

INSTRUCTOR MANUAL



V9000 COMMANDER™

Cabin Fire + Smoke Trainer

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Document changes and history

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1. TABLE OF CONTENT

1. TABLE OF CONTENT	3
2. GENERAL INFORMATION	5
2.1 SAFETY CAUTIONS	5
2.2 SAFETY MEASURES	6
2.3 <i>Emergency stop</i>	7
2.4 <i>Gas detection system</i>	8
2.5 <i>Evacuation</i>	9
3. INTRODUCTION	10
4. SYSTEM START UP	11
5. INSTRUCTOR PAGE	14
6. LESSON PLANS	19
6.1 USING LESSON PLANS	19
6.2 PROGRAMMING LESSON PLANS	20
7. EXTINGUISHER REFILLING STATION	22
8. SYSTEM CONTROL PAGE	23
9. SETTINGS PAGE	26
10. ALARM LOGGING PAGE	32

List of illustrations:

Figure 1 - V9000 Commander safety measures overview	6
Figure 2 - Emergency stop buttons	7
Figure 3 - Gas detection system	8
Figure 4 - Exit signs and panic escape handles	9
Figure 5 - Evacuation routes	9
Figure 6 – Main power switch	11
Figure 7 – Gas bottle	11
Figure 8 – Light/standby switch	11
Figure 9 – System ON/OFF	12
Figure 10 - Gas leak test notification	12
Figure 11 – Ready for Training indication	13
Figure 12 – Instructor page	14
Figure 13 - Available scenarios and light control	14
Figure 14 - Status and Warning messages	15
Figure 15 - Typical scenario example	15
Figure 16 - Training progress bar	16
Figure 17 - Training feedback controls (well done)	16
Figure 18 - Training feedback (Again)	17
Figure 19 - Laptop glowing spot	17
Figure 20 - Seat short circuit	18
Figure 21 - Instructor page	19
Figure 22 - Select your Program page	19
Figure 23 - Instructor page	19

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A V I A T I O N

Figure 24 - Standard settings.....	21
Figure 25 - Access to system control page	23
Figure 26 - System control page	24
Figure 27 - Explanation system controls	24
Figure 28 - System status indications explanation	25
Figure 29 - Access to settings page	26
Figure 30 - Settings page overview, with default values.....	27
Figure 31 - Gas system.....	27
Figure 32 - Smoke system	28
Figure 33 - Training progress.....	28
Figure 34 - Cabin light settings	29
Figure 35 - Relight timers.....	29
Figure 36 - Temperature settings.....	30
Figure 37 - Air extraction system.....	30
Figure 38 - Turn system off.....	31
Figure 39 - Access to Log page	32
Figure 40 - Log page.....	32

2. General information

2.1 Safety cautions

In order to ensure safe operation of the fire trainer, the following instructions must be observed:

- ⚠ The fire trainer may only be used under strict supervision of a qualified instructor who is aware of the safety procedures for this fire trainer.
- ⚠ Before entering the fire trainer, the instructor shall make sure there are no damages to the fire trainer on the outside or on the inside, no unusual smell or smell of gas is observed and no waste or other items are left behind in the fire trainer. In case of any damages or any unusual smell, the instructor shall immediately call a qualified engineer.
- ⚠ Never use the fire trainer without a trained instructor or observer present.
- ⚠ The emergency stop buttons may only be used in case of an emergency. Never use these buttons for normal stop functions.
- ⚠ Never remove panels and/or covers – there are no user serviceable parts inside. Many of the circuits remain charged for some time after a system is disconnected from the utility supply.
- ⚠ Never cover the gas sensors and over-temperature sensors, which are mounted in the fire trainer. Call a qualified engineer in case any gas or temperature sensor looks or is damaged.
- ⚠ The technical room may be entered exclusively by qualified engineers.
- ⚠ A qualified engineer shall be notified in the event of a fault notification or any other technical issue.
- ⚠ When training is in progress, a green light will be activated next to the main entrance door.
- ⚠ The fire extinguishers used for training are for training purposes in the fire trainer only.
- ⚠ In case a fire is detected and the fire alarm sounds, all persons must exit the fire trainer as quickly as possible.
- ⚠ Surfaces and/or areas close to the fire sources may be hot during or after they have been activated. Wear hand gloves and protective clothing!
- ⚠ All participants of the training shall be made acquainted with the safety measures and evacuation plan of the fire trainer as described in this manual before training starts.

2.2 Safety measures



CAUTION

Hazard with a low risk

Before operating the fire trainer, these safety measurements should be known. If unclear: do not start the training.

The V7000 Brigade™ and V9000 Commander™ fire trainer is equipped with the following safety measures:

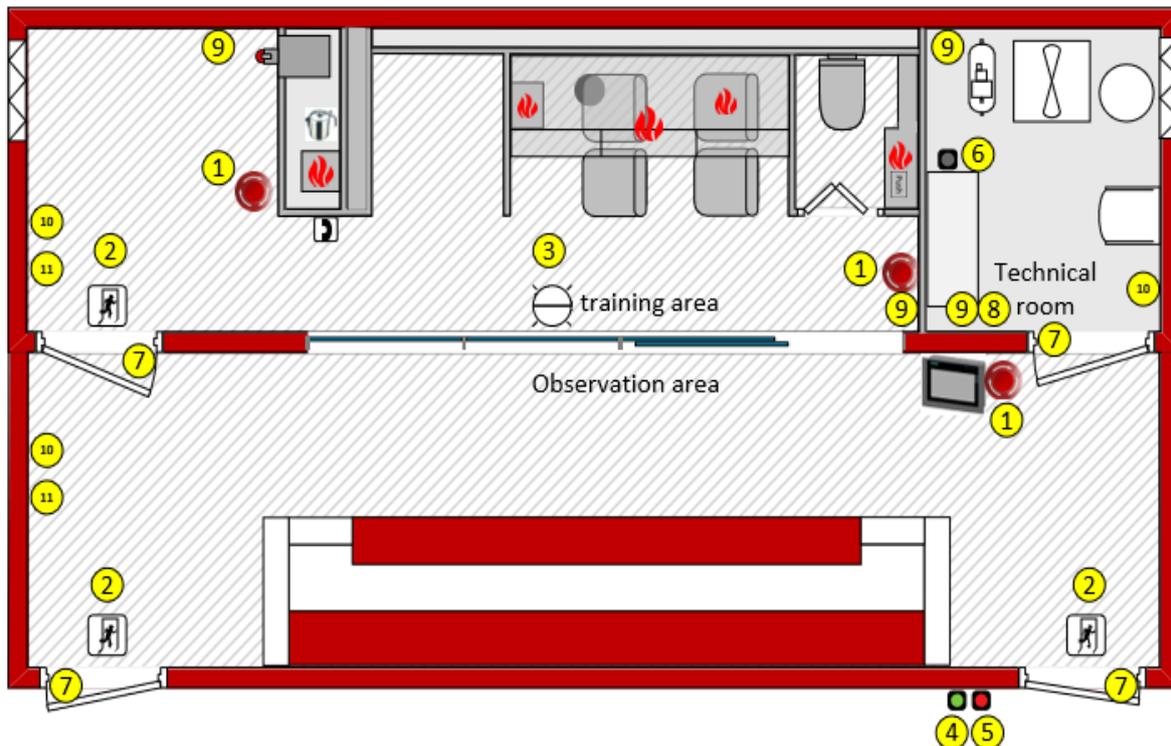


Figure 1 - V9000 Commander safety measures overview

1. Emergency stop buttons
2. Evacuation lighting
3. Orientation light
4. System OK light (outside, green)
5. Warning light (outside, red)
6. Acoustic warning horn (inside)
7. Emergency exits
8. Gas detection system
9. Gas detectors
10. Position for real fire extinguishers (to be installed by operator)
11. Position for fire blanket (to be installed by operator)

2.3 Emergency stop

The V9000 Commander™ fire trainer has three Emergency stop buttons:

1. One (1) located on the instructor operating station (IOS) in the observation cabin (V9000 Commander™ fire trainer only)
2. One (1) in the preparation area
3. One (1) under the air extraction outlet in the fire training cabin

These Emergency buttons shall be used in case of an emergency and will shut down the fire trainer immediately.



Figure 2 - Emergency stop buttons

Selecting an Emergency stop button will activate the emergency shutdown. The emergency shutdown is also activated in the following situations:

- Leak test failure
- Gas detection system alarm, 10% LEL is exceeded
- 'Room temperature too high' results in the following actions:

The following actions will be taken when the emergency shutdown is executed

- All scenario's and functionalities are being switched off.
- The main gas valve will be closed
- The cabin lights and observation lights are being switched to BRIGHT
- The ventilation is being switched to MAX
- The optical alarm is activated
- The acoustic alarm is being activated

If an emergency shutdown has been activated, inform a qualified engineer.

2.4 Gas detection system

The fire trainer is equipped with a gas detection system with four infra-red gas detection transmitters.

The system operates independently from the PLC. Two independent gas detection transmitters are installed in each room (fire training area and the technical room) at 25 cm above the floor level in order to detect gas. Since propane is denser than air the gas will sink to the ground in the event of a leak in the system.



Figure 3 - Gas detection system

2.5 Evacuation

In case of a power loss in the fire trainer, an emergency exit light will illuminate above the main exit door, and an orientation light will illuminate the fire training area. This will provide instructor and trainees enough light to evacuate the fire trainer.



Figure 4 - Exit signs and panic escape handles

All external doors can be opened from the inside at all times by pushing the panic escape handle.

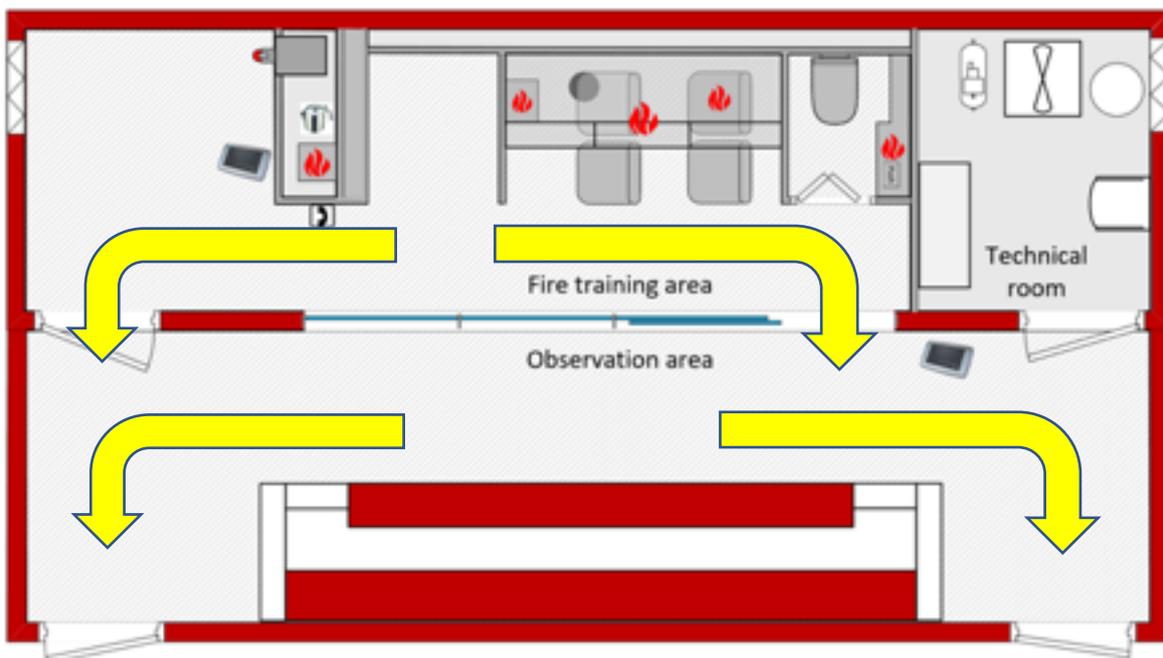


Figure 5 - Evacuation routes



3. INTRODUCTION

This manual is an outline for the operation of the V7000 Brigade™ and V9000 Commander™ Cabin Fire + Smoke Trainer, hereinafter referred to as fire trainer.

