

Engineering Support Personnel, Inc.

Reconfigurable Aviation Crew Trainer (ReACT)



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ReACT OVERVIEW

Engineering Support Personnel, Inc., (ESP) has developed an affordable, flight simulator utilizing Lockheed Martin Professional Prepar3D®. Meet the **“ReACT”**. The **ReACT**, modeled after the 737-800, is an affordable system used for flight procedures, aircraft startup, flight, and shut-down. You can perform landing approaches, holding procedures, VOR tracking, fly pre-loaded missions or “Free Fly”. Our device is designed to be used by anyone. No special training is required. The **ReACT** comes complete with all features offered by Prepar3D® such as 24,900 airports, realistic air traffic control, accurate topography and more. The **ReACT** can easily be transported and setup anywhere. As long as standard 15amp outlet power is available, the **ReACT** can be utilized. Optional network interfacing to allow for real weather (OPUSFSX) information can be used. The **ReACT** utilizes off the shelf hardware. Basic Features and Capabilities of the ReACT include:

Electrical system

All major buses are simulated. Major components in the simulation include:

- Batteries
- Three Transformer/Rectifier units
- Static inverter
- Cross bus tie relay (connects DC buses)
- Bus transfer relays (connects AC buses)
- Standby bus relays

Electrically operated valves will not function when no power is available. All electric equipment will draw power from the bus they are connected to. This allows realistic operation of the BAT DISCHARGE light.

Pneumatic system

The pneumatic system is fed with bleed air from the engines or APU. Engine bleed air uses air from the 5th and 9th stage of the engine. A valve will shut off the high stage on high engine settings. The bleed trip system will monitor the pressure in the ducts and shutoff the system when pressure is too high. Bleed trips can be reset with the trip reset button. Leaks in the air ducts are simulated and will overheat the wing body. Temperature is calculated from the dynamic pressure on the wing and the internal bleed air temperature.

Air-conditioning packs will condition bleed air for use in the cabin. Fluid dynamics calculations are used to calculate the cabin pressure. These will drive the Cabin Alt, Pressure differential and Cabin VSI gauges. The cabin outflow valve can be automatically controlled, but can also be operated manually. The outside pressure is taken from flight simulator. In automatic mode, the outflow valve will try to maintain a maximum of 700 feet/minute cabin VSI. Currently, there is no modeling for the cruise alt/land alt setting.

Fuel system

The fuel system contains the tanks and fuel ducts. Based on the pitch and bank of the aircraft one or more fuel pumps can indicate a “low pressure” warning. This is a dual channel indication, meaning that both lights must be on before a master caution situation occurs. On recall, a single low pressure light will be indicated in the master caution system. Fuel consumption in flight simulator is taken from the correct tank, based on the configuration of the fuel system.

Hydraulic system

Both system A, B and the standby system are modeled. When no pressure is available, control of the aircraft is inhibited in flight simulator. Alternate flap extension is modeled, but most hardware flap controllers overwrite the flap settings, so in that case, the alternate flap extension will not work.

Heating system

Probe heats and window heat is modeled. The window temperature is calculated from outside air temperature and dynamic pressure on the window. This will also shut off the window heat power and trigger an overheat condition.

Fire detection

A complete fire detection system is modeled. Both engines have two detection loops, which can have faults. Faulty detection loops will not detect fires. The test switch on the fire panel can test the loops. Turning a fire handle will result in engine shutdown and will inhibit hydraulic low pressure lights. The cargo fire system is also modelled with independent detection loops.

Master caution system

The master caution system contains twelve lights for indicating new situations on the overhead panel. Pushing the master caution button reset the lights. The recall button will turn on all lights when pressed down and will show all active indications when released.

IRS system

The IRS system models two independent IRS systems. These systems do not control flight simulator at the moment. The units will be subject to drift in both speed/heading calculations and position calculations. Speed/Heading drift can be realigned in flight by turning the switches to “Align”. This will start a 10 seconds quick alignment. Position drift can only be aligned on the ground and will take several minutes, depending on the latitude of the aircraft.

1. **General:** The **ReACT** is representative of the B737-800 aircraft. It is designed and manufactured with strict quality control, and in accordance with professional industry standards.
2. **Certification Criteria:** The **ReACT** is in the process of becoming FAA BATD certified.
3. **Flight Deck:** The seating consists of (Pilot and Copilot), fully adjustable pilot seats, with head-rests and adjustable vibration.
4. **Panels and Hardware:** The **ReACT** has five (5) 24" LED "touch panels" displaying B737 style hardware with 90% realistic knobs, buttons, and switches.
5. **Yoke Controls:** The dual yoke flight controls are representative of the B737 aircraft, with a complete set of functional buttons and switches, AP Disconnect, PTT, etc. The controls are heavy-duty.
6. **Rudder Controls:** The dual rudder controls are representative B737 rudder pedals with functional toe-brakes. A functional B737 style Rudder Trim panel is provided and installed on the center console, in the appropriate position.
7. **Throttle Quadrant:** The throttle quadrant is a replica of the B737, and is of aircraft quality, with fully functional heavy-duty components, including dual lever throttles with Auto Throttle, TOGA switches, thrust-reversers, spoilers, flaps, and parking brake, and all other relevant buttons, lights, indicators, and switches.



