



DEPARTMENT OF THE NAVY

COMMANDER
TRAINING AIR WING FIVE
7480 USS ENTERPRISE STREET SUITE 205
MILTON, FLORIDA 32570-6017

IN REPLY REFER TO

COMTRAWINGFIVEINST 3710.24

N8

10 May 16

COMTRAWINGFIVEINST 3710.24

Subj: DYNAMIC HYPOXIA TRAINING PROGRAM FOR TRAINING AIR WING FIVE

Ref: (a) COMNAVAIRFORINST 3710.2
(b) OPNAVINST 3710.7U
(c) COMTRAWINGFIVEINST 1555.2B

Encl: (1) DHT Emergency Action Plan
(2) CNATRA ROBD Maintenance Contract

1. Purpose. To establish Training Air Wing (TRAWING) FIVE policy and assign responsibilities for implementing references (a) and (b) to ensure Dynamic Hypoxia Training (DHT) requirements are met every 24 months.

2. Background. Reference (a) outlines the DHT policies, requirements and procedures for all Class 1 aircrew. This instruction outlines TRAWING FIVE implementation procedures and policies for ensuring all required training objectives are met by appropriately trained personnel.

4. Responsibilities. Per reference (c), the Aeromedical Safety Officer (AMSO) is designated as the Aeromedical Training Program Manager (ATPM). As the ATPM, the AMSO is responsible to ensure quality DHT is accomplished per reference (a).

a. The ATPM shall coordinate DHT training days with the TRAWING FIVE Training Department via the Instructional Systems Specialist (ISS) to ensure T-6 device 2F208B, Operational Flight Trainer (OFT) availability and sufficient time is allotted monthly to complete aircrew requiring DHT. The ATPM shall coordinate with simulator maintenance, at least 24 hours prior to training, for the installation of the Reduced Oxygen Breathing Device (ROBD) in the OFT. The ATPM shall also coordinate with the contracted gas supply company, delivery and removal of the training gasses. The ATPM shall coordinate with simulator maintenance all immediate and periodic maintenance per enclosure (2). The ATPM shall provide a roster of aircrew completing training to squadron NATOPS Officers for documentation in NATOPS jackets and submit annual reports to CNATRA AMSO per reference (a).

b. The ATPM shall be assisted in these responsibilities as follows:

(1) TRAWING FIVE T-6B NATOPS. Shall ensure each squadron NATOPS identifies, tracks, and documents aircrew DHT requirements. Further, TRAWING FIVE T-6B NATOPS shall ensure each month, each squadron NATOPS provides the number of aircrew needing DHT by month for the next two months to the ATPM and the TRAWING FIVE ISS. (e.g. In May VT-3 submits, "VT-3 needs DHT for six aircrew in June; three aircrew in July.")

(2) TRAWING FIVE Instructional Systems Specialist. Shall work with ATPM, to schedule DHT days and times on the monthly academic schedule, based on AMSO availability and number of aircrew needing training. Only three aircrew may be scheduled for each 1.3 hour block. The TRAWING FIVE Training Department shall promulgate these days and times to the squadrons. TRAWING FIVE ISS shall coordinate OFT usage and a simulator instructor(s) for DHT.

(3) Squadron NATOPS Officers. Shall assist the ATPM in the implementation of DHT by identifying, tracking and documenting aircrew DHT requirements and completed training. Squadron NATOPS shall ensure each month they provide the number of aircrew needing DHT by month for the next two months to the ATPM and the TRAWING FIVE ISS. (e.g. In May VT-3 submits, "VT-3 needs DHT for six aircrew in June; three aircrew in July.")

(4) Squadron Operations Dept. Shall ensure aircrew needing DHT are hard scheduled on the daily flight schedule. Aircrew shall be in a med-up status unless authorized in writing by a Flight Surgeon. Each squadron will be provided 1.3 hour blocks as needed. Only three aircrew may be scheduled for each block. If a squadron cannot fill all three spots in their block, they shall coordinate with the other squadrons in an attempt to fill the vacancies. All three aircrew will arrive at the beginning of the assigned block. Squadron Operations Department shall ensure aircrew arrive with their RFI helmet and oxygen mask.