The purpose of this manual is to provide:

1. Guidance in the use and functionalities of the fire trainer
2. Guidance in the use and functionalities of the automatic extinguisher refilling system
3. Guidance in customizing the settings of the fire trainer for particular fire training exercises
4. Overview of the possible fault indications

Information on the maintenance of the fire trainer can be found in the Maintenance Manual.

Information on the installation of the fire trainer and the required installation prerequisites can be found in the Installation Provisions Manual.

4. SYSTEM START UP

This section describes the start-up of the fire trainer.

STEP 1: Turn main power on



The fire trainer Main Power Switch in the Technical Room shall be ON.

It is recommended to have the Main Power Switch on at all times to ensure the proper functioning of the gas detection system and the cabin defrost heating.

Figure 6 – Main power switch

STEP 2: Open gas bottle



The gas bottle, normally located in the gas cabinet in the technical room, shall be opened by turning counter clockwise.

Figure 7 – Gas bottle

STEP 3: Activate light/standby switch



A light/standby switch is normally located next to the entrance door. This switch will turn on the lights and will activate the IOS screen.

Figure 8 – Light/standby switch

STEP 4: Activate System

Select **System On/Off** on the IOS.

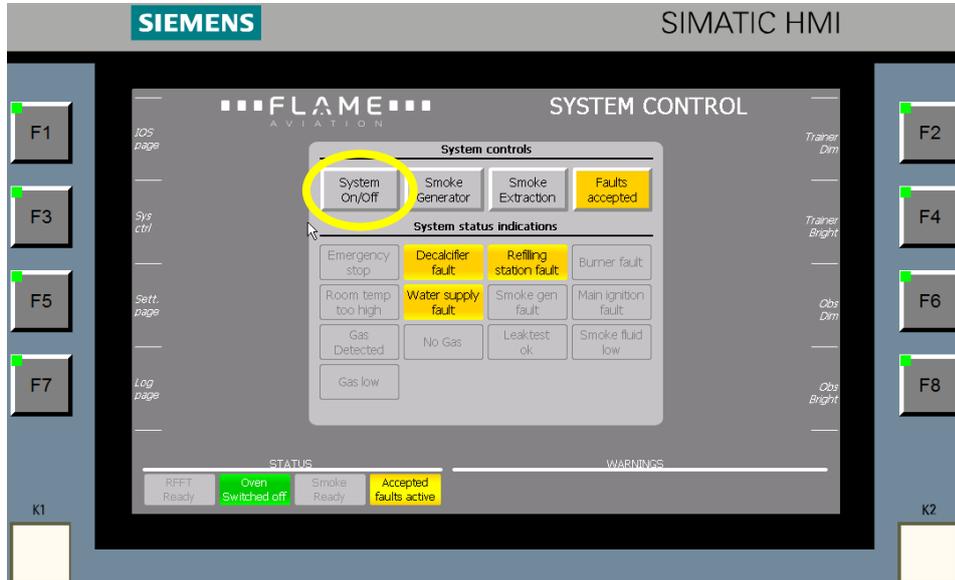


Figure 9 – System ON/OFF

When System On/Off is being selected, an automatic gas leak test will be initiated. The leak-test takes 1 minute and when the leak-test is OK, the display switches to the Instructor page automatically.

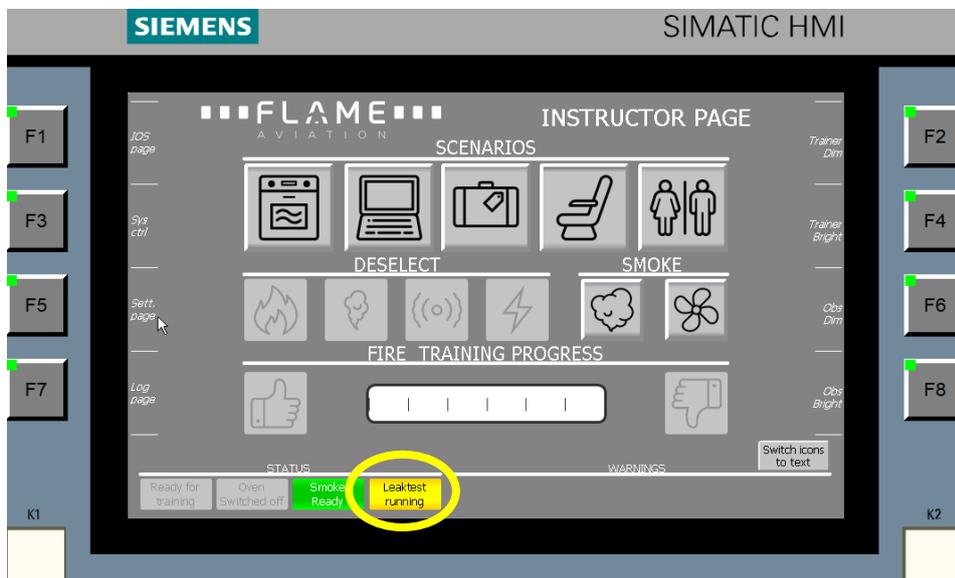


Figure 10 - Gas leak test notification

The Smoke generator needs ten minutes to warm-up. When the smoke generator has reached its operating temperature, the Ready-for-Training light will show green in the status section.

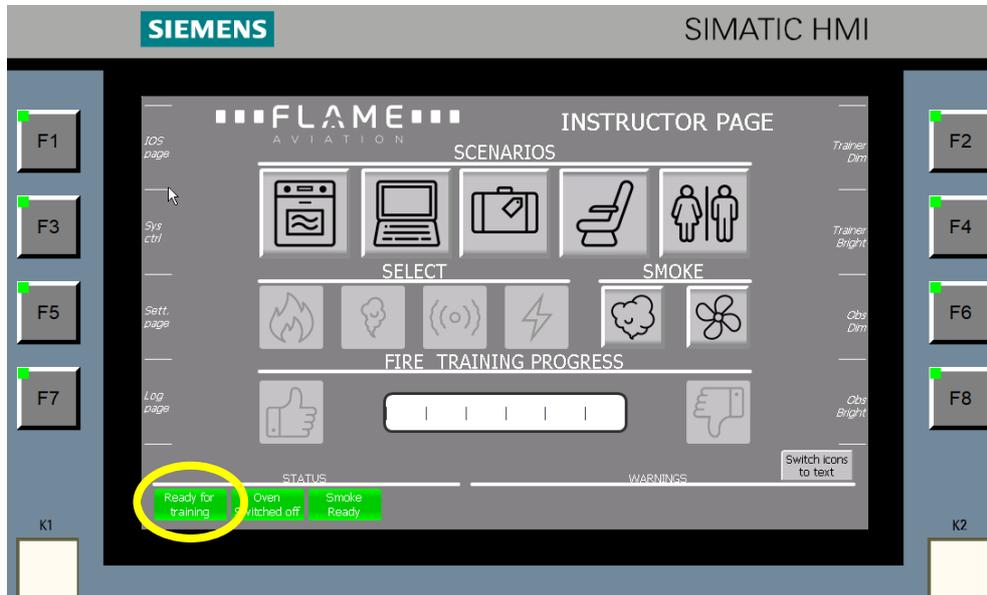


Figure 11 – Ready for Training indication

The fire trainer is Ready for training! Scenarios can be selected immediately.