8. **Pitch Trim:** The pitch trim is electronic, and is controlled by the dual yoke mounted switches.
9. **Other Controls:** Fully functional controls for the landing-gear (virtual handle) are installed.
10. **Instrument Panels:** All of the panels, including main instrument panel, overhead panel, center pedestal, and side panels, accurately represent the B737 panels, and include all of the instrument displays, FMS/CDU, controls, and equipment, properly positioned and installed, in a sturdy and secure manner.



FWD Overhead



AFT Overhead



Center Pedestal

11. **Flight Instrumentation and Avionics:** The ReACT is equipped with a realistic representation of the B737 "Glass Cockpit", with high-resolution instrumentation graphics displayed on LCD monitors, and realistic representation of the avionics as found in the aircraft. The composite standby instrument (ASI, ADI and Altimeter) is accurately positioned and displayed, as a functional replica of the real instrument.

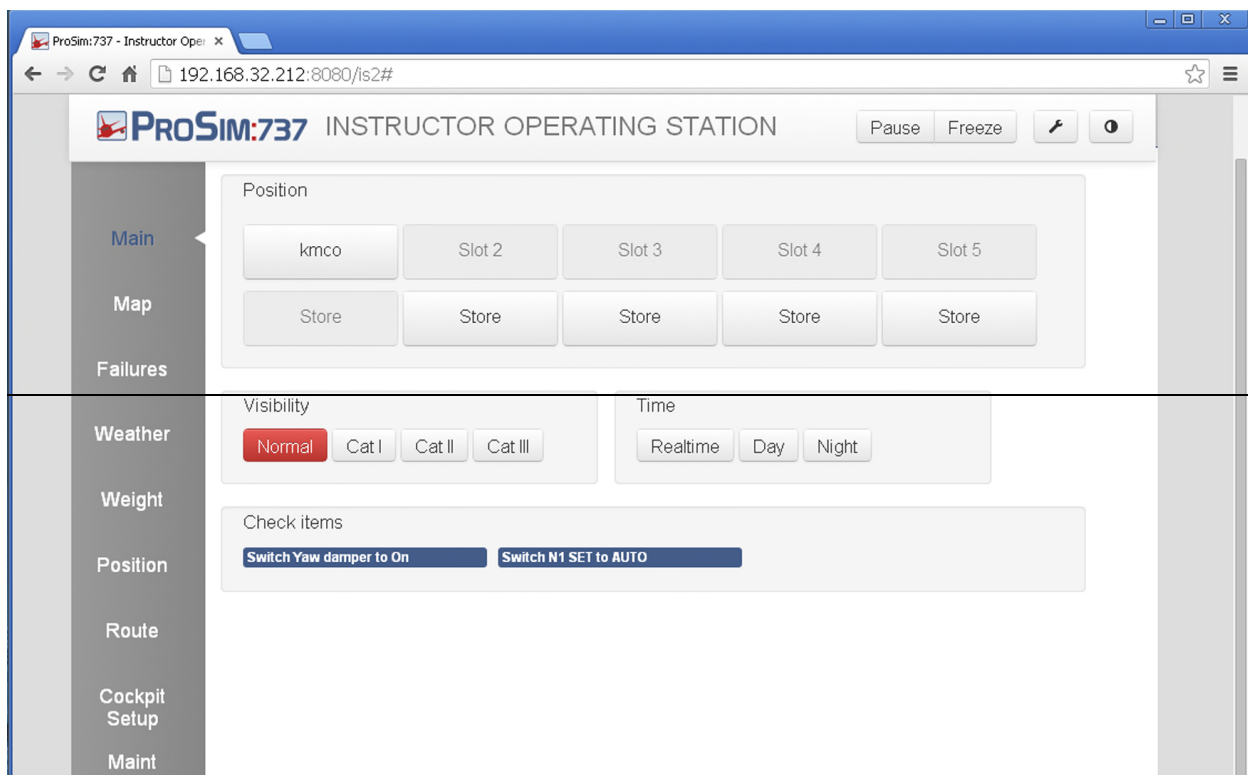


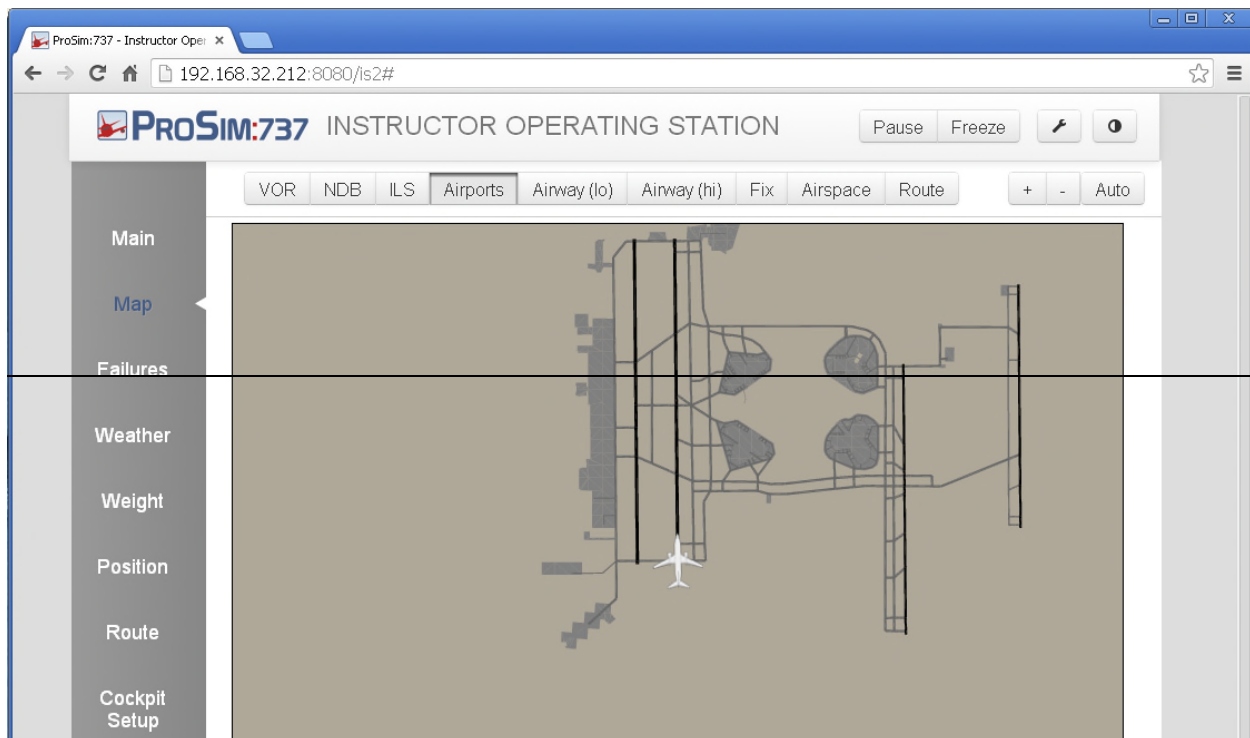
12. **FMS:** Dual integrated FMS/FMC units. The two (2) Flight Management Computer (FMC) modules are replicas of the real aircraft units with the same shape and size.



13. **Systems:** The major systems representing the B737 aircraft are supported, including Air Conditioning, Pressurization, Automatic Flight, APU, Communications (simulated radio tuning), Electrical, Emergency Equipment, Fire Protection, Flight Controls, FMS, Fuel, Hydraulics, Ice & Rain Protection, Landing Gear, Navigation, Pneumatics, Power Plant, and Warning Systems.
14. **Flight Model:** The flight model is realistic and adaptable. It is user-adjustable from the Instructor Station to accommodate changes in flight conditions, such as weight, CG, Configuration, etc., with minimum ease. The data is derived from manufacturer specifications, and represents the general handling and performance qualities of the B737 type of aircraft.
15. **Sound:** The sound effects are what are found in Prepar3D® using a multiple-channel, premium sound system. There multiple selection of Warning and Caution messages are accompanied with the proper Auditory Alerts.