(5) Flight Surgeons (FS). Shall assist the ATPM in the implementation of DHT. Flight Surgeons shall determine if aircrew in a med-down status can safely complete DHT and provide written notification to ATPM authorizing DHT.


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Distribution:
COMTRAWINGFIVEINST 5216.1U
List II (f, I, k, q-t)
Flight Surgeons

**Dynamic Hypoxia Training (DHT)
Emergency Action Plan**

1. Description of ROBD2

The Environics Series 6202 ROBD2, is a portable computerized gas-blending instrument used to produce hypoxia without changes in atmospheric pressure. The U. S. Navy uses the ROBD2 to train aviators to recognize the signs and symptoms of hypoxia and to perform the appropriate emergency procedures. Built-in self-tests verify all system component functionality before the operation of the system can begin. If any self-test fails the system will not operate.

2. Emergencies

In the event an individual experiences a reaction (illness or injury) to the ROBD flight, follow the appropriate procedure listed below. Additionally, the following must be accomplished:

a. For a non-emergency reaction, refer the individual to the medical treatment facility.

b. For a medical emergency, execute the emergency procedures below and call 911 for local EMS.

(1) Medical Emergencies

(a) Cardiopulmonary Arrest. Standard American Heart Association/Red Cross CPR protocols shall be used.

(b) Loss of Consciousness. Any loss of consciousness, exceeding two minutes associated with the hypoxia demonstration, is considered an extreme medical emergency and should be treated as such by expediting transportation to an emergency medical treatment facility. It is recommended to keep the student in the seat. If unable to maintain posture in the seat, place the student on the floor in a horizontal position. Vital signs must be taken initially, and at least every two minutes thereafter unless otherwise directed by emergency personnel (use of a pulse-oximeter is required).

(c) Hyperventilation. Hyperventilation can result from apprehension, positive pressure breathing and/or hypoxia. Suspected hyperventilation should be treated as follows:

1. Encourage the student to slow down rate of breathing and reduce their depth of breathing using the "pause breathing method."

2. If consciousness is lost, follow the loss of consciousness procedures.

(2) Other Medical Emergencies. There is always the possibility for medical conditions/emergencies not specifically

discussed above to occur. The judgment of the AMSO will be used in determining the appropriate course of action, given the urgency of the situation. Generally speaking, if symptoms could be the result of several different conditions, treatment for the "worst case scenario" should be initiated.

(3) Non-Medical Emergencies

(a) Procedures in the event of a fire. At the first sign of fire, regardless of location or severity, the AMSO shall immediately cease all training.

1. If the student has not already done so, disconnect him/her from the ROBD.

2. Immediately disconnect the oxygen supply hose from either the oxygen regulator or from the back of the ROBD.

3. Secure power to the ROBD.

4. Proceed as directed by the fire bill.

(4) Procedures for ROBD Equipment Malfunction

(a) ROBD power loss

1. Remove student's oxygen mask.

2. When power is restored, perform preflight calibration prior to resuming the ROBD flight.

(b) ROBD Communication Loss

1. If communication between the ROBD instructor and student is lost, the phase of the training will dictate the response of the ROBD instructor.

