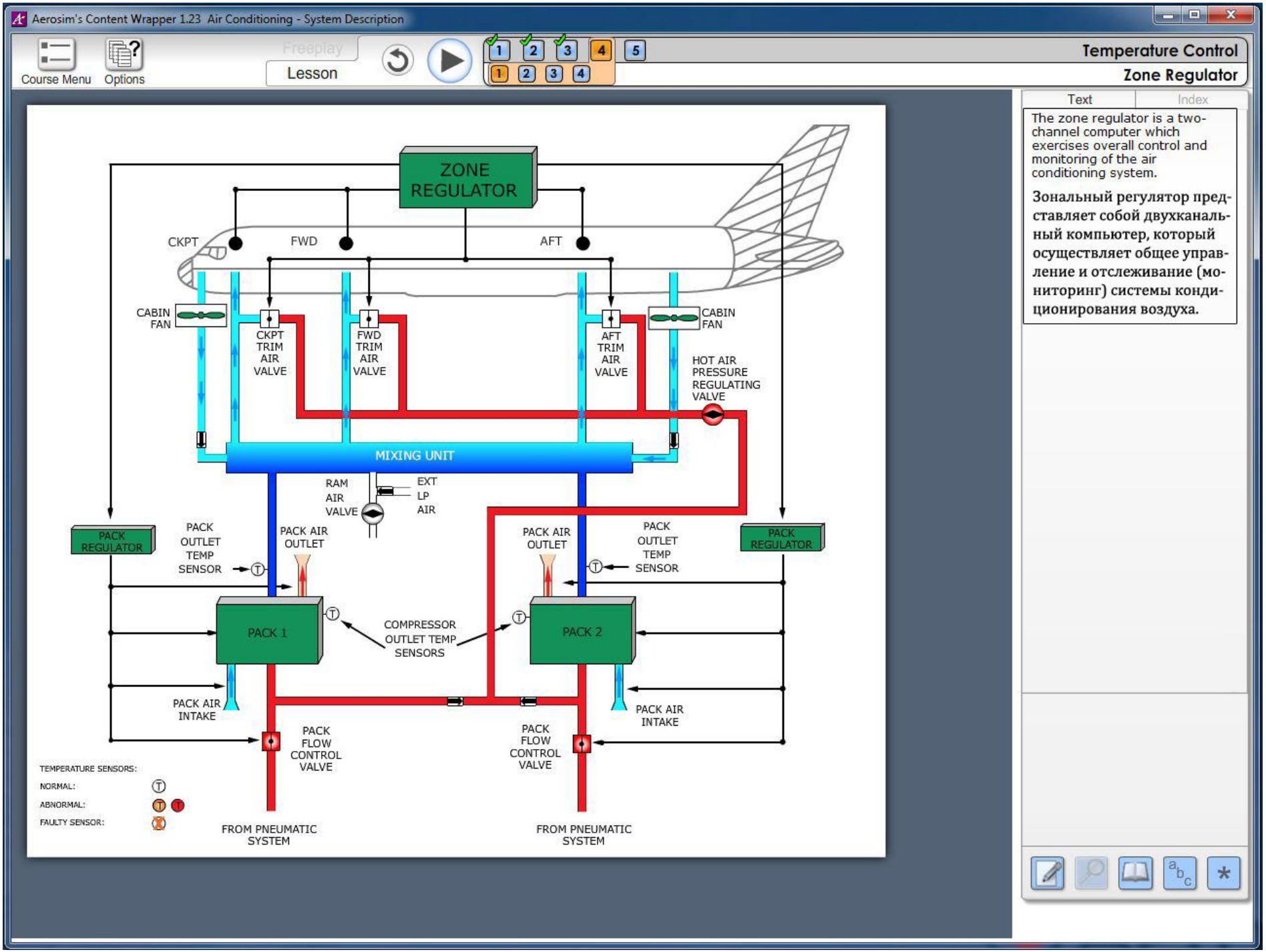

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
1 2 3 4 5
1 2 3 4
Mixing and Distribution
Ram Air Inlet
Text
Index
An emergency ram air inlet is located on the belly of the aircraft.
It is normally closed and is checked during the exterior preflight.
Аварийный воздухозаборник набегающего потока воздуха расположен в нижней части фюзеляжа.
Он нормально закрыт и проверяется при внешнем предполётном осмотре.

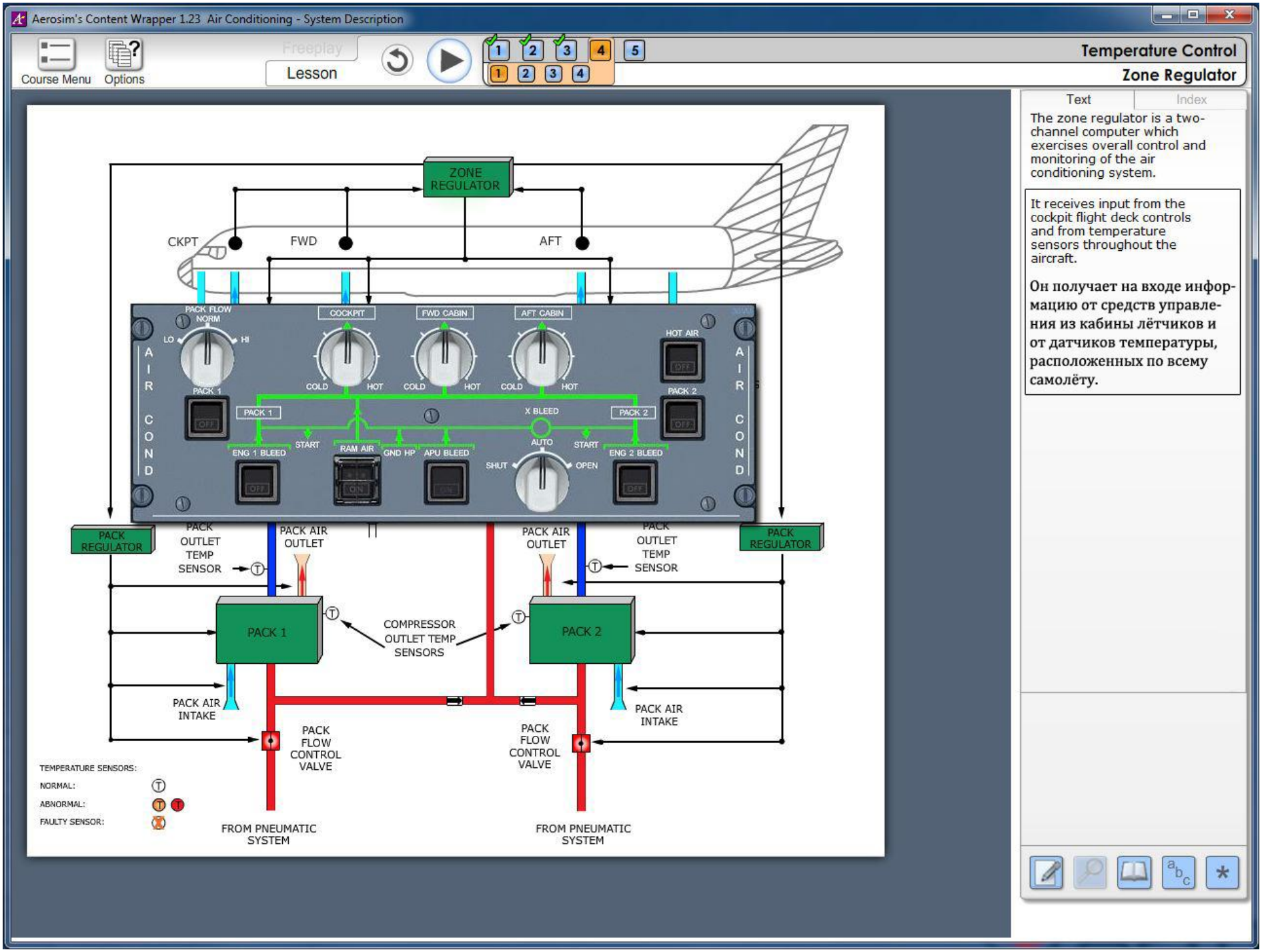

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Mixing and Distribution
Ram Air Inlet
Text
Index
An emergency ram air inlet is located on the belly of the aircraft.
It is normally closed and is checked during the exterior preflight.
Air from the ram air inlet is fed directly into the mixing unit and then flows to the three zones.
Воздух из воздухозаборника набегающего потока поступает прямо в устройство смешивания и затем течёт в три зоны.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

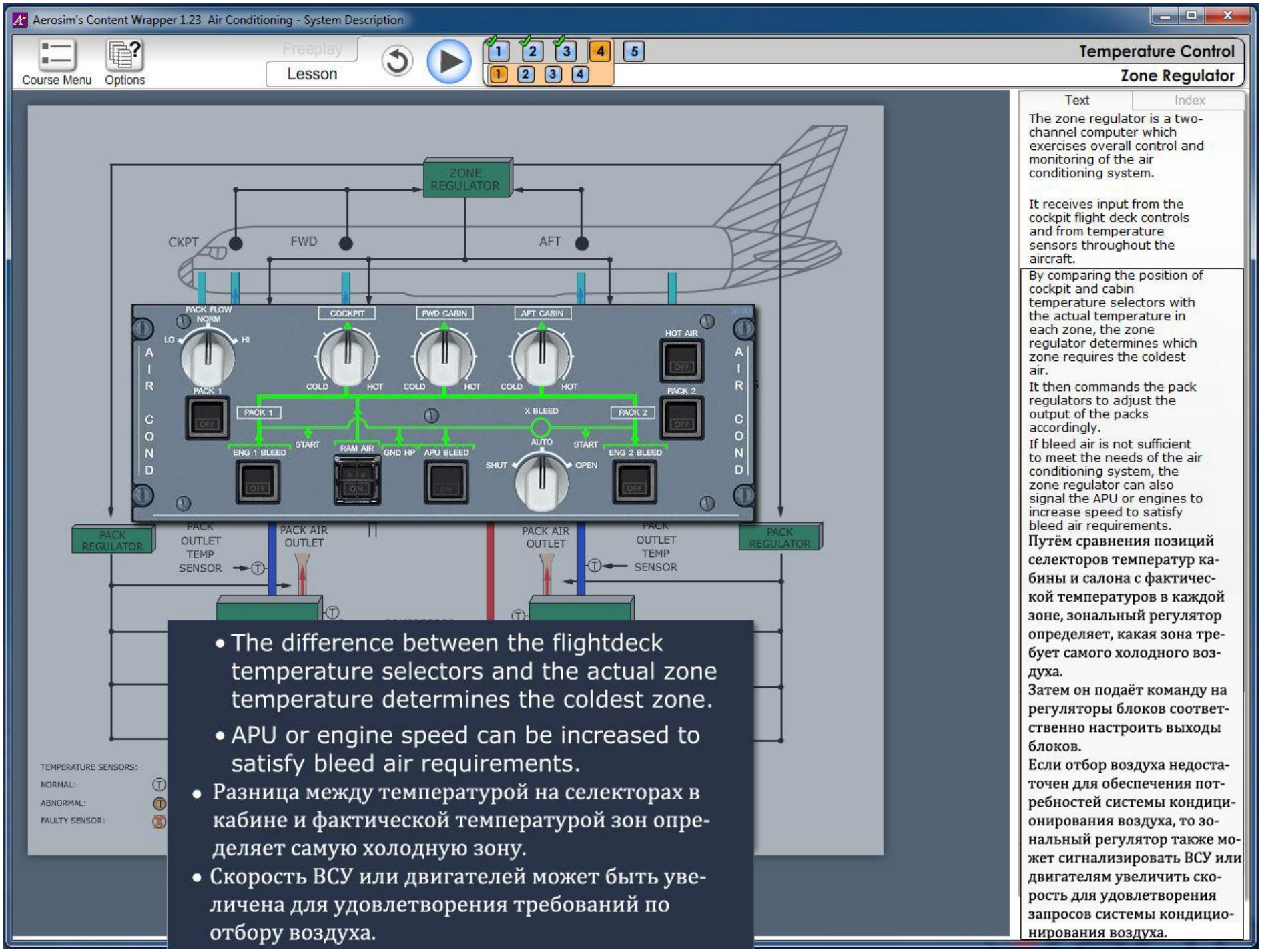

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Mixing and Distribution
Ram Air Inlet
Text
Index
An emergency ram air inlet is located on the belly of the aircraft.
It is normally closed and is checked during the exterior preflight.
Air from the ram air inlet is fed directly into the mixing unit and then flows to the three zones.
The ram air inlet can be used to provide ventilation for an unpressurized aircraft should both packs fail in flight.
It can also be used for smoke elimination.
Воздухозаборник набегающего потока используется для вентиляции не наддутого самолёта, когда отказали оба блока кондиционирования.
Он также может быть использован для удаления дыма.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

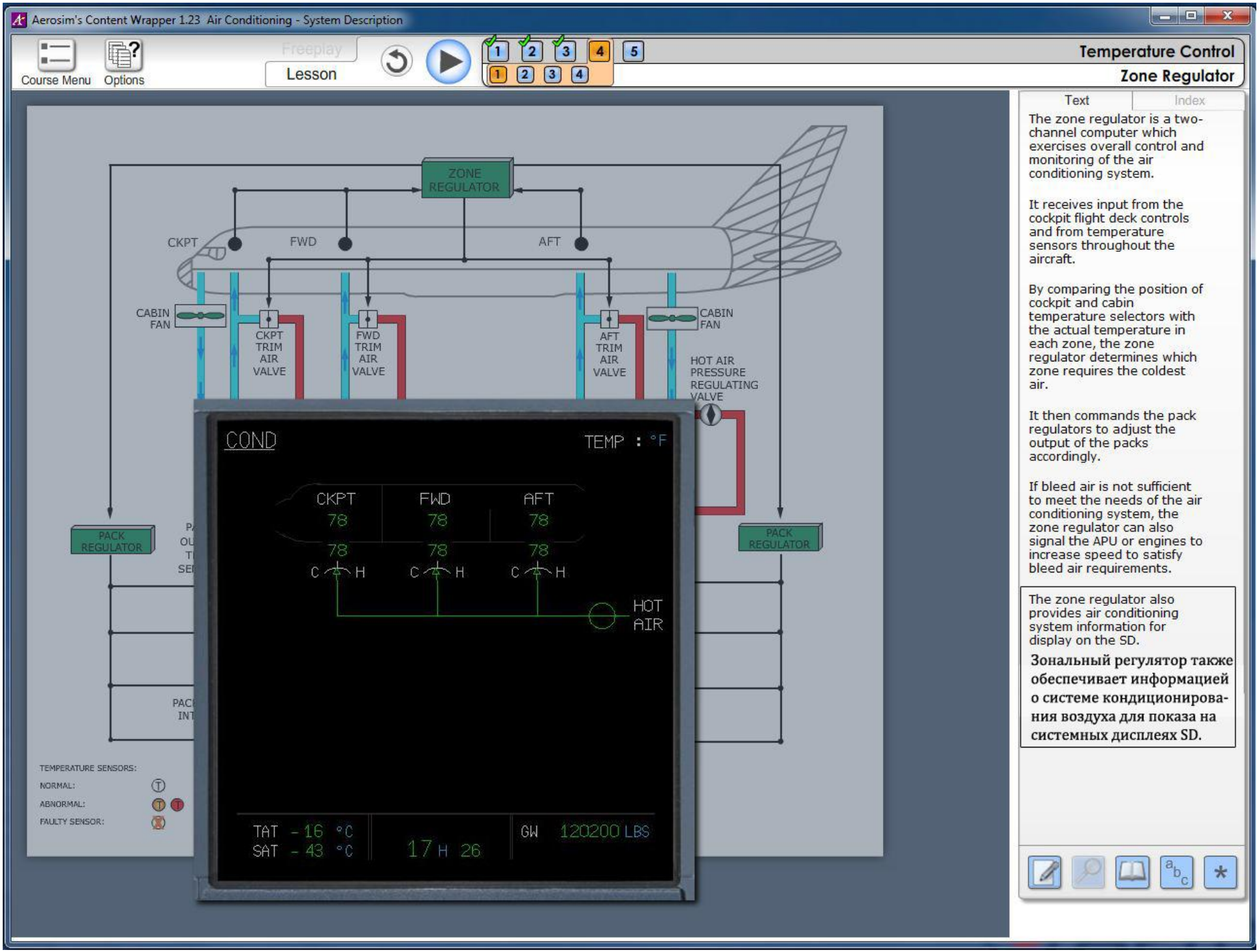

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Mixing and Distribution
Ram Air Inlet
Text
Index
An emergency ram air inlet is located on the belly of the aircraft.
It is normally closed and is checked during the exterior preflight.
Air from the ram air inlet is fed directly into the mixing unit and then flows to the three zones.
The ram air inlet can be used to provide ventilation for an unpressurized aircraft should both packs fail in flight.
It can also be used for smoke elimination.
The ram air inlet is controlled by the guarded RAM AIR pb, and its status is displayed on the BLEED page.
Воздухозаборник набегающего потока управляется защищённой колпачком клавишей RAM AIR и его состояние показывается на странице BLEED.
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
HOT AIR
COLD
HOT
PACK 1
PACK 2
X BLEED
AUTO
SHUT
OPEN
START
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
ENG 2 BLEED
AIR COND
REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
BLEED
25°C
110°C
C
H
LO
HI
RAM AIR
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM

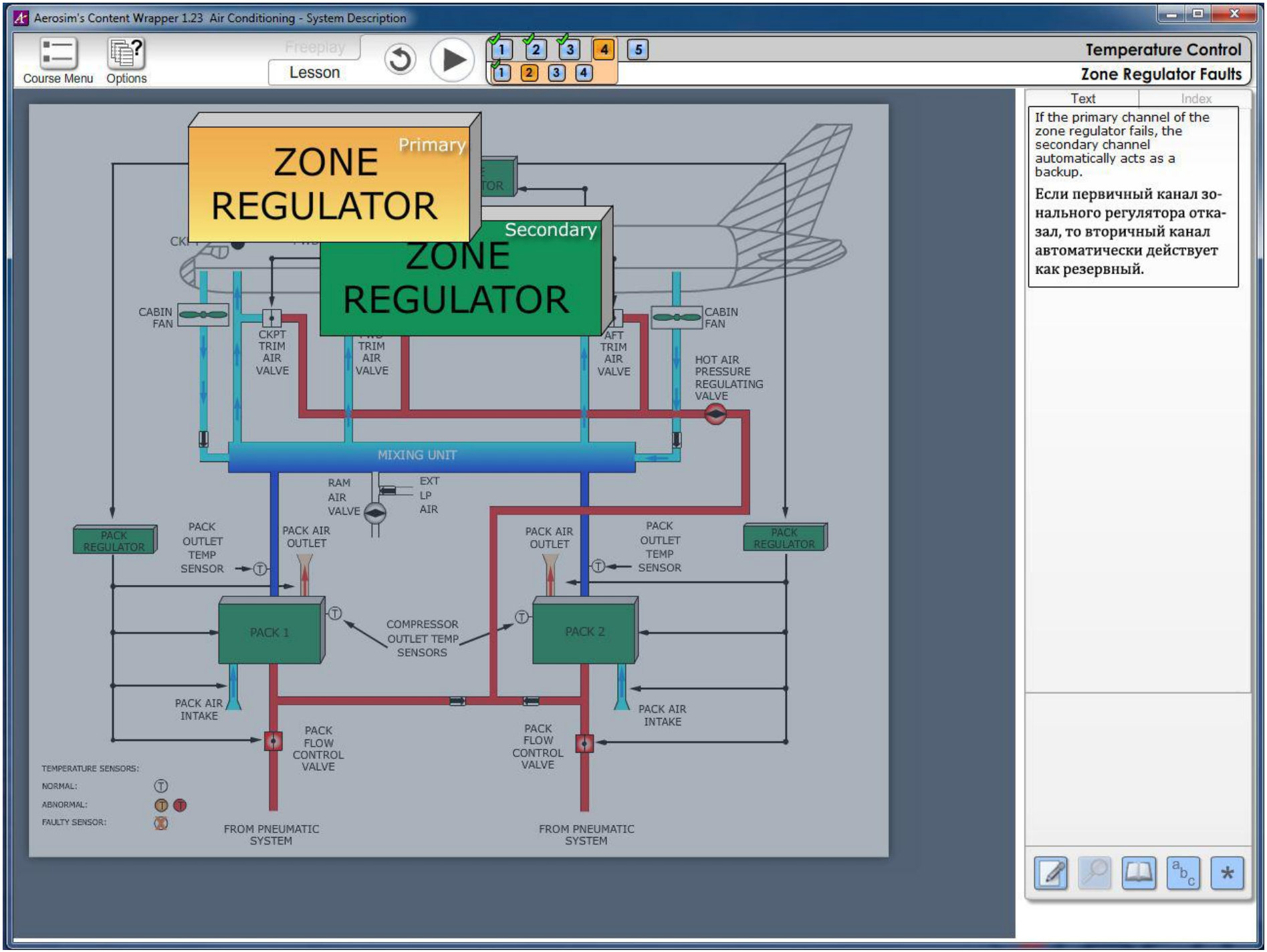

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Mixing and Distribution
Ram Air Inlet
Text
Index
An emergency ram air inlet is located on the belly of the aircraft.
It is normally closed and is checked during the exterior preflight.
Air from the ram air inlet is fed directly into the mixing unit and then flows to the three zones.
The ram air inlet can be used to provide ventilation for an unpressurized aircraft should both packs fail in flight.
It can also be used for smoke elimination.
The ram air inlet is controlled by the guarded RAM AIR pb, and its status is displayed on the BLEED page.
Open the ram air valve and review the BLEED page indications.
Откройте клапан забортного воздуха и посмотрите индикацию на странице BLEED.
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
X BLEED
AUTO
SHUT
OPEN
START
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
ENG 2 BLEED
REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
BLEED
25°C
105°C
C
H
LO
HI
RAM AIR
FROM PNEUMATIC SYSTEM
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:

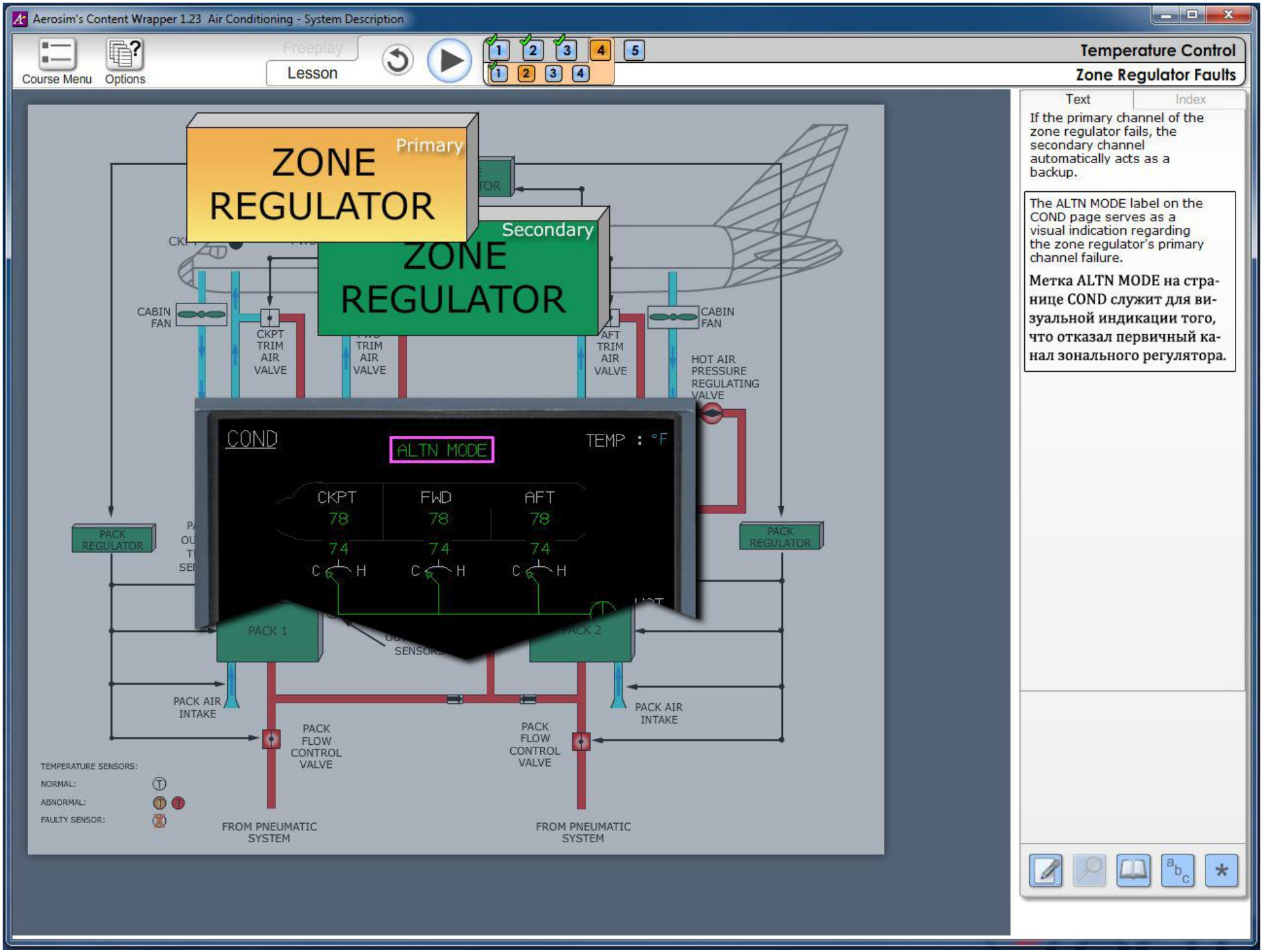

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Zone Regulator
Text
Index
The zone regulator is a two-channel computer which exercises overall control and monitoring of the air conditioning system.
Зональный регулятор представляет собой двухканальный компьютер, который осуществляет общее управление и отслеживание (мониторинг) системы кондиционирования воздуха.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

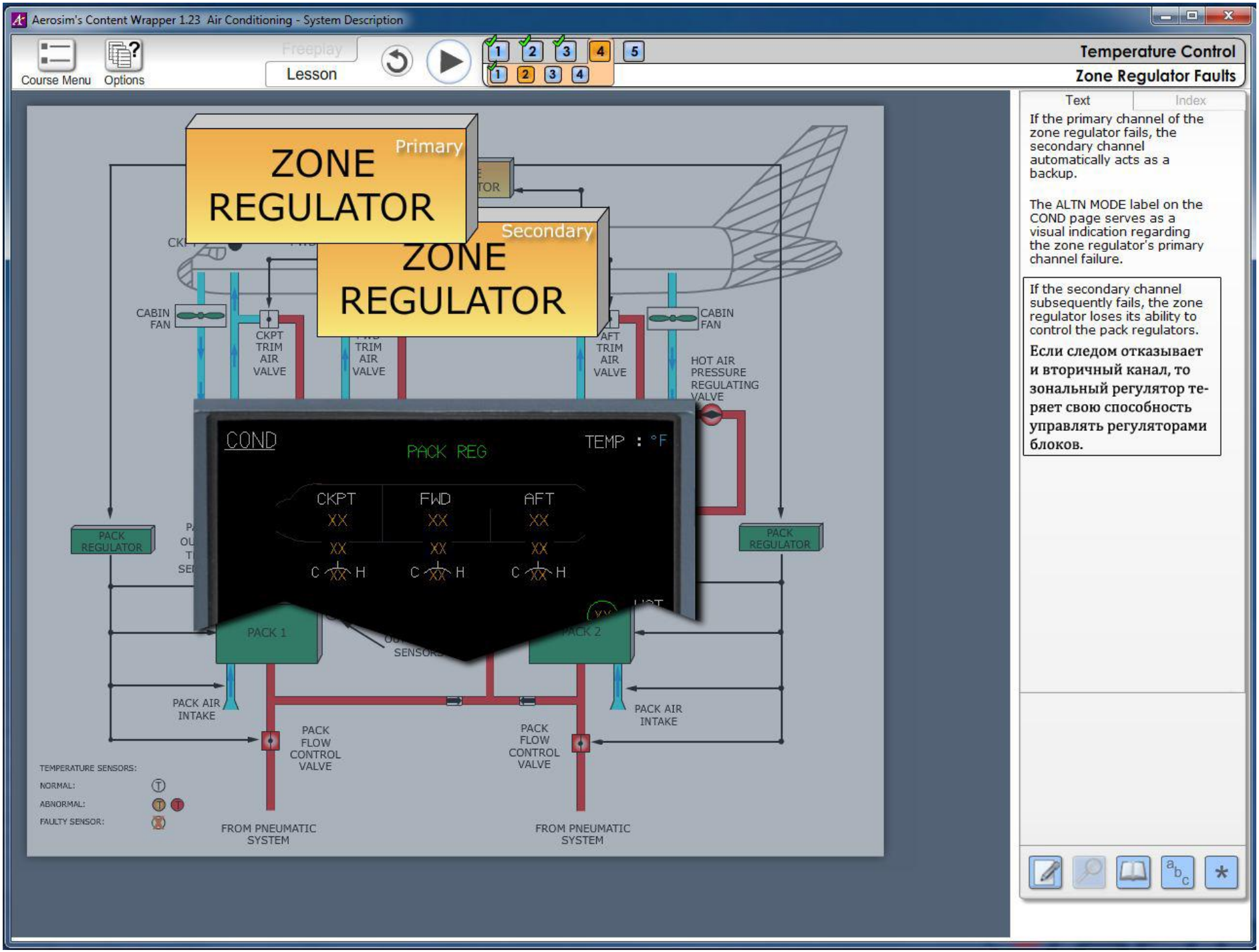

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Zone Regulator
Text
Index
The zone regulator is a two-channel computer which exercises overall control and monitoring of the air conditioning system.
It receives input from the cockpit flight deck controls and from temperature sensors throughout the aircraft.
Он получает на входе информацию от средств управления из кабины лётчиков и от датчиков температуры, расположенных по всему самолёту.
ZONE REGULATOR
CKPT
FWD
AFT
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
HOT AIR
COLD
HOT
PACK 1
PACK 2
X BLEED
AUTO
START
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
ENG 2 BLEED
SHUT
OPEN
AIR COND
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
COMPRESSOR OUTLET TEMP SENSORS
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
FROM PNEUMATIC SYSTEM
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:

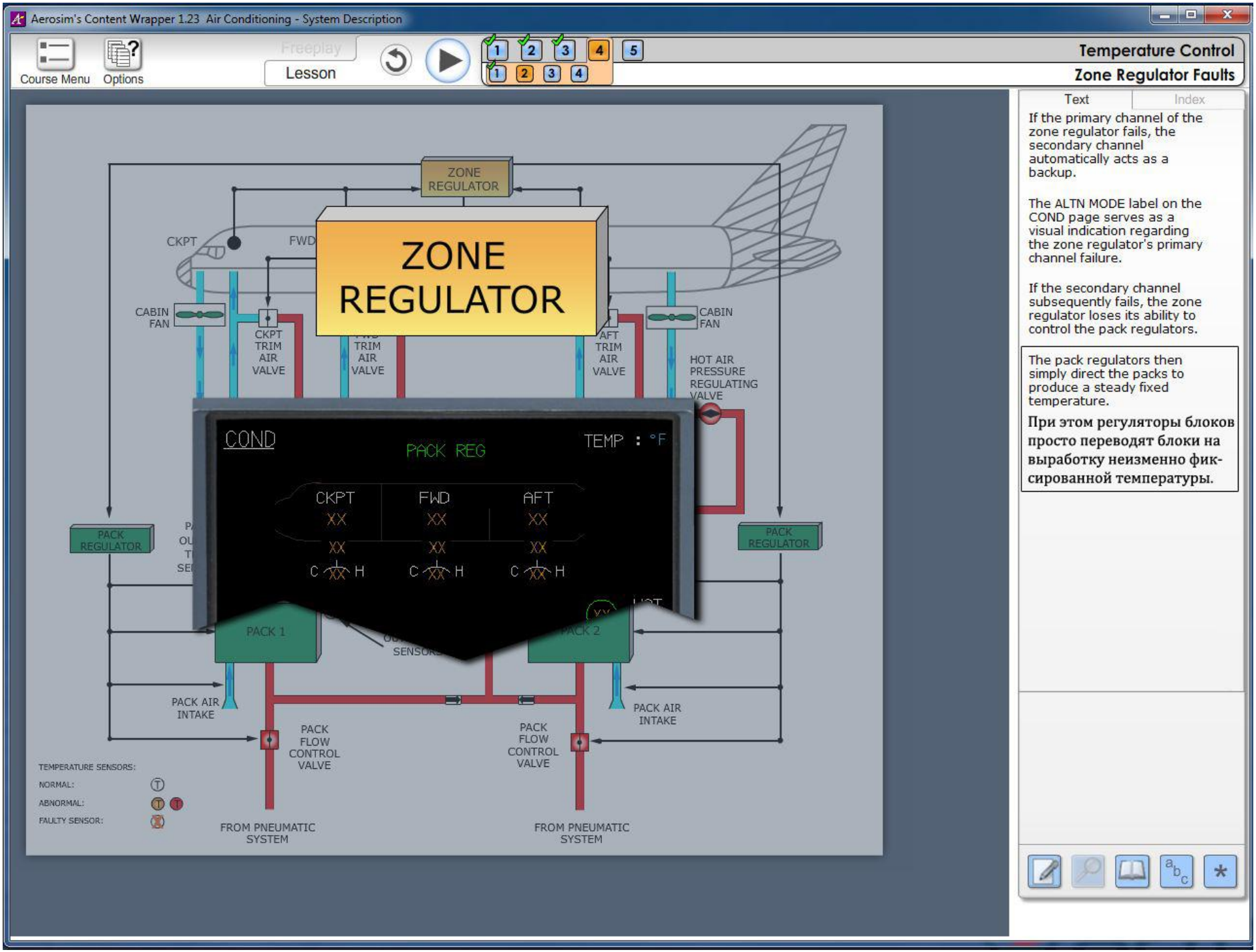

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Zone Regulator
Text
Index
The zone regulator is a two-channel computer which exercises overall control and monitoring of the air conditioning system.
It receives input from the cockpit flight deck controls and from temperature sensors throughout the aircraft.
By comparing the position of cockpit and cabin temperature selectors with the actual temperature in each zone, the zone regulator determines which zone requires the coldest air.
It then commands the pack regulators to adjust the output of the packs accordingly.
If bleed air is not sufficient to meet the needs of the air conditioning system, the zone regulator can also signal the APU or engines to increase speed to satisfy bleed air requirements.
Путём сравнения позиций селекторов температур кабины и салона с фактической температуров в каждой зоне, зональный регулятор определяет, какая зона требует самого холодного воздуха.
Затем он подаёт команду на регуляторы блоков соответственно настроить выходы блоков.
Если отбор воздуха недостаточен для обеспечения потребностей системы кондиционирования воздуха, то зональный регулятор также может сигнализировать ВСУ или двигателям увеличить скорость для удовлетворения запросов системы кондиционирования воздуха.
ZONE REGULATOR
CKPT
FWD
AFT
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
X BLEED
AUTO
START
SHUT
OPEN
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
ENG 2 BLEED
AIR COND
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
• The difference between the flightdeck temperature selectors and the actual zone temperature determines the coldest zone.
• APU or engine speed can be increased to satisfy bleed air requirements.
• Разница между температурой на селекторах в кабине и фактической температурой зон определяет самую холодную зону.
• Скорость ВСУ или двигателей может быть увеличена для удовлетворения требований по отбору воздуха.

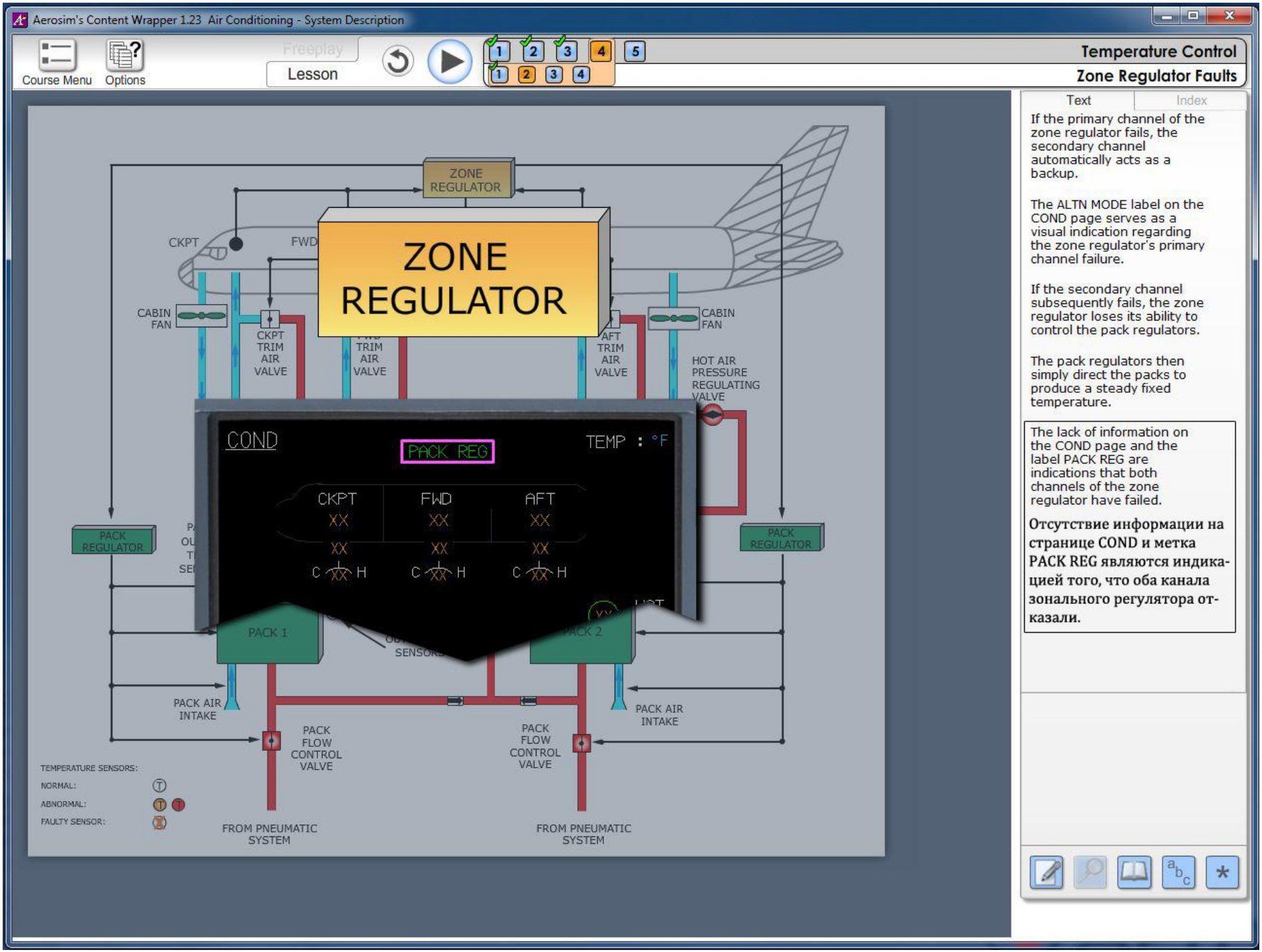

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Zone Regulator
Text
Index
The zone regulator is a two-channel computer which exercises overall control and monitoring of the air conditioning system.
It receives input from the cockpit flight deck controls and from temperature sensors throughout the aircraft.
By comparing the position of cockpit and cabin temperature selectors with the actual temperature in each zone, the zone regulator determines which zone requires the coldest air.
It then commands the pack regulators to adjust the output of the packs accordingly.
If bleed air is not sufficient to meet the needs of the air conditioning system, the zone regulator can also signal the APU or engines to increase speed to satisfy bleed air requirements.
The zone regulator also provides air conditioning system information for display on the SD.
Зональный регулятор также обеспечивает информацией о системе кондиционирования воздуха для показа на системных дисплеях SD.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
PACK REGULATOR
PACK REGULATOR
COND
TEMP : °F
CKPT FWD AFT
78 78 78
78 78 78
C H C H C H
HOT AIR
TAT - 16 °C
SAT - 43 °C
17 H 26
GW 120200 LBS
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:

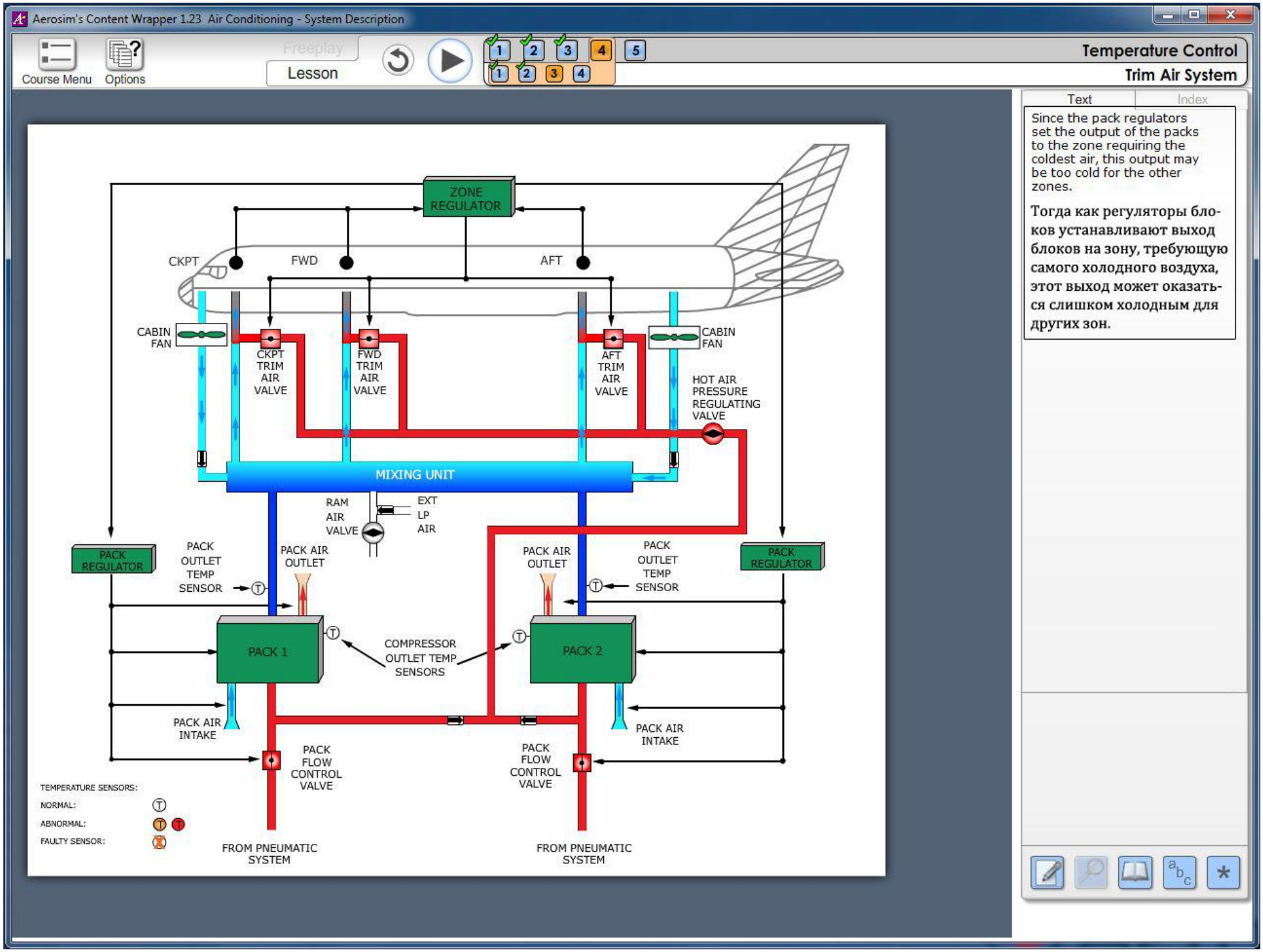

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Zone Regulator Faults
Text
Index
If the primary channel of the zone regulator fails, the secondary channel automatically acts as a backup.
Если первичный канал зонального регулятора отказал, то вторичный канал автоматически действует как резервный.
ZONE REGULATOR
Primary
ZONE REGULATOR
Secondary
CABIN FAN
CKPT TRIM AIR VALVE
AFT TRIM AIR VALVE
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK 1
PACK 2
COMPRESSOR OUTLET TEMP SENSORS
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM

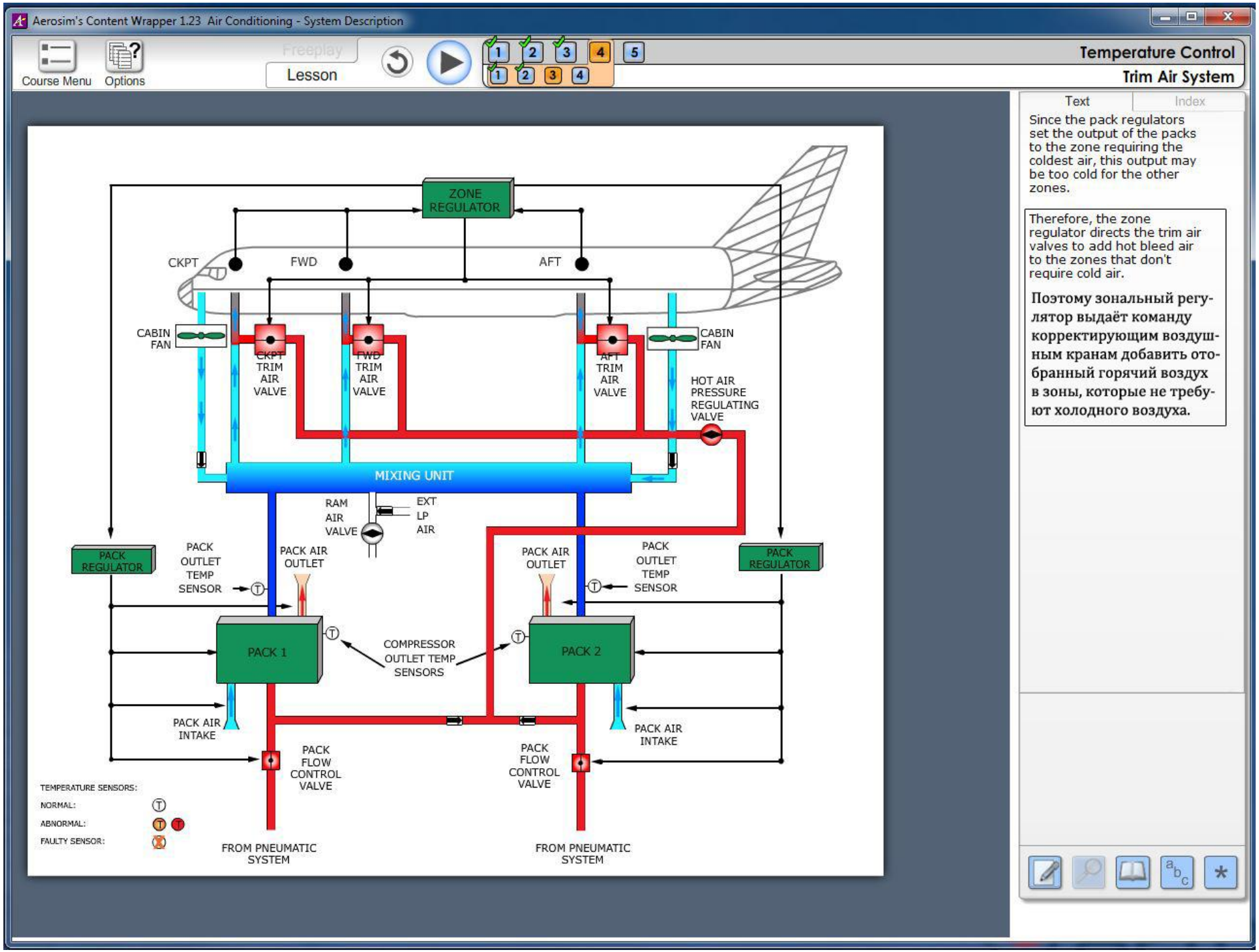

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Zone Regulator Faults
Text
Index
If the primary channel of the zone regulator fails, the secondary channel automatically acts as a backup.
The ALTN MODE label on the COND page serves as a visual indication regarding the zone regulator's primary channel failure.
Метка ALTN MODE на странице COND служит для визуальной индикации того, что отказал первичный канал зонального регулятора.
Primary
ZONE REGULATOR
Secondary
ZONE REGULATOR
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
COND
ALTN MODE
TEMP : °F
CKPT
FWD
AFT
78
78
78
74
74
74
C H
C H
C H
PACK REGULATOR
PACK REGULATOR
PACK 1
PACK 2
SENSORS
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

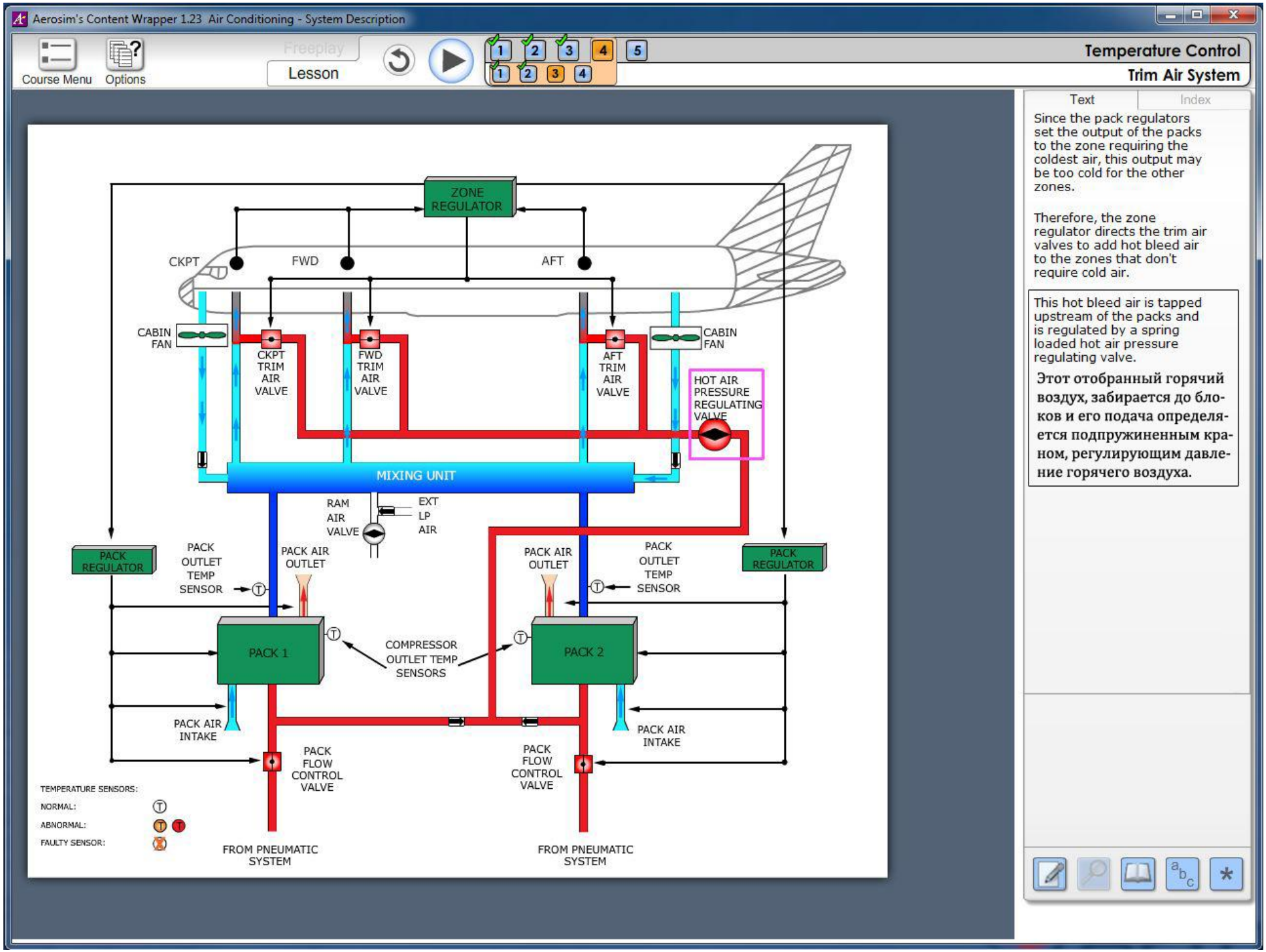

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Zone Regulator Faults
Text
Index
If the primary channel of the zone regulator fails, the secondary channel automatically acts as a backup.
The ALTN MODE label on the COND page serves as a visual indication regarding the zone regulator's primary channel failure.
If the secondary channel subsequently fails, the zone regulator loses its ability to control the pack regulators.
Если следом отказывает и вторичный канал, то зональный регулятор теряет свою способность управлять регуляторами блоков.
ZONE REGULATOR
Primary
ZONE REGULATOR
Secondary
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
HOT AIR PRESSURE REGULATING VALVE
COND
PACK REG
TEMP : °F
CKPT
FWD
AFT
PACK REGULATOR
PACK 1
PACK 2
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
FROM PNEUMATIC SYSTEM
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:

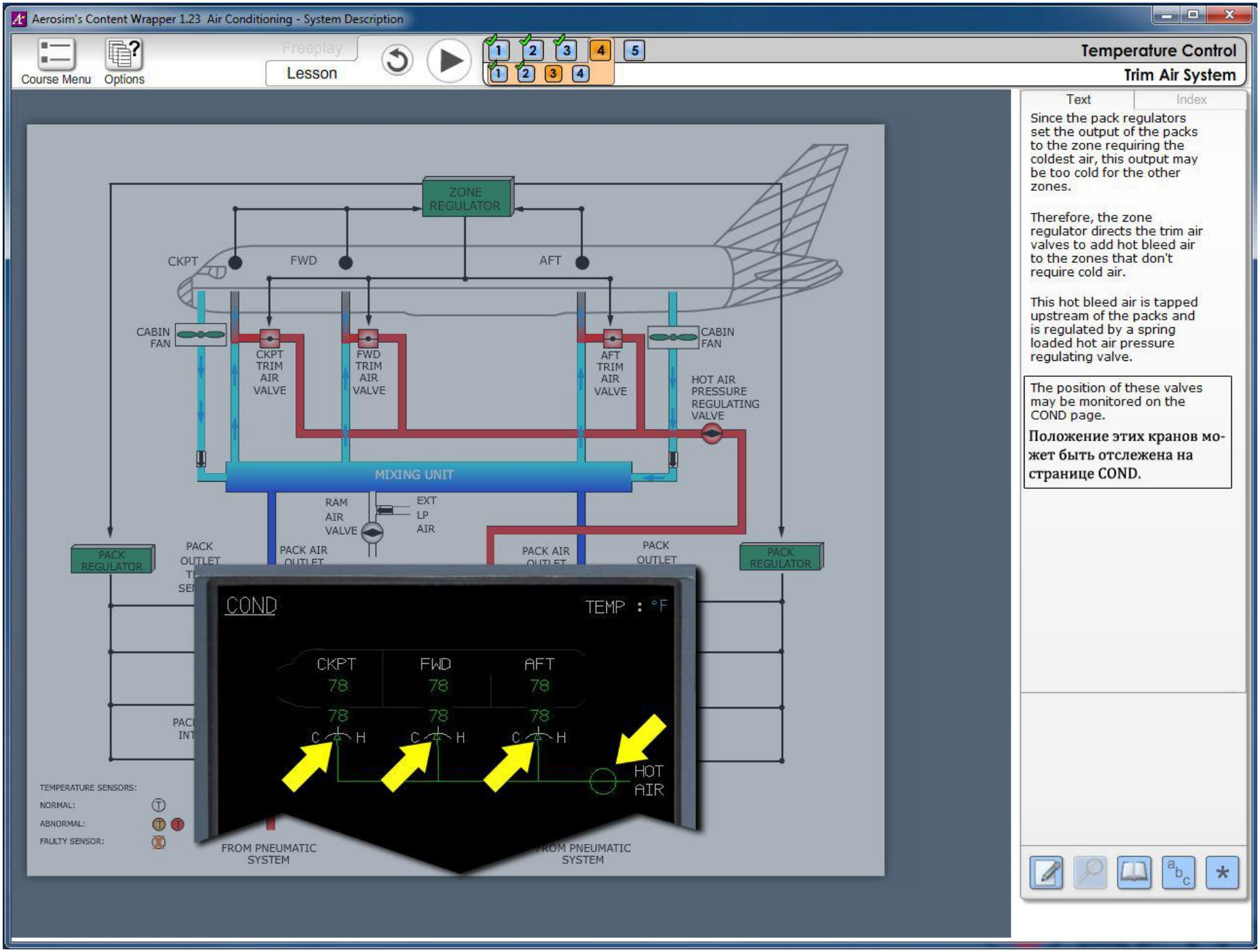

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Zone Regulator Faults
Text
Index
If the primary channel of the zone regulator fails, the secondary channel automatically acts as a backup.
The ALTN MODE label on the COND page serves as a visual indication regarding the zone regulator's primary channel failure.
If the secondary channel subsequently fails, the zone regulator loses its ability to control the pack regulators.
The pack regulators then simply direct the packs to produce a steady fixed temperature.
При этом регуляторы блоков просто переводят блоки на выработку неизменно фиксированной температуры.
ZONE REGULATOR
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
HOT AIR PRESSURE REGULATING VALVE
COND
PACK REG
TEMP : °F
CKPT
FWD
AFT
PACK REGULATOR
PACK REGULATOR
PACK 1
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

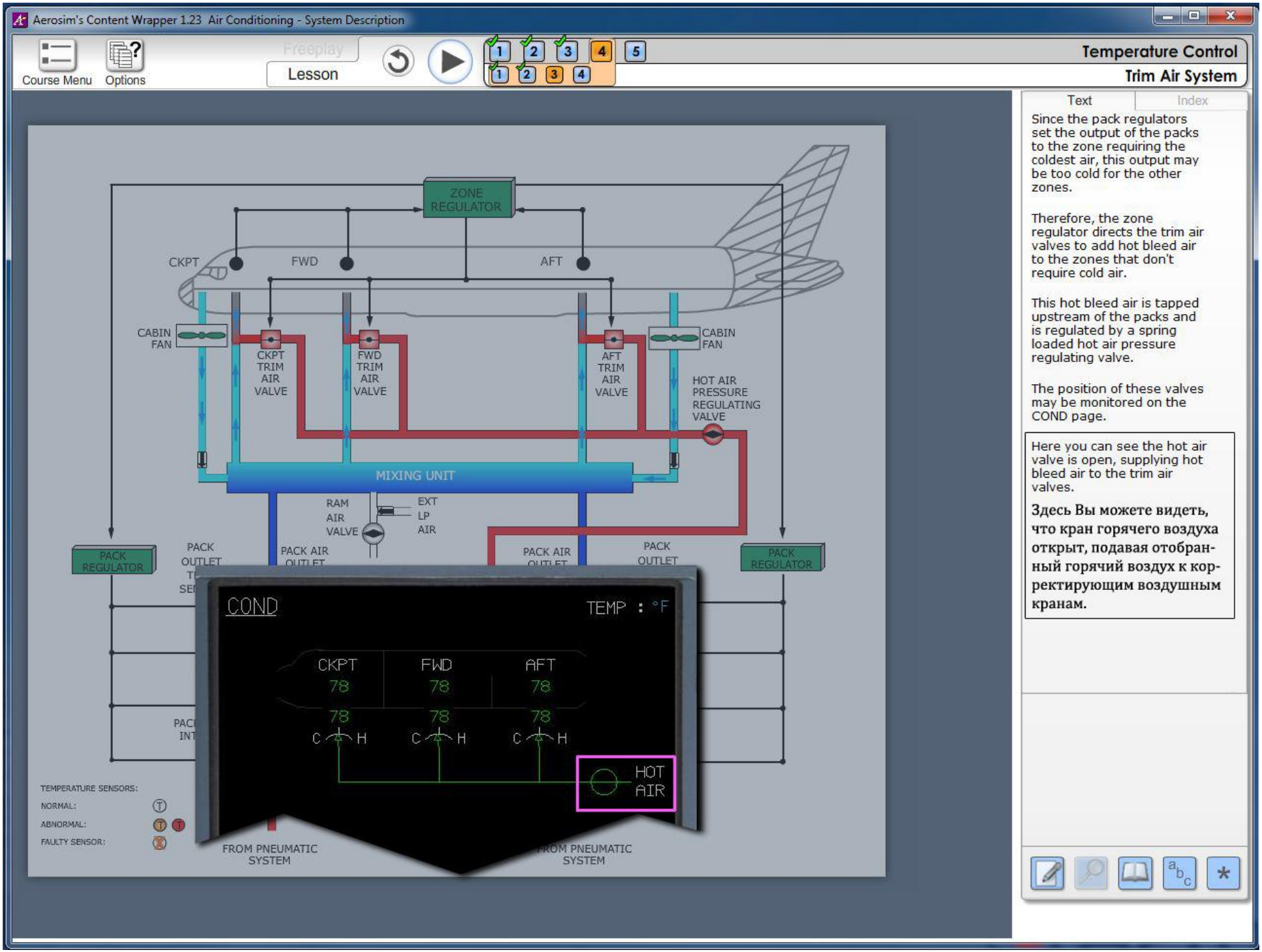

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Zone Regulator Faults
Text
Index
If the primary channel of the zone regulator fails, the secondary channel automatically acts as a backup.
The ALTN MODE label on the COND page serves as a visual indication regarding the zone regulator's primary channel failure.
If the secondary channel subsequently fails, the zone regulator loses its ability to control the pack regulators.
The pack regulators then simply direct the packs to produce a steady fixed temperature.
The lack of information on the COND page and the label PACK REG are indications that both channels of the zone regulator have failed.
Отсутствие информации на странице COND и метка PACK REG являются индикацией того, что оба канала зонального регулятора отказали.
ZONE REGULATOR
ZONE REGULATOR
CKPT
FWD
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
COND
PACK REG
TEMP : °F
CKPT
FWD
AFT
PACK REGULATOR
PACK REGULATOR
PACK 1
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

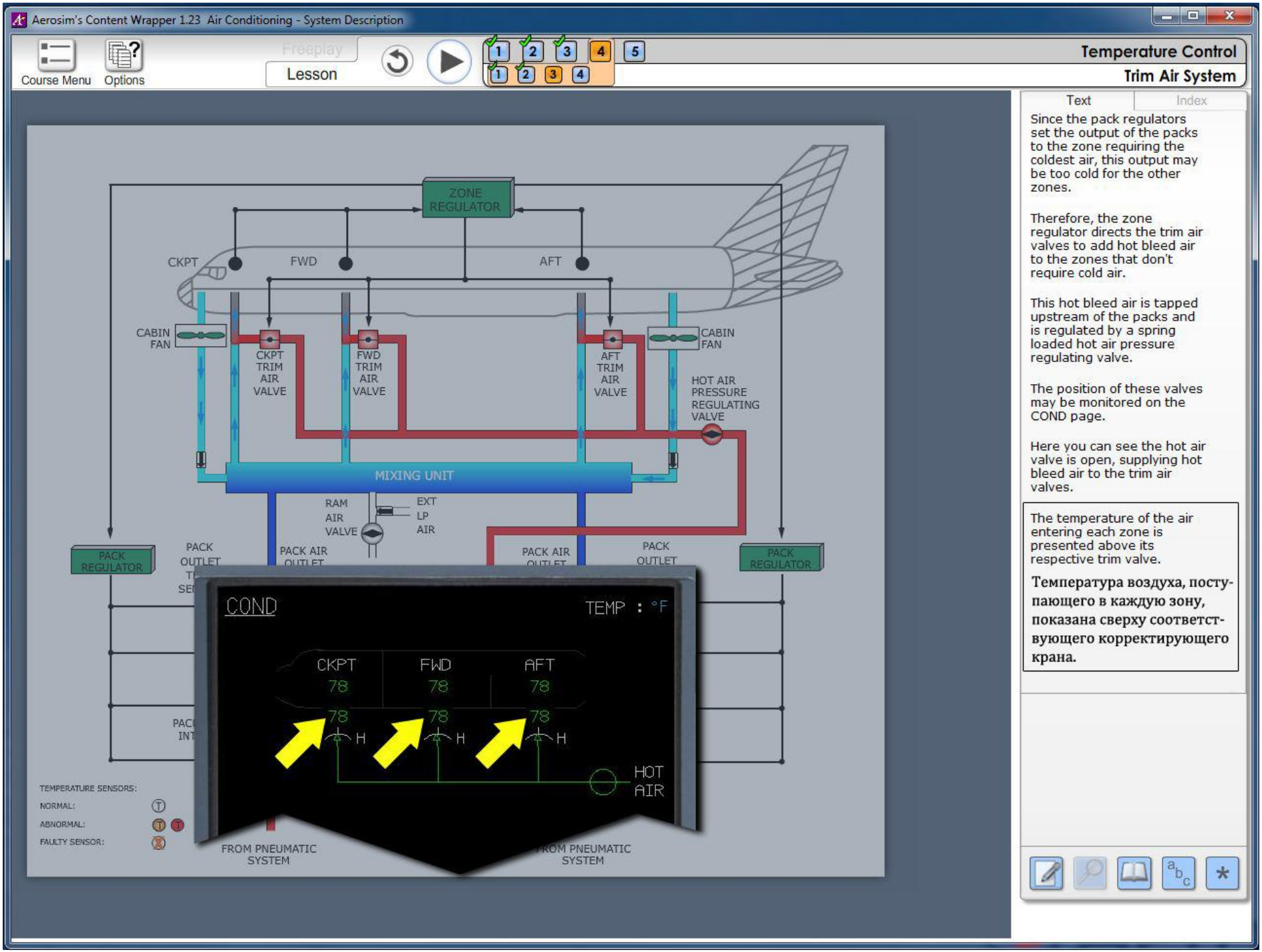

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Trim Air System
Text
Index
Since the pack regulators set the output of the packs to the zone requiring the coldest air, this output may be too cold for the other zones.
Тогда как регуляторы блоков устанавливают выход блоков на зону, требующую самого холодного воздуха, этот выход может оказаться слишком холодным для других зон.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

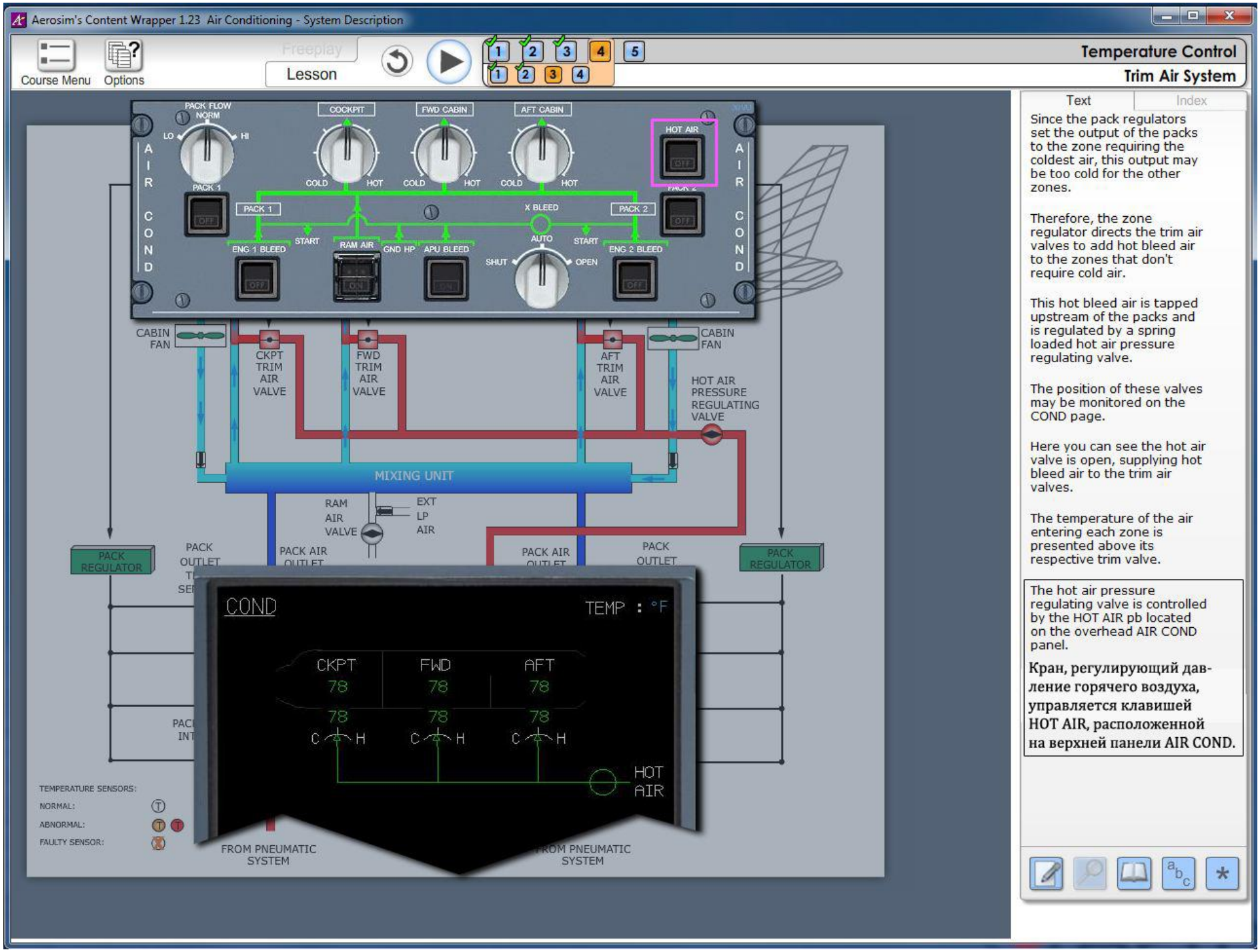

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Trim Air System
Text
Index
Since the pack regulators set the output of the packs to the zone requiring the coldest air, this output may be too cold for the other zones.
Therefore, the zone regulator directs the trim air valves to add hot bleed air to the zones that don't require cold air.
Поэтому зональный регулятор выдаёт команду корректирующим воздушным кранам добавить отобранный горячий воздух в зоны, которые не требуют холодного воздуха.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

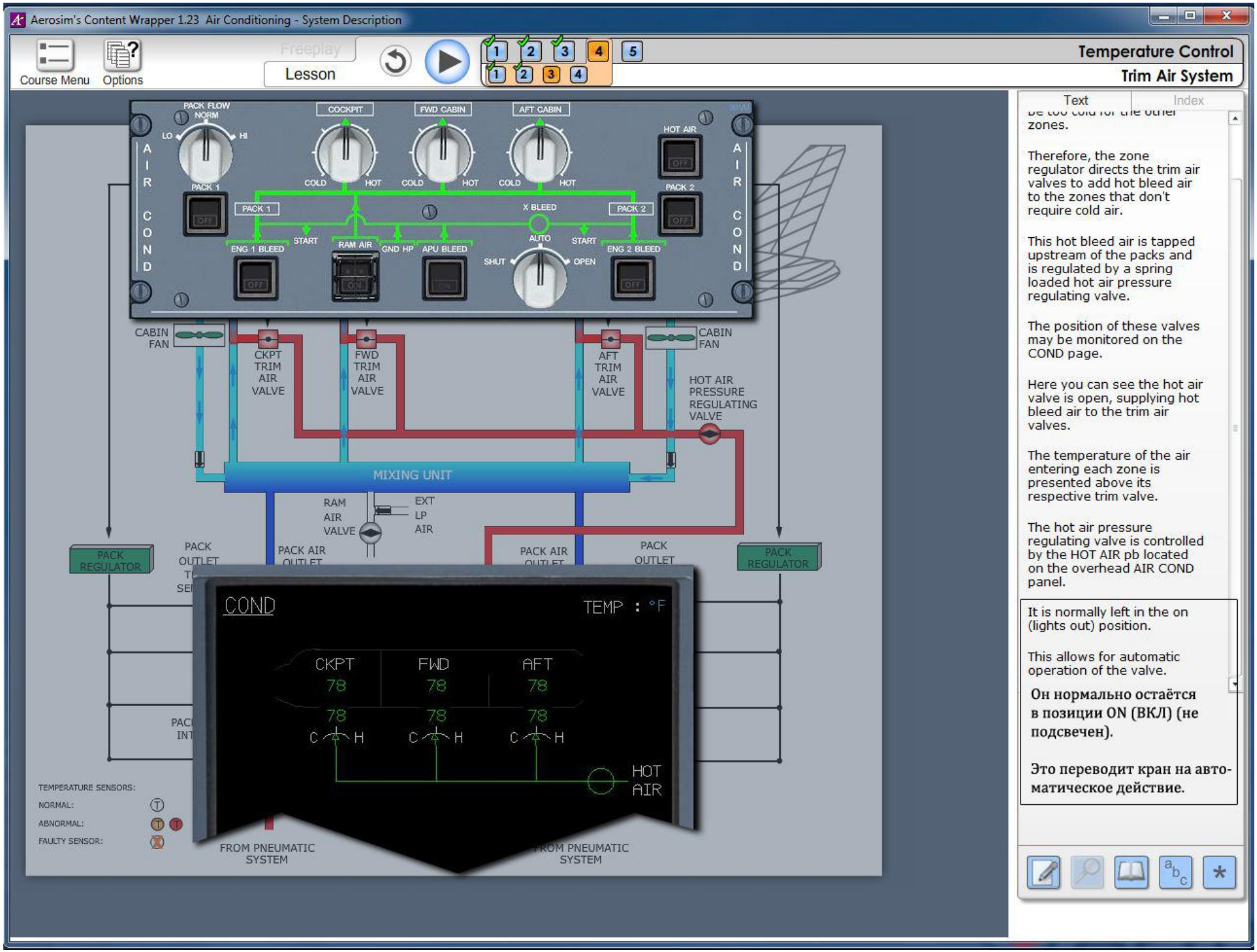

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Trim Air System
Text
Index
Since the pack regulators set the output of the packs to the zone requiring the coldest air, this output may be too cold for the other zones.
Therefore, the zone regulator directs the trim air valves to add hot bleed air to the zones that don't require cold air.
This hot bleed air is tapped upstream of the packs and is regulated by a spring loaded hot air pressure regulating valve.
Этот отобранный горячий воздух, забирается до блоков и его подача определяется подпружиненным краном, регулирующим давление горячего воздуха.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

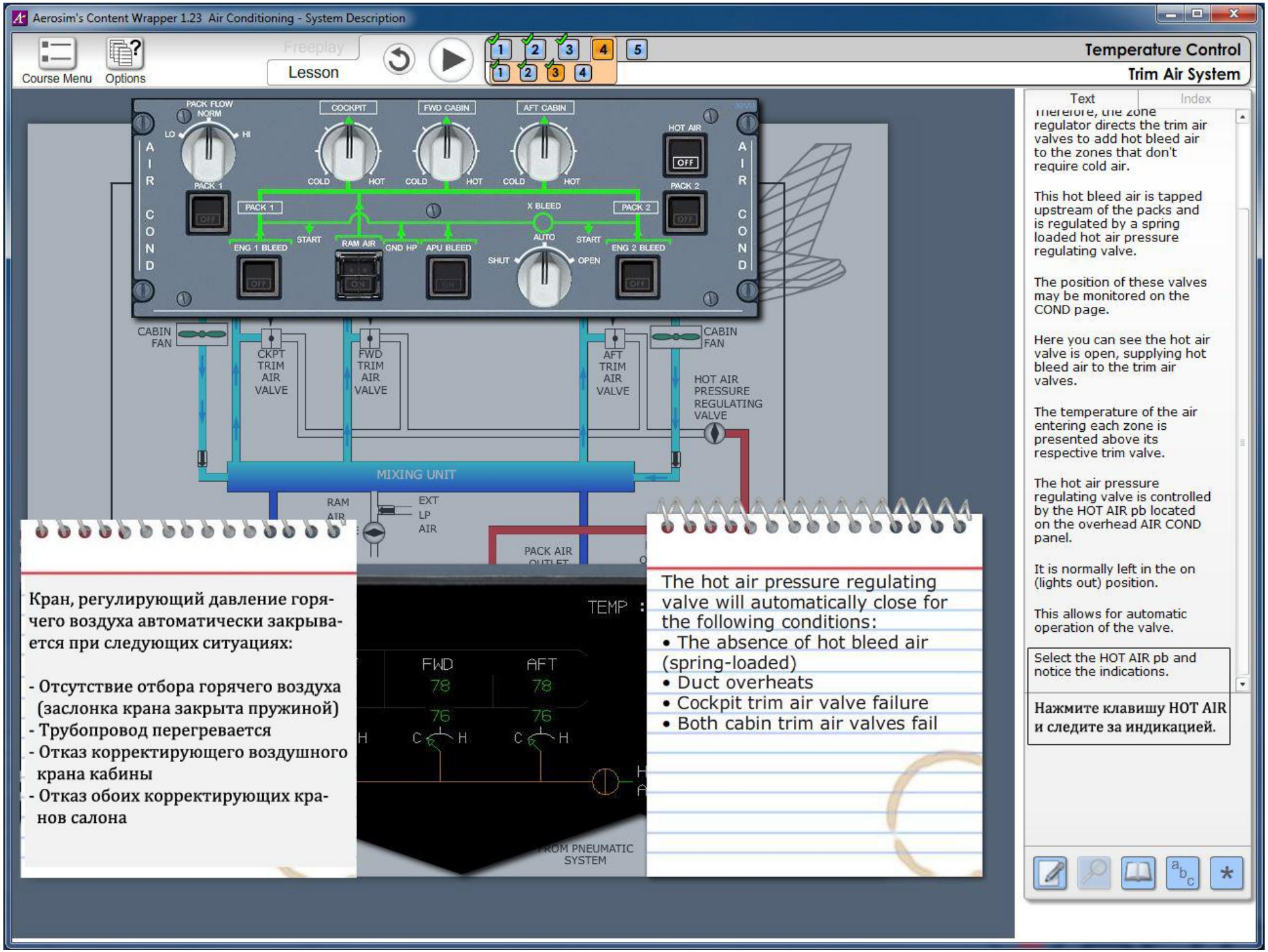

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Trim Air System
Text
Index
Since the pack regulators set the output of the packs to the zone requiring the coldest air, this output may be too cold for the other zones.
Therefore, the zone regulator directs the trim air valves to add hot bleed air to the zones that don't require cold air.
This hot bleed air is tapped upstream of the packs and is regulated by a spring loaded hot air pressure regulating valve.
The position of these valves may be monitored on the COND page.
Положение этих кранов может быть отслежена на странице COND.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET
PACK REGULATOR
COND
TEMP : °F
CKPT
FWD
AFT
78
78
78
78
78
78
C
H
C
H
C
H
HOT AIR
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

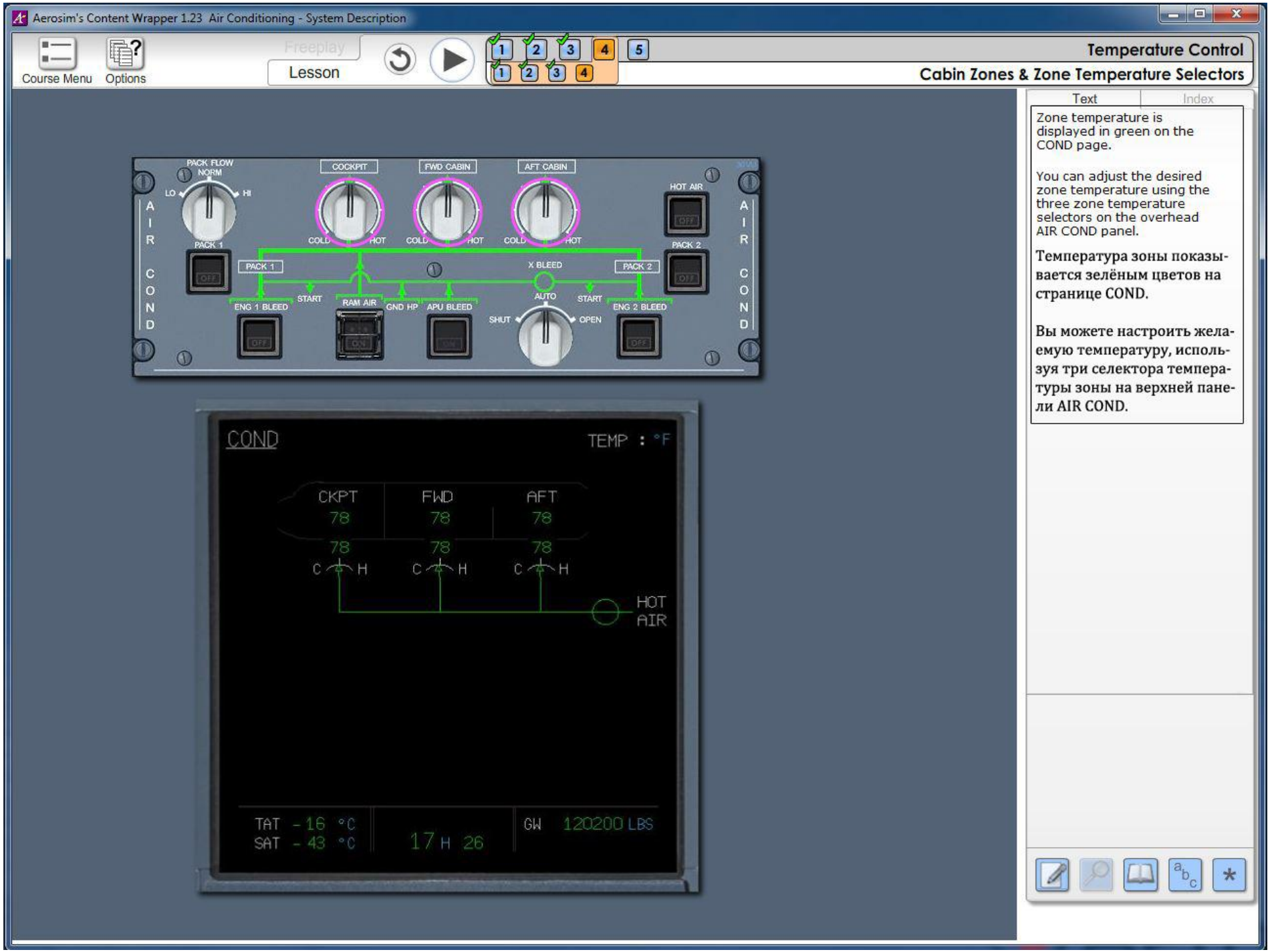

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Trim Air System
Text
Index
Since the pack regulators set the output of the packs to the zone requiring the coldest air, this output may be too cold for the other zones.
Therefore, the zone regulator directs the trim air valves to add hot bleed air to the zones that don't require cold air.
This hot bleed air is tapped upstream of the packs and is regulated by a spring loaded hot air pressure regulating valve.
The position of these valves may be monitored on the COND page.
Here you can see the hot air valve is open, supplying hot bleed air to the trim air valves.
Здесь Вы можете видеть, что кран горячего воздуха открыт, подавая отобранный горячий воздух к корректирующим воздушным кранам.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET
PACK REGULATOR
COND
TEMP : °F
CKPT
FWD
AFT
78
78
78
78
78
78
C H
C H
C H
HOT AIR
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

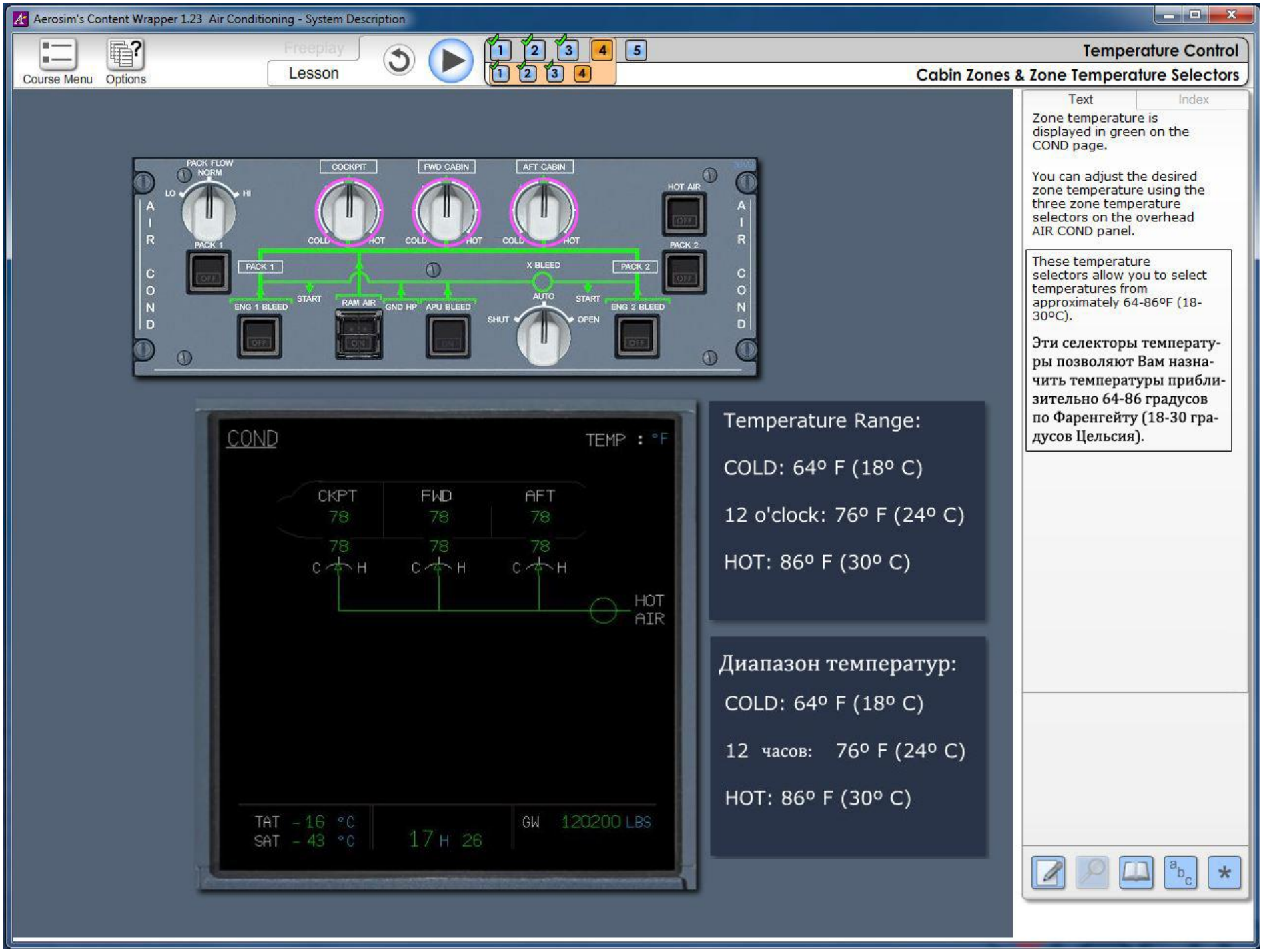

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Trim Air System
Text
Index
Since the pack regulators set the output of the packs to the zone requiring the coldest air, this output may be too cold for the other zones.
Therefore, the zone regulator directs the trim air valves to add hot bleed air to the zones that don't require cold air.
This hot bleed air is tapped upstream of the packs and is regulated by a spring loaded hot air pressure regulating valve.
The position of these valves may be monitored on the COND page.
Here you can see the hot air valve is open, supplying hot bleed air to the trim air valves.
The temperature of the air entering each zone is presented above its respective trim valve.
Температура воздуха, поступающего в каждую зону, показана сверху соответствующего корректирующего крана.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET
PACK REGULATOR
COND
TEMP : °F
CKPT
FWD
AFT
78
78
78
78
78
78
H
H
H
HOT AIR
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

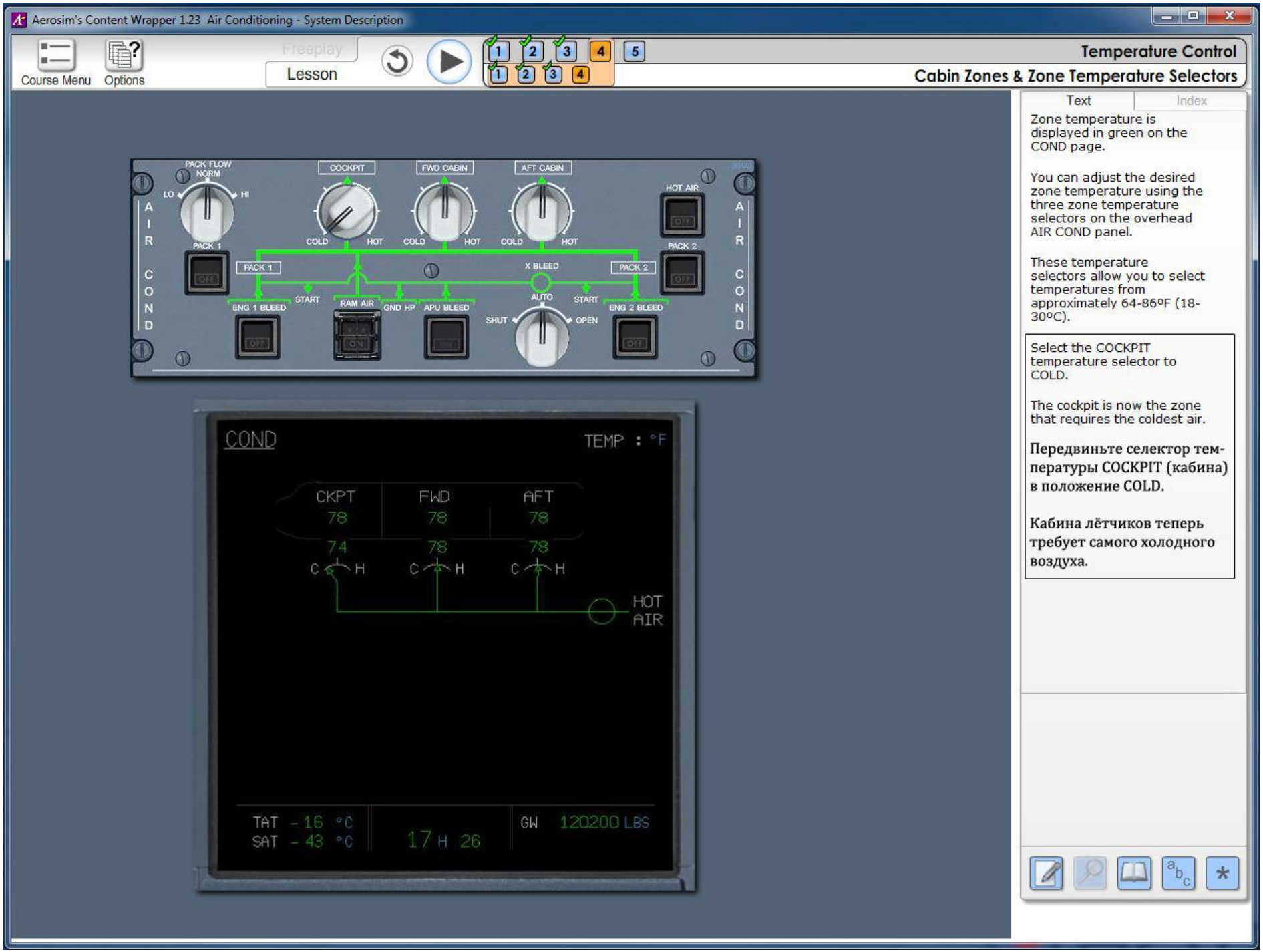

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Trim Air System
Text
Index
Since the pack regulators set the output of the packs to the zone requiring the coldest air, this output may be too cold for the other zones.
Therefore, the zone regulator directs the trim air valves to add hot bleed air to the zones that don't require cold air.
This hot bleed air is tapped upstream of the packs and is regulated by a spring loaded hot air pressure regulating valve.
The position of these valves may be monitored on the COND page.
Here you can see the hot air valve is open, supplying hot bleed air to the trim air valves.
The temperature of the air entering each zone is presented above its respective trim valve.
The hot air pressure regulating valve is controlled by the HOT AIR pb located on the overhead AIR COND panel.
Кран, регулирующий давление горячего воздуха, управляется клавишей HOT AIR, расположенной на верхней панели AIR COND.
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
X BLEED
AUTO
START
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
SHUT
OPEN
ENG 2 BLEED
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET
PACK AIR OUTLET
COND
TEMP : °F
CKPT
FWD
AFT
78
C
H
HOT AIR
FROM PNEUMATIC SYSTEM
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:


Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Trim Air System
Text
Index
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
HOT AIR
COLD
HOT
PACK 1
PACK 2
X BLEED
AUTO
SHUT
OPEN
START
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
ENG 2 BLEED
AIR COND
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET
PACK AIR OUTLET
COND
TEMP : °F
CKPT
FWD
AFT
78
C
H
HOT AIR
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
zones.
Therefore, the zone regulator directs the trim air valves to add hot bleed air to the zones that don't require cold air.
This hot bleed air is tapped upstream of the packs and is regulated by a spring loaded hot air pressure regulating valve.
The position of these valves may be monitored on the COND page.
Here you can see the hot air valve is open, supplying hot bleed air to the trim air valves.
The temperature of the air entering each zone is presented above its respective trim valve.
The hot air pressure regulating valve is controlled by the HOT AIR pb located on the overhead AIR COND panel.
It is normally left in the on (lights out) position.
This allows for automatic operation of the valve.
Он нормально остаётся в позиции ON (ВКЛ) (не подсвечен).
Это переводит кран на автоматическое действие.


Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Trim Air System
Text
Index
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
OFF
PACK 1
PACK 2
X BLEED
AUTO
SHUT
OPEN
START
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
ENG 2 BLEED
AIR COND
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR
EXT LP AIR
PACK AIR OUTLET
TEMP
FWD
AFT
78
76
FROM PNEUMATIC SYSTEM
Кран, регулирующий давление горячего воздуха автоматически закрывается при следующих ситуациях:
- Отсутствие отбора горячего воздуха (заслонка крана закрыта пружиной)
- Трубопровод перегревается
- Отказ корректирующего воздушного крана кабины
- Отказ обоих корректирующих кранов салона
The hot air pressure regulating valve will automatically close for the following conditions:
• The absence of hot bleed air (spring-loaded)
• Duct overheats
• Cockpit trim air valve failure
• Both cabin trim air valves fail
regulator directs the trim air valves to add hot bleed air to the zones that don't require cold air.
This hot bleed air is tapped upstream of the packs and is regulated by a spring loaded hot air pressure regulating valve.
The position of these valves may be monitored on the COND page.
Here you can see the hot air valve is open, supplying hot bleed air to the trim air valves.
The temperature of the air entering each zone is presented above its respective trim valve.
The hot air pressure regulating valve is controlled by the HOT AIR pb located on the overhead AIR COND panel.
It is normally left in the on (lights out) position.
This allows for automatic operation of the valve.
Select the HOT AIR pb and notice the indications.
Нажмите клавишу HOT AIR и следите за индикацией.


Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Cabin Zones & Zone Temperature Selectors
Text
Index
Zone temperature is displayed in green on the COND page.
You can adjust the desired zone temperature using the three zone temperature selectors on the overhead AIR COND panel.
Температура зоны показывается зелёным цветов на странице COND.
Вы можете настроить желаемую температуру, используя три селектора температуры зоны на верхней панели AIR COND.
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
X BLEED
ENG 1 BLEED
START
RAM AIR
GND HP
APU BLEED
AUTO
SHUT
OPEN
ENG 2 BLEED
AIR COND
COND
TEMP : °F
CKPT
FWD
AFT
78
C
H
HOT AIR
TAT -16 °C
SAT -43 °C
17 H 26
GW 120200 LBS


Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Cabin Zones & Zone Temperature Selectors
Text
Index
Zone temperature is displayed in green on the COND page.
You can adjust the desired zone temperature using the three zone temperature selectors on the overhead AIR COND panel.
These temperature selectors allow you to select temperatures from approximately 64-86ºF (18-30ºC).
Эти селекторы температуры позволяют Вам назначить температуры приблизительно 64-86 градусов по Фаренгейту (18-30 градусов Цельсия).
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
HOT AIR
COLD
HOT
PACK 1
PACK 2
X BLEED
AUTO
SHUT
OPEN
START
RAM AIR
GND HP
APU BLEED
ENG 1 BLEED
ENG 2 BLEED
AIR COND
COND
TEMP : °F
CKPT
FWD
AFT
78
HOT AIR
TAT -16 °C
SAT -43 °C
17 H 26
GW 120200 LBS
Temperature Range:
COLD: 64º F (18º C)
12 o'clock: 76º F (24º C)
HOT: 86º F (30º C)
Диапазон температур:
COLD: 64º F (18º C)
12 часов: 76º F (24º C)
HOT: 86º F (30º C)


Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
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Zone temperature is displayed in green on the COND page.
You can adjust the desired zone temperature using the three zone temperature selectors on the overhead AIR COND panel.
These temperature selectors allow you to select temperatures from approximately 64-86ºF (18-30ºC).
Select the COCKPIT temperature selector to COLD.
The cockpit is now the zone that requires the coldest air.
Передвиньте селектор температуры COCKPIT (кабина) в положение COLD.
Кабина лётчиков теперь требует самого холодного воздуха.
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
HOT AIR
COLD
HOT
PACK 1
PACK 2
X BLEED
ENG 1 BLEED
START
RAM AIR
GND HP
APU BLEED
AUTO
SHUT
OPEN
ENG 2 BLEED
COND
TEMP : °F
CKPT
FWD
AFT
78
74
TAT - 16 °C
SAT - 43 °C
17 H 26
GW 120200 LBS

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description

Course Menu Options Freeplay Lesson

Temperature Control

Cabin Zones & Zone Temperature Selectors





Text | Index

Zone temperature is displayed in green on the COND page.

You can adjust the desired zone temperature using the three zone temperature selectors on the overhead AIR COND panel.

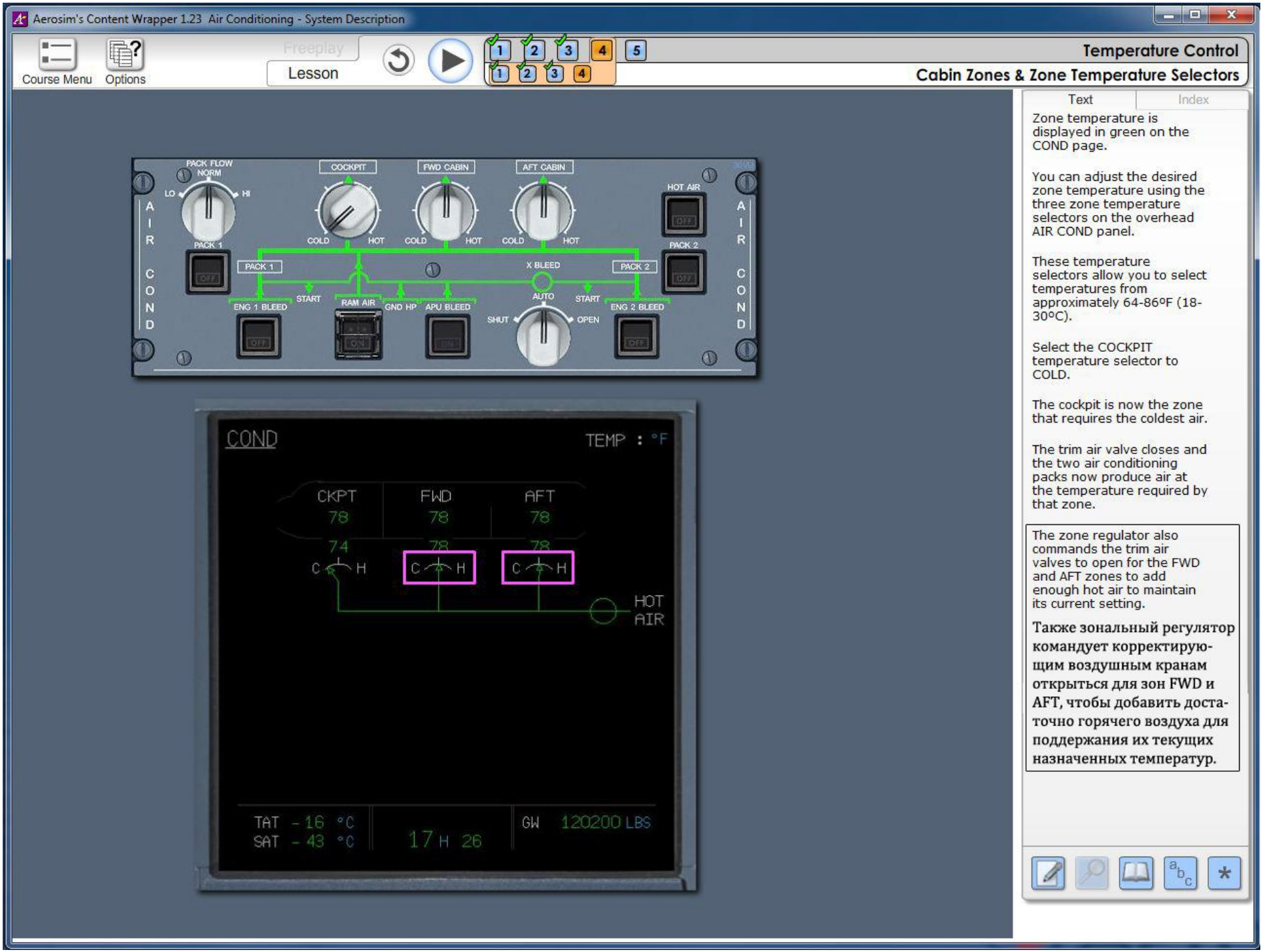
These temperature selectors allow you to select temperatures from approximately 64-86ºF (18-30ºC).

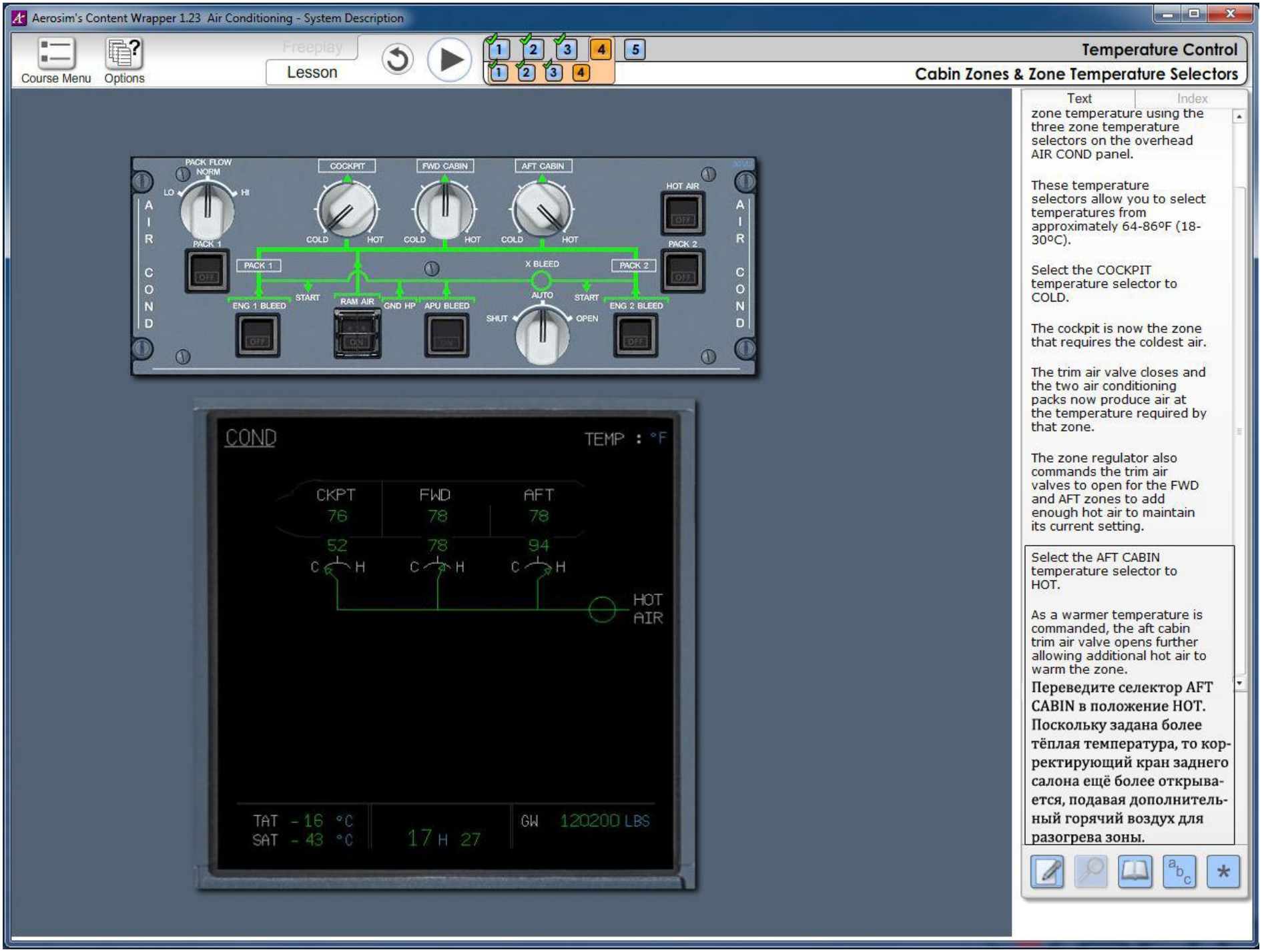
Select the COCKPIT temperature selector to COLD.

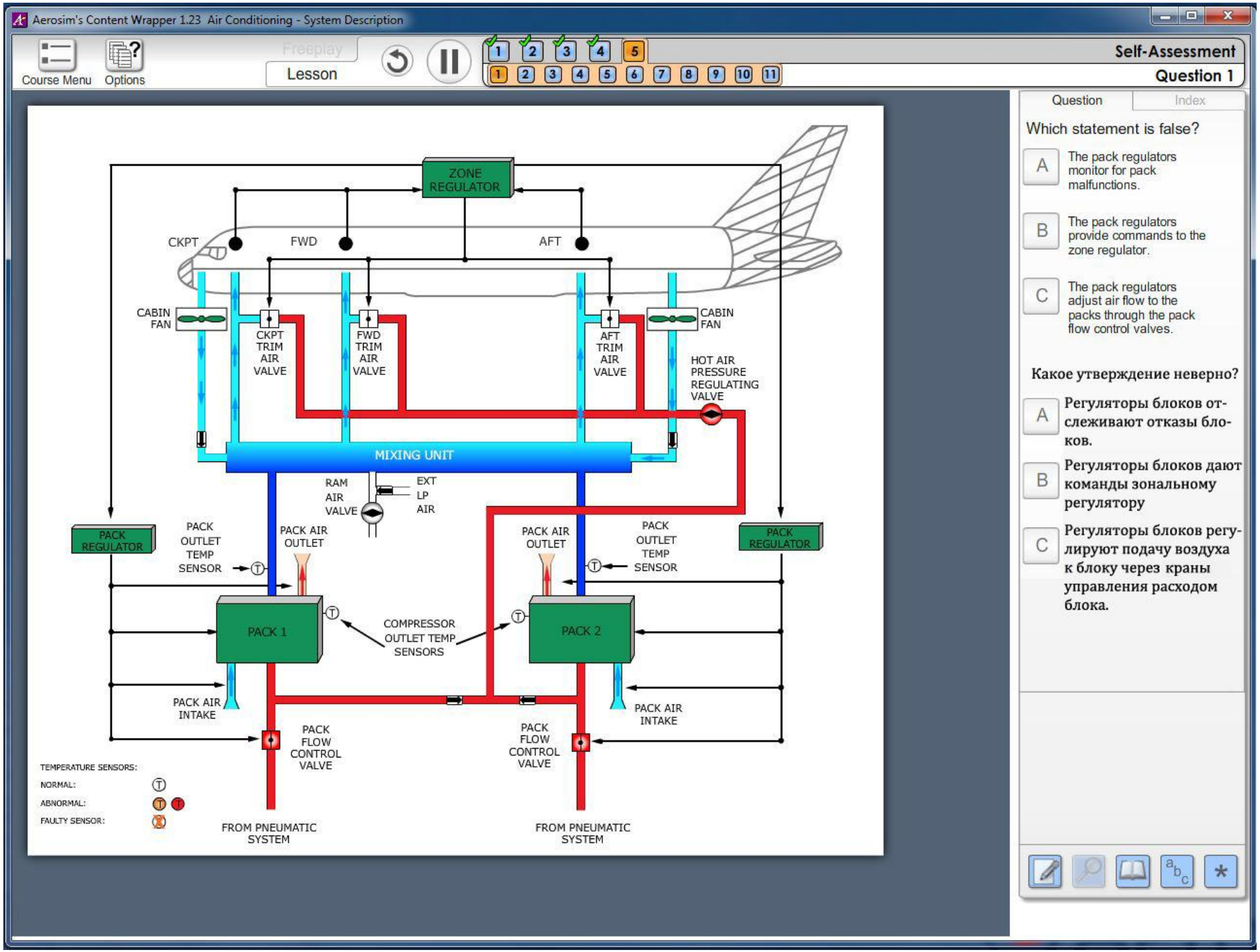
The cockpit is now the zone that requires the coldest air.

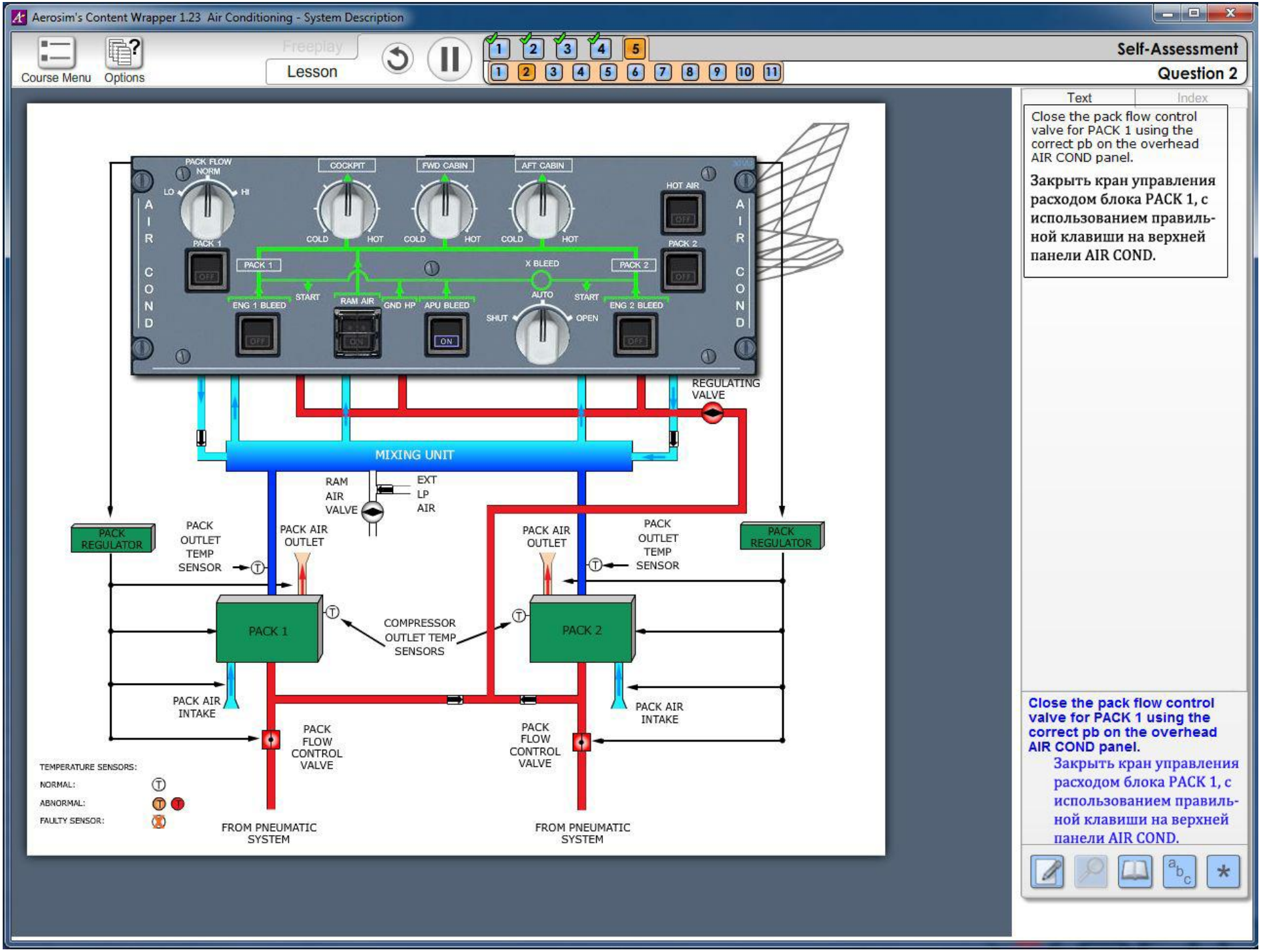
The trim air valve closes and the two air conditioning packs now produce air at the temperature required by that zone.

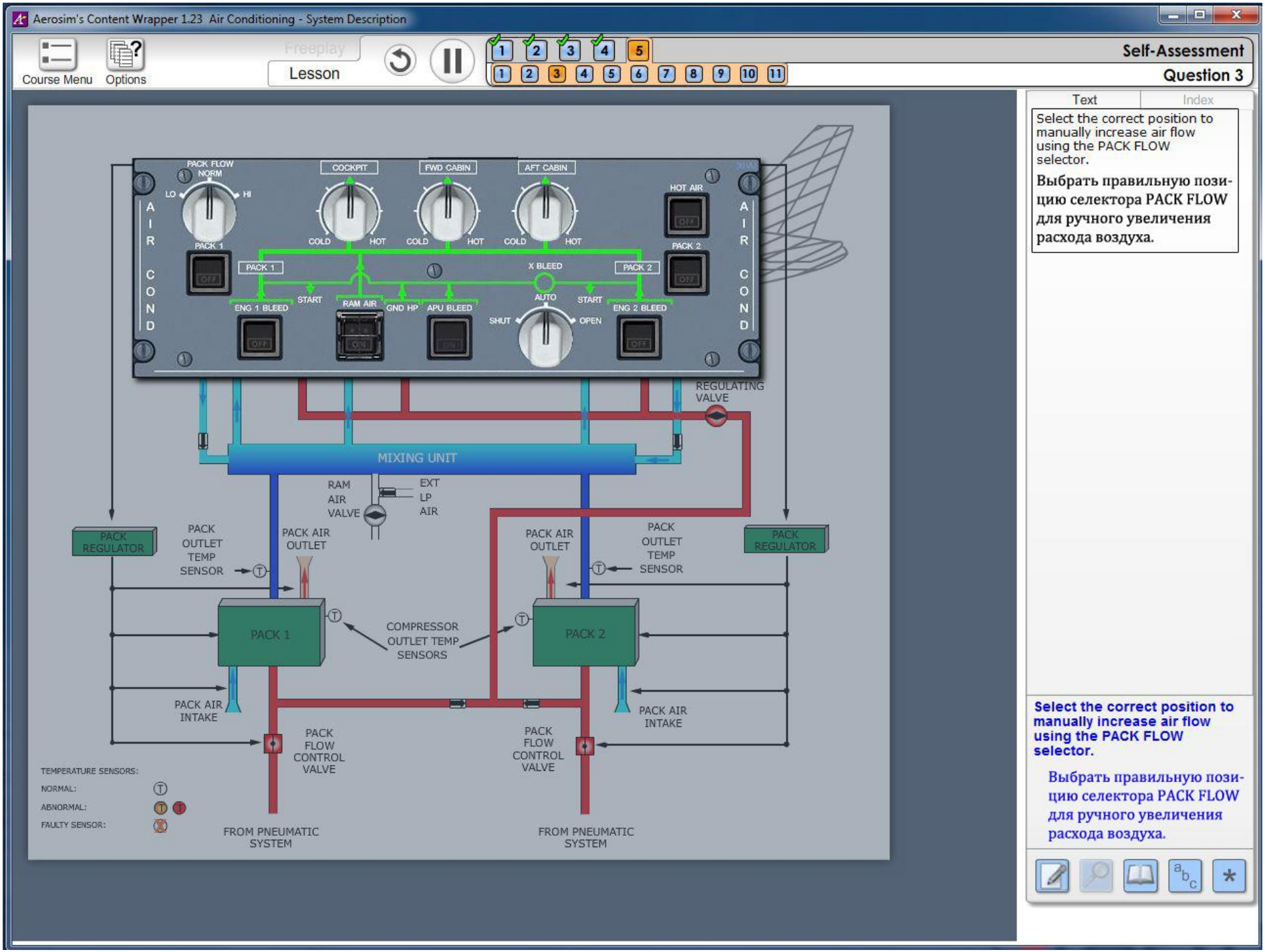
Корректирующий воздушный кран закрывается и два блока кондиционирования теперь подают воздух с температурой, потребной для этой зоны.

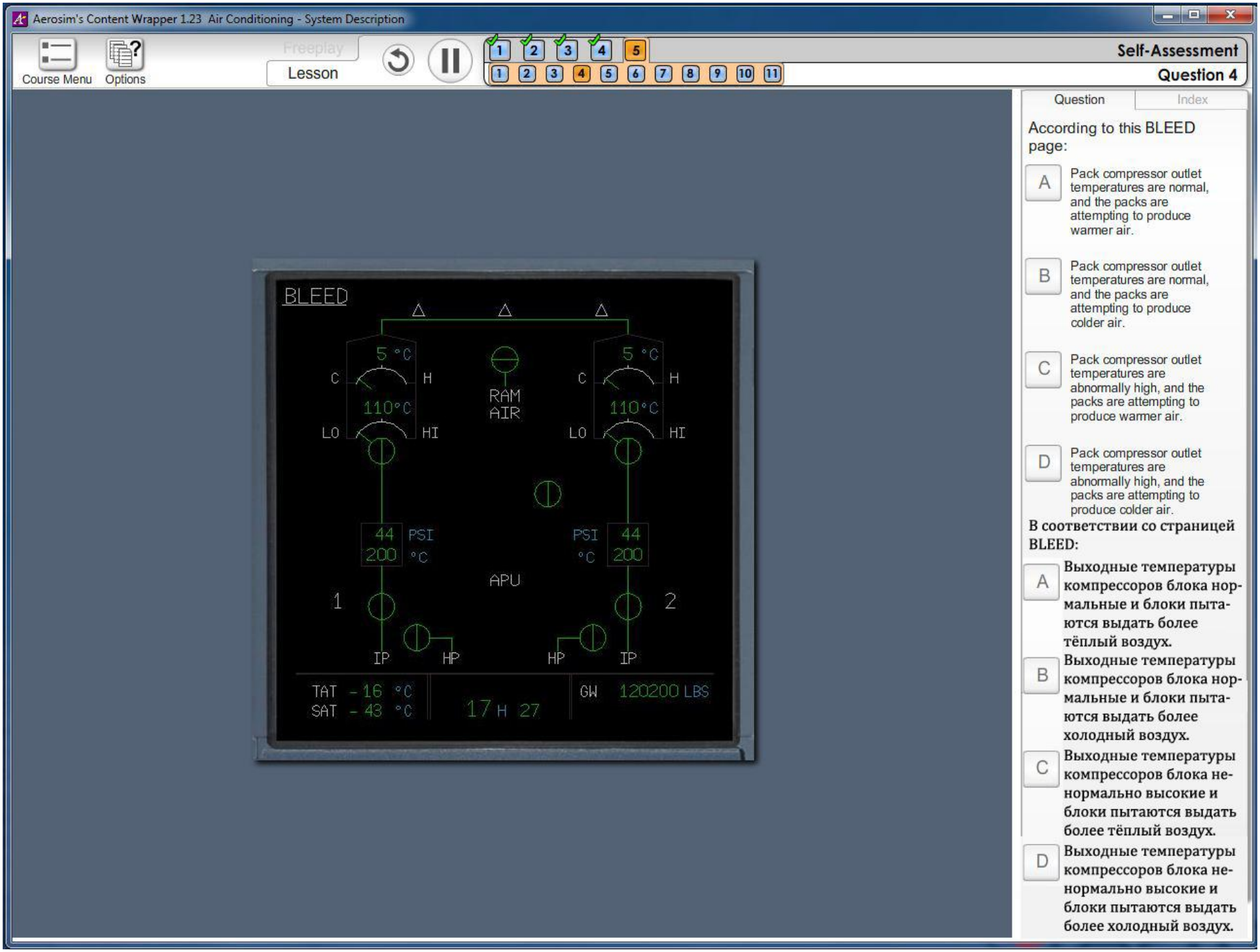

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
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Zone temperature is displayed in green on the COND page.
You can adjust the desired zone temperature using the three zone temperature selectors on the overhead AIR COND panel.
These temperature selectors allow you to select temperatures from approximately 64-86ºF (18-30ºC).
Select the COCKPIT temperature selector to COLD.
The cockpit is now the zone that requires the coldest air.
The trim air valve closes and the two air conditioning packs now produce air at the temperature required by that zone.
The zone regulator also commands the trim air valves to open for the FWD and AFT zones to add enough hot air to maintain its current setting.
Также зональный регулятор командует корректирующим воздушным кранам открыться для зон FWD и AFT, чтобы добавить достаточно горячего воздуха для поддержания их текущих назначенных температур.
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
X BLEED
AUTO
START
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
SHUT
OPEN
ENG 2 BLEED
COND
TEMP : °F
CKPT
FWD
AFT
78
74
HOT AIR
TAT - 16 °C
SAT - 43 °C
17 H 26
GW 120200 LBS

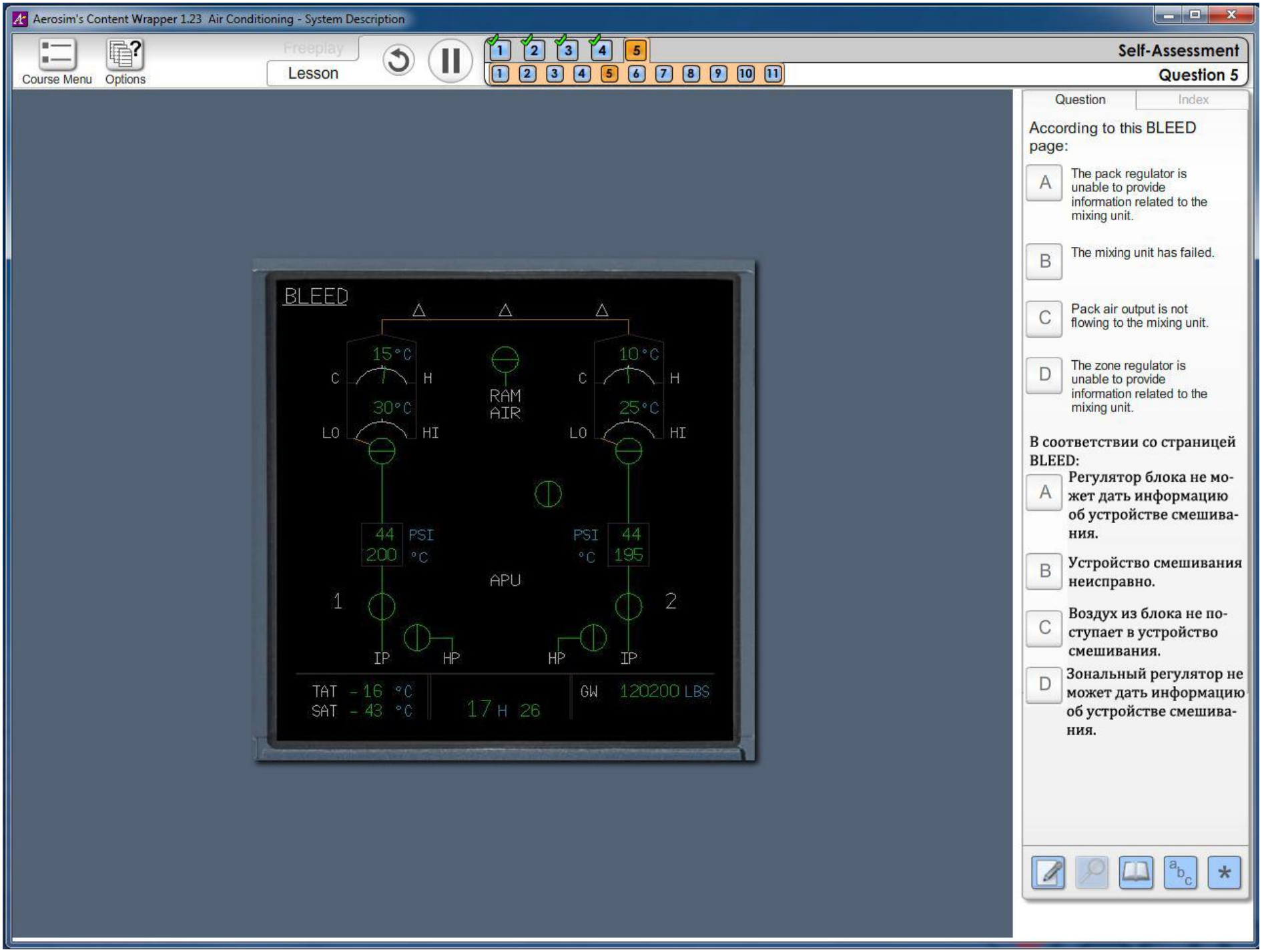

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Cabin Zones & Zone Temperature Selectors
Text
Index
zone temperature using the three zone temperature selectors on the overhead AIR COND panel.
These temperature selectors allow you to select temperatures from approximately 64-86ºF (18-30ºC).
Select the COCKPIT temperature selector to COLD.
The cockpit is now the zone that requires the coldest air.
The trim air valve closes and the two air conditioning packs now produce air at the temperature required by that zone.
The zone regulator also commands the trim air valves to open for the FWD and AFT zones to add enough hot air to maintain its current setting.
Select the AFT CABIN temperature selector to HOT.
As a warmer temperature is commanded, the aft cabin trim air valve opens further allowing additional hot air to warm the zone.
Переведите селектор AFT CABIN в положение HOT. Поскольку задана более тёплая температура, то корректирующий кран заднего салона ещё более открывается, подавая дополнительный горячий воздух для разогрева зоны.
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
X BLEED
AUTO
SHUT
OPEN
START
ENG 1 BLEED
ENG 2 BLEED
RAM AIR
GND HP
APU BLEED
COND
TEMP : °F
CKPT
FWD
AFT
76
78
78
52
78
94
HOT AIR
TAT -16 °C
SAT -43 °C
17 H 27
GW 120200 LBS

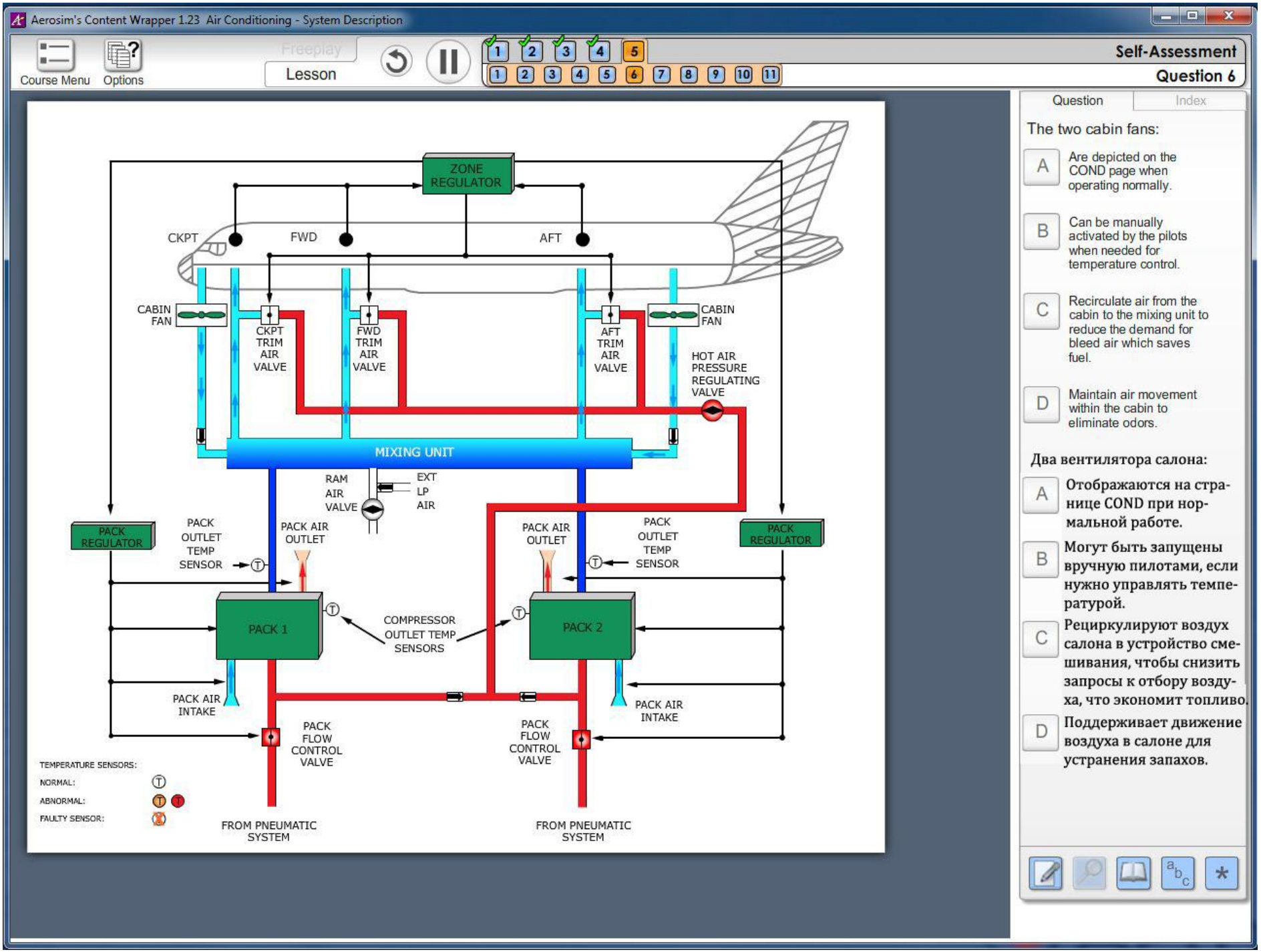

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Self-Assessment
Question 1
Question
Index
Which statement is false?
A
The pack regulators monitor for pack malfunctions.
B
The pack regulators provide commands to the zone regulator.
C
The pack regulators adjust air flow to the packs through the pack flow control valves.
Какое утверждение неверно?
A
Регуляторы блоков отслеживают отказы блоков.
B
Регуляторы блоков дают команды зональному регулятору
C
Регуляторы блоков регулируют подачу воздуха к блоку через краны управления расходом блока.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

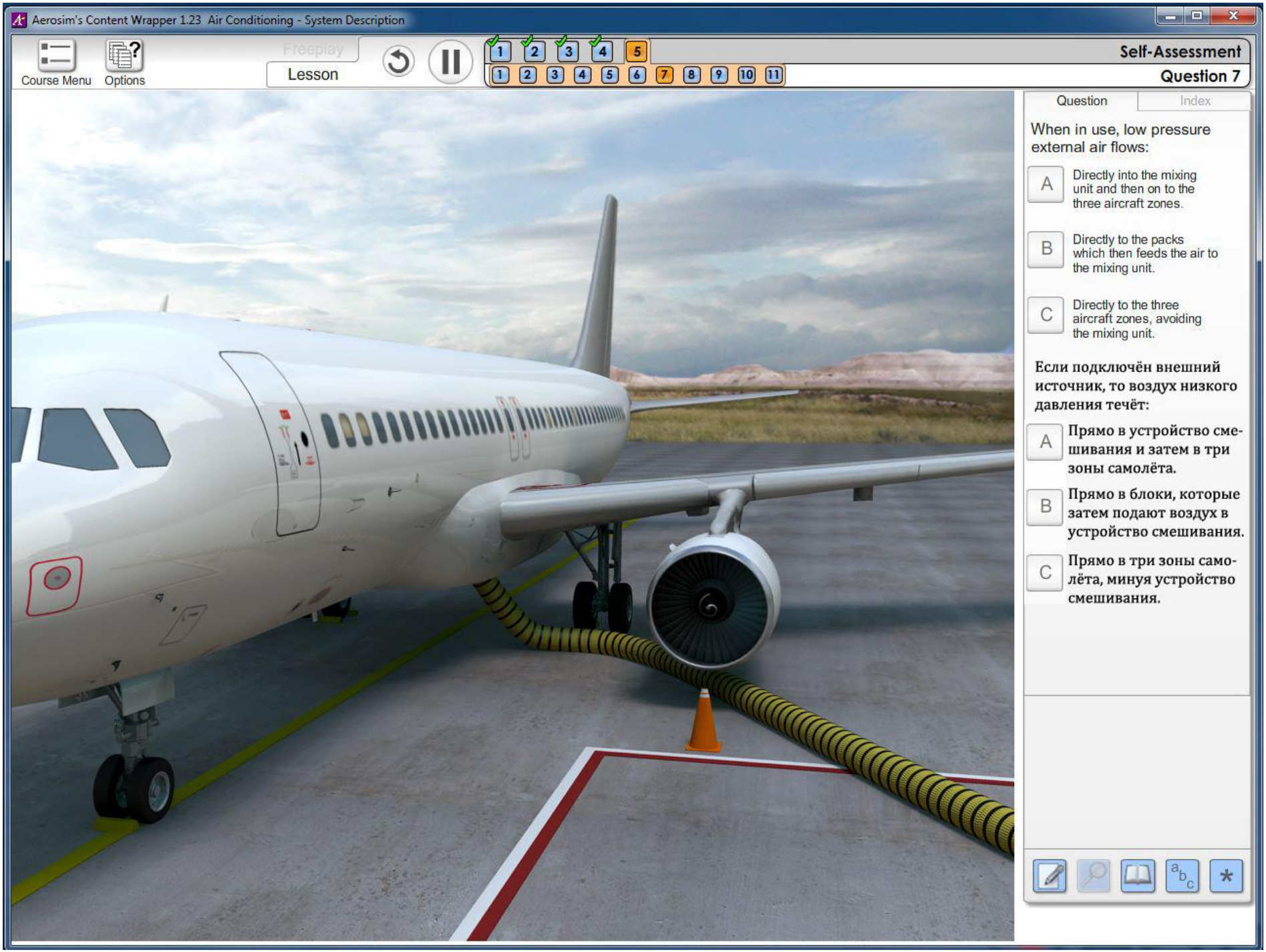

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Self-Assessment
Question 2
Text
Index
Close the pack flow control valve for PACK 1 using the correct pb on the overhead AIR COND panel.
Закрыть кран управления расходом блока PACK 1, с использованием правильной клавиши на верхней панели AIR COND.
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
HOT AIR
COLD
HOT
PACK 1
PACK 2
X BLEED
AUTO
START
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
ENG 2 BLEED
SHUT
OPEN
REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
COMPRESSOR OUTLET TEMP SENSORS
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
Close the pack flow control valve for PACK 1 using the correct pb on the overhead AIR COND panel.
Закрыть кран управления расходом блока PACK 1, с использованием правильной клавиши на верхней панели AIR COND.

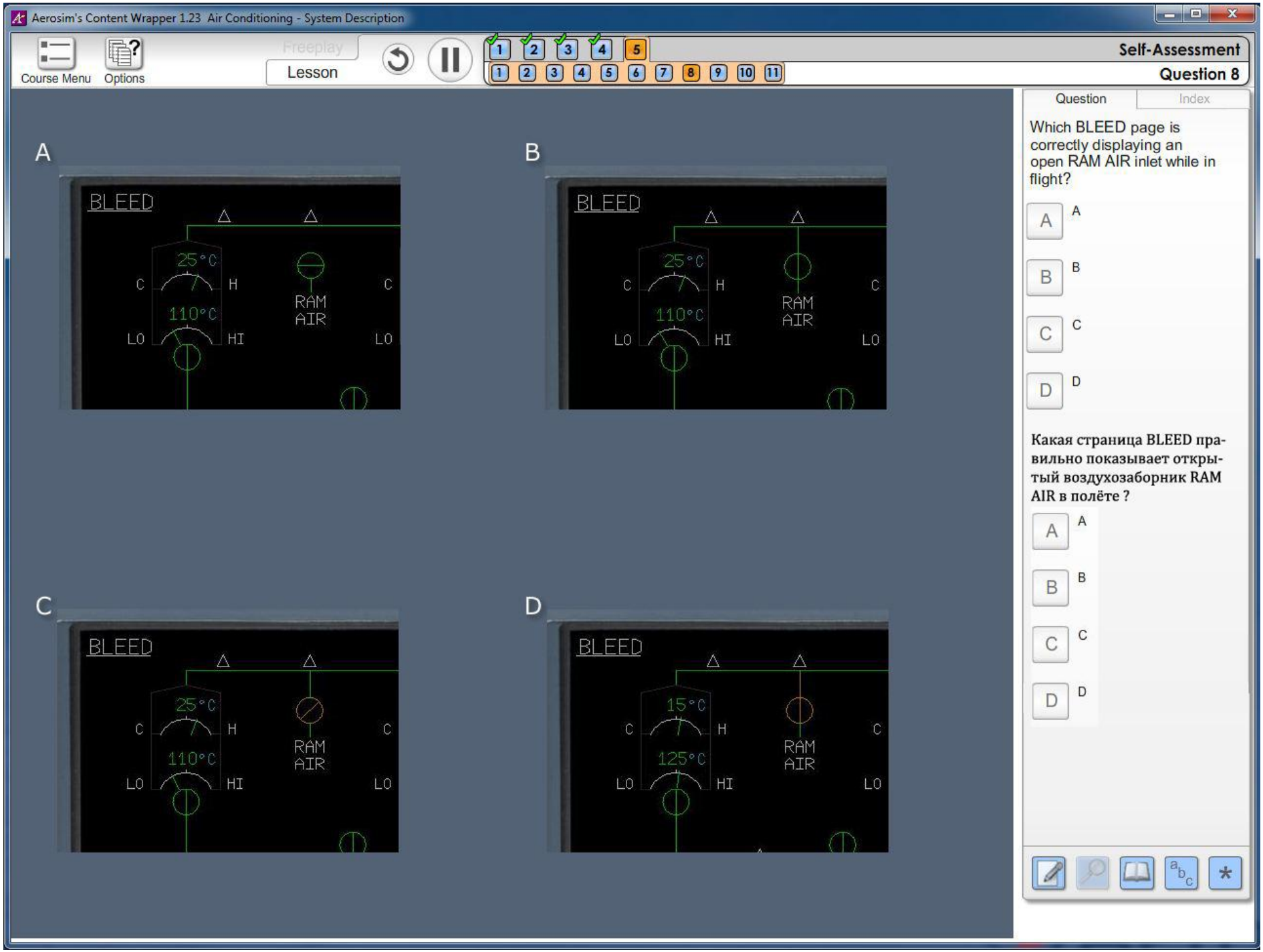

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Self-Assessment
Question 3
Text
Index
Select the correct position to manually increase air flow using the PACK FLOW selector.
Выбрать правильную позицию селектора PACK FLOW для ручного увеличения расхода воздуха.
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
OFF
PACK 1
PACK 2
X BLEED
START
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
AUTO
SHUT
OPEN
ENG 2 BLEED
AIR COND
REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
COMPRESSOR OUTLET TEMP SENSORS
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
Select the correct position to manually increase air flow using the PACK FLOW selector.
Выбрать правильную позицию селектора PACK FLOW для ручного увеличения расхода воздуха.

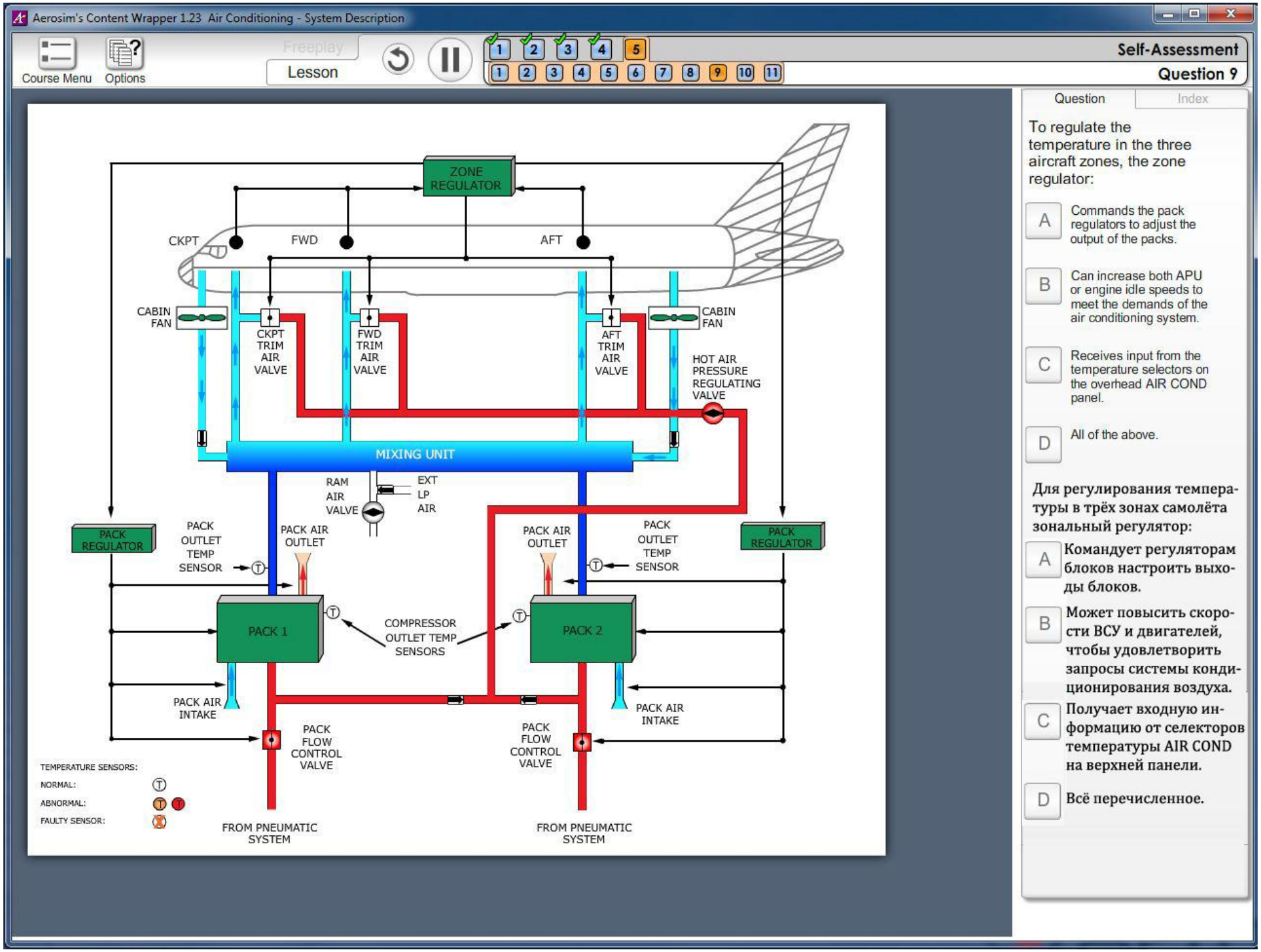

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Self-Assessment
Question 4
Question
Index
According to this BLEED page:
A
Pack compressor outlet temperatures are normal, and the packs are attempting to produce warmer air.
B
Pack compressor outlet temperatures are normal, and the packs are attempting to produce colder air.
C
Pack compressor outlet temperatures are abnormally high, and the packs are attempting to produce warmer air.
D
Pack compressor outlet temperatures are abnormally high, and the packs are attempting to produce colder air.
В соответствии со страницей BLEED:
A
Выходные температуры компрессоров блока нормальные и блоки пытаются выдать более тёплый воздух.
B
Выходные температуры компрессоров блока нормальные и блоки пытаются выдать более холодный воздух.
C
Выходные температуры компрессоров блока ненормально высокие и блоки пытаются выдать более тёплый воздух.
D
Выходные температуры компрессоров блока ненормально высокие и блоки пытаются выдать более холодный воздух.
BLEED
5 °C
C
H
110°C
LO
HI
RAM AIR
44 PSI
200 °C
APU
1
2
IP
HP
TAT -16 °C
SAT -43 °C
17 H 27
GW 120200 LBS

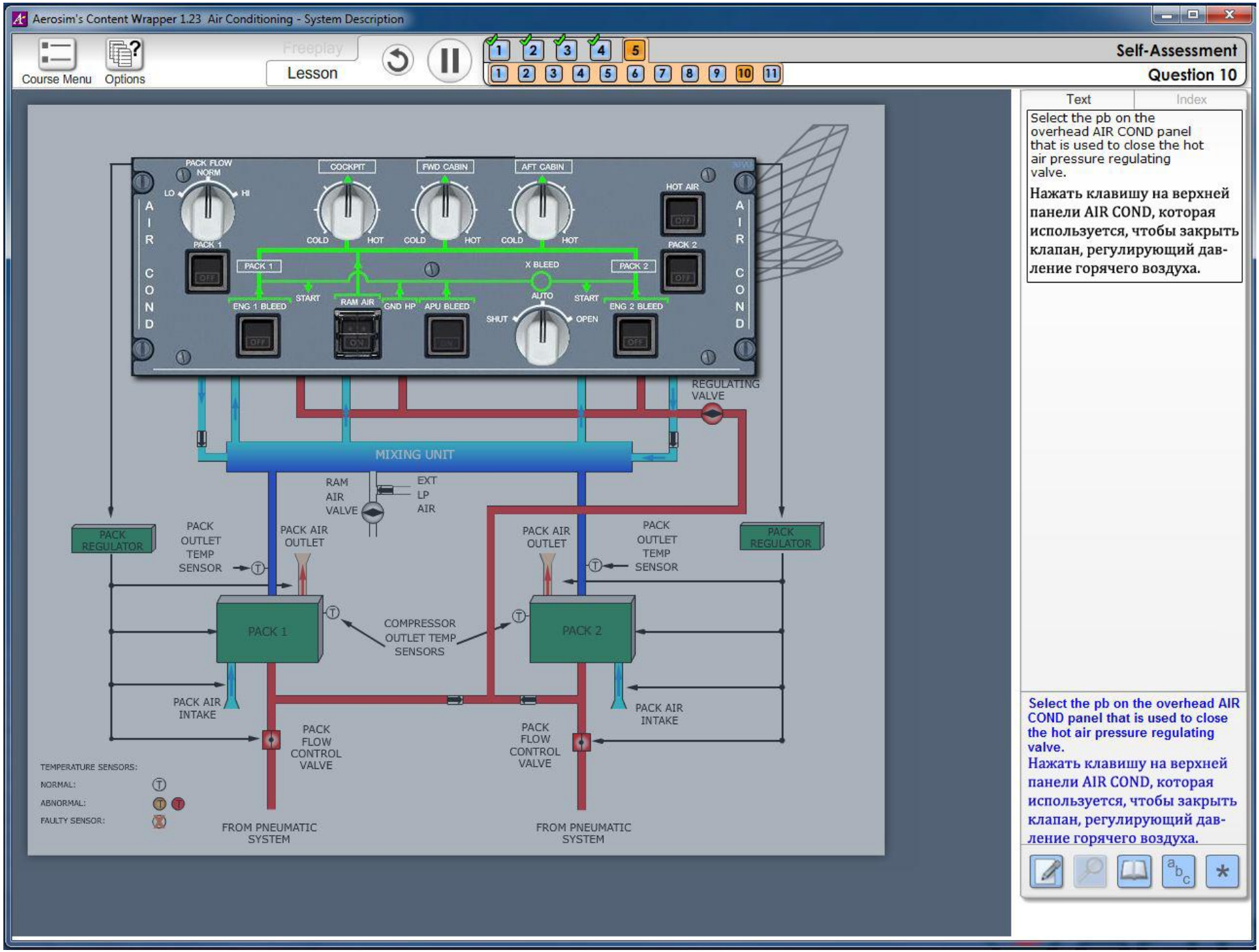

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Self-Assessment
Question 5
Question
Index
According to this BLEED page:
A The pack regulator is unable to provide information related to the mixing unit.
B The mixing unit has failed.
C Pack air output is not flowing to the mixing unit.
D The zone regulator is unable to provide information related to the mixing unit.
В соответствии со страницей BLEED:
A Регулятор блока не может дать информацию об устройстве смешивания.
B Устройство смешивания неисправно.
C Воздух из блока не поступает в устройство смешивания.
D Зональный регулятор не может дать информацию об устройстве смешивания.
BLEED
15 °C
30 °C
10 °C
25 °C
C
H
LO
HI
RAM AIR
44 PSI
200 °C
44 PSI
195 °C
APU
1
2
IP
HP
TAT - 16 °C
SAT - 43 °C
17 H 26
GW 120200 LBS

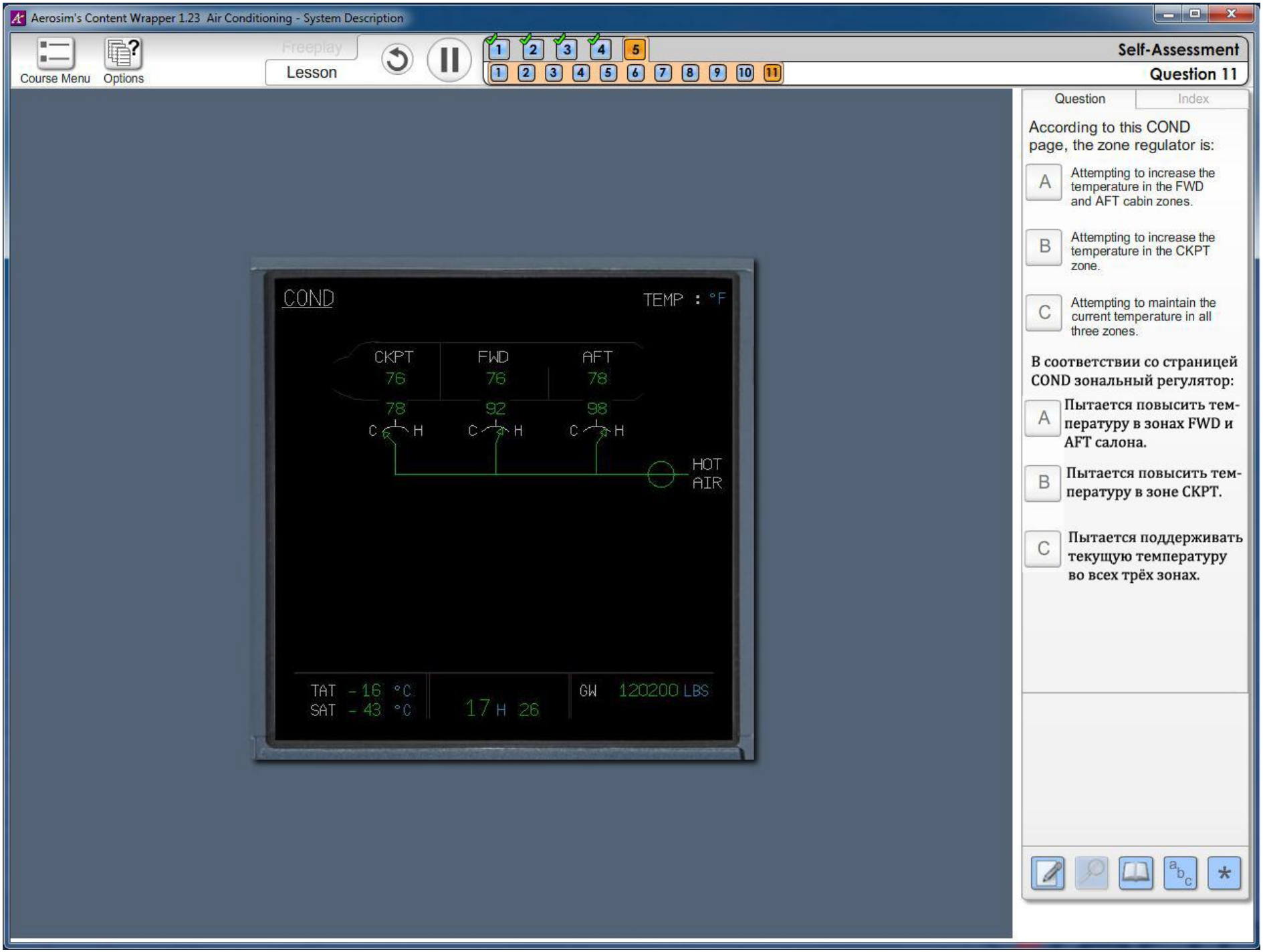

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Self-Assessment
Question 6
Question
Index
The two cabin fans:
A
Are depicted on the COND page when operating normally.
B
Can be manually activated by the pilots when needed for temperature control.
C
Recirculate air from the cabin to the mixing unit to reduce the demand for bleed air which saves fuel.
D
Maintain air movement within the cabin to eliminate odors.
Два вентилятора салона:
A
Отображаются на странице COND при нормальной работе.
B
Могут быть запущены вручную пилотами, если нужно управлять температурой.
C
Рециркулируют воздух салона в устройство смешивания, чтобы снизить запросы к отбору воздуха, что экономит топливо.
D
Поддерживает движение воздуха в салоне для устранения запахов.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM


Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Self-Assessment
Question 7
Question
Index
When in use, low pressure external air flows:
A
Directly into the mixing unit and then on to the three aircraft zones.
B
Directly to the packs which then feeds the air to the mixing unit.
C
Directly to the three aircraft zones, avoiding the mixing unit.
Если подключён внешний источник, то воздух низкого давления течёт:
A
Прямо в устройство смешивания и затем в три зоны самолёта.
B
Прямо в блоки, которые затем подают воздух в устройство смешивания.
C
Прямо в три зоны самолёта, минуя устройство смешивания.


Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Self-Assessment
Question 8
Question
Index
Which BLEED page is correctly displaying an open RAM AIR inlet while in flight?
A
B
C
D
Какая страница BLEED правильно показывает открытый воздухозаборник RAM AIR в полёте ?
A
B
C
D
BLEED
25°C
110°C
15°C
125°C
C
H
LO
HI
RAM AIR


Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Self-Assessment
Question 9
Question
Index
To regulate the temperature in the three aircraft zones, the zone regulator:
A Commands the pack regulators to adjust the output of the packs.
B Can increase both APU or engine idle speeds to meet the demands of the air conditioning system.
C Receives input from the temperature selectors on the overhead AIR COND panel.
D All of the above.
Для регулирования температуры в трёх зонах самолёта зональный регулятор:
A Командует регуляторам блоков настроить выходы блоков.
B Может повысить скорости ВСУ и двигателей, чтобы удовлетворить запросы системы кондиционирования воздуха.
C Получает входную информацию от селекторов температуры AIR COND на верхней панели.
D Всё перечисленное.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM


Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Self-Assessment
Question 10
Text
Index
Select the pb on the overhead AIR COND panel that is used to close the hot air pressure regulating valve.
Нажать клавишу на верхней панели AIR COND, которая используется, чтобы закрыть клапан, регулирующий давление горячего воздуха.
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
HOT AIR
COLD
HOT
PACK 1
PACK 2
X BLEED
AUTO
START
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
ENG 2 BLEED
SHUT
OPEN
REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK 1
PACK 2
COMPRESSOR OUTLET TEMP SENSORS
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
FROM PNEUMATIC SYSTEM
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
Select the pb on the overhead AIR COND panel that is used to close the hot air pressure regulating valve.
Нажать клавишу на верхней панели AIR COND, которая используется, чтобы закрыть клапан, регулирующий давление горячего воздуха.


Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
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Self-Assessment
Question 11
Question
Index
According to this COND page, the zone regulator is:
A
Attempting to increase the temperature in the FWD and AFT cabin zones.
B
Attempting to increase the temperature in the CKPT zone.
C
Attempting to maintain the current temperature in all three zones.
В соответствии со страницей COND зональный регулятор:
A
Пытается повысить температуру в зонах FWD и AFT салона.
B
Пытается повысить температуру в зоне CKPT.
C
Пытается поддерживать текущую температуру во всех трёх зонах.
COND
TEMP : °F
CKPT
FWD
AFT
76
76
78
78
92
98
C
H
HOT AIR
TAT - 16 °C
SAT - 43 °C
17 H 26
GW 120200 LBS

МИНИСТЕРСТВО ОБРАЗОВАНИЯ И НАУКИ РОССИЙСКОЙ ФЕДЕРАЦИИ

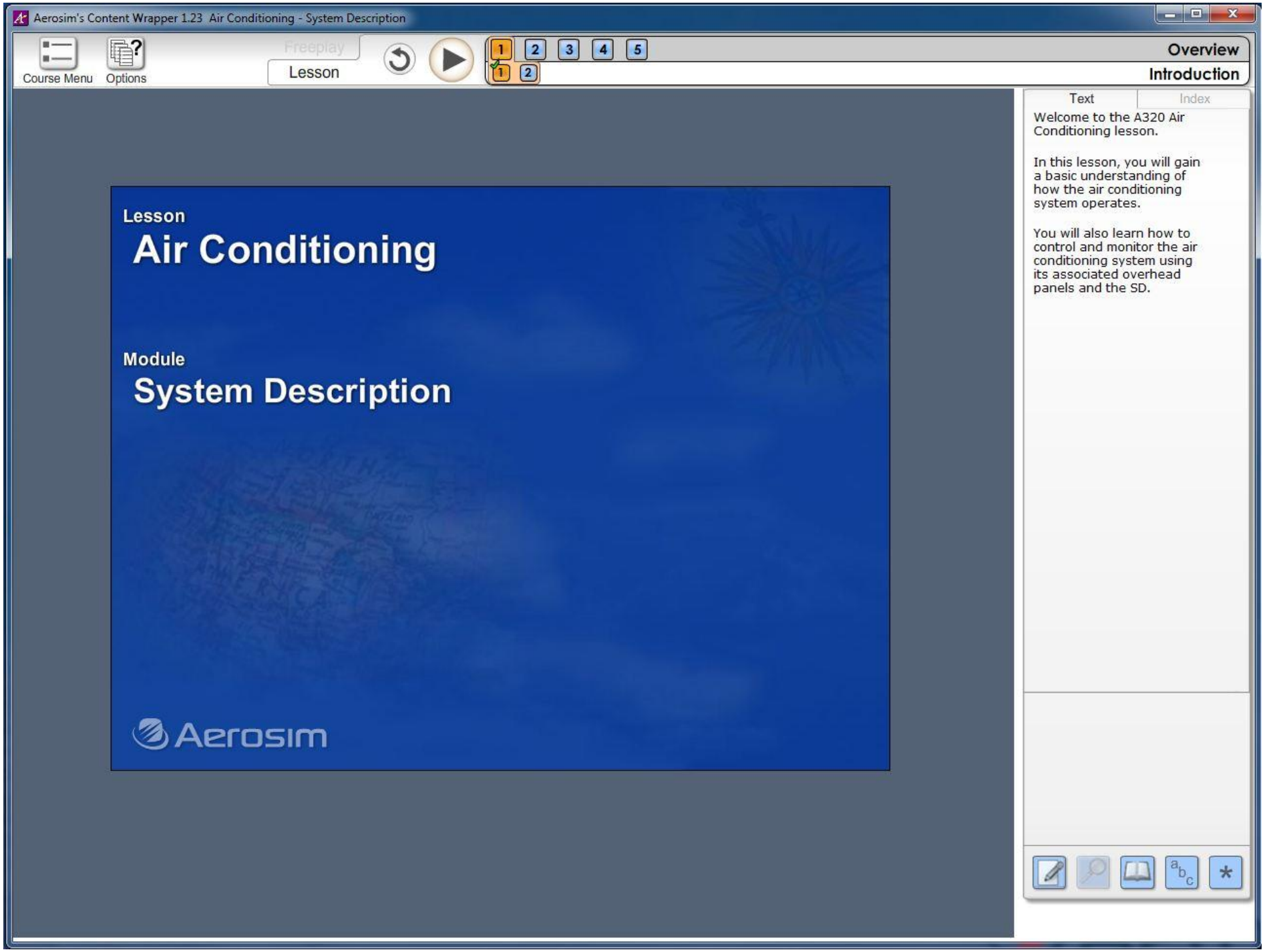
ФЕДЕРАЛЬНОЕ ГОСУДАРСТВЕННОЕ
БЮДЖЕТНОЕ ОБРАЗОВАТЕЛЬНОЕ УЧРЕЖДЕНИЕ
ВЫСШЕГО ПРОФЕССИОНАЛЬНОГО ОБРАЗОВАНИЯ
«САМАРСКИЙ ГОСУДАРСТВЕННЫЙ АЭРОКОСМИЧЕСКИЙ
УНИВЕРСИТЕТ ИМЕНИ АКАДЕМИКА С.П. КОРОЛЕВА
(НАЦИОНАЛЬНЫЙ ИССЛЕДОВАТЕЛЬСКИЙ УНИВЕРСИТЕТ)»

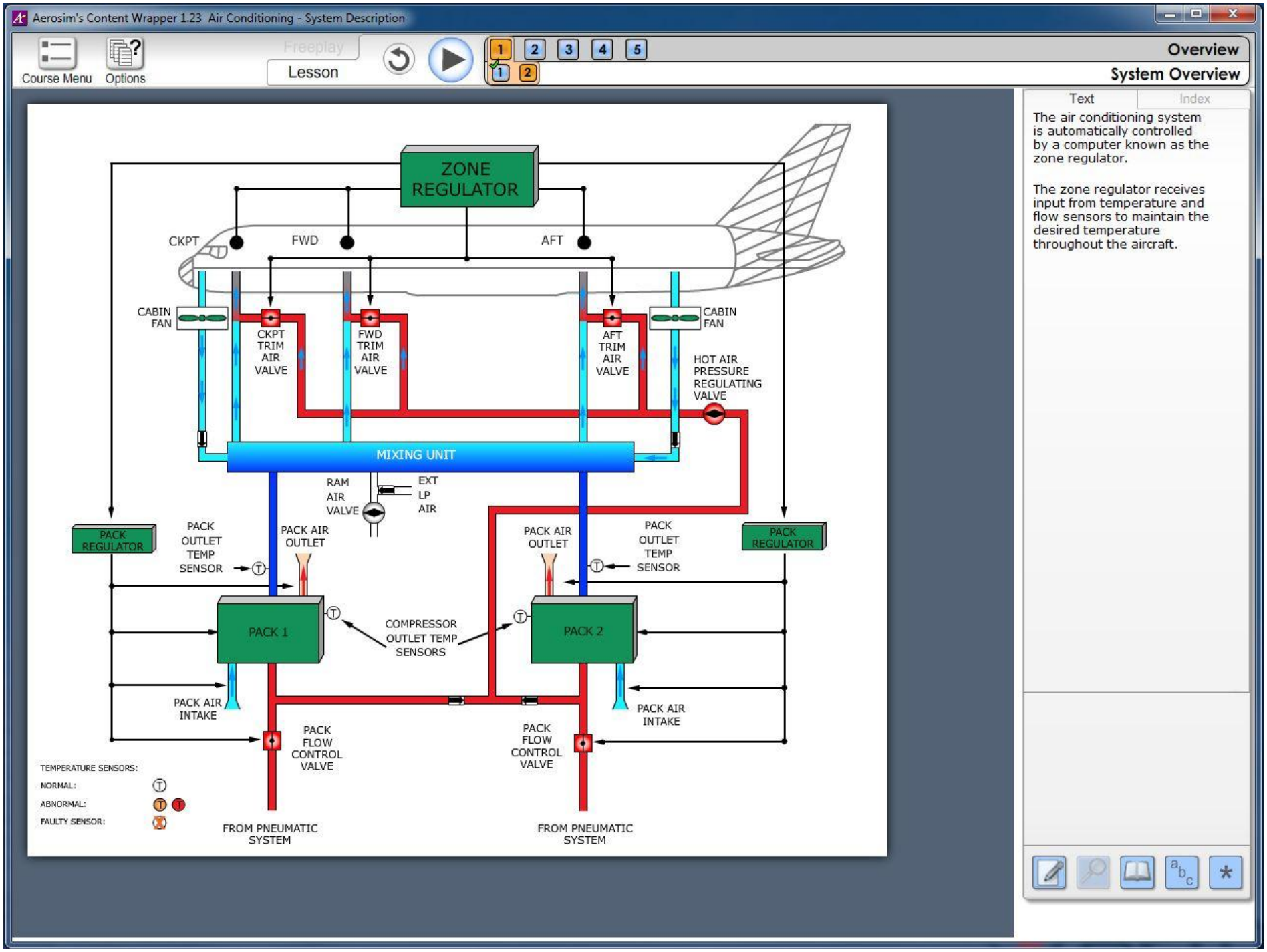
А.И. ДАНИЛИН, А.Н.ТИХОНОВ

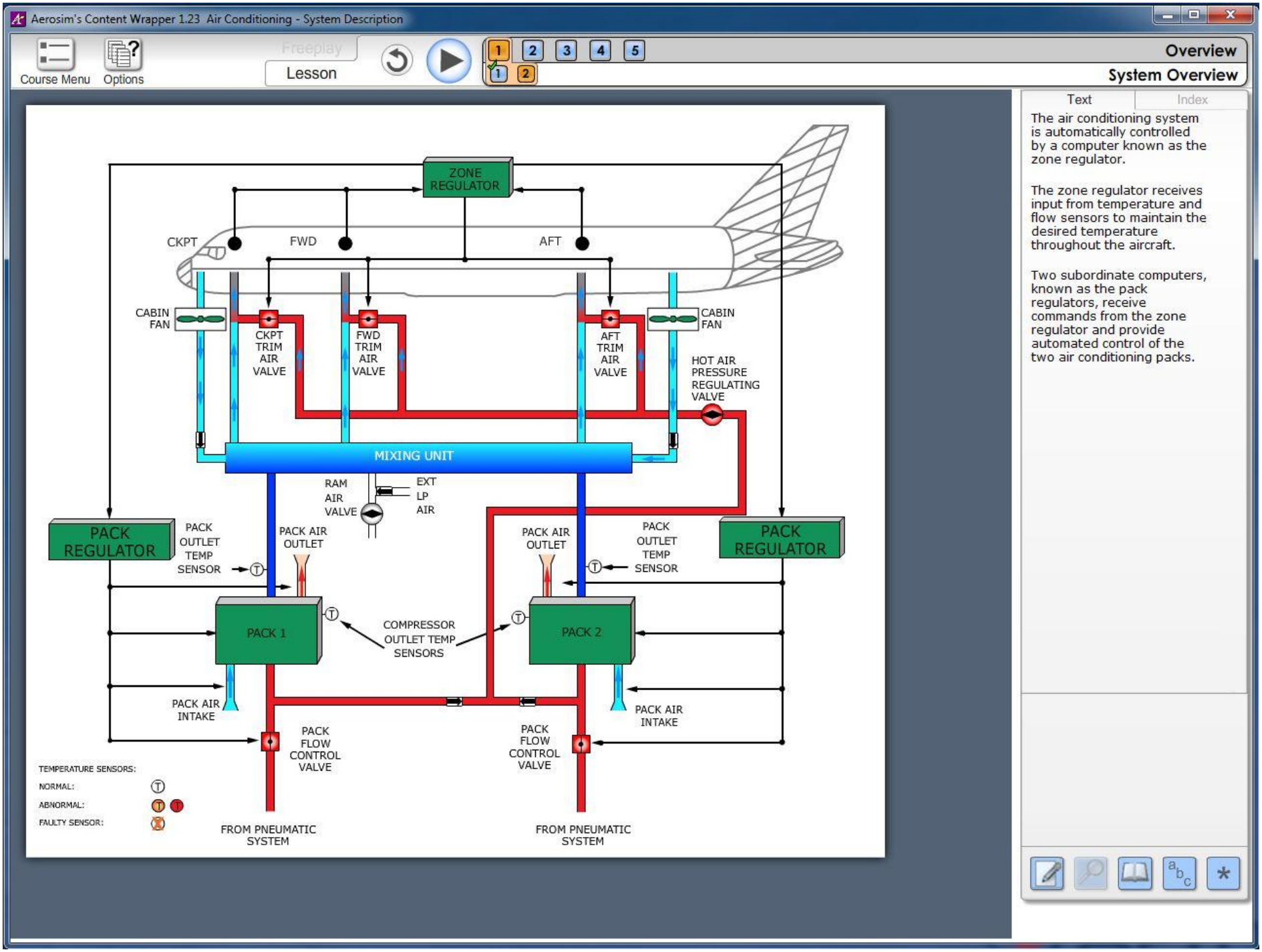
Manual for study of air conditioning system of airliner A320 with using the virtual trainer from Aerosim

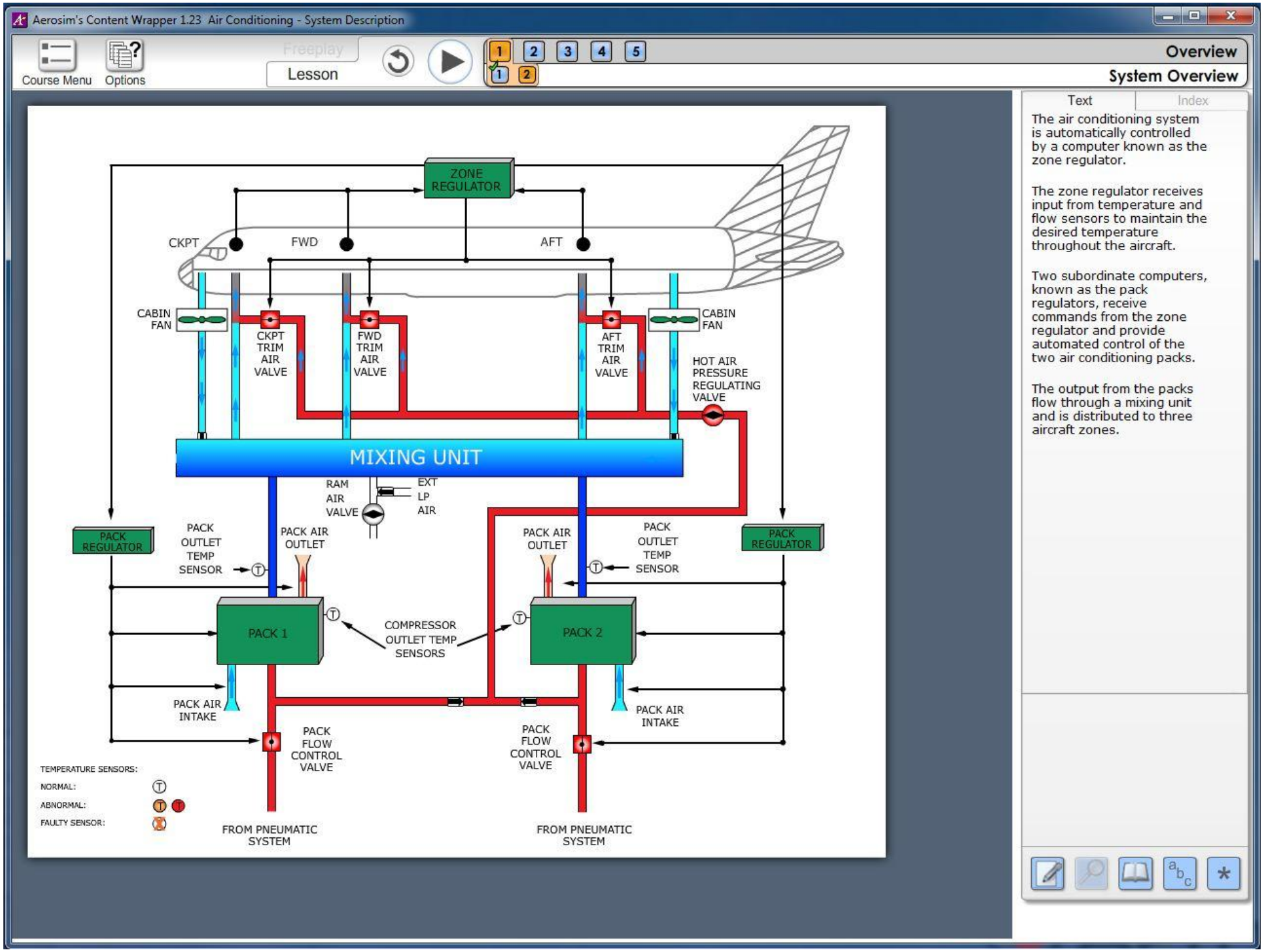
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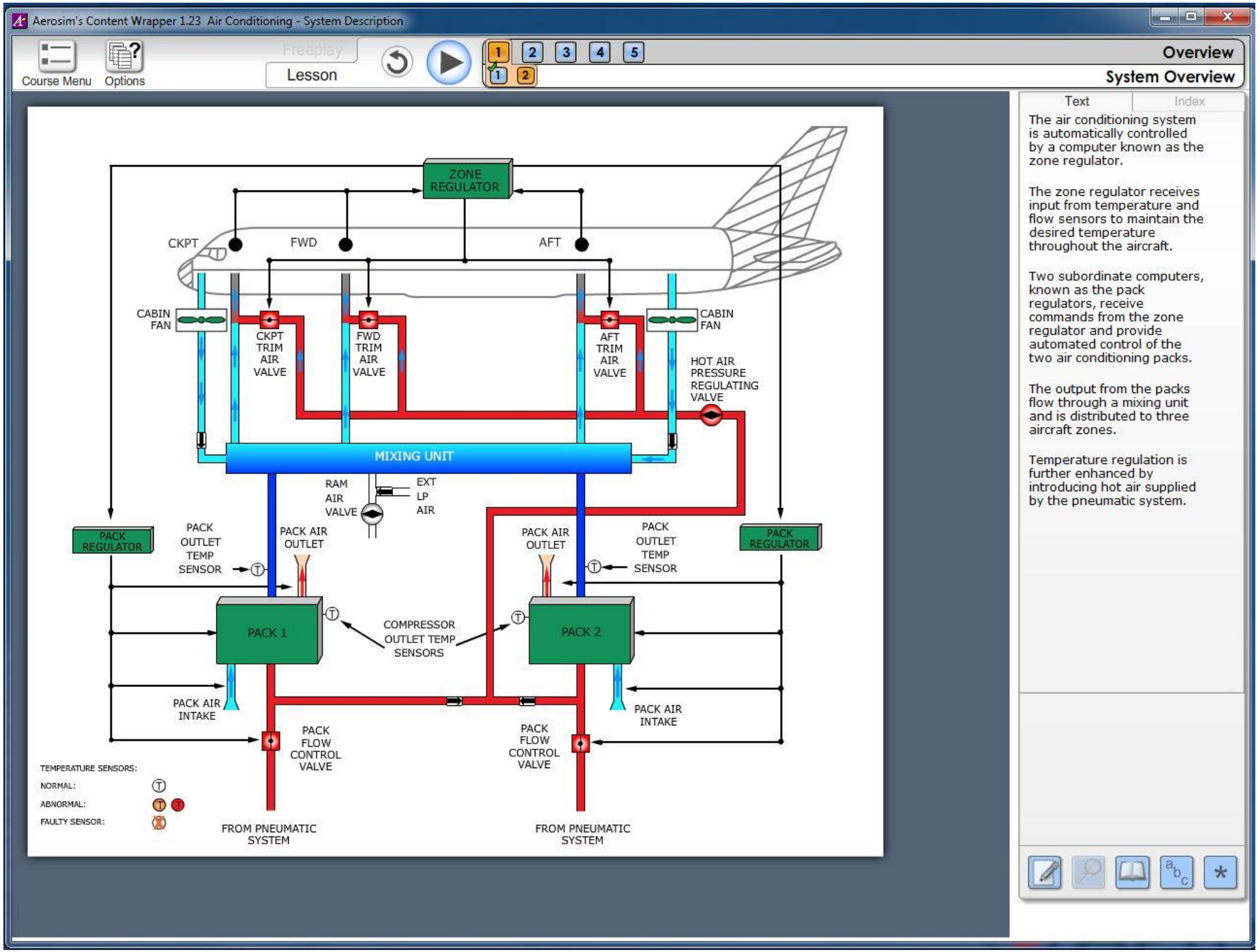
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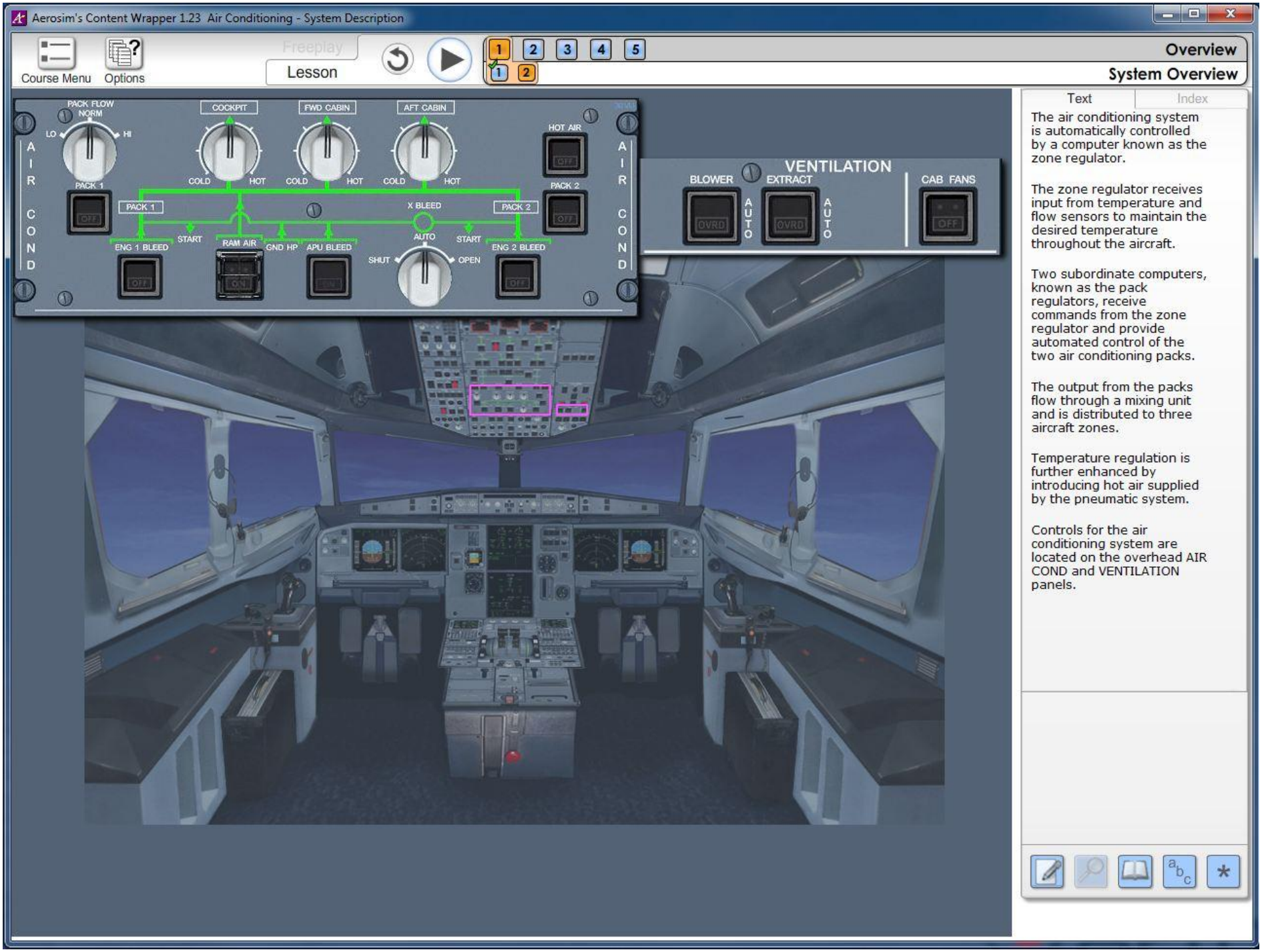

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
1 2 3 4 5
1 2
Overview
Introduction
Text
Index
Welcome to the A320 Air Conditioning lesson.
In this lesson, you will gain a basic understanding of how the air conditioning system operates.
You will also learn how to control and monitor the air conditioning system using its associated overhead panels and the SD.
Lesson
Air Conditioning
Module
System Description
Aerosim

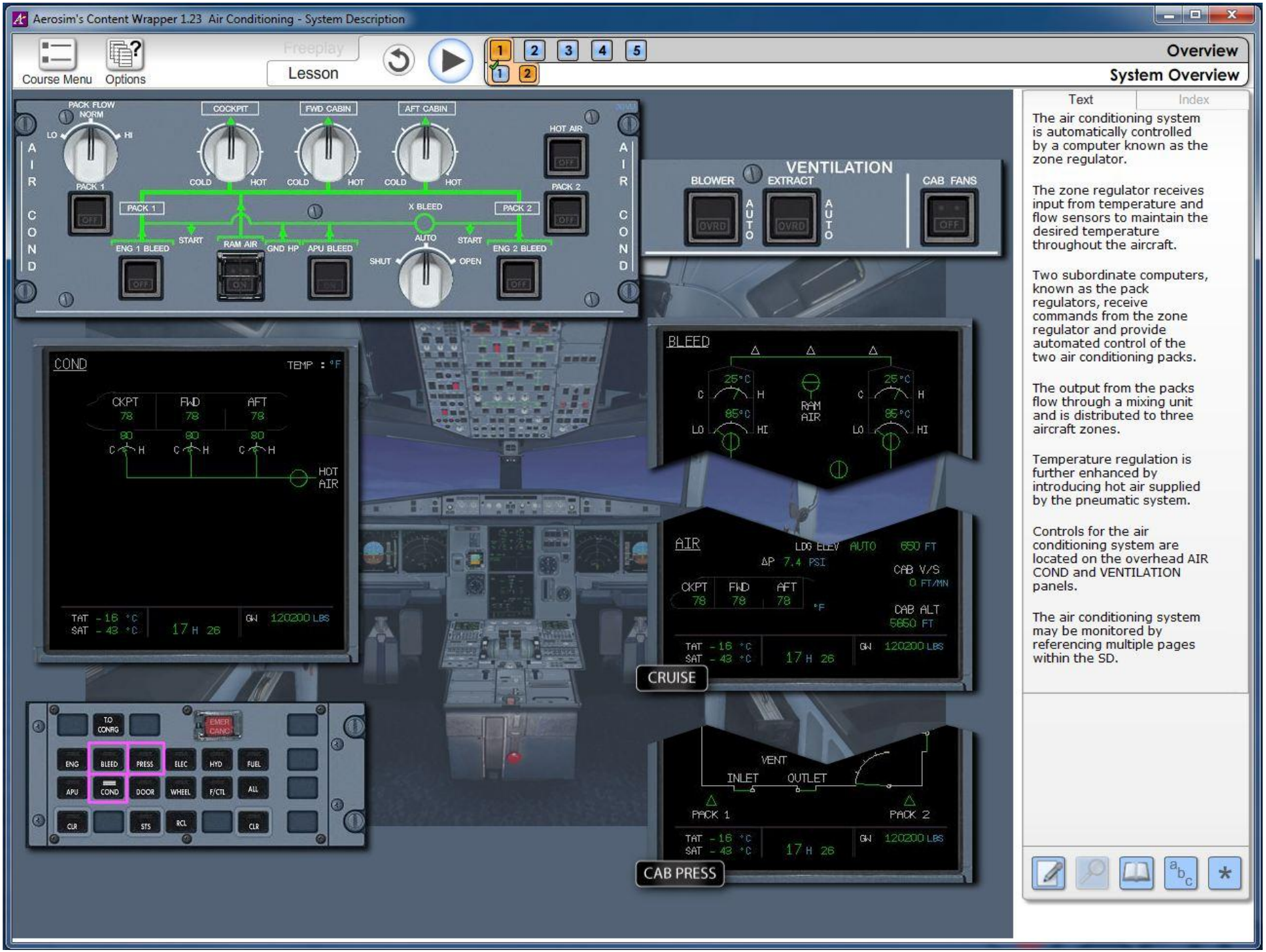

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
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Overview
System Overview
Text
Index
The air conditioning system is automatically controlled by a computer known as the zone regulator.
The zone regulator receives input from temperature and flow sensors to maintain the desired temperature throughout the aircraft.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

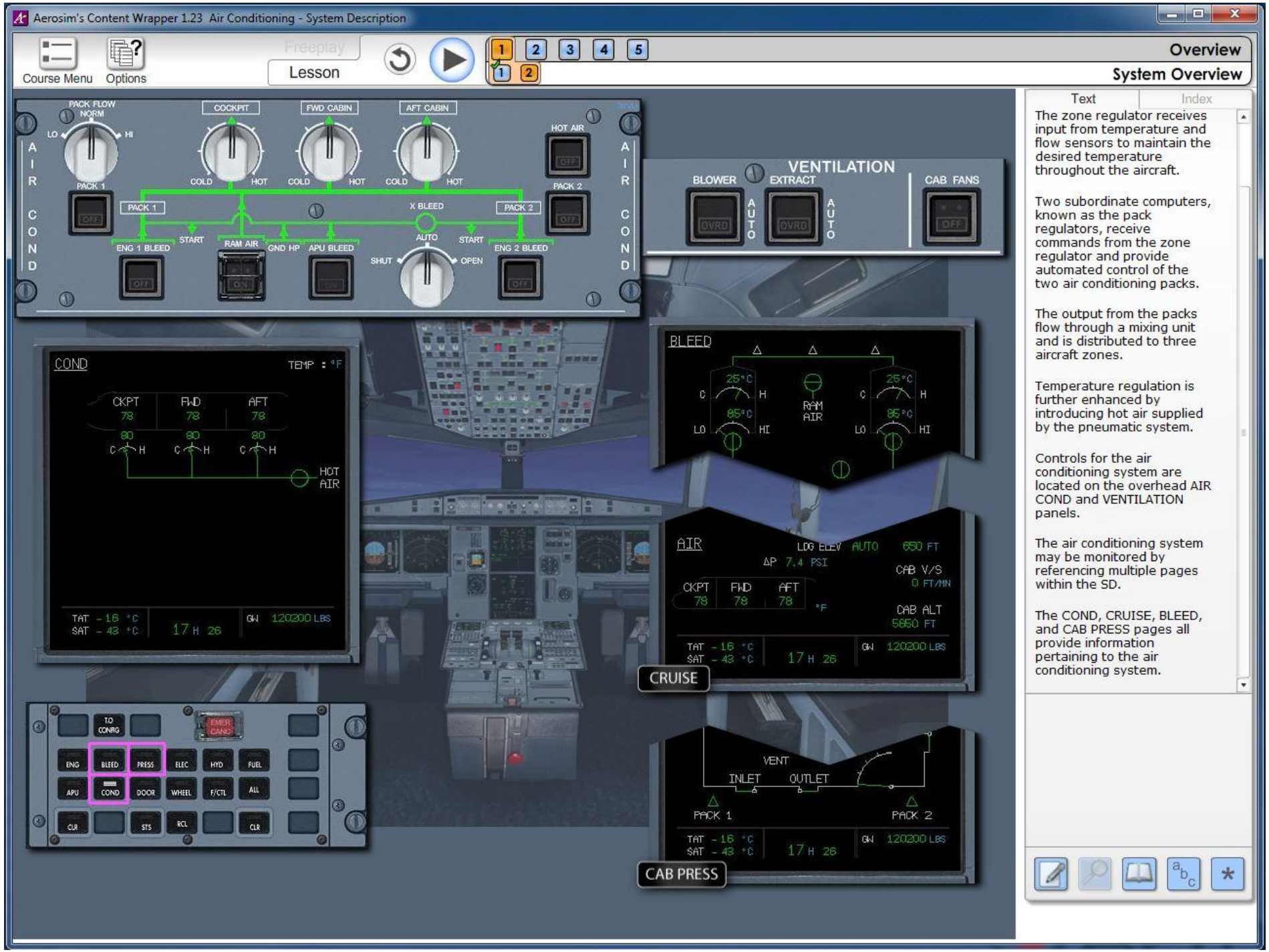

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
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System Overview
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Two subordinate computers, known as the pack regulators, receive commands from the zone regulator and provide automated control of the two air conditioning packs.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

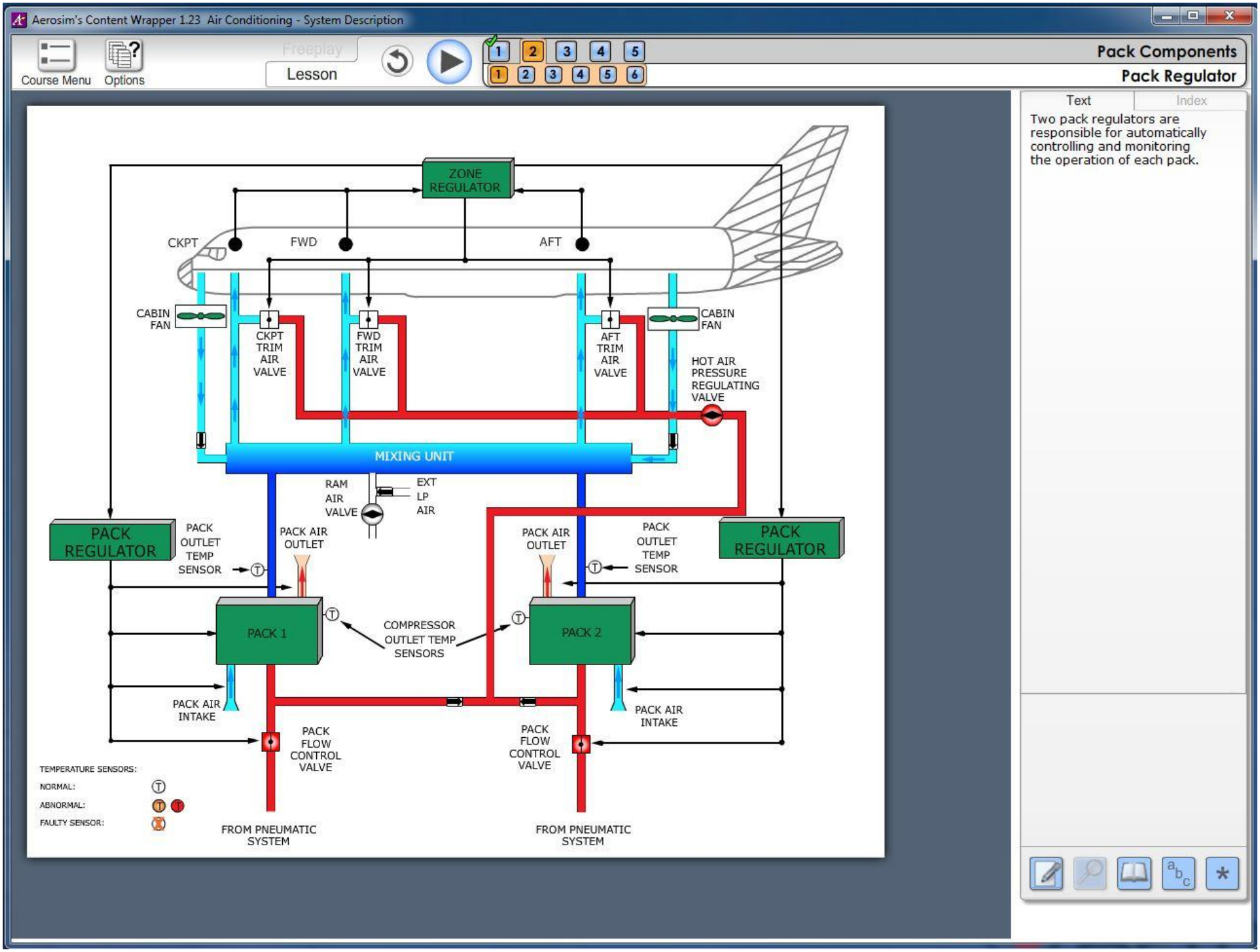

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
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Overview
System Overview
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The output from the packs flow through a mixing unit and is distributed to three aircraft zones.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

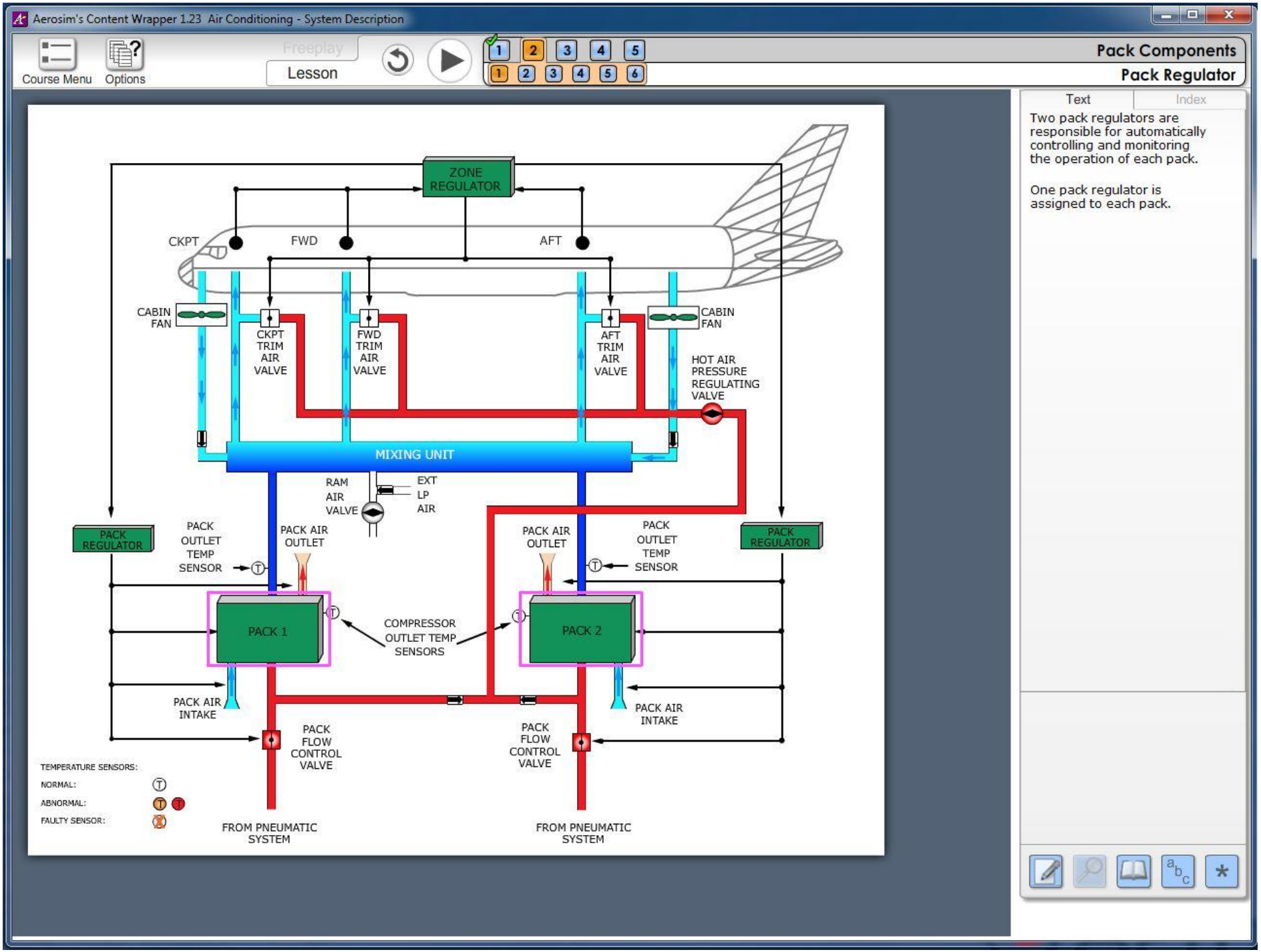

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Course Menu
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2
3
4
5
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System Overview
Text
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Two subordinate computers, known as the pack regulators, receive commands from the zone regulator and provide automated control of the two air conditioning packs.
The output from the packs flow through a mixing unit and is distributed to three aircraft zones.
Temperature regulation is further enhanced by introducing hot air supplied by the pneumatic system.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

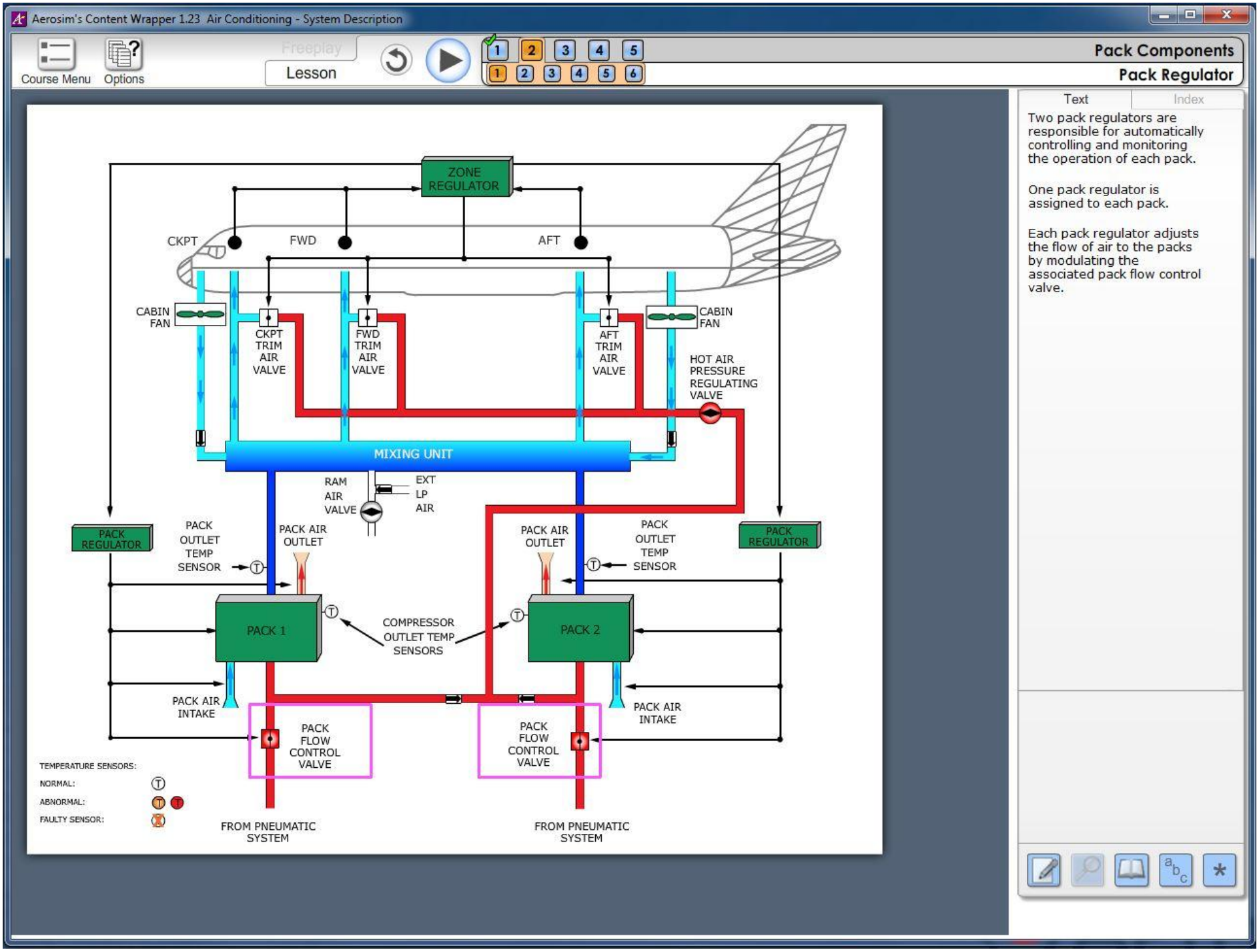

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
1
2
3
4
5
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System Overview
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The output from the packs flow through a mixing unit and is distributed to three aircraft zones.
Temperature regulation is further enhanced by introducing hot air supplied by the pneumatic system.
Controls for the air conditioning system are located on the overhead AIR COND and VENTILATION panels.
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
X BLEED
ENG 1 BLEED
ENG 2 BLEED
START
RAM AIR
GND HP
APU BLEED
AUTO
SHUT
OPEN
AIR COND
VENTILATION
BLOWER
EXTRACT
CAB FANS
OVRD
OFF

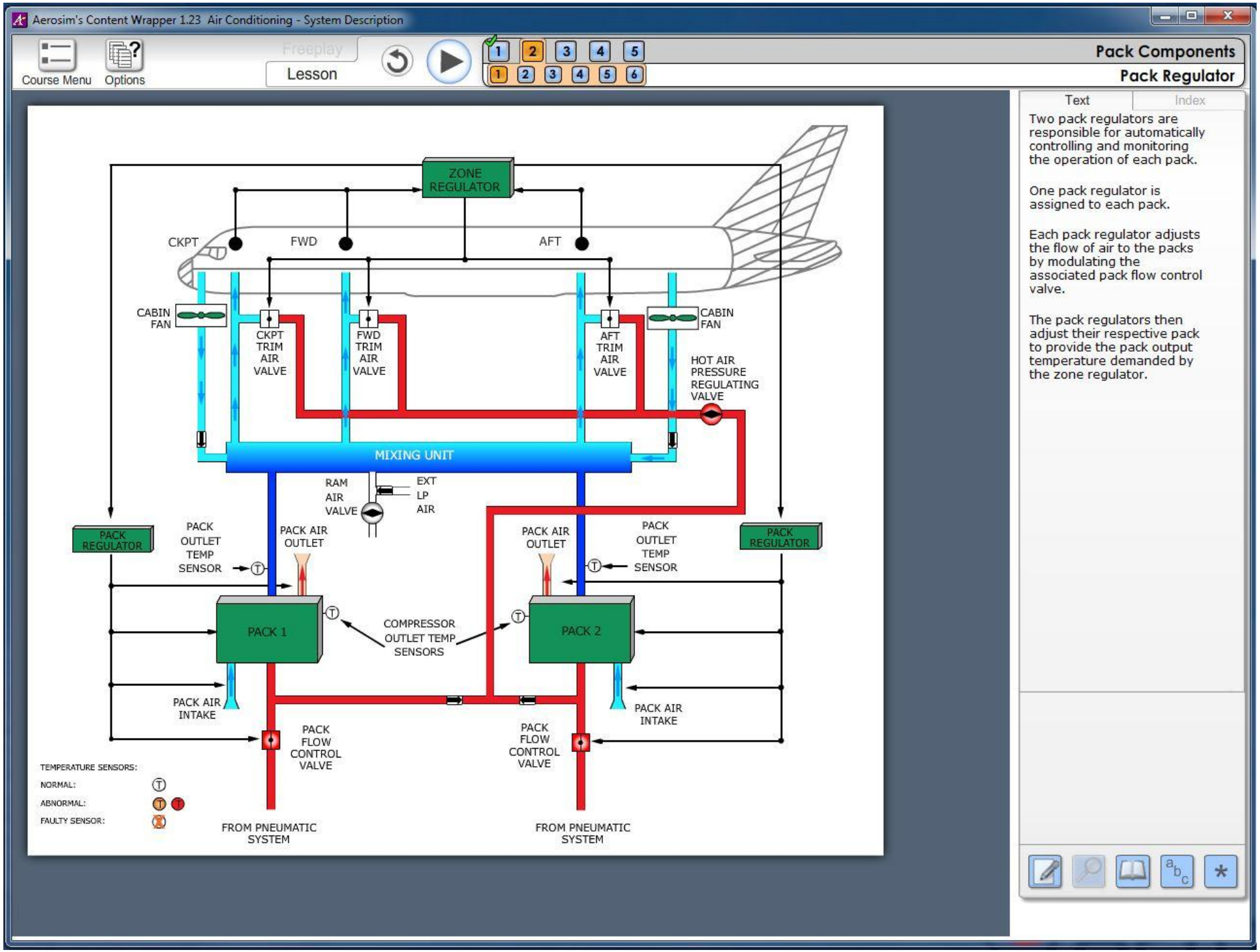

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
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Freeplay
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System Overview
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The air conditioning system is automatically controlled by a computer known as the zone regulator.
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The output from the packs flow through a mixing unit and is distributed to three aircraft zones.
Temperature regulation is further enhanced by introducing hot air supplied by the pneumatic system.
Controls for the air conditioning system are located on the overhead AIR COND and VENTILATION panels.
The air conditioning system may be monitored by referencing multiple pages within the SD.
PACK FLOW
COCKPIT
FWD CABIN
AFT CABIN
HOT AIR
PACK 1
PACK 2
X BLEED
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
ENG 2 BLEED
VENTILATION
BLOWER
EXTRACT
CAB FANS
COND
BLEED
AIR
CRUISE
CAB PRESS
VENT
INLET
OUTLET

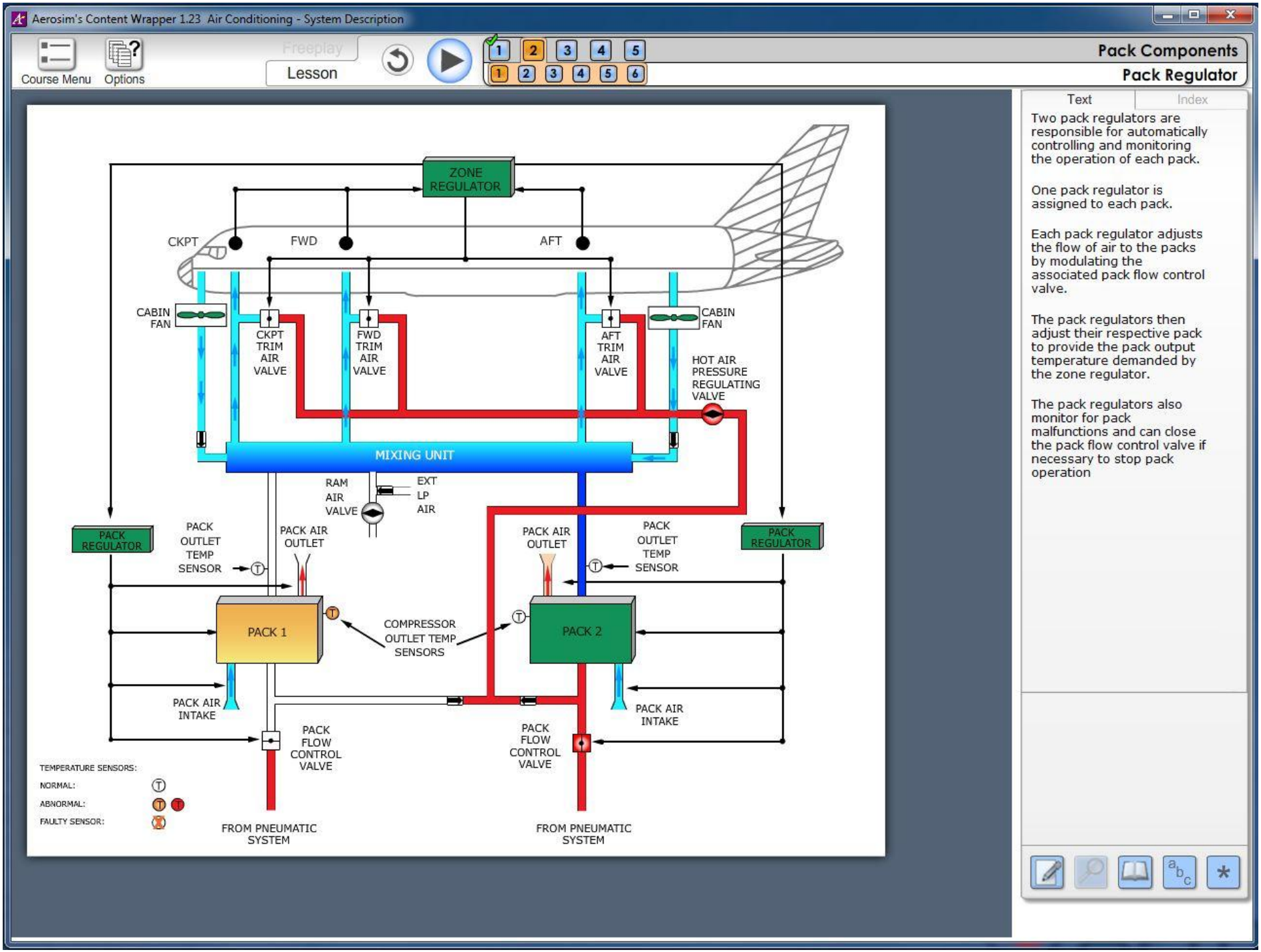

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Overview
System Overview
Text
Index
The zone regulator receives input from temperature and flow sensors to maintain the desired temperature throughout the aircraft.
Two subordinate computers, known as the pack regulators, receive commands from the zone regulator and provide automated control of the two air conditioning packs.
The output from the packs flow through a mixing unit and is distributed to three aircraft zones.
Temperature regulation is further enhanced by introducing hot air supplied by the pneumatic system.
Controls for the air conditioning system are located on the overhead AIR COND and VENTILATION panels.
The air conditioning system may be monitored by referencing multiple pages within the SD.
The COND, CRUISE, BLEED, and CAB PRESS pages all provide information pertaining to the air conditioning system.
PACK FLOW
COCKPIT
FWD CABIN
AFT CABIN
HOT AIR
PACK 1
PACK 2
X BLEED
ENG 1 BLEED
ENG 2 BLEED
RAM AIR
GND HP
APU BLEED
VENTILATION
BLOWER
EXTRACT
CAB FANS
COND
BLEED
AIR
CRUISE
CAB PRESS
VENT
INLET
OUTLET

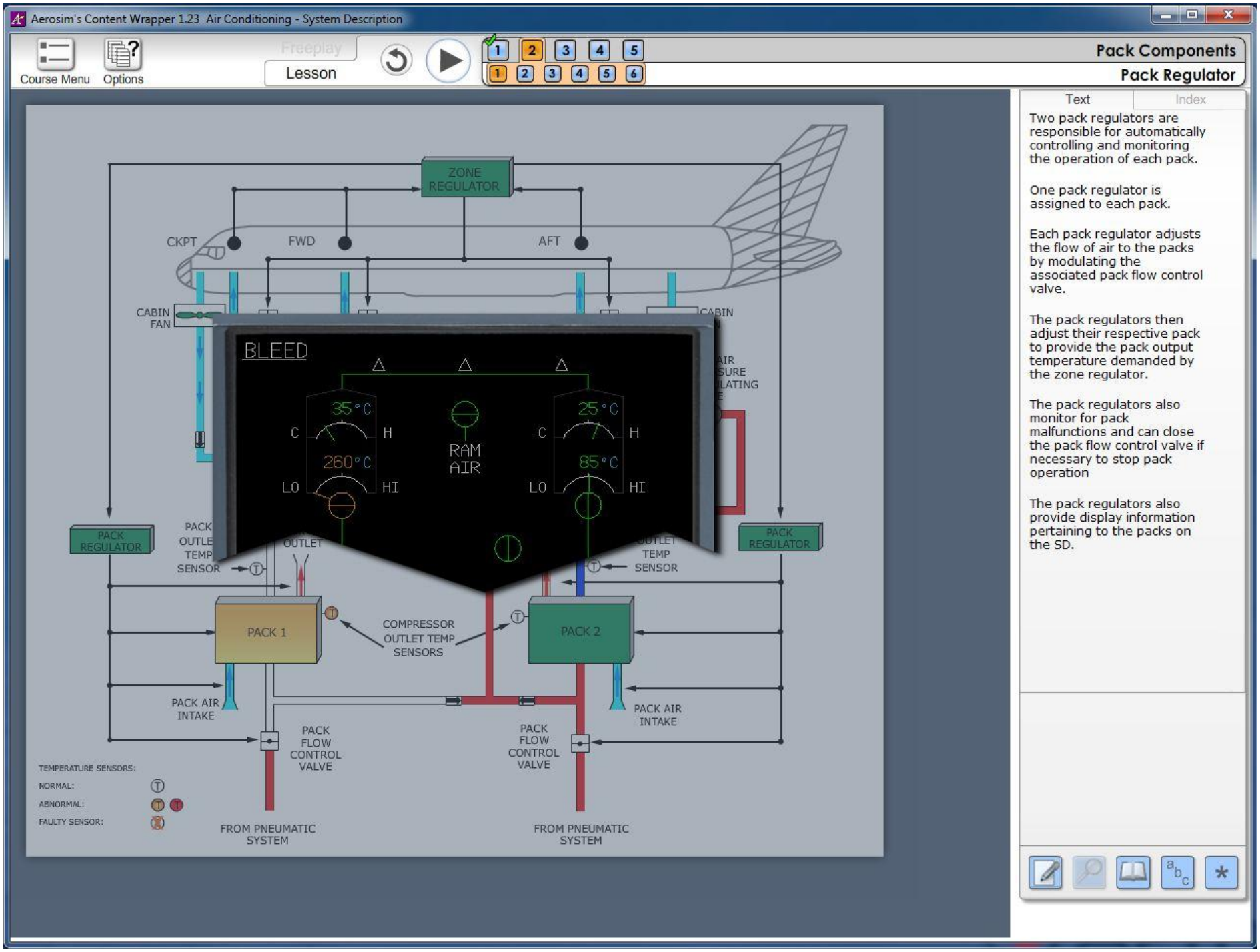

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Regulator
Text
Index
Two pack regulators are responsible for automatically controlling and monitoring the operation of each pack.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

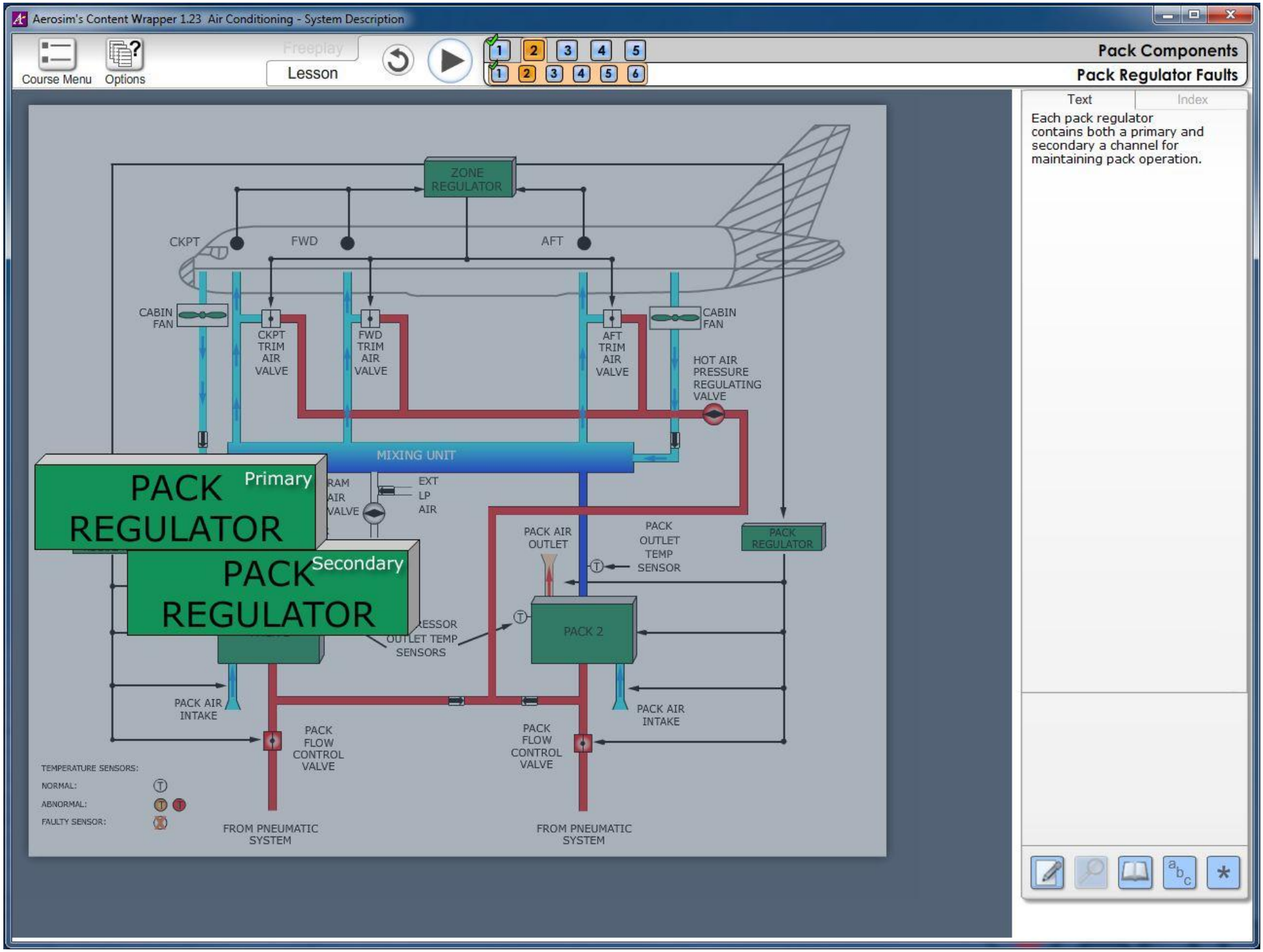

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Regulator
Text
Index
Two pack regulators are responsible for automatically controlling and monitoring the operation of each pack.
One pack regulator is assigned to each pack.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

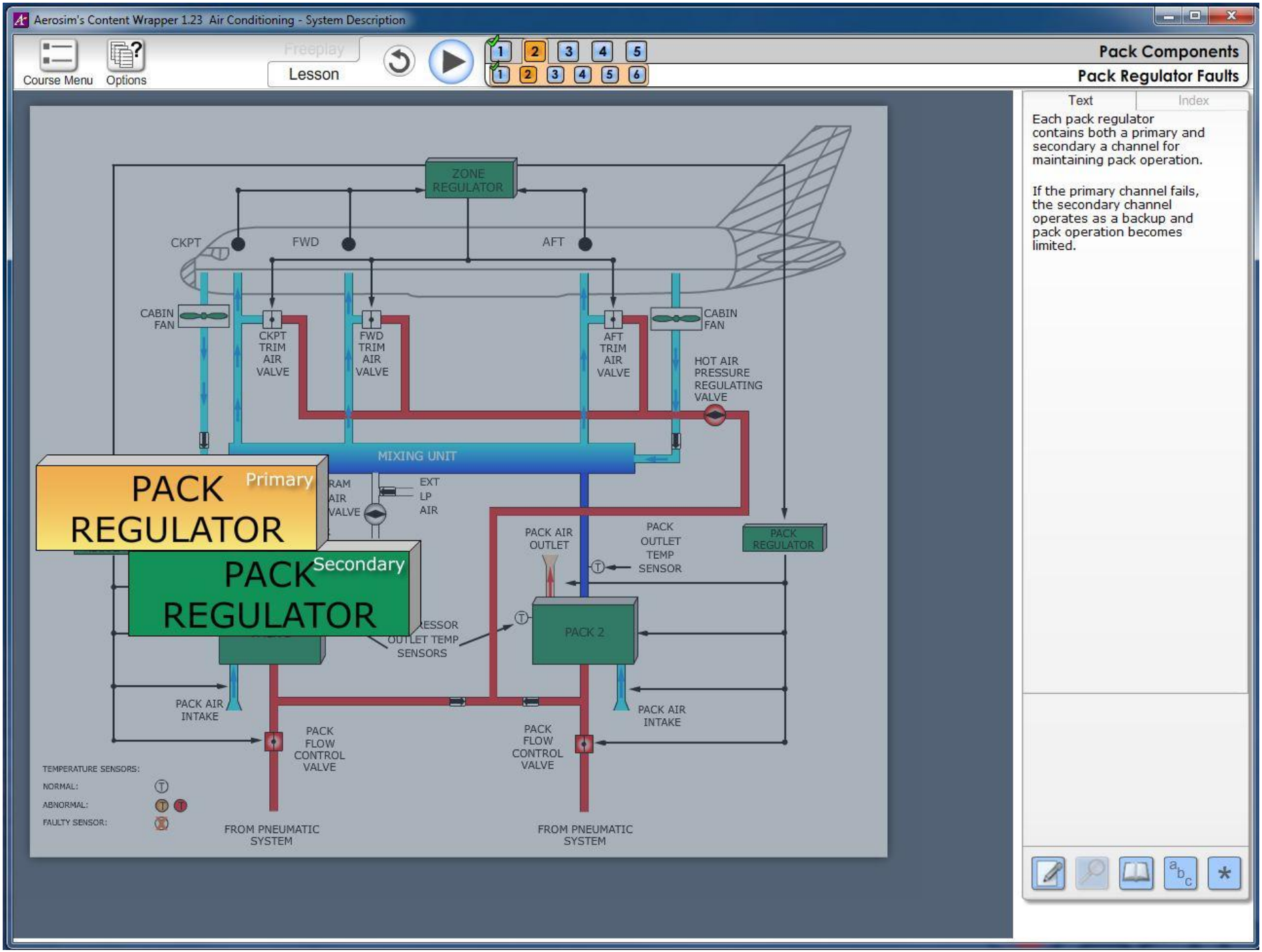

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Regulator
Text
Index
Two pack regulators are responsible for automatically controlling and monitoring the operation of each pack.
One pack regulator is assigned to each pack.
Each pack regulator adjusts the flow of air to the packs by modulating the associated pack flow control valve.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

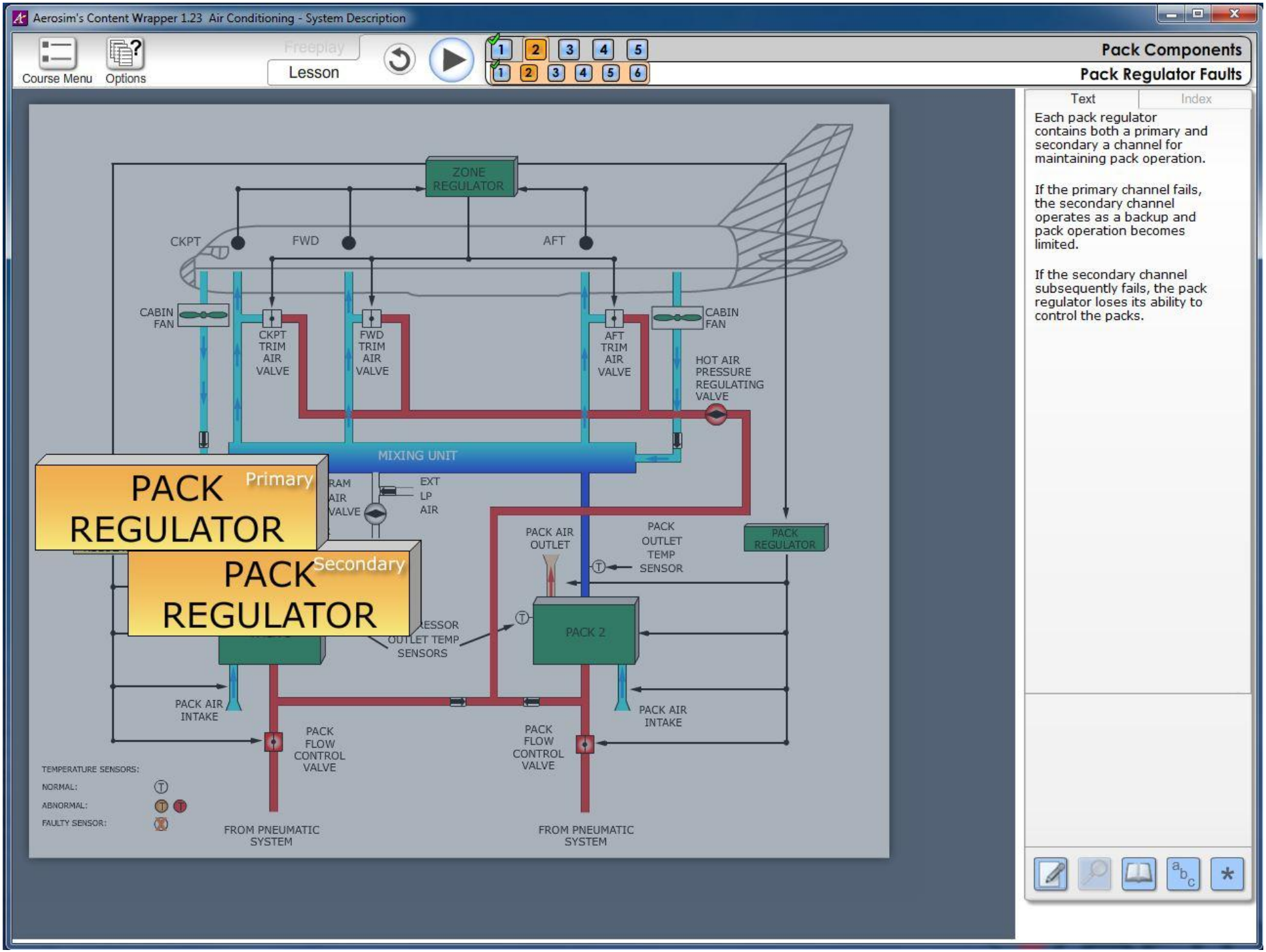

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Regulator
Text
Index
Two pack regulators are responsible for automatically controlling and monitoring the operation of each pack.
One pack regulator is assigned to each pack.
Each pack regulator adjusts the flow of air to the packs by modulating the associated pack flow control valve.
The pack regulators then adjust their respective pack to provide the pack output temperature demanded by the zone regulator.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

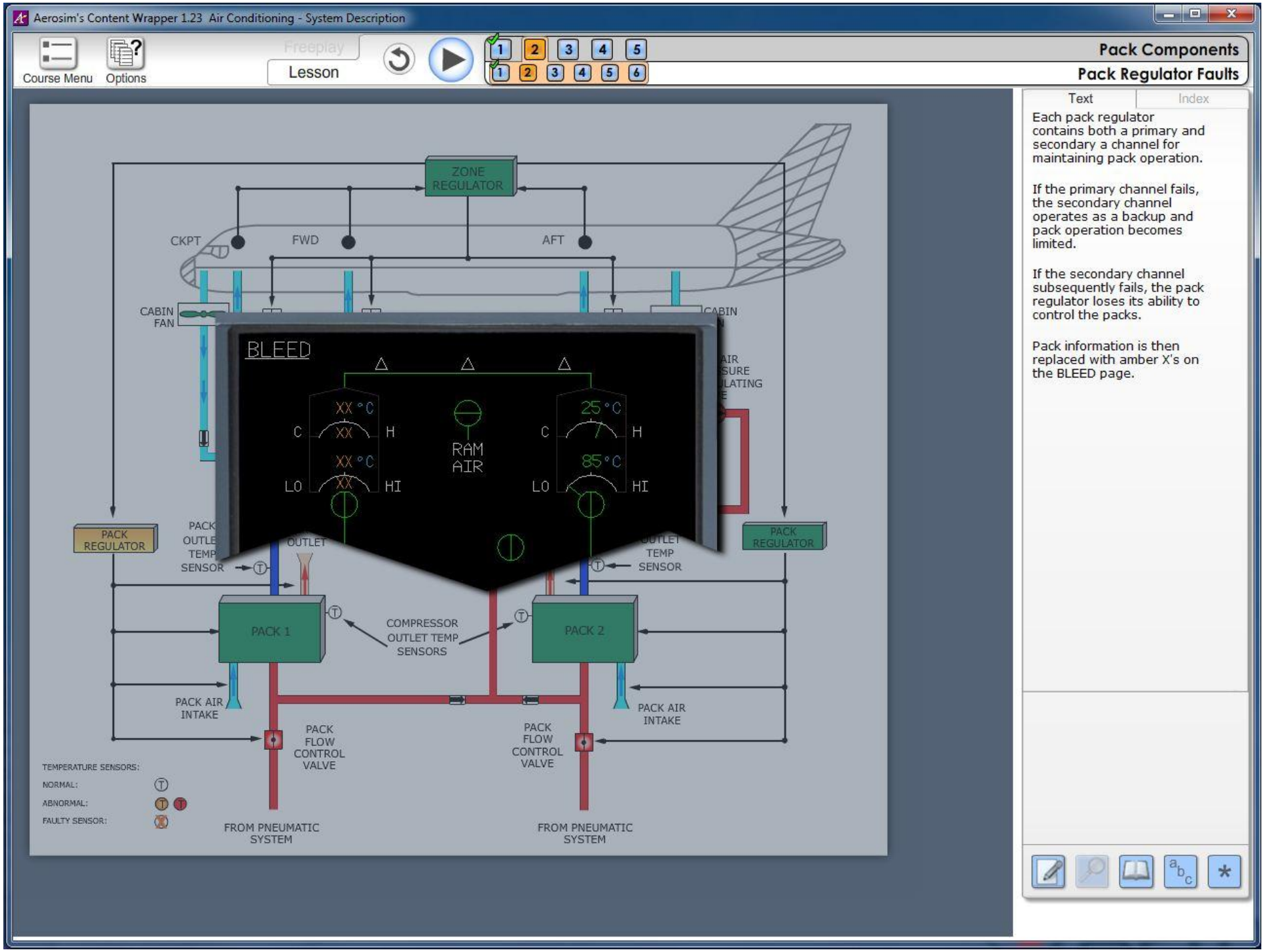

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Regulator
Text
Index
Two pack regulators are responsible for automatically controlling and monitoring the operation of each pack.
One pack regulator is assigned to each pack.
Each pack regulator adjusts the flow of air to the packs by modulating the associated pack flow control valve.
The pack regulators then adjust their respective pack to provide the pack output temperature demanded by the zone regulator.
The pack regulators also monitor for pack malfunctions and can close the pack flow control valve if necessary to stop pack operation
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

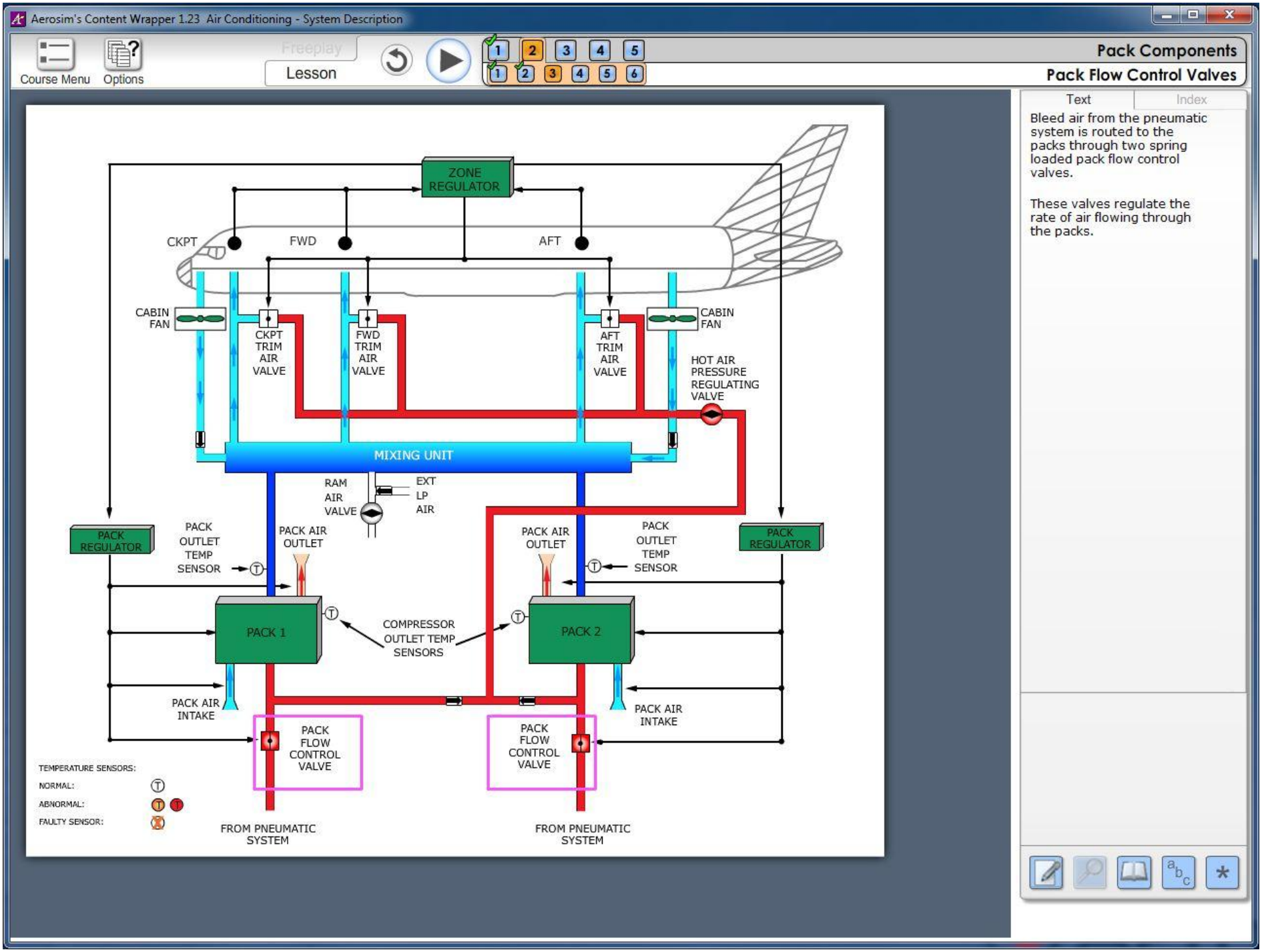

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Regulator
Text
Index
Two pack regulators are responsible for automatically controlling and monitoring the operation of each pack.
One pack regulator is assigned to each pack.
Each pack regulator adjusts the flow of air to the packs by modulating the associated pack flow control valve.
The pack regulators then adjust their respective pack to provide the pack output temperature demanded by the zone regulator.
The pack regulators also monitor for pack malfunctions and can close the pack flow control valve if necessary to stop pack operation
The pack regulators also provide display information pertaining to the packs on the SD.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
BLEED
35°C
260°C
C
H
LO
HI
RAM AIR
25°C
85°C
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK 1
PACK 2
COMPRESSOR OUTLET TEMP SENSORS
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
FROM PNEUMATIC SYSTEM
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:

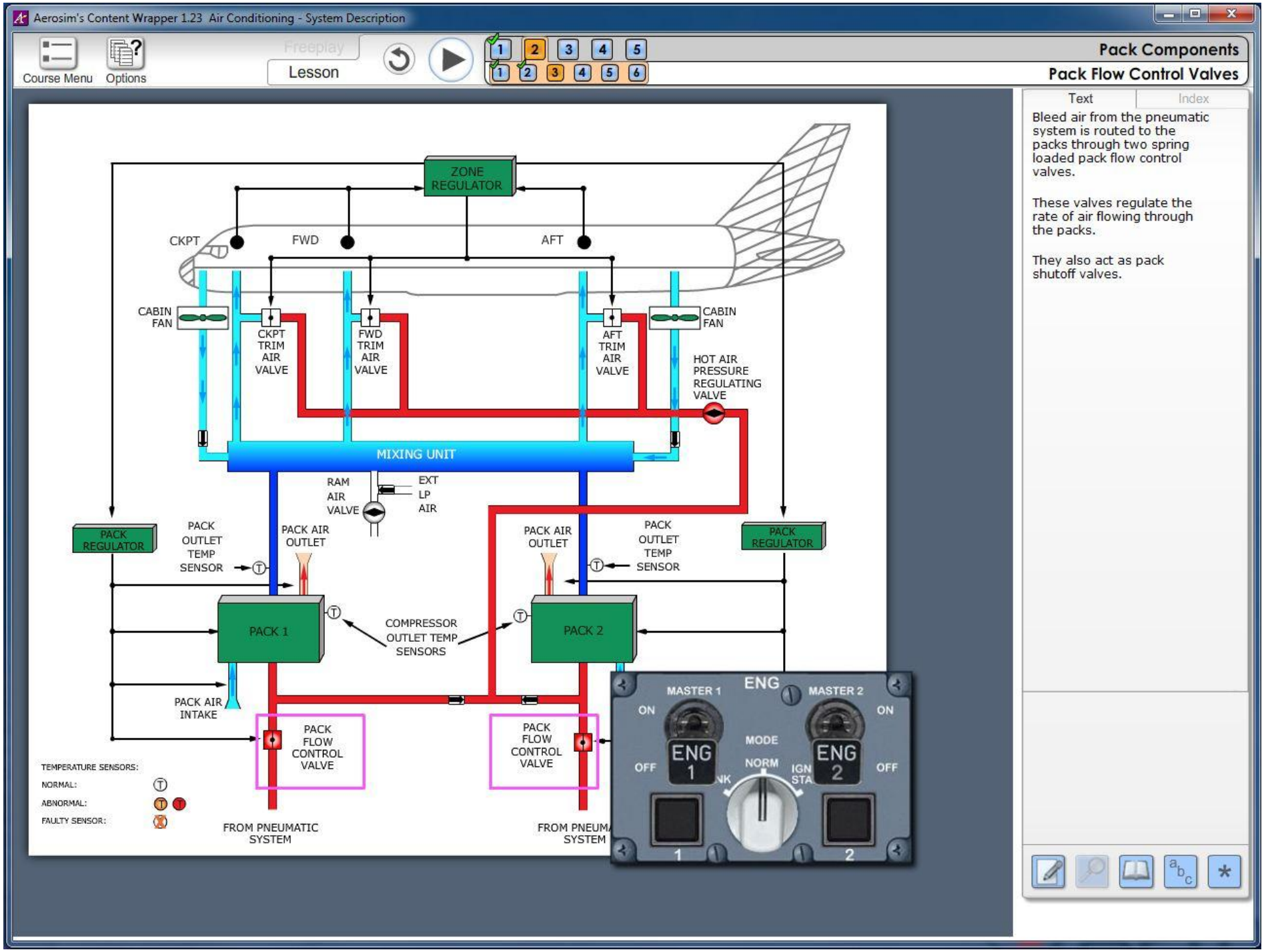

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Regulator Faults
Text
Index
Each pack regulator contains both a primary and secondary a channel for maintaining pack operation.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
PACK Primary REGULATOR
PACK Secondary REGULATOR
RAM AIR VALVE
EXT LP AIR
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
ESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

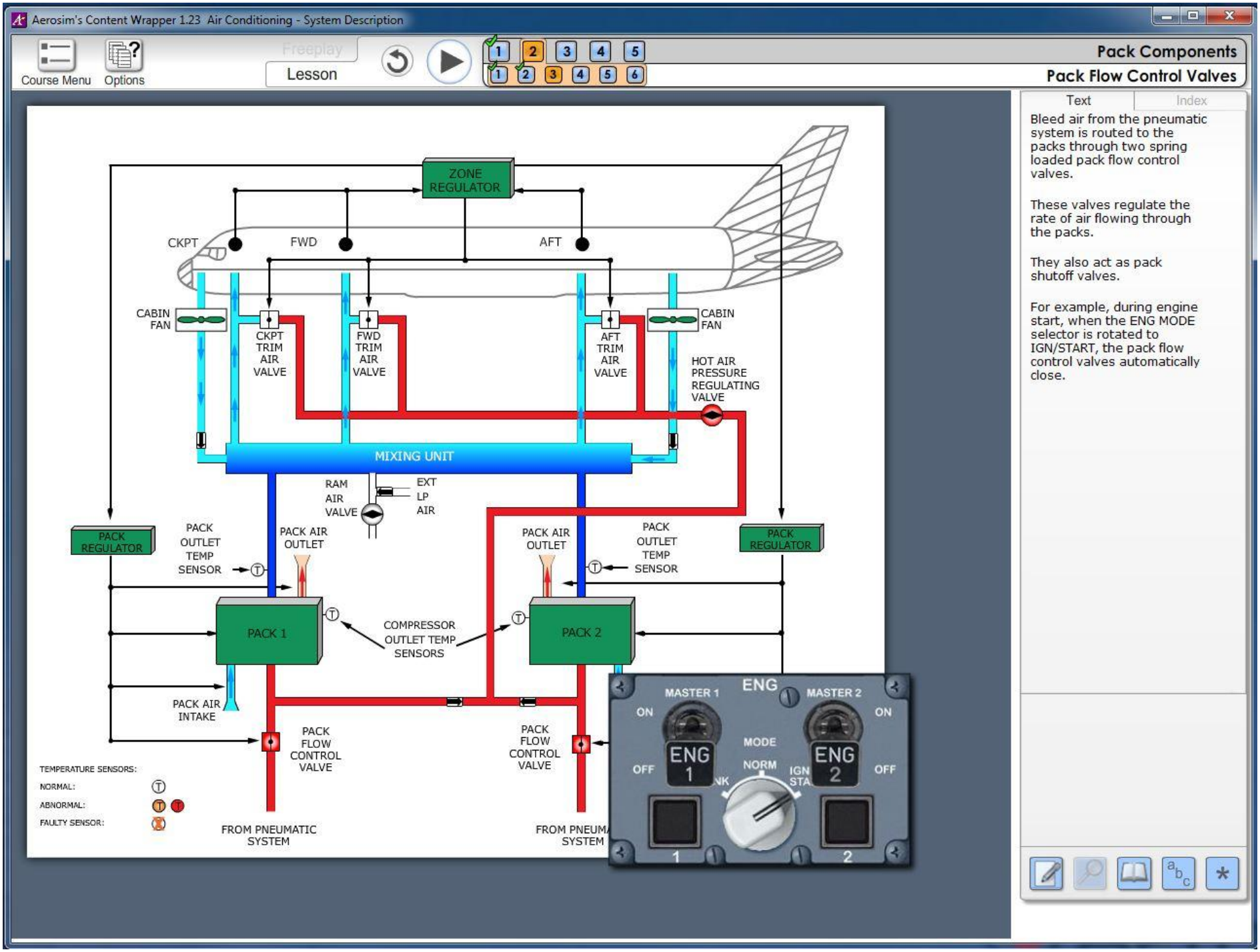

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
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Lesson
Pack Components
Pack Regulator Faults
Text
Index
Each pack regulator contains both a primary and secondary a channel for maintaining pack operation.
If the primary channel fails, the secondary channel operates as a backup and pack operation becomes limited.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
PACK Primary REGULATOR
PACK Secondary REGULATOR
EXT LP AIR
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 2
OUTLET TEMP SENSORS
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

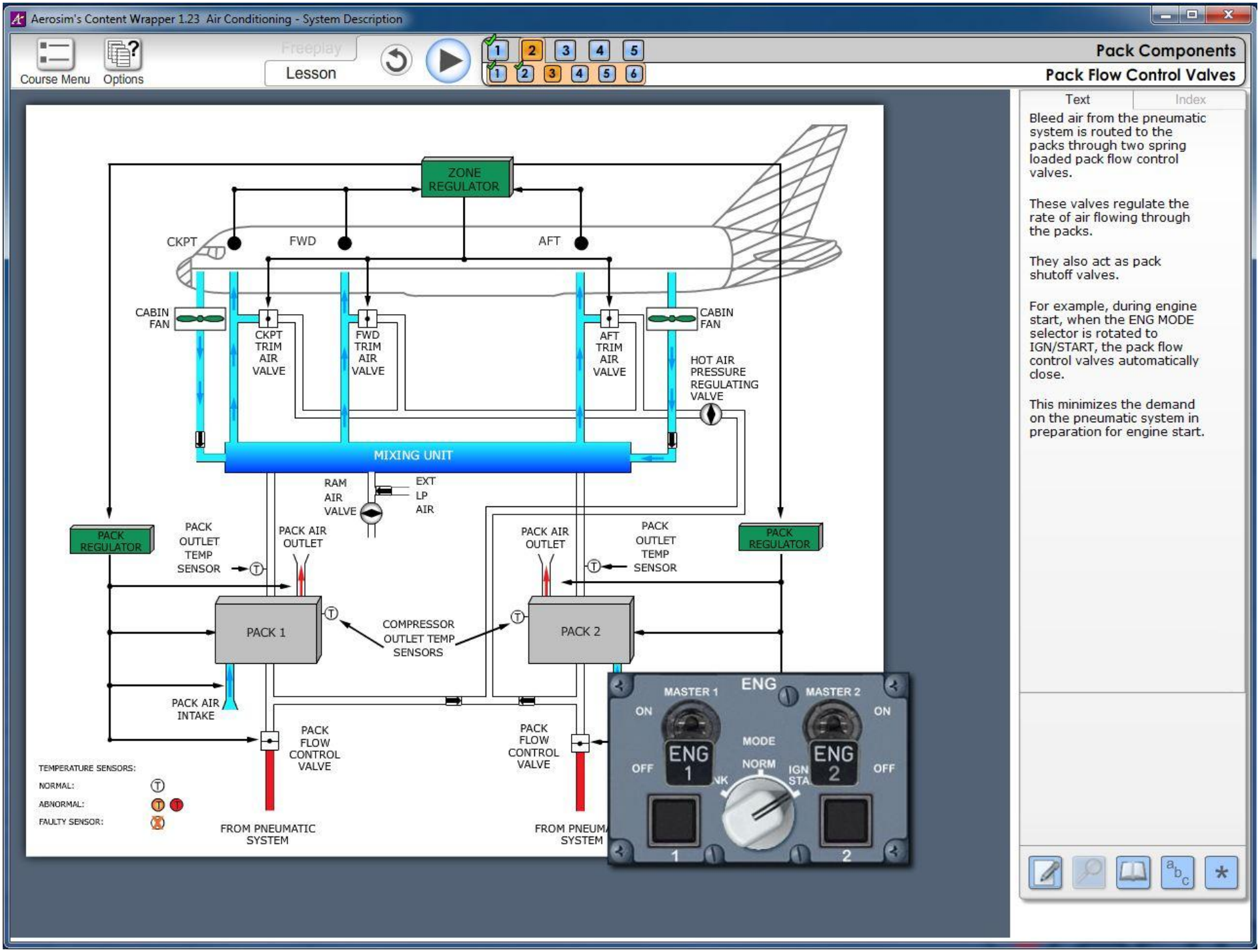

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
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Lesson
Pack Components
Pack Regulator Faults
Text
Index
Each pack regulator contains both a primary and secondary a channel for maintaining pack operation.
If the primary channel fails, the secondary channel operates as a backup and pack operation becomes limited.
If the secondary channel subsequently fails, the pack regulator loses its ability to control the packs.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
PACK Primary REGULATOR
PACK Secondary REGULATOR
RAM AIR VALVE
EXT LP AIR
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
ESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