5. INSTRUCTOR PAGE



Figure 12 – Instructor page

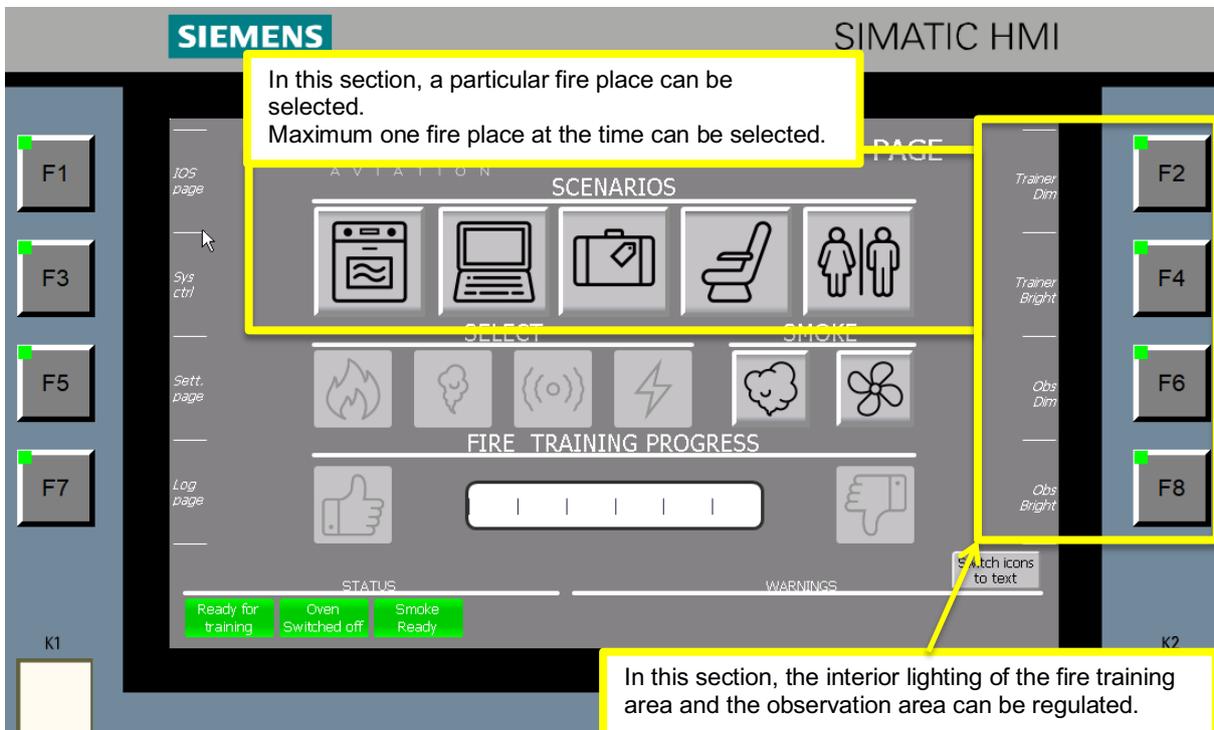


Figure 13 - Available scenarios and light control

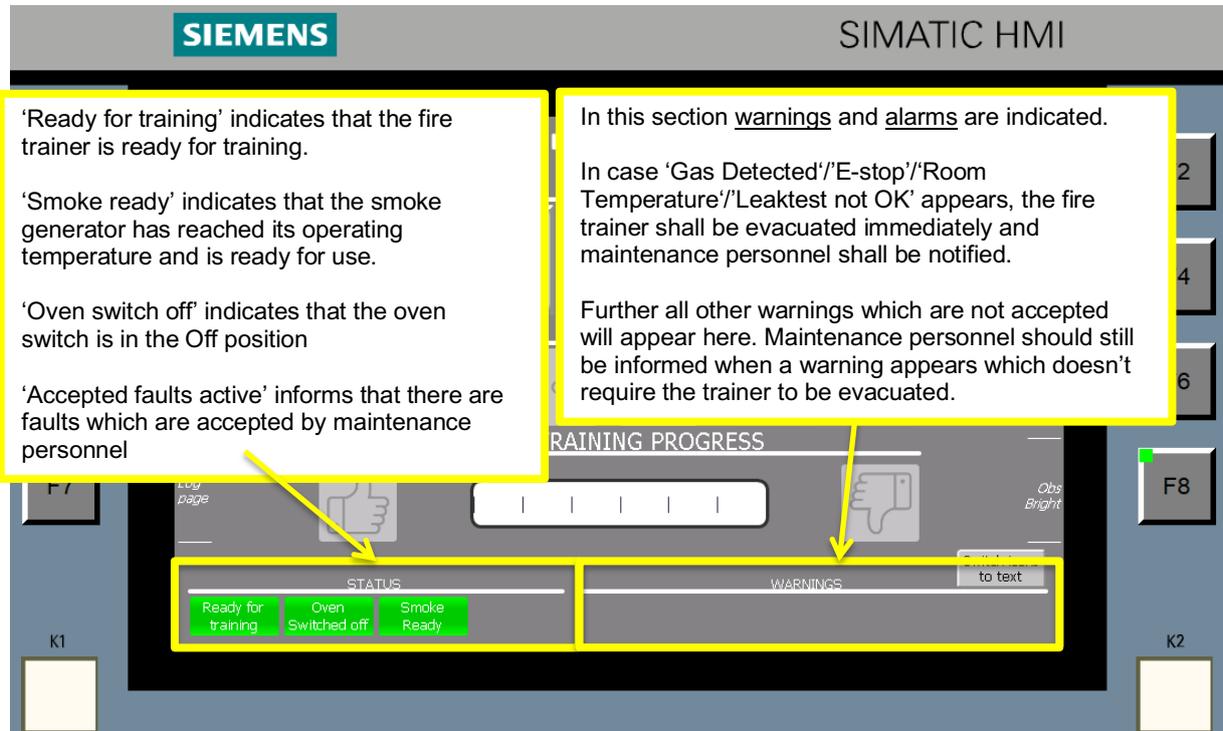


Figure 14 - Status and Warning messages

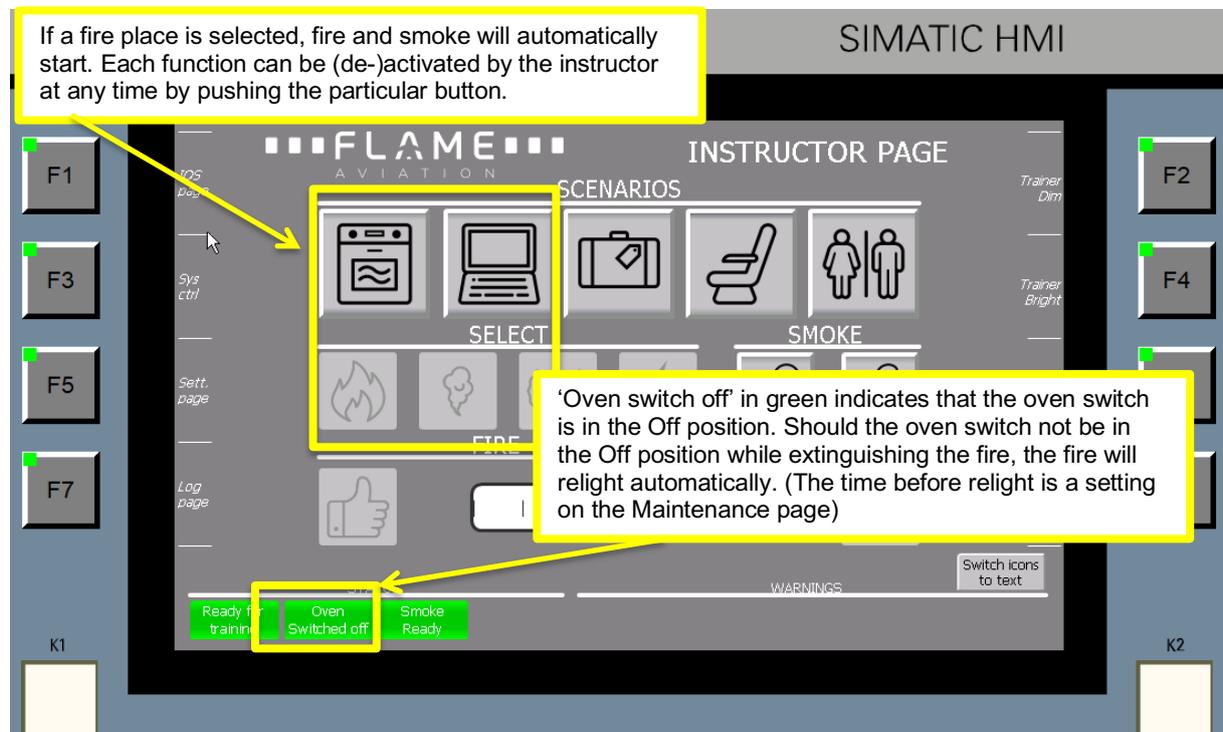


Figure 15 - Typical scenario example

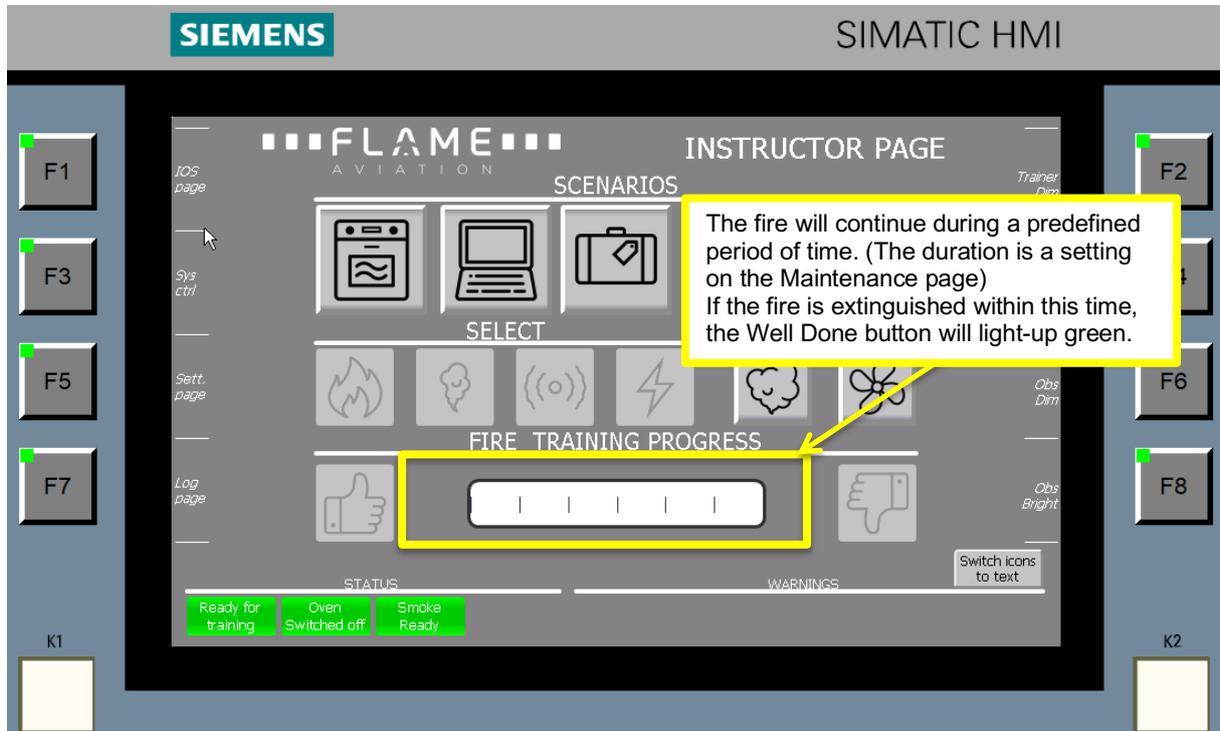


Figure 16 - Training progress bar

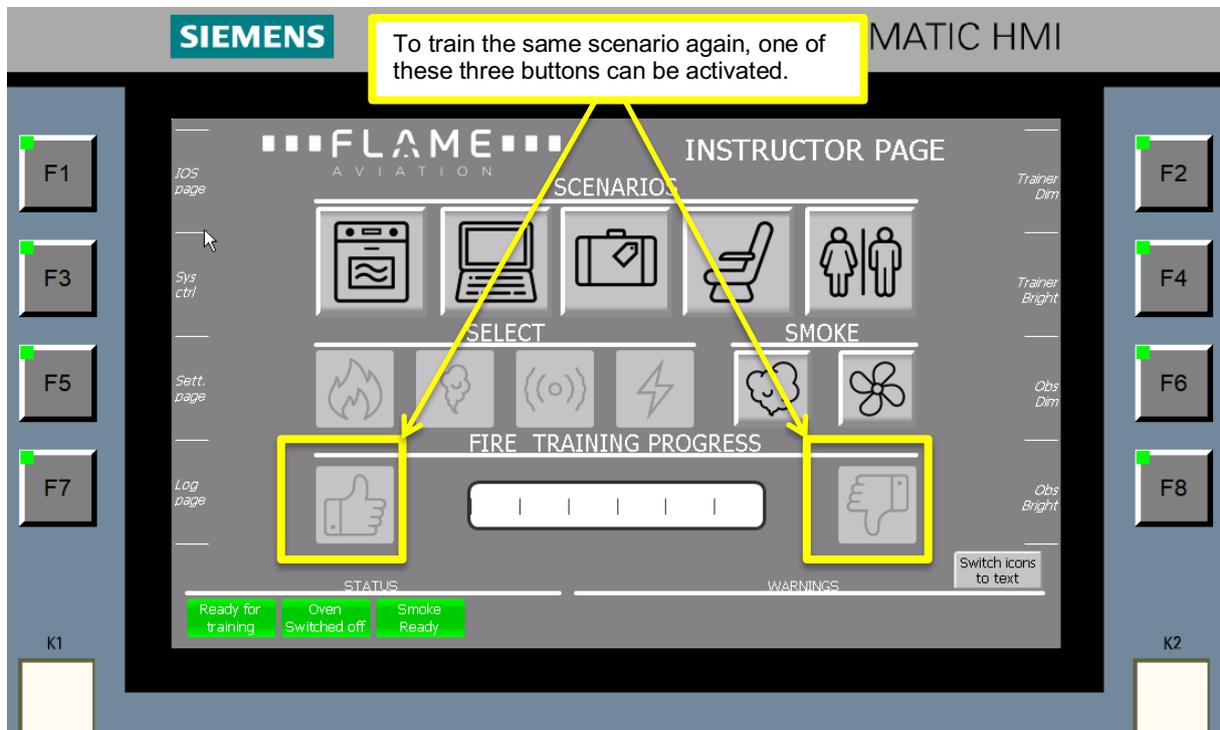


Figure 17 - Training feedback controls (well done)



Figure 18 - Training feedback (Again)