16. **MCP Panel:** The glare-shield is equipped with the MCP/EFIS panel that is heavy-duty, fully functional, highly accurate, with integrated Autopilot functions, and Pilot controlled modes.

- 17. Navigational Database:** The **ReACT** has the Prepar3D® database available as delivered. It includes highly detailed scenery and terrain reflecting the actual landscape, structures, and hazards of the real environment. The database can be updated by the user.
- 18. Instructor Station:** A Graphical Instructor Console and Station is provided, which also controls the start and shut-down operation of the device. It consists of a single LCD monitor, keyboard, and mouse. It allows the instructor to control and monitor the **ReACT**.





19. **Visual System:** The visual system is a five-channel, high resolution system with a world-wide database, and provides an accurate representation of the terrain. It consists of a library of over 24,900 airports, 40 high-detailed cities, with high resolution, highly detailed, major US and international airports, with accurate modeling and representation of the airport terminal, ramp, runway, signage, lighting, and surrounding environment. The display system consists of five (5) wrap-around high-resolution 42" LCD screens.
20. **Computer System:** The computer system is installed in a separate, heavy-duty computer cabinet, with the computers connected through a LAN-based Ethernet system, with dedicated Host, IOS, Image Generator, and other supporting computers.
21. **Documentation:** The **ReACT** is accompanied with a complete set of Operating and Maintenance Manuals, with provisions for updates and revisions, as required.
22. **Training:** Upon completion of the delivery, installation, and set-up of the **ReACT** at the training facility, complete on-site operator and maintenance training is provided for the safe and proper operation of the device.
23. **Warranty and Support:** Standard Technical Support and Limited Warranty for Parts and Labor for a 180 day period are included, with an Extended Limited Warranty available as an option.
24. **Total Price (excluding crating, shipping, duties, taxes, tariffs): \$350,000 USD**

MALFUNCTION LIST

(Not all inclusive)

