



Model 6202

Reduced Oxygen Breathing
Device 2

**Simulator Accessory Package
Operator's Guide**

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LIST OF INCLUDED EQUIPMENT

Laptop computer with neoprene storage case

19" monitor (size is for portability, larger monitors available at an additional charge)

X-Plane software

Joystick - throttle package

4 place stereo intercom

Instructor headset with microphone

Student headphones

(2) Oxygen masks* (1 large, 1 medium) with microphones and amplifiers extended and customized to mate with the ROBD2 and the intercom.

External Speakers for demonstration purposes

Custom shipping case

* oxygen masks may not be available under certain conditions and should be considered as optional. Mask accessories to connect a mask to the ROBD2 and intercom are always included.

The ROBD2 is not included with the simulator accessory package and must be purchased separately.

OVERVIEW

The second generation Reduced Oxygen Breathing Device (ROBD2) is a computerized gas-blending instrument. The system mixes air and nitrogen to produce the sea level equivalent atmospheric oxygen contents for altitudes up to 34,000 feet. The ROBD2 will make the operator hypoxic and the simulation equipment allows the instructor to make an accurate assessment of the subject under test (SUT) ability to perform flight related tasks under the stress created by reduced oxygen.

This manual contains information and guidance for setting up and operating the Simulator Accessory Package available for use with the ROBD2. It does not include instructions on operating the X-Plane or any other flight simulator software. The ROBD2 operating instructions are contained in the instruments user and programming manuals.

Step by step instructions are provided for connecting power, audio and video sources, for the SUT, the instructor monitoring the test and additional personnel who wish to observe.

IMPORTANT: The ROBD2 operator should be certified in first-aid and CPR and have access to communication in the event of an emergency.

Prior to participation in ROBD2 training or research, the subject under test should have the equivalent to a FAA physical of any class or military flight physical and be screened for current health status prior to the run.

UNPACKING AND ORIENTATION

Transport case unpacking

1. The transport case is provided with the ability to be locked. If a lock has been added, remove the lock and activate the press to release latches.
2. Remove the equipment from the boxes and read any important instructions or notes found within.
3. Save and store the boxes and inserts for future use in the event the equipment needs to be returned or delivered to another site for operation.
4. If an optional larger monitor is requested it will be delivered in a separate container.

Orientation

1. Select a suitable location to set up all the equipment associated with the ROBD2 and simulation package. We recommend a table that is at least eight foot long and three feet wide.
2. The table should be located a few inches from the wall for clearance of cables and hoses. Also the high pressure tanks need to be properly secured to the wall.
3. The equipment should be arranged so the instructor has immediate access to the ROBD2 front panel and the laptop computer.
4. The SUT will need a clear view of the monitor and easy access to the flight controls.

SYSTEM SETUP

Computer

1. LAPTOP - The X-plane software is preinstalled on the laptop. It is ready to plug in and power up.
2. MONITOR - Connect the video cable directly to the external monitor port on the laptop and plug the power in.
3. THROTTLE / JOYSTICK – The joystick comes with a cable that plugs into the throttle and the throttle cable plugs into a USB port on the computer.
4. The computer and flight simulator software should be ready for testing at this time. The instructor should be thoroughly familiar with the X-plane operation prior to facilitating the training of students.

Communications

1. INTERCOM – The pilot PA-400ST controls the routing of audio signals. It operates on two 9 volt batteries (included) and is used to control squelch and individual volumes for the Subject Under Test (pilot) and the Instructor (Co-Pilot). See the intercom audio connections section for specific connection instructions.
2. LAPTOP – The audio output connector on the laptop may be connected to the Music/Cell in jack on the intercom if crosstalk is desired during testing. The X-Plane software provides constant audio crosstalk.
3. INSTRUCTOR HEADSET – Aircraft quality headphones with microphone attached. The headset should be connected to the CO-PILOT MIC and HDPH jacks on the intercom. The MIC plug is slightly thinner than the HDPH jack.
4. PILOT (SUT) MASK & HEADPHONES – Two standard aircrew breathing masks are included, one is medium size and the other is large. One set of standard over ear headphones are also included. These are connected to the pilot MIC & HDPH section of the intercom. The breathing tube is plugged directly into the breathing port on the ROBD2. A head net is included with each mask and is used to hold the mask in place. The mask must fit correctly to work properly, instructions for donning the mask are given in the mask fitting section of this guide.
5. EXTERNAL SPEAKERS – If desired these are connected to one of the passenger HDPH jacks on the intercom using the provided adapter.

NOTE: For a pictorial view of the communications setup see the intercom audio connections section of this guide.

MASK FITTING

1. The mask attaches to the head net with quick release connectors. The connectors have been color coded for ease of use.
2. The straps on the head net are adjustable to tighten the mask and lock with a Velcro tab.
3. To don the mask.
 - A. Leave the yellow and blue quick release connectors connected.
 - B. Loosen all head net straps slightly
 - C. Hold the mask over your mouth and nose while holding the net above your head by the disconnected red and green quick connects.
 - D. Lower the net over your head so the red and green quick connects are hanging at the back of your neck. The mask should stay in place.
 - E. Connect the red and green quick connects together. The straps should cross over your cheeks.
 - F. Pull the net straps to adjust for comfort and an airtight seal. To test the seal flatten the breathing tube between your palms, you should not be able to inhale when the tube is flattened.
 - G. If the mask is tight and it is not properly sealed then try the other size mask.