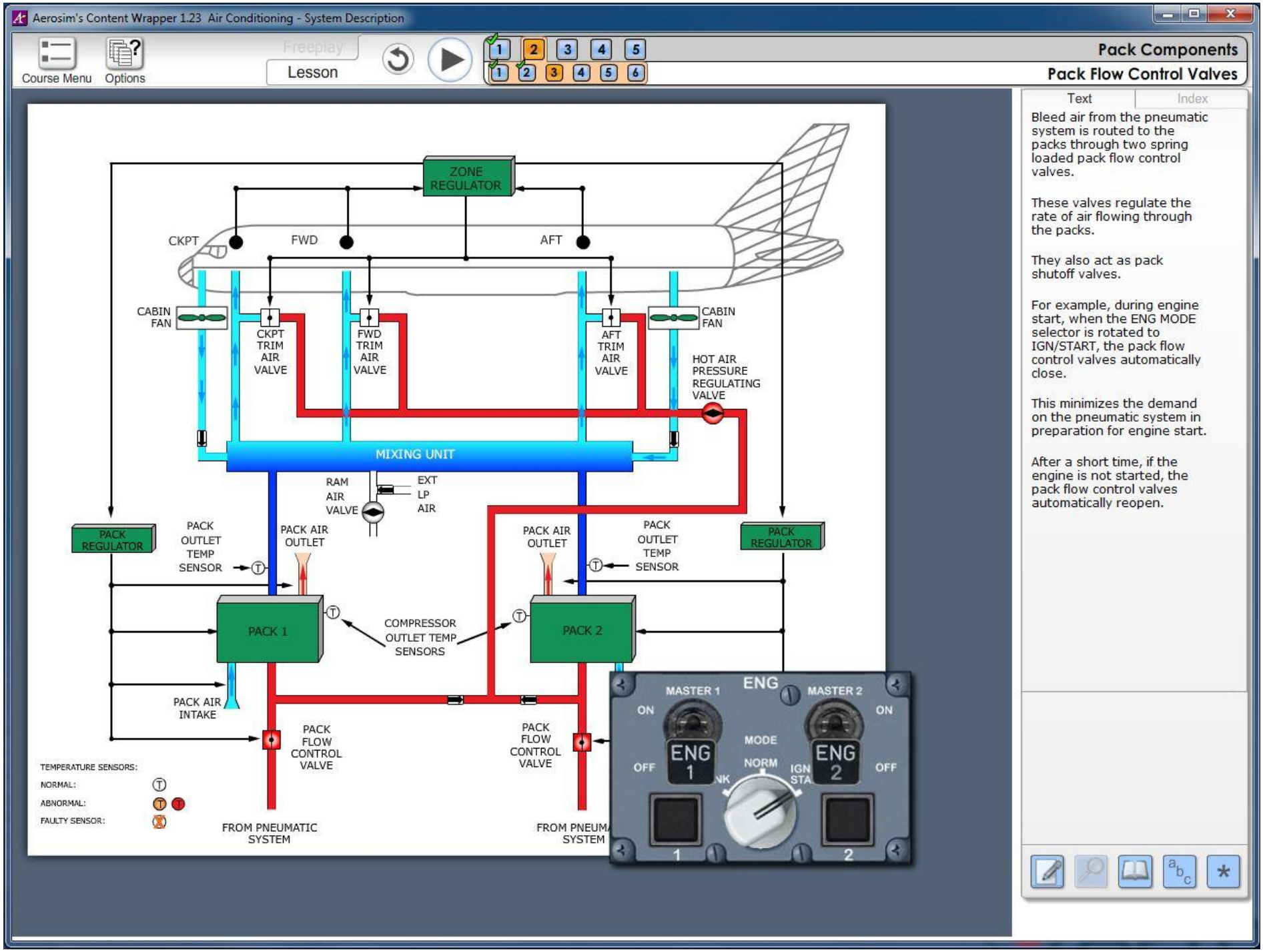

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Regulator Faults
Text
Index
Each pack regulator contains both a primary and secondary a channel for maintaining pack operation.
If the primary channel fails, the secondary channel operates as a backup and pack operation becomes limited.
If the secondary channel subsequently fails, the pack regulator loses its ability to control the packs.
Pack information is then replaced with amber X's on the BLEED page.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
BLEED
XX °C
XX
C
H
XX °C
XX
LO
HI
RAM AIR
25 °C
C
H
85 °C
LO
HI
PACK REGULATOR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
OUTLET TEMP SENSOR
PACK 1
PACK 2
COMPRESSOR OUTLET TEMP SENSORS
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

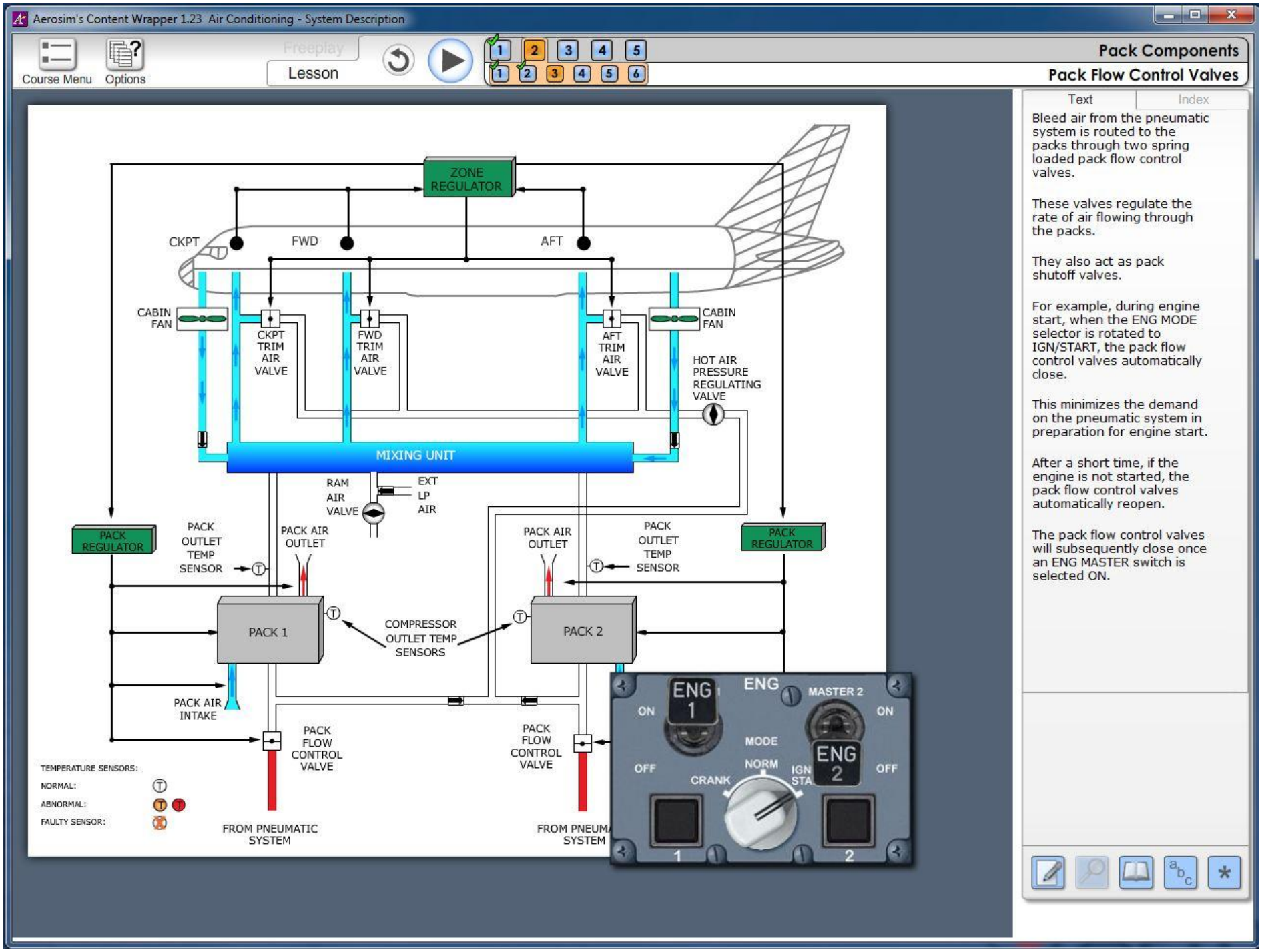

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
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Pack Components
Pack Flow Control Valves
Text
Index
Bleed air from the pneumatic system is routed to the packs through two spring loaded pack flow control valves.
These valves regulate the rate of air flowing through the packs.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

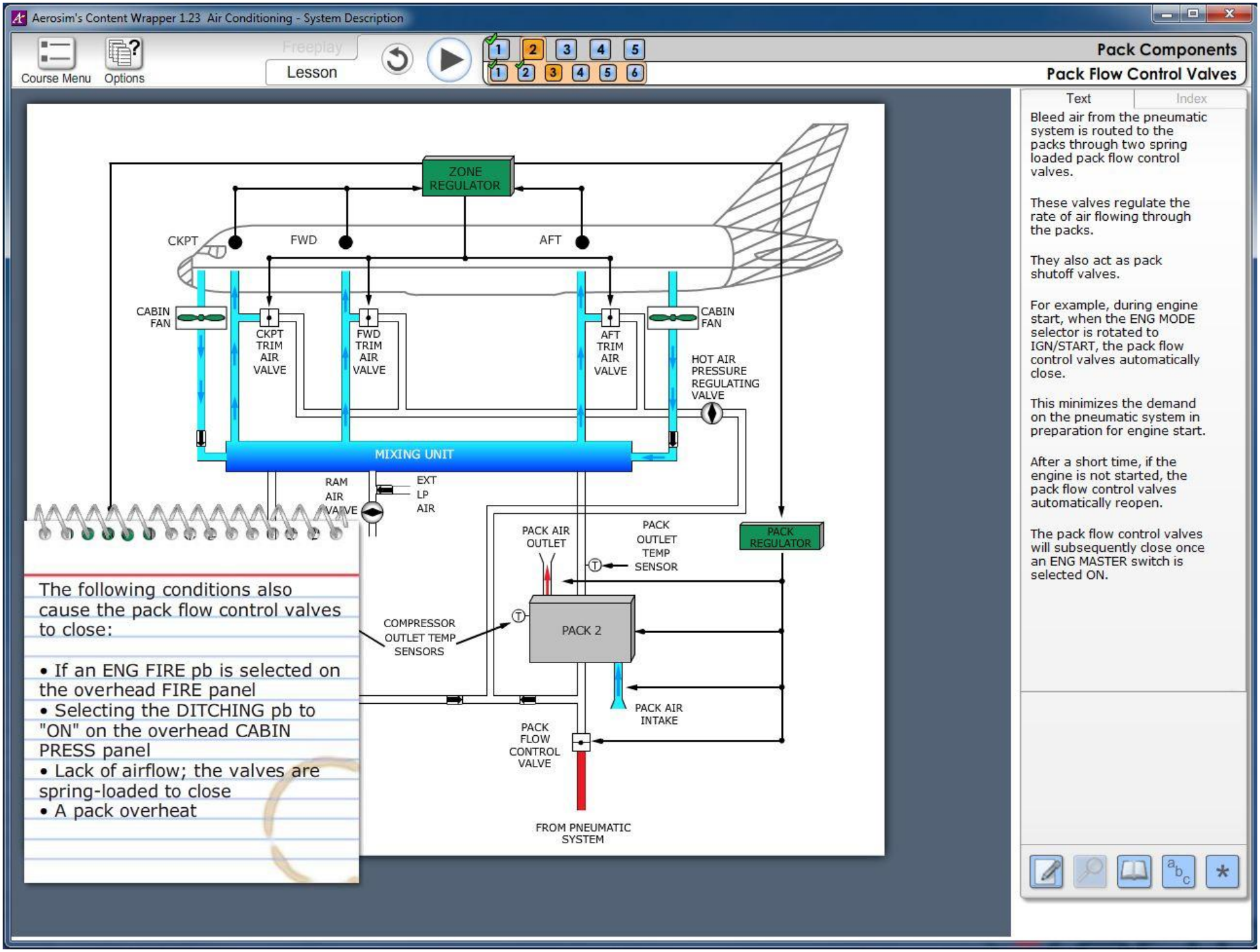

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
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Bleed air from the pneumatic system is routed to the packs through two spring loaded pack flow control valves.
These valves regulate the rate of air flowing through the packs.
They also act as pack shutoff valves.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM
ENG
MASTER 1
MASTER 2
ON
ON
MODE
ENG 1
ENG 2
OFF
OFF
NORM
IGN STA
1
2

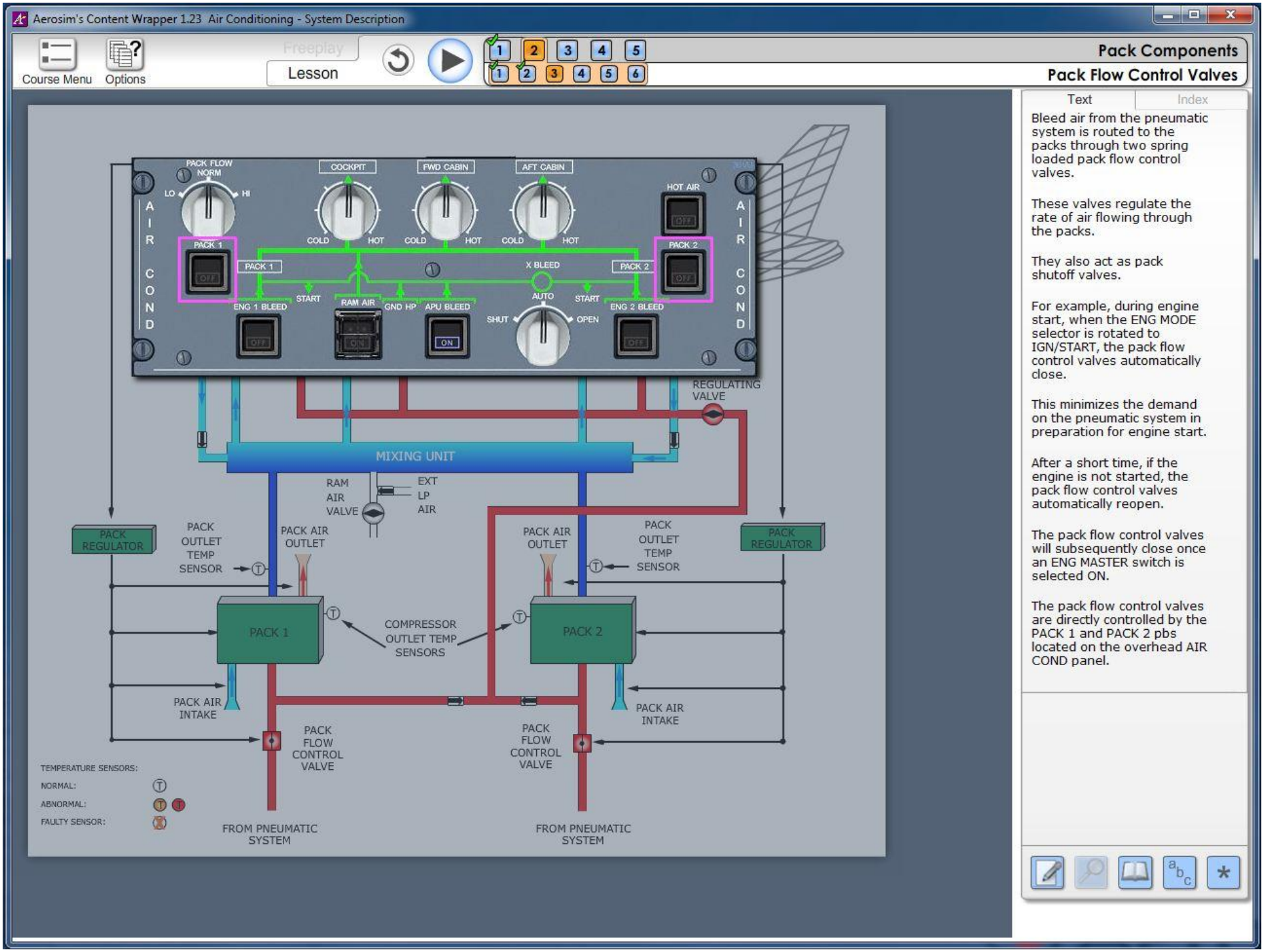

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
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Bleed air from the pneumatic system is routed to the packs through two spring loaded pack flow control valves.
These valves regulate the rate of air flowing through the packs.
They also act as pack shutoff valves.
For example, during engine start, when the ENG MODE selector is rotated to IGN/START, the pack flow control valves automatically close.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMA SYSTEM
ENG
MASTER 1
MASTER 2
ON
ON
OFF
OFF
ENG 1
ENG 2
MODE
NORM
IGN STA
1
2

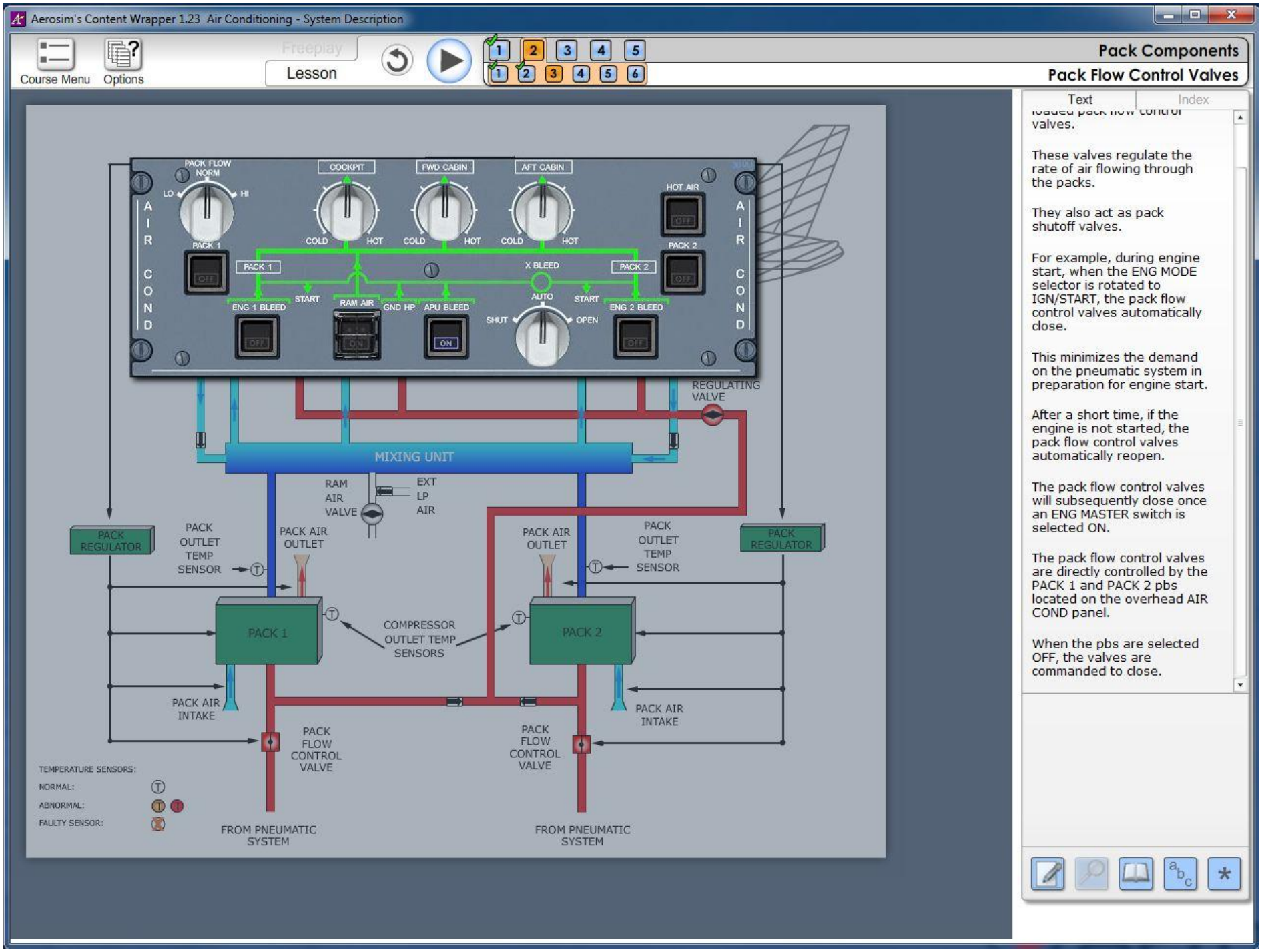

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
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Bleed air from the pneumatic system is routed to the packs through two spring loaded pack flow control valves.
These valves regulate the rate of air flowing through the packs.
They also act as pack shutoff valves.
For example, during engine start, when the ENG MODE selector is rotated to IGN/START, the pack flow control valves automatically close.
This minimizes the demand on the pneumatic system in preparation for engine start.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM
ENG
MASTER 1
MASTER 2
ON
ON
MODE
ENG 1
ENG 2
OFF
OFF
NORM
IGN STA
1
2

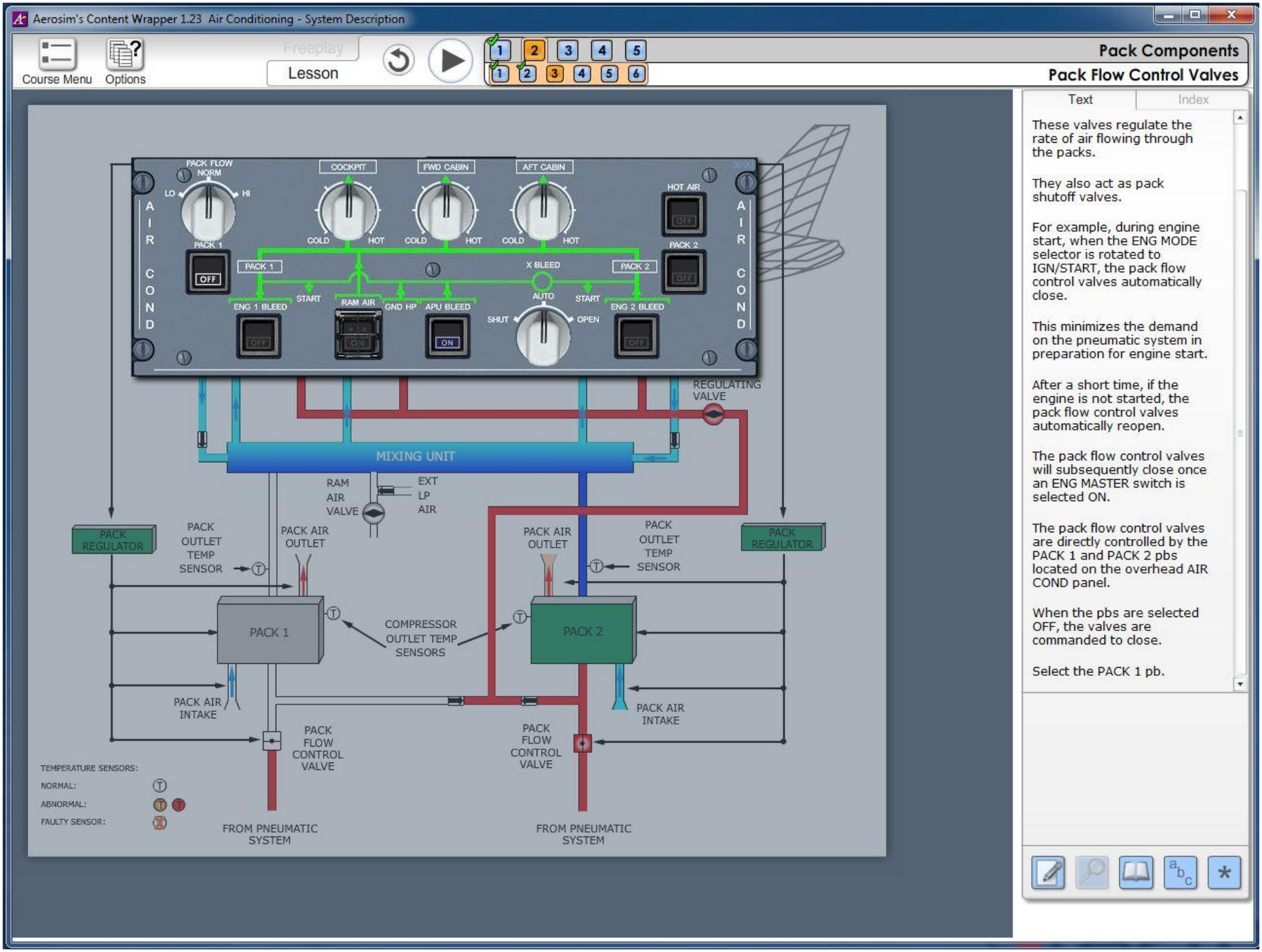

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
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Bleed air from the pneumatic system is routed to the packs through two spring loaded pack flow control valves.
These valves regulate the rate of air flowing through the packs.
They also act as pack shutoff valves.
For example, during engine start, when the ENG MODE selector is rotated to IGN/START, the pack flow control valves automatically close.
This minimizes the demand on the pneumatic system in preparation for engine start.
After a short time, if the engine is not started, the pack flow control valves automatically reopen.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM
ENG
MASTER 1
MASTER 2
ON
ON
MODE
ENG 1
ENG 2
OFF
OFF
NORM
IGN STA
1
2

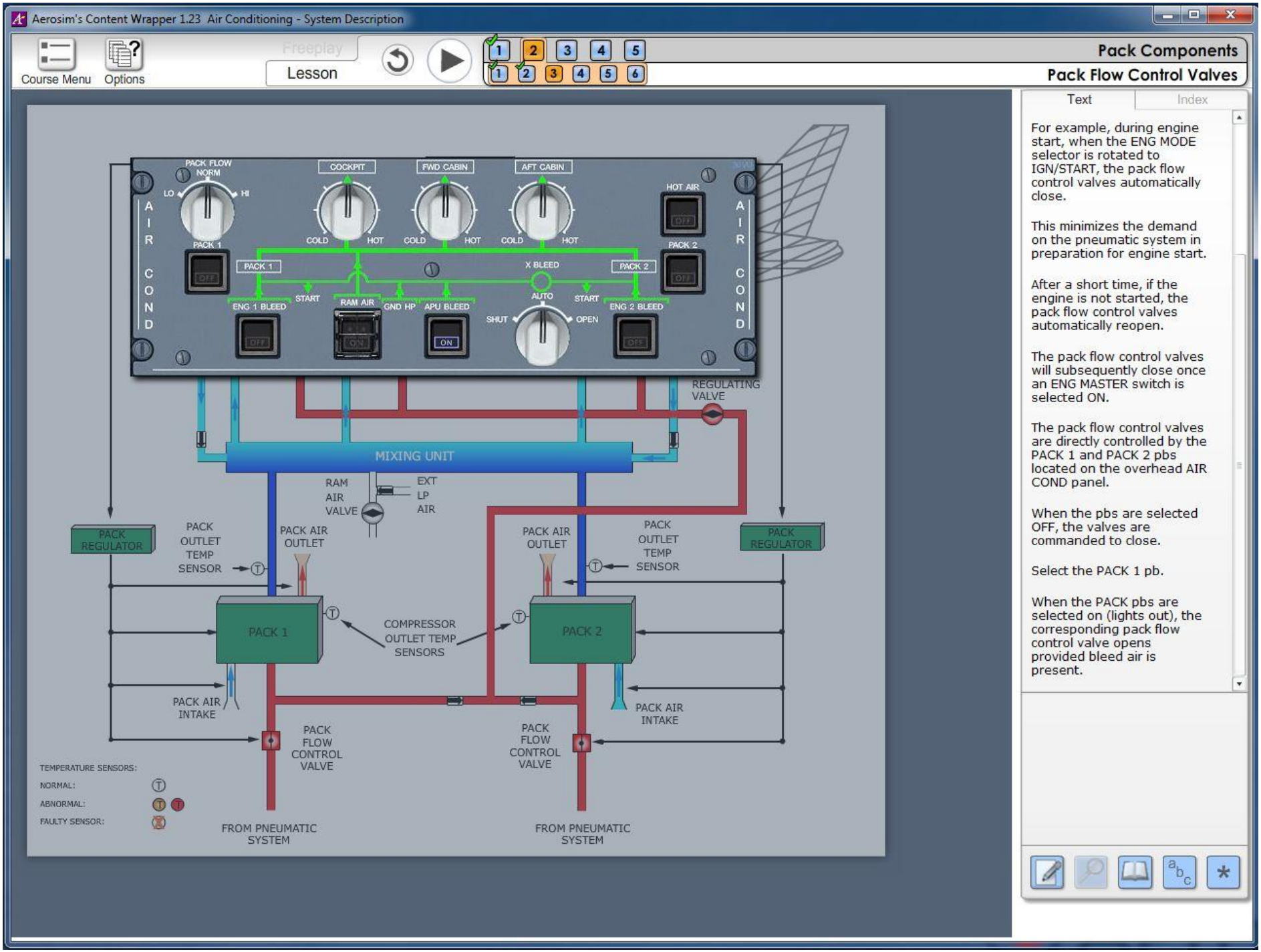

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
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Pack Components
Pack Flow Control Valves
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Bleed air from the pneumatic system is routed to the packs through two spring loaded pack flow control valves.
These valves regulate the rate of air flowing through the packs.
They also act as pack shutoff valves.
For example, during engine start, when the ENG MODE selector is rotated to IGN/START, the pack flow control valves automatically close.
This minimizes the demand on the pneumatic system in preparation for engine start.
After a short time, if the engine is not started, the pack flow control valves automatically reopen.
The pack flow control valves will subsequently close once an ENG MASTER switch is selected ON.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMA SYSTEM
ENG 1
ENG
MASTER 2
ON
ON
MODE
ENG 2
OFF
NORM
IGN STA
OFF
CRANK
1
2

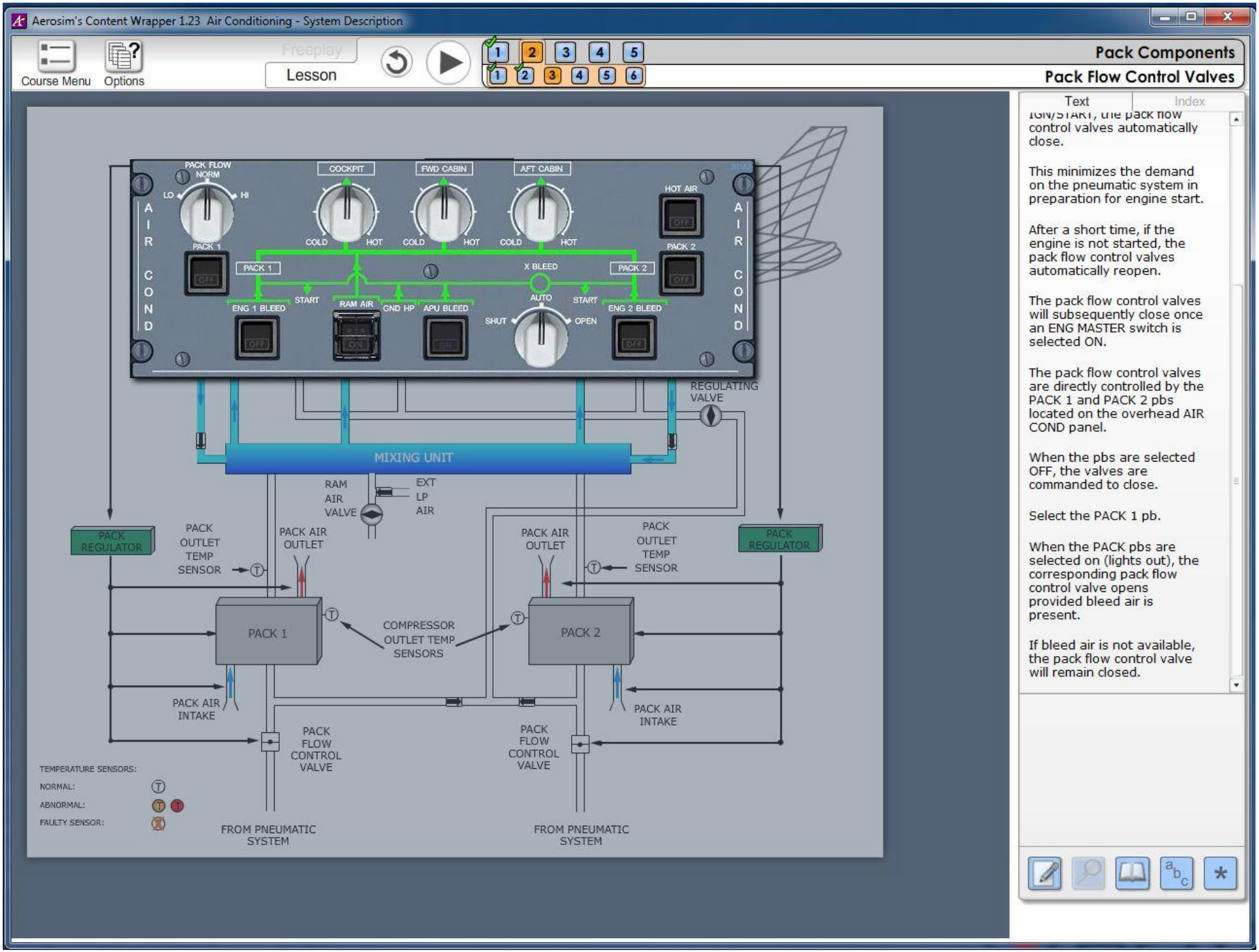

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
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Bleed air from the pneumatic system is routed to the packs through two spring loaded pack flow control valves.
These valves regulate the rate of air flowing through the packs.
They also act as pack shutoff valves.
For example, during engine start, when the ENG MODE selector is rotated to IGN/START, the pack flow control valves automatically close.
This minimizes the demand on the pneumatic system in preparation for engine start.
After a short time, if the engine is not started, the pack flow control valves automatically reopen.
The pack flow control valves will subsequently close once an ENG MASTER switch is selected ON.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
FROM PNEUMATIC SYSTEM
The following conditions also cause the pack flow control valves to close:
• If an ENG FIRE pb is selected on the overhead FIRE panel
• Selecting the DITCHING pb to "ON" on the overhead CABIN PRESS panel
• Lack of airflow; the valves are spring-loaded to close
• A pack overheat

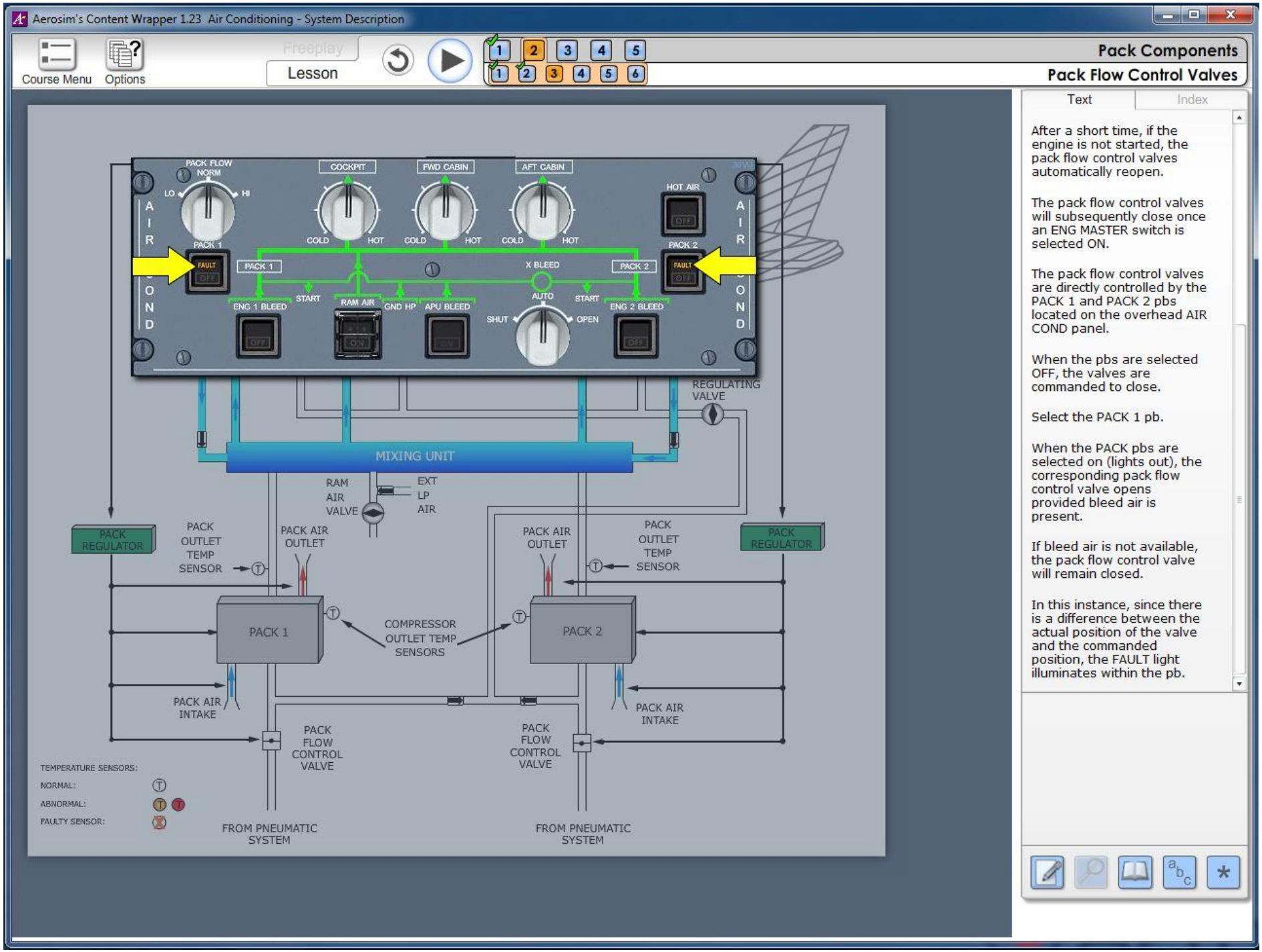

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
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Pack Components
Pack Flow Control Valves
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Bleed air from the pneumatic system is routed to the packs through two spring loaded pack flow control valves.
These valves regulate the rate of air flowing through the packs.
They also act as pack shutoff valves.
For example, during engine start, when the ENG MODE selector is rotated to IGN/START, the pack flow control valves automatically close.
This minimizes the demand on the pneumatic system in preparation for engine start.
After a short time, if the engine is not started, the pack flow control valves automatically reopen.
The pack flow control valves will subsequently close once an ENG MASTER switch is selected ON.
The pack flow control valves are directly controlled by the PACK 1 and PACK 2 pbs located on the overhead AIR COND panel.
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
AIR COND
PACK 1
PACK 2
X BLEED
AUTO
SHUT
OPEN
ENG 1 BLEED
ENG 2 BLEED
START
RAM AIR
GND HP
APU BLEED
ON
OFF
REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
COMPRESSOR OUTLET TEMP SENSORS
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
FROM PNEUMATIC SYSTEM
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:

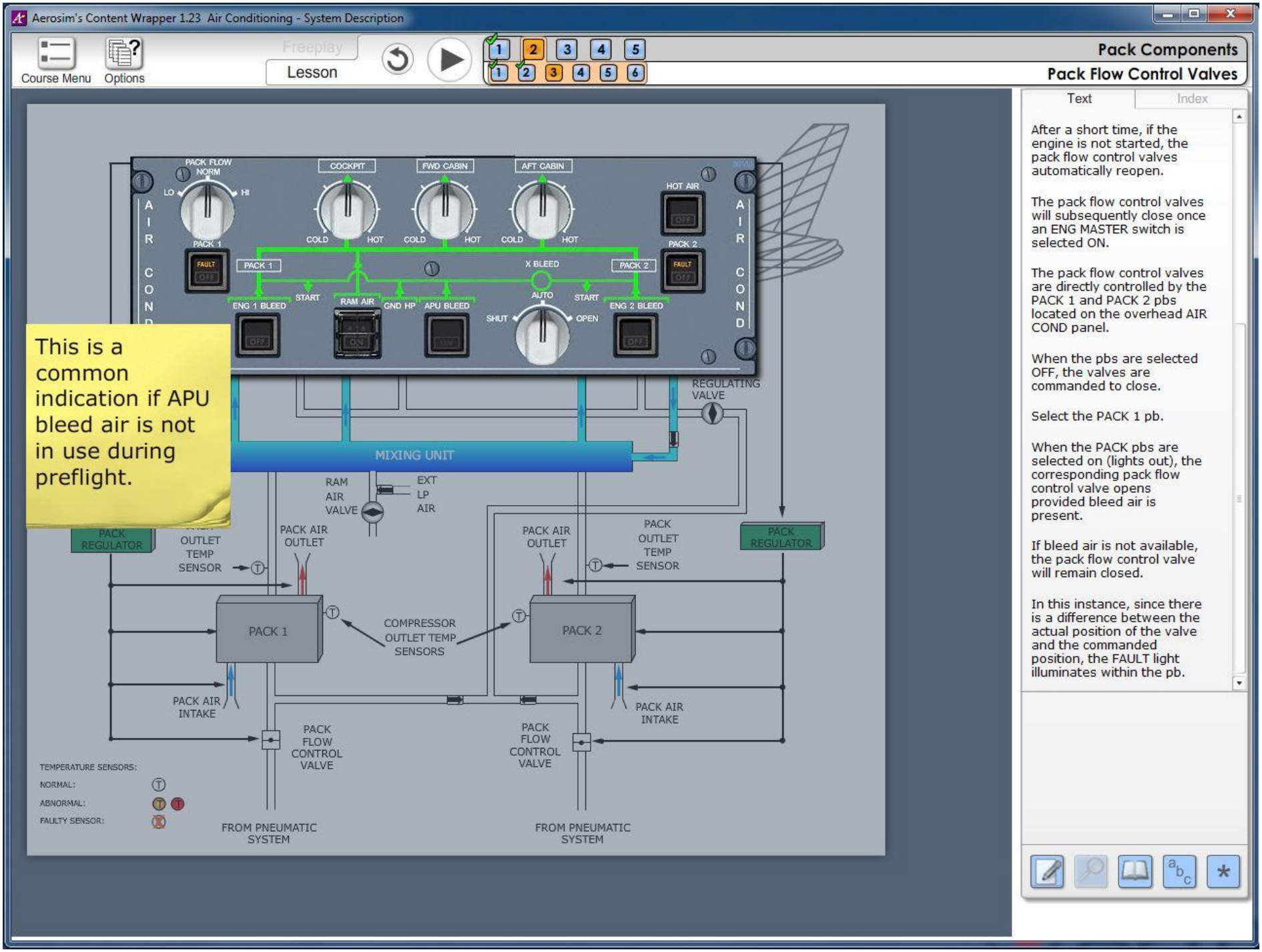

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
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Lesson
Pack Components
Pack Flow Control Valves
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valves.
These valves regulate the rate of air flowing through the packs.
They also act as pack shutoff valves.
For example, during engine start, when the ENG MODE selector is rotated to IGN/START, the pack flow control valves automatically close.
This minimizes the demand on the pneumatic system in preparation for engine start.
After a short time, if the engine is not started, the pack flow control valves automatically reopen.
The pack flow control valves will subsequently close once an ENG MASTER switch is selected ON.
The pack flow control valves are directly controlled by the PACK 1 and PACK 2 pbs located on the overhead AIR COND panel.
When the pbs are selected OFF, the valves are commanded to close.
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
X BLEED
AUTO
SHUT
OPEN
START
ENG 1 BLEED
ENG 2 BLEED
RAM AIR
GND HP
APU BLEED
ON
OFF
REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
COMPRESSOR OUTLET TEMP SENSORS
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
FROM PNEUMATIC SYSTEM
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:

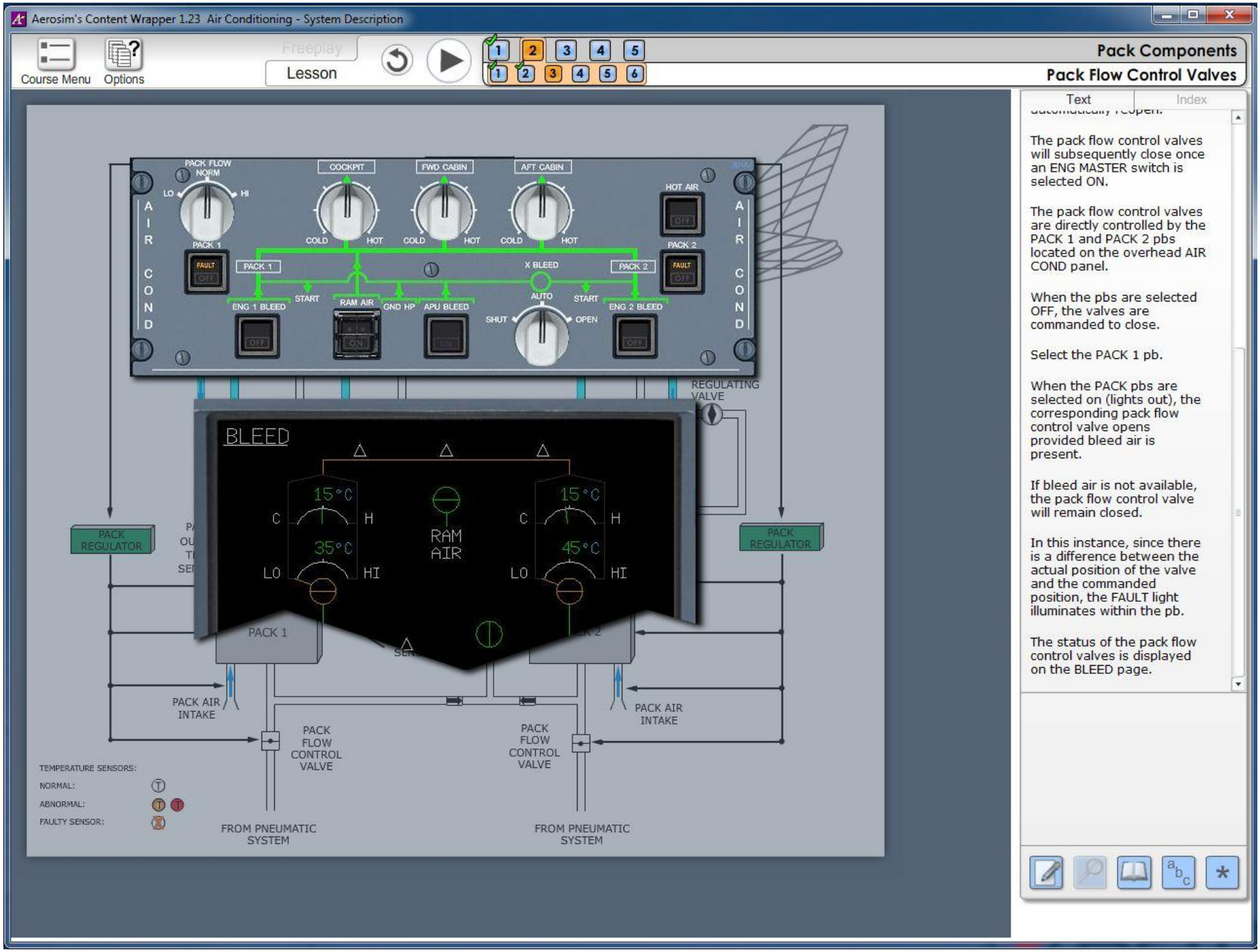

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
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Pack Components
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These valves regulate the rate of air flowing through the packs.
They also act as pack shutoff valves.
For example, during engine start, when the ENG MODE selector is rotated to IGN/START, the pack flow control valves automatically close.
This minimizes the demand on the pneumatic system in preparation for engine start.
After a short time, if the engine is not started, the pack flow control valves automatically reopen.
The pack flow control valves will subsequently close once an ENG MASTER switch is selected ON.
The pack flow control valves are directly controlled by the PACK 1 and PACK 2 pbs located on the overhead AIR COND panel.
When the pbs are selected OFF, the valves are commanded to close.
Select the PACK 1 pb.
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
OFF
X BLEED
AUTO
SHUT
OPEN
START
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
ENG 2 BLEED
ON
AIR COND
REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
COMPRESSOR OUTLET TEMP SENSORS
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
FROM PNEUMATIC SYSTEM
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:

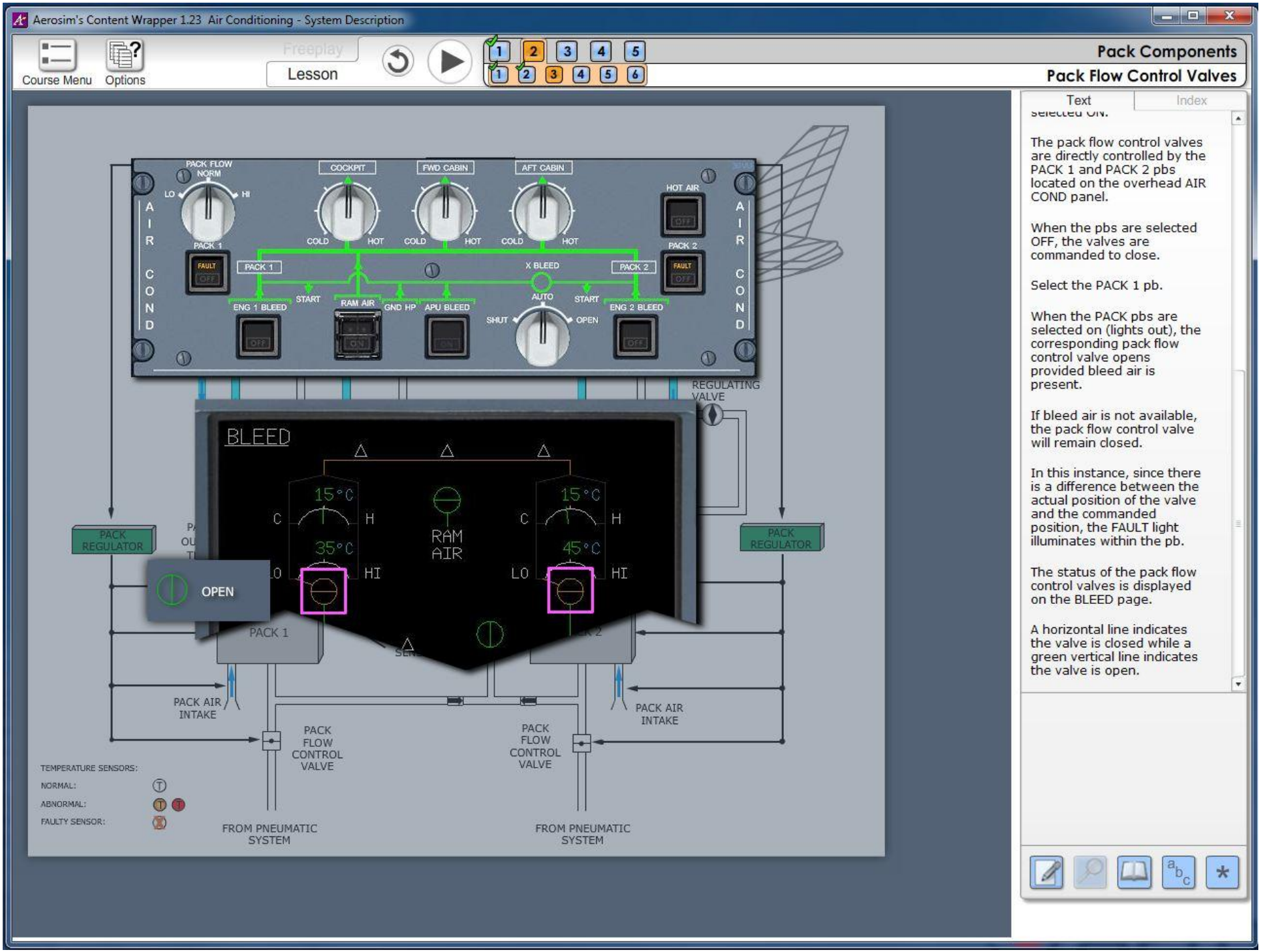

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
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For example, during engine start, when the ENG MODE selector is rotated to IGN/START, the pack flow control valves automatically close.
This minimizes the demand on the pneumatic system in preparation for engine start.
After a short time, if the engine is not started, the pack flow control valves automatically reopen.
The pack flow control valves will subsequently close once an ENG MASTER switch is selected ON.
The pack flow control valves are directly controlled by the PACK 1 and PACK 2 pbs located on the overhead AIR COND panel.
When the pbs are selected OFF, the valves are commanded to close.
Select the PACK 1 pb.
When the PACK pbs are selected on (lights out), the corresponding pack flow control valve opens provided bleed air is present.
PACK FLOW NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
X BLEED
AUTO
SHUT
OPEN
START
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
ENG 2 BLEED
REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
COMPRESSOR OUTLET TEMP SENSORS
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM

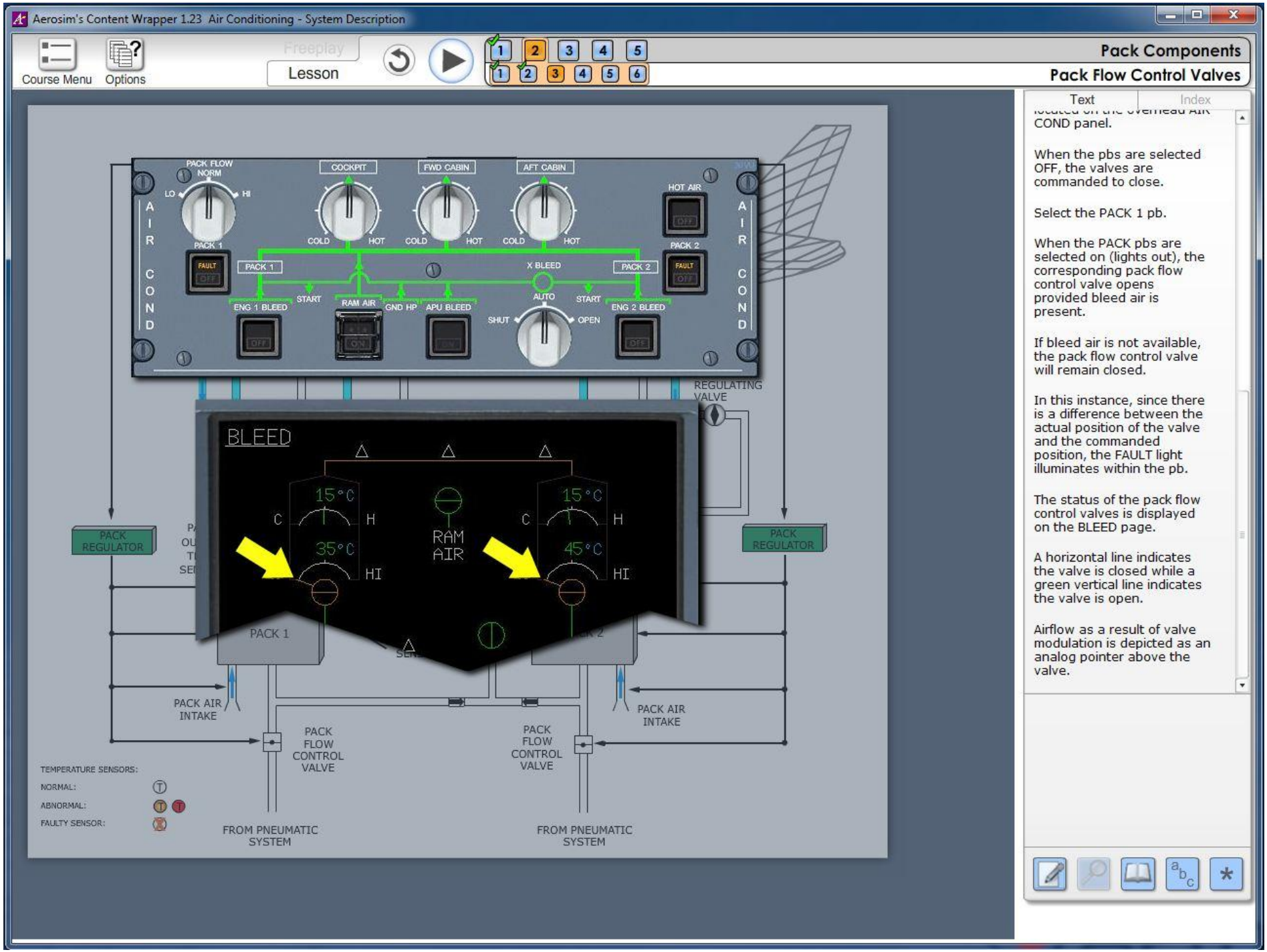

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Pack Flow Control Valves
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Index
control valves automatically close.
This minimizes the demand on the pneumatic system in preparation for engine start.
After a short time, if the engine is not started, the pack flow control valves automatically reopen.
The pack flow control valves will subsequently close once an ENG MASTER switch is selected ON.
The pack flow control valves are directly controlled by the PACK 1 and PACK 2 pbs located on the overhead AIR COND panel.
When the pbs are selected OFF, the valves are commanded to close.
Select the PACK 1 pb.
When the PACK pbs are selected on (lights out), the corresponding pack flow control valve opens provided bleed air is present.
If bleed air is not available, the pack flow control valve will remain closed.
PACK FLOW NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
X BLEED
AUTO
SHUT
OPEN
START
ENG 1 BLEED
ENG 2 BLEED
RAM AIR
GND HP
APU BLEED
REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
COMPRESSOR OUTLET TEMP SENSORS
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM

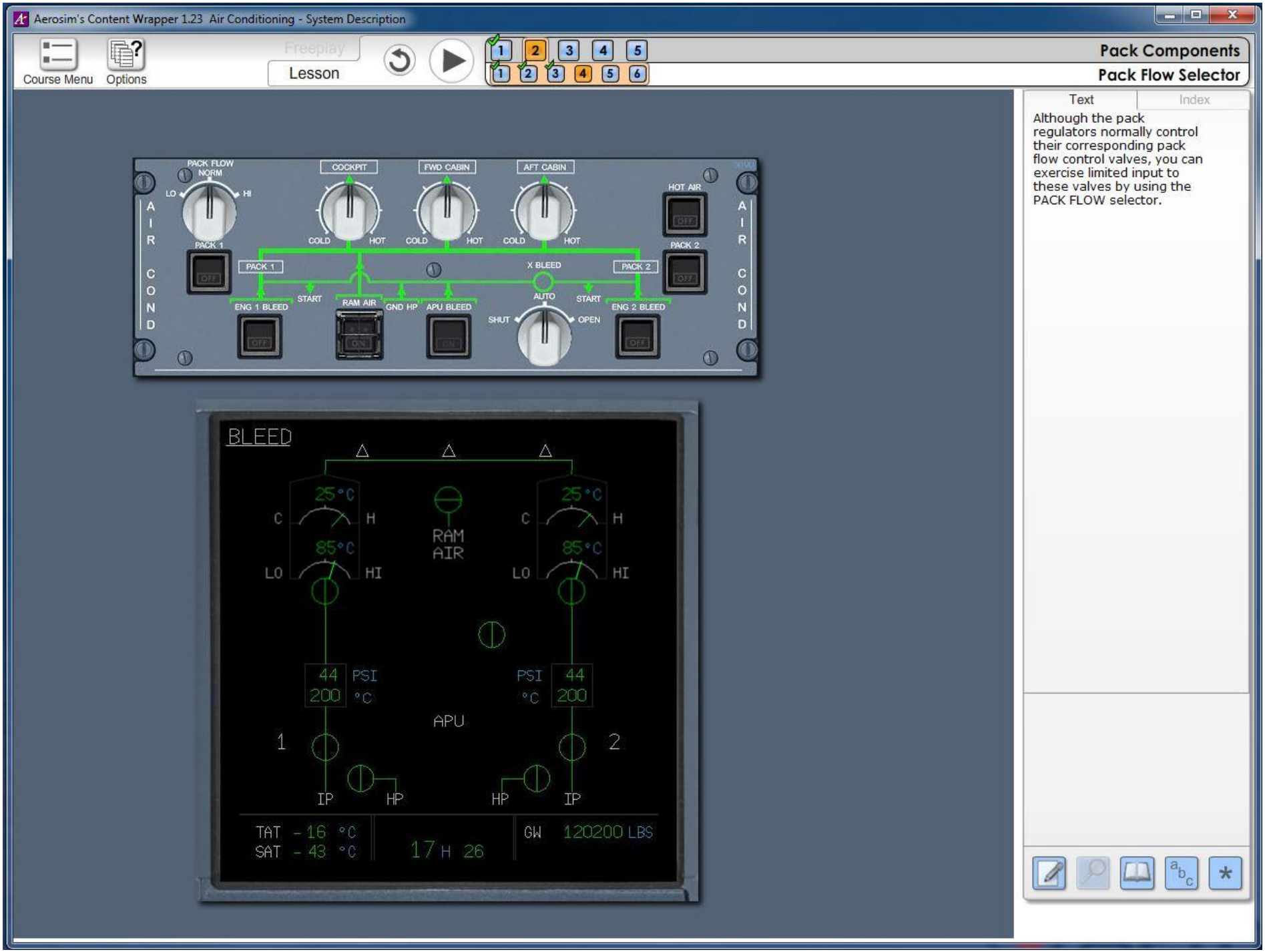

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Flow Control Valves
Text
Index
After a short time, if the engine is not started, the pack flow control valves automatically reopen.
The pack flow control valves will subsequently close once an ENG MASTER switch is selected ON.
The pack flow control valves are directly controlled by the PACK 1 and PACK 2 pbs located on the overhead AIR COND panel.
When the pbs are selected OFF, the valves are commanded to close.
Select the PACK 1 pb.
When the PACK pbs are selected on (lights out), the corresponding pack flow control valve opens provided bleed air is present.
If bleed air is not available, the pack flow control valve will remain closed.
In this instance, since there is a difference between the actual position of the valve and the commanded position, the FAULT light illuminates within the pb.
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
FAULT
OFF
X BLEED
AUTO
SHUT
OPEN
START
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
ENG 2 BLEED
REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
COMPRESSOR OUTLET TEMP SENSORS
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
FROM PNEUMATIC SYSTEM
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:

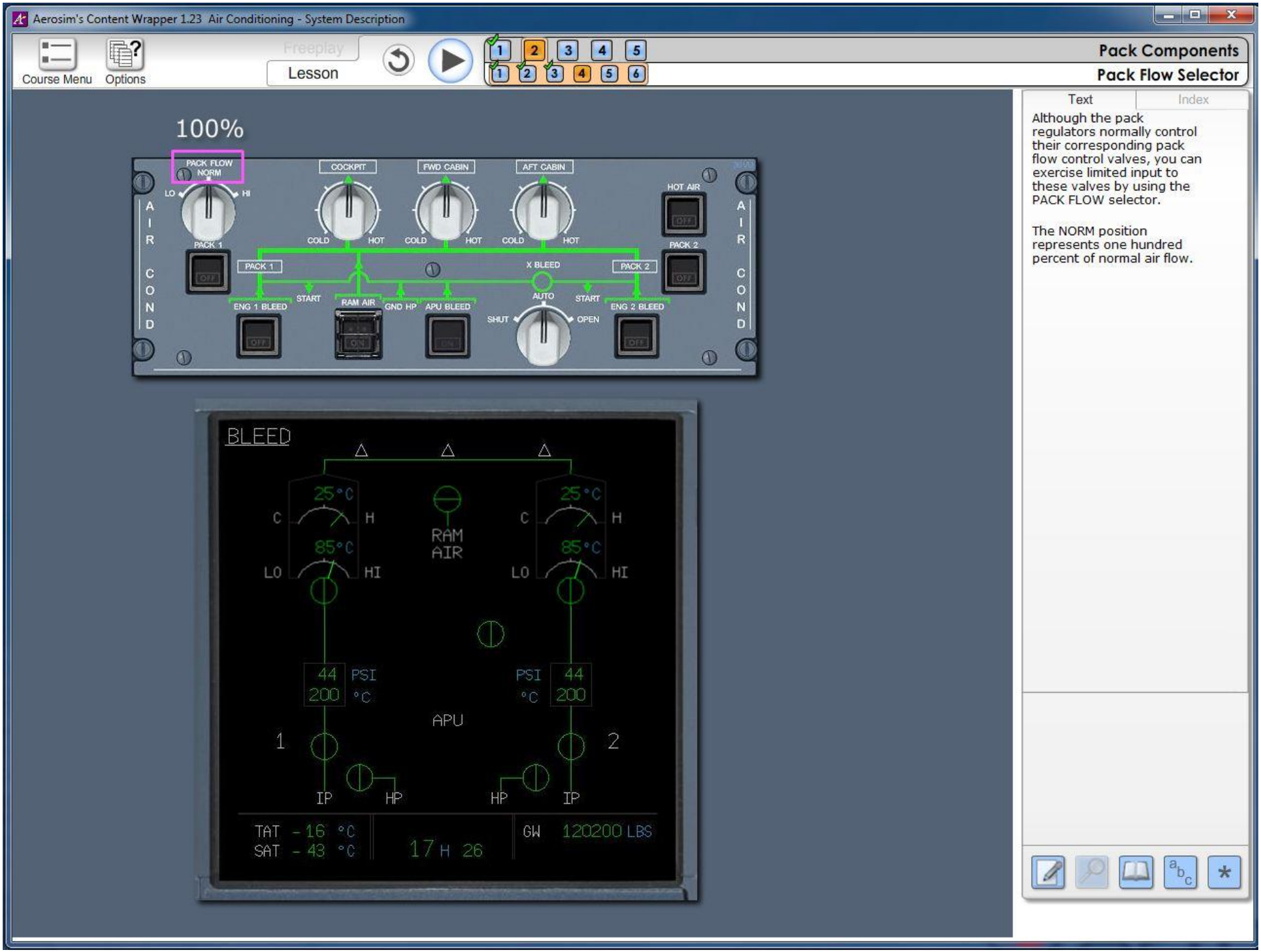

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Flow Control Valves
Text
Index
After a short time, if the engine is not started, the pack flow control valves automatically reopen.
The pack flow control valves will subsequently close once an ENG MASTER switch is selected ON.
The pack flow control valves are directly controlled by the PACK 1 and PACK 2 pbs located on the overhead AIR COND panel.
When the pbs are selected OFF, the valves are commanded to close.
Select the PACK 1 pb.
When the PACK pbs are selected on (lights out), the corresponding pack flow control valve opens provided bleed air is present.
If bleed air is not available, the pack flow control valve will remain closed.
In this instance, since there is a difference between the actual position of the valve and the commanded position, the FAULT light illuminates within the pb.
This is a common indication if APU bleed air is not in use during preflight.
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
FAULT
OFF
X BLEED
ENG 1 BLEED
START
RAM AIR
GND HP
APU BLEED
AUTO
SHUT
OPEN
ENG 2 BLEED
REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK 1
PACK 2
COMPRESSOR OUTLET TEMP SENSORS
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
FROM PNEUMATIC SYSTEM
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:

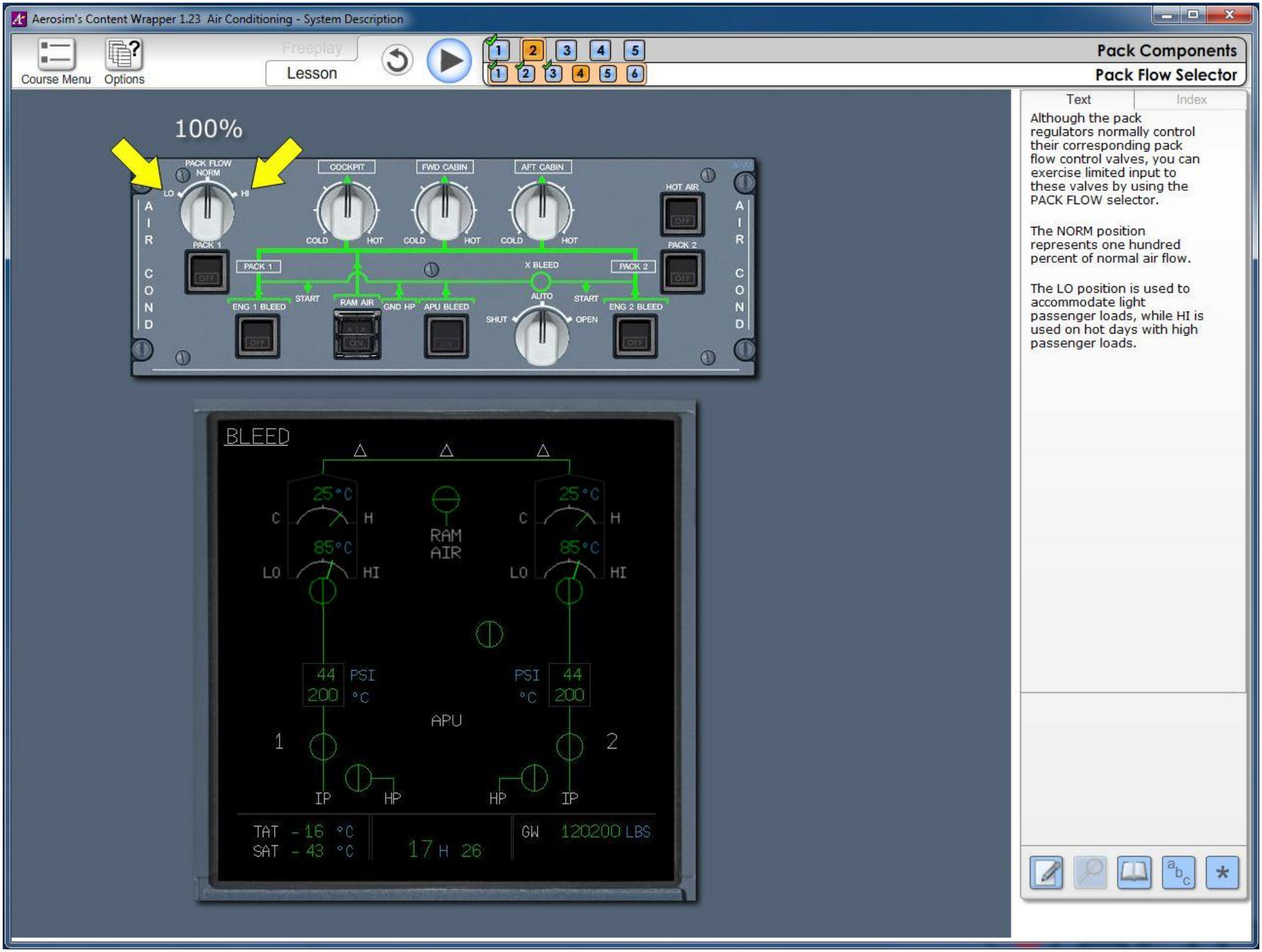

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Flow Control Valves
Text
Index
The pack flow control valves will subsequently close once an ENG MASTER switch is selected ON.
The pack flow control valves are directly controlled by the PACK 1 and PACK 2 pbs located on the overhead AIR COND panel.
When the pbs are selected OFF, the valves are commanded to close.
Select the PACK 1 pb.
When the PACK pbs are selected on (lights out), the corresponding pack flow control valve opens provided bleed air is present.
If bleed air is not available, the pack flow control valve will remain closed.
In this instance, since there is a difference between the actual position of the valve and the commanded position, the FAULT light illuminates within the pb.
The status of the pack flow control valves is displayed on the BLEED page.
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
FAULT
X BLEED
AUTO
SHUT
OPEN
START
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
ENG 2 BLEED
AIR COND
REGULATING VALVE
BLEED
15°C
35°C
45°C
C
H
RAM AIR
PACK REGULATOR
PACK 1
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM

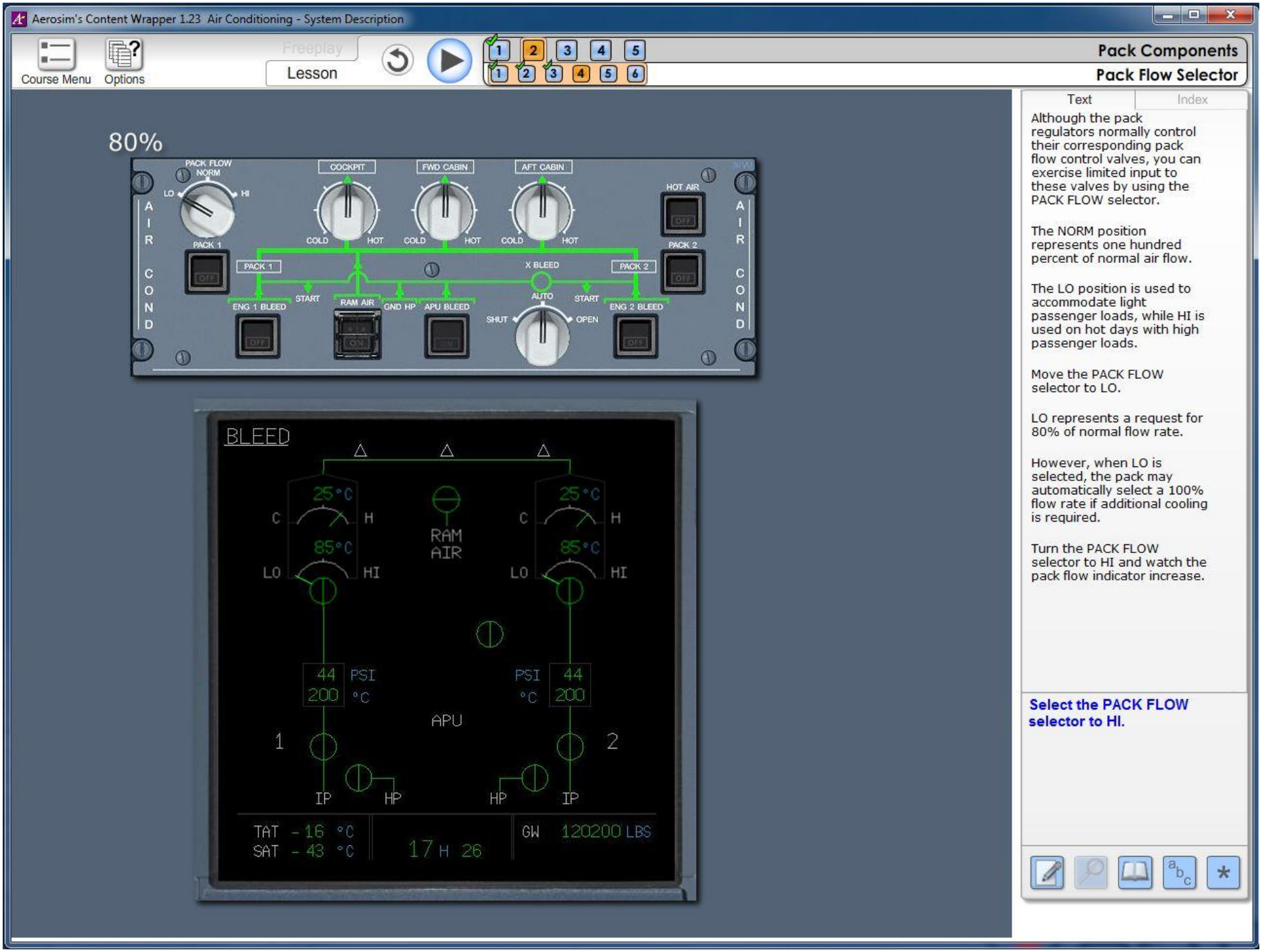

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Flow Control Valves
Text
Index
The pack flow control valves are directly controlled by the PACK 1 and PACK 2 pbs located on the overhead AIR COND panel.
When the pbs are selected OFF, the valves are commanded to close.
Select the PACK 1 pb.
When the PACK pbs are selected on (lights out), the corresponding pack flow control valve opens provided bleed air is present.
If bleed air is not available, the pack flow control valve will remain closed.
In this instance, since there is a difference between the actual position of the valve and the commanded position, the FAULT light illuminates within the pb.
The status of the pack flow control valves is displayed on the BLEED page.
A horizontal line indicates the valve is closed while a green vertical line indicates the valve is open.
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
FAULT
OFF
X BLEED
AUTO
SHUT
OPEN
START
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
ENG 2 BLEED
REGULATING VALVE
BLEED
15°C
35°C
45°C
C
H
RAM AIR
PACK REGULATOR
OPEN
PACK 1
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
FROM PNEUMATIC SYSTEM
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:

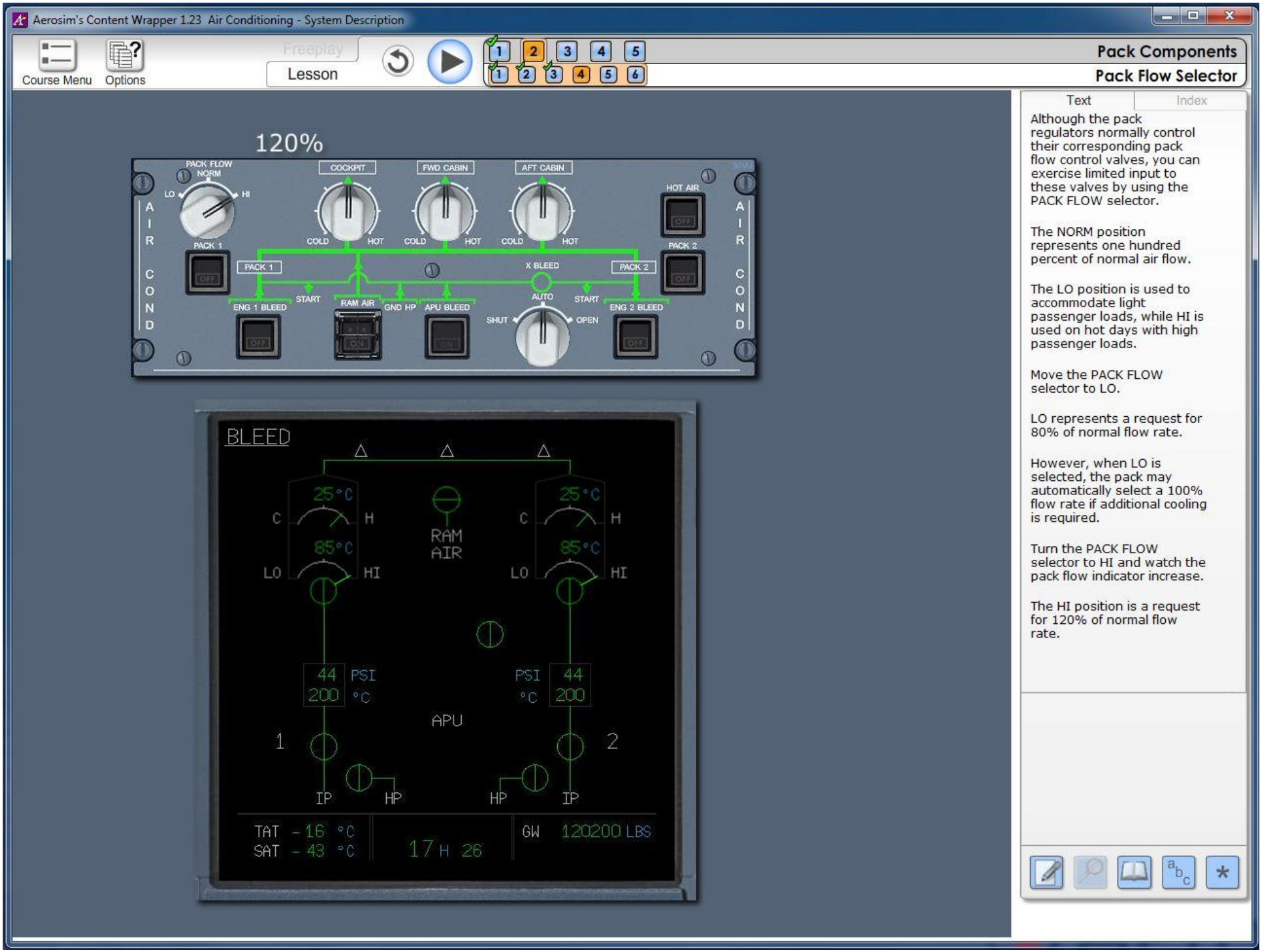

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Flow Control Valves
Text
Index
When the pbs are selected OFF, the valves are commanded to close.
Select the PACK 1 pb.
When the PACK pbs are selected on (lights out), the corresponding pack flow control valve opens provided bleed air is present.
If bleed air is not available, the pack flow control valve will remain closed.
In this instance, since there is a difference between the actual position of the valve and the commanded position, the FAULT light illuminates within the pb.
The status of the pack flow control valves is displayed on the BLEED page.
A horizontal line indicates the valve is closed while a green vertical line indicates the valve is open.
Airflow as a result of valve modulation is depicted as an analog pointer above the valve.
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
FAULT
OFF
X BLEED
AUTO
SHUT
OPEN
START
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
ENG 2 BLEED
AIR COND
REGULATING VALVE
BLEED
15°C
35°C
45°C
C
H
HI
RAM AIR
PACK REGULATOR
PACK 1
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
FROM PNEUMATIC SYSTEM
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:

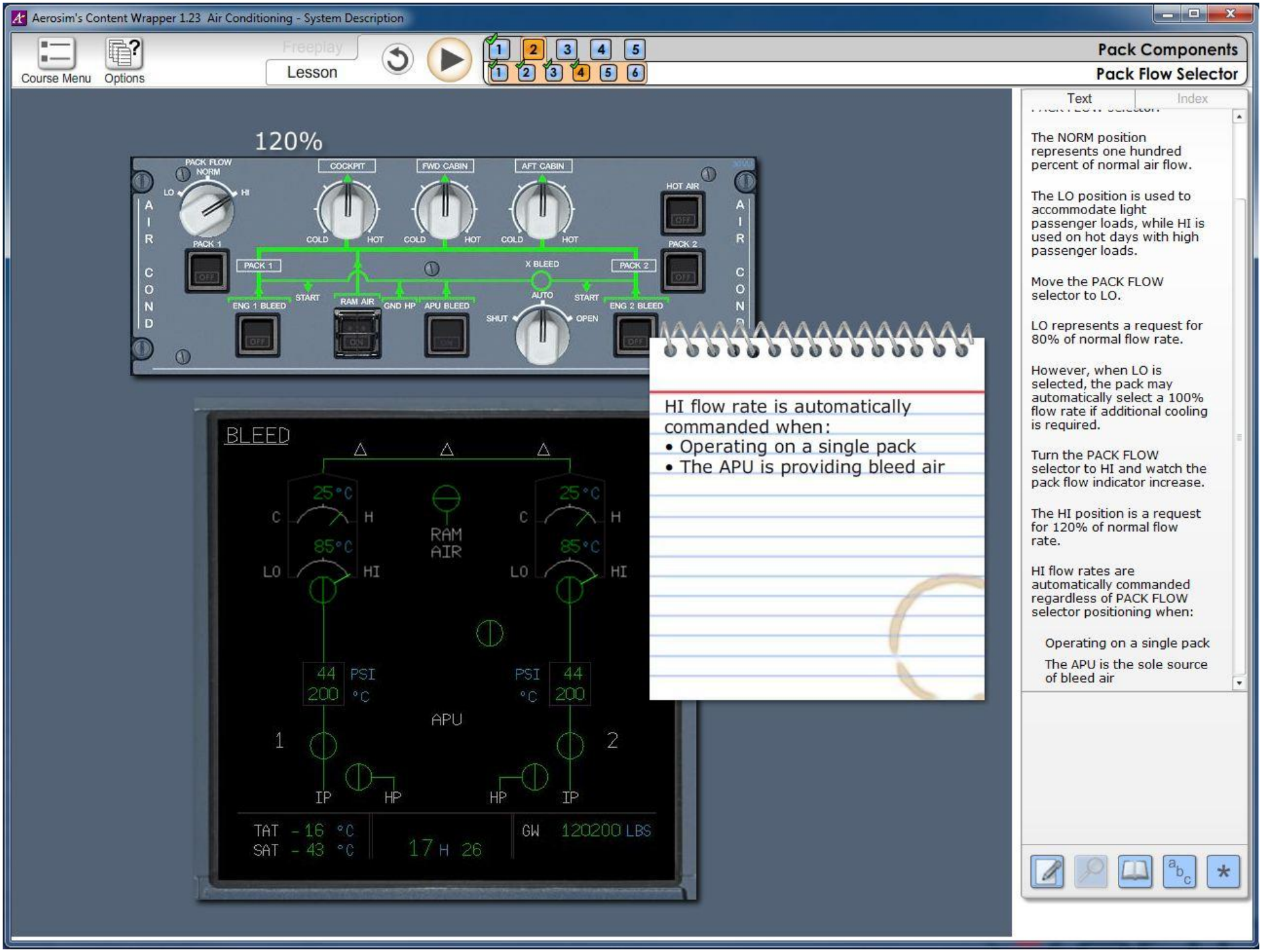

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Flow Selector
Text
Index
Although the pack regulators normally control their corresponding pack flow control valves, you can exercise limited input to these valves by using the PACK FLOW selector.
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
X BLEED
AUTO
SHUT
OPEN
START
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
ENG 2 BLEED
AIR COND
BLEED
25°C
85°C
C
H
RAM AIR
44
200
PSI
°C
APU
1
2
IP
HP
TAT -16 °C
SAT -43 °C
17 H 26
GW 120200 LBS

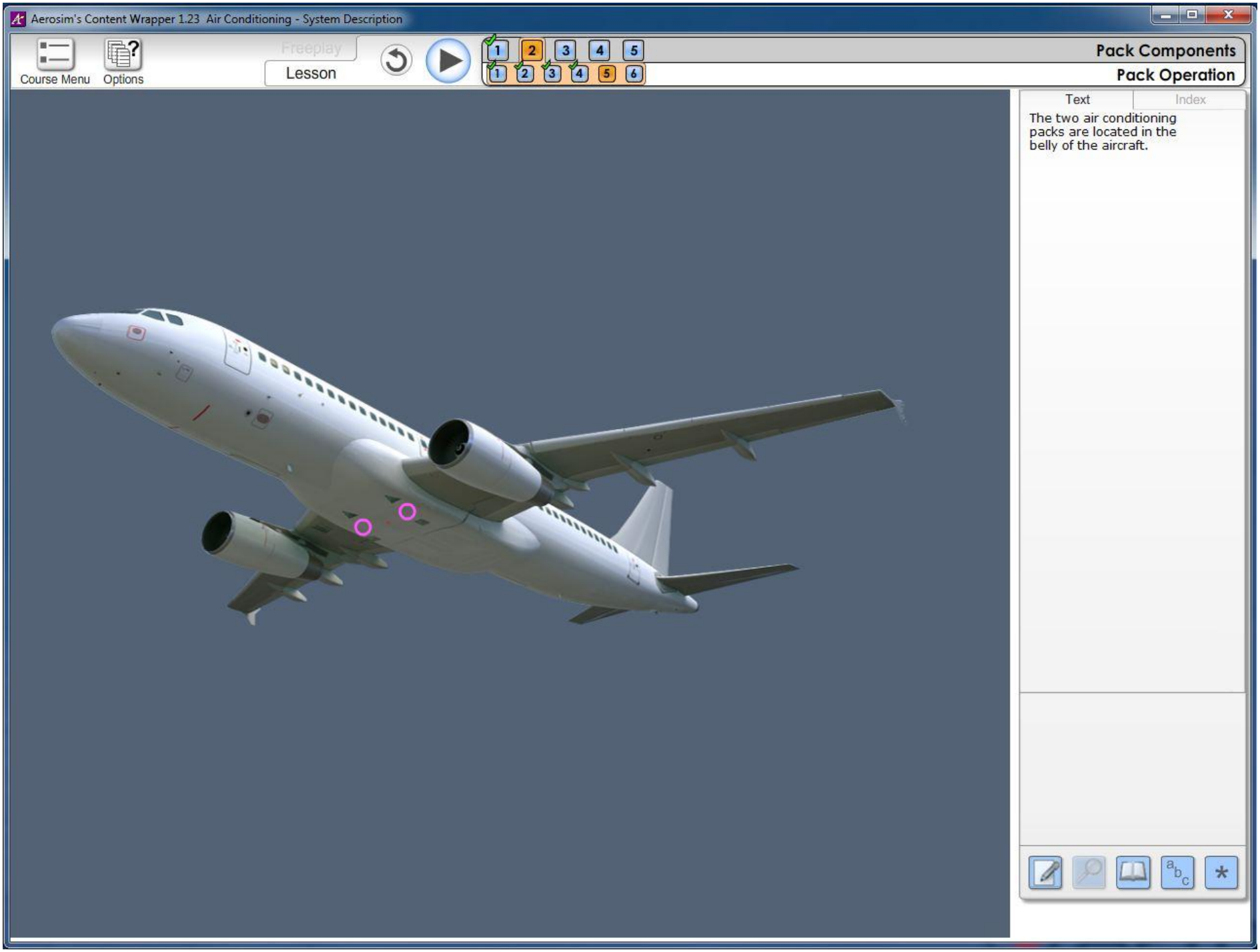

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Flow Selector
Text
Index
Although the pack regulators normally control their corresponding pack flow control valves, you can exercise limited input to these valves by using the PACK FLOW selector.
The NORM position represents one hundred percent of normal air flow.
100%
PACK FLOW NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
AIR COND
X BLEED
AUTO
SHUT
OPEN
START
ENG 1 BLEED
ENG 2 BLEED
RAM AIR
GND HP
APU BLEED
BLEED
25°C
85°C
C
H
RAM AIR
44
200
PSI
°C
APU
1
2
IP
HP
TAT -16 °C
SAT -43 °C
17 H 26
GW 120200 LBS

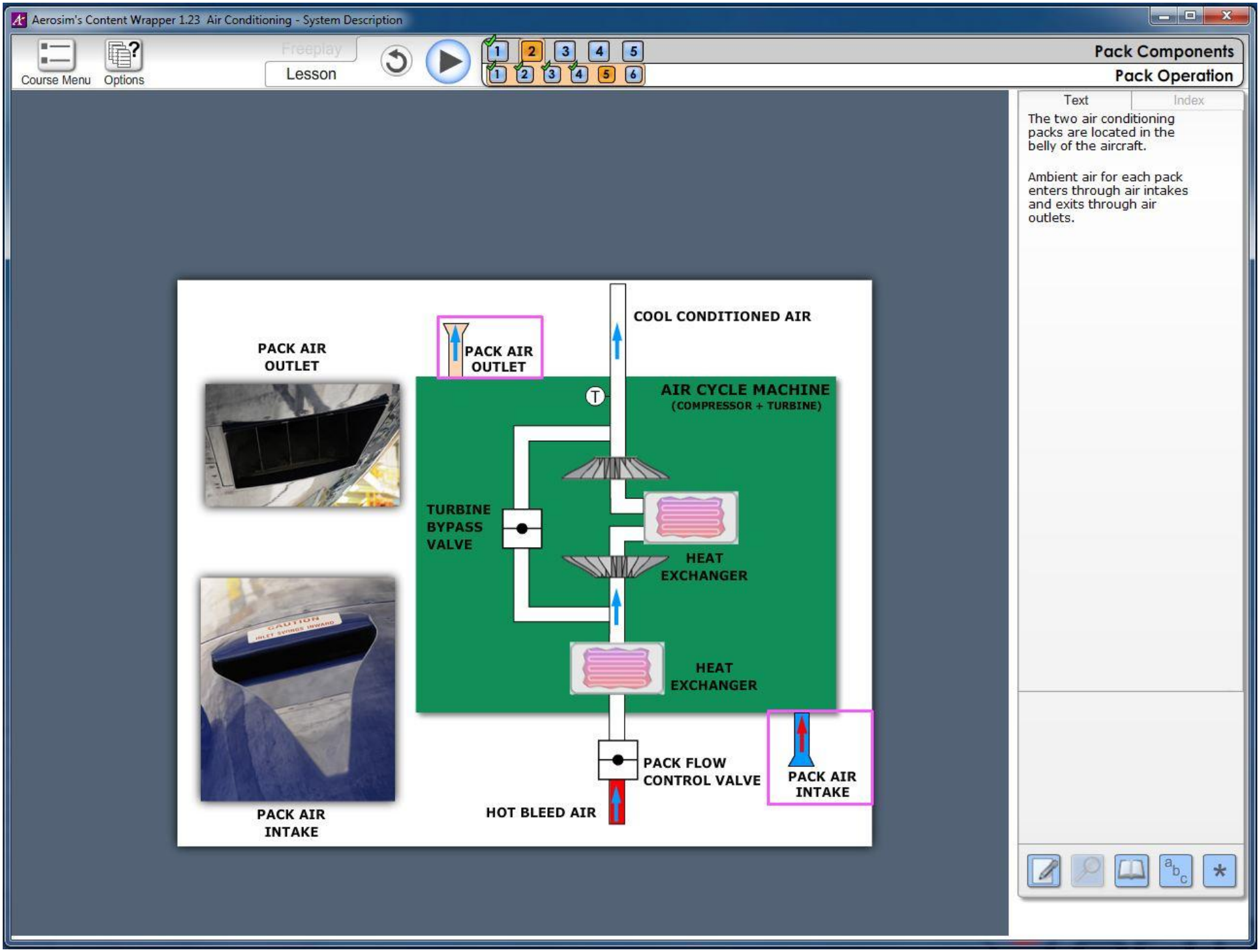

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Flow Selector
Text
Index
Although the pack regulators normally control their corresponding pack flow control valves, you can exercise limited input to these valves by using the PACK FLOW selector.
The NORM position represents one hundred percent of normal air flow.
The LO position is used to accommodate light passenger loads, while HI is used on hot days with high passenger loads.
100%
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
X BLEED
AUTO
SHUT
OPEN
START
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
ENG 2 BLEED
AIR COND
BLEED
25°C
85°C
C
H
LO
HI
RAM AIR
44
200
PSI
°C
APU
1
2
IP
HP
TAT -16 °C
SAT -43 °C
17 H 26
GW 120200 LBS

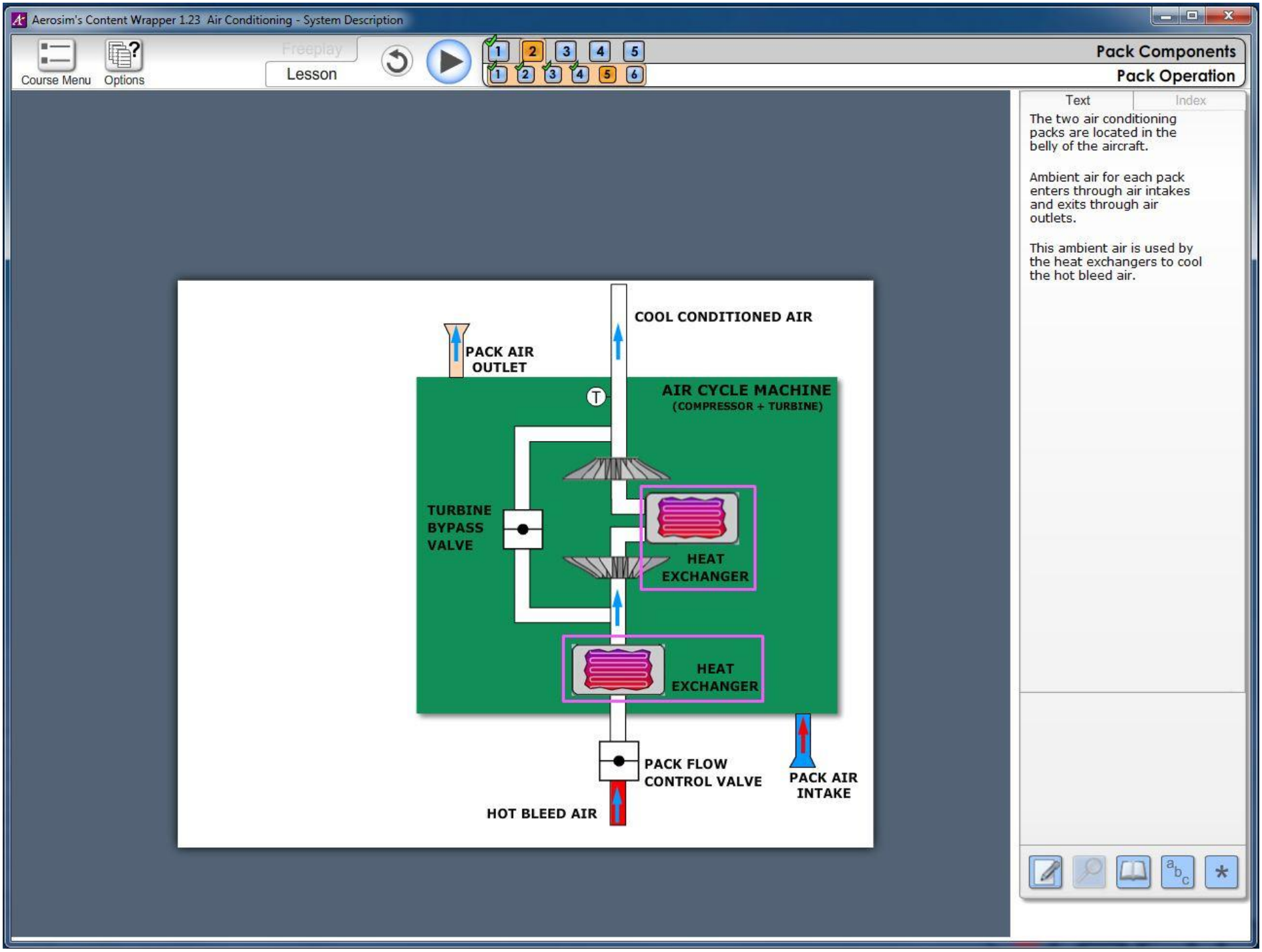

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Flow Selector
Text
Index
80%
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
HOT AIR
COLD
HOT
PACK 1
PACK 2
X BLEED
AUTO
SHUT
OPEN
START
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
ENG 2 BLEED
AIR COND
BLEED
25°C
85°C
RAM AIR
44
200
PSI
°C
APU
1
2
IP
HP
TAT - 16 °C
SAT - 43 °C
17 H 26
GW 120200 LBS
Although the pack regulators normally control their corresponding pack flow control valves, you can exercise limited input to these valves by using the PACK FLOW selector.
The NORM position represents one hundred percent of normal air flow.
The LO position is used to accommodate light passenger loads, while HI is used on hot days with high passenger loads.
Move the PACK FLOW selector to LO.
LO represents a request for 80% of normal flow rate.
However, when LO is selected, the pack may automatically select a 100% flow rate if additional cooling is required.
Turn the PACK FLOW selector to HI and watch the pack flow indicator increase.
Select the PACK FLOW selector to HI.

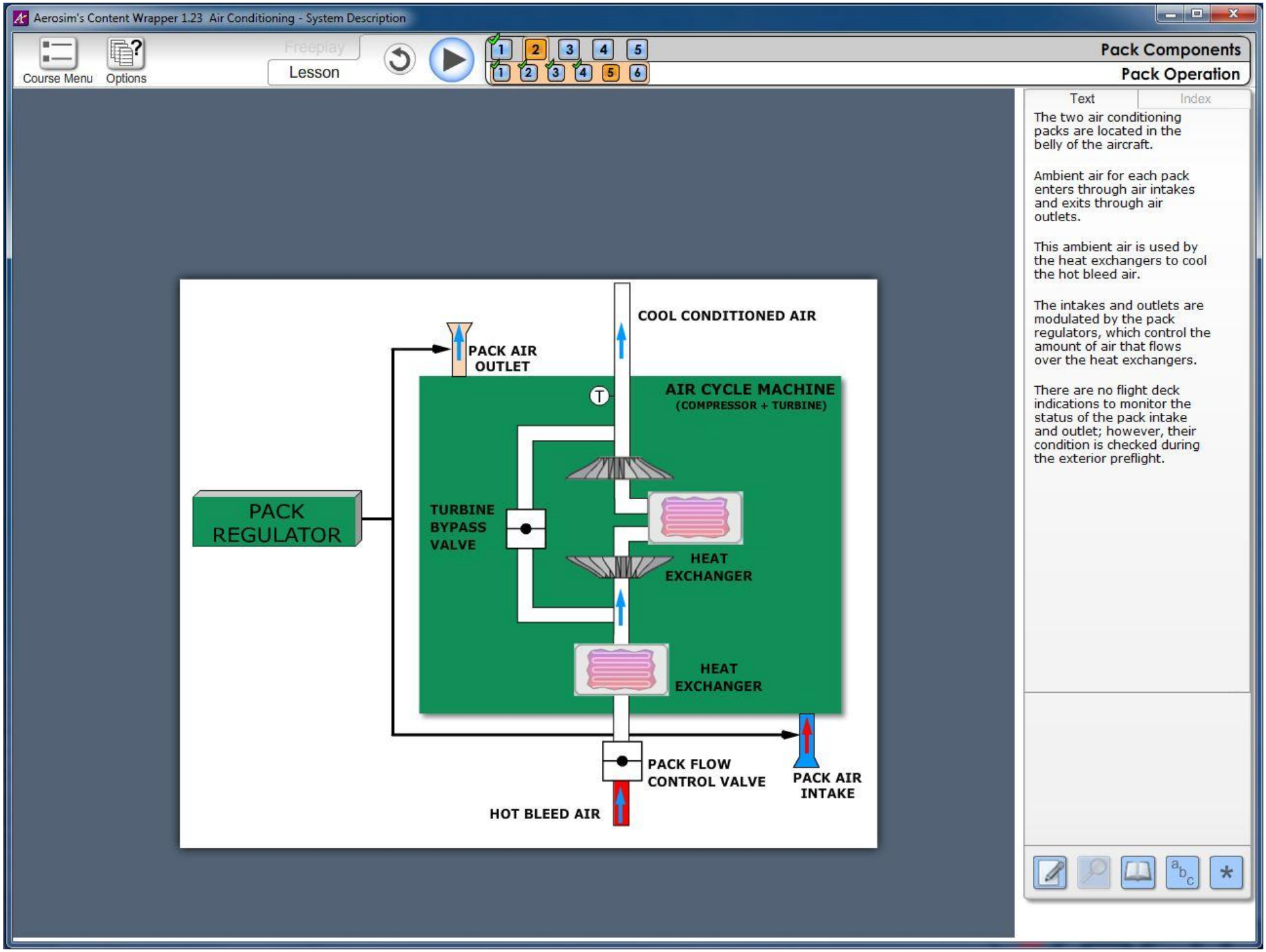

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Flow Selector
Text
Index
Although the pack regulators normally control their corresponding pack flow control valves, you can exercise limited input to these valves by using the PACK FLOW selector.
The NORM position represents one hundred percent of normal air flow.
The LO position is used to accommodate light passenger loads, while HI is used on hot days with high passenger loads.
Move the PACK FLOW selector to LO.
LO represents a request for 80% of normal flow rate.
However, when LO is selected, the pack may automatically select a 100% flow rate if additional cooling is required.
Turn the PACK FLOW selector to HI and watch the pack flow indicator increase.
The HI position is a request for 120% of normal flow rate.
120%
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
HOT AIR
COLD
HOT
PACK 1
PACK 2
X BLEED
ENG 1 BLEED
START
RAM AIR
GND HP
APU BLEED
AUTO
SHUT
OPEN
ENG 2 BLEED
AIR COND
BLEED
25°C
85°C
C
H
RAM AIR
44
200
PSI
°C
APU
1
2
IP
HP
TAT -16 °C
SAT -43 °C
17 H 26
GW 120200 LBS

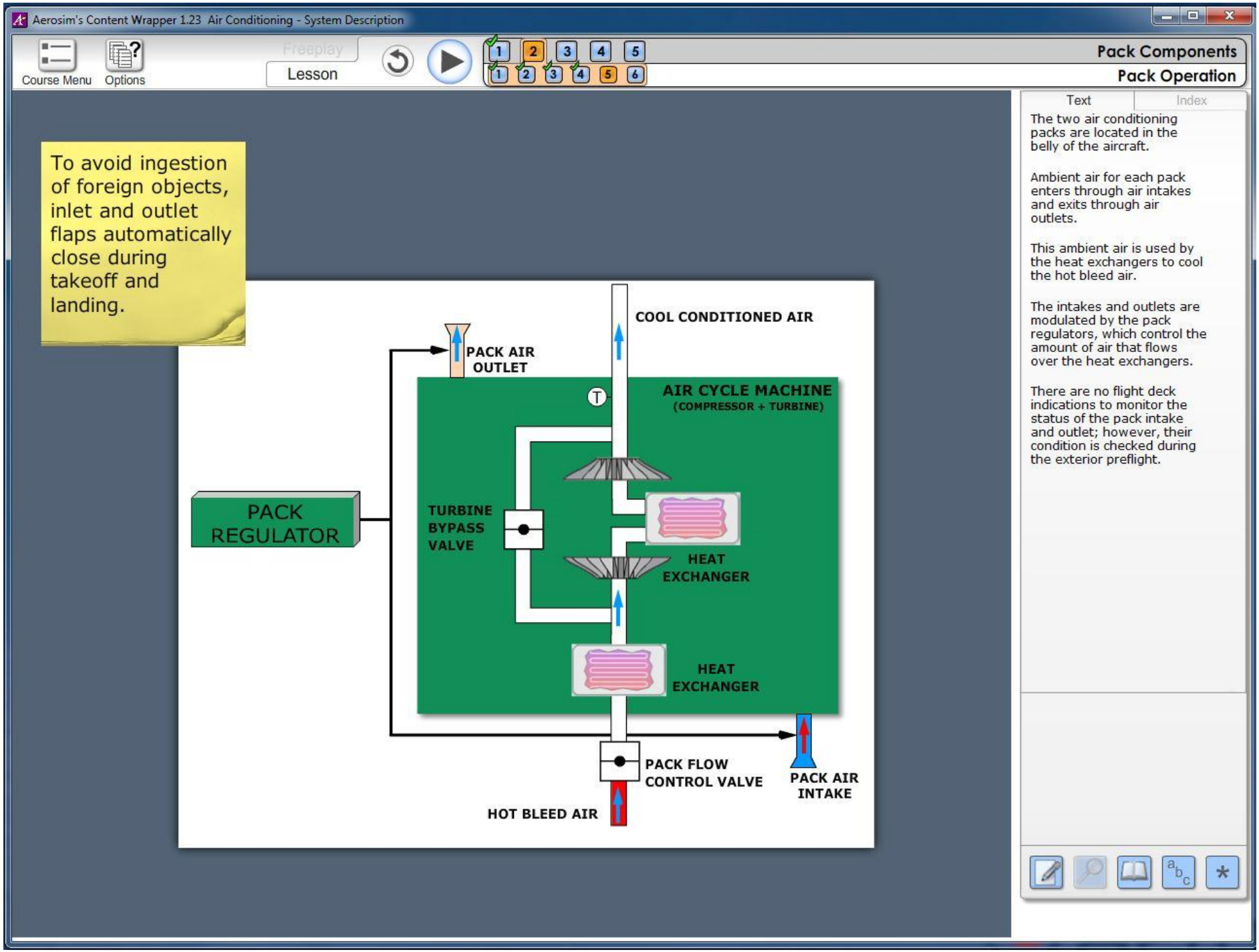

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Flow Selector
Text
Index
120%
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
X BLEED
AUTO
SHUT
OPEN
START
RAM AIR
GND HP
APU BLEED
ENG 1 BLEED
ENG 2 BLEED
AIR COND
BLEED
25°C
85°C
C
H
RAM AIR
44
200
PSI
°C
APU
1
2
IP
HP
TAT - 16 °C
SAT - 43 °C
17 H 26
GW 120200 LBS
HI flow rate is automatically commanded when:
• Operating on a single pack
• The APU is providing bleed air
The NORM position represents one hundred percent of normal air flow.
The LO position is used to accommodate light passenger loads, while HI is used on hot days with high passenger loads.
Move the PACK FLOW selector to LO.
LO represents a request for 80% of normal flow rate.
However, when LO is selected, the pack may automatically select a 100% flow rate if additional cooling is required.
Turn the PACK FLOW selector to HI and watch the pack flow indicator increase.
The HI position is a request for 120% of normal flow rate.
HI flow rates are automatically commanded regardless of PACK FLOW selector positioning when:
Operating on a single pack
The APU is the sole source of bleed air

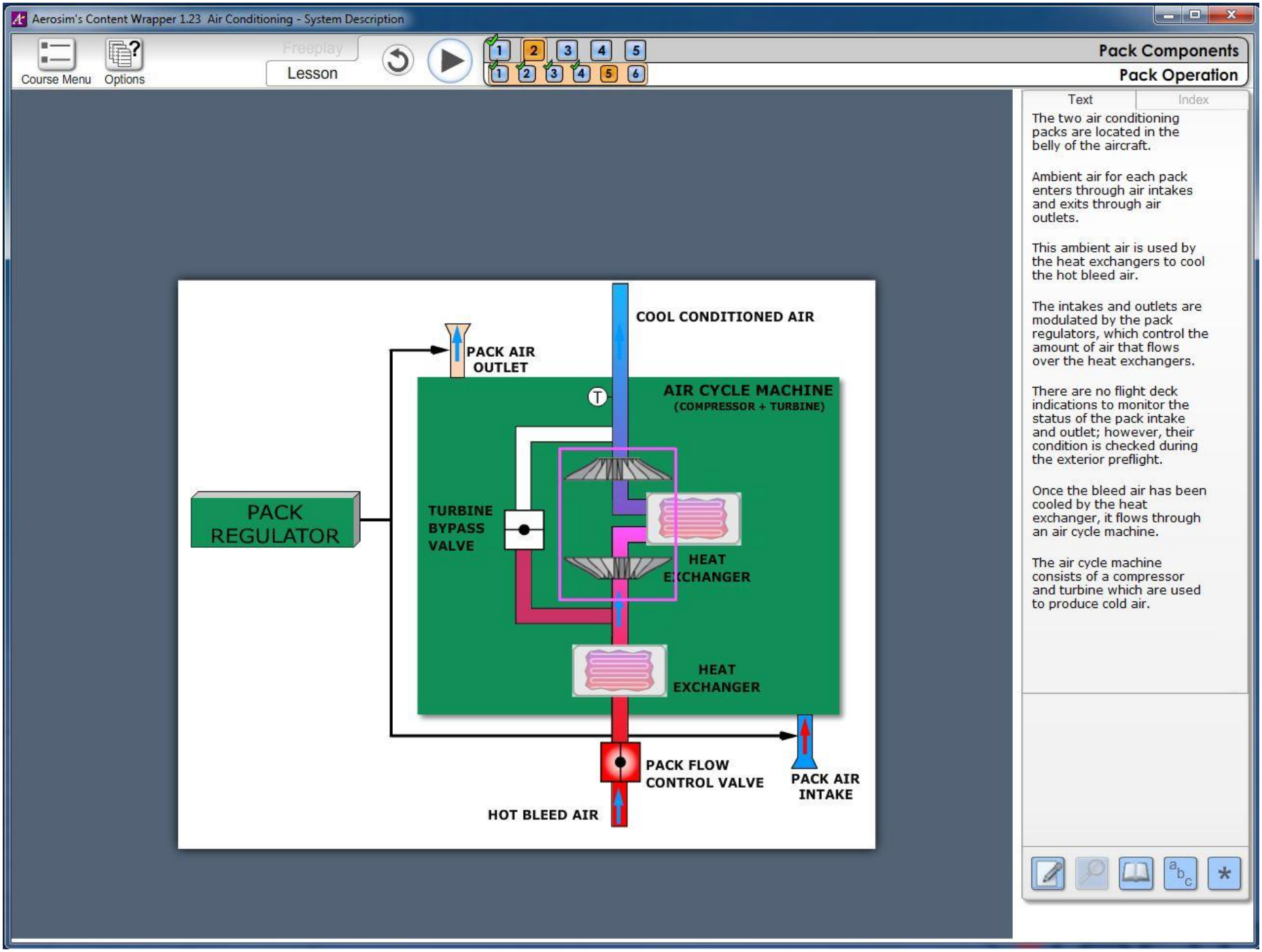

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
1 2 3 4 5
1 2 3 4 5 6
Pack Components
Pack Operation
Text
Index
The two air conditioning packs are located in the belly of the aircraft.

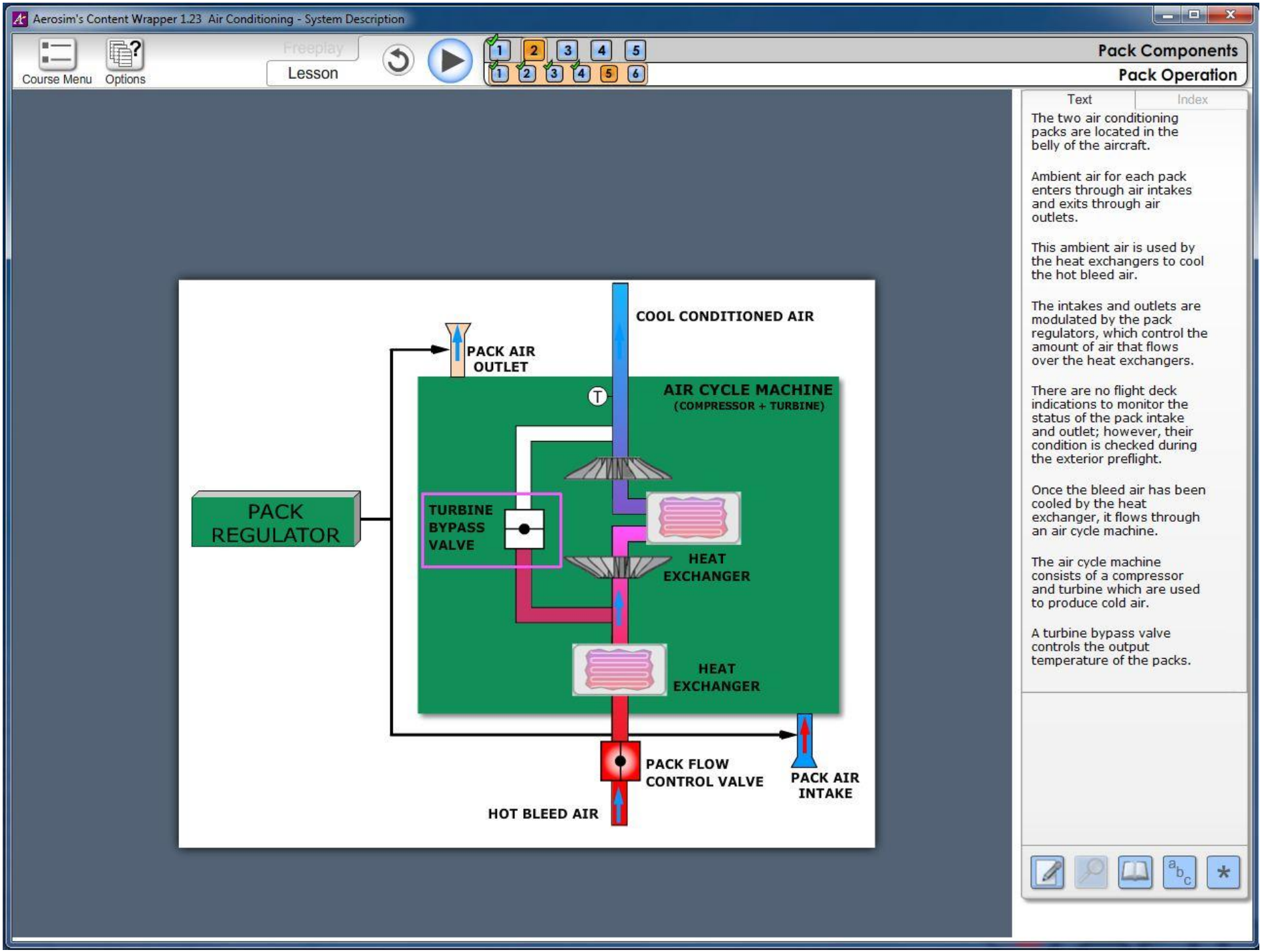

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Operation
Text
Index
The two air conditioning packs are located in the belly of the aircraft.
Ambient air for each pack enters through air intakes and exits through air outlets.
PACK AIR OUTLET
PACK AIR OUTLET
COOL CONDITIONED AIR
AIR CYCLE MACHINE
(COMPRESSOR + TURBINE)
T
TURBINE BYPASS VALVE
HEAT EXCHANGER
HEAT EXCHANGER
PACK FLOW CONTROL VALVE
PACK AIR INTAKE
HOT BLEED AIR
PACK AIR INTAKE

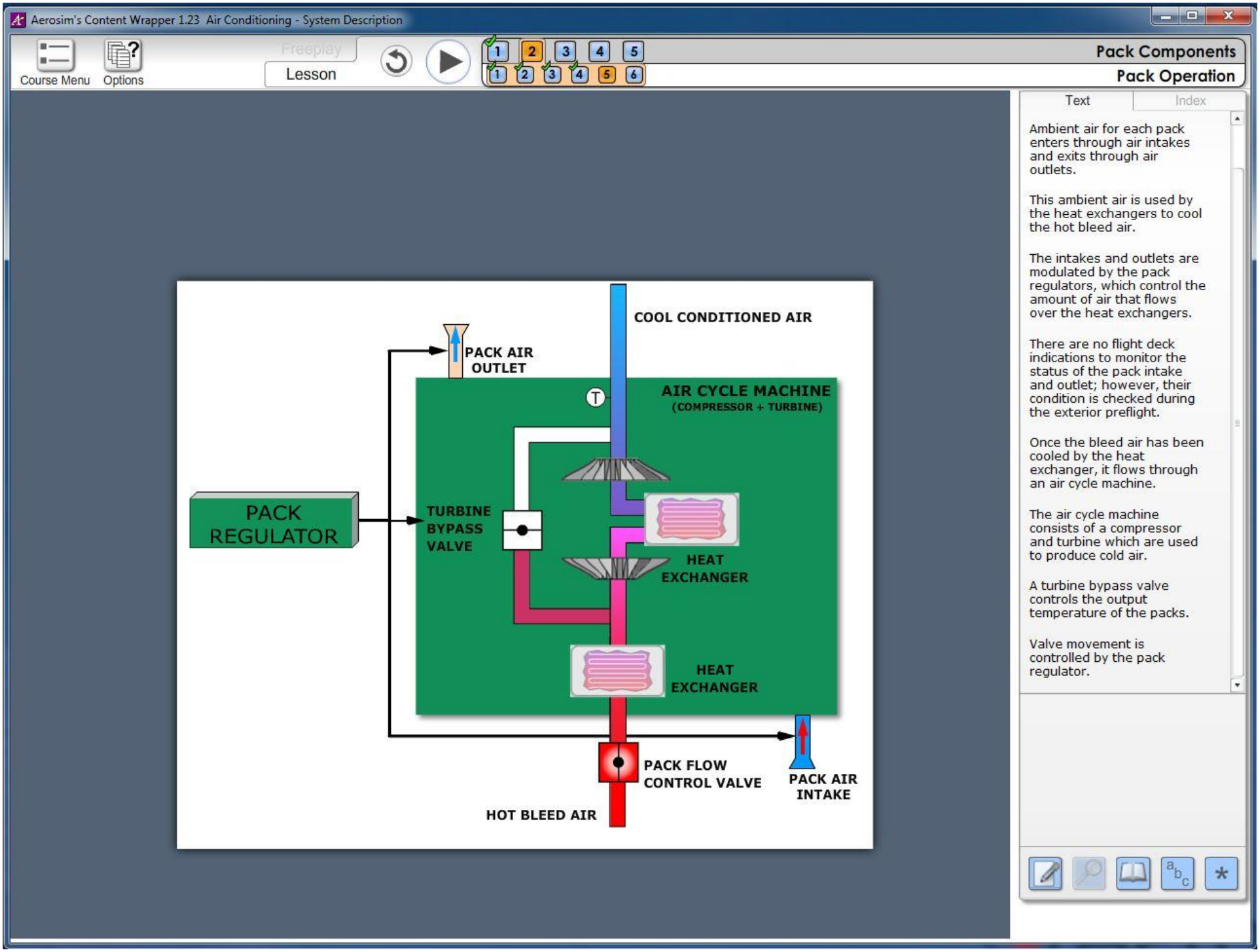

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Operation
Text
Index
The two air conditioning packs are located in the belly of the aircraft.
Ambient air for each pack enters through air intakes and exits through air outlets.
This ambient air is used by the heat exchangers to cool the hot bleed air.
COOL CONDITIONED AIR
PACK AIR OUTLET
AIR CYCLE MACHINE
(COMPRESSOR + TURBINE)
T
TURBINE BYPASS VALVE
HEAT EXCHANGER
HEAT EXCHANGER
PACK FLOW CONTROL VALVE
PACK AIR INTAKE
HOT BLEED AIR

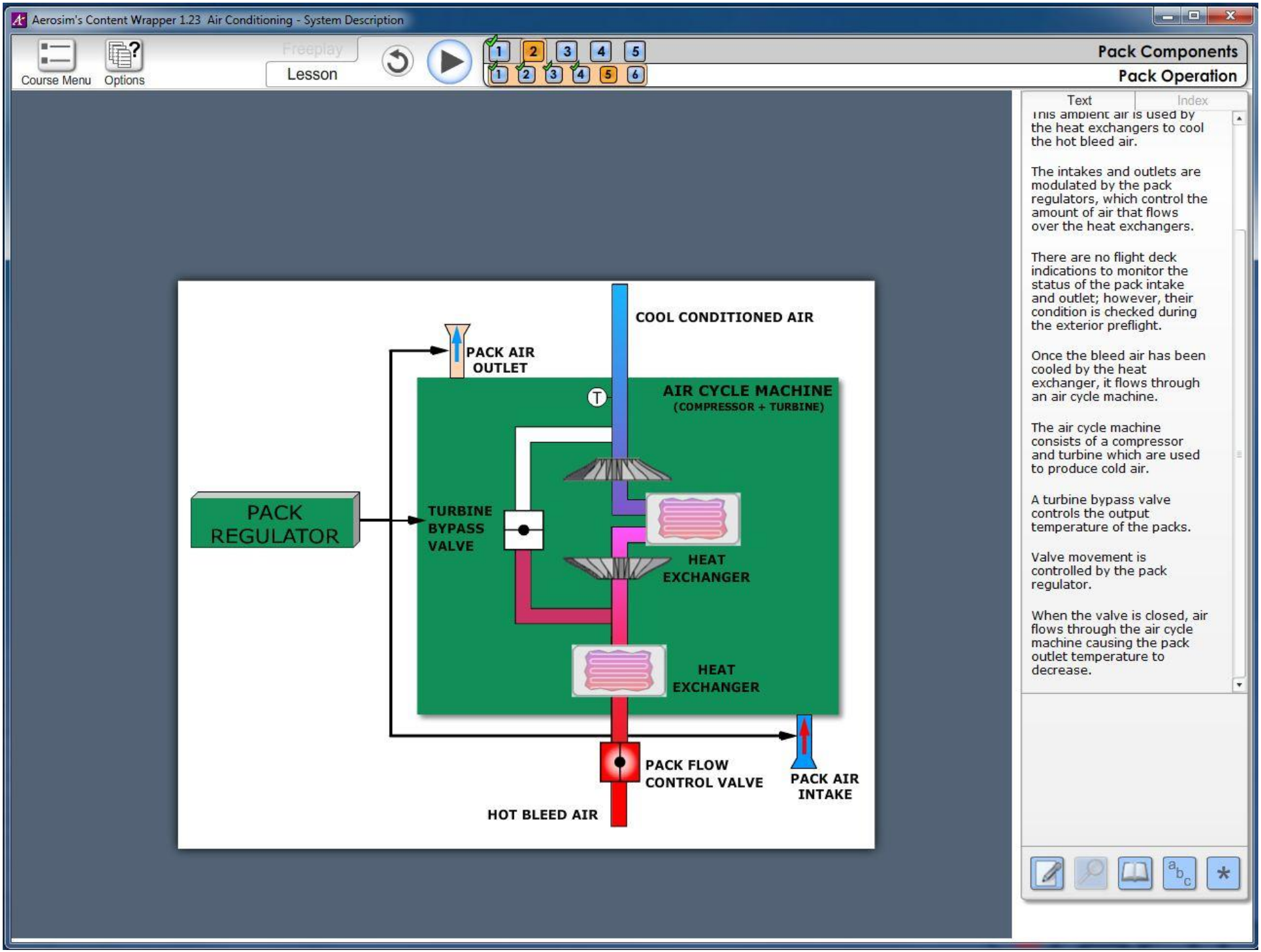

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Operation
Text
Index
The two air conditioning packs are located in the belly of the aircraft.
Ambient air for each pack enters through air intakes and exits through air outlets.
This ambient air is used by the heat exchangers to cool the hot bleed air.
The intakes and outlets are modulated by the pack regulators, which control the amount of air that flows over the heat exchangers.
There are no flight deck indications to monitor the status of the pack intake and outlet; however, their condition is checked during the exterior preflight.
COOL CONDITIONED AIR
PACK AIR OUTLET
AIR CYCLE MACHINE
(COMPRESSOR + TURBINE)
T
PACK REGULATOR
TURBINE BYPASS VALVE
HEAT EXCHANGER
HEAT EXCHANGER
PACK FLOW CONTROL VALVE
PACK AIR INTAKE
HOT BLEED AIR

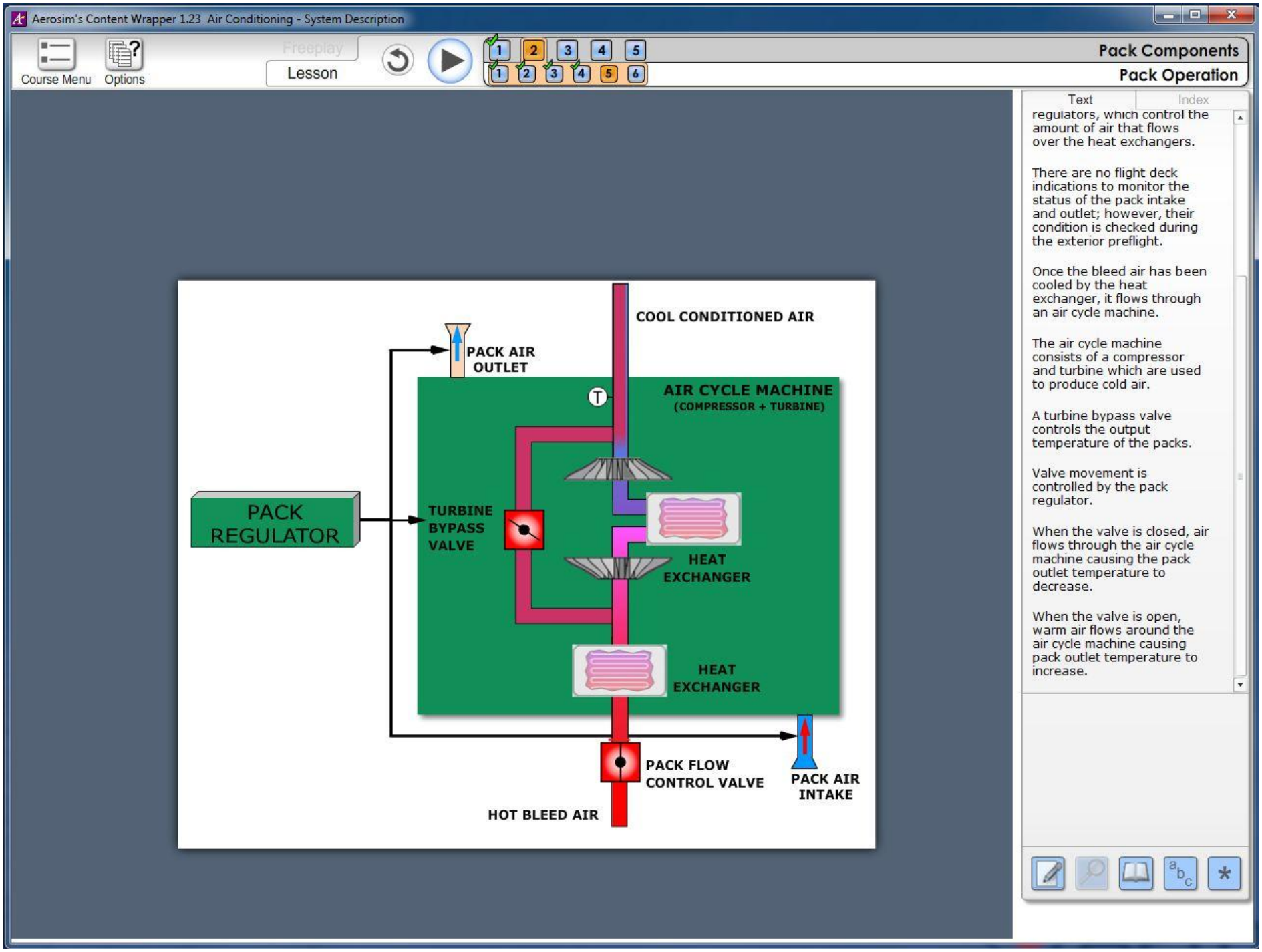

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Operation
Text
Index
The two air conditioning packs are located in the belly of the aircraft.
Ambient air for each pack enters through air intakes and exits through air outlets.
This ambient air is used by the heat exchangers to cool the hot bleed air.
The intakes and outlets are modulated by the pack regulators, which control the amount of air that flows over the heat exchangers.
There are no flight deck indications to monitor the status of the pack intake and outlet; however, their condition is checked during the exterior preflight.
To avoid ingestion of foreign objects, inlet and outlet flaps automatically close during takeoff and landing.
COOL CONDITIONED AIR
PACK AIR OUTLET
AIR CYCLE MACHINE
(COMPRESSOR + TURBINE)
T
PACK REGULATOR
TURBINE BYPASS VALVE
HEAT EXCHANGER
HEAT EXCHANGER
PACK FLOW CONTROL VALVE
PACK AIR INTAKE
HOT BLEED AIR

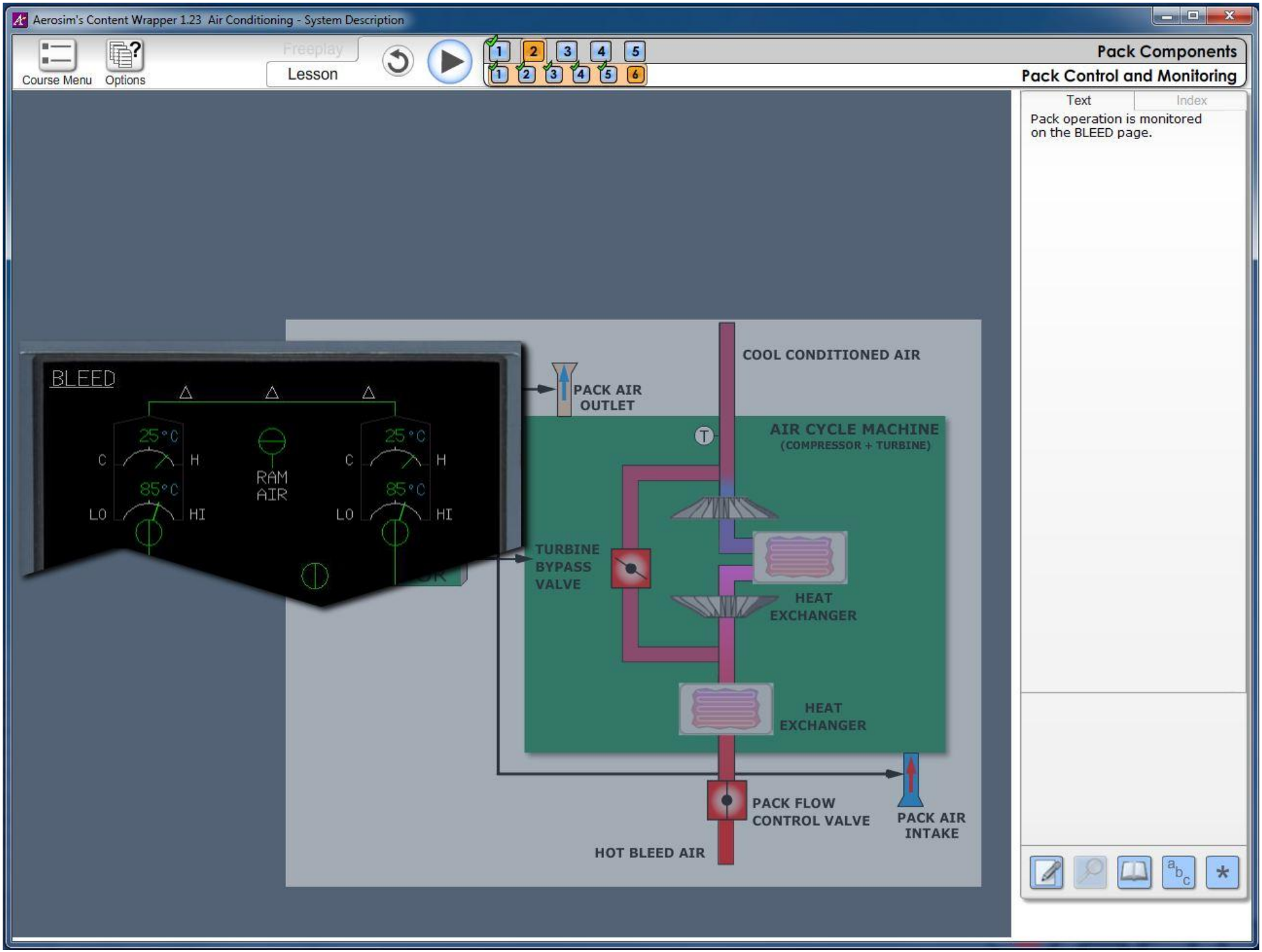

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Operation
Text
Index
The two air conditioning packs are located in the belly of the aircraft.
Ambient air for each pack enters through air intakes and exits through air outlets.
This ambient air is used by the heat exchangers to cool the hot bleed air.
The intakes and outlets are modulated by the pack regulators, which control the amount of air that flows over the heat exchangers.
There are no flight deck indications to monitor the status of the pack intake and outlet; however, their condition is checked during the exterior preflight.
Once the bleed air has been cooled by the heat exchanger, it flows through an air cycle machine.
The air cycle machine consists of a compressor and turbine which are used to produce cold air.
COOL CONDITIONED AIR
PACK AIR OUTLET
AIR CYCLE MACHINE
(COMPRESSOR + TURBINE)
T
PACK REGULATOR
TURBINE BYPASS VALVE
HEAT EXCHANGER
HEAT EXCHANGER
PACK FLOW CONTROL VALVE
PACK AIR INTAKE
HOT BLEED AIR

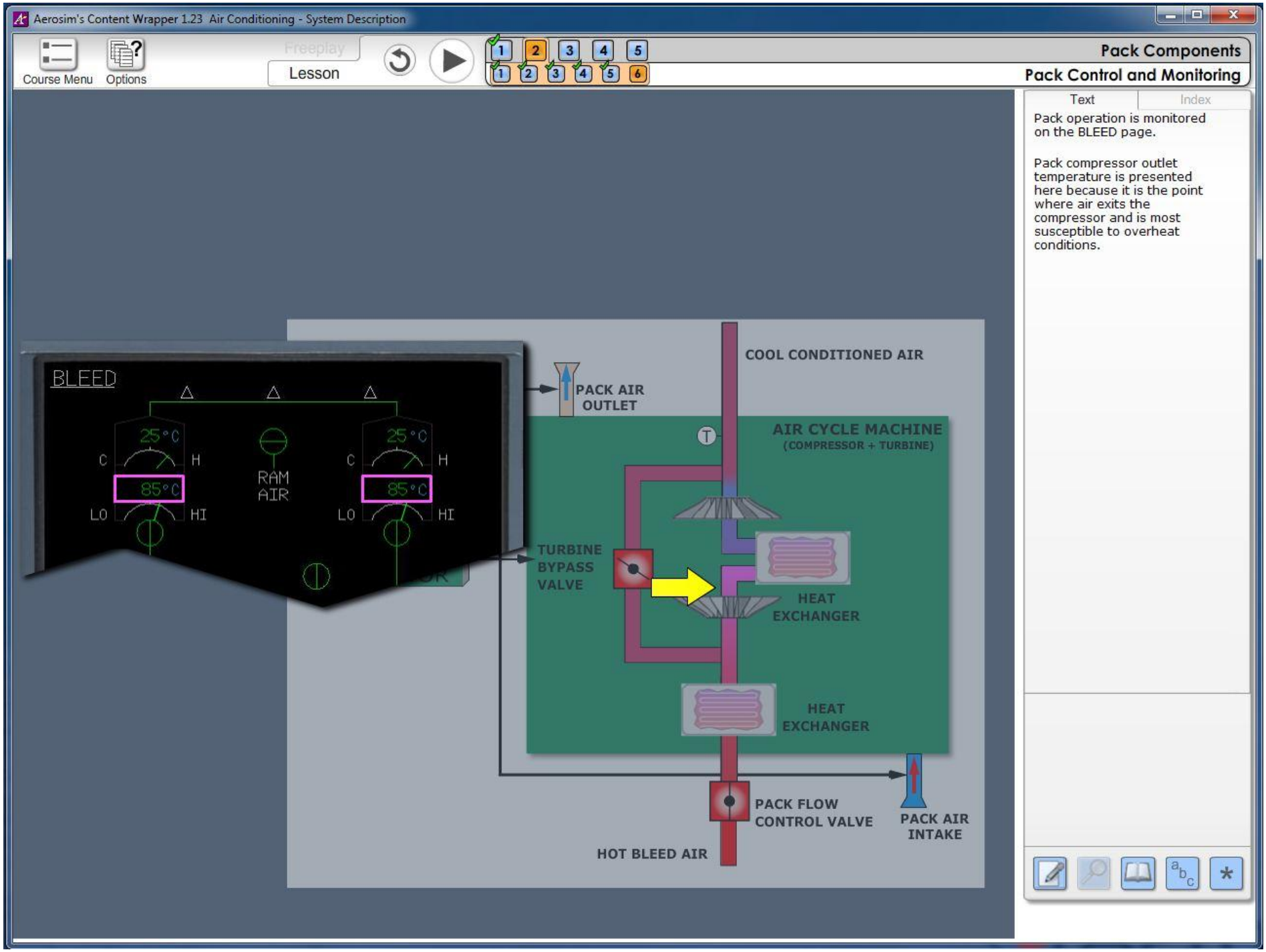

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Operation
Text
Index
The two air conditioning packs are located in the belly of the aircraft.
Ambient air for each pack enters through air intakes and exits through air outlets.
This ambient air is used by the heat exchangers to cool the hot bleed air.
The intakes and outlets are modulated by the pack regulators, which control the amount of air that flows over the heat exchangers.
There are no flight deck indications to monitor the status of the pack intake and outlet; however, their condition is checked during the exterior preflight.
Once the bleed air has been cooled by the heat exchanger, it flows through an air cycle machine.
The air cycle machine consists of a compressor and turbine which are used to produce cold air.
A turbine bypass valve controls the output temperature of the packs.
COOL CONDITIONED AIR
PACK AIR OUTLET
AIR CYCLE MACHINE
(COMPRESSOR + TURBINE)
T
PACK REGULATOR
TURBINE BYPASS VALVE
HEAT EXCHANGER
HEAT EXCHANGER
PACK FLOW CONTROL VALVE
PACK AIR INTAKE
HOT BLEED AIR

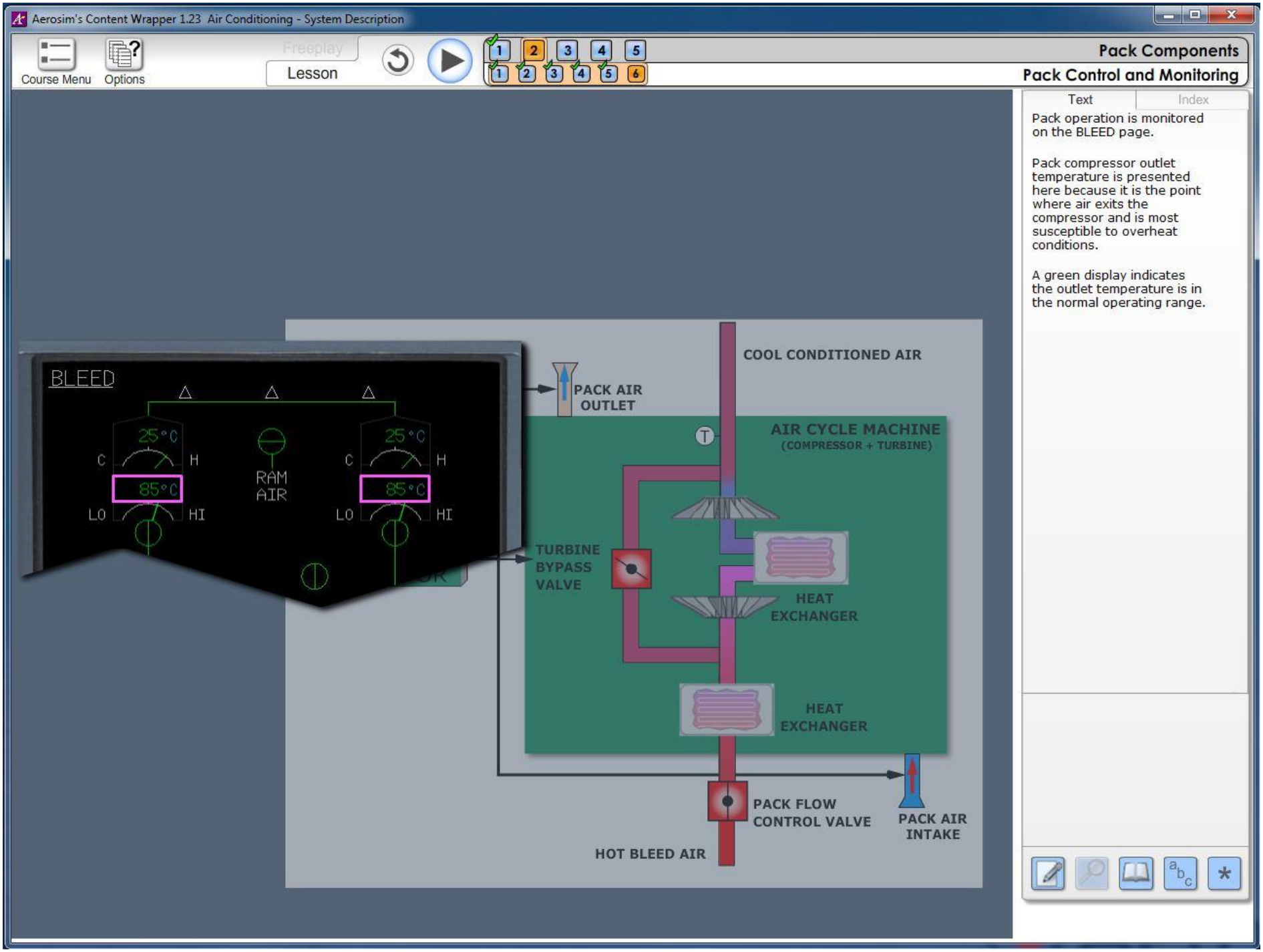

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
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Pack Components
Pack Operation
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Index
Ambient air for each pack enters through air intakes and exits through air outlets.
This ambient air is used by the heat exchangers to cool the hot bleed air.
The intakes and outlets are modulated by the pack regulators, which control the amount of air that flows over the heat exchangers.
There are no flight deck indications to monitor the status of the pack intake and outlet; however, their condition is checked during the exterior preflight.
Once the bleed air has been cooled by the heat exchanger, it flows through an air cycle machine.
The air cycle machine consists of a compressor and turbine which are used to produce cold air.
A turbine bypass valve controls the output temperature of the packs.
Valve movement is controlled by the pack regulator.
COOL CONDITIONED AIR
PACK AIR OUTLET
AIR CYCLE MACHINE
(COMPRESSOR + TURBINE)
T
PACK REGULATOR
TURBINE BYPASS VALVE
HEAT EXCHANGER
HEAT EXCHANGER
PACK FLOW CONTROL VALVE
PACK AIR INTAKE
HOT BLEED AIR

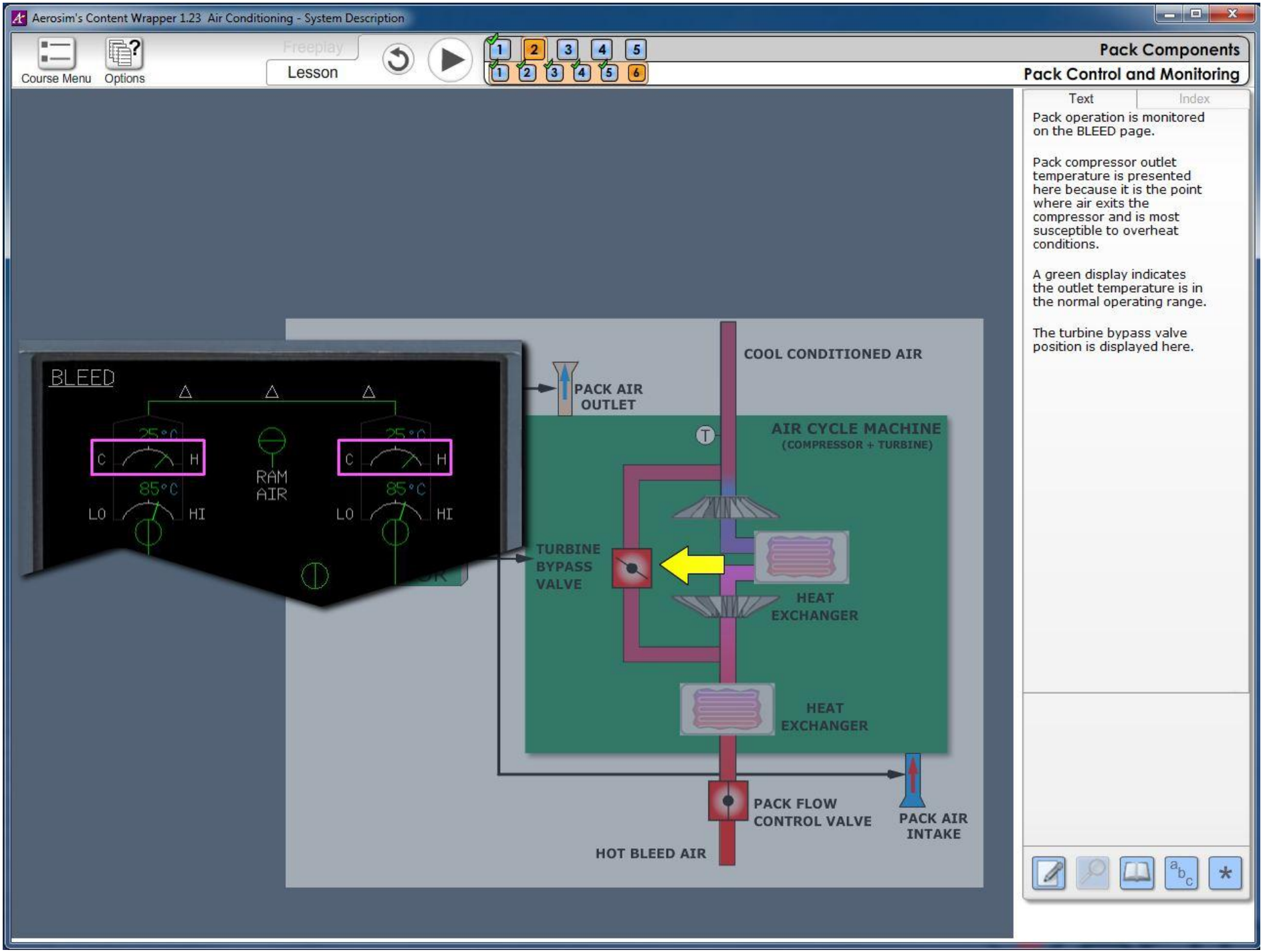

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
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Lesson
Pack Components
Pack Operation
Text
Index
This ambient air is used by the heat exchangers to cool the hot bleed air.
The intakes and outlets are modulated by the pack regulators, which control the amount of air that flows over the heat exchangers.
There are no flight deck indications to monitor the status of the pack intake and outlet; however, their condition is checked during the exterior preflight.
Once the bleed air has been cooled by the heat exchanger, it flows through an air cycle machine.
The air cycle machine consists of a compressor and turbine which are used to produce cold air.
A turbine bypass valve controls the output temperature of the packs.
Valve movement is controlled by the pack regulator.
When the valve is closed, air flows through the air cycle machine causing the pack outlet temperature to decrease.
COOL CONDITIONED AIR
PACK AIR OUTLET
AIR CYCLE MACHINE
(COMPRESSOR + TURBINE)
T
PACK REGULATOR
TURBINE BYPASS VALVE
HEAT EXCHANGER
HEAT EXCHANGER
PACK FLOW CONTROL VALVE
PACK AIR INTAKE
HOT BLEED AIR

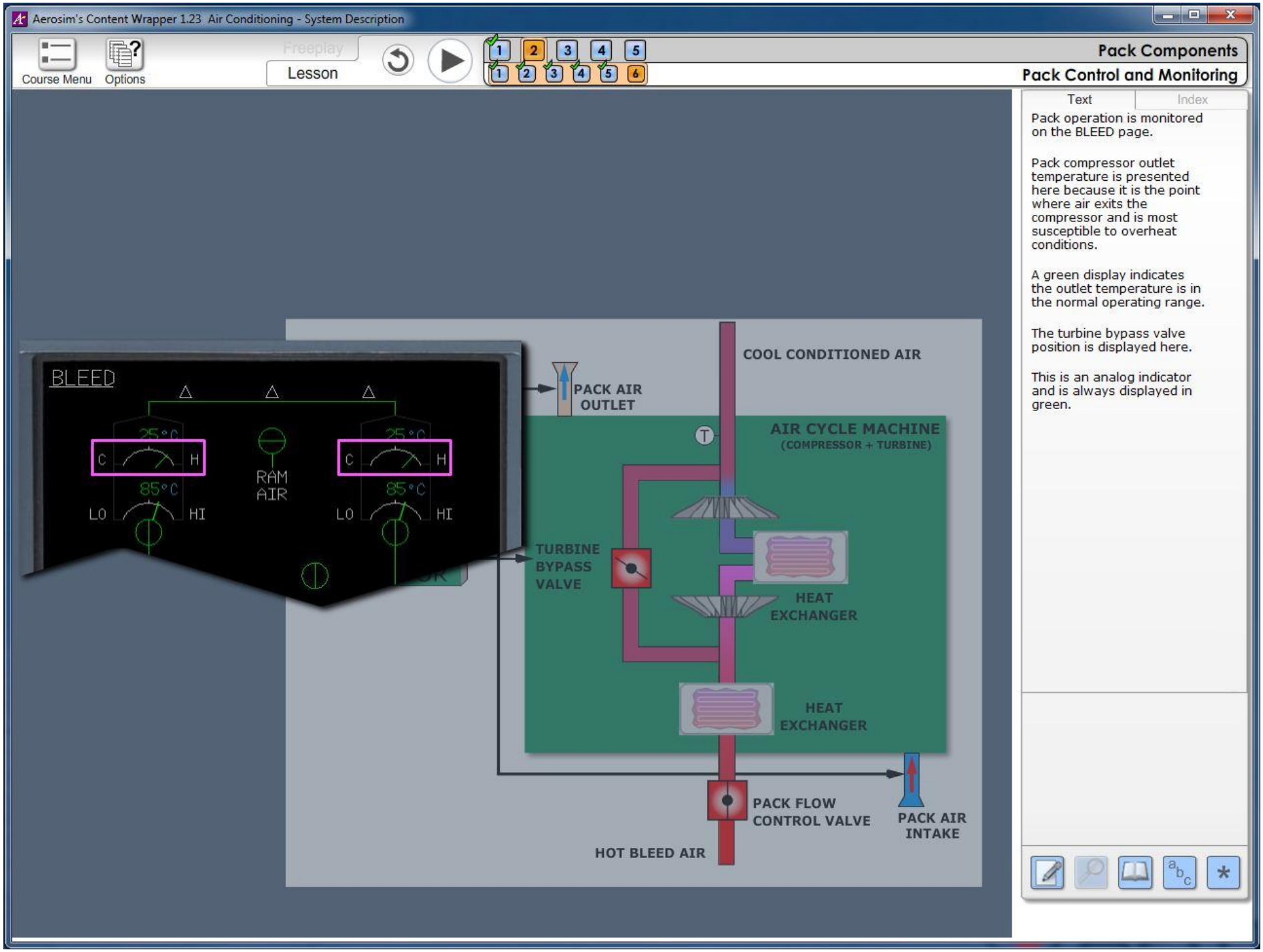

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
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Lesson
Pack Components
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Text
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regulators, which control the amount of air that flows over the heat exchangers.
There are no flight deck indications to monitor the status of the pack intake and outlet; however, their condition is checked during the exterior preflight.
Once the bleed air has been cooled by the heat exchanger, it flows through an air cycle machine.
The air cycle machine consists of a compressor and turbine which are used to produce cold air.
A turbine bypass valve controls the output temperature of the packs.
Valve movement is controlled by the pack regulator.
When the valve is closed, air flows through the air cycle machine causing the pack outlet temperature to decrease.
When the valve is open, warm air flows around the air cycle machine causing pack outlet temperature to increase.
COOL CONDITIONED AIR
PACK AIR OUTLET
AIR CYCLE MACHINE
(COMPRESSOR + TURBINE)
T
PACK REGULATOR
TURBINE BYPASS VALVE
HEAT EXCHANGER
HEAT EXCHANGER
PACK FLOW CONTROL VALVE
PACK AIR INTAKE
HOT BLEED AIR

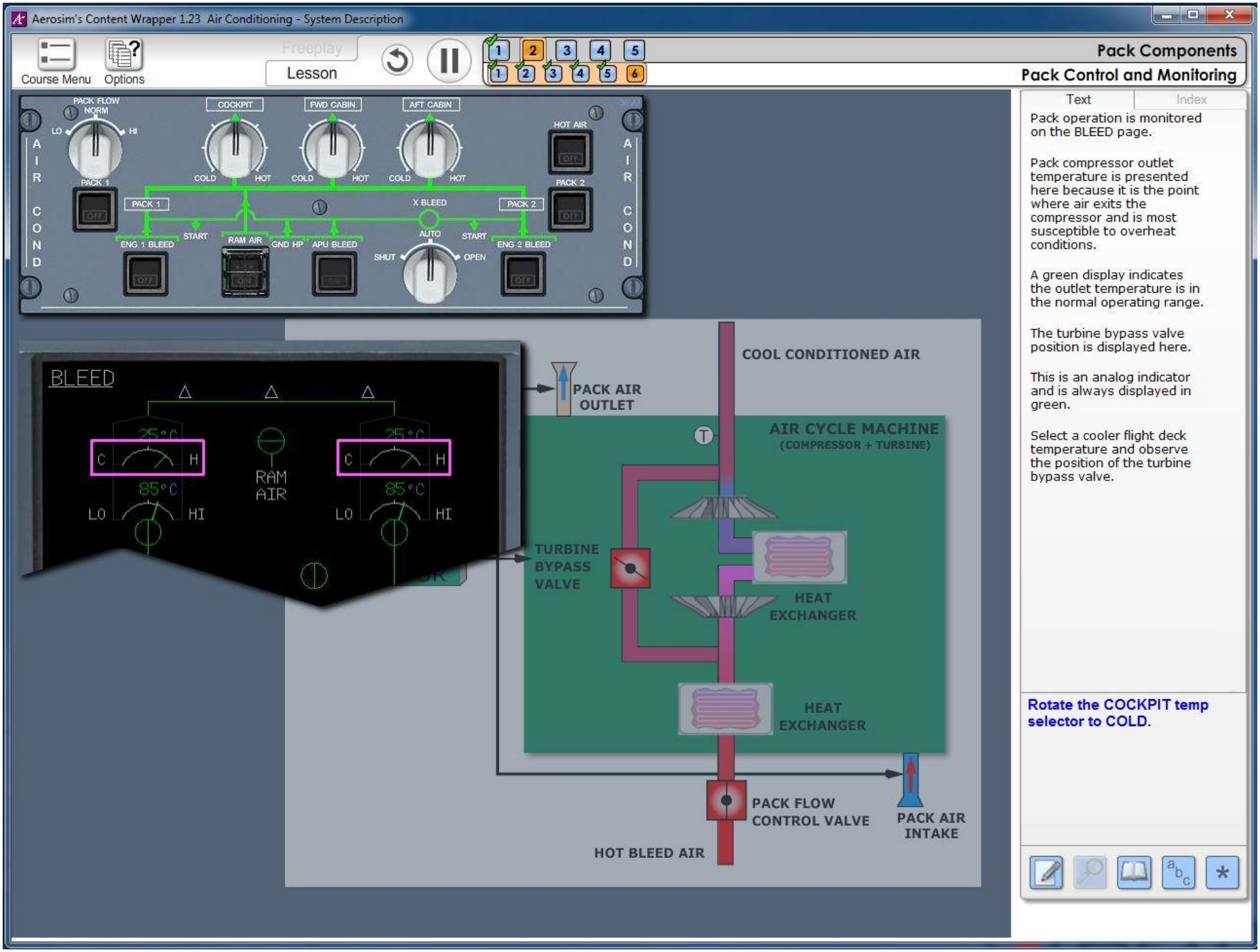

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Control and Monitoring
Text
Index
Pack operation is monitored on the BLEED page.
BLEED
25 °C
C
H
85 °C
LO
HI
RAM AIR
COOL CONDITIONED AIR
PACK AIR OUTLET
AIR CYCLE MACHINE
(COMPRESSOR + TURBINE)
T
TURBINE BYPASS VALVE
HEAT EXCHANGER
HEAT EXCHANGER
PACK FLOW CONTROL VALVE
PACK AIR INTAKE
HOT BLEED AIR

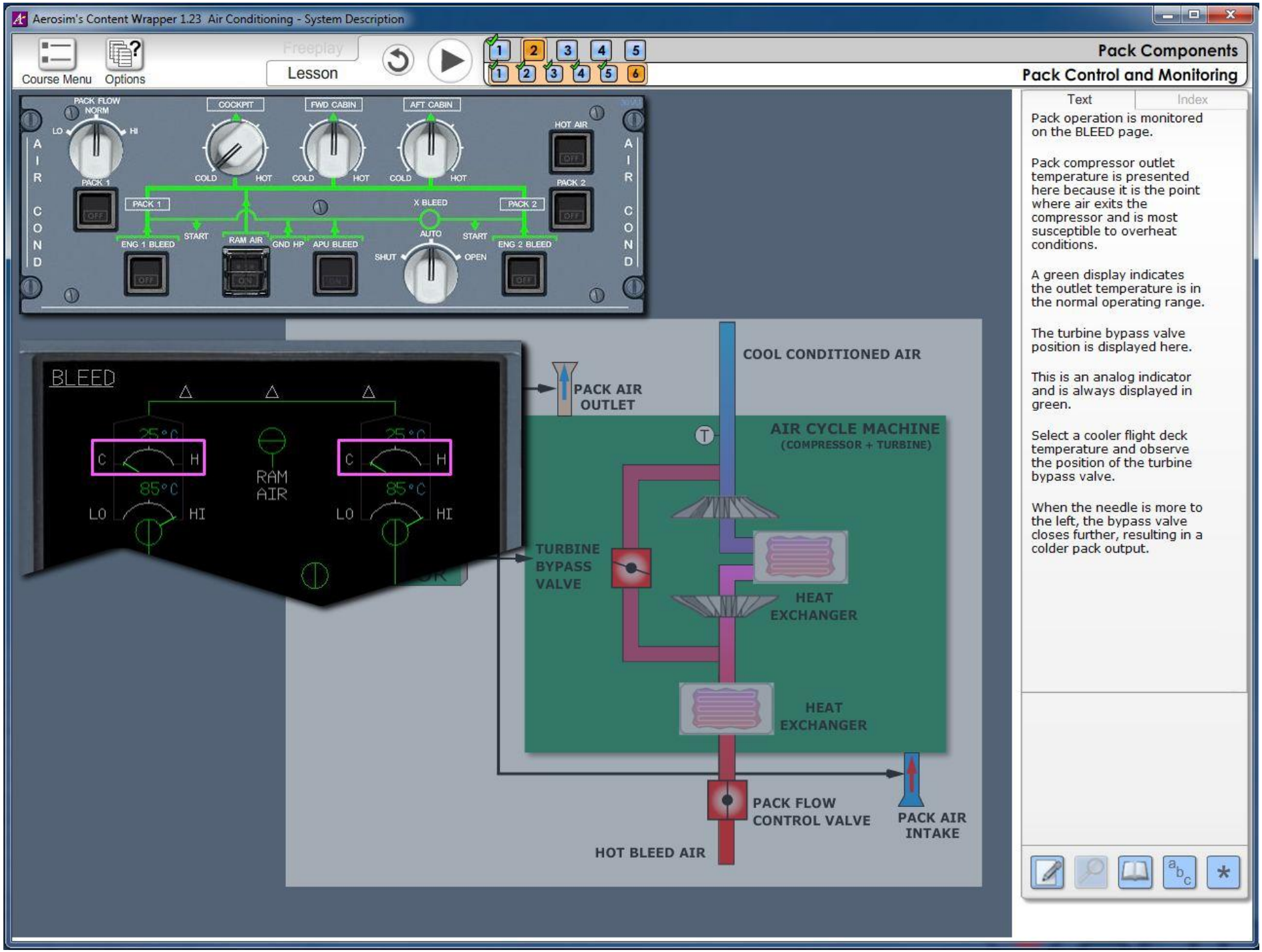

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Control and Monitoring
Text
Index
Pack operation is monitored on the BLEED page.
Pack compressor outlet temperature is presented here because it is the point where air exits the compressor and is most susceptible to overheat conditions.
BLEED
25 °C
C
H
85 °C
LO
HI
RAM AIR
COOL CONDITIONED AIR
PACK AIR OUTLET
AIR CYCLE MACHINE
(COMPRESSOR + TURBINE)
T
TURBINE BYPASS VALVE
HEAT EXCHANGER
HEAT EXCHANGER
PACK FLOW CONTROL VALVE
PACK AIR INTAKE
HOT BLEED AIR

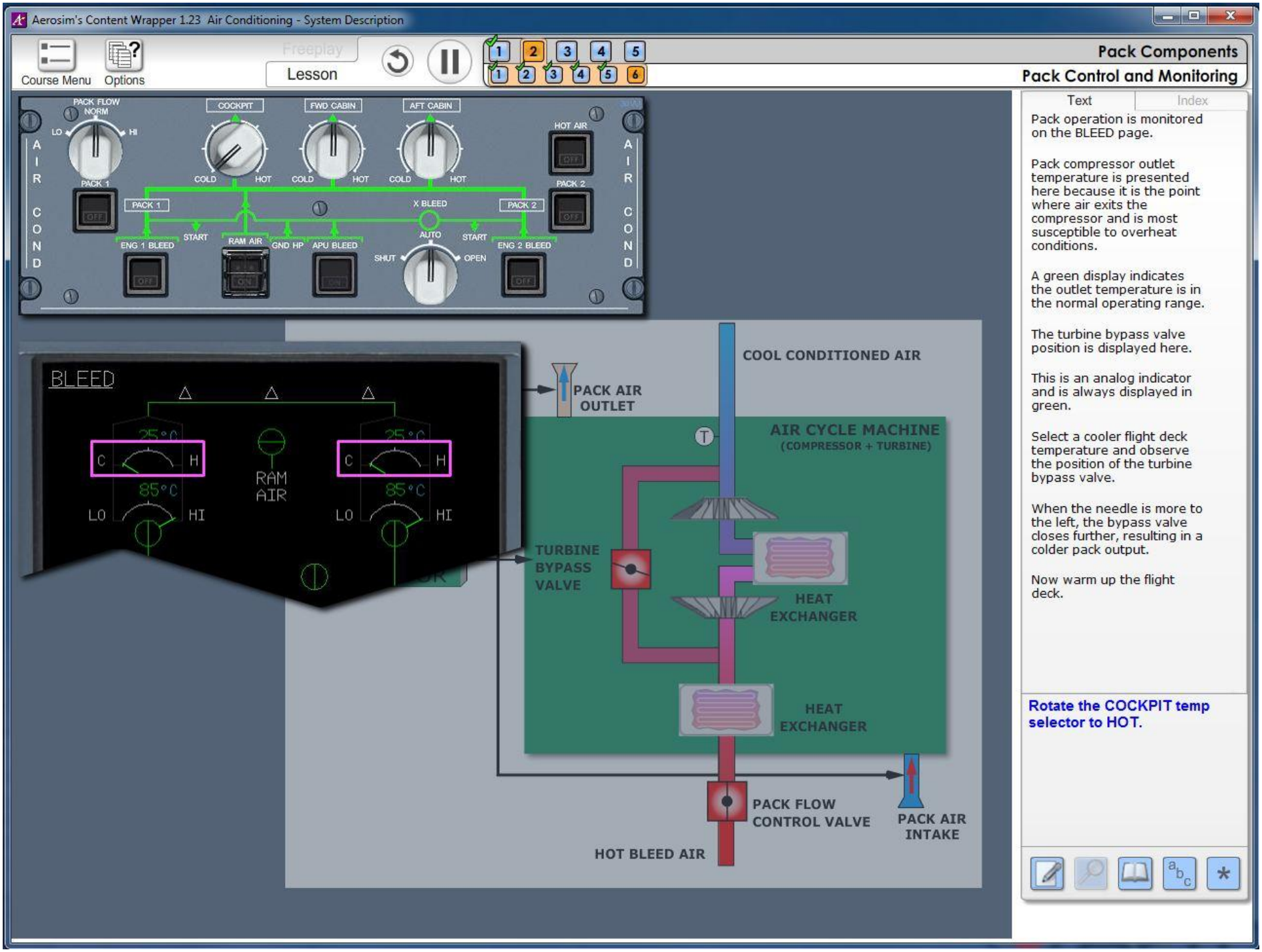

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Control and Monitoring
Text
Index
Pack operation is monitored on the BLEED page.
Pack compressor outlet temperature is presented here because it is the point where air exits the compressor and is most susceptible to overheat conditions.
A green display indicates the outlet temperature is in the normal operating range.
BLEED
25 °C
C
H
85 °C
LO
HI
RAM AIR
COOL CONDITIONED AIR
PACK AIR OUTLET
AIR CYCLE MACHINE
(COMPRESSOR + TURBINE)
T
TURBINE BYPASS VALVE
HEAT EXCHANGER
HEAT EXCHANGER
PACK FLOW CONTROL VALVE
PACK AIR INTAKE
HOT BLEED AIR