ATA 22 - Auto Flight

----- Autopilot failure

Name: CMD A

Description: CMD A failure

Help: CMD A failed and is unavailable

Name: CMD B

Description: CMD B failure

Help: CMD B failed and is unavailable

----- F/D failure

Name: Left

Description: F/D left failure

Help: Left F/D failed and is unavailable

Name: Right

Description: F/D right failure

Help: Right F/D failed and is unavailable

----- A/T failure

Name: A/T

Description: A/T failure

Help: A/T failed and is unavailable

ATA 23 - Communications

----- SELCAL

Name: FAIL

Description: SELCAL Failure

Help: SELCAL failed

ATA 24 - Electrical power

----- Transfer bus

Name: Left

Description: TransBus1

Help: The TransBus1 bus has failed

Name: Right

Description: TransBus2

Help: The TransBus2 bus has failed

Main bus

Name: Left
Description: MainBus1
Help: The MainBus1 bus has failed

Name: Right
Description: MainBus2
Help: The MainBus2 bus has failed

----- Galley bus

Name: Left
Description: GalleyBusLeft
Help: The GalleyBusLeft bus has failed

Name: Right
Description: GalleyBusRight
Help: The GalleyBusRight bus has failed

----- IFE bus

Name: Left
Description: IFEBusLeft
Help: The IFEBusLeft bus has failed

Name: Right
Description: IFEBusRight
Help: The IFEBusRight bus has failed

----- AC Standby

Name: ACStandbyBus
Description: ACStandbyBus
Help: The ACStandbyBus bus has failed

----- DC bus

Name: Left
Description: DCBus1
Help: The DCBus1 bus has failed

Name: Right
Description: DCBus2
Help: The DCBus2 bus has failed

----- DC Standby

Name: DCStandbyBus
Description: DCStandbyBus
Help: The DCStandbyBus bus has failed

----- Battery bus

Name: BattBus
Description: BattBus
Help: The BattBus bus has failed

----- Hot battery bus

Name: HotBattBus
Description: HotBattBus
Help: The HotBattBus bus has failed

----- Switched battery bus

Name: SwitchedHotBattBus
Description: SwitchedHotBattBus
Help: The SwitchedHotBattBus bus has failed

----- Ground service bus

Name: GroundServicesBus
Description: GroundServicesBus
Help: The GroundServicesBus bus has failed

----- Generator

Name: 1
Description: Generator 1
Help: Electric generator has failed and will not provide any electric power.

Name: 2
Description: Generator 2
Help: Electric generator has failed and will not provide any electric power.

----- Generator disconnect

Name: 1
Description: Generator 1 disconnect
Help: Electric generator has been disconnected from the engine and will not provide any power. Generator can only be reconnected on the ground.

Name: 2

Description: Generator 2 disconnect

Help: Electric generator has been disconnected from the engine and will not provide any power. Generator can only be reconnected on the ground.

----- Battery

Name: Battery

Description: Battery

Help: Battery has been depleted and cannot provide any power.

Name: Aux Battery

Description: Aux Battery

Help: Aux Battery has been depleted and cannot provide any power.

----- TR Failure

Name: TR 1

Description: TR 1 failure

Help: Transformer/Rectifier unit has failed and will not provide DC power.

Name: TR 2

Description: TR 2 failure

Help: Transformer/Rectifier unit has failed and will not provide DC power.

Name: TR 3

Description: TR 3 failure

Help: Transformer/Rectifier unit has failed and will not provide DC power.

----- Overload

Name: Minor

Description: Overload 1

Help: Overload condition exists.

Name: Major

Description: Overload 2

Help: Overload condition exists.

----- Static inverter

Name: Static inverter

Description: Static inverter

Help: Static inverter has failed and will not be able to provide AC power from the battery system. Crew should establish AC power source from a generator or external power.

----- Source off

Name: left

Description: Source off left

Help: The power source has been shutoff. Crew should reconnect power.

Name: right

Description: Source off right

Help: The power source has been shutoff. Crew should reconnect power.

ATA 26 - Fire protection

----- Fire

Name: Engine 1

Description: Fire engine 1

Help: Fire in the left engine has been detected.

Name: Engine 2

Description: Fire engine 2

Help: Fire in the right engine has been detected.

Name: APU

Description: Fire APU

Help: Fire in the APU has been detected.

----- Overheat

Name: Engine 1

Description: Overheat engine 1

Help: An overheat in the left engine has been detected.

Name: Engine 2

Description: Overheat engine 2

Help: An overheat in the right engine has been detected.

----- Fire bottle discharged

Name: L bottle

Description: L bottle discharged

Help: The L bottle has discharged.

Name: R bottle

Description: R bottle discharged

Help: The R bottle has discharged.

Name: APU bottle

Description: APU bottle discharged

Help: The APU bottle has discharged.

----- Loop failure

Name: Engine 1 loop A

Description: Engine 1 loop A

Help: Engine 1 loop A overheat detection has failed. Crew should switch fire detection to the working loop.

Name: Engine 1 loop B

Description: Engine 1 loop B

Help: Engine 1 loop B overheat detection has failed. Crew should switch fire detection to the working loop.