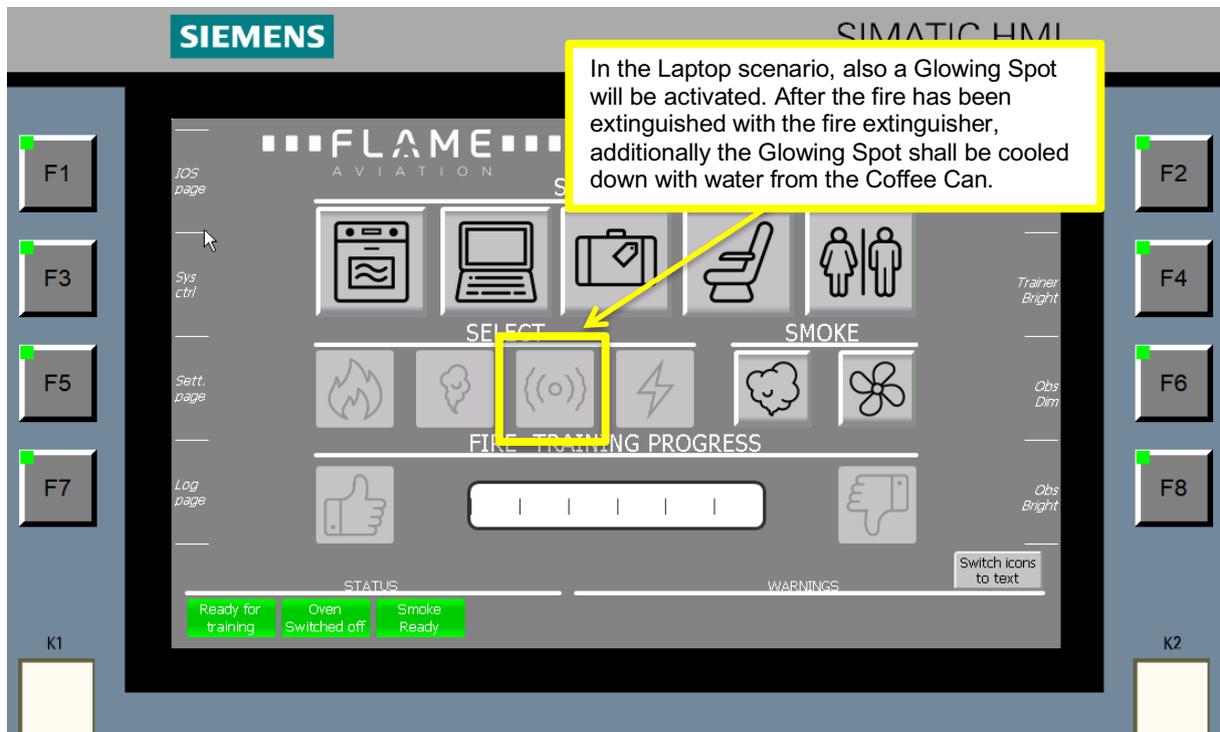


Figure 19 - Laptop glowing spot

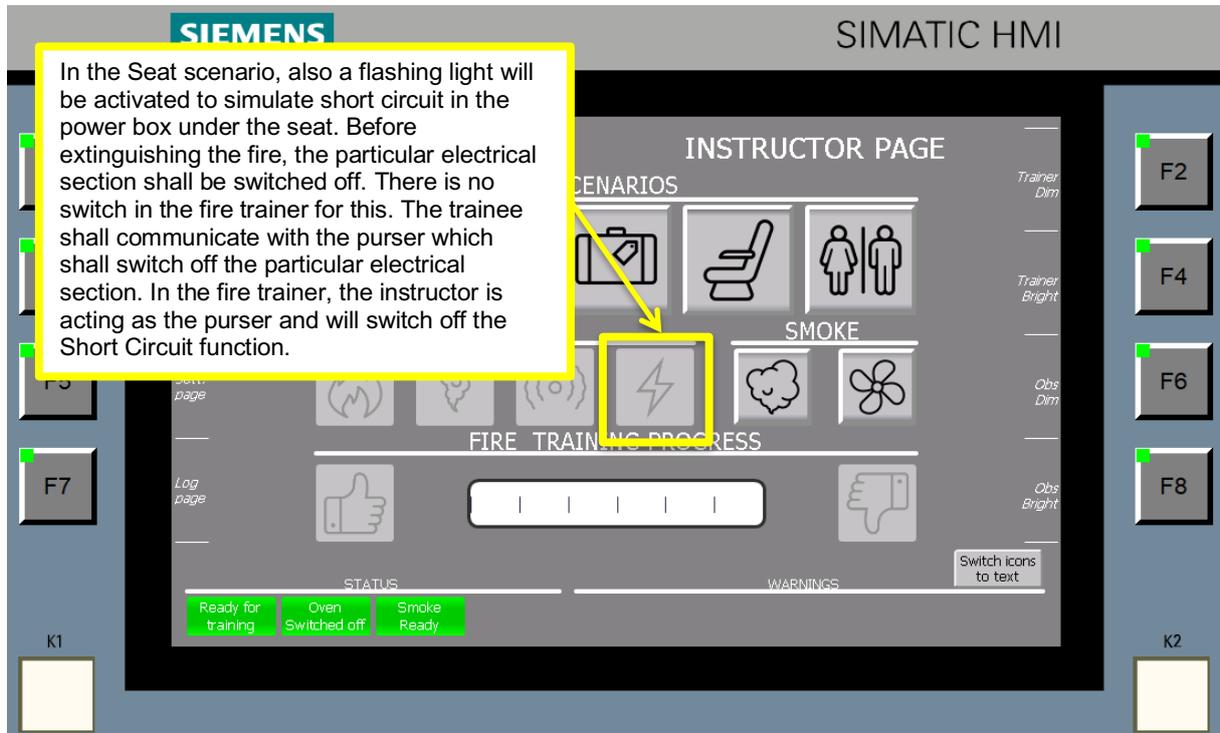


Figure 20 - Seat short circuit

6. LESSON PLANS

6.1 Using lesson plans

Follow the following steps to change to another lesson plan:

1. Select "Select your Program" on the Instructor page

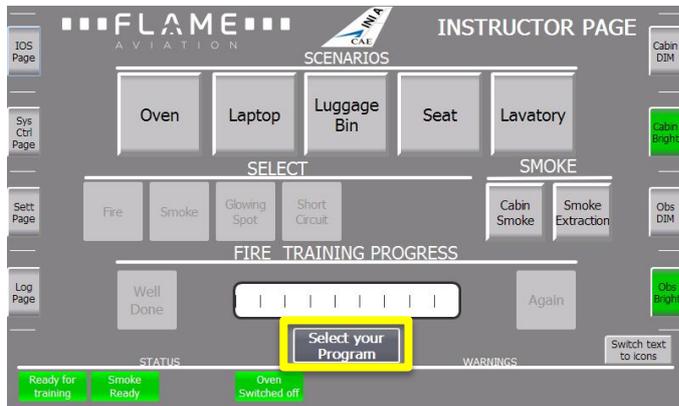


Figure 21 - Instructor page

2. Select the program you would like to use, e.g. INI A

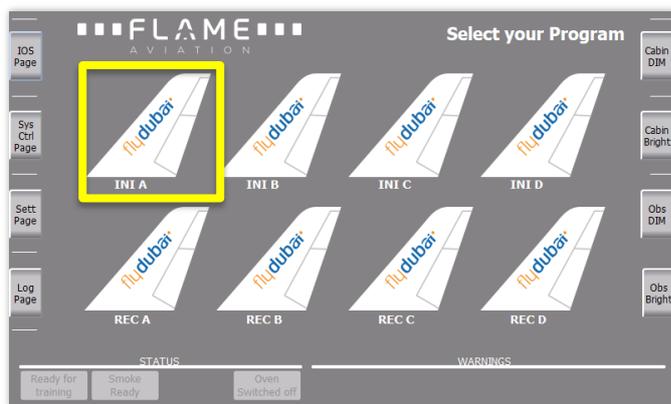


Figure 22 - Select your Program page

3. INI A will appear on the Instructor page

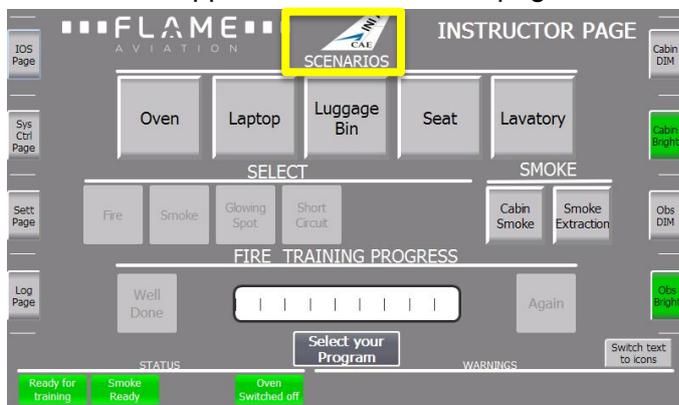


Figure 23 - Instructor page

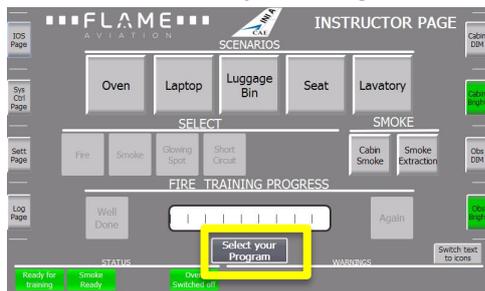
6.2 Programming Lesson plans

The fire trainer offers a lot of room for customization. The following parameters can be customized to customers preferred settings:

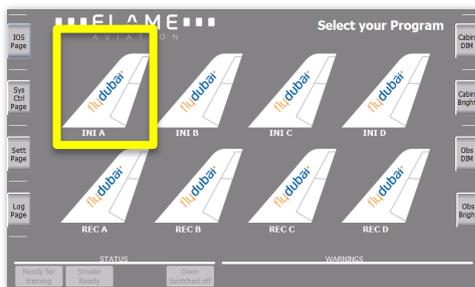
- Training in “Automatic mode” or in “Manual mode”
- Difficulty level between 1 and 4: 1 is easy to extinguish and 4 is hard to extinguish.
- Lighting between 0% and 100%
- Smoke quantity between 0% and 100% per fire place
- Training time: time allowed for trainee to conduct the extinguishing task
- Glowing spot relight timer indicates after how many seconds the fire should start again if the glowing spot is not properly cooled with the water can
- Oven switch timer indicates after how many seconds the fire should start again if the oven switch was not switched off
- Enable or disable cabin panic sound (optional)
- Enable or disable burning smell (optional)

Change settings as follows:

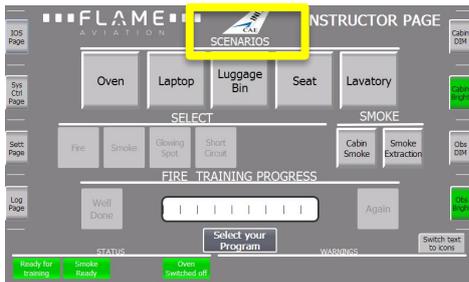
1. Select “Select your Program” on the Instructor page



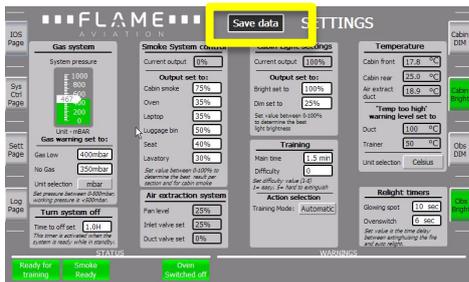
2. Select the program you would like to change, e.g. INI A



3. INI A will appear on the Instructor page



4. Select "Settings page". This page is password protected!
5. Change settings as desired
6. Select "Save Data"



7. "Save Data" will illuminate yellow to confirm settings change
- Up to eight different settings can be saved.

Standard settings are:

	INI A	INI B	INI C	INI D	REC A	REC B	REC C	REC D
Auto/Man	A	A	A	A	M	M	M	M
Diff level	1	2	3	4	2	2	4	4
Lighting	100%	80%	60%	40%	80%	80%	20%	20%
Smoke	20%	40%	60%	80%	20%	80%	20%	80%
Tr. Time	2,5m	2,0m	1,5m	1,0m	1,0m	1,5m	1,0m	1,5m
GS timer	15s	15s	10s	10s	10s	10s	10s	10s
Ov timer	10s	10s	6s	6s	6s	6s	6s	6s
Sound	OFF	OFF	ON	ON	ON	ON	ON	ON
Smell	OFF	OFF	ON	ON	ON	ON	ON	ON

Figure 24 - Standard settings

7. EXTINGUISHER REFILLING STATION



WARNING

Hazard with risk of physical injury

Make sure your hand or fingers are not trapped between the fire extinguisher bottle and the holder while placing the fire extinguisher into the ARS1200.