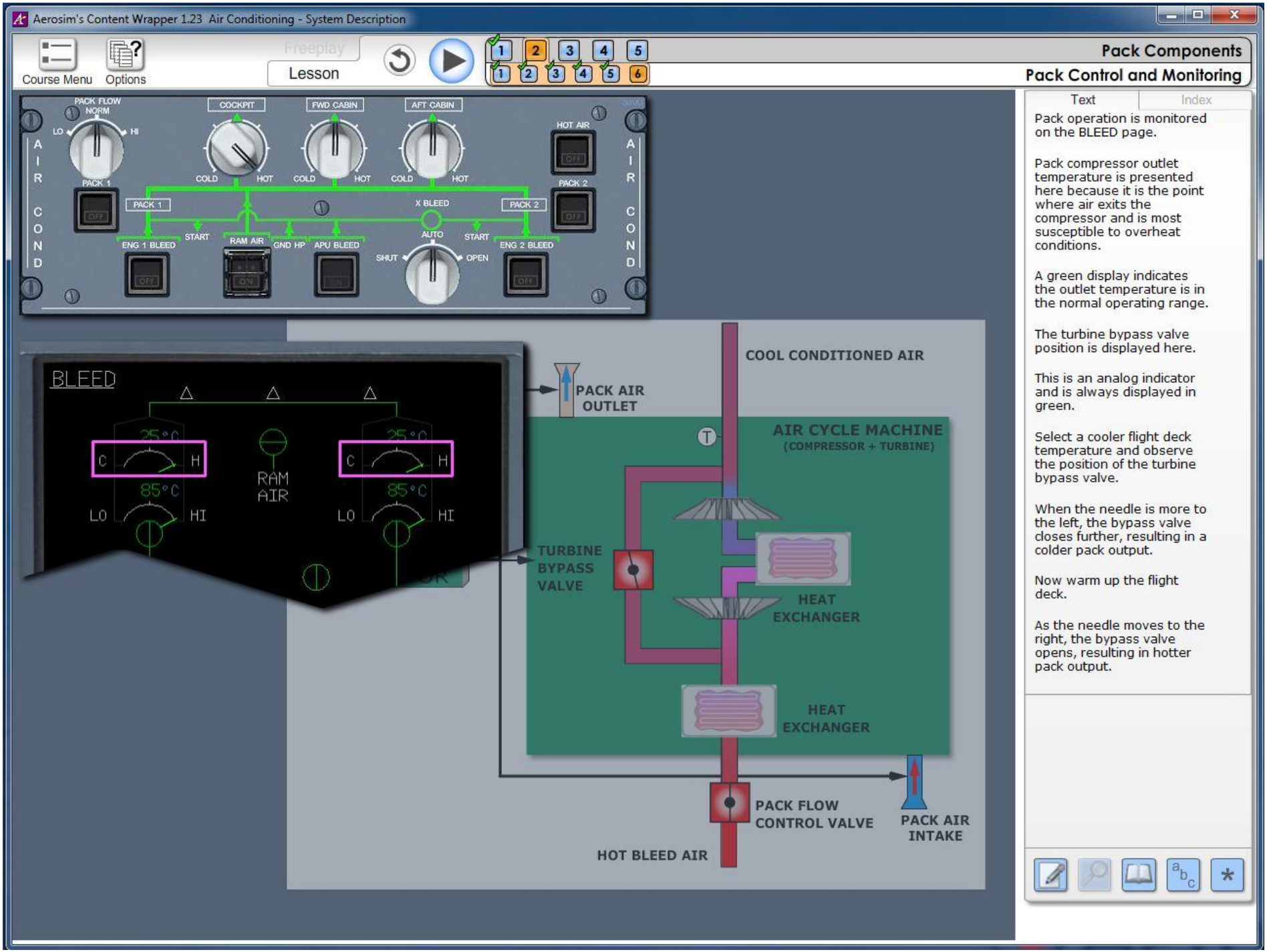

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Control and Monitoring
Text
Index
Pack operation is monitored on the BLEED page.
Pack compressor outlet temperature is presented here because it is the point where air exits the compressor and is most susceptible to overheat conditions.
A green display indicates the outlet temperature is in the normal operating range.
The turbine bypass valve position is displayed here.
BLEED
25 °C
C
H
85 °C
LO
HI
RAM AIR
COOL CONDITIONED AIR
PACK AIR OUTLET
AIR CYCLE MACHINE
(COMPRESSOR + TURBINE)
T
TURBINE BYPASS VALVE
HEAT EXCHANGER
HEAT EXCHANGER
PACK FLOW CONTROL VALVE
PACK AIR INTAKE
HOT BLEED AIR

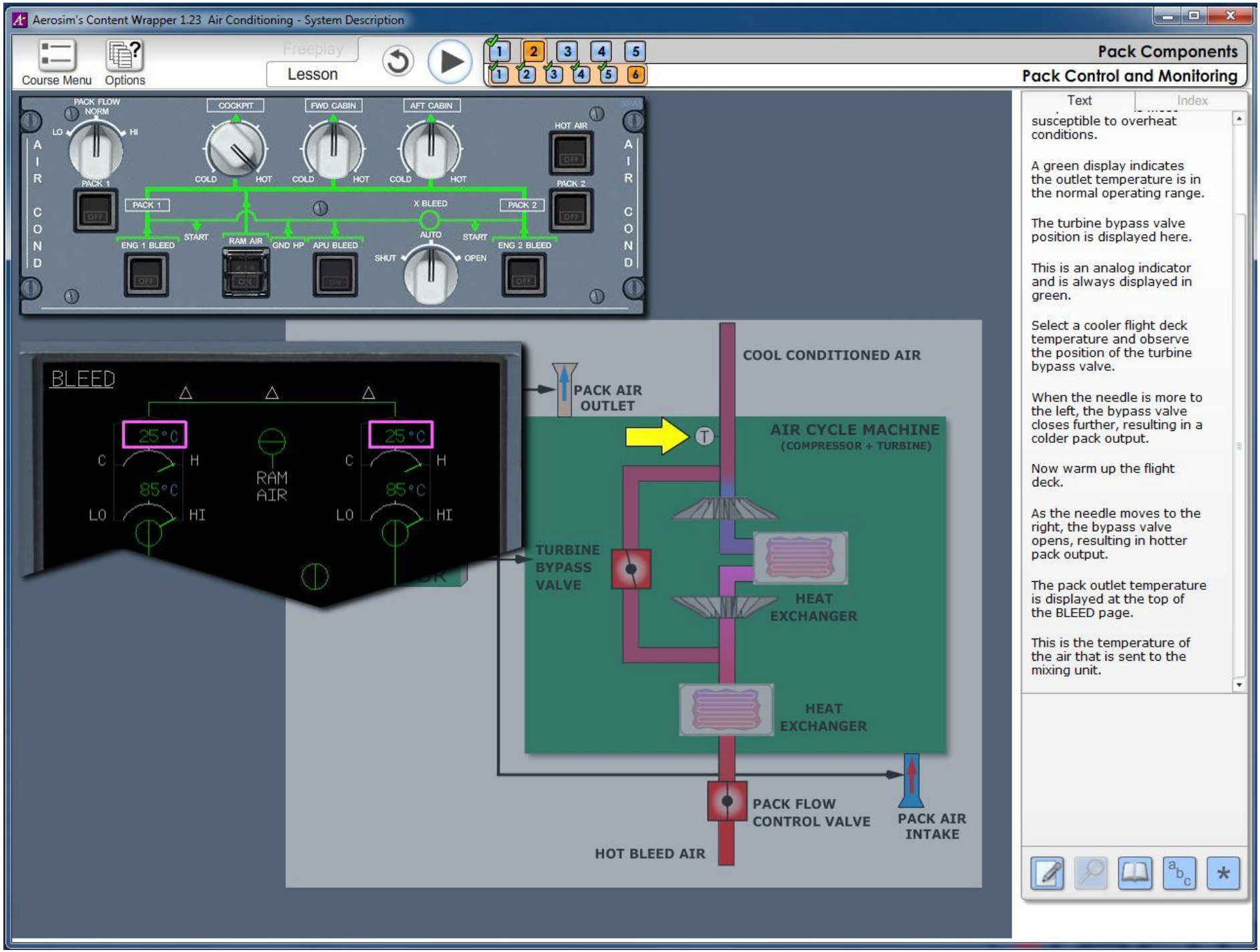

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Control and Monitoring
Text
Index
Pack operation is monitored on the BLEED page.
Pack compressor outlet temperature is presented here because it is the point where air exits the compressor and is most susceptible to overheat conditions.
A green display indicates the outlet temperature is in the normal operating range.
The turbine bypass valve position is displayed here.
This is an analog indicator and is always displayed in green.
BLEED
25°C
C
H
85°C
LO
HI
RAM AIR
COOL CONDITIONED AIR
PACK AIR OUTLET
AIR CYCLE MACHINE
(COMPRESSOR + TURBINE)
TURBINE BYPASS VALVE
HEAT EXCHANGER
HEAT EXCHANGER
PACK FLOW CONTROL VALVE
PACK AIR INTAKE
HOT BLEED AIR

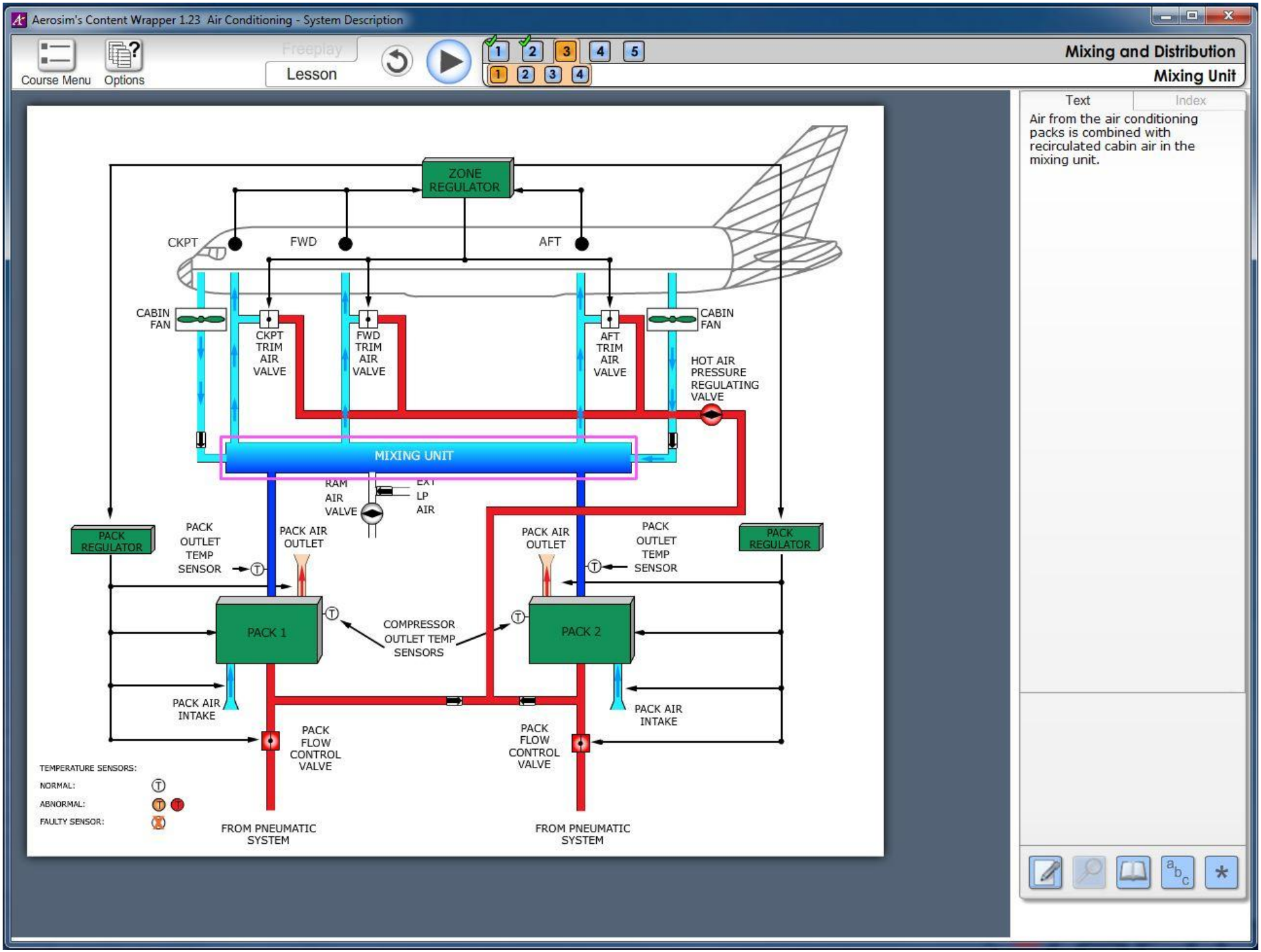

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Control and Monitoring
Text
Index
Pack operation is monitored on the BLEED page.
Pack compressor outlet temperature is presented here because it is the point where air exits the compressor and is most susceptible to overheat conditions.
A green display indicates the outlet temperature is in the normal operating range.
The turbine bypass valve position is displayed here.
This is an analog indicator and is always displayed in green.
Select a cooler flight deck temperature and observe the position of the turbine bypass valve.
Rotate the COCKPIT temp selector to COLD.
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
OFF
X BLEED
AUTO
SHUT
OPEN
START
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
ENG 2 BLEED
AIR COND
BLEED
25 °C
85 °C
C
H
RAM AIR
COOL CONDITIONED AIR
PACK AIR OUTLET
AIR CYCLE MACHINE
(COMPRESSOR + TURBINE)
T
TURBINE BYPASS VALVE
HEAT EXCHANGER
HEAT EXCHANGER
PACK FLOW CONTROL VALVE
PACK AIR INTAKE
HOT BLEED AIR

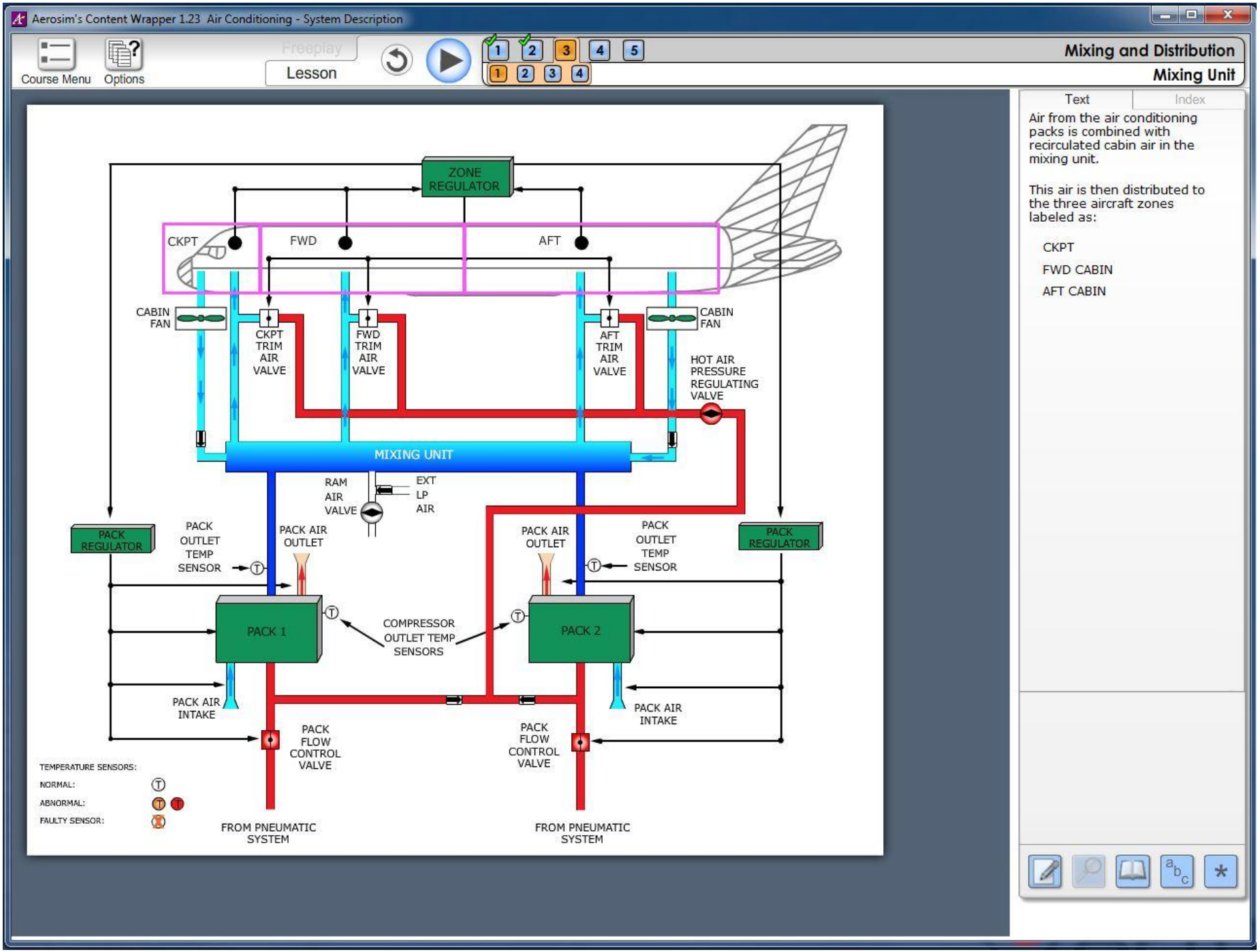

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Control and Monitoring
Text
Index
Pack operation is monitored on the BLEED page.
Pack compressor outlet temperature is presented here because it is the point where air exits the compressor and is most susceptible to overheat conditions.
A green display indicates the outlet temperature is in the normal operating range.
The turbine bypass valve position is displayed here.
This is an analog indicator and is always displayed in green.
Select a cooler flight deck temperature and observe the position of the turbine bypass valve.
When the needle is more to the left, the bypass valve closes further, resulting in a colder pack output.
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
X BLEED
AUTO
SHUT
OPEN
START
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
ENG 2 BLEED
AIR COND
BLEED
25°C
85°C
C
H
RAM AIR
COOL CONDITIONED AIR
PACK AIR OUTLET
AIR CYCLE MACHINE
(COMPRESSOR + TURBINE)
T
TURBINE BYPASS VALVE
HEAT EXCHANGER
HEAT EXCHANGER
PACK FLOW CONTROL VALVE
PACK AIR INTAKE
HOT BLEED AIR

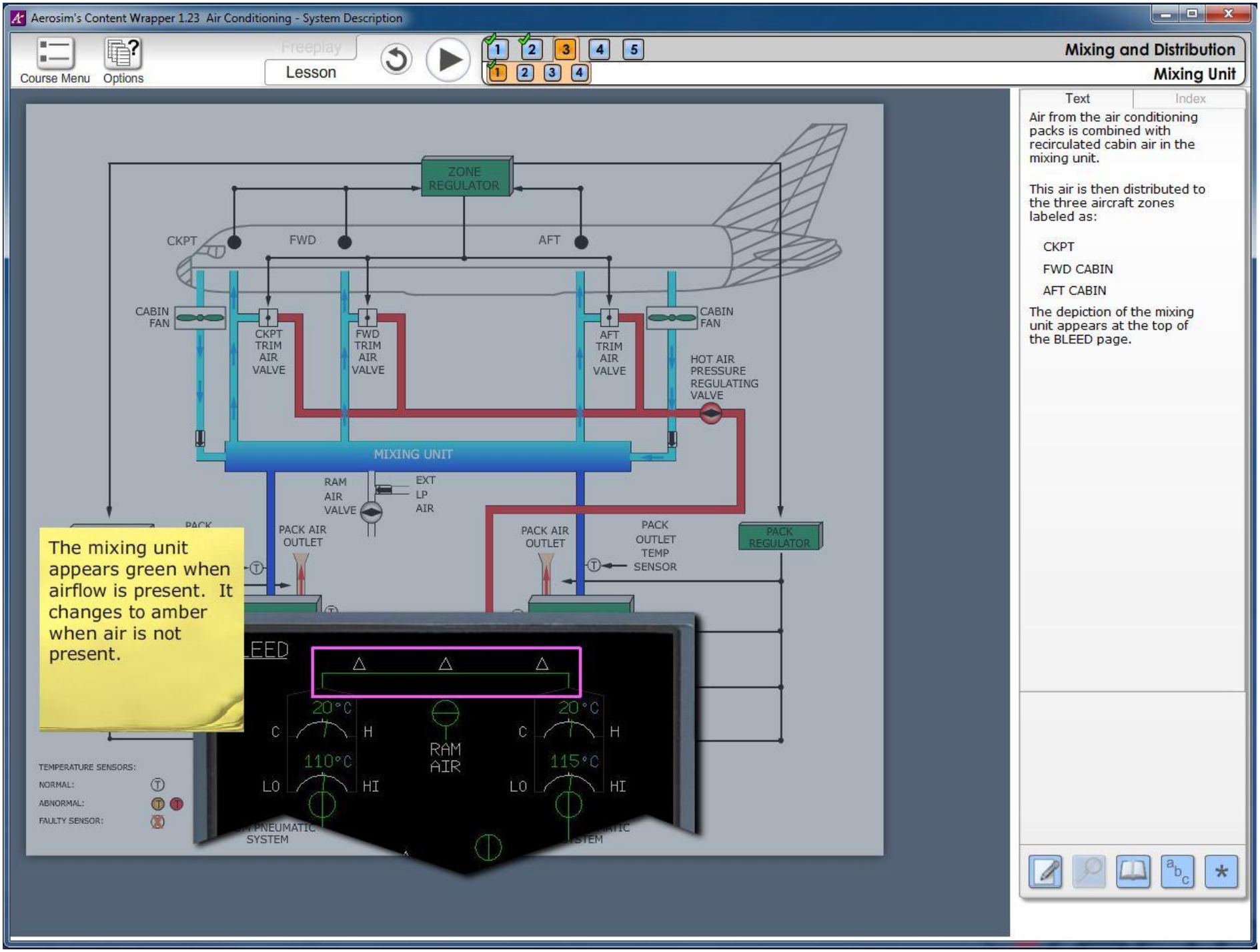

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Control and Monitoring
Text
Index
Pack operation is monitored on the BLEED page.
Pack compressor outlet temperature is presented here because it is the point where air exits the compressor and is most susceptible to overheat conditions.
A green display indicates the outlet temperature is in the normal operating range.
The turbine bypass valve position is displayed here.
This is an analog indicator and is always displayed in green.
Select a cooler flight deck temperature and observe the position of the turbine bypass valve.
When the needle is more to the left, the bypass valve closes further, resulting in a colder pack output.
Now warm up the flight deck.
Rotate the COCKPIT temp selector to HOT.
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
X BLEED
AUTO
SHUT
OPEN
START
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
ENG 2 BLEED
AIR COND
BLEED
25°C
85°C
C
H
RAM AIR
COOL CONDITIONED AIR
PACK AIR OUTLET
AIR CYCLE MACHINE
(COMPRESSOR + TURBINE)
TURBINE BYPASS VALVE
HEAT EXCHANGER
HEAT EXCHANGER
PACK FLOW CONTROL VALVE
PACK AIR INTAKE
HOT BLEED AIR

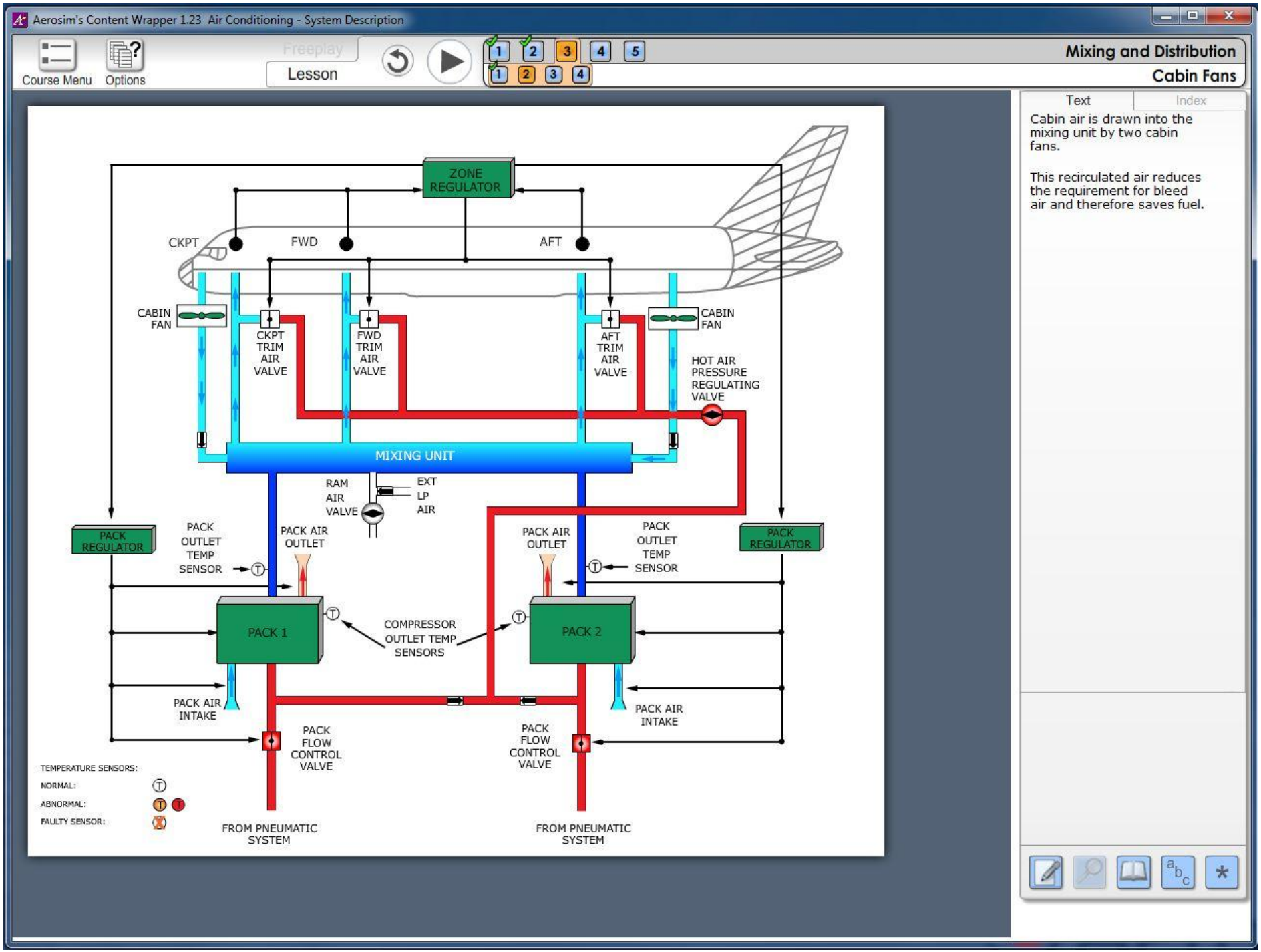

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Control and Monitoring
Text
Index
Pack operation is monitored on the BLEED page.
Pack compressor outlet temperature is presented here because it is the point where air exits the compressor and is most susceptible to overheat conditions.
A green display indicates the outlet temperature is in the normal operating range.
The turbine bypass valve position is displayed here.
This is an analog indicator and is always displayed in green.
Select a cooler flight deck temperature and observe the position of the turbine bypass valve.
When the needle is more to the left, the bypass valve closes further, resulting in a colder pack output.
Now warm up the flight deck.
As the needle moves to the right, the bypass valve opens, resulting in hotter pack output.
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
X BLEED
AUTO
SHUT
OPEN
START
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
ENG 2 BLEED
AIR COND
BLEED
25°C
85°C
C
H
RAM AIR
COOL CONDITIONED AIR
PACK AIR OUTLET
AIR CYCLE MACHINE
(COMPRESSOR + TURBINE)
TURBINE BYPASS VALVE
HEAT EXCHANGER
HEAT EXCHANGER
PACK FLOW CONTROL VALVE
PACK AIR INTAKE
HOT BLEED AIR

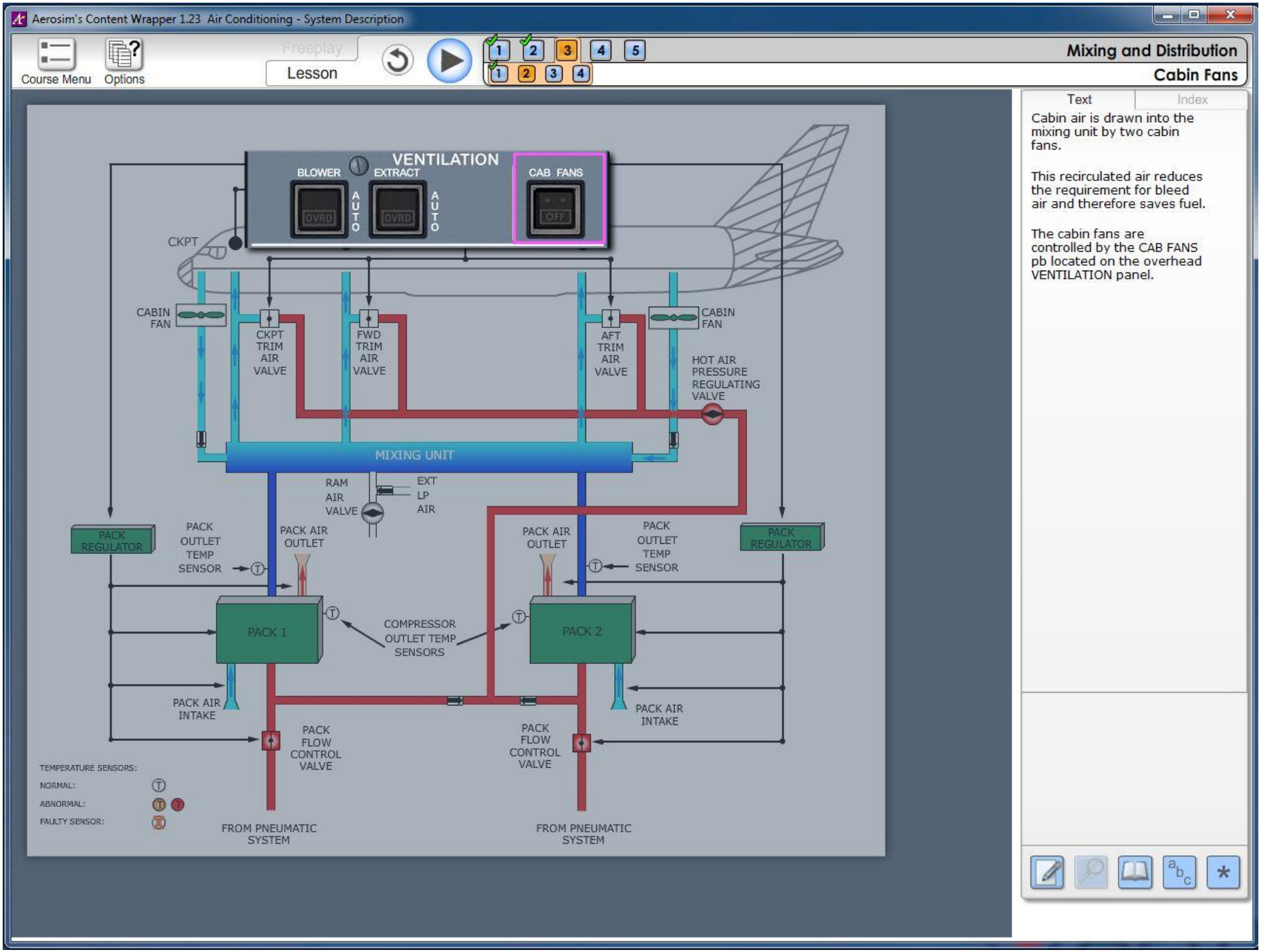

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Pack Components
Pack Control and Monitoring
Text
Index
susceptible to overheat conditions.
A green display indicates the outlet temperature is in the normal operating range.
The turbine bypass valve position is displayed here.
This is an analog indicator and is always displayed in green.
Select a cooler flight deck temperature and observe the position of the turbine bypass valve.
When the needle is more to the left, the bypass valve closes further, resulting in a colder pack output.
Now warm up the flight deck.
As the needle moves to the right, the bypass valve opens, resulting in hotter pack output.
The pack outlet temperature is displayed at the top of the BLEED page.
This is the temperature of the air that is sent to the mixing unit.
PACK FLOW
NORM
LO
HI
PACK 1
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 2
AIR COND
X BLEED
AUTO
SHUT
OPEN
START
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
ENG 2 BLEED
BLEED
25°C
85°C
C
H
RAM AIR
COOL CONDITIONED AIR
PACK AIR OUTLET
AIR CYCLE MACHINE
(COMPRESSOR + TURBINE)
TURBINE BYPASS VALVE
HEAT EXCHANGER
HEAT EXCHANGER
PACK FLOW CONTROL VALVE
PACK AIR INTAKE
HOT BLEED AIR

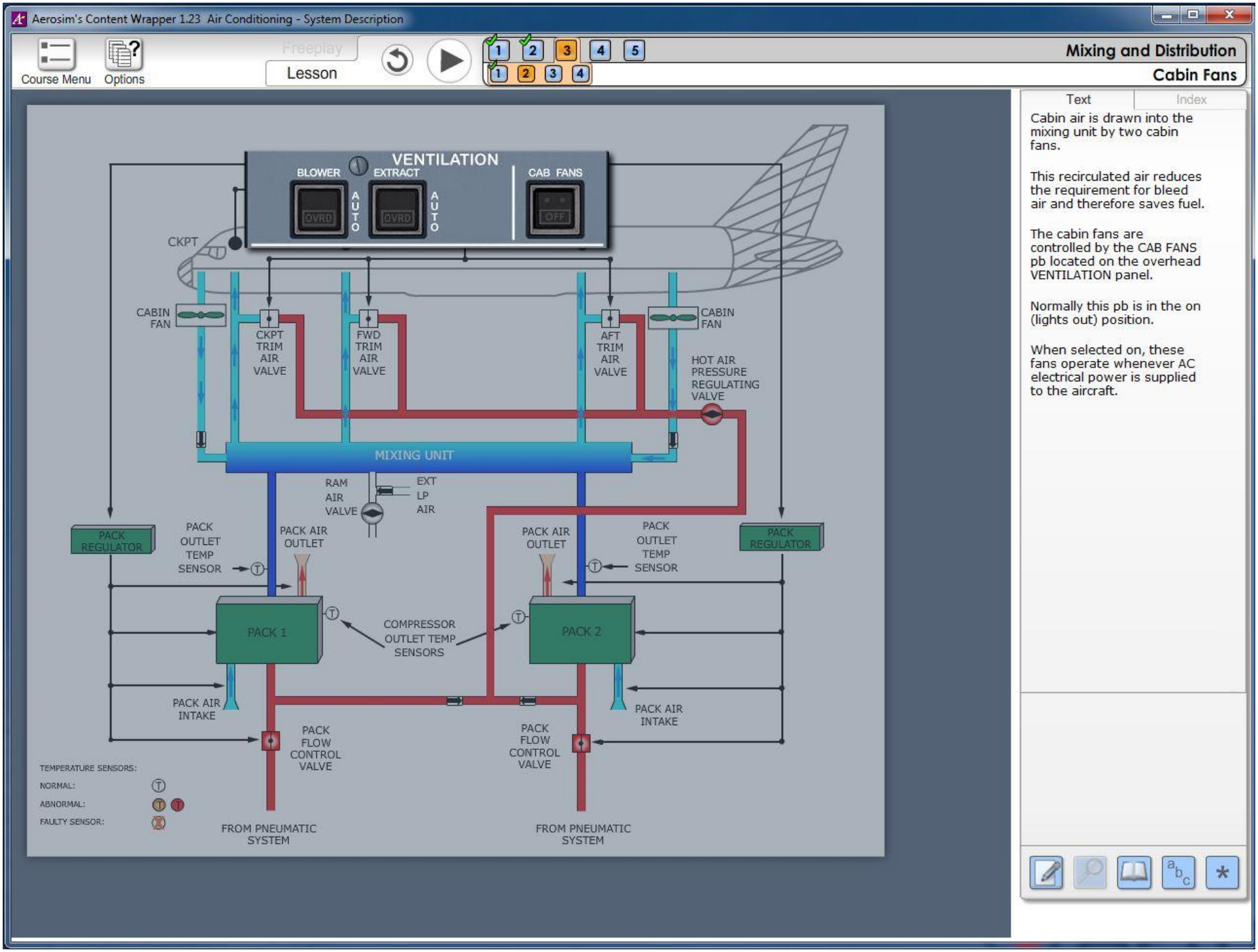

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Mixing and Distribution
Mixing Unit
Text
Index
Air from the air conditioning packs is combined with recirculated cabin air in the mixing unit.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

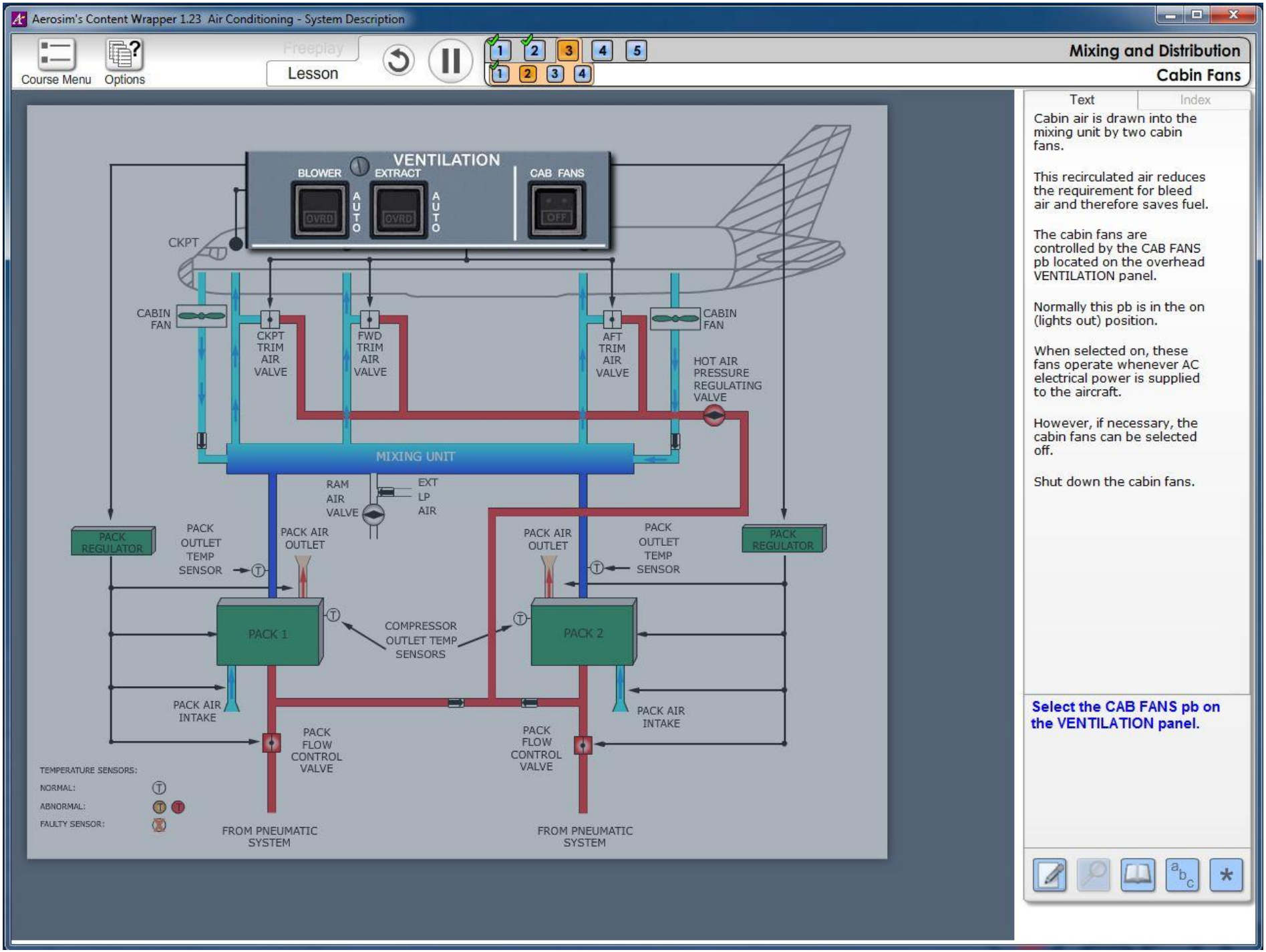

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Mixing and Distribution
Mixing Unit
Text
Index
Air from the air conditioning packs is combined with recirculated cabin air in the mixing unit.
This air is then distributed to the three aircraft zones labeled as:
CKPT
FWD CABIN
AFT CABIN
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

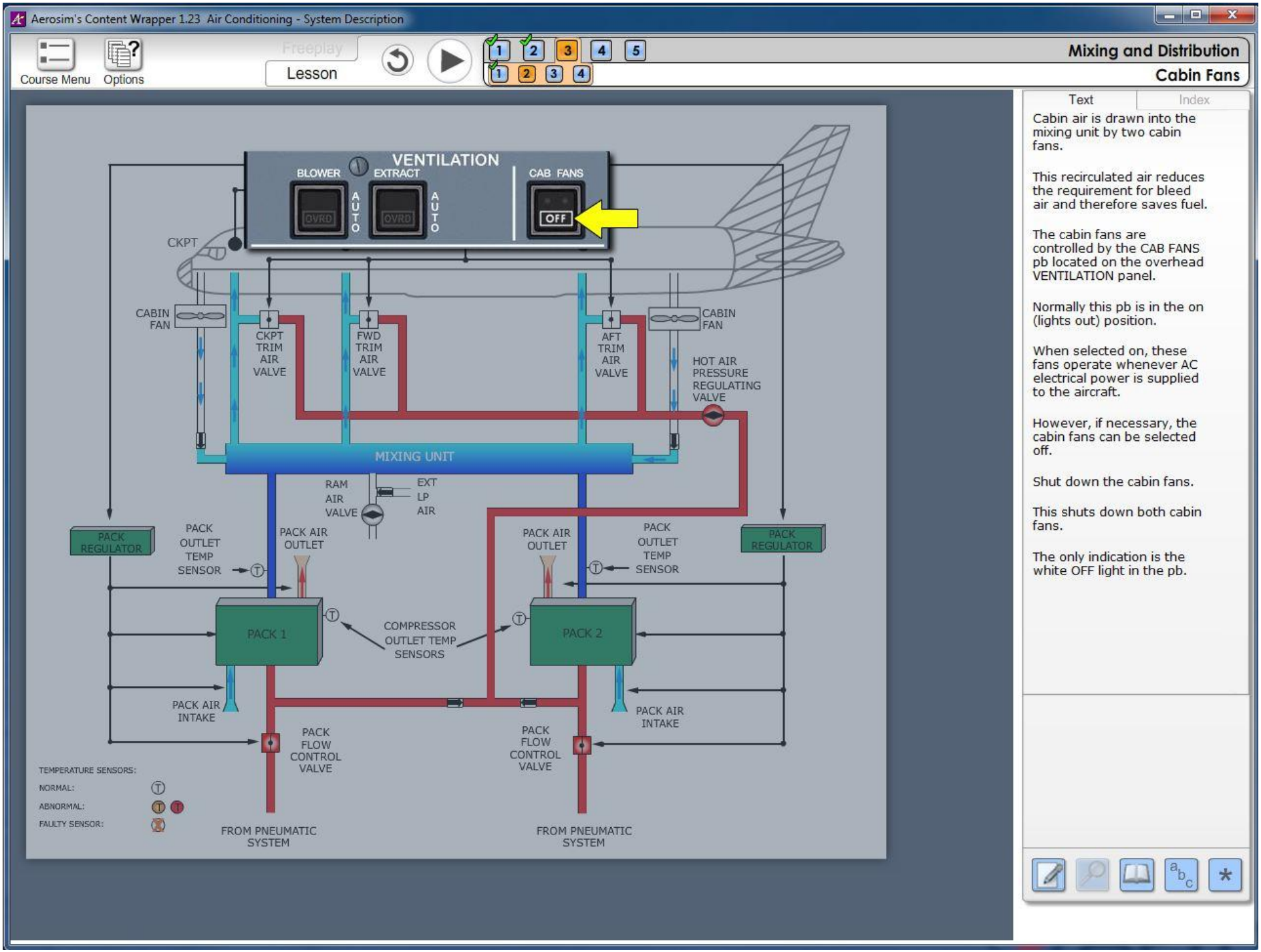

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Mixing and Distribution
Mixing Unit
Text
Index
Air from the air conditioning packs is combined with recirculated cabin air in the mixing unit.
This air is then distributed to the three aircraft zones labeled as:
CKPT
FWD CABIN
AFT CABIN
The depiction of the mixing unit appears at the top of the BLEED page.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
The mixing unit appears green when airflow is present. It changes to amber when air is not present.
20°C
C
H
110°C
LO
HI
RAM AIR
20°C
C
H
115°C
LO
HI
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:

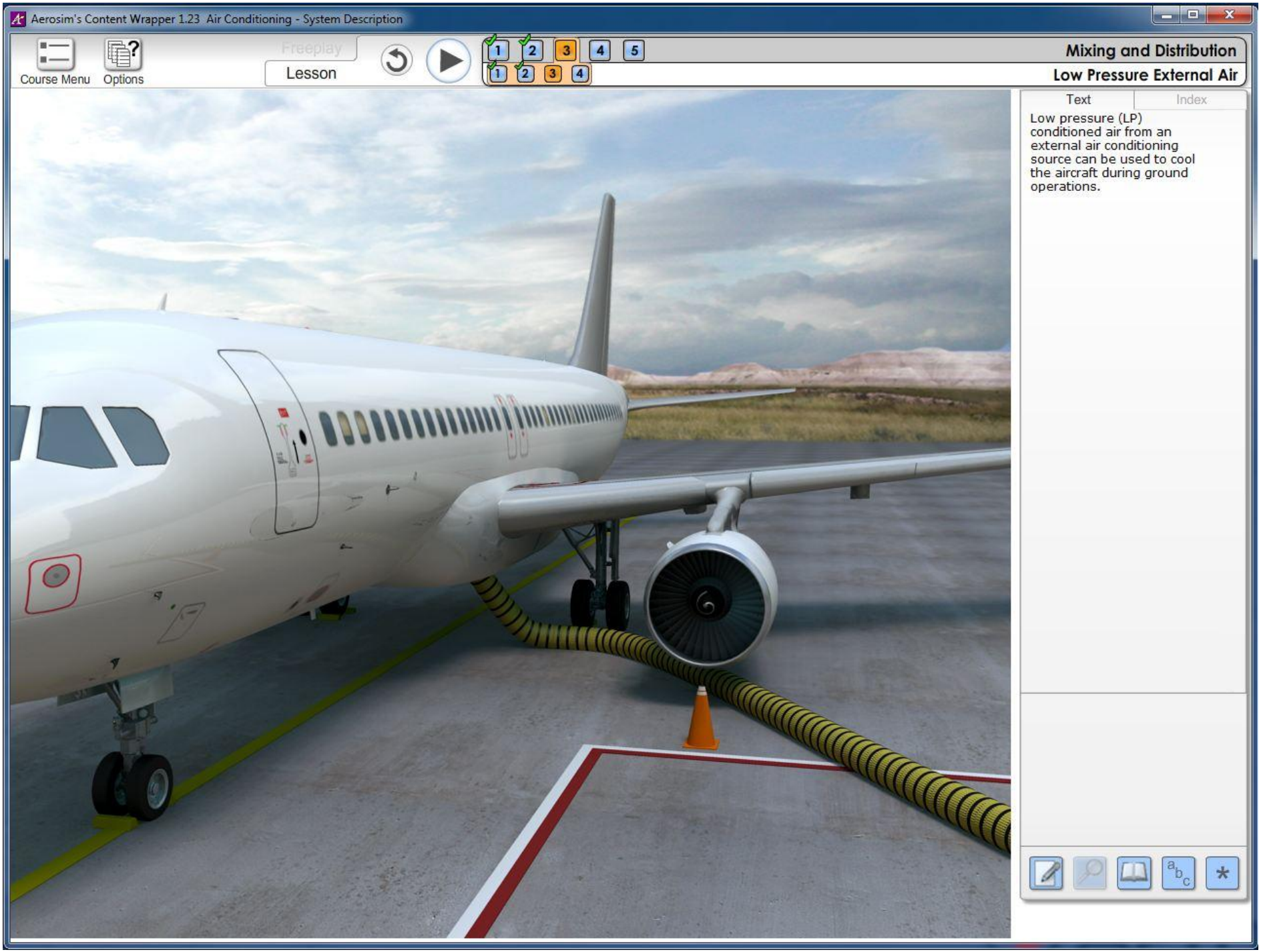

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Mixing and Distribution
Cabin Fans
Text
Index
Cabin air is drawn into the mixing unit by two cabin fans.
This recirculated air reduces the requirement for bleed air and therefore saves fuel.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

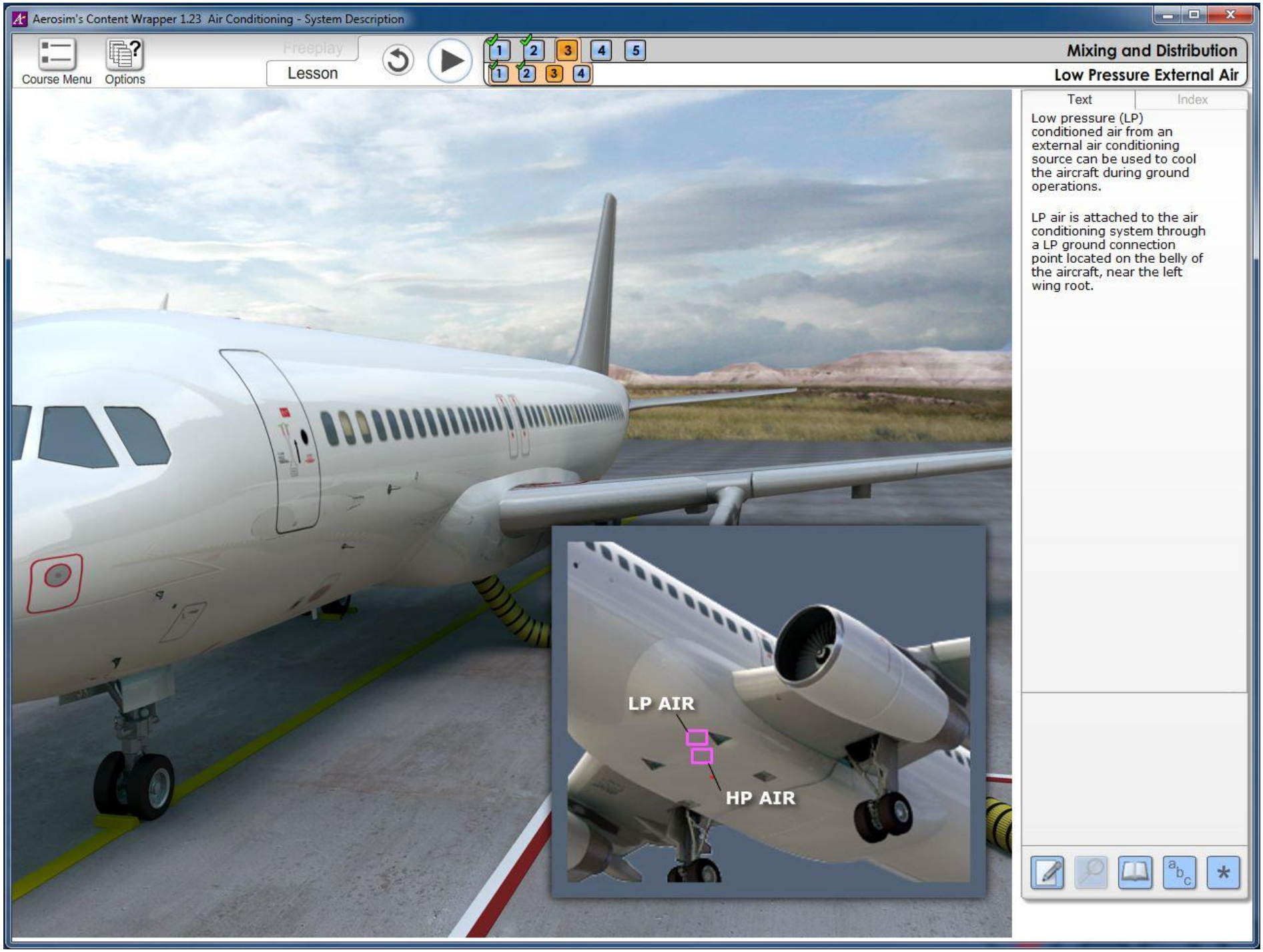

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Mixing and Distribution
Cabin Fans
Text
Index
Cabin air is drawn into the mixing unit by two cabin fans.
This recirculated air reduces the requirement for bleed air and therefore saves fuel.
The cabin fans are controlled by the CAB FANS pb located on the overhead VENTILATION panel.
VENTILATION
BLOWER
EXTRACT
CAB FANS
AUTO
OVRD
OFF
CKPT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK 1
PACK 2
COMPRESSOR OUTLET TEMP SENSORS
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM

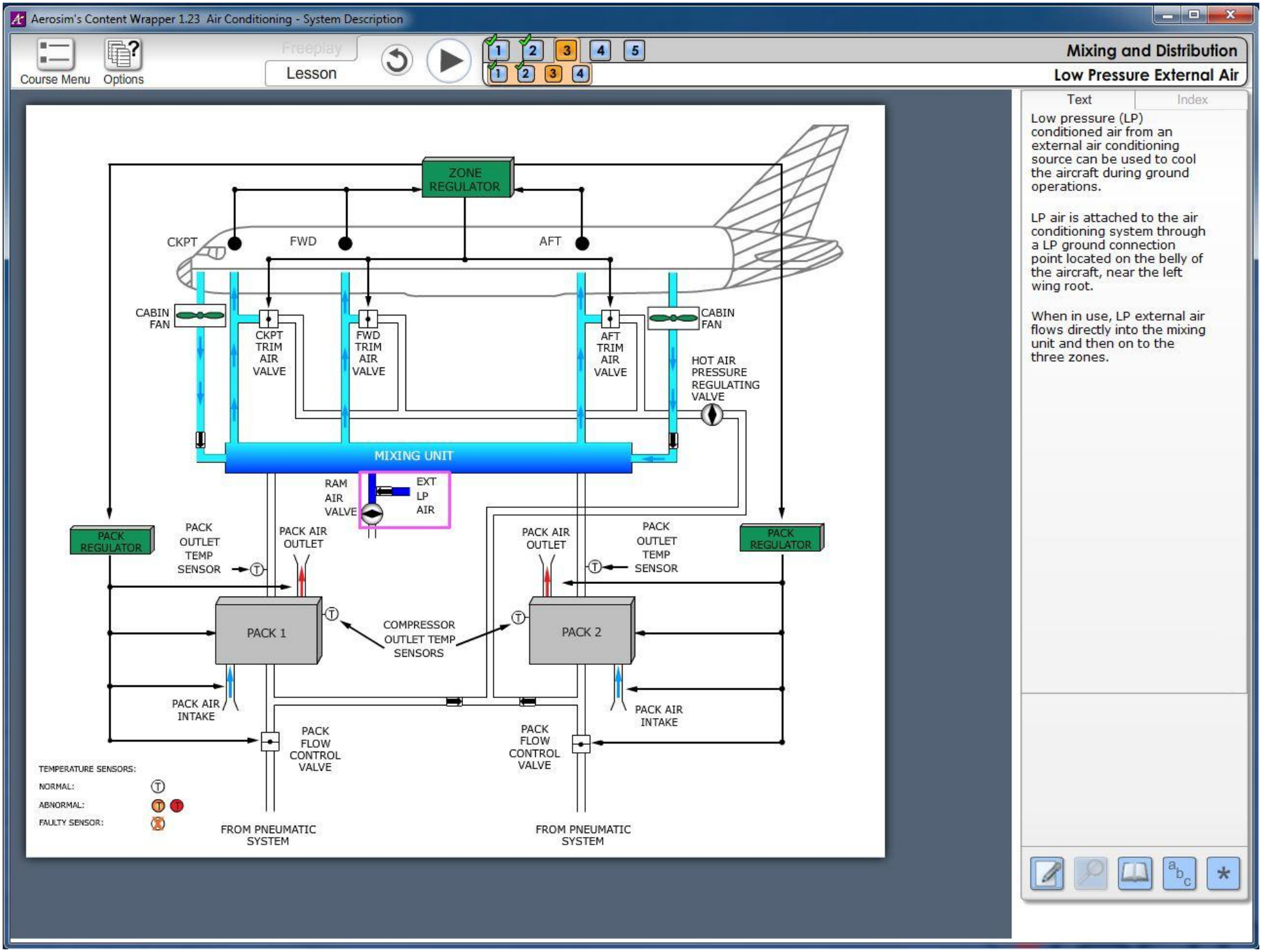

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Mixing and Distribution
Cabin Fans
Text
Index
Cabin air is drawn into the mixing unit by two cabin fans.
This recirculated air reduces the requirement for bleed air and therefore saves fuel.
The cabin fans are controlled by the CAB FANS pb located on the overhead VENTILATION panel.
Normally this pb is in the on (lights out) position.
When selected on, these fans operate whenever AC electrical power is supplied to the aircraft.
VENTILATION
BLOWER
EXTRACT
CAB FANS
AUTO
OVRD
OFF
CKPT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK 1
PACK 2
COMPRESSOR OUTLET TEMP SENSORS
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM

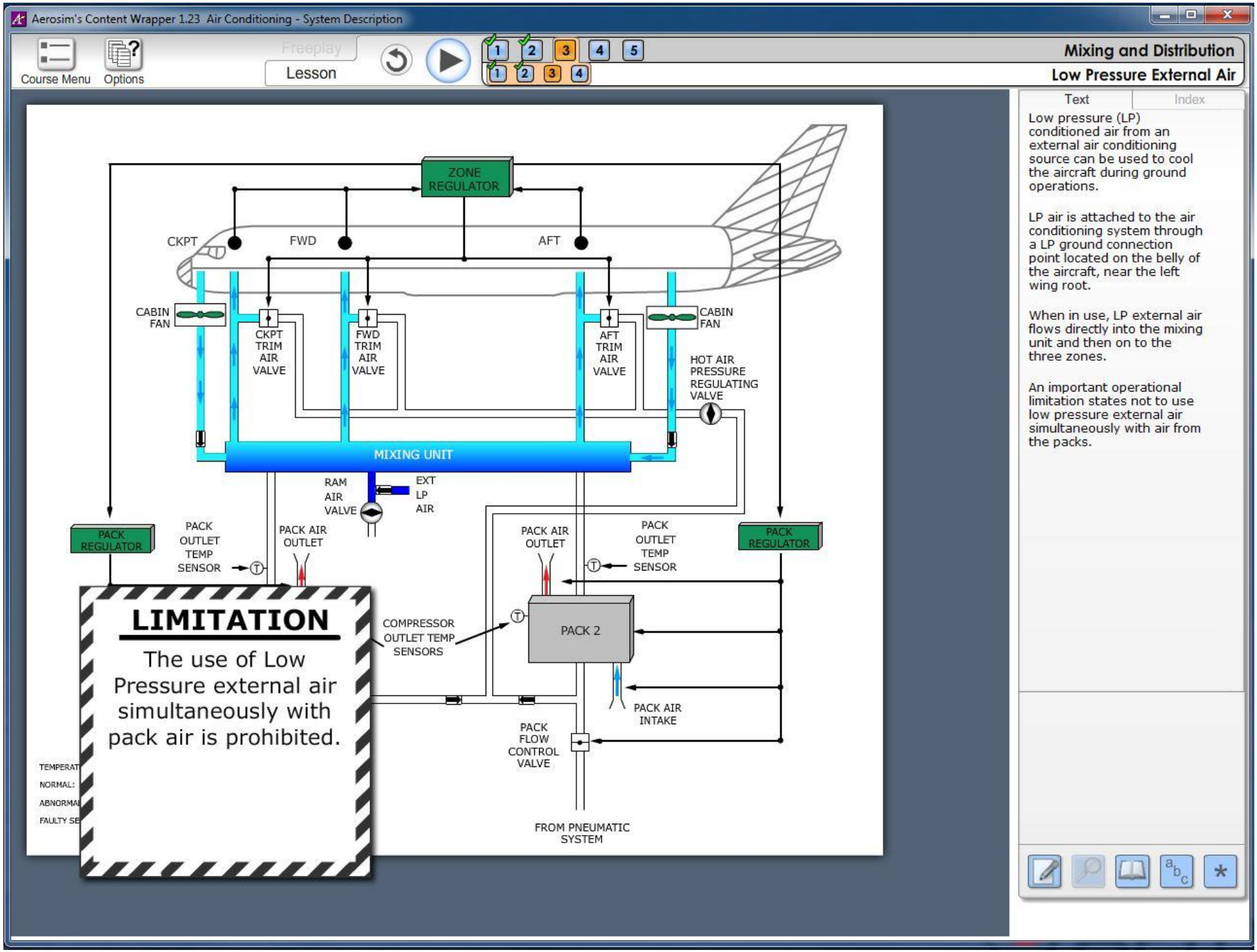

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Mixing and Distribution
Cabin Fans
Text
Index
Cabin air is drawn into the mixing unit by two cabin fans.
This recirculated air reduces the requirement for bleed air and therefore saves fuel.
The cabin fans are controlled by the CAB FANS pb located on the overhead VENTILATION panel.
Normally this pb is in the on (lights out) position.
When selected on, these fans operate whenever AC electrical power is supplied to the aircraft.
However, if necessary, the cabin fans can be selected off.
Shut down the cabin fans.
Select the CAB FANS pb on the VENTILATION panel.
VENTILATION
BLOWER
EXTRACT
CAB FANS
AUTO
OVRD
OFF
CKPT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK 1
PACK 2
COMPRESSOR OUTLET TEMP SENSORS
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
FROM PNEUMATIC SYSTEM
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:

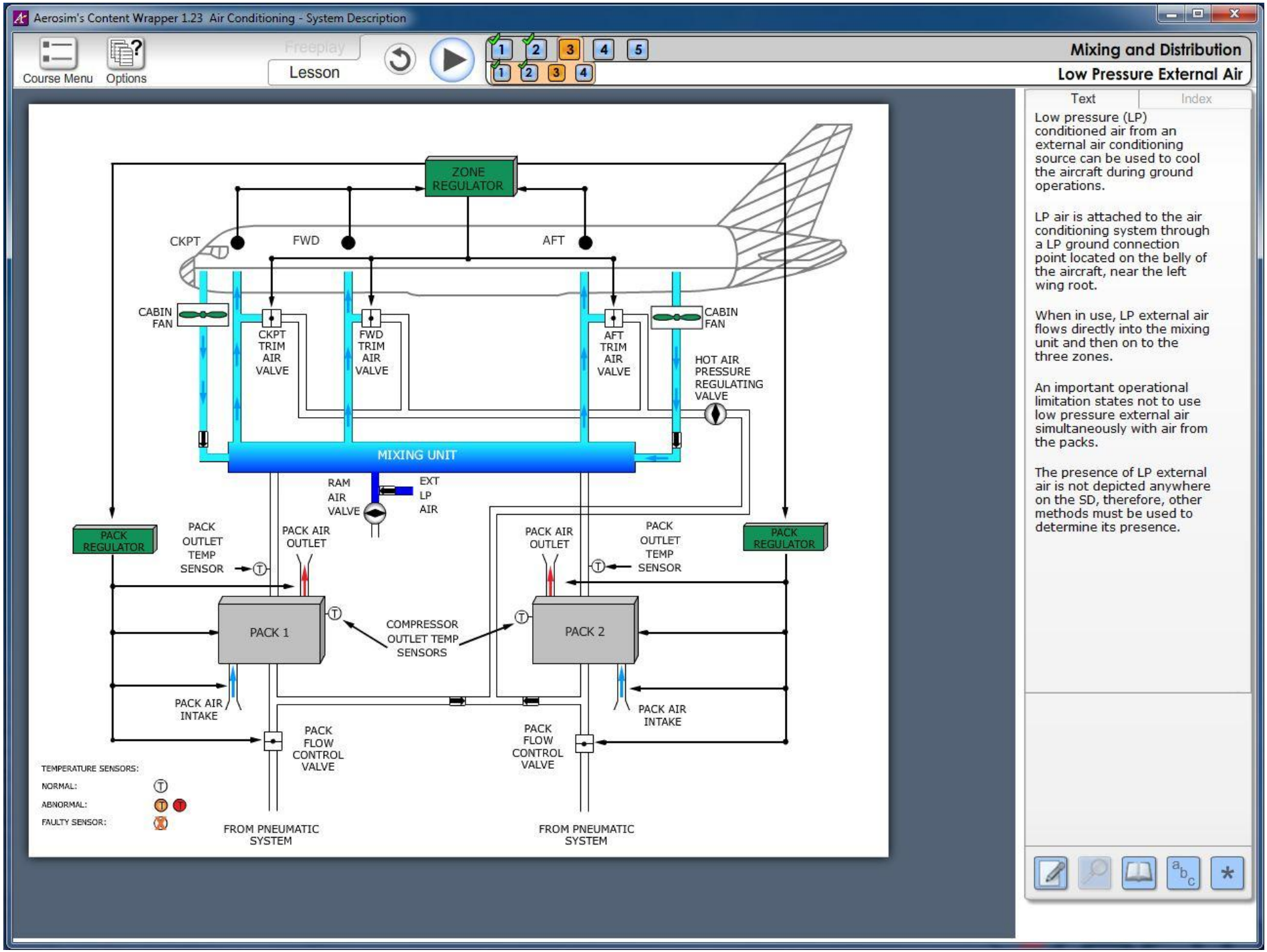

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Mixing and Distribution
Cabin Fans
Text
Index
Cabin air is drawn into the mixing unit by two cabin fans.
This recirculated air reduces the requirement for bleed air and therefore saves fuel.
The cabin fans are controlled by the CAB FANS pb located on the overhead VENTILATION panel.
Normally this pb is in the on (lights out) position.
When selected on, these fans operate whenever AC electrical power is supplied to the aircraft.
However, if necessary, the cabin fans can be selected off.
Shut down the cabin fans.
This shuts down both cabin fans.
The only indication is the white OFF light in the pb.
VENTILATION
BLOWER
EXTRACT
CAB FANS
AUTO
OVRD
OFF
CKPT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK 1
PACK 2
COMPRESSOR OUTLET TEMP SENSORS
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
FROM PNEUMATIC SYSTEM
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:

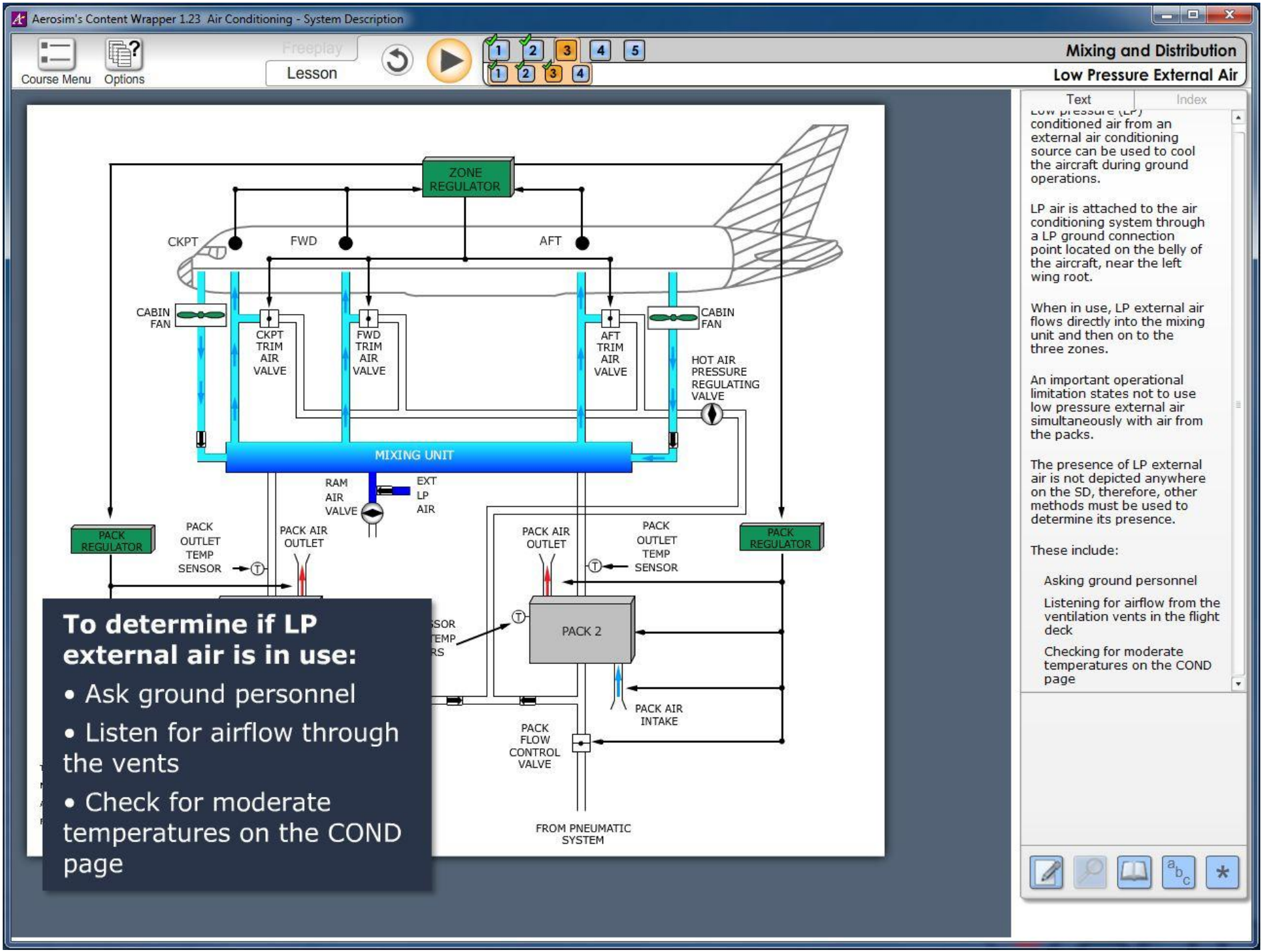

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
1 2 3 4 5
1 2 3 4
Mixing and Distribution
Low Pressure External Air
Text
Index
Low pressure (LP) conditioned air from an external air conditioning source can be used to cool the aircraft during ground operations.