Name: Engine 2 loop A

Description: Engine 2 loop A

Help: Engine 2 loop A overheat detection has failed. Crew should switch fire detection to the working loop.

Name: Engine 2 loop B

Description: Engine 2 loop B

Help: Engine 2 loop B overheat detection has failed. Crew should switch fire detection to the working loop.

Name: APU

Description: APU loop

Help: APU overheat detection has failed. Crew should switch fire detection to the working loop.

----- Smoke

Name: Lavatory

Description: Lavatory smoke

Help: Smoke has been detected in a lavatory.

----- Cargo fire

Name: fwd

Description: Cargo fire fwd

Help: A fire in the fwd cargo compartment has been detected

Name: aft

Description: Cargo fire aft

Help: A fire in the aft cargo compartment has been detected

----- Cargo fire loop

Name: fwd A

Description: Cargo fire fwd detection loop A

Help: Cargo fire fwd detection loop A has failed. Crew should switch fire detection to the working loop.

Name: fwd B

Description: Cargo fire fwd detection loop B

Help: Cargo fire fwd detection loop B has failed. Crew should switch fire detection to the working loop.

Name: aft A

Description: Cargo fire aft detection loop A

Help: Cargo fire aft detection loop A has failed. Crew should switch fire detection to the working loop.

Name: aft B

Description: Cargo fire aft detection loop B

Help: Cargo fire aft detection loop B has failed. Crew should switch fire detection to the working loop.

ATA 27 - Flight controls

----- Speed brake

Name: Do not arm

Description: Speed brake do not arm

Help: Speed brake do not arm light

----- Rudder Trim

Name: Actuator

Description: Rudder Trim Actuator fail

Help: Rudder Trim Actuator failure.

Name: Transducer

Description: Rudder Trim Transducer fail

Help: Rudder Trim Transducer failure.

----- Trim

Name: Speed trim

Description: Speed trim fail

Help: Speed trim system failure.

Name: Mach trim

Description: Mach trim fail

Help: Mach trim system failure.

----- Auto slat

Name: Auto slat

Description: Auto slat fail

Help: Auto slat system failure.

ATA 28 - Fuel

----- Fuel pump left

Name: Fuel Left Aft

Description: Fuel Left Aft pump

Help: The fuel pump has failed.

Name: Fuel Left Fwd

Description: Fuel Left Fwd pump

Help: The fuel pump has failed.

----- Fuel pump center

Name: Fuel Center Left

Description: Fuel Center Left pump

Help: The fuel pump has failed.

Name: Fuel Center Right

Description: Fuel Center Right pump

Help: The fuel pump has failed.

----- Fuel pump right

Name: Fuel Right Aft

Description: Fuel Right Aft pump

Help: The fuel pump has failed.

Name: Fuel Right Fwd

Description: Fuel Right Fwd pump

Help: The fuel pump has failed.

----- Filter bypass

Name: Left

Description: Filter bypass left

Help: Fuel filter is being bypassed because of fuel contamination. Crew should monitor engine performance.

Name: Right

Description: Filter bypass right

Help: Fuel filter is being bypassed because of fuel contamination. Crew should monitor engine performance.

ATA 29 - Hydraulic power

----- Hydraulic pump

Name: Eng 1

Description: Hyd ENG1

Help: Pump has failed and will not produce any output.

Name: Eng 2

Description: Hyd ENG2

Help: Pump has failed and will not produce any output.

----- Elec Hydraulic Partial

Name: Hyd ELEC2

Description: Hyd ELEC2 partial failure

Help: Electric hydraulic pump is not efficient. Crew should shut down this pump to avoid overheat.

Name: Hyd ELEC1

Description: Hyd ELEC1 partial failure

Help: Electric hydraulic pump is not efficient. Crew should shut down this pump to avoid overheat.

----- Elec Hydraulic Total

Name: Hyd ELEC2

Description: Hyd ELEC2 total failure

Help: Electric hydraulic pump failed.

Name: Hyd ELEC1

Description: Hyd ELEC1 total failure

Help: Electric hydraulic pump failed.

----- Standby pump

Name: Standby pump

Description: Hyd Standby pump

Help: Standby pump failure. The pump will not provide any pressure.

----- Low quantity

Name: Hydraulic standby

Description: Standby hyd low quantity

Help: Standby hydraulic fluid level is too low. Standby pump will not provide pressure.

ATA 30 - Ice and rain protection

----- Heating Captain

Name: Capt Pitot Heat

Description: Capt Pitot Heat

Help: The heating element has failed and is unable to provide heating.

Name: Alpha Vane Heat L

Description: Alpha Vane Heat L

Help: The heating element has failed and is unable to provide heating.

Name: Elev pitot Heat L

Description: Elev pitot Heat L

Help: The heating element has failed and is unable to provide heating.

Name: tempProbe Heat

Description: tempProbe Heat

Help: The heating element has failed and is unable to provide heating.

----- Heating F/O

Name: Copilot Pitot Heat

Description: Copilot Pitot Heat

Help: The heating element has failed and is unable to provide heating.

Name: Alpha Vane Heat R

Description: Alpha Vane Heat R

Help: The heating element has failed and is unable to provide heating.