The refilling process is fully automatic.

To prevent injury by trapping your hand or fingers, make sure the fire extinguisher is held on the grip and only one hand is being used.



WRONG



CORRECT

When an extinguisher is placed in the holder, it will be locked and the refilling process starts automatically.

A flashing green light indicates that the refilling process is ongoing.



When the refilling process is finished, the green light will illuminate steady and the extinguisher will be released. The entire process shall not take more than 25 seconds.

When the extinguisher is taken from the holder, the green light will illuminate for approx. 2 seconds.

The next extinguisher can be placed in the holder for refilling not before the green light is switched off.

8. SYSTEM CONTROL PAGE

The system control page is password protected and only accessible for authorized personnel.

The system control page can be selected to check the status of the fire trainer, to switch the fire trainer ON/OFF, override the smoke generator power, control the smoke extraction and accept faults.

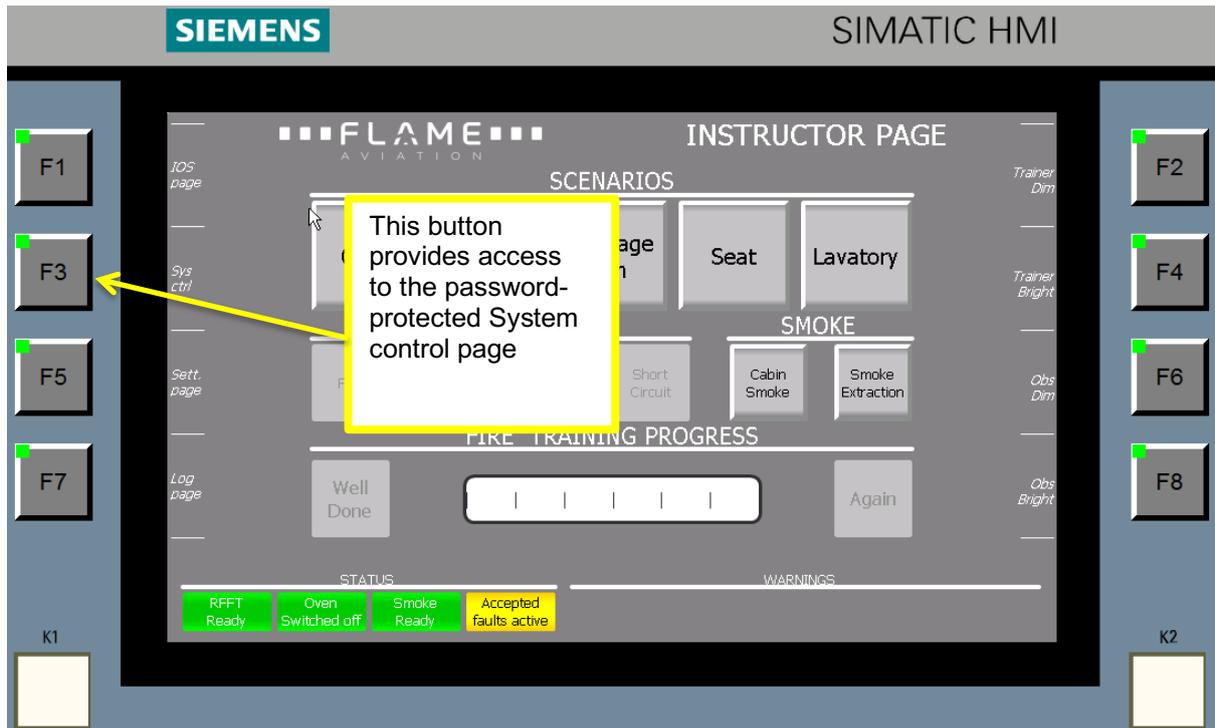


Figure 25 - Access to system control page

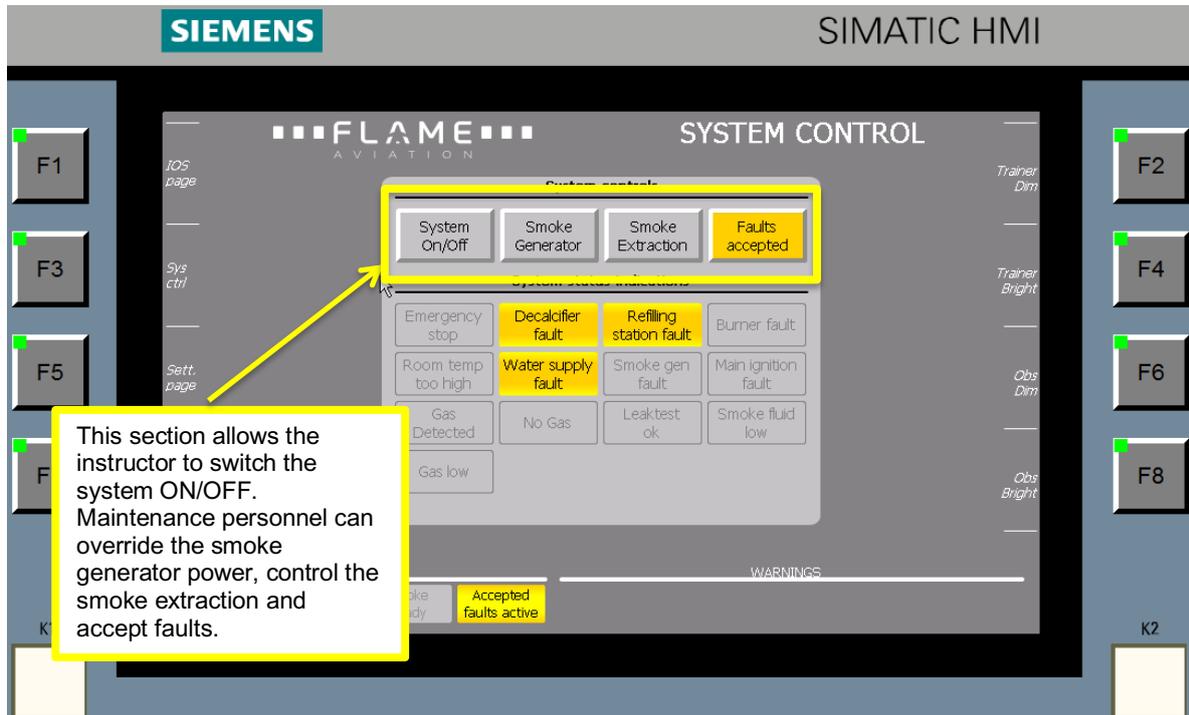


Figure 26 - System control page

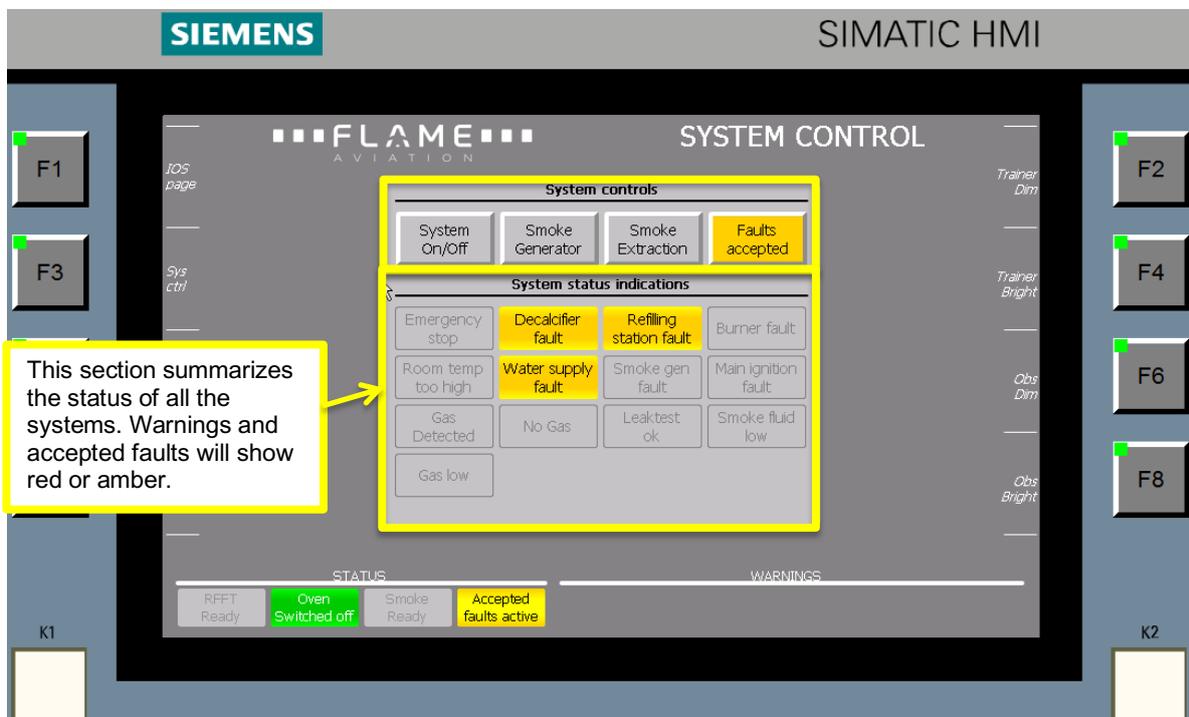


Figure 27 - Explanation system controls

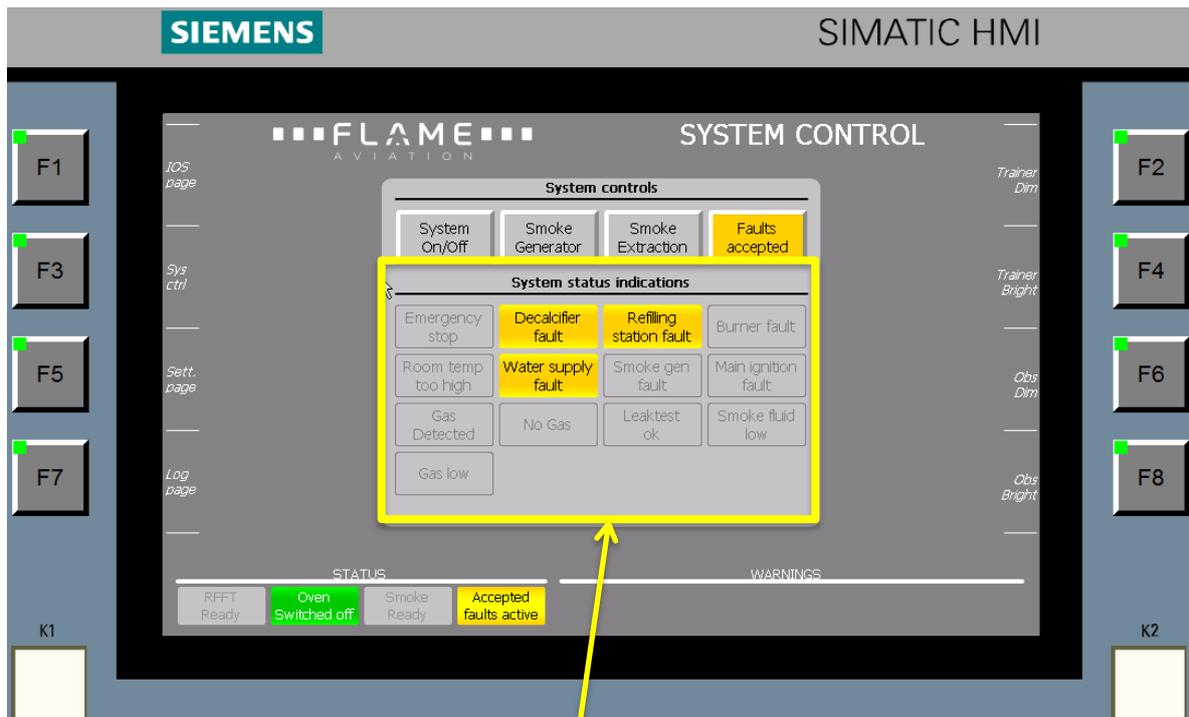


Figure 28 - System status indications explanation

System status indications

- 'Emergency stop': emergency stop button is activated
- 'Decalcifier fault': decalcifier is not working
- 'Refilling station fault': refilling unit is not working
- 'Burner fault': burner is not igniting after 4 attempts
- 'Room temp too high': the preset value is exceeded
- 'Water supply fault': there is not water flow detected by the filling station
- 'Smoke gen fault': smoke generator is not responding for at least 10 min
- 'Main ignition fault': main burner is not igniting
- 'Gas detected': the gas detection system has detected gas
- 'No gas': no gas available
- 'Leak test ok/not ok': indicates the outcome of the leak test
- 'Smoke fluid low': smoke fluid reservoir almost empty
- 'Gas low': gas pressure is low in the system

The maintenance manual contains a troubleshooting section and Job Guides on how to solve issues.