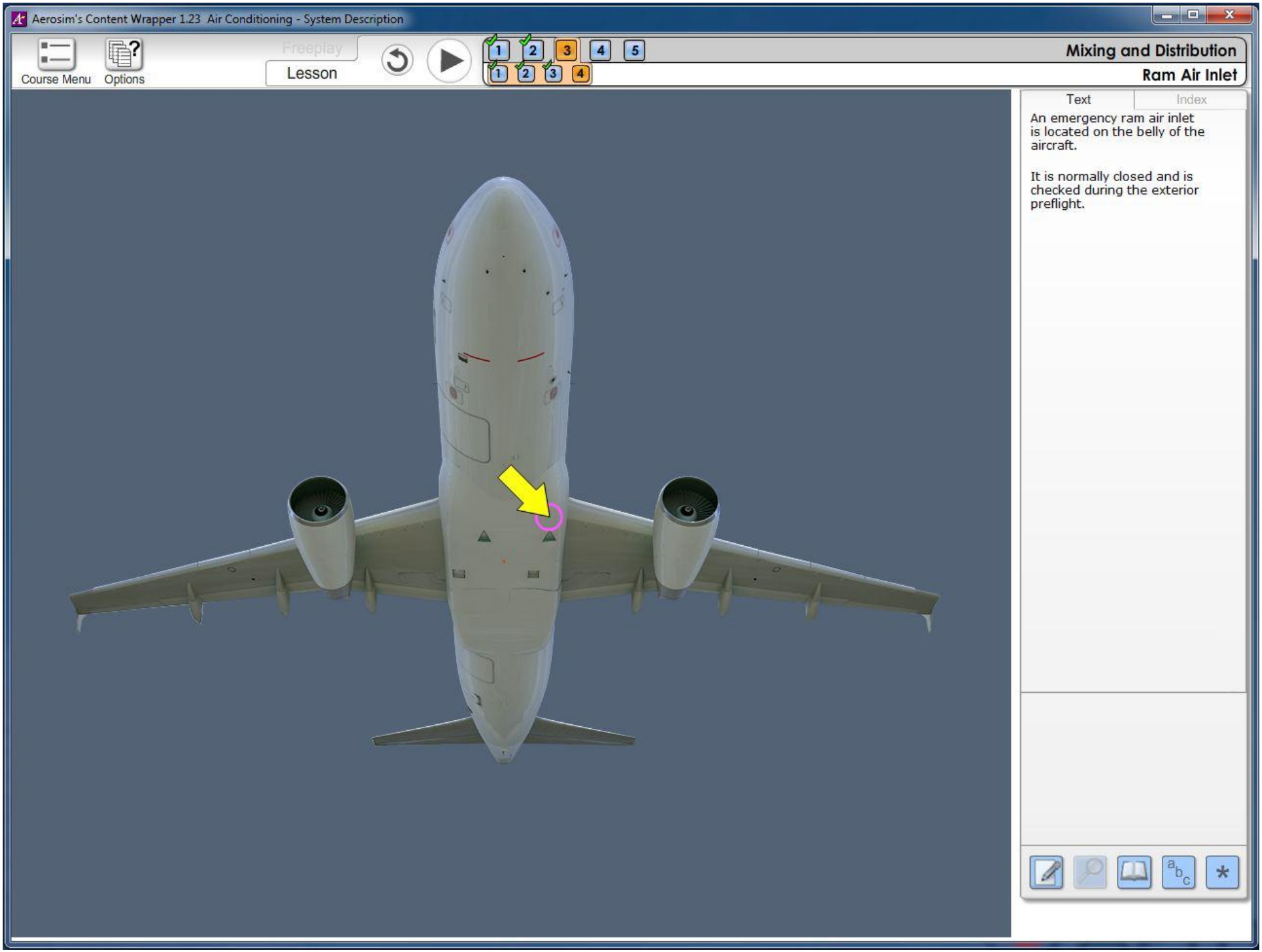

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Mixing and Distribution
Low Pressure External Air
Text
Index
Low pressure (LP) conditioned air from an external air conditioning source can be used to cool the aircraft during ground operations.
LP air is attached to the air conditioning system through a LP ground connection point located on the belly of the aircraft, near the left wing root.
LP AIR
HP AIR

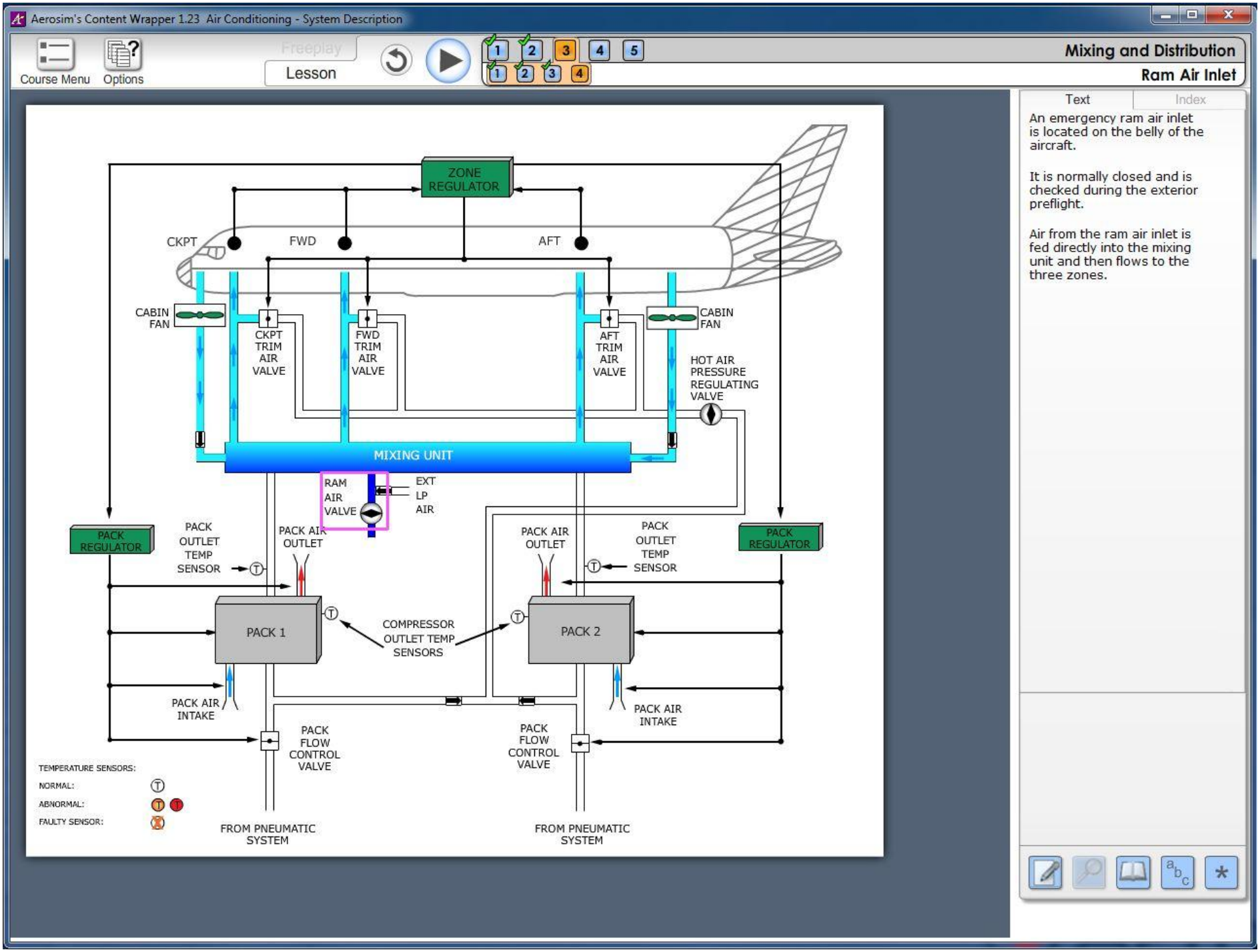

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Mixing and Distribution
Low Pressure External Air
Text
Index
Low pressure (LP) conditioned air from an external air conditioning source can be used to cool the aircraft during ground operations.
LP air is attached to the air conditioning system through a LP ground connection point located on the belly of the aircraft, near the left wing root.
When in use, LP external air flows directly into the mixing unit and then on to the three zones.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

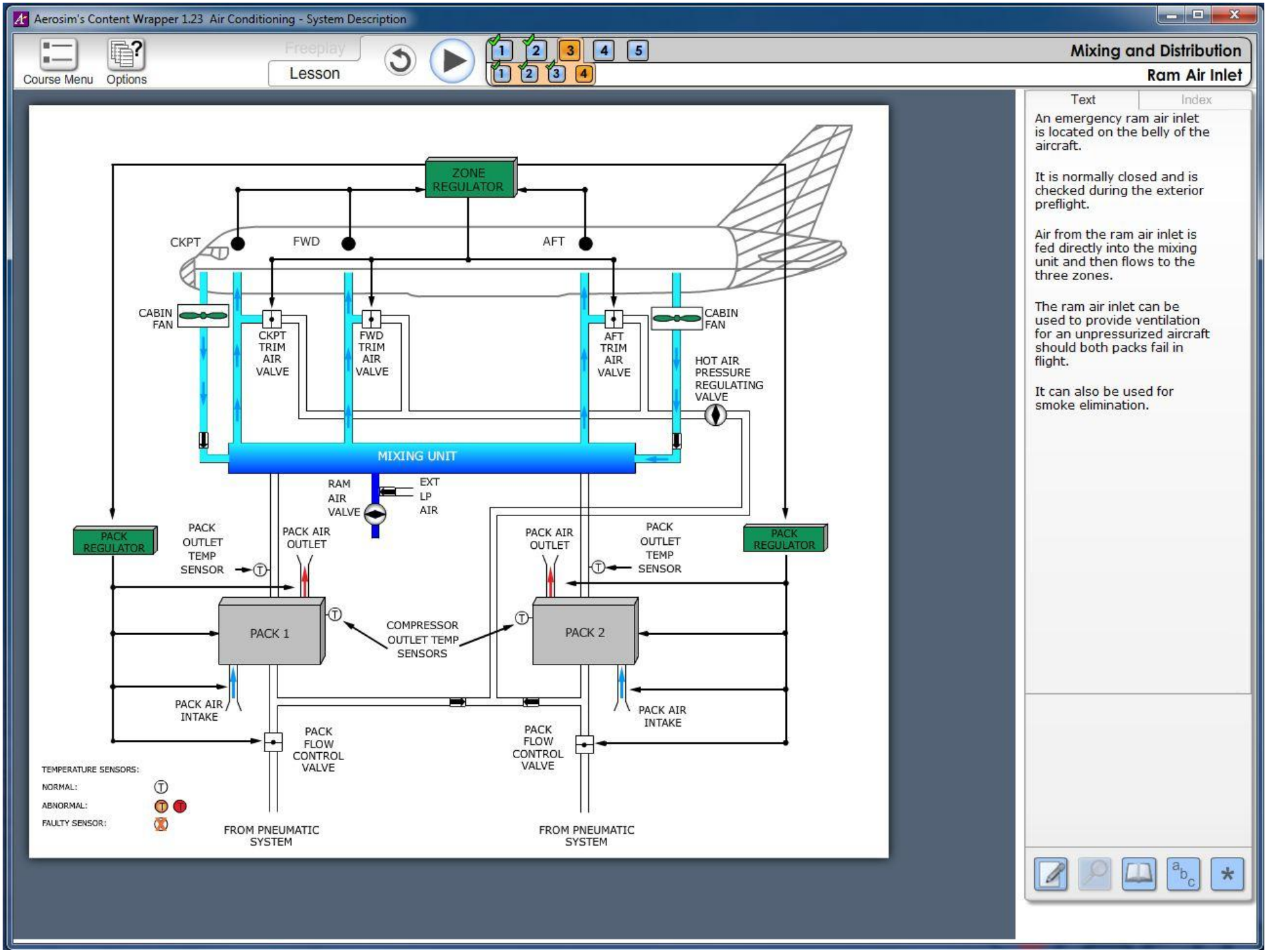

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Mixing and Distribution
Low Pressure External Air
Text
Index
Low pressure (LP) conditioned air from an external air conditioning source can be used to cool the aircraft during ground operations.
LP air is attached to the air conditioning system through a LP ground connection point located on the belly of the aircraft, near the left wing root.
When in use, LP external air flows directly into the mixing unit and then on to the three zones.
An important operational limitation states not to use low pressure external air simultaneously with air from the packs.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
LIMITATION
The use of Low Pressure external air simultaneously with pack air is prohibited.
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
FROM PNEUMATIC SYSTEM

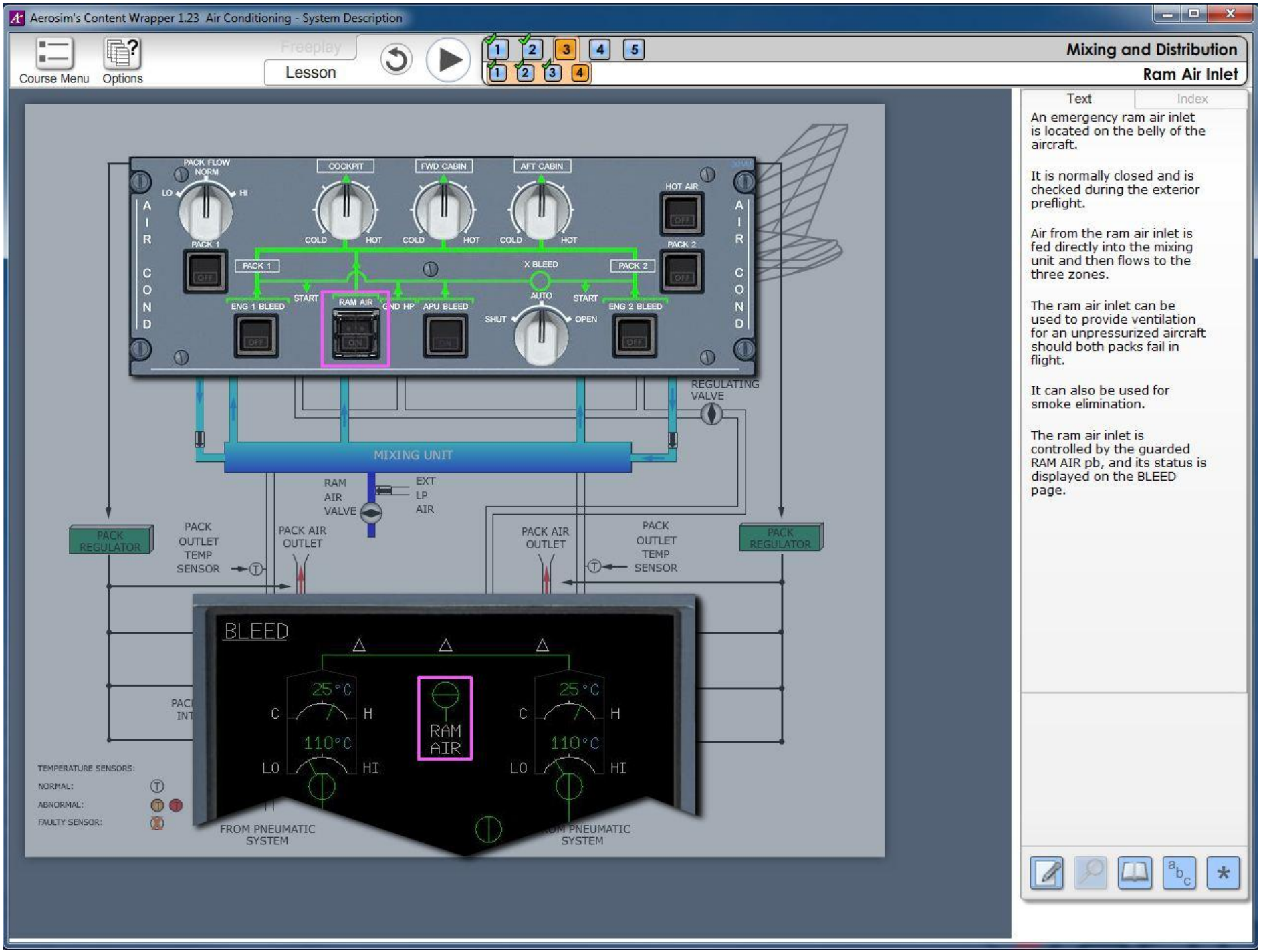

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Mixing and Distribution
Low Pressure External Air
Text
Index
Low pressure (LP) conditioned air from an external air conditioning source can be used to cool the aircraft during ground operations.
LP air is attached to the air conditioning system through a LP ground connection point located on the belly of the aircraft, near the left wing root.
When in use, LP external air flows directly into the mixing unit and then on to the three zones.
An important operational limitation states not to use low pressure external air simultaneously with air from the packs.
The presence of LP external air is not depicted anywhere on the SD, therefore, other methods must be used to determine its presence.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

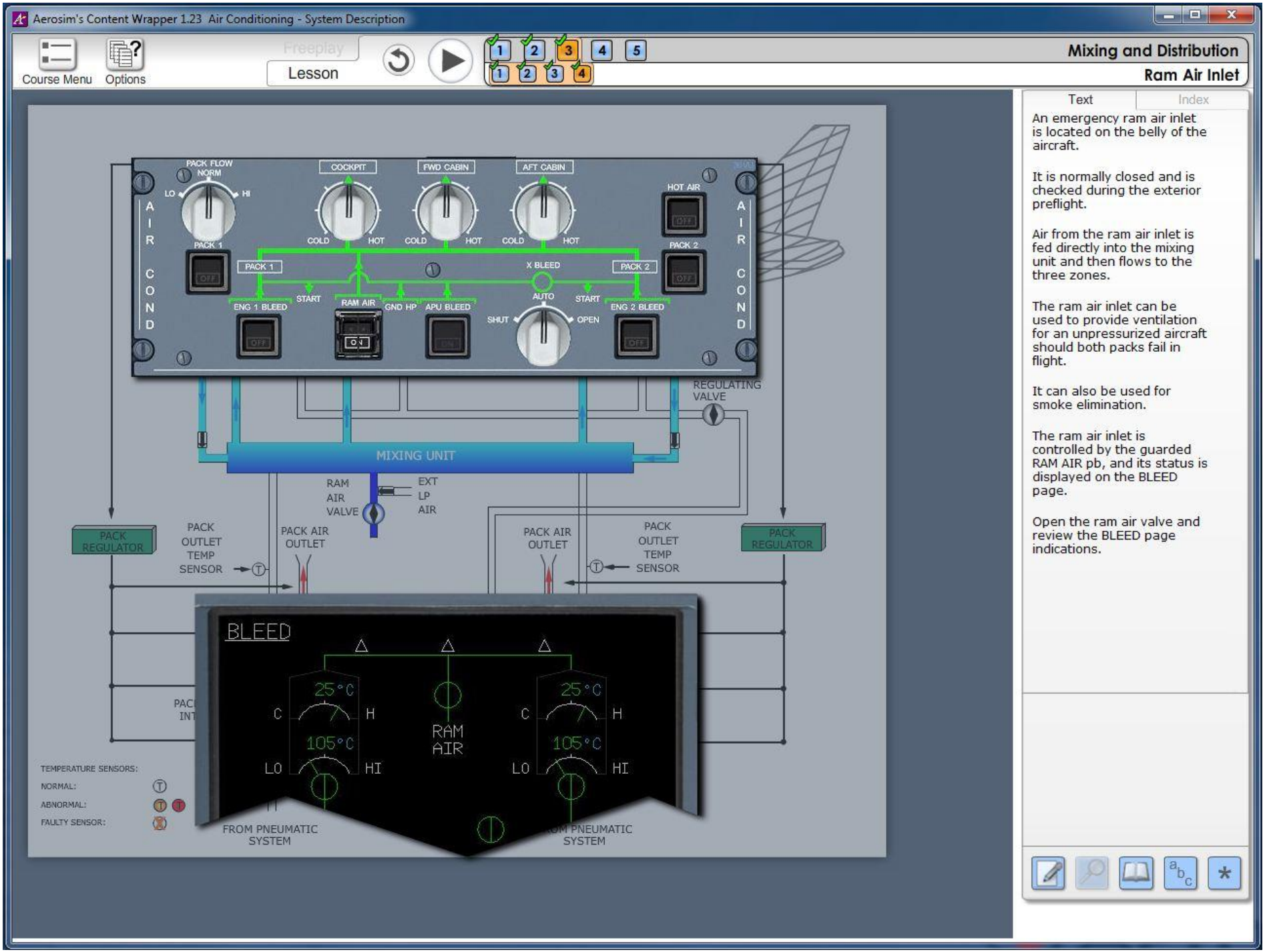

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Mixing and Distribution
Low Pressure External Air
Text
Index
conditioned air from an external air conditioning source can be used to cool the aircraft during ground operations.
LP air is attached to the air conditioning system through a LP ground connection point located on the belly of the aircraft, near the left wing root.
When in use, LP external air flows directly into the mixing unit and then on to the three zones.
An important operational limitation states not to use low pressure external air simultaneously with air from the packs.
The presence of LP external air is not depicted anywhere on the SD, therefore, other methods must be used to determine its presence.
These include:
Asking ground personnel
Listening for airflow from the ventilation vents in the flight deck
Checking for moderate temperatures on the COND page
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 2
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
FROM PNEUMATIC SYSTEM
To determine if LP external air is in use:
• Ask ground personnel
• Listen for airflow through the vents
• Check for moderate temperatures on the COND page

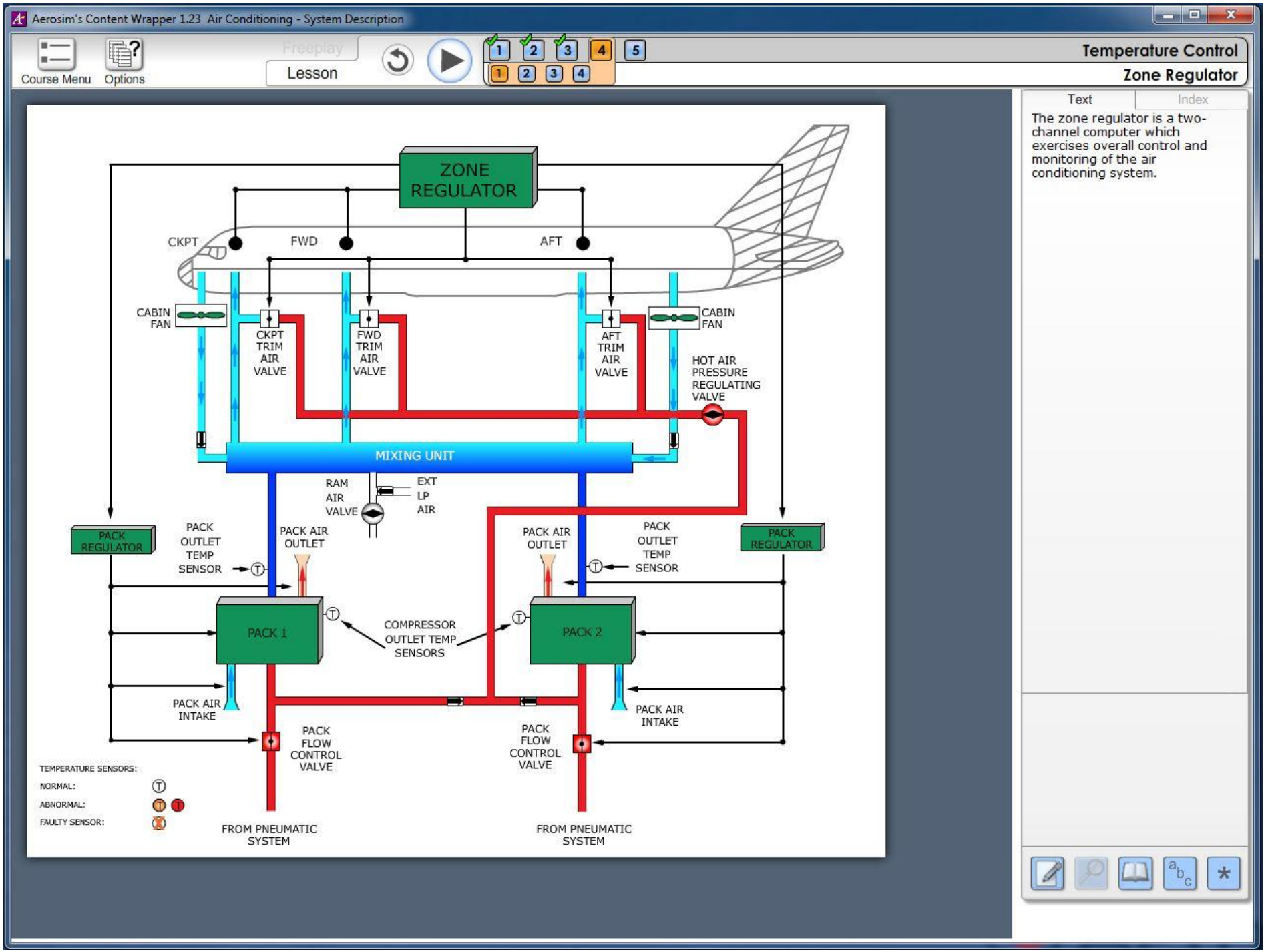

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Mixing and Distribution
Ram Air Inlet
Text
Index
An emergency ram air inlet is located on the belly of the aircraft.
It is normally closed and is checked during the exterior preflight.

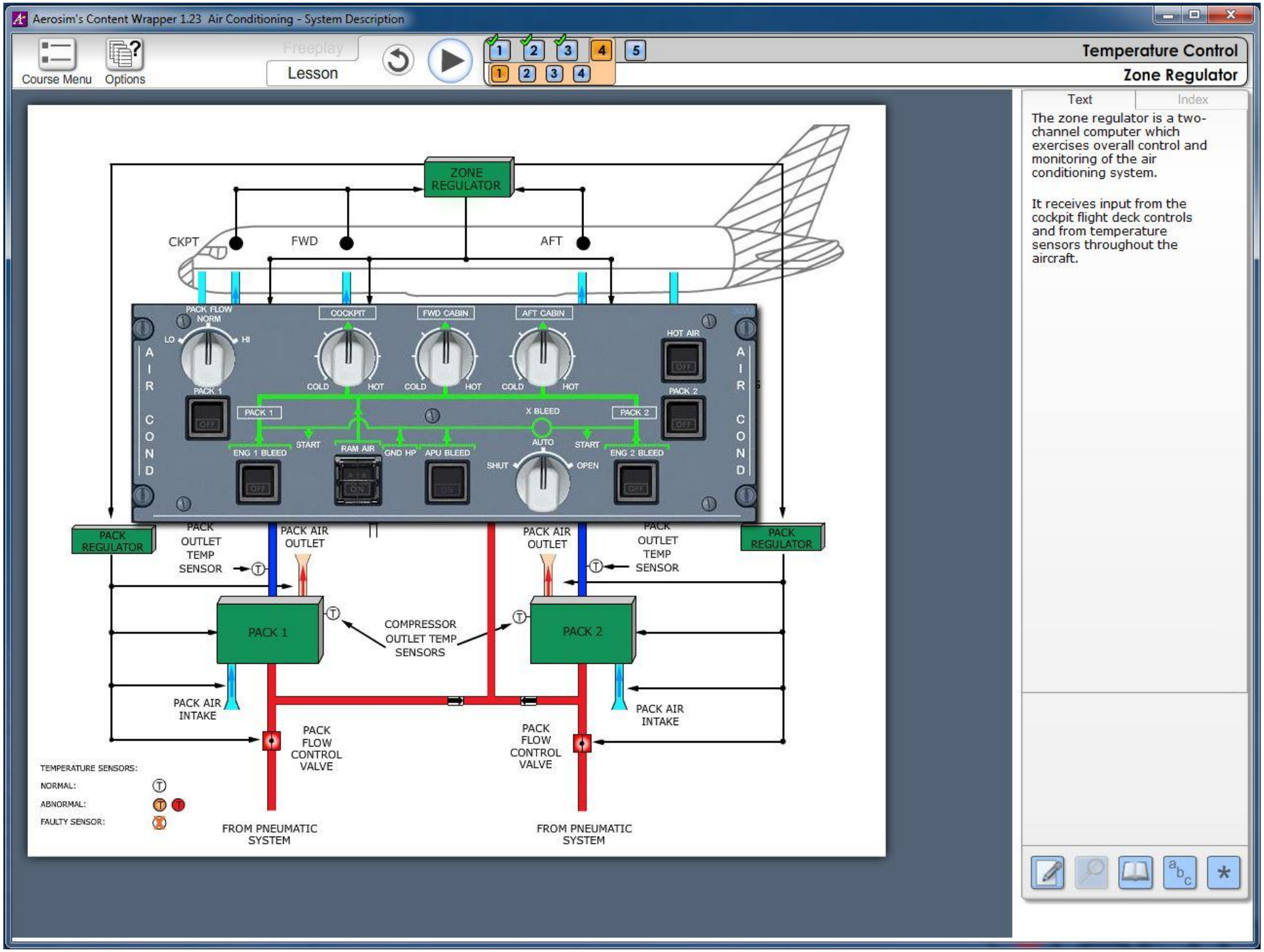

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Mixing and Distribution
Ram Air Inlet
Text
Index
An emergency ram air inlet is located on the belly of the aircraft.
It is normally closed and is checked during the exterior preflight.
Air from the ram air inlet is fed directly into the mixing unit and then flows to the three zones.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

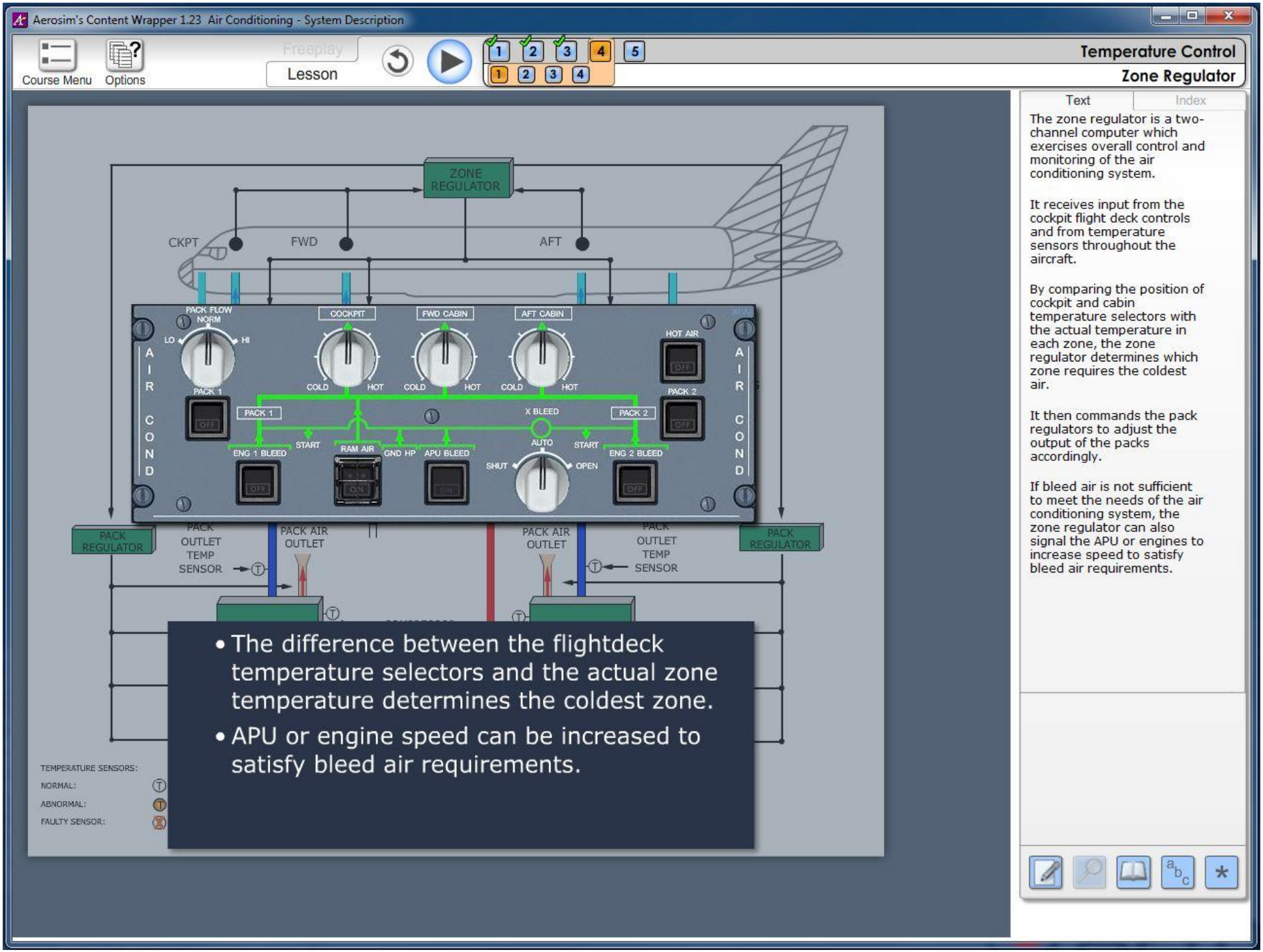

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Mixing and Distribution
Ram Air Inlet
Text
Index
An emergency ram air inlet is located on the belly of the aircraft.
It is normally closed and is checked during the exterior preflight.
Air from the ram air inlet is fed directly into the mixing unit and then flows to the three zones.
The ram air inlet can be used to provide ventilation for an unpressurized aircraft should both packs fail in flight.
It can also be used for smoke elimination.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

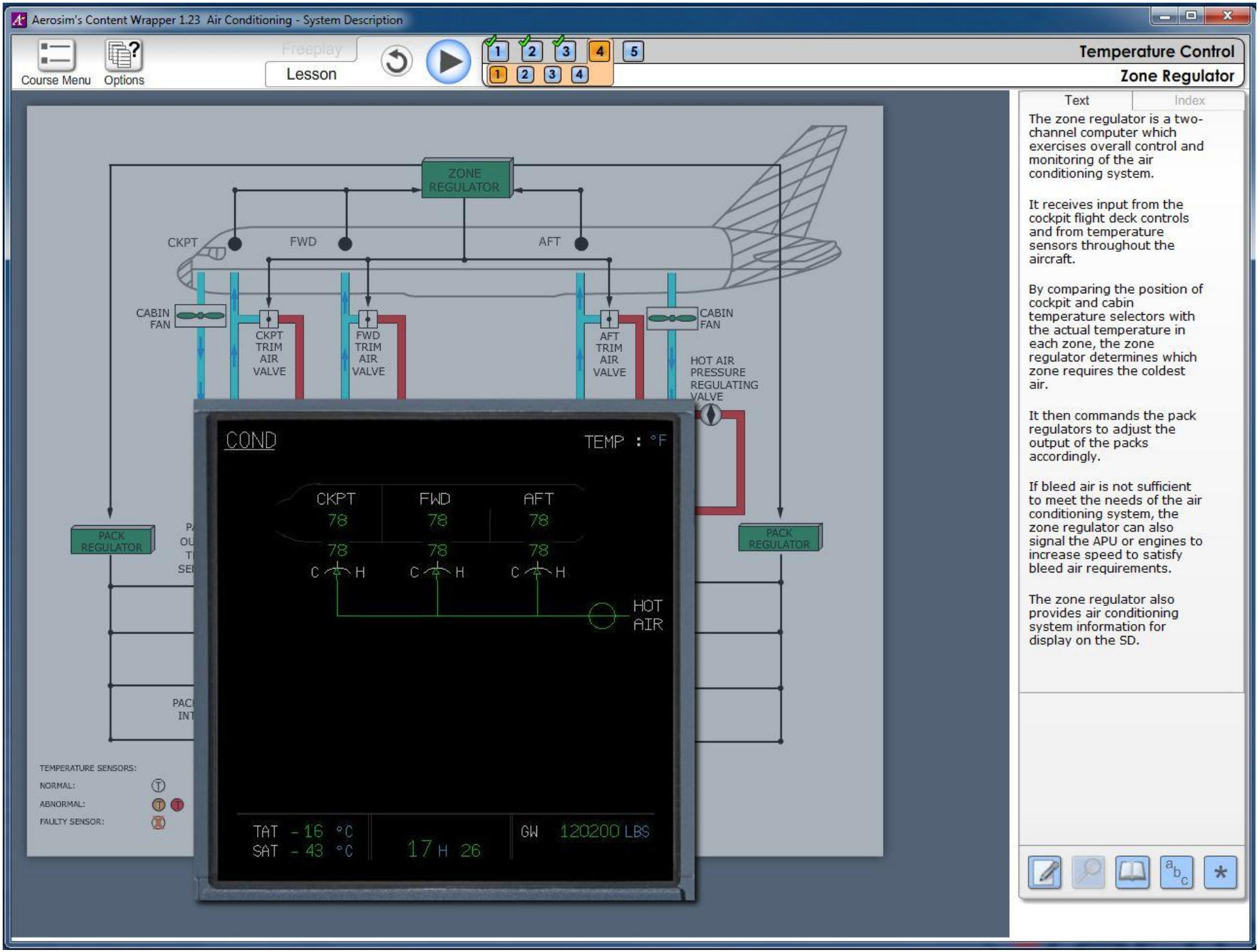

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Mixing and Distribution
Ram Air Inlet
Text
Index
An emergency ram air inlet is located on the belly of the aircraft.
It is normally closed and is checked during the exterior preflight.
Air from the ram air inlet is fed directly into the mixing unit and then flows to the three zones.
The ram air inlet can be used to provide ventilation for an unpressurized aircraft should both packs fail in flight.
It can also be used for smoke elimination.
The ram air inlet is controlled by the guarded RAM AIR pb, and its status is displayed on the BLEED page.
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
X BLEED
AUTO
SHUT
OPEN
START
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
ENG 2 BLEED
REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
BLEED
25°C
110°C
C
H
LO
HI
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM

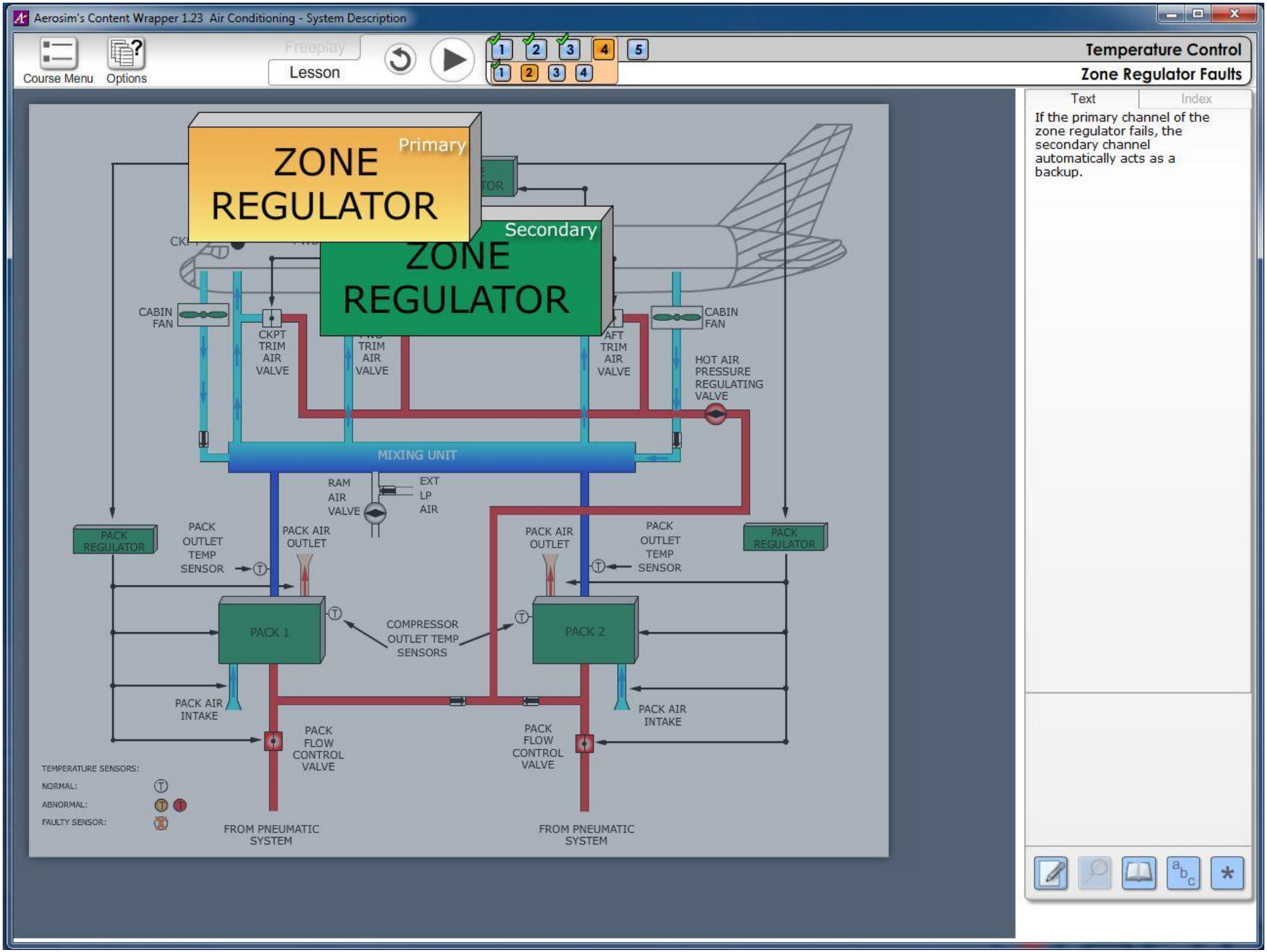

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Mixing and Distribution
Ram Air Inlet
Text
Index
An emergency ram air inlet is located on the belly of the aircraft.
It is normally closed and is checked during the exterior preflight.
Air from the ram air inlet is fed directly into the mixing unit and then flows to the three zones.
The ram air inlet can be used to provide ventilation for an unpressurized aircraft should both packs fail in flight.
It can also be used for smoke elimination.
The ram air inlet is controlled by the guarded RAM AIR pb, and its status is displayed on the BLEED page.
Open the ram air valve and review the BLEED page indications.
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
X BLEED
AUTO
SHUT
OPEN
START
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
ENG 2 BLEED
REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
BLEED
25°C
105°C
RAM AIR
FROM PNEUMATIC SYSTEM
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:

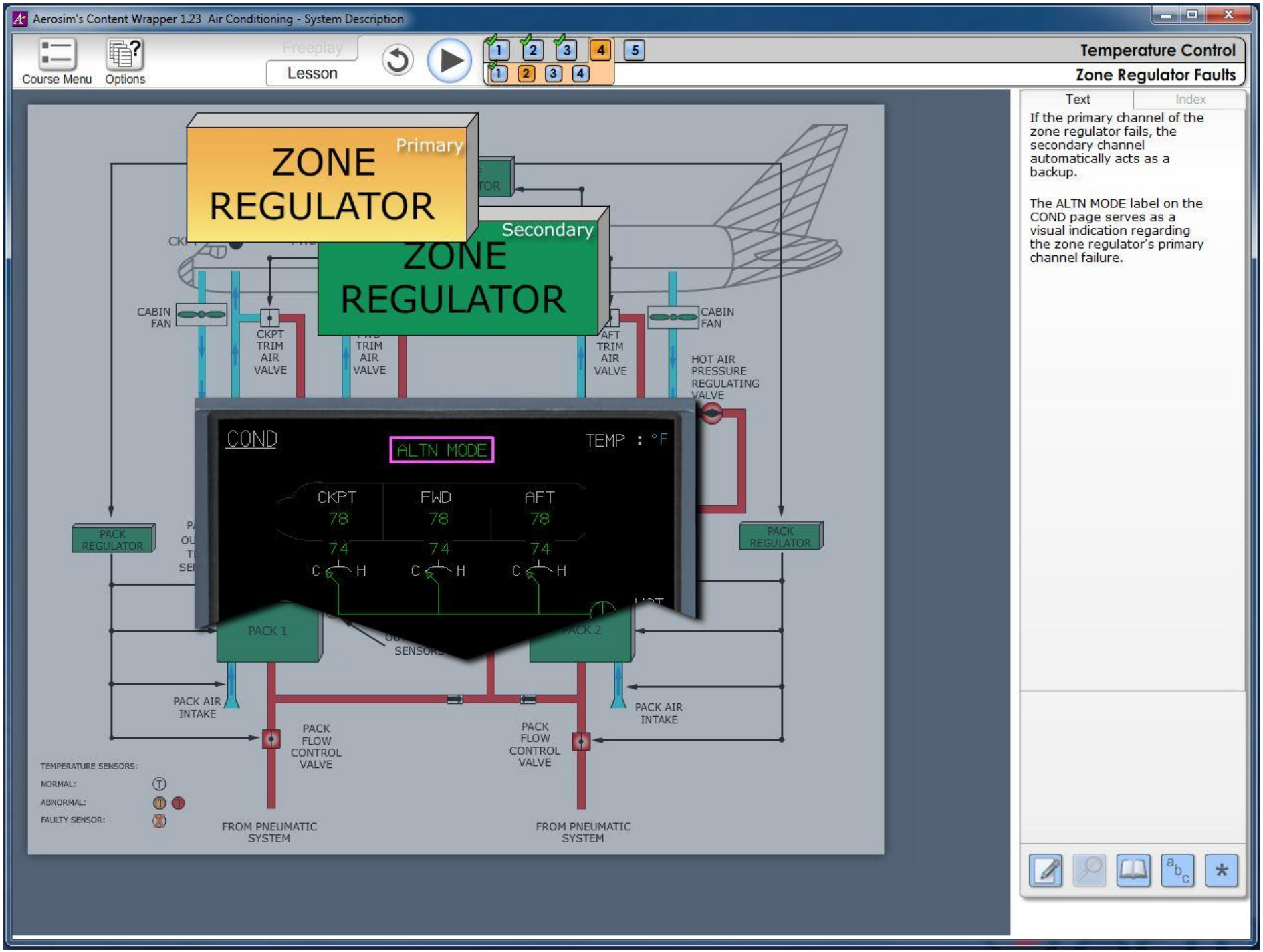

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Zone Regulator
Text
Index
The zone regulator is a two-channel computer which exercises overall control and monitoring of the air conditioning system.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

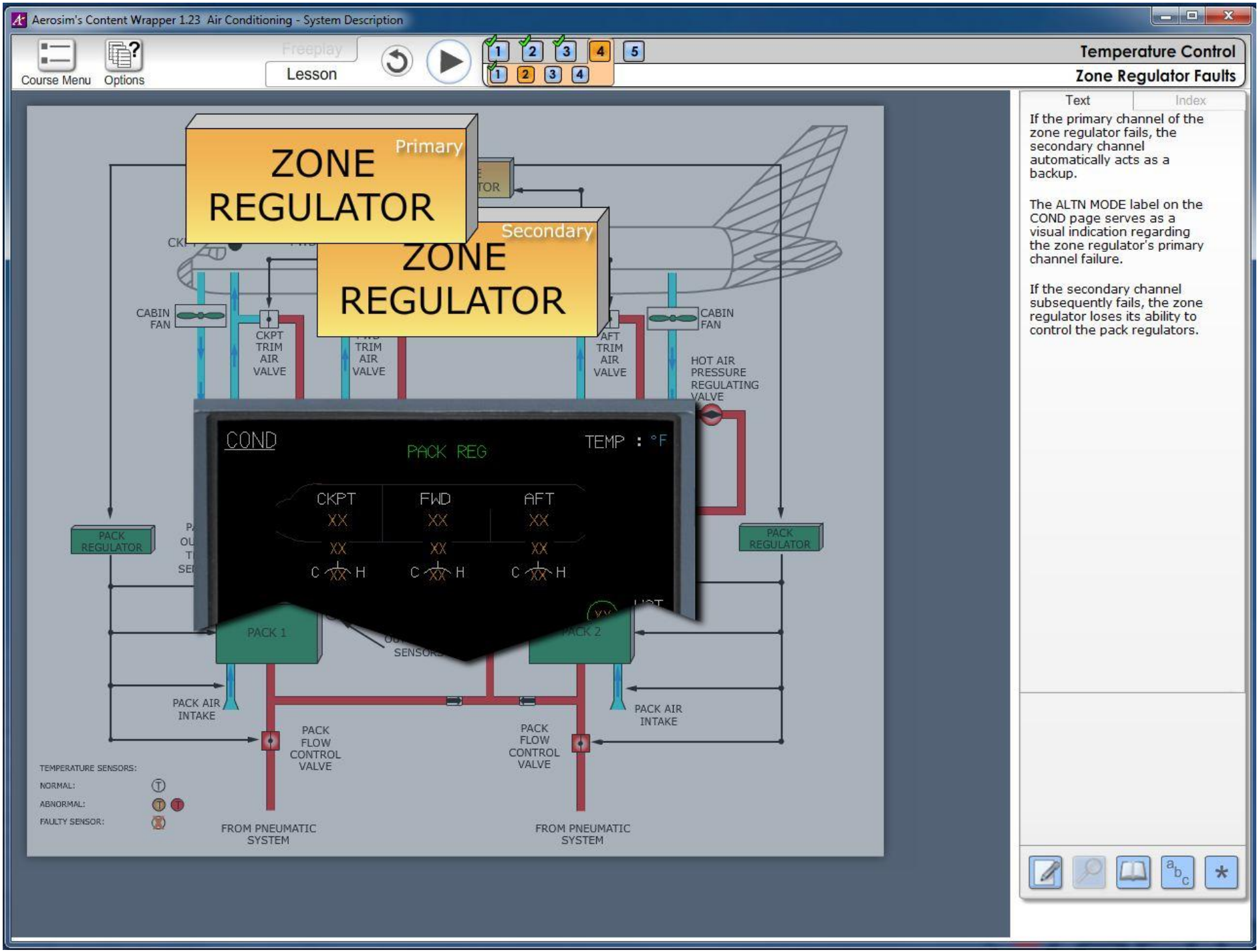

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Zone Regulator
Text
Index
The zone regulator is a two-channel computer which exercises overall control and monitoring of the air conditioning system.
It receives input from the cockpit flight deck controls and from temperature sensors throughout the aircraft.
ZONE REGULATOR
CKPT
FWD
AFT
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
HOT AIR
COLD
HOT
PACK 1
PACK 2
X BLEED
AUTO
START
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
ENG 2 BLEED
SHUT
OPEN
AIR COND
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
COMPRESSOR OUTLET TEMP SENSORS
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM

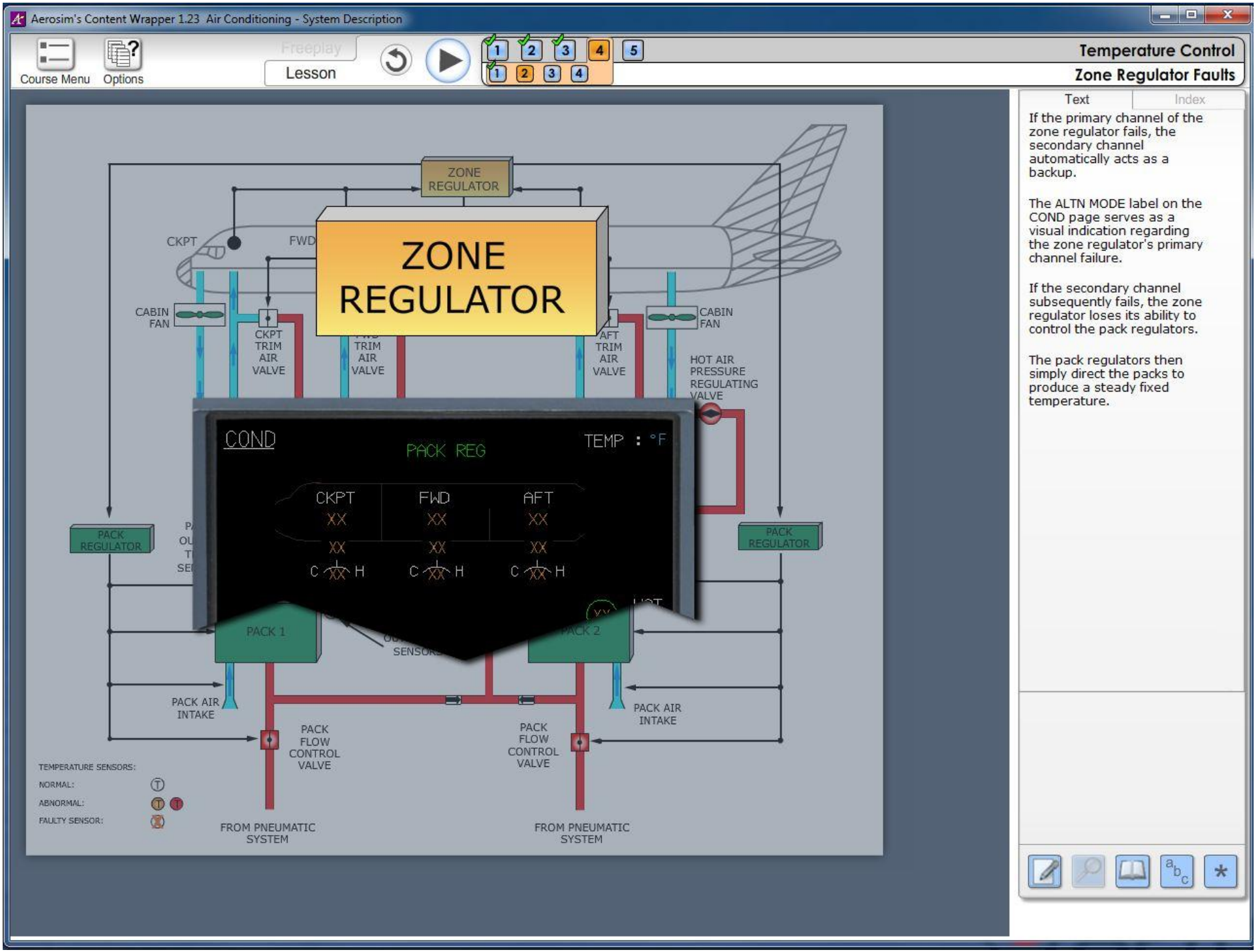

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Zone Regulator
Text
Index
The zone regulator is a two-channel computer which exercises overall control and monitoring of the air conditioning system.
It receives input from the cockpit flight deck controls and from temperature sensors throughout the aircraft.
By comparing the position of cockpit and cabin temperature selectors with the actual temperature in each zone, the zone regulator determines which zone requires the coldest air.
It then commands the pack regulators to adjust the output of the packs accordingly.
If bleed air is not sufficient to meet the needs of the air conditioning system, the zone regulator can also signal the APU or engines to increase speed to satisfy bleed air requirements.
ZONE REGULATOR
CKPT
FWD
AFT
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
HOT AIR
COLD
HOT
PACK 1
PACK 2
X BLEED
AUTO
SHUT
OPEN
START
ENG 1 BLEED
ENG 2 BLEED
RAM AIR
GND HP
APU BLEED
AIR COND
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
• The difference between the flightdeck temperature selectors and the actual zone temperature determines the coldest zone.
• APU or engine speed can be increased to satisfy bleed air requirements.
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:

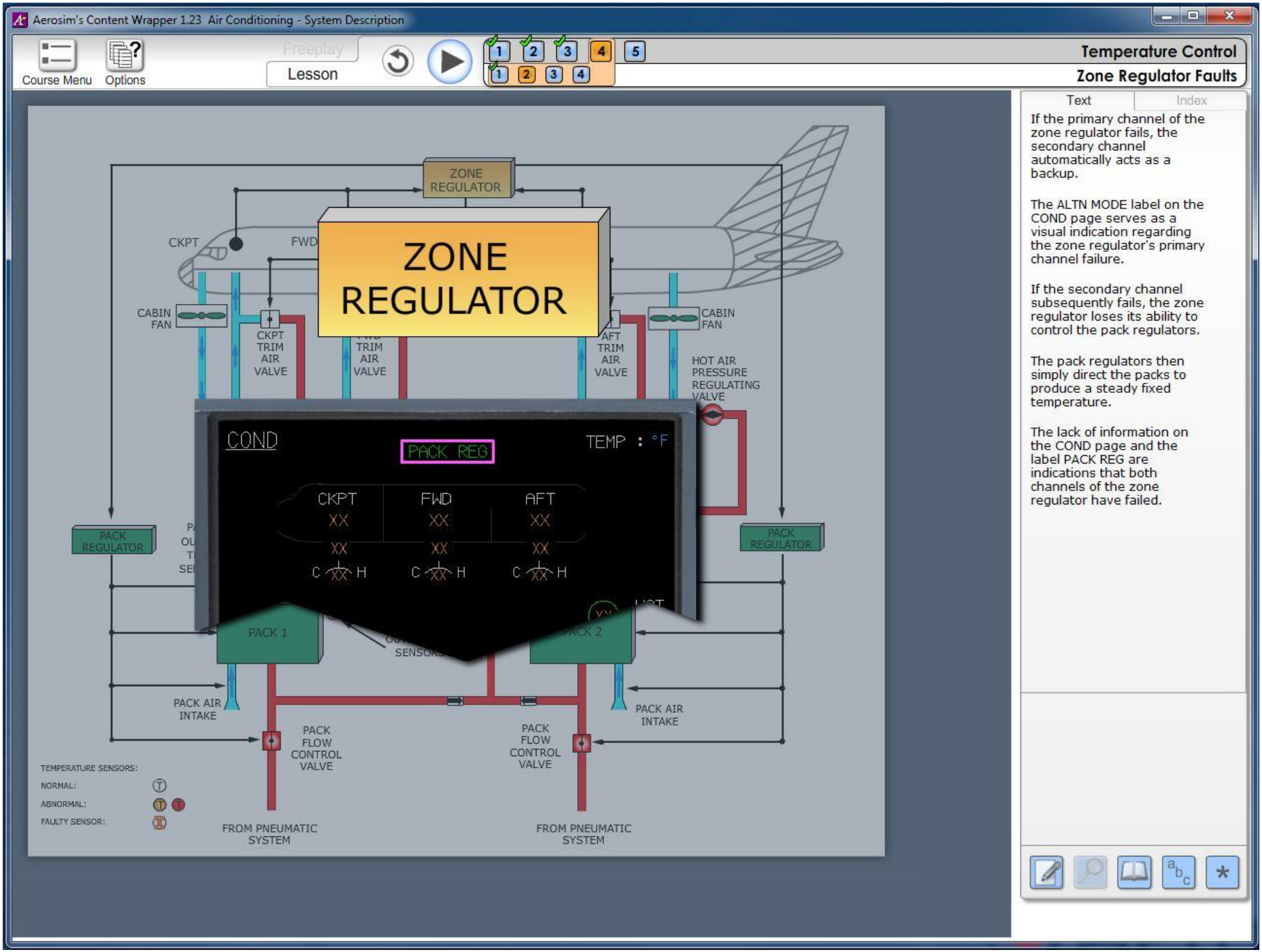

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Zone Regulator
Text
Index
The zone regulator is a two-channel computer which exercises overall control and monitoring of the air conditioning system.
It receives input from the cockpit flight deck controls and from temperature sensors throughout the aircraft.
By comparing the position of cockpit and cabin temperature selectors with the actual temperature in each zone, the zone regulator determines which zone requires the coldest air.
It then commands the pack regulators to adjust the output of the packs accordingly.
If bleed air is not sufficient to meet the needs of the air conditioning system, the zone regulator can also signal the APU or engines to increase speed to satisfy bleed air requirements.
The zone regulator also provides air conditioning system information for display on the SD.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
PACK REGULATOR
PACK REGULATOR
COND
TEMP : °F
CKPT
FWD
AFT
78
78
78
78
78
78
C
H
C
H
C
H
HOT AIR
TAT - 16 °C
SAT - 43 °C
17 H 26
GW 120200 LBS
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:

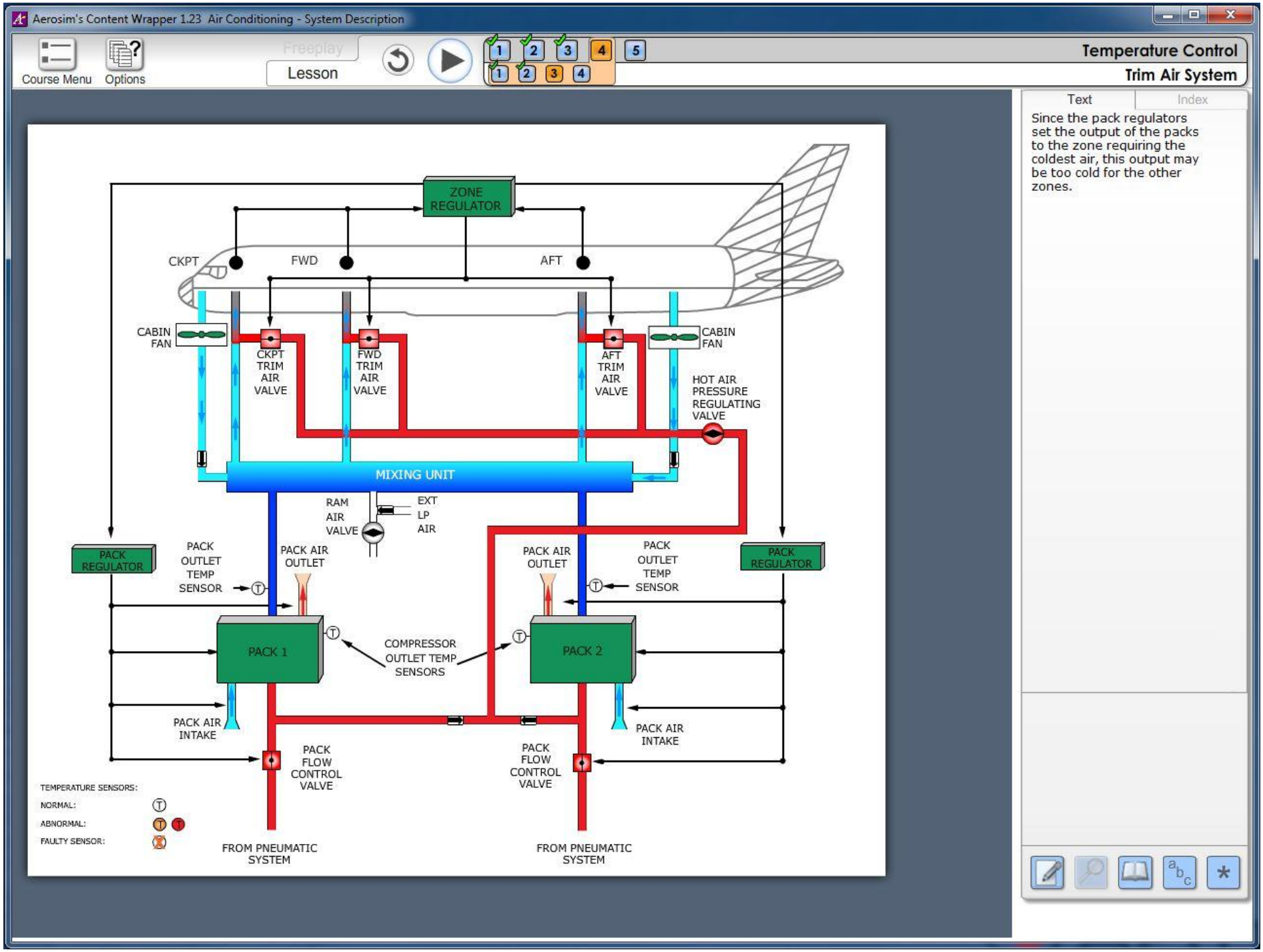

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Zone Regulator Faults
Text
Index
If the primary channel of the zone regulator fails, the secondary channel automatically acts as a backup.
ZONE REGULATOR
Primary
ZONE REGULATOR
Secondary
CABIN FAN
CKPT TRIM AIR VALVE
AFT TRIM AIR VALVE
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK 1
PACK 2
COMPRESSOR OUTLET TEMP SENSORS
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM

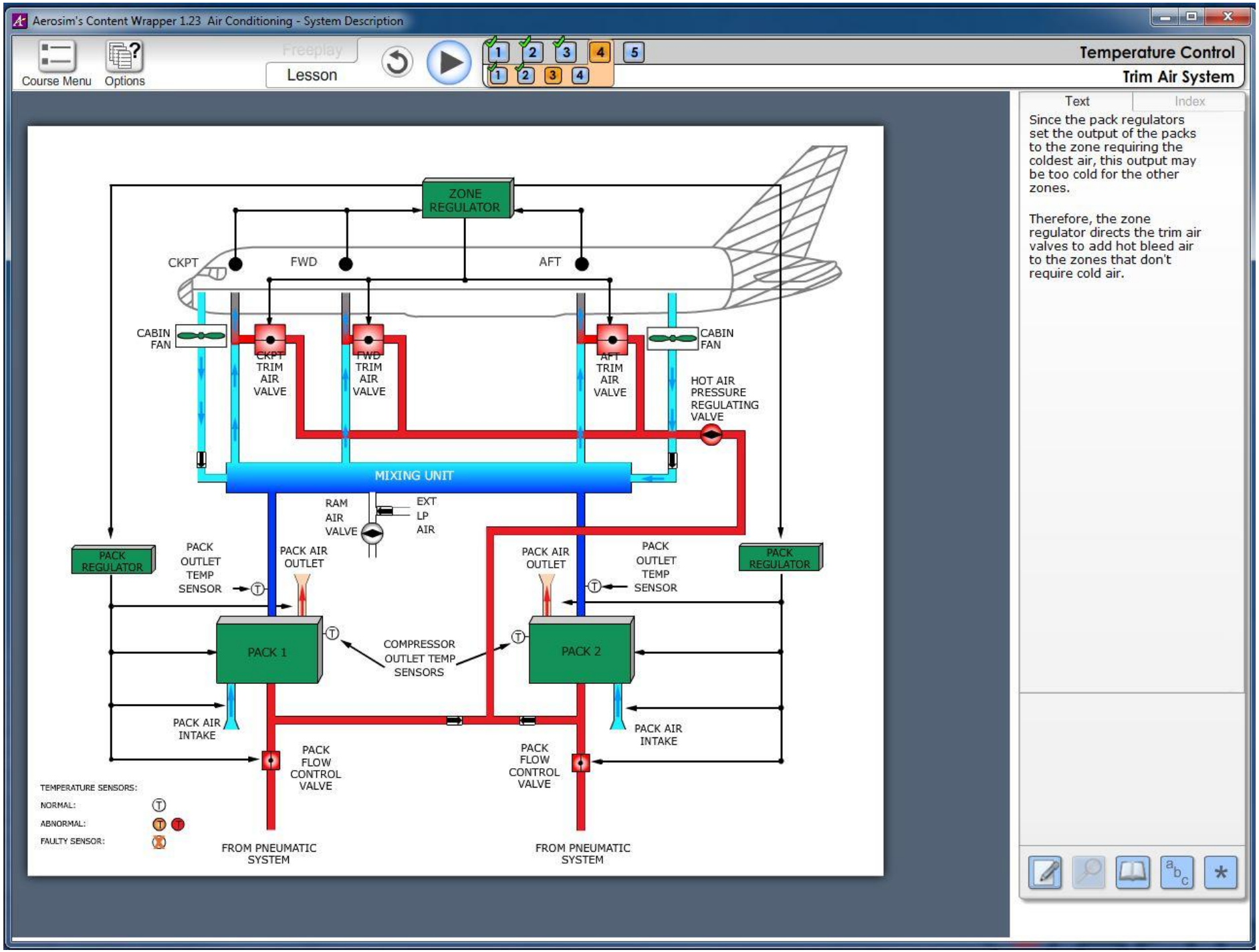

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Zone Regulator Faults
Text
Index
If the primary channel of the zone regulator fails, the secondary channel automatically acts as a backup.
The ALTN MODE label on the COND page serves as a visual indication regarding the zone regulator's primary channel failure.
ZONE REGULATOR
Primary
ZONE REGULATOR
Secondary
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
COND
ALTN MODE
TEMP : °F
CKPT
FWD
AFT
78
78
78
74
74
74
C H
C H
C H
PACK REGULATOR
PACK REGULATOR
PACK 1
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

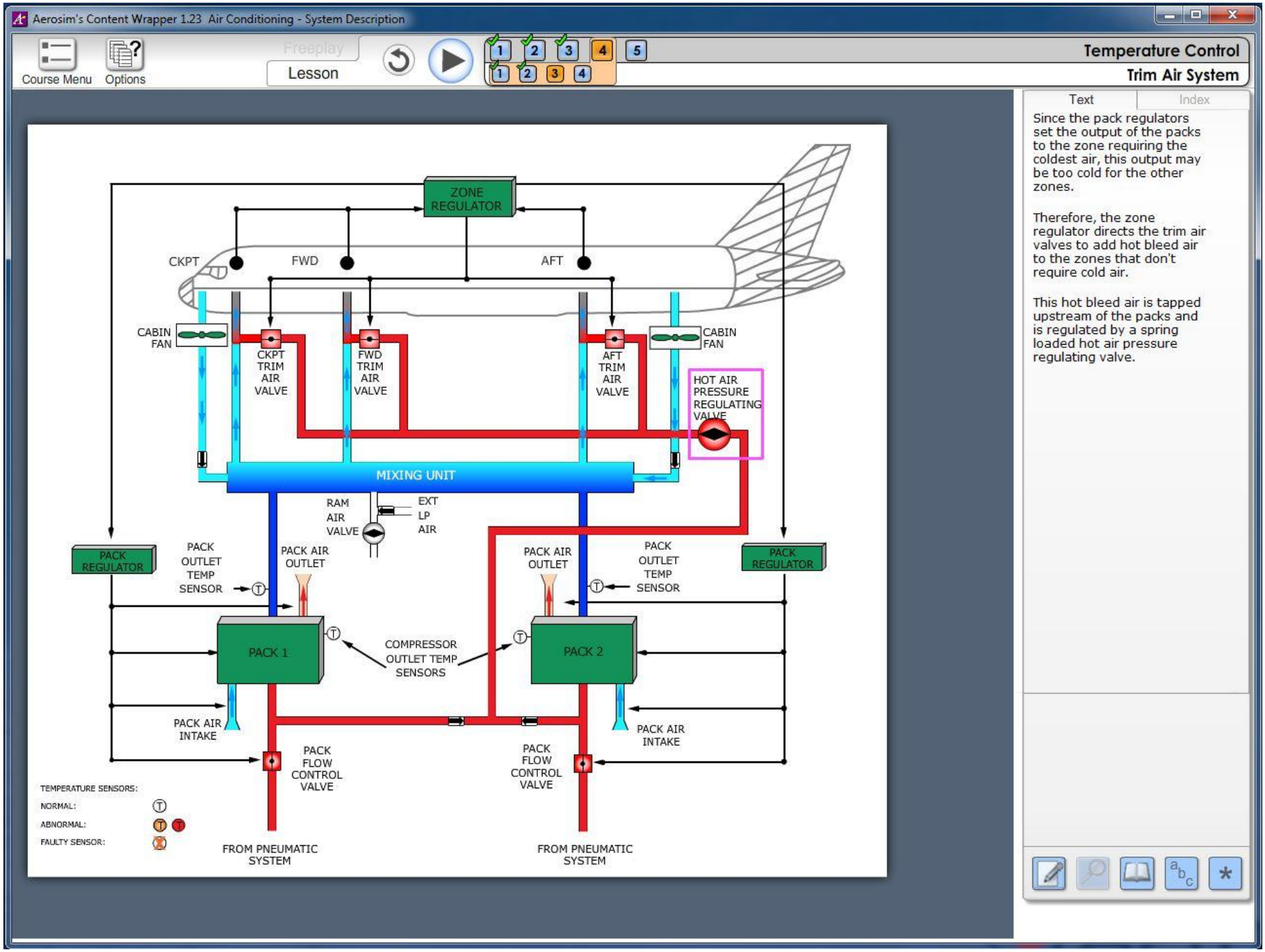

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Zone Regulator Faults
Text
Index
If the primary channel of the zone regulator fails, the secondary channel automatically acts as a backup.
The ALTN MODE label on the COND page serves as a visual indication regarding the zone regulator's primary channel failure.
If the secondary channel subsequently fails, the zone regulator loses its ability to control the pack regulators.
Primary
ZONE REGULATOR
Secondary
ZONE REGULATOR
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
HOT AIR PRESSURE REGULATING VALVE
COND
PACK REG
TEMP : °F
CKPT
FWD
AFT
PACK REGULATOR
PACK 1
PACK 2
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM

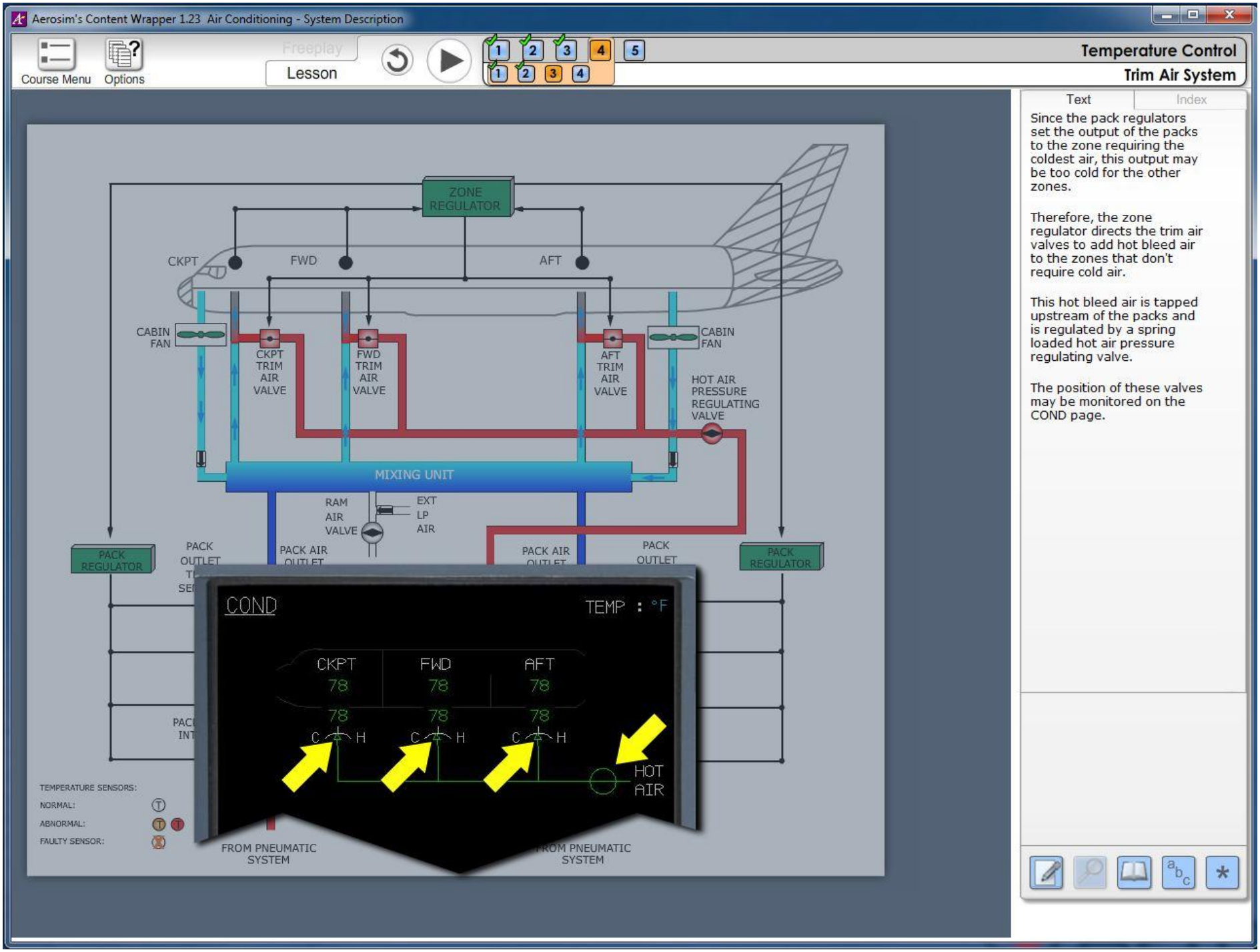

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Zone Regulator Faults
Text
Index
If the primary channel of the zone regulator fails, the secondary channel automatically acts as a backup.
The ALTN MODE label on the COND page serves as a visual indication regarding the zone regulator's primary channel failure.
If the secondary channel subsequently fails, the zone regulator loses its ability to control the pack regulators.
The pack regulators then simply direct the packs to produce a steady fixed temperature.
ZONE REGULATOR
ZONE REGULATOR
CKPT
FWD
CABIN FAN
CKPT TRIM AIR VALVE
AFT TRIM AIR VALVE
HOT AIR PRESSURE REGULATING VALVE
COND
PACK REG
TEMP : °F
CKPT
FWD
AFT
PACK REGULATOR
PACK 1
PACK 2
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM

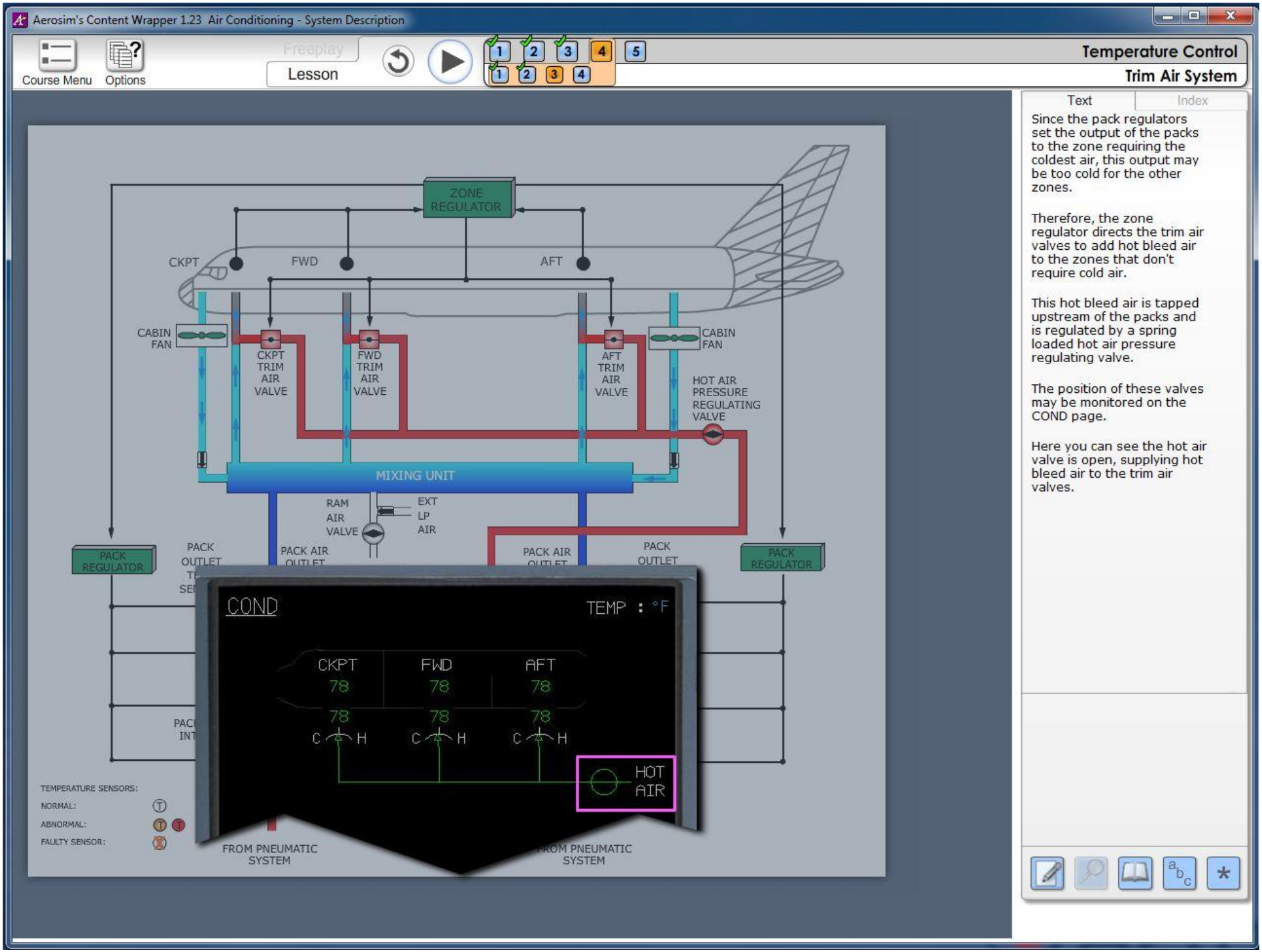

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Zone Regulator Faults
Text
Index
If the primary channel of the zone regulator fails, the secondary channel automatically acts as a backup.
The ALTN MODE label on the COND page serves as a visual indication regarding the zone regulator's primary channel failure.
If the secondary channel subsequently fails, the zone regulator loses its ability to control the pack regulators.
The pack regulators then simply direct the packs to produce a steady fixed temperature.
The lack of information on the COND page and the label PACK REG are indications that both channels of the zone regulator have failed.
ZONE REGULATOR
ZONE REGULATOR
CKPT
FWD
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
COND
PACK REG
TEMP : °F
CKPT
FWD
AFT
XX
C XX H
PACK REGULATOR
PACK REGULATOR
PACK 1
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

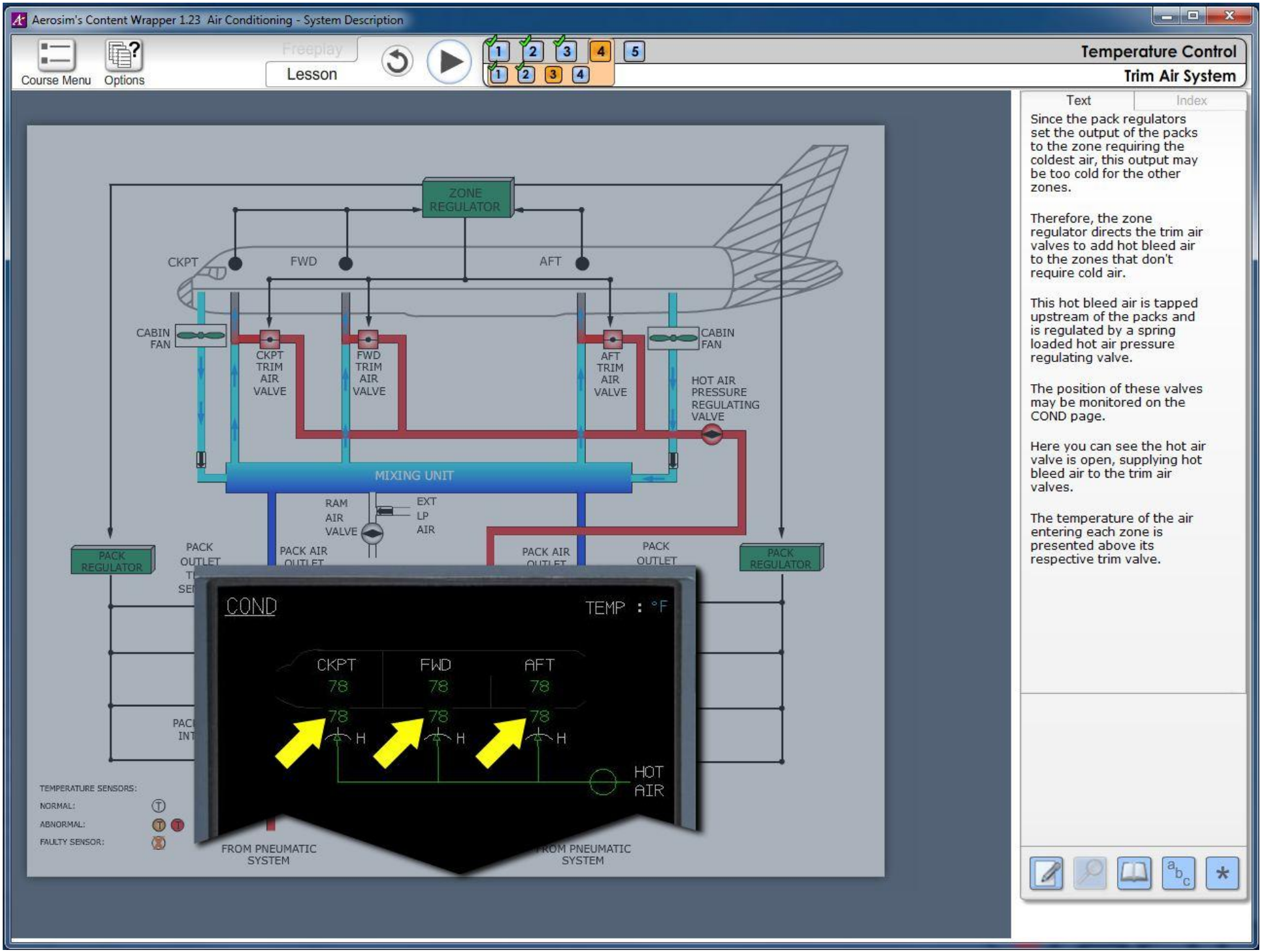

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Trim Air System
Text
Index
Since the pack regulators set the output of the packs to the zone requiring the coldest air, this output may be too cold for the other zones.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

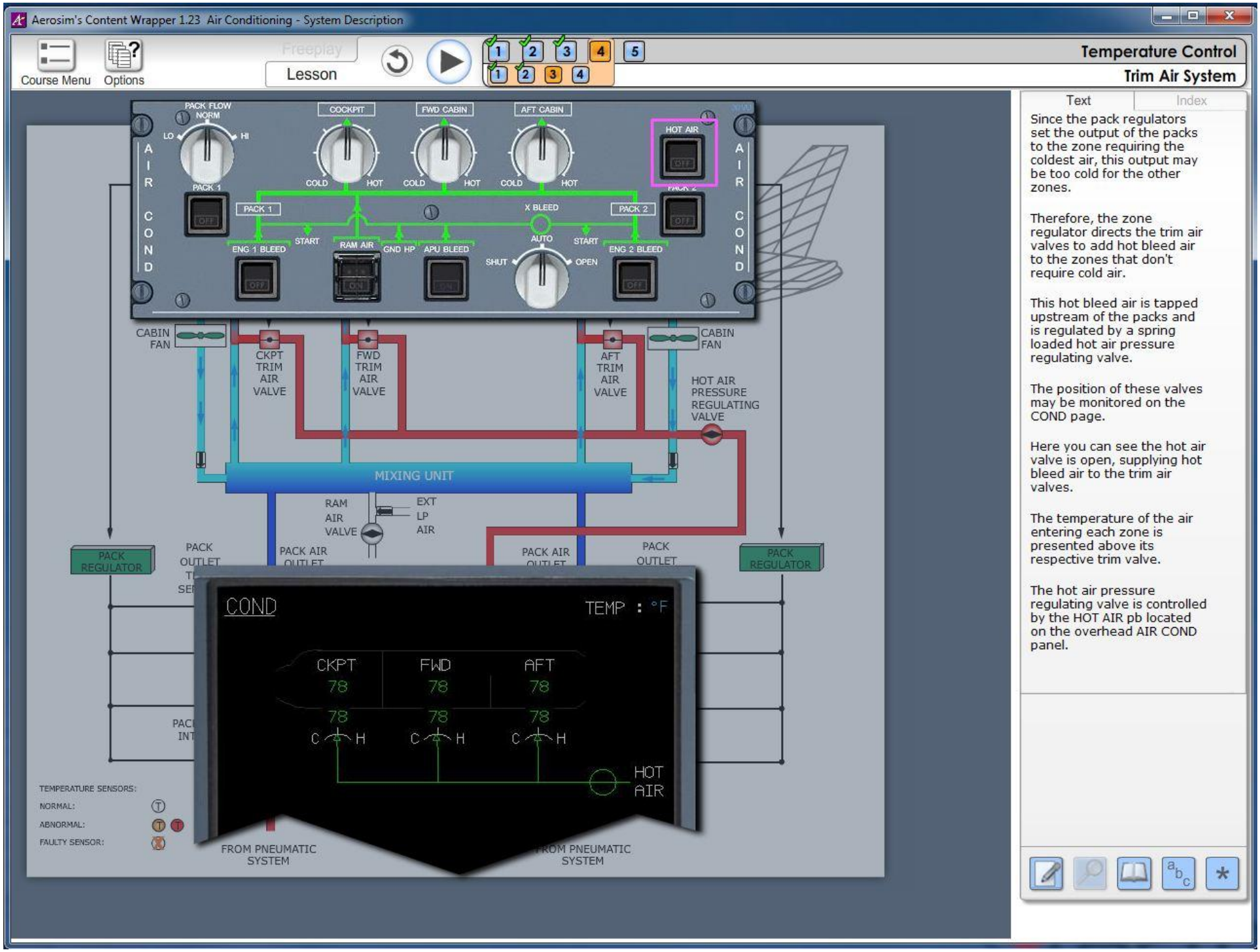

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Trim Air System
Text
Index
Since the pack regulators set the output of the packs to the zone requiring the coldest air, this output may be too cold for the other zones.
Therefore, the zone regulator directs the trim air valves to add hot bleed air to the zones that don't require cold air.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

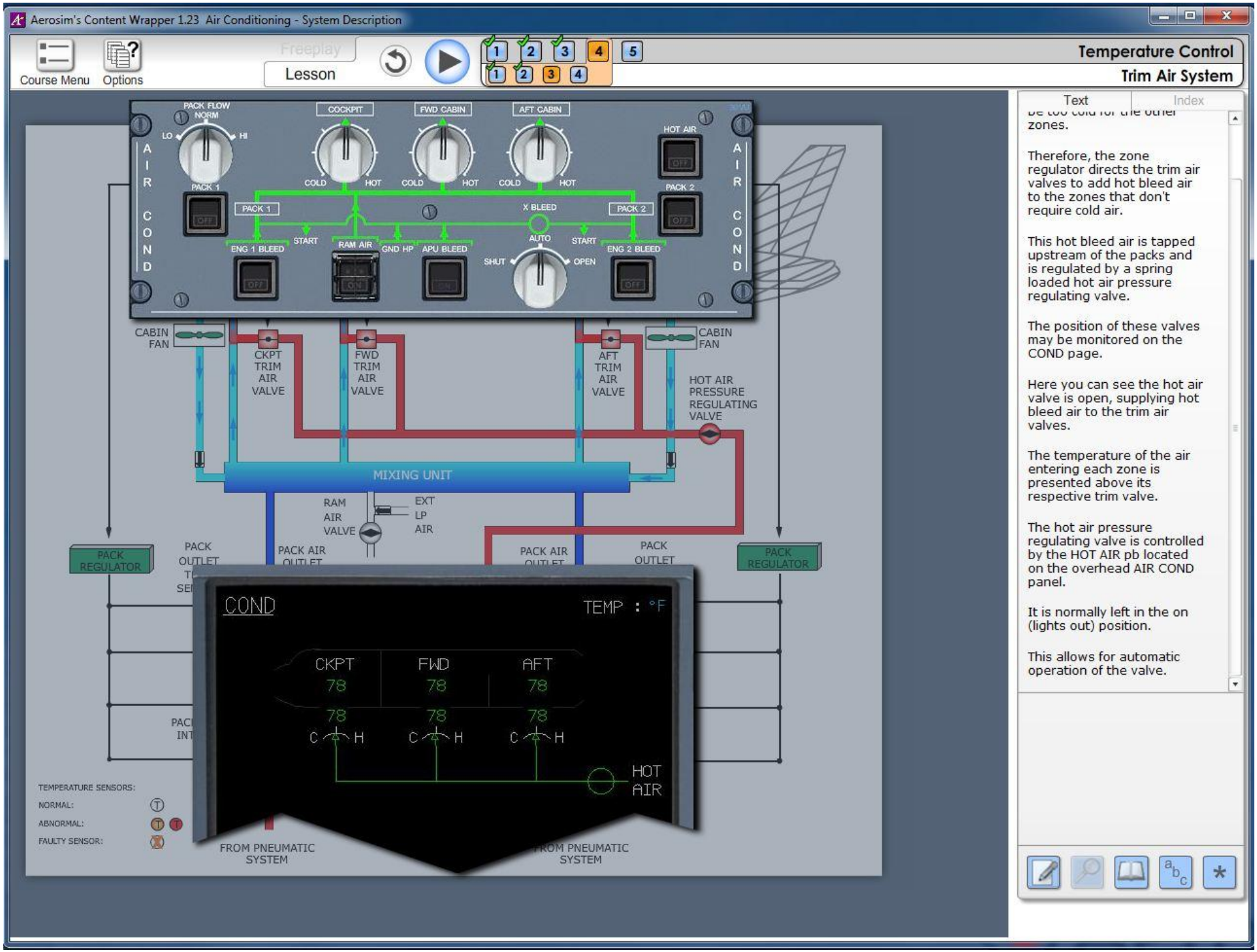

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Trim Air System
Text
Index
Since the pack regulators set the output of the packs to the zone requiring the coldest air, this output may be too cold for the other zones.
Therefore, the zone regulator directs the trim air valves to add hot bleed air to the zones that don't require cold air.
This hot bleed air is tapped upstream of the packs and is regulated by a spring loaded hot air pressure regulating valve.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