Name: Elev pitot Heat R

Description: Elev pitot Heat R

Help: The heating element has failed and is unable to provide heating.

Name: auxPitot Heat

Description: auxPitot Heat

Help: The heating element has failed and is unable to provide heating.

----- Window heat

Name: Side L

Description: Window heat Side L element

Help: The window heating element will not provide heating.

Name: FWD L

Description: Window heat FWD L element

Help: The window heating element will not provide heating.

Name: Side R
Description: Window heat Side R element
Help: The window heating element will not provide heating.

Name: FWD R
Description: Window heat FWD R element
Help: The window heating element will not provide heating.

----- Cowl overpressure

Name: Left
Description: Cowl overpressure L
Help: A cowl anti ice overpressure situation has been detected. Crew should close the cowl anti ice valve.

Name: Right
Description: Cowl overpressure R
Help: A cowl anti ice overpressure situation has been detected. Crew should close the cowl anti ice valve.

ATA 31 - Indicating/Recording system

----- P6-5

Name: A4
Description: CB RCCB Remote
Help: CB RCCB Remote popped

----- P6-3

Name: D18
Description: CB Landing Gear Aural Warn
Help: CB Landing Gear Aural Warn popped

Name: C18
Description: CB Landing Gear TO Warning Cutoff
Help: CB Landing Gear TO Warning Cutoff popped

Name: B7
Description: CB Fuel Cross-feed Valve
Help: CB Fuel Cross-feed Valve popped

Name: C16
Description: CB PSEU SYS 1
Help: CB PSEU SYS 1 popped

Name: C15
Description: CB PSEU SYS 2
Help: CB PSEU SYS 2 popped

----- P18-2

Name: E4
Description: CB Stick Shaker Left
Help: CB Stick Shaker Left popped

----- P6-1

Name: B6
Description: CB Stick Shaker Right
Help: CB Stick Shaker Right popped

----- P6-2

Name: B9
Description: CB Auto Speed Brake
Help: CB Auto Speed Brake popped

----- DEU

Name: 1
Description: DEU 1 failure
Help: DEU 1 has failed on cannot drive the associated instruments

Name: 2
Description: DEU 2 failure
Help: DEU 2 has failed on cannot drive the associated instruments

----- P18-1

Name: B7
Description: CB GPWS
Help: CB GPWS popped

ATA 32 - Landing gear

----- Brake Temp

Name: LEFT
Description: Left Gear brake temp increase.
Help: Left Gear temperature will increase abnormally

Name: RIGHT
Description: Right Gear brake temp increase.
Help: Right Gear temperature will increase abnormally

----- Anti-Skid

Name: INOP

Description: Anti-Skid inoperative

Help: Anti-Skid inoperative

----- Gear lock

Name: Nose

Description: Nose gear does not lock

Help: Nose gear does not lock

Name: Right

Description: Right main gear does not lock

Help: Right gear does not lock

Name: Left

Description: Left main gear does not lock

Help: Left gear does not lock

ATA 34 - Navigation

----- XPDR

Name: 1

Description: XPDR 1 Fail

Help: XPDR 1 Fail

Name: 2

Description: XPDR 2 Fail

Help: XPDR 2 Fail

----- SMYD

Name: Left

Description: SMYD Left Fault

Help: SMYD left has failed

Name: Right

Description: SMYD Right Fault

Help: SMYD right has failed

----- GPS

Name: Left

Description: Left GPS fail

Help: GPS Left has failed.

Name: Right
Description: Right GPS fail
Help: GPS Right has failed.

----- IRS total failure

Name: Left
Description: IRS left total failure
Help: The IRS left unit has failed. No data is available from this device.

Name: Right
Description: IRS right total failure
Help: The IRS right unit has failed. No data is available from this device.

----- IRS position failure

Name: Left
Description: IRS left position failure
Help: The IRS left unit has failed. Only attitude data is available from this device.

Name: Right
Description: IRS right position failure
Help: The IRS right unit has failed. Only attitude data is available from this device.

----- IRS Alignment

Name: Left
Description: IRS left alignment
Help: IRS left alignment is lost. Unit should be realigned on the ground.

Name: Right
Description: IRS right alignment
Help: IRS right alignment is lost. Unit should be realigned on the ground.

----- AD Static port blocked

Name: Captain
Description: Static port blocked Captain
Help: Static port blocked Captain