9. SETTINGS PAGE

The Settings page offers the possibility to customize particular settings. This page is password protected and shall only be accessible for authorized instructors.



NOTE

This settings page can be used to change the parameters (in the white boxes) used for training. Note that changes can have a negative effect on the training experience.

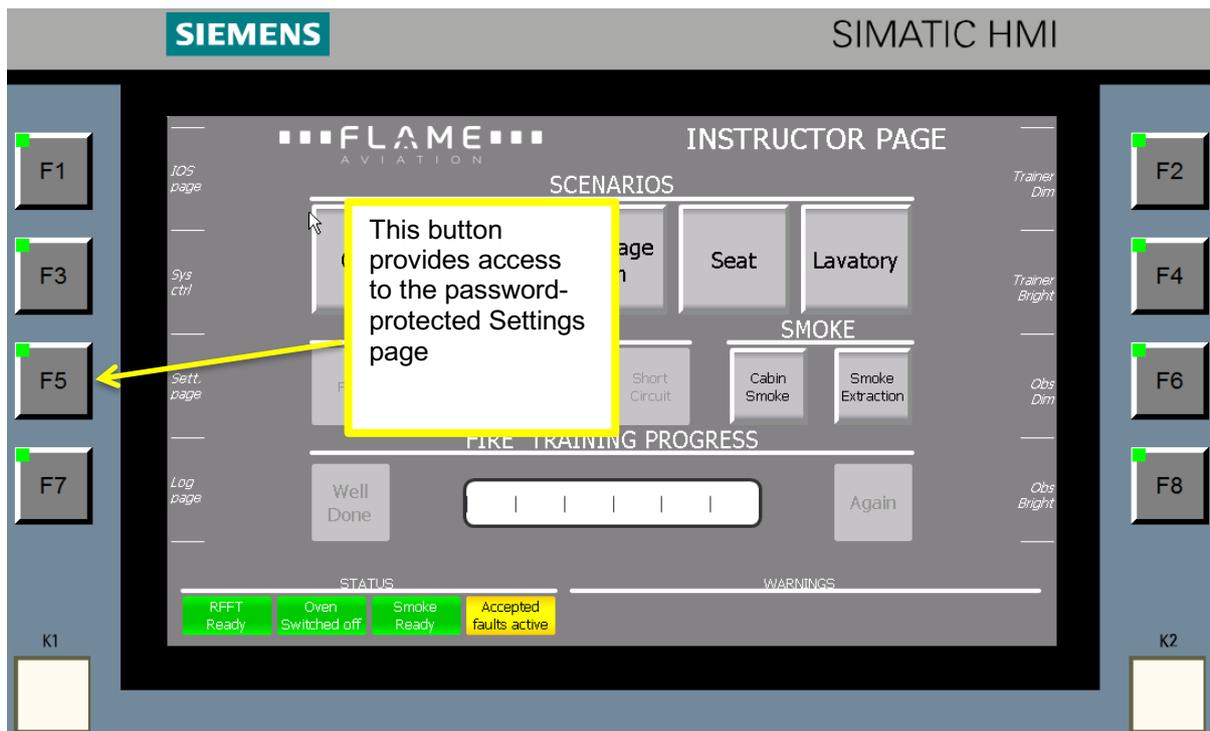


Figure 29 - Access to settings page

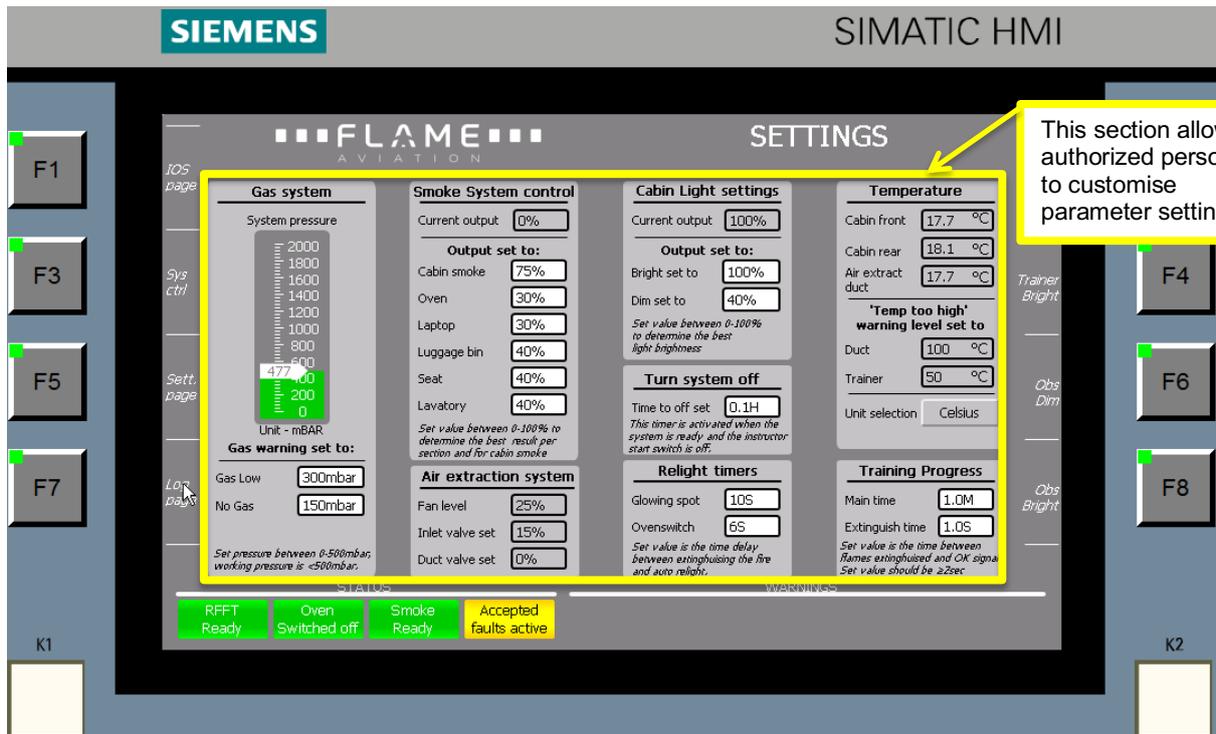