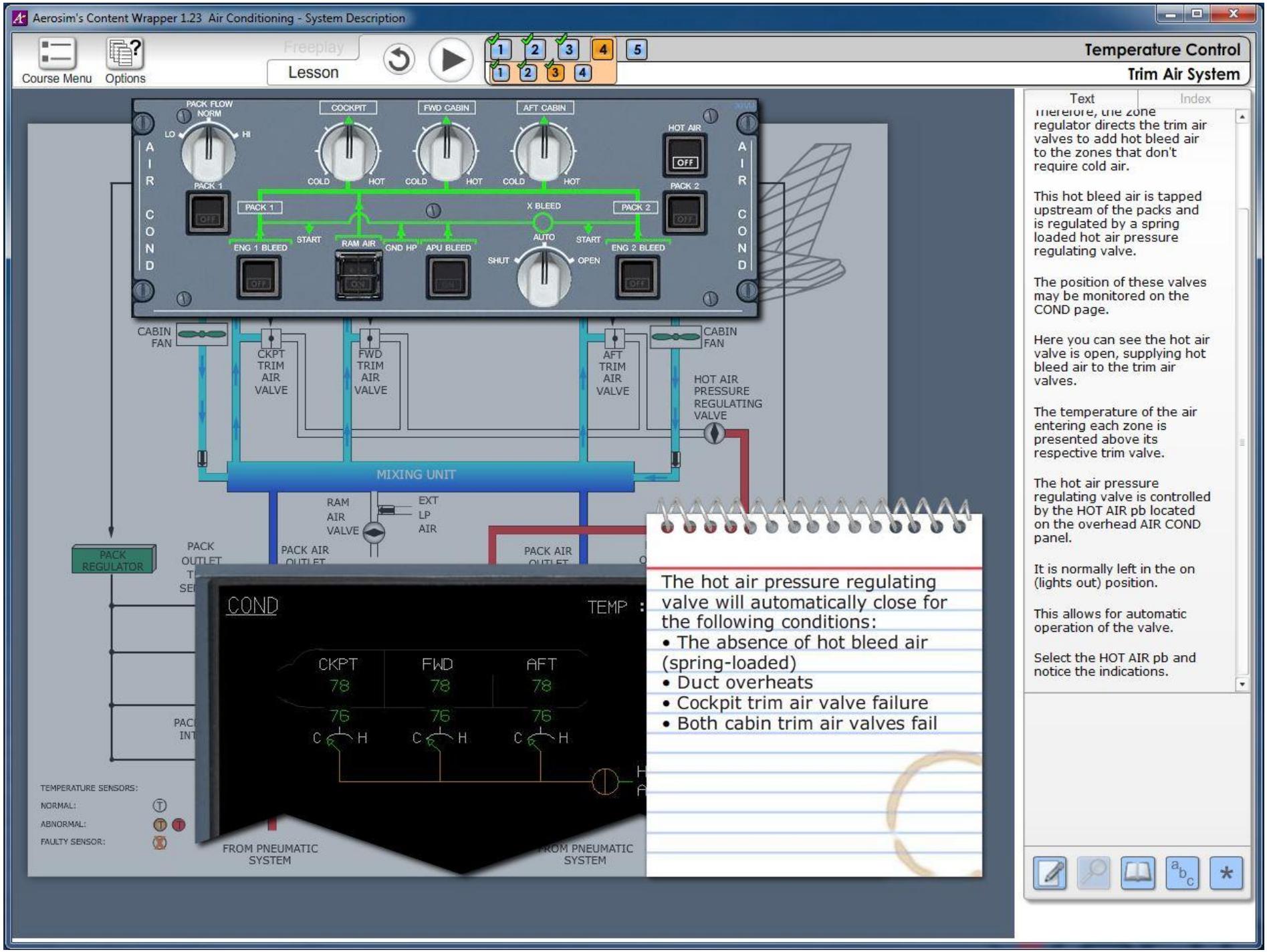

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Trim Air System
Text
Index
Since the pack regulators set the output of the packs to the zone requiring the coldest air, this output may be too cold for the other zones.
Therefore, the zone regulator directs the trim air valves to add hot bleed air to the zones that don't require cold air.
This hot bleed air is tapped upstream of the packs and is regulated by a spring loaded hot air pressure regulating valve.
The position of these valves may be monitored on the COND page.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET
PACK REGULATOR
COND
TEMP : °F
CKPT
FWD
AFT
78
78
78
78
78
78
C
H
C
H
C
H
HOT AIR
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

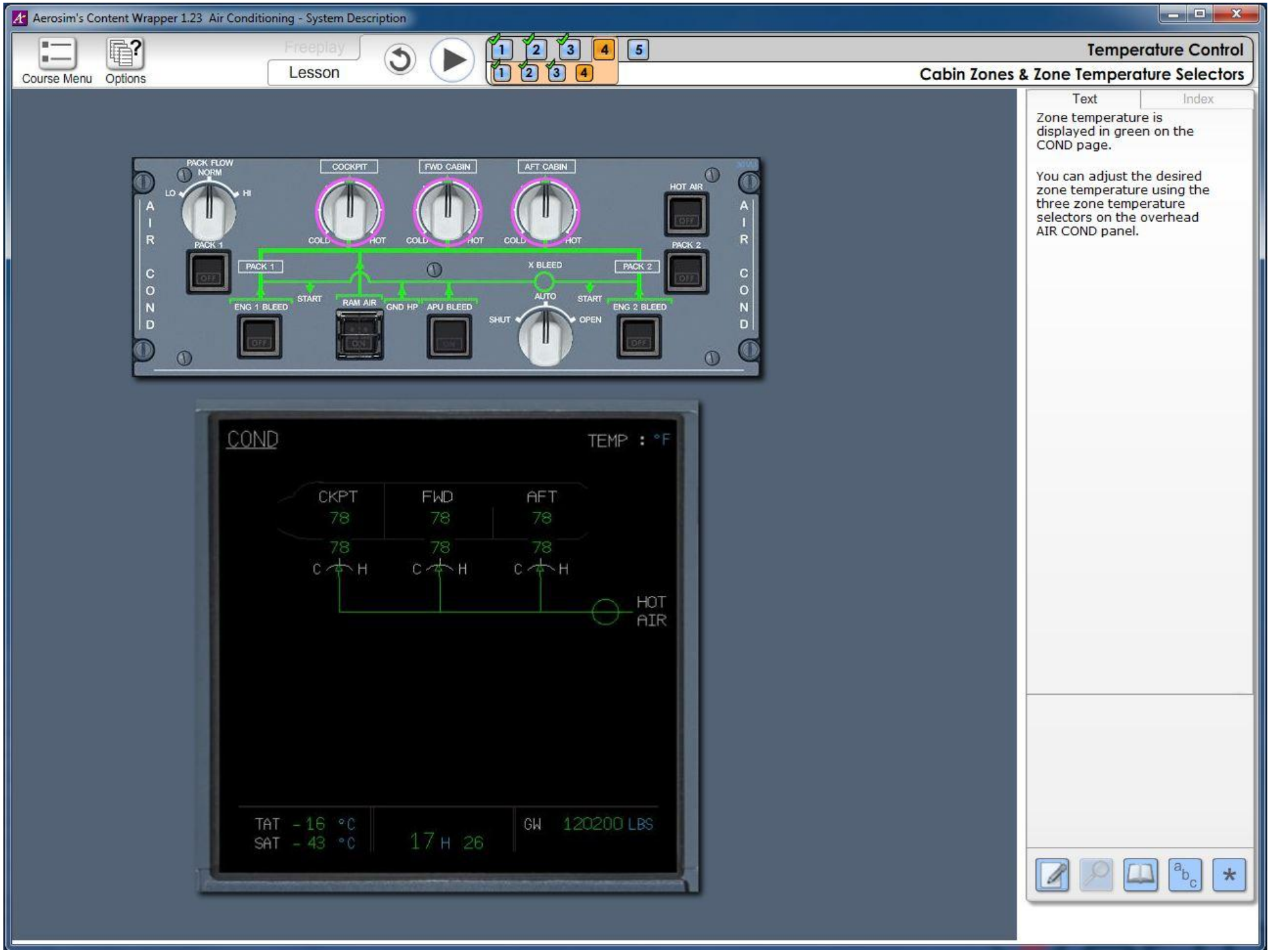

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Trim Air System
Text
Index
Since the pack regulators set the output of the packs to the zone requiring the coldest air, this output may be too cold for the other zones.
Therefore, the zone regulator directs the trim air valves to add hot bleed air to the zones that don't require cold air.
This hot bleed air is tapped upstream of the packs and is regulated by a spring loaded hot air pressure regulating valve.
The position of these valves may be monitored on the COND page.
Here you can see the hot air valve is open, supplying hot bleed air to the trim air valves.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET
PACK REGULATOR
COND
TEMP : °F
CKPT
FWD
AFT
78
78
78
78
78
78
C H
C H
C H
HOT AIR
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

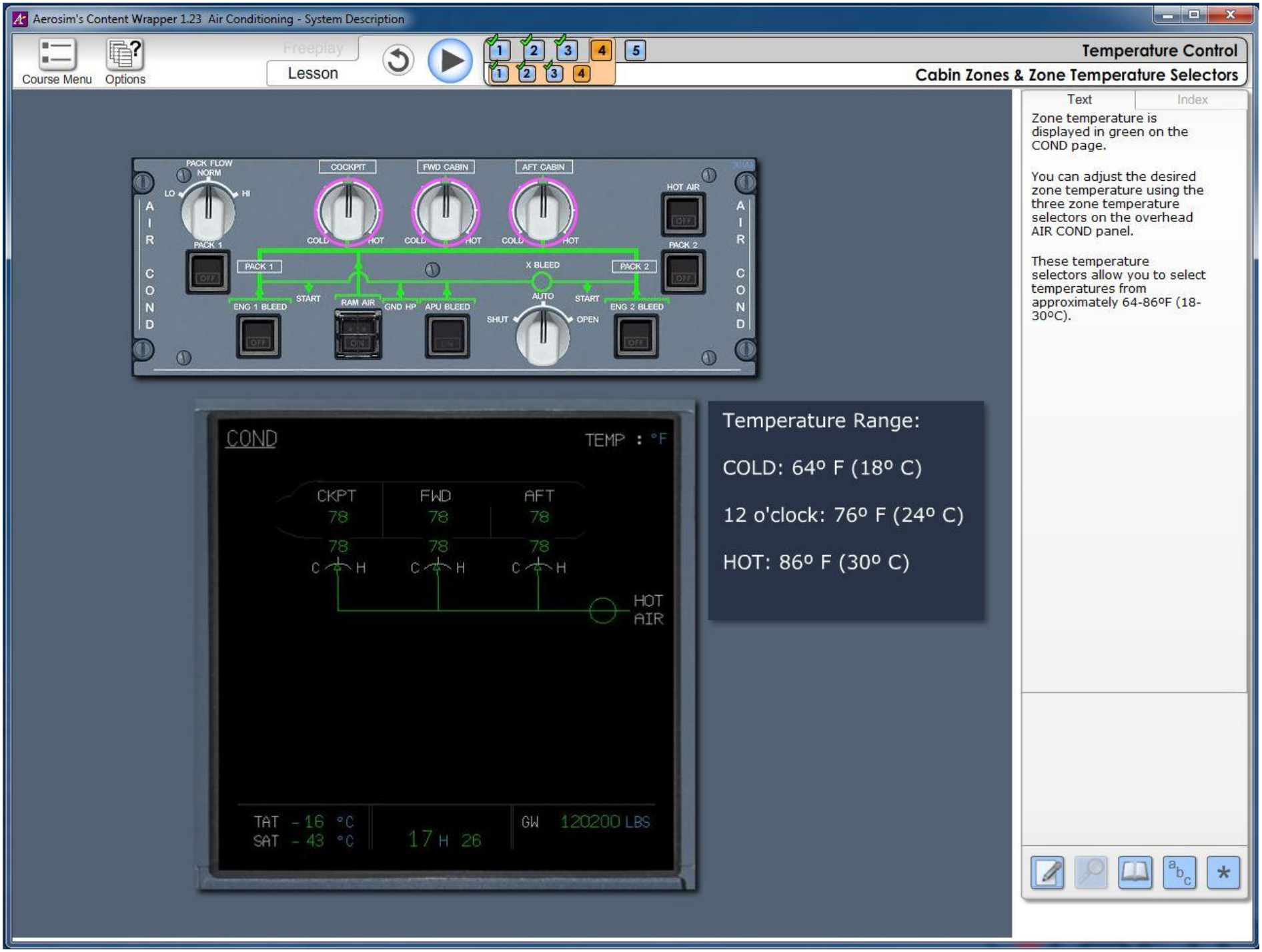

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Trim Air System
Text
Index
Since the pack regulators set the output of the packs to the zone requiring the coldest air, this output may be too cold for the other zones.
Therefore, the zone regulator directs the trim air valves to add hot bleed air to the zones that don't require cold air.
This hot bleed air is tapped upstream of the packs and is regulated by a spring loaded hot air pressure regulating valve.
The position of these valves may be monitored on the COND page.
Here you can see the hot air valve is open, supplying hot bleed air to the trim air valves.
The temperature of the air entering each zone is presented above its respective trim valve.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET
PACK REGULATOR
COND
TEMP : °F
CKPT
FWD
AFT
78
78
78
78
78
78
H
H
H
HOT AIR
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

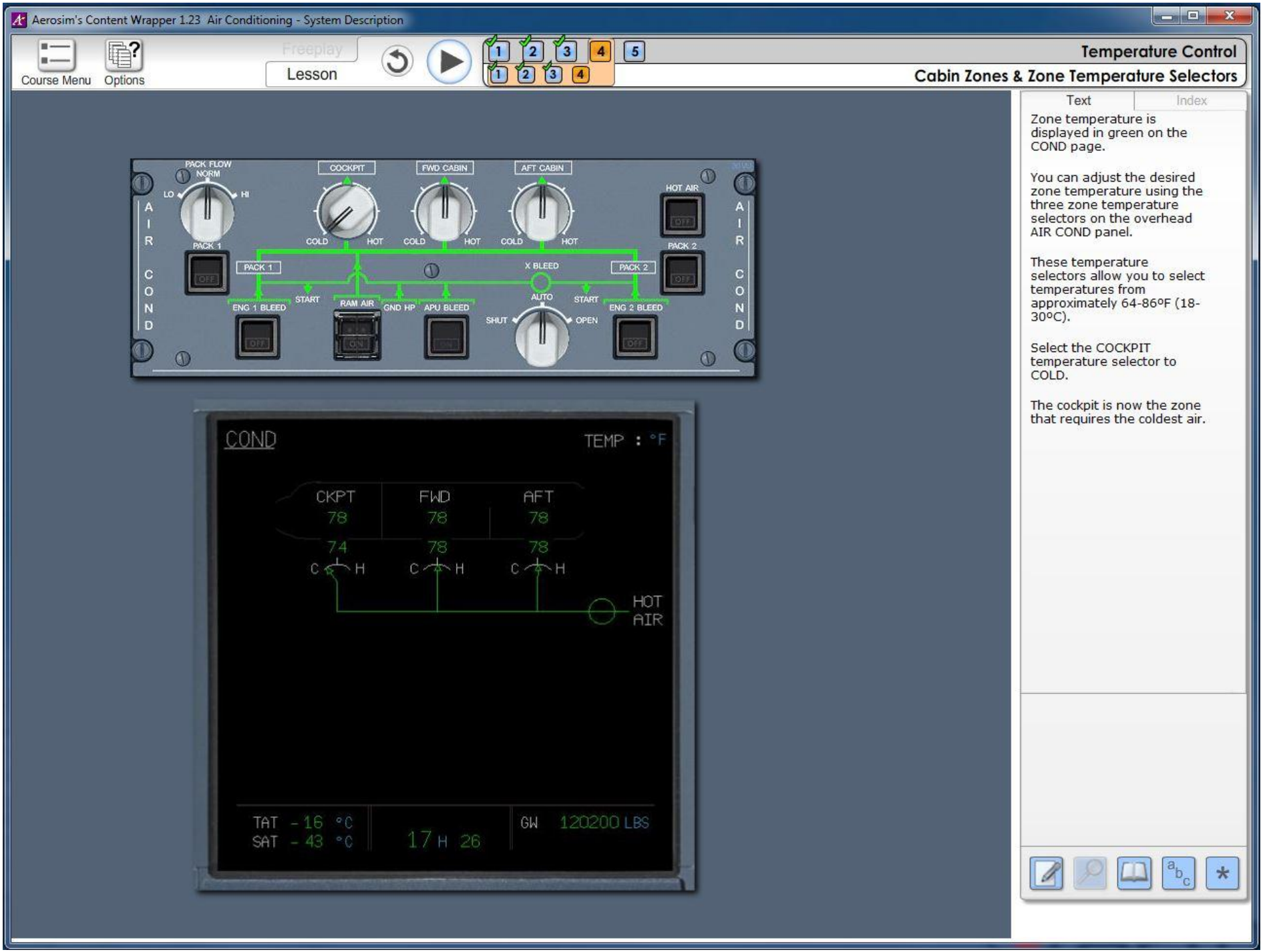

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Trim Air System
Text
Index
Since the pack regulators set the output of the packs to the zone requiring the coldest air, this output may be too cold for the other zones.
Therefore, the zone regulator directs the trim air valves to add hot bleed air to the zones that don't require cold air.
This hot bleed air is tapped upstream of the packs and is regulated by a spring loaded hot air pressure regulating valve.
The position of these valves may be monitored on the COND page.
Here you can see the hot air valve is open, supplying hot bleed air to the trim air valves.
The temperature of the air entering each zone is presented above its respective trim valve.
The hot air pressure regulating valve is controlled by the HOT AIR pb located on the overhead AIR COND panel.
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
X BLEED
ENG 1 BLEED
START
RAM AIR
GND HP
APU BLEED
AUTO
SHUT
OPEN
ENG 2 BLEED
AIR COND
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET
PACK AIR OUTLET
COND
TEMP : °F
CKPT
FWD
AFT
78
C
H
HOT AIR
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM


Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Trim Air System
Text
Index
zones.
Therefore, the zone regulator directs the trim air valves to add hot bleed air to the zones that don't require cold air.
This hot bleed air is tapped upstream of the packs and is regulated by a spring loaded hot air pressure regulating valve.
The position of these valves may be monitored on the COND page.
Here you can see the hot air valve is open, supplying hot bleed air to the trim air valves.
The temperature of the air entering each zone is presented above its respective trim valve.
The hot air pressure regulating valve is controlled by the HOT AIR pb located on the overhead AIR COND panel.
It is normally left in the on (lights out) position.
This allows for automatic operation of the valve.
PACK FLOW
NORM
LO
HI
PACK 1
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 2
X BLEED
AUTO
SHUT
OPEN
START
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
ENG 2 BLEED
AIR COND
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET
PACK AIR OUTLET
COND
TEMP : °F
CKPT
FWD
AFT
78
C
H
HOT AIR
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM


Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Trim Air System
Text
Index
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
OFF
PACK 1
PACK 2
X BLEED
AUTO
SHUT
OPEN
START
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
ENG 2 BLEED
AIR COND
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET
PACK AIR OUTLET
COND
TEMP
CKPT
FWD
AFT
78
76
C
H
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM
The hot air pressure regulating valve will automatically close for the following conditions:
• The absence of hot bleed air (spring-loaded)
• Duct overheats
• Cockpit trim air valve failure
• Both cabin trim air valves fail
regulator directs the trim air valves to add hot bleed air to the zones that don't require cold air.
This hot bleed air is tapped upstream of the packs and is regulated by a spring loaded hot air pressure regulating valve.
The position of these valves may be monitored on the COND page.
Here you can see the hot air valve is open, supplying hot bleed air to the trim air valves.
The temperature of the air entering each zone is presented above its respective trim valve.
The hot air pressure regulating valve is controlled by the HOT AIR pb located on the overhead AIR COND panel.
It is normally left in the on (lights out) position.
This allows for automatic operation of the valve.
Select the HOT AIR pb and notice the indications.


Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Cabin Zones & Zone Temperature Selectors
Text
Index
Zone temperature is displayed in green on the COND page.
You can adjust the desired zone temperature using the three zone temperature selectors on the overhead AIR COND panel.
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
X BLEED
AUTO
SHUT
OPEN
START
RAM AIR
GND HP
APU BLEED
ENG 1 BLEED
ENG 2 BLEED
AIR COND
COND
TEMP : °F
CKPT
FWD
AFT
78
C
H
HOT AIR
TAT -16 °C
SAT -43 °C
17 H 26
GW 120200 LBS


Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Cabin Zones & Zone Temperature Selectors
Text
Index
Zone temperature is displayed in green on the COND page.
You can adjust the desired zone temperature using the three zone temperature selectors on the overhead AIR COND panel.
These temperature selectors allow you to select temperatures from approximately 64-86ºF (18-30ºC).
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
X BLEED
AUTO
SHUT
OPEN
START
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
ENG 2 BLEED
COND
TEMP : °F
CKPT
FWD
AFT
78
HOT AIR
TAT - 16 °C
SAT - 43 °C
17 H 26
GW 120200 LBS
Temperature Range:
COLD: 64º F (18º C)
12 o'clock: 76º F (24º C)
HOT: 86º F (30º C)


Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Cabin Zones & Zone Temperature Selectors
Text
Index
Zone temperature is displayed in green on the COND page.
You can adjust the desired zone temperature using the three zone temperature selectors on the overhead AIR COND panel.
These temperature selectors allow you to select temperatures from approximately 64-86ºF (18-30ºC).
Select the COCKPIT temperature selector to COLD.
The cockpit is now the zone that requires the coldest air.
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
X BLEED
START
RAM AIR
GND HP
APU BLEED
AUTO
SHUT
OPEN
ENG 1 BLEED
ENG 2 BLEED
COND
TEMP : °F
CKPT
FWD
AFT
78
74
HOT AIR
TAT - 16 °C
SAT - 43 °C
17 H 26
GW 120200 LBS

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description

Course Menu Options Freeplay Lesson

Temperature Control

Cabin Zones & Zone Temperature Selectors

Text Index

Zone temperature is displayed in green on the COND page.

You can adjust the desired zone temperature using the three zone temperature selectors on the overhead AIR COND panel.

These temperature selectors allow you to select temperatures from approximately 64-86ºF (18-30ºC).

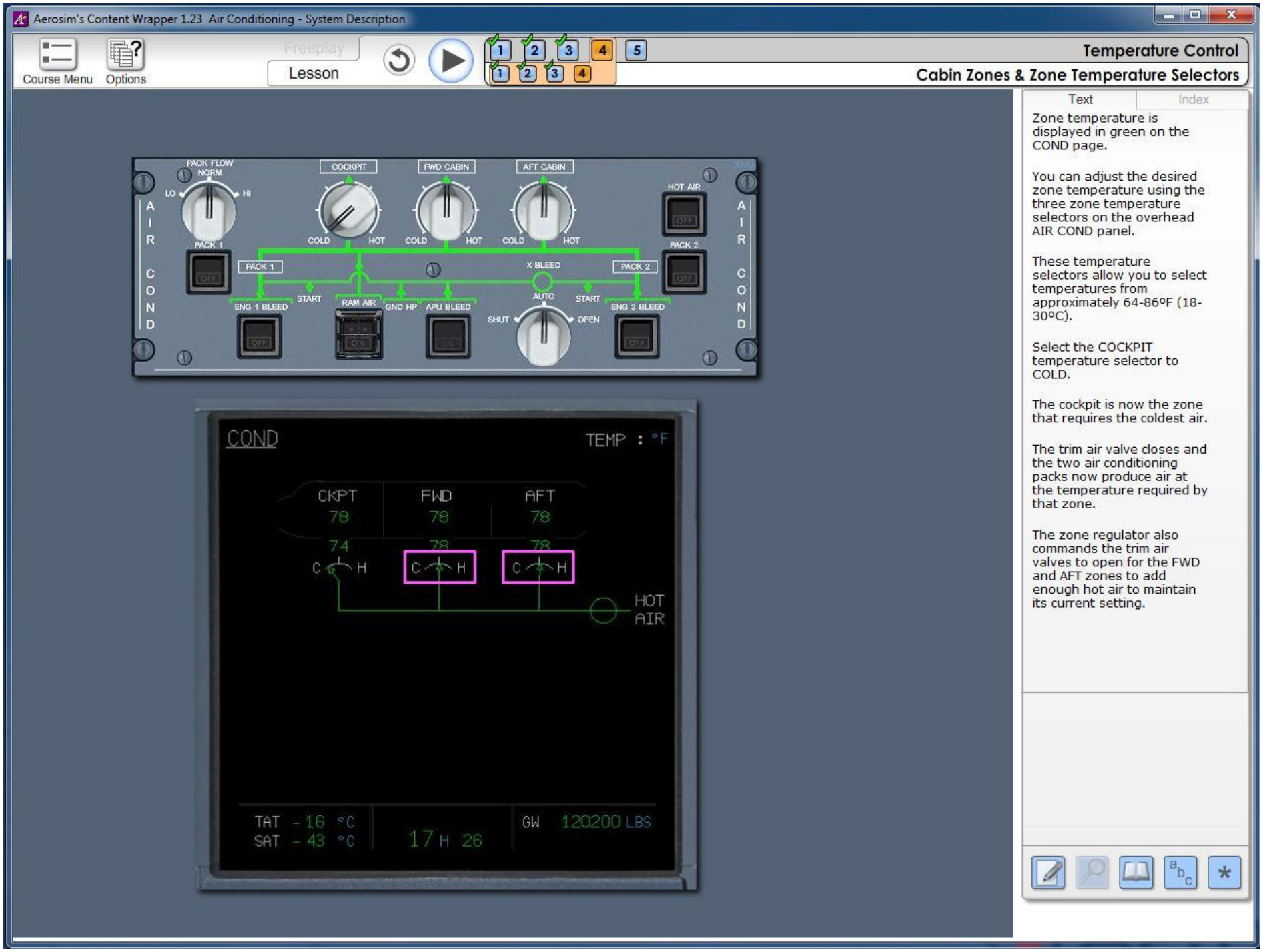
Select the COCKPIT temperature selector to COLD.

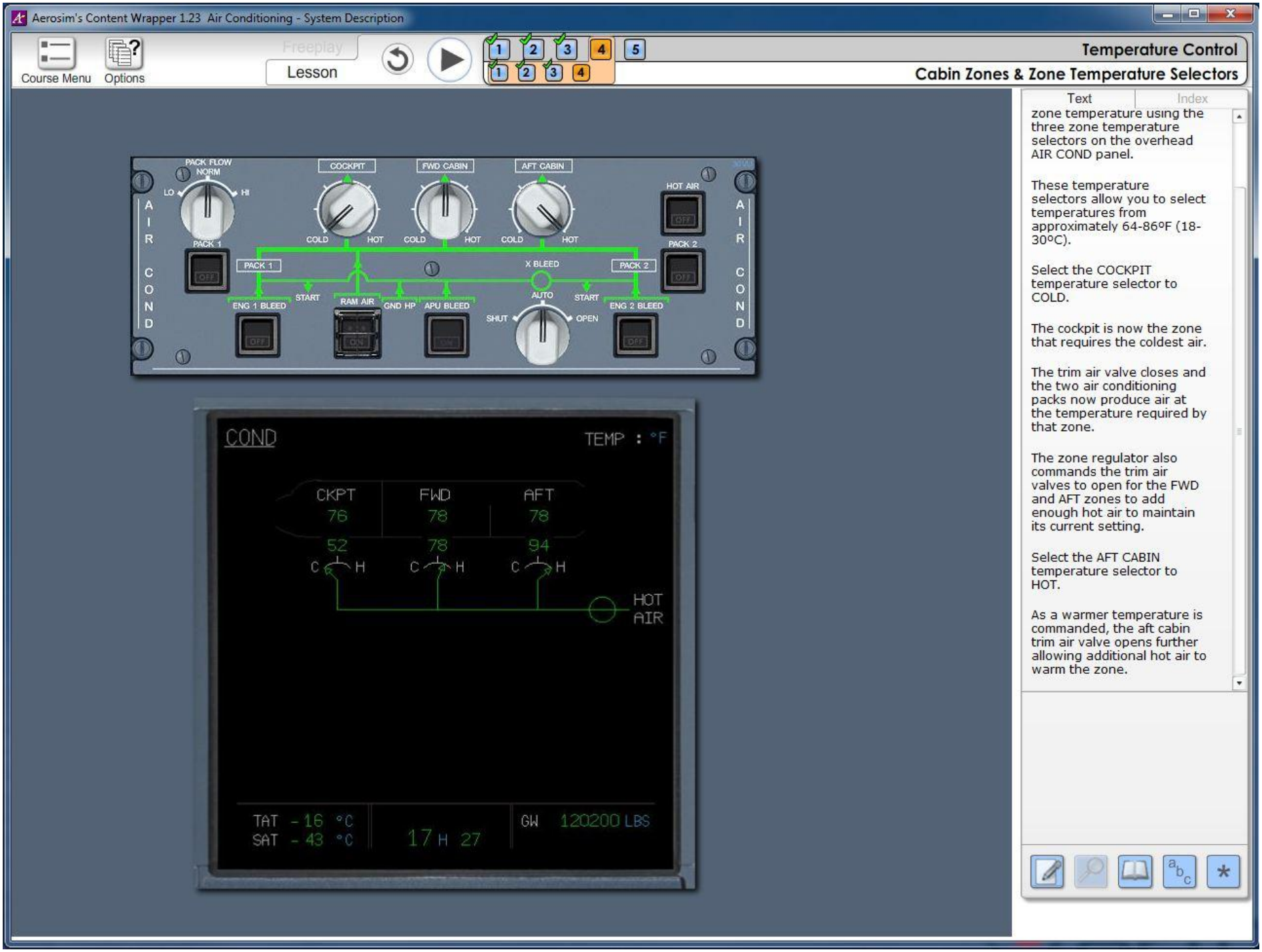
The cockpit is now the zone that requires the coldest air.

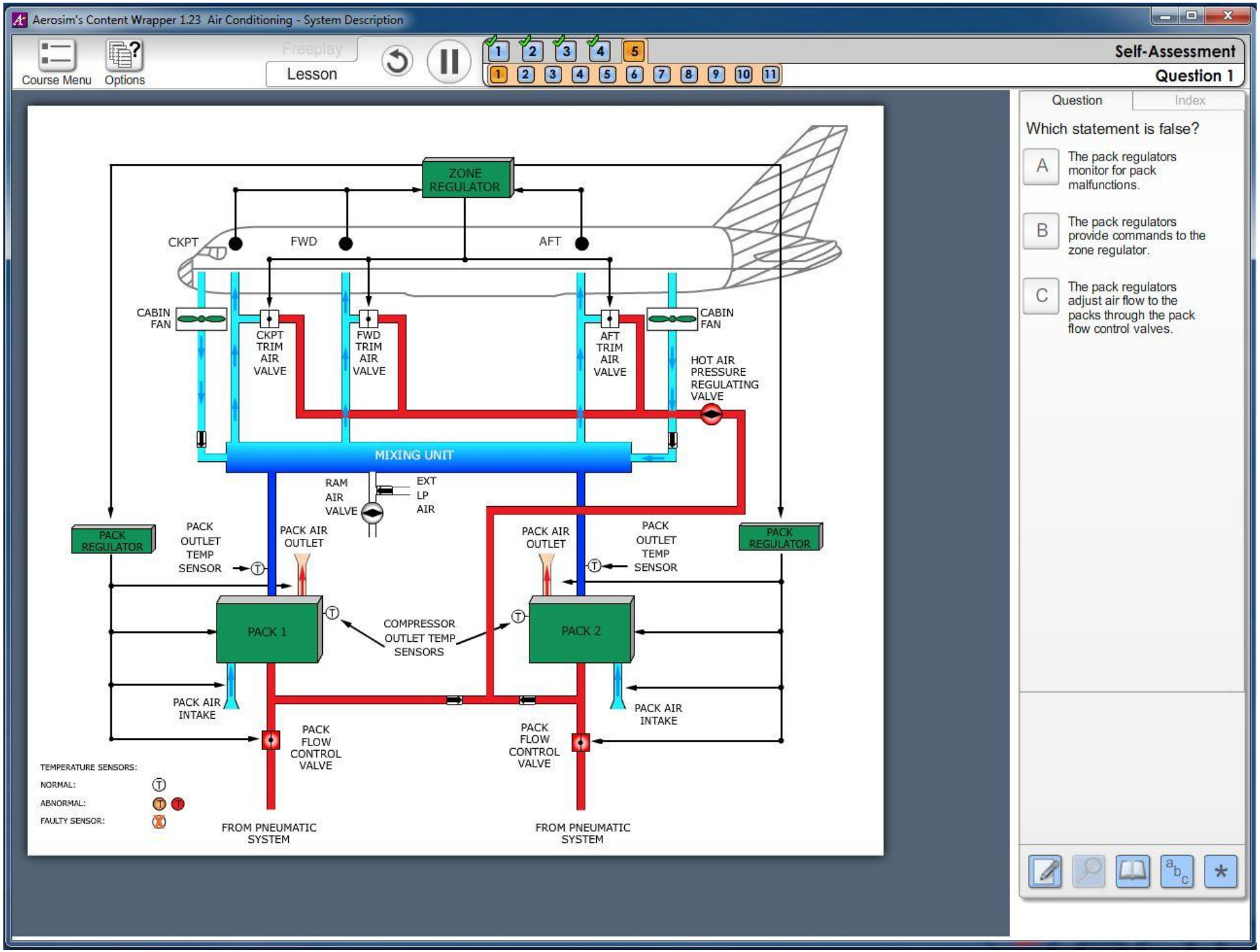
The trim air valve closes and the two air conditioning packs now produce air at the temperature required by that zone.

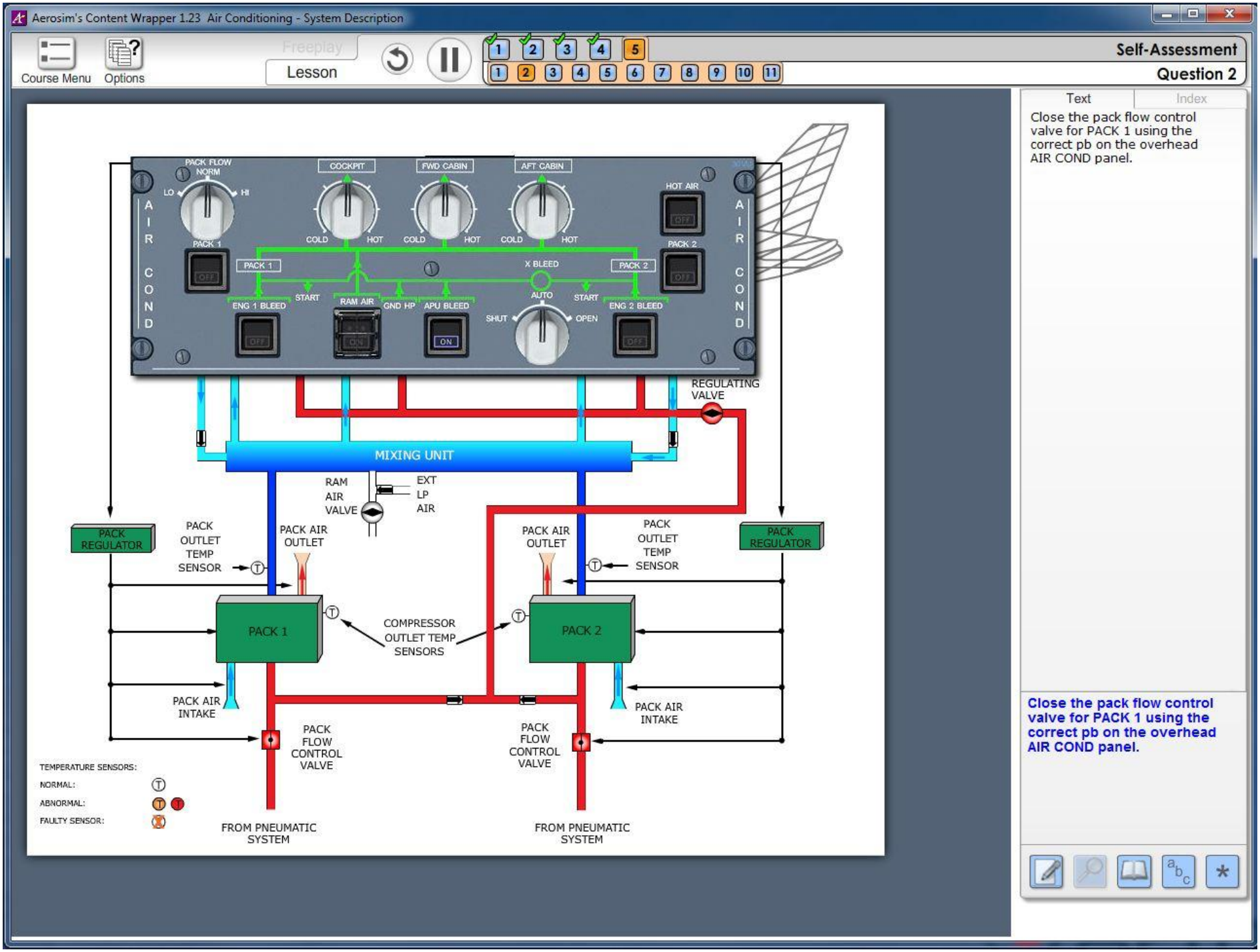


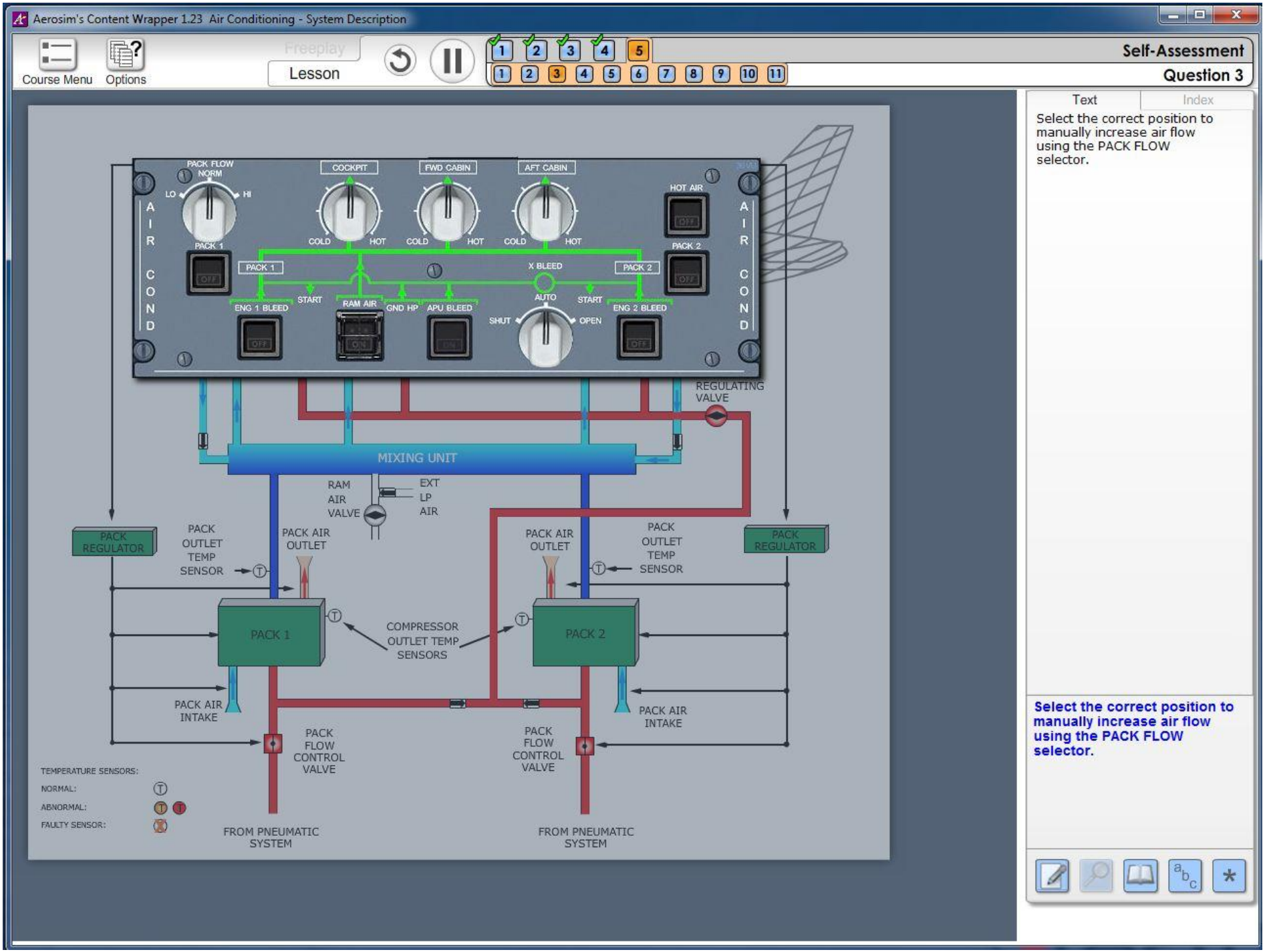


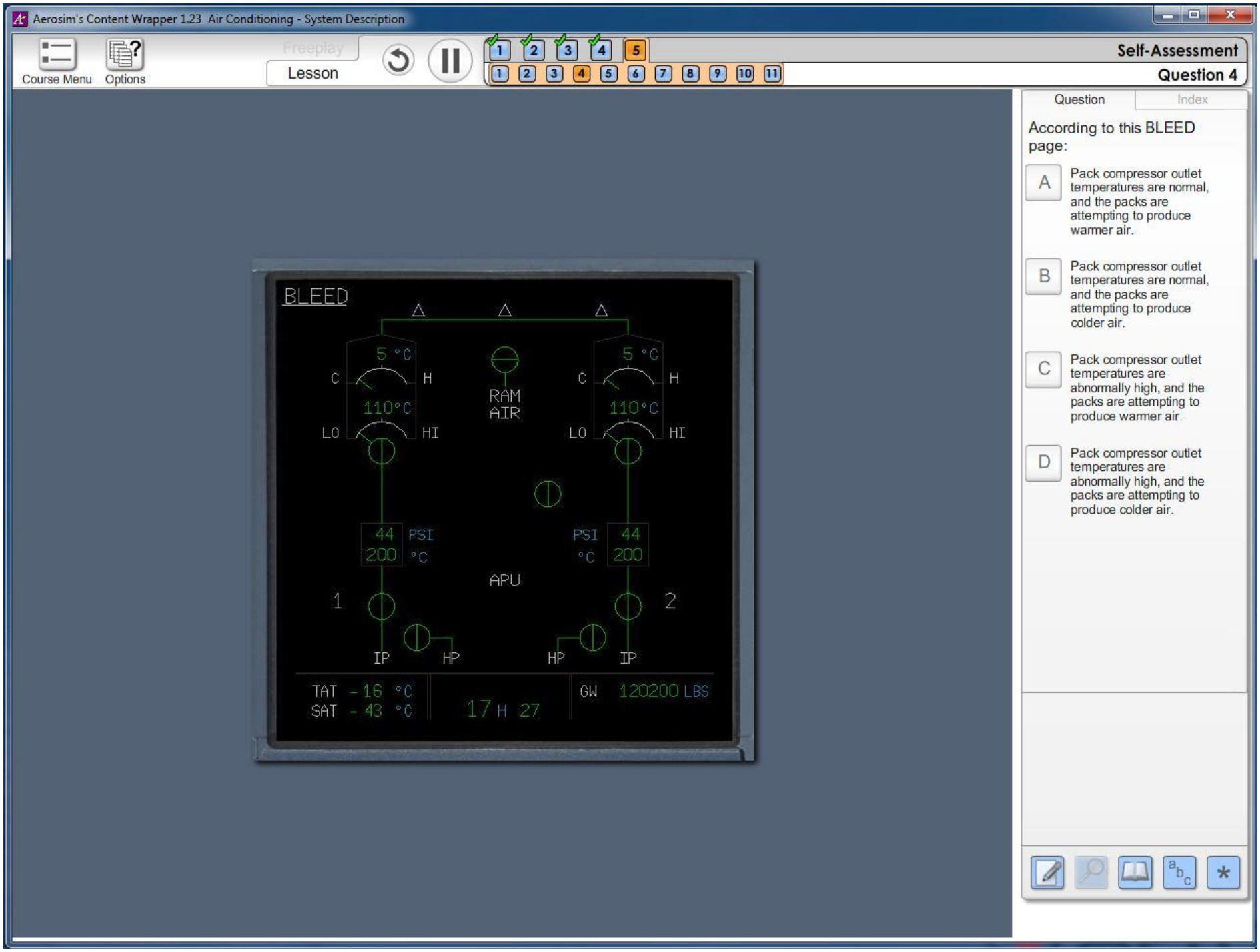

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Cabin Zones & Zone Temperature Selectors
Text
Index
Zone temperature is displayed in green on the COND page.
You can adjust the desired zone temperature using the three zone temperature selectors on the overhead AIR COND panel.
These temperature selectors allow you to select temperatures from approximately 64-86ºF (18-30ºC).
Select the COCKPIT temperature selector to COLD.
The cockpit is now the zone that requires the coldest air.
The trim air valve closes and the two air conditioning packs now produce air at the temperature required by that zone.
The zone regulator also commands the trim air valves to open for the FWD and AFT zones to add enough hot air to maintain its current setting.
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
X BLEED
AUTO
SHUT
OPEN
START
ENG 1 BLEED
ENG 2 BLEED
RAM AIR
GND HP
APU BLEED
COND
TEMP : °F
CKPT
FWD
AFT
78
74
HOT
AIR
TAT - 16 °C
SAT - 43 °C
17 H 26
GW 120200 LBS

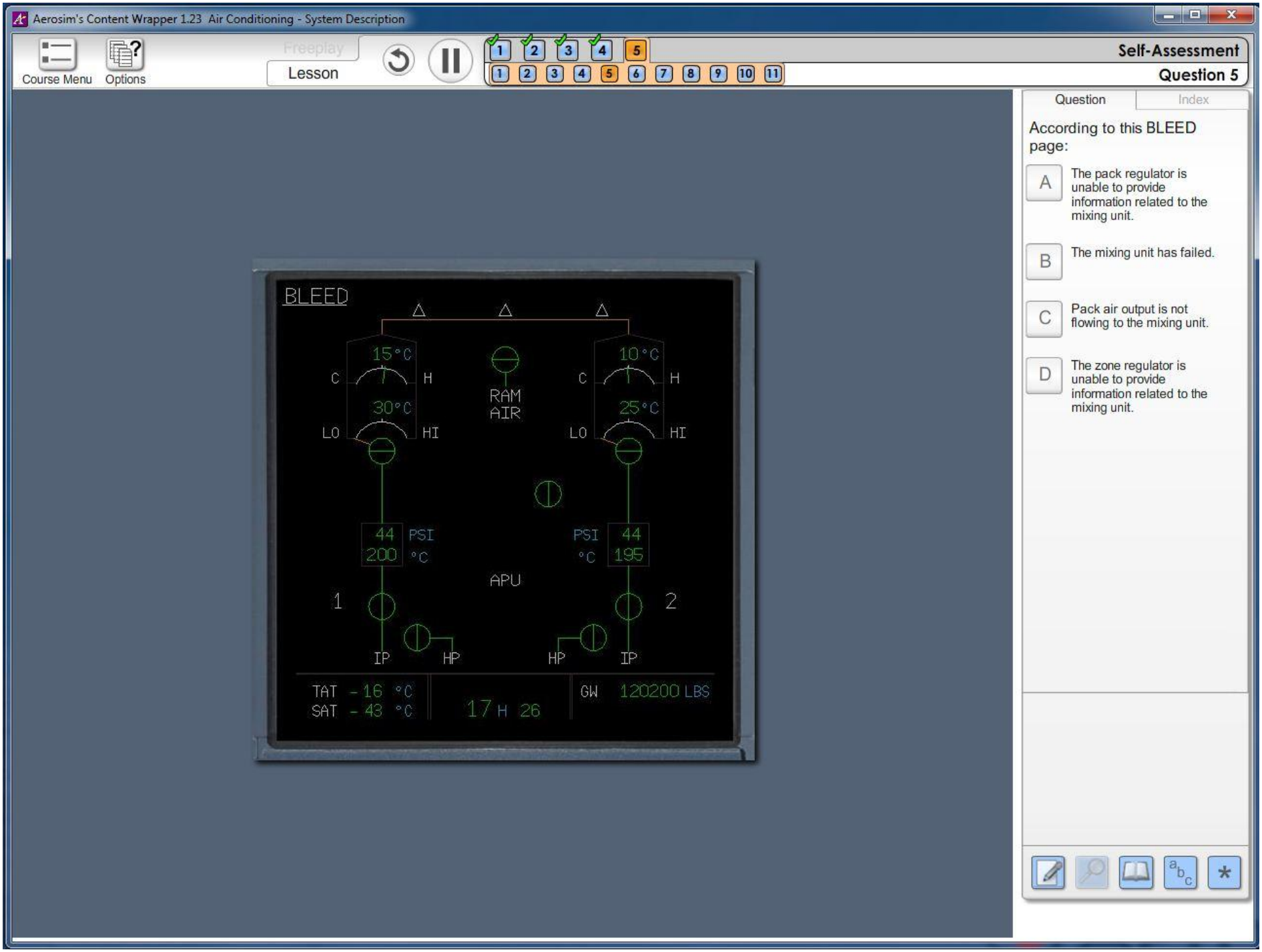

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Temperature Control
Cabin Zones & Zone Temperature Selectors
Text
Index
zone temperature using the three zone temperature selectors on the overhead AIR COND panel.
These temperature selectors allow you to select temperatures from approximately 64-86ºF (18-30ºC).
Select the COCKPIT temperature selector to COLD.
The cockpit is now the zone that requires the coldest air.
The trim air valve closes and the two air conditioning packs now produce air at the temperature required by that zone.
The zone regulator also commands the trim air valves to open for the FWD and AFT zones to add enough hot air to maintain its current setting.
Select the AFT CABIN temperature selector to HOT.
As a warmer temperature is commanded, the aft cabin trim air valve opens further allowing additional hot air to warm the zone.
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
COLD
HOT
HOT AIR
PACK 1
PACK 2
X BLEED
AUTO
SHUT
OPEN
START
RAM AIR
GND HP
APU BLEED
ENG 1 BLEED
ENG 2 BLEED
AIR COND
COND
TEMP : °F
CKPT
FWD
AFT
76
78
78
52
78
94
C
H
HOT AIR
TAT - 16 °C
SAT - 43 °C
17 H 27
GW 120200 LBS

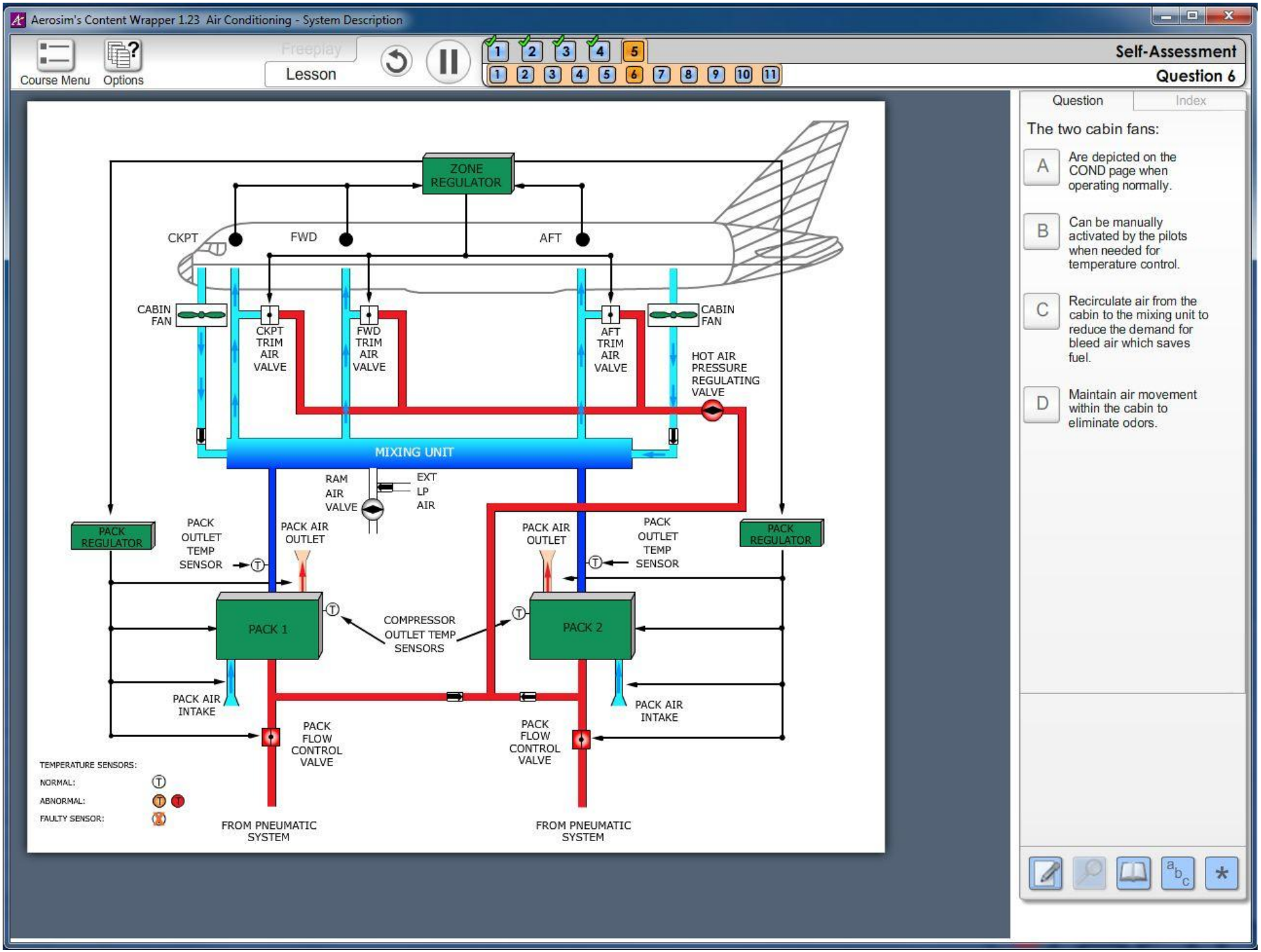

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Self-Assessment
Question 1
Question
Index
Which statement is false?
A
The pack regulators monitor for pack malfunctions.
B
The pack regulators provide commands to the zone regulator.
C
The pack regulators adjust air flow to the packs through the pack flow control valves.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM

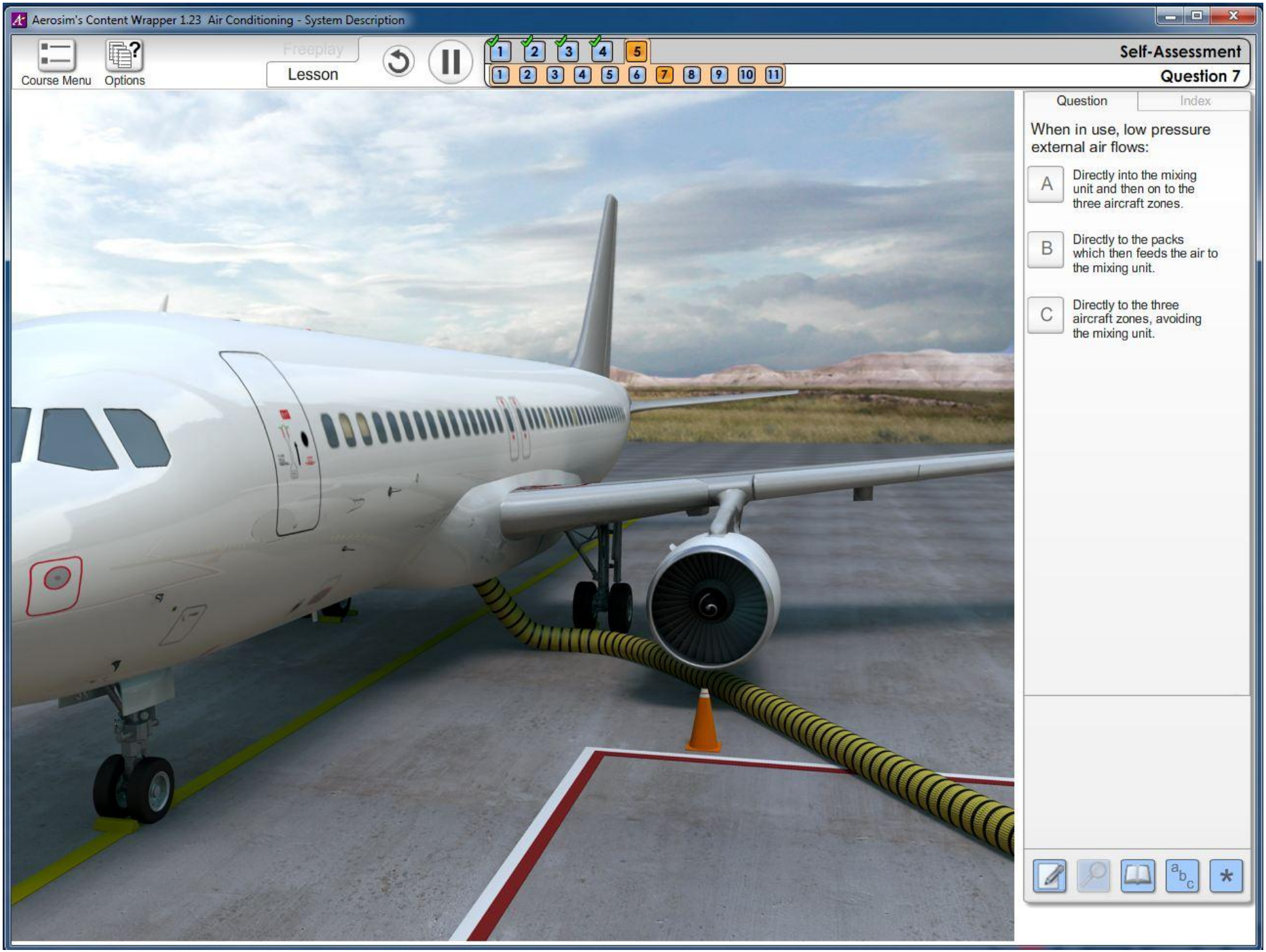

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Self-Assessment
Question 2
Text
Index
Close the pack flow control valve for PACK 1 using the correct pb on the overhead AIR COND panel.
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
HOT AIR
COLD
HOT
PACK 1
PACK 2
X BLEED
AUTO
START
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
SHUT
OPEN
ENG 2 BLEED
REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK 1
PACK 2
COMPRESSOR OUTLET TEMP SENSORS
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
Close the pack flow control valve for PACK 1 using the correct pb on the overhead AIR COND panel.

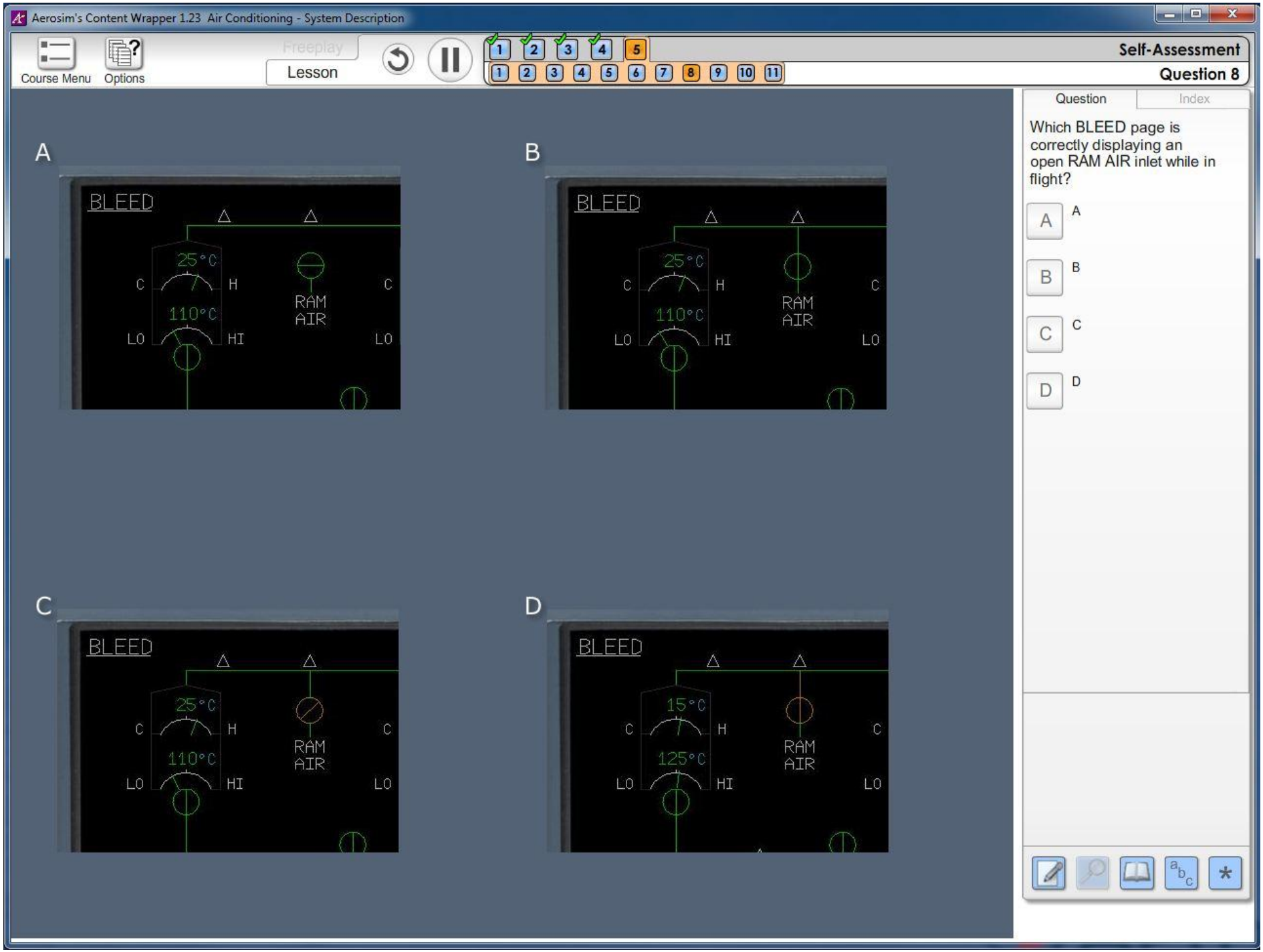

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Self-Assessment
Question 3
Text
Index
Select the correct position to manually increase air flow using the PACK FLOW selector.
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
HOT AIR
COLD
HOT
PACK 1
PACK 2
X BLEED
START
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
AUTO
SHUT
OPEN
ENG 2 BLEED
AIR COND
REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
COMPRESSOR OUTLET TEMP SENSORS
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
Select the correct position to manually increase air flow using the PACK FLOW selector.

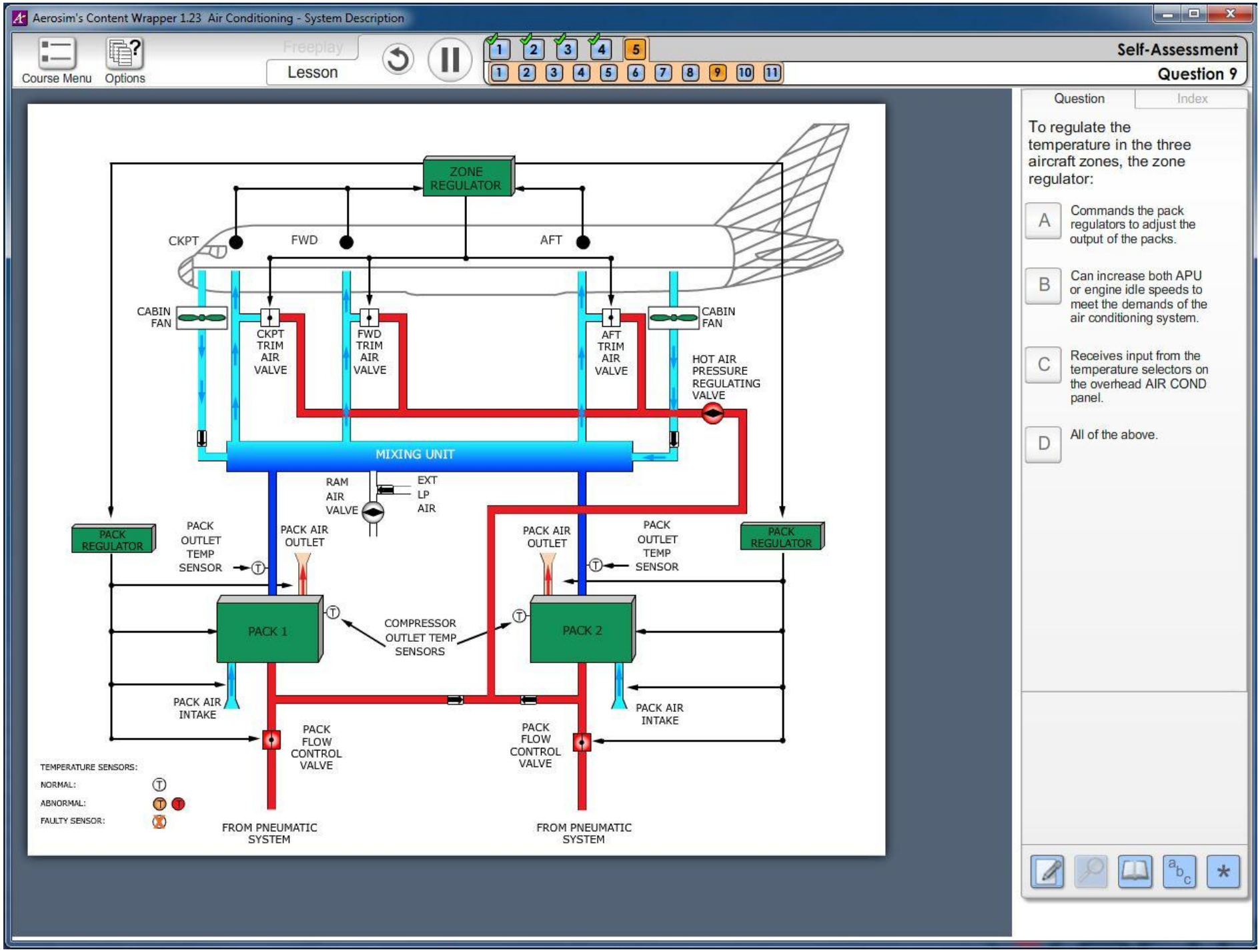

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Self-Assessment
Question 4
Question
Index
According to this BLEED page:
A
Pack compressor outlet temperatures are normal, and the packs are attempting to produce warmer air.
B
Pack compressor outlet temperatures are normal, and the packs are attempting to produce colder air.
C
Pack compressor outlet temperatures are abnormally high, and the packs are attempting to produce warmer air.
D
Pack compressor outlet temperatures are abnormally high, and the packs are attempting to produce colder air.
BLEED
5 °C
C
H
110°C
LO
HI
RAM AIR
44
200
PSI
°C
APU
1
2
IP
HP
TAT -16 °C
SAT -43 °C
17 H 27
GW 120200 LBS

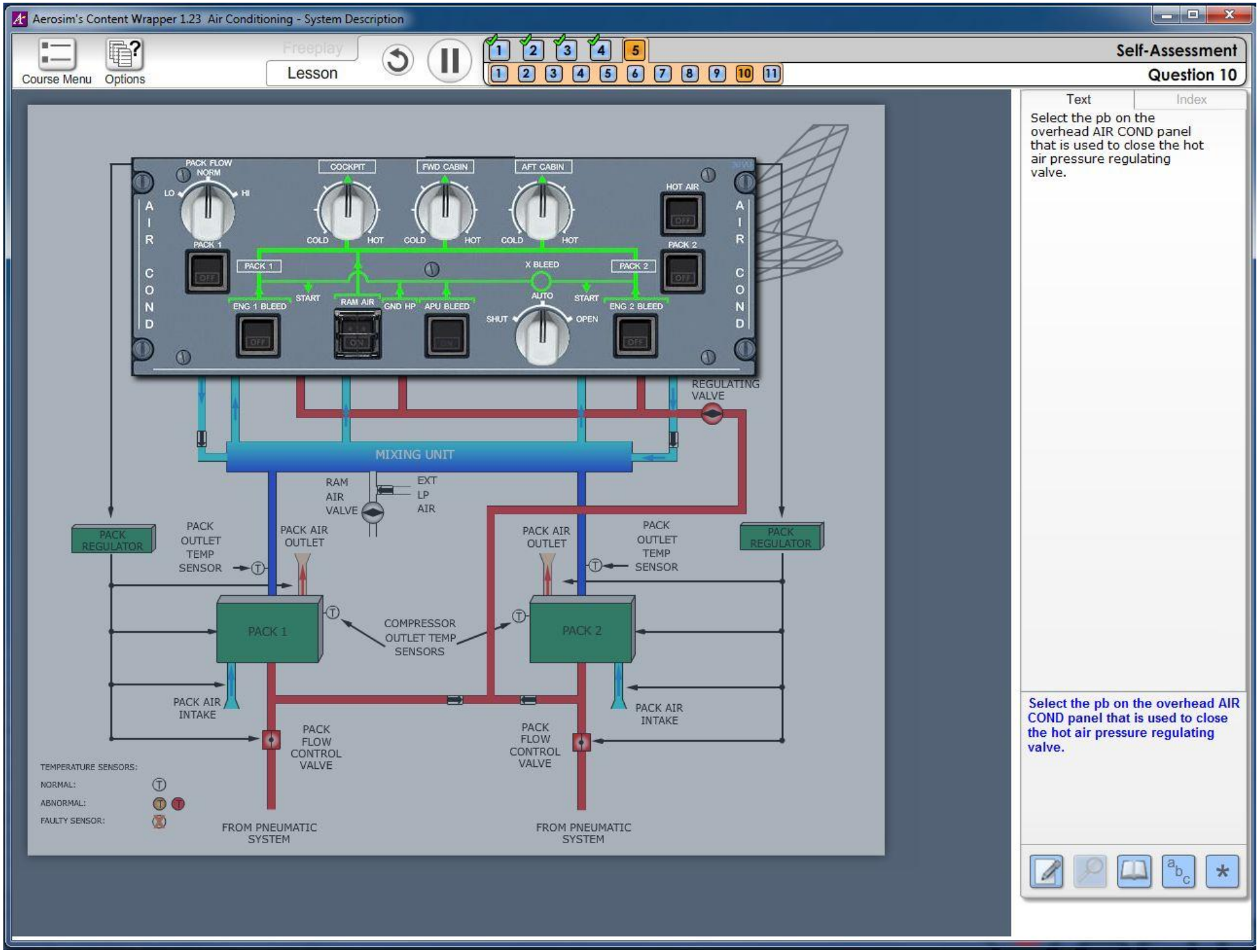

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Self-Assessment
Question 5
Question
Index
According to this BLEED page:
A
The pack regulator is unable to provide information related to the mixing unit.
B
The mixing unit has failed.
C
Pack air output is not flowing to the mixing unit.
D
The zone regulator is unable to provide information related to the mixing unit.
BLEED
15 °C
C
H
30 °C
LO
HI
RAM AIR
10 °C
C
H
25 °C
LO
HI
44 PSI
200 °C
APU
PSI 44
°C 195
1
2
IP
HP
HP
IP
TAT - 16 °C
SAT - 43 °C
17 H 26
GW 120200 LBS

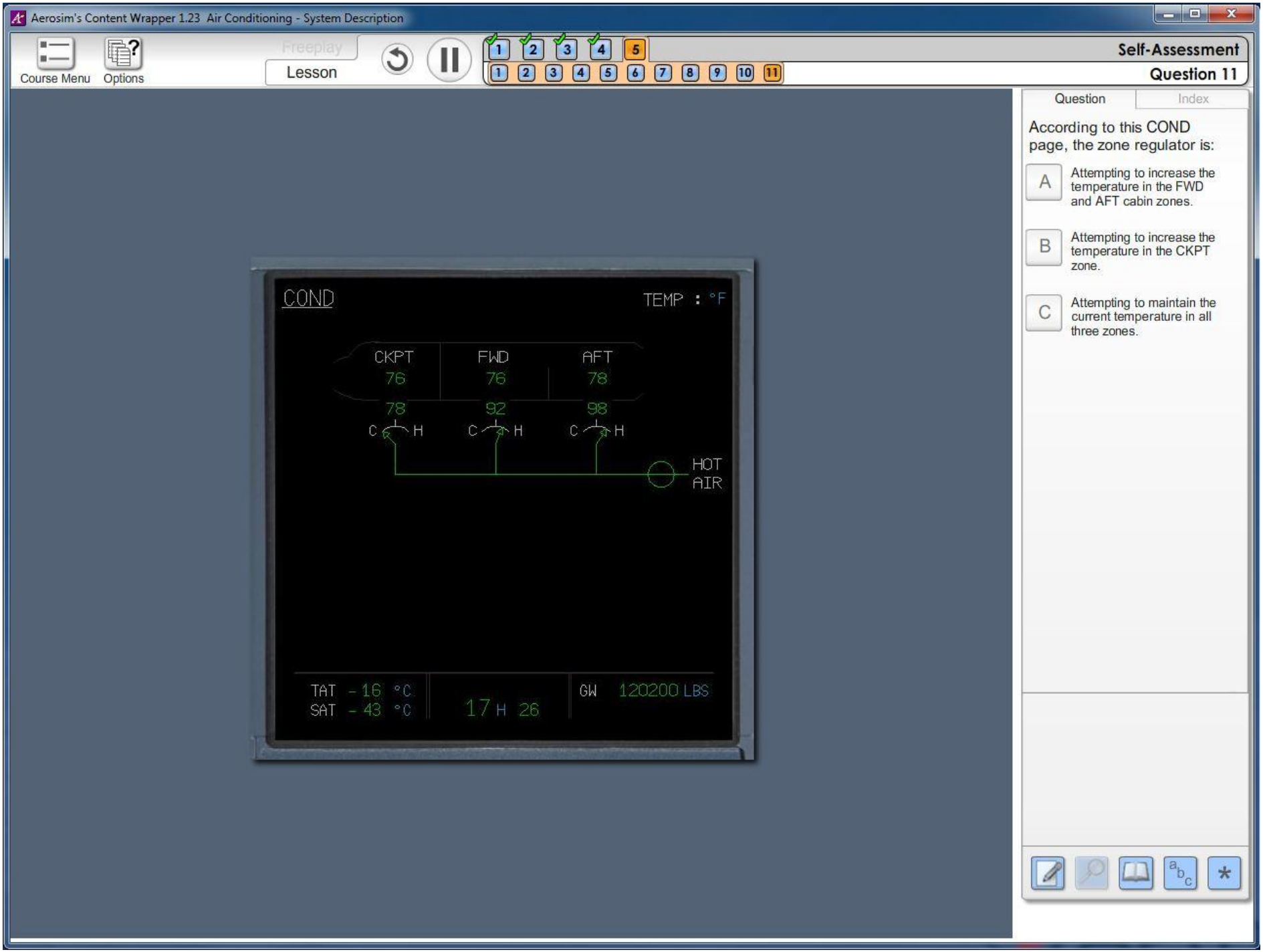

Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Self-Assessment
Question 6
Question
Index
The two cabin fans:
A
Are depicted on the COND page when operating normally.
B
Can be manually activated by the pilots when needed for temperature control.
C
Recirculate air from the cabin to the mixing unit to reduce the demand for bleed air which saves fuel.
D
Maintain air movement within the cabin to eliminate odors.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
CABIN FAN
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK REGULATOR
PACK 1
COMPRESSOR OUTLET TEMP SENSORS
PACK 2
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM


Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Self-Assessment
Question 7
Question
Index
When in use, low pressure external air flows:
A
Directly into the mixing unit and then on to the three aircraft zones.
B
Directly to the packs which then feeds the air to the mixing unit.
C
Directly to the three aircraft zones, avoiding the mixing unit.


Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Self-Assessment
Question 8
Question
Index
Which BLEED page is correctly displaying an open RAM AIR inlet while in flight?
A
B
C
D
A
BLEED
25°C
C
H
110°C
LO
HI
RAM AIR
C
LO
B
BLEED
25°C
C
H
110°C
LO
HI
RAM AIR
C
LO
C
BLEED
25°C
C
H
110°C
LO
HI
RAM AIR
C
LO
D
BLEED
15°C
C
H
125°C
LO
HI
RAM AIR
C
LO


Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Self-Assessment
Question 9
Question
Index
To regulate the temperature in the three aircraft zones, the zone regulator:
A
Commands the pack regulators to adjust the output of the packs.
B
Can increase both APU or engine idle speeds to meet the demands of the air conditioning system.
C
Receives input from the temperature selectors on the overhead AIR COND panel.
D
All of the above.
ZONE REGULATOR
CKPT
FWD
AFT
CABIN FAN
CABIN FAN
CKPT TRIM AIR VALVE
FWD TRIM AIR VALVE
AFT TRIM AIR VALVE
HOT AIR PRESSURE REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
PACK AIR OUTLET
PACK OUTLET TEMP SENSOR
PACK 1
PACK 2
COMPRESSOR OUTLET TEMP SENSORS
PACK AIR INTAKE
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM
FROM PNEUMATIC SYSTEM


Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Self-Assessment
Question 10
Text
Index
Select the pb on the overhead AIR COND panel that is used to close the hot air pressure regulating valve.
Select the pb on the overhead AIR COND panel that is used to close the hot air pressure regulating valve.
PACK FLOW
NORM
LO
HI
COCKPIT
FWD CABIN
AFT CABIN
HOT AIR
COLD
HOT
PACK 1
PACK 2
X BLEED
AUTO
SHUT
OPEN
START
ENG 1 BLEED
RAM AIR
GND HP
APU BLEED
ENG 2 BLEED
AIR COND
REGULATING VALVE
MIXING UNIT
RAM AIR VALVE
EXT LP AIR
PACK REGULATOR
PACK OUTLET TEMP SENSOR
PACK AIR OUTLET
COMPRESSOR OUTLET TEMP SENSORS
PACK AIR INTAKE
PACK FLOW CONTROL VALVE
TEMPERATURE SENSORS:
NORMAL:
ABNORMAL:
FAULTY SENSOR:
FROM PNEUMATIC SYSTEM


Aerosim's Content Wrapper 1.23 Air Conditioning - System Description
Course Menu
Options
Freeplay
Lesson
Self-Assessment
Question 11
Question
Index
According to this COND page, the zone regulator is:
A
Attempting to increase the temperature in the FWD and AFT cabin zones.
B
Attempting to increase the temperature in the CKPT zone.
C
Attempting to maintain the current temperature in all three zones.
COND
TEMP : °F
CKPT
FWD
AFT
76
76
78
78
92
98
C H
C H
C H
HOT AIR
TAT - 16 °C
SAT - 43 °C
17 H 26
GW 120200 LBS

Перечень контрольных вопросов по системе кондиционирования воздуха самолёта А-320

1. Что делает зональный регулятор (ZONE REGULATOR) ?
2. Что делает регулятор блока (PACK REGULATOR) ?
3. Куда подаётся воздух в самолёте А320?
4. Откуда происходит управление системой кондиционирования воздуха?
5. На каких страницах справочного дисплея осуществляется индикация состояния системы кондиционирования воздуха?
6. Как осуществляется подача воздуха в блок (PACK) и регулирование выхода воздуха из блока?
7. Сколько каналов управления имеет регулятор блока? Равноценны ли они?
8. Зачем в блок поступает воздух, отобранный от двигателя? Кто управляет этим процессом?
9. Идёт отбор воздуха от двигателя во время его запуска?
10. Что происходит с отбором воздуха от двигателя, если двигатель не стартовал?
11. При каких условиях закрывается кран управления расходом блока?
12. Чем управляется кран управления расходом блока?
13. Где показывается состояние кранов управления расходом блоков?
14. Что означают вертикальные и горизонтальные линии в обозначении кранов?
15. Что делает селектор PACK FLOW ?
16. Что означает позиция NORM селектора PACK FLOW ?
17. Когда применяются позиции LO и HI селектора PACK FLOW ?
18. В каких ситуациях предписывается режим HI ?
19. Где расположены блоки кондиционирования воздуха ?
20. Опишите работу блока кондиционирования воздуха.
21. Как отслеживается состояние воздухозаборников и сопел блоков кондиционирования воздуха?
22. Как и в каком устройстве охлаждается отобранный от двигателя воздух?
23. Зачем нужен обводной клапан турбины?
24. Куда поступает информация о работе блоков кондиционирования воздуха?
25. В каком месте блока контролируется температура воздуха?
26. Опишите назначение устройства смешивания.
27. Куда поступает воздух после устройства смешивания?
28. Что означает зелёный и жёлтый цвет обозначения устройства смешивания?

29. Как кондиционируется салон во время стоянки на земле?
30. Где расположены точки подключения воздуховодов низкого давления?
31. Возможна ли одновременная работа блоков кондиционирования воздуха и наземных воздуховодов?
32. Как по показаниям индикаторов и другими методами определить, подключён или нет внешний воздуховод?
33. Что предусмотрено на случай аварии системы кондиционирования воздуха? Как эти средства работают?
34. Что представляет собой зональный регулятор?
35. Что на входе зонального регулятора и что на выходе?
36. Может ли зональный регулятор вмешаться в режим работы двигателей или вспомогательной силовой установки?
37. Как происходит индикация отказа первичного канала зонального регулятора?
38. Что будет, если откажет и вторичный канал зонального регулятора?
39. Какая индикация свидетельствует об отказе зонального регулятора?
40. Как работает система кондиционирования воздуха при отказе зонального регулятора?
41. Что делает клавиша HOT AIR на пульте AIR COND ?
42. В каких ситуациях автоматически закрывается кран, регулирующий давление горячего воздуха?
43. Можно ли вручную настроить температуру зон салона? Если «да», то как?
44. Вопросы на стр. 105…115 «Инструкция по изучению системы кондиционирования воздуха самолёта Эрбас А320 на тренажёре Aerosim»

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