Name: F/O
Description: Static port blocked F/O
Help: Static port blocked F/O

Name: ALTN
Description: Static port blocked ALTN
Help: Static port blocked ALTN

----- AD Static ADM failed

Name: Captain

Description: Static ADM failed Captain

Help: Static ADM failed Captain

Name: F/O

Description: Static ADM failed F/O

Help: Static ADM failed F/O

----- Airspeed unreliable

Name: Captain

Description: Airspeed unreliable Captain

Help: Airspeed unreliable Captain

Name: F/O

Description: Airspeed unreliable F/O

Help: Airspeed unreliable F/O

Name: AUX

Description: Airspeed unreliable AUX

Help: Airspeed unreliable AUX

----- AD Pitot port blocked

Name: Captain

Description: Pitot port blocked Captain

Help: Pitot port blocked Captain

Name: F/O

Description: Pitot port blocked F/O

Help: Pitot port blocked F/O

Name: AUX

Description: Pitot port blocked AUX

Help: Pitot port blocked AUX

----- AD Pitot ADM failed

Name: Captain

Description: Pitot ADM failed Captain

Help: Pitot ADM failed Captain

Name: F/O

Description: Pitot ADM failed F/O

Help: Pitot ADM failed F/O

----- AOA sensor failed

Name: Captain

Description: AOA sensor failed Captain

Help: AOA sensor failed Captain

Name: F/O

Description: AOA sensor failed F/O

Help: AOA sensor failed F/O

----- TAT probe failed

Name: TAT Probe

Description: TAT probe failed

Help: TAT probe failed

----- Radio Altimeter

Name: 1

Description: RA 1 fail

Help: RA 1 has failed.

Name: 2

Description: RA 2 fail

Help: RA 2 has failed.

----- ILS Receiver

Name: 1

Description: ILS Receiver 1

Help:

Name: 2

Description: ILS Receiver 2

Help:

----- VOR Receiver

Name: 1

Description: VOR Receiver 1

Help:

Name: 2

Description: VOR Receiver 2

Help:

----- Marker Beacon Receiver

Name: Receiver

Description: Marker Beacon Receiver

Help: Marker beacon receiver has failed

----- DME Receiver

Name: 1

Description: DME Receiver 1

Help:

Name: 2

Description: DME Receiver 2

Help:

----- ADF Receiver

Name: 1

Description: ADF Receiver 1

Help:

Name: 2

Description: ADF Receiver 2

Help:

----- Radio receivers

Name: Localizer

Description: Localizer

Help: Localizer data is unavailable

Name: Glideslope

Description: Glideslope

Help: Glideslope data is unavailable

----- GPWC

Name: GPWC

Description: GPWC

Help:

----- TCAS

Name: Fail

Description: TCAS Fail

Help: TCAS Fail

----- Weather Radar

Name: R/T

Description: Weather Radar receiver/transmitter fault

Help: Weather Radar Receiver/Transmitter fault

Name: Antenna

Description: Weather Radar antenna fault

Help: Weather Radar antenna fault

Name: Control Panel

Description: Weather Radar control panel fault

Help: Weather Radar control panel fault

Name: Attitude

Description: Weather Radar attitude fault

Help: Weather Radar attitude fault

Name: Calibration

Description: Weather Radar calibration fault

Help: Weather Radar calibration fault

ATA 36 - Pneumatic

----- Bleed trip

Name: Left

Description: Left Bleed trip

Help: Overheat or overpressure has been detected in a bleed air duct. The associated bleed air valve has been shut down and the duct will no longer provide bleed air pressure. Crew can reset the situation with the trip reset button and should monitor duct pressure.

Name: Right

Description: Right Bleed trip

Help: Overheat or overpressure has been detected in a bleed air duct. The associated bleed air valve has been shut down and the duct will no longer provide bleed air pressure. Crew can reset the situation with the trip reset button and should monitor duct pressure.

----- High stage locked close

Name: Left

Description: Left High stage locked close

Help: High pressure stage of the bleed air system will not open. Only low pressure bleed air will be available. Crew should keep the pneumatic isolation valve open.

Name: Right

Description: Right High stage locked close

Help: High pressure stage of the bleed air system will not open. Only low pressure bleed air will be available. Crew should keep the pneumatic isolation valve open.

----- Bleed stage shift

Name: Left

Description: Left Bleed Stage shift

Help: The bleed air system will not properly close the high stage bleed air valve at high power engine settings. The bleed air duct will be over-pressured, causing a bleed trip. Crew should keep the bleed air valve closed.

Name: Right

Description: Right Bleed Stage shift

Help: The bleed air system will not properly close the high stage bleed air valve at high power engine settings. The bleed air duct will be over-pressured, causing a bleed trip. Crew should keep the bleed air valve closed.

----- Pack

Name: Left

Description: Pack L

Help: Both primary and standby pack controls have failed and the pack will not provide any air. Pressurization cannot be maintained when both packs have failed. Crew should monitor pressurization and turn off the pack.

Name: Right

Description: Pack R

Help: Both primary and standby pack controls have failed and the pack will not provide any air. Pressurization cannot be maintained when both packs have failed. Crew should monitor pressurization and turn off the pack.

----- Depressurization

Name: Major

Description: Pressure loss high

Help: A hull leak causes a major pressure loss. Emergency descend should be performed.

Name: Minor

Description: Pressure loss low

Help: A hull leak causes a minor pressure loss. Pressurization cannot be maintained at higher altitudes.

----- Pressurization controller

Name: Master

Description: Pressurization master controller

Help: Master pressurization controller has failed. The system will utilize the alternate pressurization system.

Name: Alternate

Description: Pressurization alternate controller

Help: Alternate pressurization controller has failed. The system will utilize the alternate pressurization system.

----- Passenger oxygen

Name: Masks deployed

Description: Passenger oxygen

Help: Passenger oxygen masks have been deployed.