Figure 30 - Settings page overview, with default values

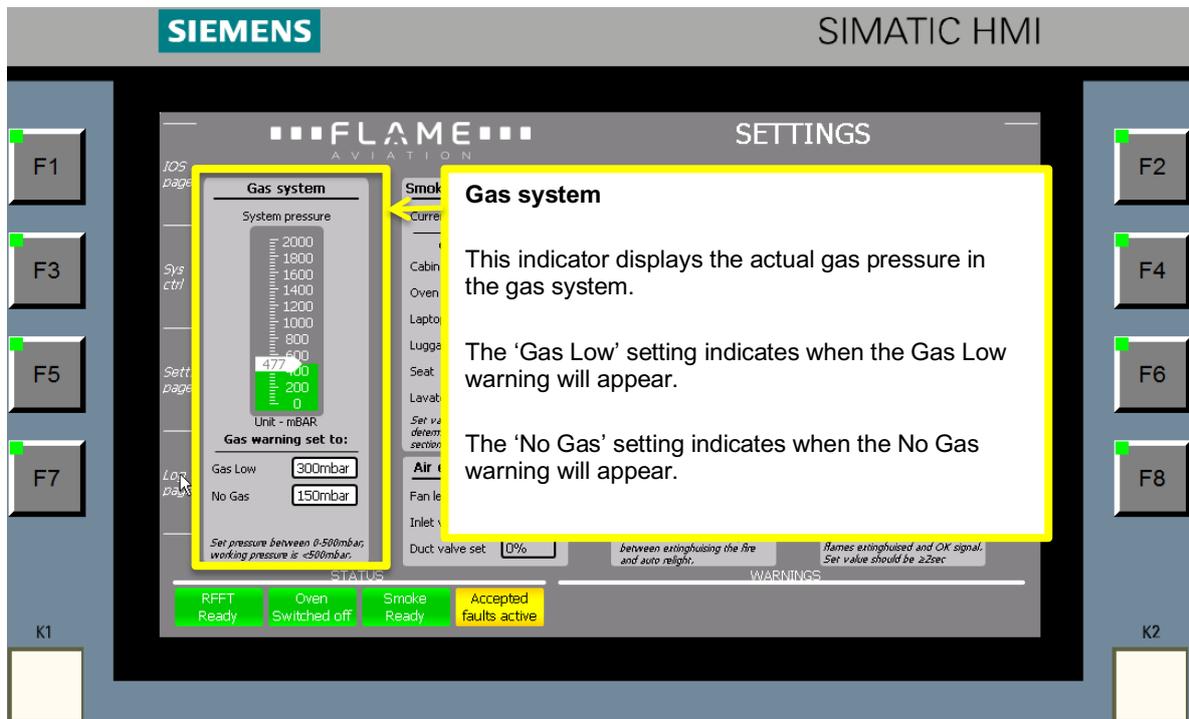


Figure 31 - Gas system

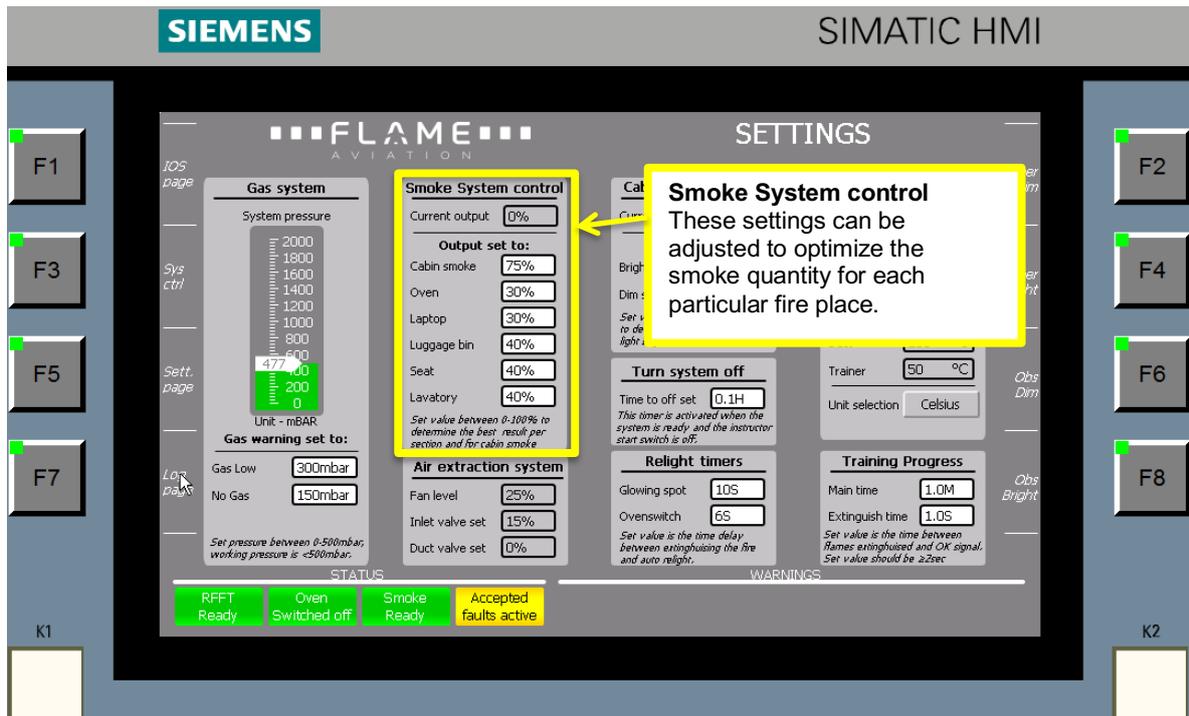


Figure 32 - Smoke system

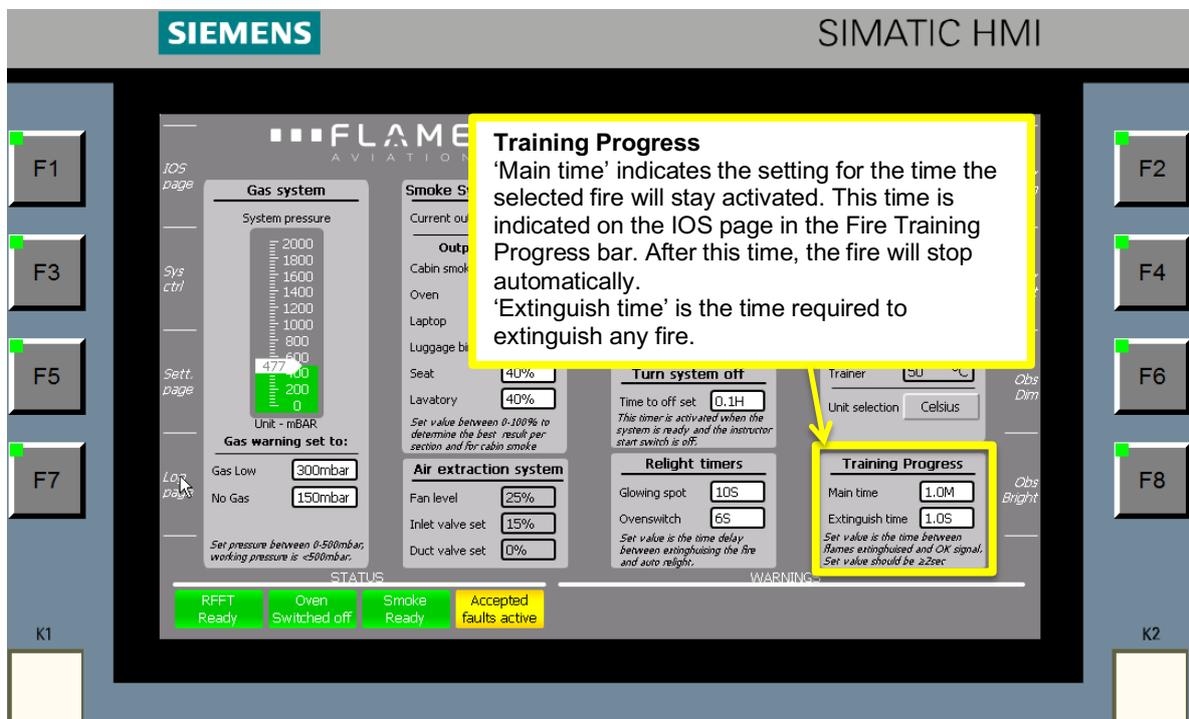


Figure 33 - Training progress

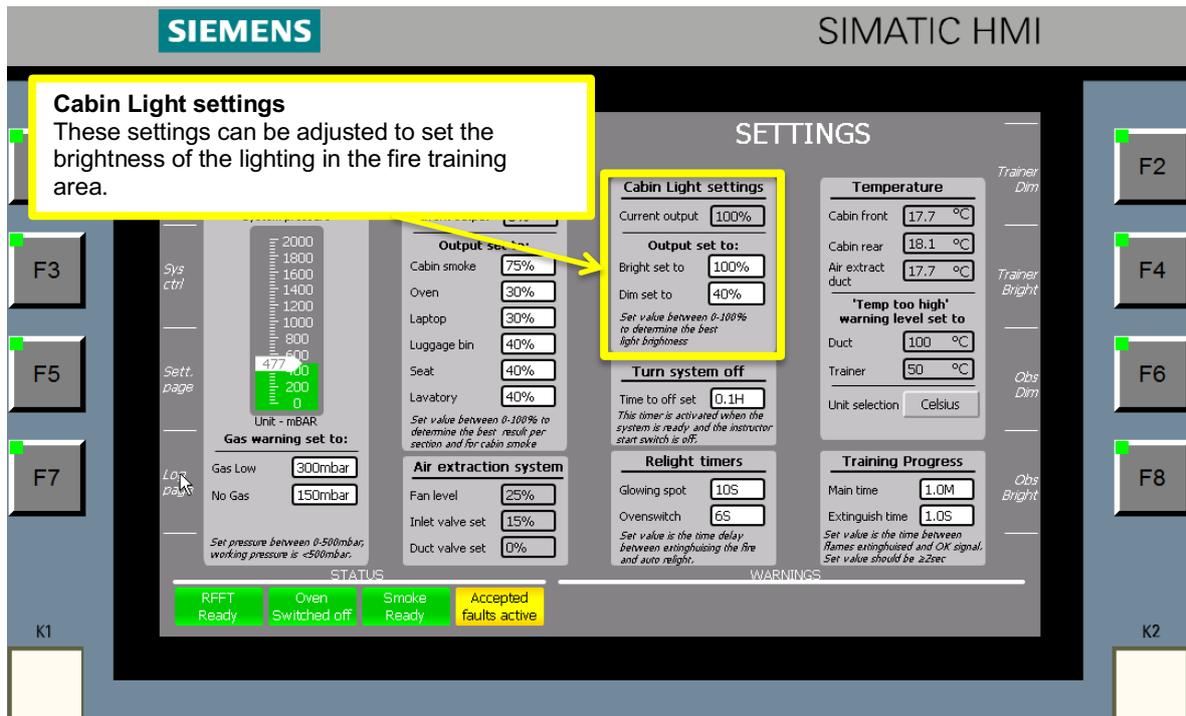


Figure 34 - Cabin light settings

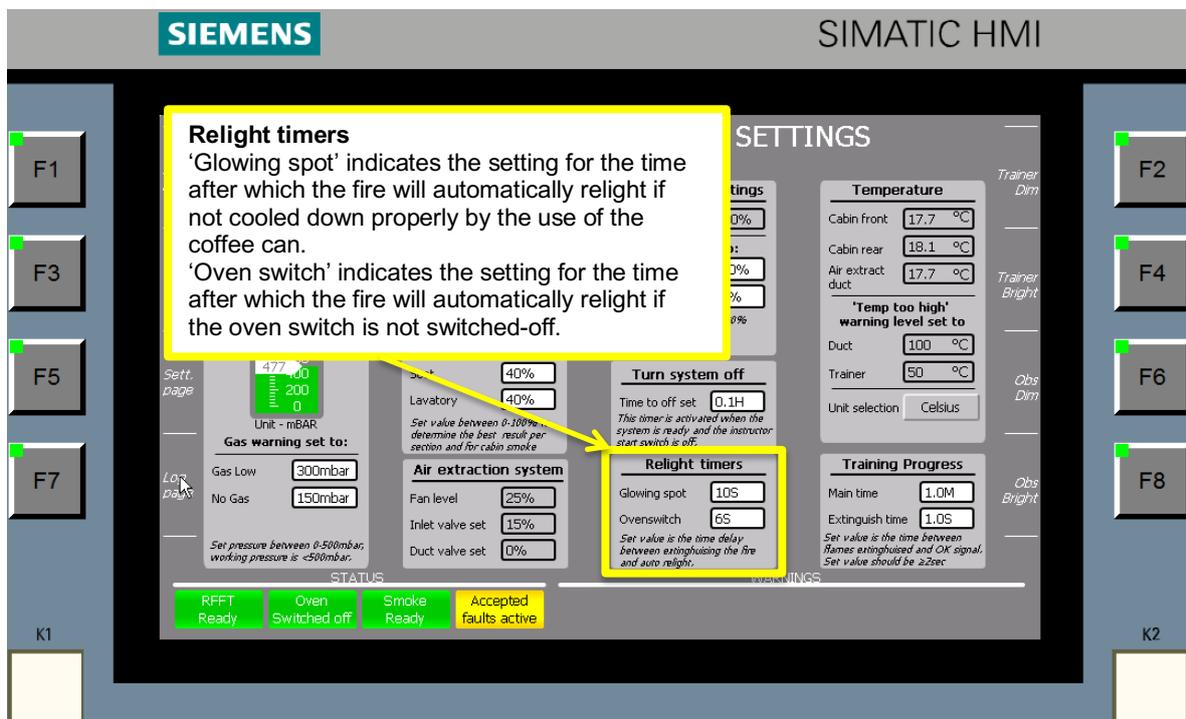


Figure 35 - Relight timers

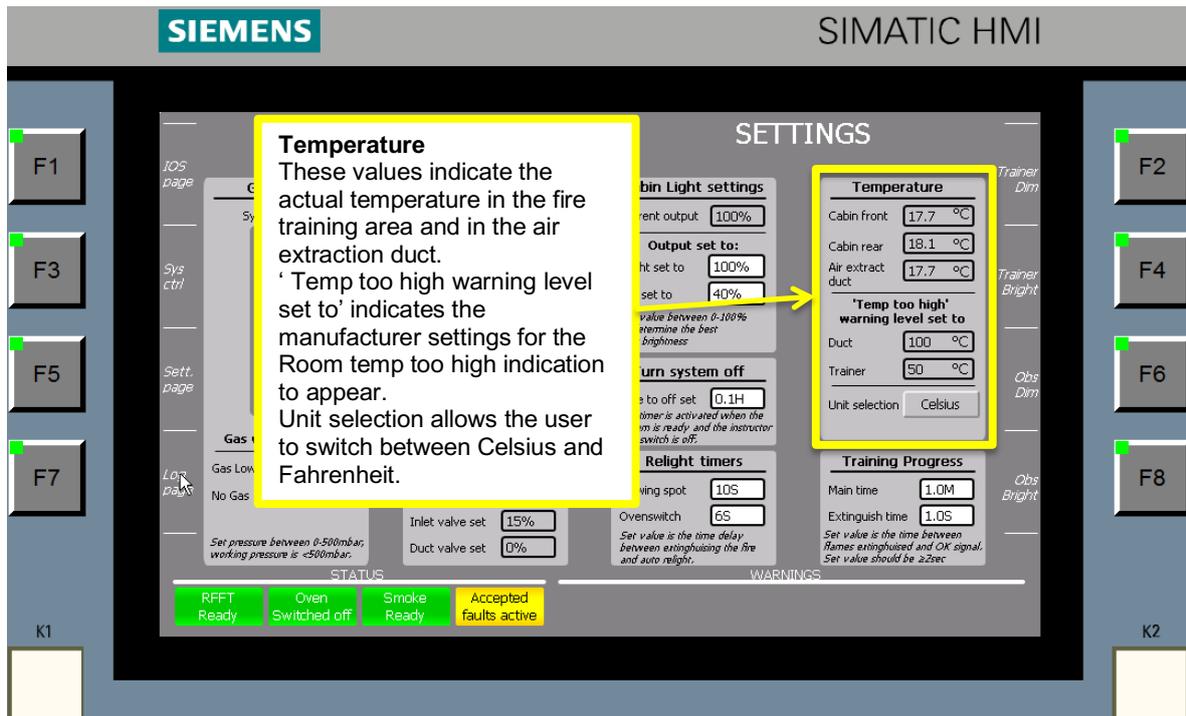