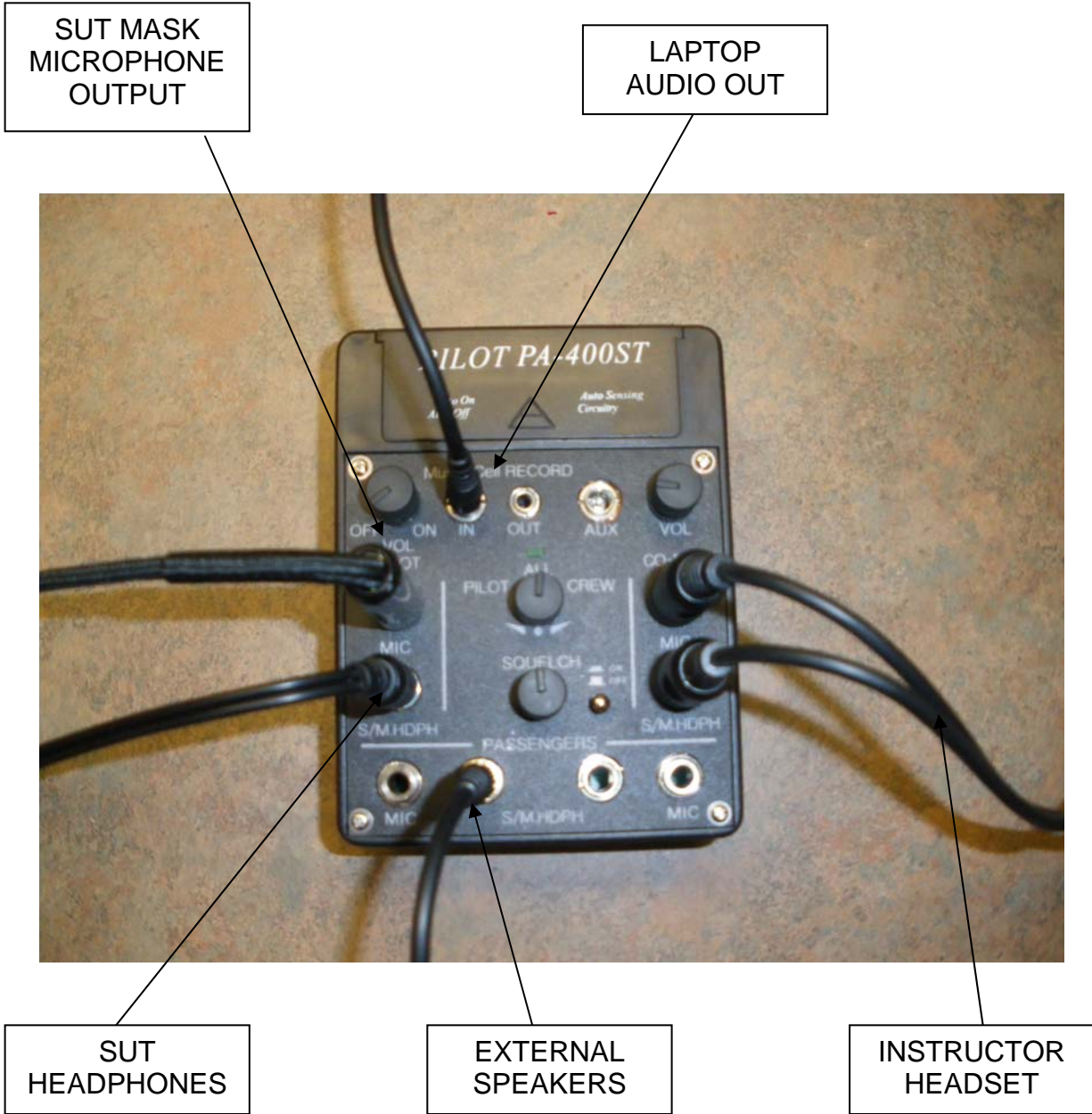


MASK ACCESSORIES

When the mask option is not available or requested the following accessories are included to adapt an aviation mask for connection to the ROBD2 and intercom. If the mask is included with the simulator accessory package the following items are attached at Environics and the mask is ready for use.

1. Extended breathing tube, ROBD2 connector and breathing tube union fitting. It will be necessary to remove the air fitting from the A/C end of the breathing mask to connect the mask to the extended breathing tube.
2. Two different style electrical adapters/extenders are included for the most common type of aviation mask electrical connectors. Please note that only the microphone connection from the adapter will plug into the intercom box when the hair net/headphone option is used.
3. To secure the mask to the SUT a hair net and quick connects are included. It may be necessary to remove existing bayonet or other fittings that are normally used to attach the mask to a helmet when using the hair net. When using the hair net refer back to the mask fitting section of this manual for proper fit and connections.

INTERCOM AUDIO CONNECTIONS



SYSTEM PICTURES