----- High Altitude Landing

Name: INOP

Description: High Altitude Landing INOP

Help: High Altitude Landing not available

----- Duct leak

Name: Left

Description: Duct leak Left

Help: The bleed air duct is leaking, causing hot air to enter the wing area. This will cause a wing body overheat situation. Crew should isolate the problem and close the bleed air and pneumatic isolation valves.

Name: Right

Description: Duct leak Right

Help: The bleed air duct is leaking, causing hot air to enter the wing area. This will cause a wing body overheat situation. Crew should isolate the problem and close the bleed air and pneumatic isolation valves.

ATA 49 - APU

----- APU

Name: APU

Description: APU

Help: APU has been shut-down because of a failure and will not provide bleed air or electric power.

ATA 52 - Doors

----- Doors left

Name: Equip

Description: Equip door

Help: The door may not have been properly locked. Crew should check door status.

Name: Fwd entry
Description: Fwd entry door
Help: The door may not have been properly locked. Crew should check door status.

Name: Fwd Overwing
Description: Left Fwd Overwing door
Help: The door may not have been properly locked. Crew should check door status.

Name: Aft Overwing
Description: Left Aft Overwing door
Help: The door may not have been properly locked. Crew should check door status.

Name: Aft Entry
Description: Aft Entry door
Help: The door may not have been properly locked. Crew should check door status.

Name: Air Stairs
Description: Air Stairs door
Help: The door may not have been properly locked. Crew should check door status.

----- Doors right

Name: Fwd Service
Description: Fwd Service door
Help: The door may not have been properly locked. Crew should check door status.

Name: Fwd Overwing
Description: Right Fwd Overwing door
Help: The door may not have been properly locked. Crew should check door status.

Name: Aft Overwing
Description: Right Aft Overwing door
Help: The door may not have been properly locked. Crew should check door status.

Name: Aft Service
Description: Aft Service door
Help: The door may not have been properly locked. Crew should check door status.

Name: Fwd Cargo
Description: Fwd Cargo door
Help: The door may not have been properly locked. Crew should check door status.

Name: Aft Cargo
Description: Aft Cargo door
Help: The door may not have been properly locked. Crew should check door status.

ATA 70 - power plant

----- Engine failure

Name: Engine 1

Description: Engine 1 failure

Help: Engine 1 has failed.

Name: Engine 2

Description: Engine 2 failure

Help: Engine 2 has failed.

----- Scavenge oil filter clogged

Name: Engine 1

Description: Engine 1 oil filter

Help: Engine 1 scavenge oil filter is clogged.

Name: Engine 2

Description: Engine 2 oil filter

Help: Engine 2 scavenge oil filter is clogged.

ATA 73 - Engine faults

----- T/R sleeve locked

Name: 1-L

Description: L T/R sleeve lock does not unlock

Help: LT/R sleeve lock does not unlock

Name: 1-R

Description: R T/R sleeve lock does not unlock

Help: RT/R sleeve lock does not unlock

Name: 2-L

Description: L T/R sleeve lock does not unlock

Help: LT/R sleeve lock does not unlock

Name: 2-R

Description: R T/R sleeve lock does not unlock

Help: RT/R sleeve lock does not unlock

----- T/R sleeve unlocked

Name: 1-L

Description: L T/R sleeve lock does not lock

Help: L T/R sleeve lock does not lock

Name: 1-R
Description: R T/R sleeve lock does not lock
Help: R T/R sleeve lock does not lock

Name: 2-L
Description: L T/R sleeve lock does not lock
Help: L T/R sleeve lock does not lock

Name: 2-R
Description: R T/R sleeve lock does not lock
Help: R T/R sleeve lock does not lock

ATA 80 - Start faults

----- Hot start

Name: Engine 1
Description: Engine 1 hot start
Help: Engine hot start

Name: Engine 2
Description: Engine 2 hot start
Help: Engine hot start

----- Hot start high FF

Name: Engine 1
Description: Engine 1 hot start high FF
Help: Engine hot start high FF

Name: Engine 2
Description: Engine 2 hot start high FF
Help: Engine hot start high FF

----- Hung start

Name: Engine 1
Description: Engine 1 hung start
Help: Engine hung start

Name: Engine 2
Description: Engine 2 hung start
Help: Engine hung start

----- No N1 rotation

Name: Engine 1
Description: Engine 1 no N1
Help: No N1 rotation

Name: Engine 2
Description: Engine 2 no N1
Help: No N1 rotation

----- No ignition

Name: Engine 1
Description: Engine 1 no ignition
Help: No ignition

Name: Engine 2
Description: Engine 2 no ignition
Help: No ignition

----- Start valve remains open

Name: Engine 1
Description: Engine 1 start valve remains open
Help: Start valve 1 remains open

Name: Engine 2
Description: Engine 2 start valve remains open
Help: Start valve 2 remains open

----- Start valve does not open

Name: Engine 1
Description: Engine 1 start valve does not open
Help: Start valve 1 does not open

Name: Engine 2
Description: Engine 2 start valve does not open
Help: Start valve 2 does not open