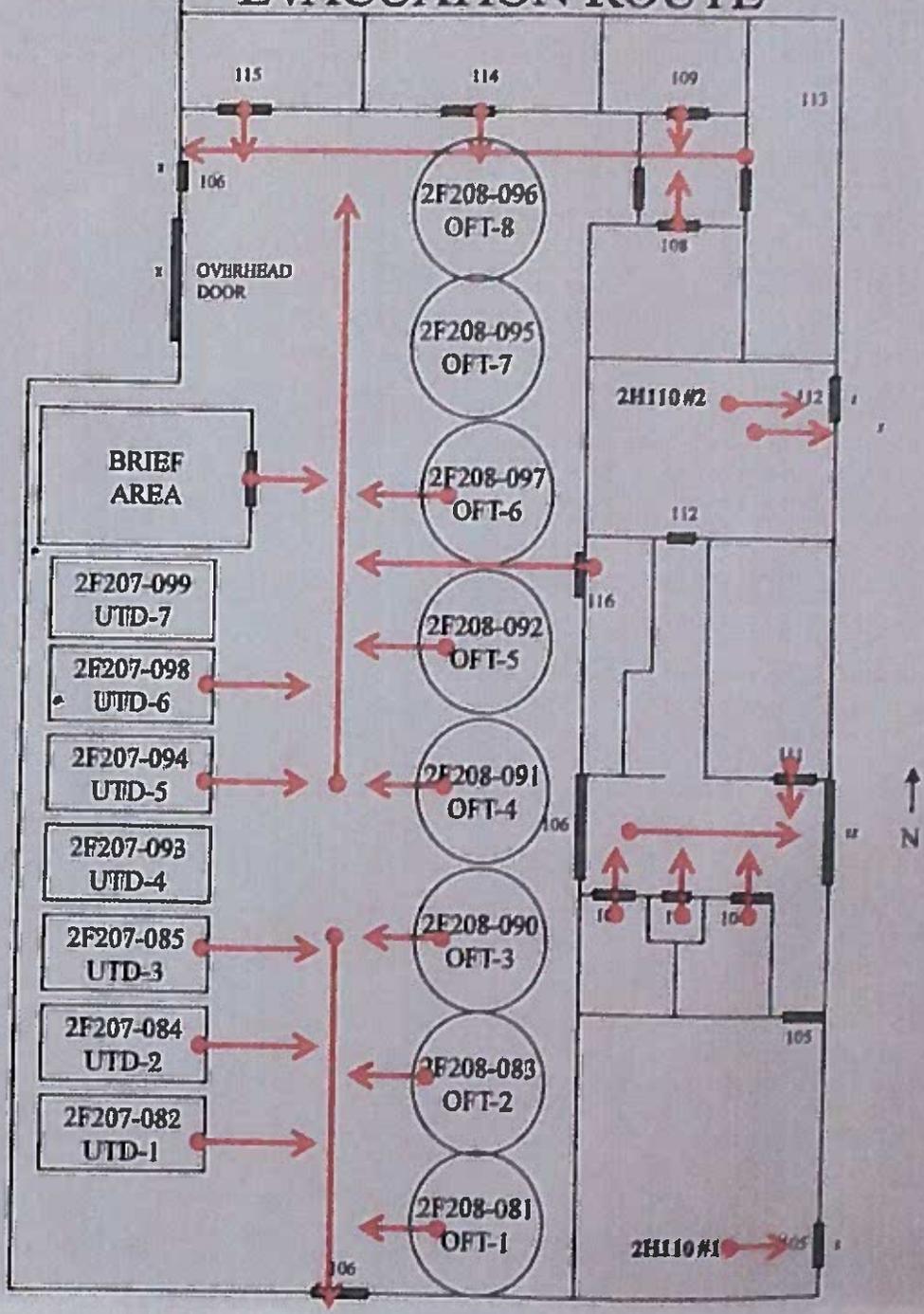
a. In most cases the student can easily hear through the helmet. If the instructor/student communications are adequate, training can be continued as normal. Once the student has fully recovered (i.e., absence of symptoms and blood oxygen saturation greater than 95 percent), troubleshoot the communications system prior to any further training.

b. If instructor/student communications cannot be adequately maintained, training shall be stopped until communications can be restored. If the student's blood oxygen saturation is below 87 percent, the O2 dump shall be initiated by the instructor. Training may continue once the student has fully recovered and communications have been restored. **Contact simulator maintenance for troubleshooting.**

(c) Miscellaneous Equipment Malfunctions. In the event that equipment issues are identified during the training scenario

(i.e., leaking mask, simulator malfunction), stop the ROBD profile, have the student disconnect their mask and troubleshoot the issue. Training may continue once the issue has been resolved.