Figure 36 - Temperature settings

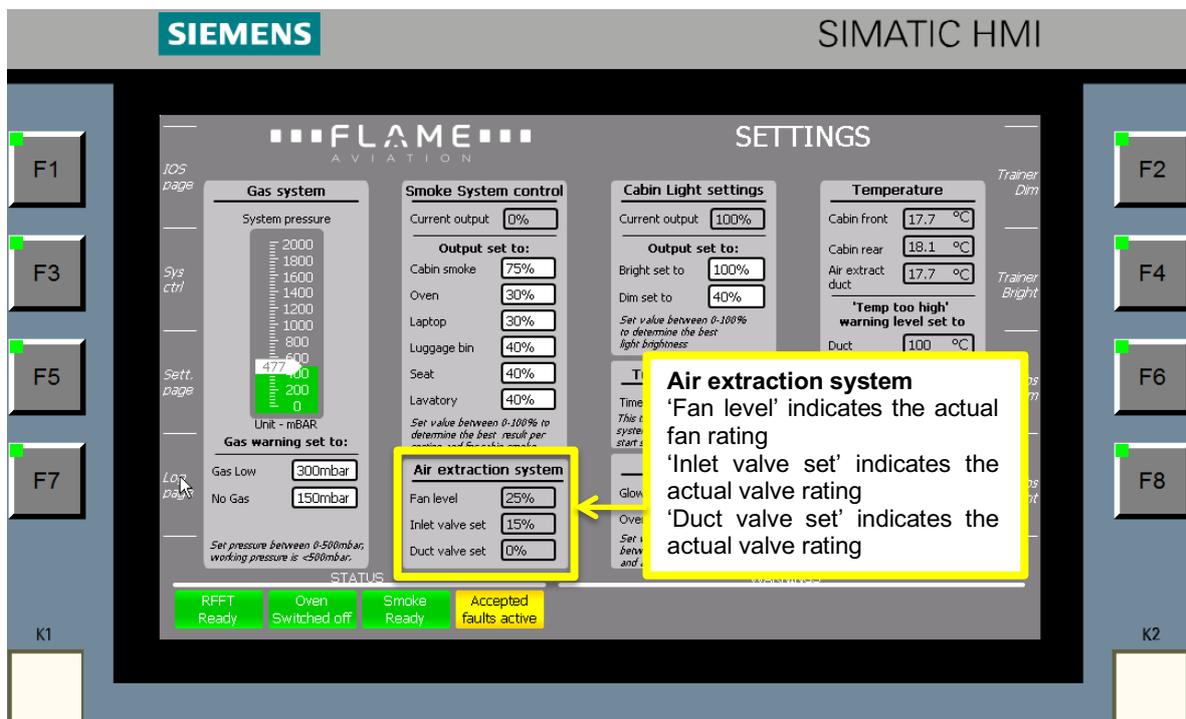


Figure 37 - Air extraction system

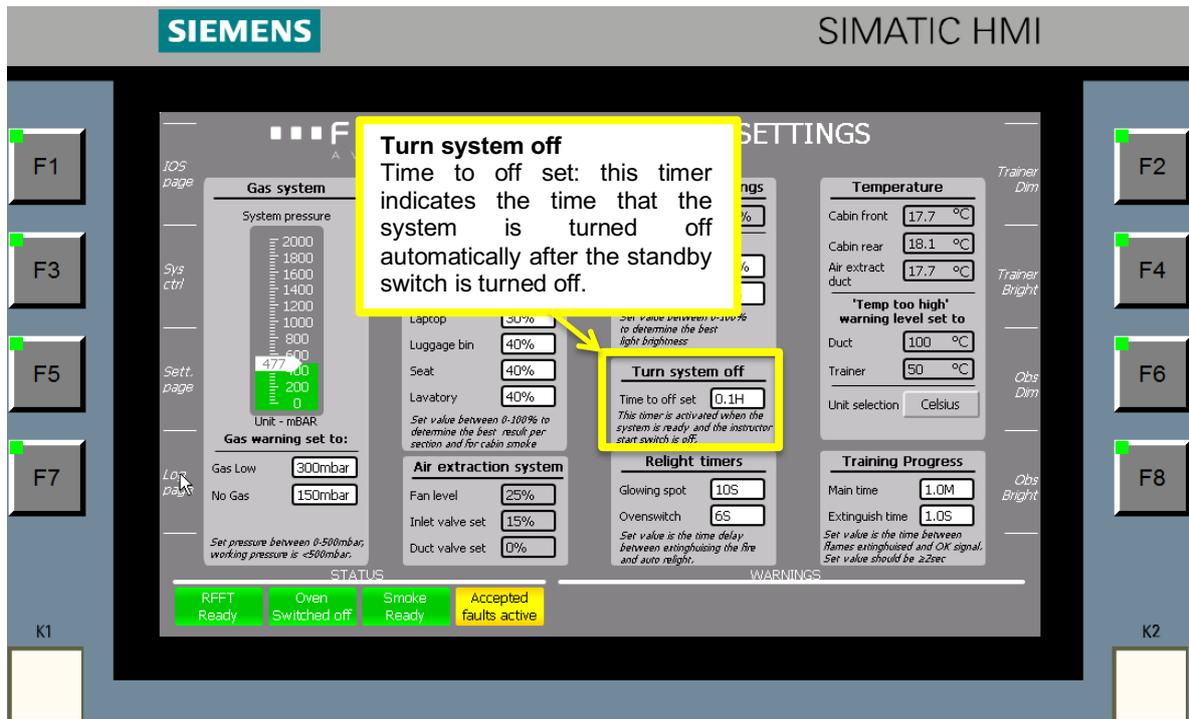


Figure 38 - Turn system off

10. ALARM LOGGING PAGE

The alarm logging page can be used to see the logged alarms, e.g. E-stop, Room temperature too high, etc.

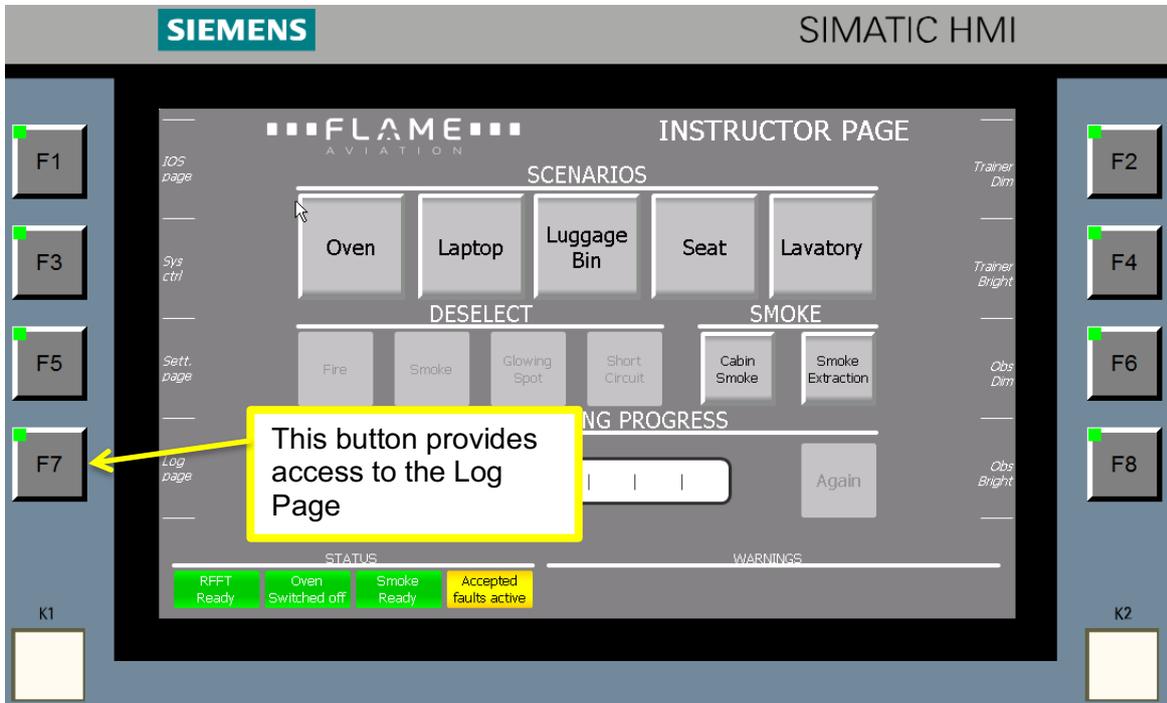


Figure 39 - Access to Log page

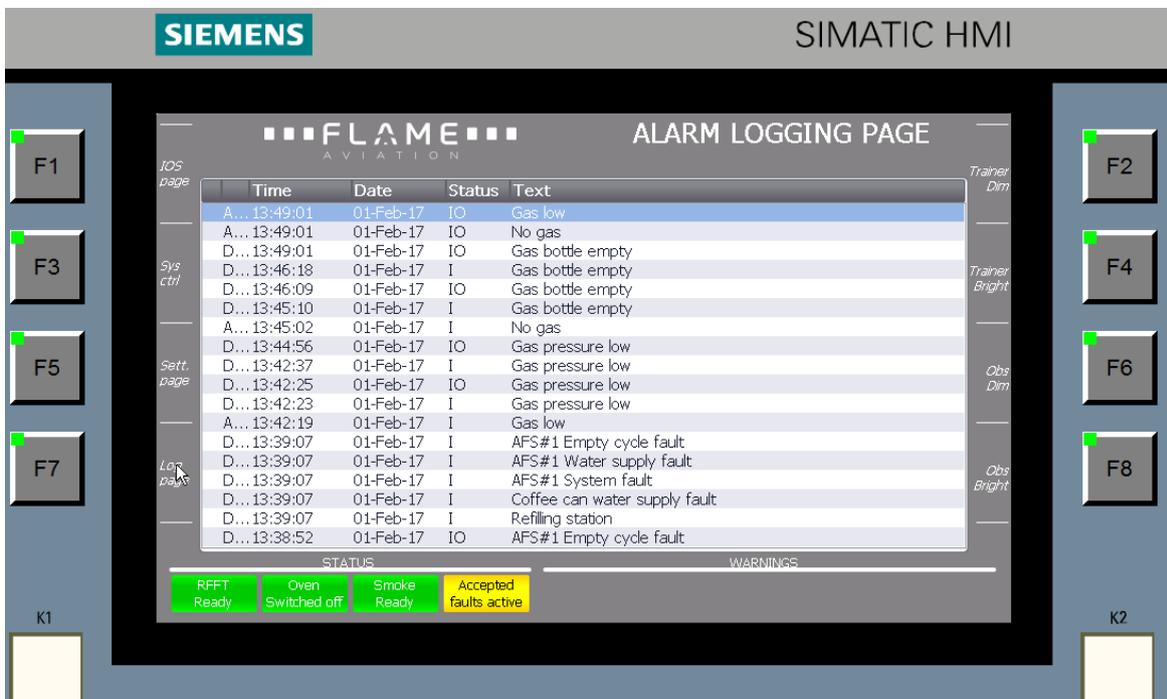


Figure 40 - Log page