



DEPARTMENT OF THE NAVY  
COMMANDER TRAINING AIR WING ONE  
101 FULLER ROAD SUITE 250  
MERIDIAN, MS 39309-5403

IN REPLY REFER TO:  
COMTRAWINGONEINST 3710.16  
01FS  
15 Aug 16

**COMMANDER, TRAINING AIR WING ONE INSTRUCTION 3710.16**

From: Commander, Training Air Wing ONE

Subj: TRAINING AIR WING ONE AEROMEDICAL TRAINING PROGRAM

Ref: (a) OPNAVINST 3710.7U  
(b) COMNAVAIRFORINST 3710.2

- Encl: (1) Sample Aeromedical Adjunctive Training: Level A Required Annual Training Memorandum  
(2) T-45C Ejection Seat/Emergency Ground Egress/ALSS Training Instructor Personnel Qualification Sheet  
(3) Hypoxia Awareness/GLOC/GTIP/Sensory Problems Training Instructor Personnel Qualification Sheet  
(4) NACES Seat Brief and Egress Outline  
(5) Aeromedical Aspects of Ejection Outline  
(6) T-45C Annual Aeromedical Training Requirements Roster  
(7) Level A Annual Aeromedical Briefs Learning Objectives

1. **Purpose.** To establish Training Air Wing ONE (TRAWING ONE) policy and assign responsibilities in accordance with references (a) and (b) to ensure all annual aeromedical training requirements are met. This is a new instruction and should be reviewed in its entirety.

2. **Background.** Reference (a) outlines all annual aeromedical training requirements. Reference (b) outlines the biennial dynamic hypoxia training requirements. These requirements are a combination of aeromedical briefs and dynamic training evolutions. This instruction outlines TRAWING ONE implementation procedures and policy for ensuring all required training objectives are met and that appropriately trained personnel provide the training.

3. **Responsibilities.** The Aeromedical Safety Officer (AMSO) shall be designated in writing by Commander, TRAWING ONE as the Aeromedical Training Program Manager (ATPM). In the event an AMSO is unable to hold this position, this duty should be delegated to a Wing Flight Surgeon or Wing Safety Officer.

a. The ATPM is responsible for training all new aeromedical training instructors and ensuring aeromedical training curriculum meets all objectives listed in references (a) and (b).

b. The ATPM shall coordinate all training with squadron NATOPS officers or their assigned assistants to ensure training is available to aircrew on a regular basis. When aircrews complete

all or a portion of their annual aeromedical training, it is the responsibility of the ATPM to send attendance notification to squadron NATOPS Officers or assigned assistants. Notification should be sent to the NATOPS Officers using enclosure (1).

c. The ATPM shall be assisted in this responsibility as follows:

(1) T-45C NATOPS Officer/Assistant(s). Shall assist the ATPM in the implementation of the Aeromedical Training Program (ATP). NATOPS Officers are only authorized to conduct Ejection Seat, Emergency Ground Egress, and Aviation Life Support System training. On a case by case basis, NATOPS qualified T-45C aircrew member, who are not NATOPS officers, may become Ejection Seat, Emergency Ground Egress, and Aviation Life Support System instructors. Prior to conducting any training, all instructors shall receive appropriate instructor training from the ATPM and have it documented using enclosure (2).

(2) Flight Surgeons. Shall assist the ATPM in the implementation of the ATP. The Flight Surgeons (FS) are only authorized to conduct the following briefs: Hypoxia Awareness Training, G Tolerance Improvement Procedures, G Induced Loss of Consciousness, and Sensory Problems. Prior to providing any aeromedical training, the FS shall receive appropriate instructor training from the ATPM documented using enclosure (3).

(3) Naval Aerospace and Operational Physiologists (NAOP). May assist the ATPM in the implementation of the ATP. NAOPs are only authorized to conduct the following briefs: Hypoxia Awareness Training, G-Tolerance Improvement Procedures, G-Induced Loss of Consciousness, and Sensory Problems. Prior to providing any aeromedical training, the NAOP should receive appropriate instructor training from the ATPM documented using enclosure (3). Any designated NAOP qualified to provide these briefs at a Naval Survival Training Institute (NSTI), Aviation Survival Training Center (ASTC) may forgo the TRAWING ONE training process at the discretion of the ATPM.