Bldg 3125 "EVACUATION ROUTE"



APPENDIX AH

TRAINER DESCRIPTION FOR
REDUCED OXYGEN BREATHING DEVICE 2 (ROBD2)

1.1 DESCRIPTION OF ROBD2

1.1.1 Function and General Description. The Environics Series 6202 ROBD2, is a portable computerized gas-blending instrument used to produce hypoxia without changes in atmospheric pressure. The U. S. Navy currently uses the ROBD2 to train aviators to recognize the signs and symptoms of hypoxia and to perform the appropriate emergency procedures and additionally, conducts hypoxia research. The ROBD2 uses Thermal Mass Flow Controllers (MFC) to mix breathing air and nitrogen to produce the sea level equivalent atmospheric oxygen contents for altitudes up to 34,000 feet. The MFCs are calibrated on a primary flow standard traceable to the National Institute of Standards and Technology (NIST). The ROBD2 introduces pressure changes and gas expansion as a function of altitude. Built-in self-tests verify all system component functionality before the operation of the system can begin. If any self-test fails the system will not operate. The system is designed to work with both bottled gases and gases produced by a Nitrogen/Air Generator (available separately).

1.1.2 Trainee Stations. There are three (3) trainee stations: a single station at NAS Meridian, a single station at NAS Pensacola and a single station at NAS Kingsville. Trainee stations are anticipated at NAS Whiting Field and NAS Corpus Christi in the March/April 2016 timeframe.

1.1.3 Instructor/Operator Station. The ROBD2 box is the I/OS control station for the instructors to control the environment in which the students are exposed.

1.1.4 Control Station. NOT APPLICABLE

1.1.5 Computer System and Peripherals. NOT APPLICABLE

1.1.6 Aircraft Common Subsystems. NOT APPLICABLE.

1.1.7 Power System / Gas System.

ROBD2 box	110 or 220 vac, 50/60 HZ
Air	Yellow Cylinder (40 PSIG)
Oxygen	Green Cylinder (20 PSIG)
Nitrogen	Black Cylinder (40 PSIG)

1.1.8 Visual/Video System. NOT APPLICABLE

1.1.9 Control Loading / Motion System. NOT APPLICABLE

1.1.10 Air Conditioning System. NOT APPLICABLE

1.1.11 MOTOR GENERATOR SETS: NOT APPLICABLE.

1.1.12 HYDRAULIC SYSTEM: NOT APPLICABLE

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1.1.13 DEVICE LOCATIONS:

DEVICE	LOCATION	QUANTITY	SERIAL NUMBER
ROBD	NAS Pensacola	1	3699
ROBD	NAS Meridian	1	3700
ROBD	NAS Kingsville	1	4565
ROBD	NAS Whiting Field	1	unknown
ROBD	NAS Corpus Christi	1	unknown

2.1 DEVICE ILLUSTRATION:

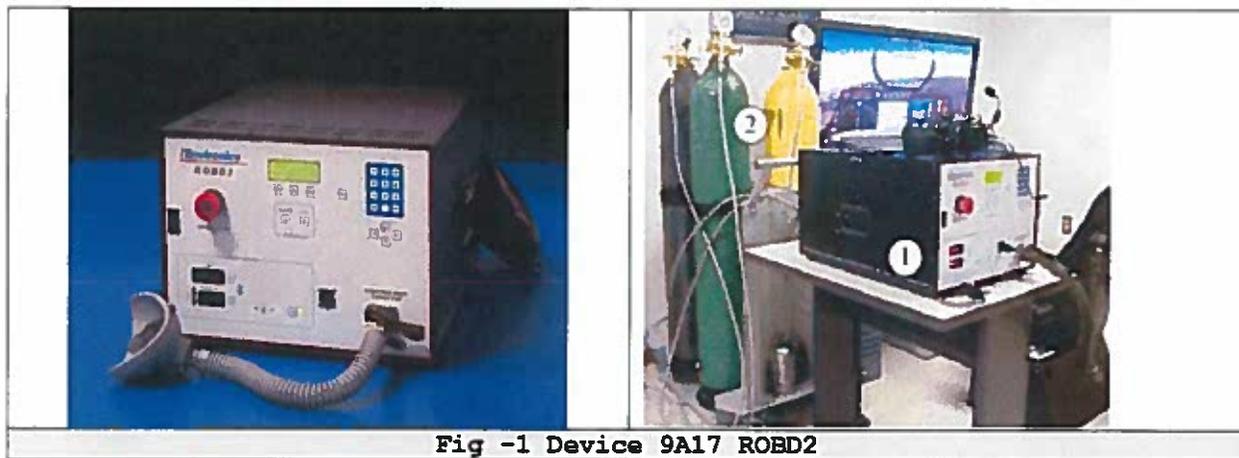


Fig -1 Device 9A17 ROBD2

3.1 MISSION ESSENTIAL SUBSYSTEM MATRIX: NOT APPLICABLE

4.1 On-Call Maintenance/Contractor Maintenance Services (CMS):

The contractor shall provide on-call maintenance for equipment/devices identified herein. Contractor maintenance support personnel shall respond to on-call requests (notifications for need of corrective maintenance action) from the TPOC or other designated Government representative within 30 (thirty) minutes. On-call response time is included in Hours to Repair used for CMF calculations. Expect operations to be no more than three days per month.

Contractor Maintenance Support Hours are 0800-1630 Monday through Friday. The training devices may be used for training during and after maintenance support hours. Preventive maintenance shall be performed according to PMS schedules noted in the Maintenance Requirement Cards established for the ROBDs. The contractor is responsible for all consumable supply support costs. Any corrective maintenance actions performed by the contractor will be negotiated as an Over and Above Work Request (OAWR). Requisition and replenishment of the air, oxygen and nitrogen cylinders will be paid for by the appropriate wing. The wings are responsible for the proper storing of all air, oxygen and nitrogen cylinders. The handling, use and storage of these cylinders will be in accordance with OSHA's compressed gases standard 29 CFR 1910.101. At the end of

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each usage day, the Contractor will provide the amount of gas remaining in each cylinder to the appropriate TPOC.

The Contractor will prepare and ship the ROBDs to the Original Equipment Manufacturer (OEM) for calibration and tune up on a 24 month cycle. The preparation, shipping and calibration/tune up is to be done at contractor's expense. The TPOC at each wing will be notified in advance of the shipment of the ROBDs for calibration and tune up. The TPOC will inform the cognizant wing Aeromedical Safety Officer (AMSO) as to suggested dates for shipment on a not to interfere with training basis.

All preventive and corrective maintenance work shall be scheduled and conducted on a not to interfere basis with training operations. Additionally, the contractor is responsible for monthly equipment functional tests and the repair of any discrepancies discovered in accordance with the applicable maintenance manuals.

5.1 AIRCRAFT COMMON EQUIPMENT/TRAINER UNIQUE EQUIPMENT/TRAINER SUPPORT PACKAGE

5.1.1 Aircraft Common Equipment: NOT APPLICABLE

5.1.2 Trainer Unique Equipment (TUE): The entire device including embedded and component systems, auxiliary support equipment and device circuit breakers (i.e., circuit breakers dedicated to the device) are TUE.

5.1.3 Major ROBD2 System Components:

- Environics ROBD2
- Air Cylinder
- Nitrogen Cylinder
- Oxygen Cylinder
- Breathing Bag
- Regulators
- Hoses
- Masks
- Pulse oximeter finger probe
- Three (3) gas specific stainless steel braided hoses
- Three (3) gas specific regulator/gauge sets
- M/F RS232 interface connector cable
- AC power cord
- Modular plastic storage/shipping case
- Tripp-Late Uninterruptible Power Supply (UPS)
- ROBD2 Maintenance Log Book

5.1.4 Trainer Support Package: NOT APPLICABLE

6.1 PARTIAL MISSION CAPABILITY STANDARD: NOT APPLICABLE

7.1 FLOOR PLANS AND PROJECTED ADDITIONS: NOT APPLICABLE

8.1 JANITORIAL SCHEDULING REQUIREMENTS: NOT APPLICABLE