4. Aeromedical Training. Only personnel trained or authorized by the ATPM can conduct the following training. NATOPS Officers shall only conduct training for the aircraft in which they are NATOPS qualified.

a. T-45C Ejection Seat Training: Reference (a) requires aircrew to receive annual ejection seat training. The TRAWING ONE T-45C EST satisfies this requirement, and is the primary device for teaching proper ejection procedures, strap-in procedures, and basic use of the T-45C ejection seat. All students and instructors shall receive this training using this device. Training shall be under the supervision of a qualified instructor. Enclosure (4) outlines all required learning objectives to be briefed.

(1) EST Pre/Post-flight. Instructors shall comply with the following safety checks and procedures: Inspect the EST for the presence of the oxygen supply/communication connection, ejection seat safety pin, and the proper routing of the leg restraints. The instructor will ensure

appropriate NATOPS entries are completed on all students/instructors and generate a roster using enclosure (5).

(2) Egress Training. Instructors shall ensure the following is accomplished during training:

(a) Instructors shall utilize the EST to conduct T-45C ejection seat training and emergency ground egress as outlined in NATOPS. T-45C NATOPS qualified aircrew or those with significant experience flying in the NACES ejection seat are not required to review strap-in procedures, but common strap-in errors shall be reviewed.

(b) If applicable, instructors will monitor aircrew to reinforce strap-in procedures in EST. Once the aircrew is prepared, the instructor will present an emergency situation and observe the aircrew demonstrating the proper emergency ground egress procedures.

(3) Injury Procedures. If a student is injured during training, the instructor shall ensure the following are accomplished:

(a) Immediately suspend training.

(b) Ensure the student does not move.

(c) Perform a primary survey of the student's injuries.

(d) Direct the Class Leader to muster uninvolved students in the classroom.

(e) Notify base Emergency Medical Services (EMS) at 911, if required.

(f) Perform CPR/first aid, as required.

(g) At an appropriate time, inform the Wing Safety Officer and AMSO of student injury and file official injury report, as appropriate.

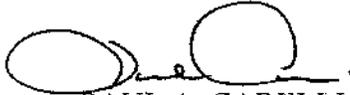
b. Aviation Life Support Systems. A lecture and hands-on demonstration of man-mounted and seat kit ALSS shall be conducted in conjunction with T-45C ejection seat training. All aircrew should have the opportunity to receive hands-on training using training assets, if available. Enclosure (4) outlines all required learning objectives to be briefed. Any designated NAOP qualified to provide this brief at a NSTI ASTC may forgo the TRAWING ONE training process at the discretion of the ATPM.

c. Aeromedical Aspects of Ejection. The Aeromedical Aspects of Ejection lecture shall be addressed in conjunction with T-45C ejection seat training. Per reference (a), this training can be conducted by any T-45C qualified instructor trained by the ATPM. Enclosure (4) outlines all required learning objectives to be briefed. Any designated NAOP qualified to provide this brief at a NSTI ASTC may forgo the TRAWING ONE training process at the discretion of the ATPM.

d. Hypoxia Awareness Training. Per reference (a), hypoxia awareness training shall be conducted annually for T-45C aircrew. The Reduced Oxygen Breathing Device (ROBD) shall be used to meet the biennial Dynamic Hypoxia Training (DHT) requirement per reference (b). ROBD training shall be conducted in the T-45C OFTs. Procedures for conducting ROBD are outlined in reference (b). If the ROBD is unavailable or simulators are not functional, a hypoxia awareness brief designed by the ATPM shall be used to meet the requirement. This brief shall only be conducted by the AMSO, FS, or NAOP. Enclosure (6) outlines all required learning objectives to be briefed. Any designated NAOP qualified to provide this brief at a NSTI ASTC may forgo the TRAWING ONE training process at the discretion of the ATPM.

e. G Tolerance Improvement Procedures/G Induced Loss of Consciousness. Per reference (a), G Tolerance Improvement Procedures (GTIP) and G Induced Loss of Consciousness (GLOC) briefs shall be conducted annually for T-45C aircrew. This requirement shall be met using a brief designed by the ATPM and be conducted by the AMSO, FS, or NAOP. Enclosure (6) outlines all required learning objectives to be briefed. Any designated NAOP qualified to provide this brief at a NSTI ASTC may forgo the TRAWING ONE training process at the discretion of the ATPM. Students who fail Centrifuge-based Flight Environment Training (CFET) or aircrew who are considered high risk for a GLOC event shall be referred to the AMSO and be placed in the GTIP program. The ATPM shall be responsible for implementation of the GTIP program that consists of cardiovascular, strength, and anti-G straining maneuver training.

f. Sensory Problems. Per reference (a), a Sensory Problems brief shall be conducted annually for all aircrew. This requirement shall be met using a brief designed by the ATPM and be conducted by the AMSO, FS, or NAOP. Enclosure (6) outlines all required learning objectives to be briefed. Any designated NAOP qualified to provide this brief at a NSTI ASTC may forgo the TRAWING ONE training process at the discretion of the ATPM.



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MEMORANDUM

From: Aeromedical Safety Officer, TW-1  
To: NATOPS Officer, VT-X

Subj: OPNAVINST 3710.7U AEROMEDICAL ADJUNCTIVE TRAINING: LEVEL A  
REQUIRED ANNUAL TRAINING

1. The personnel listed have completed the following OPNAVINST 3710.7U Level A Annual Training Requirements on dd-mmm-yy:

T-45C Aeromedical Aspects of Ejection  
T-45C Ejection Seat Training  
T-45C Emergency Ground Egress  
T-45C Hypoxia Awareness Training  
G-Tolerance Improvement Procedures (GTIP)  
Sensory Problems

<u>Rank</u>	<u>Name</u>	<u>SSN</u>
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XX XXX USN

**TRAINING AIR WING ONE  
EJECTION SEAT/EMERGENCY GROUND EGRESS/ALSS TRAINING  
INSTRUCTOR PERSONNEL QUALIFICATION SHEET**

This qualification sheet specifies the requirements for qualification as a T-45C Ejection Seat/Emergency Ground Egress/ALSS Training Instructor at Training Air Wing ONE.

Name: \_\_\_\_\_ Rank: \_\_\_\_\_ Service: \_\_\_\_\_  
Squadron: \_\_\_\_\_

1. Qualified NATOPS/Asst NATOPS Instructor, Aerospace Physiologist, Wing Safety Officer, or Wing Aviation Safety Officer. \_\_\_\_\_(ATPM initials)
2. NATOPS signature authority. \_\_\_\_\_(ATPM initials)
3. Read and understand COMTRAWINGONEINST 3710.16. \_\_\_\_\_(ATPM initials)
4. Complete ejection seat/emergency ground egress/ALSS training as a student. \_\_\_\_\_(ATPM initials)
5. Observe one training lecture/lab conducted by the TRAWING ONE ATPM. \_\_\_\_\_(ATPM initials)
6. Teach one training lecture/lab as an Instructor under supervision of the TRAWING ONE ATPM. \_\_\_\_\_(ATPM initials)

Qualified as T-45C Ejection Seat/Emergency Ground Egress/ALSS Training Instructor  
\_\_\_\_\_(ATPM initials)

\_\_\_\_\_  
TRAWING ONE ATPM      DATE

**TRAINING AIR WING ONE  
HYPOXIA AWARENESS/GLOC/GTIP/SENSORY PROBLEMS TRAINING  
INSTRUCTOR PERSONNEL QUALIFICATION SHEET**

This qualification sheet specifies the requirements for qualification as a Hypoxia Awareness, GLOC, GTIP, or Sensory Problems Training Instructor at Training Air Wing ONE.

Name: \_\_\_\_\_ Rank: \_\_\_\_\_ Service: \_\_\_\_\_ Squadron: \_\_\_\_\_

1. Designated Aerospace Physiologist or Flight Surgeon \_\_\_\_\_(ATPM initials)
2. Read and understand COMTRAWINGONEINST 3710.16 \_\_\_\_\_(ATPM initials)
3. Observe one brief conducted by the TRAWING ONE ATPM. \_\_\_\_\_(ATPM initials)
4. Provide one brief as an instructor under supervision of the TRAWING ONE ATPM.  
\_\_\_\_\_(ATPM initials)

Qualified as Hypoxia Awareness, GLOC/GTIP, Sensory Problems (circle one or more) Training Instructor \_\_\_\_\_(ATPM initials)

\_\_\_\_\_  
TRAWING ONE ATPM

\_\_\_\_\_  
DATE

## NACES SEAT BRIEF AND EGRESS OUTLINE

1. Canopy system
  - a. Ejection with canopy in any position other than fully locked could cause seat malfunction and serious injury.
  - b. With aircrew head above canopy breakers, severe head and neck injury may occur.
2. NACES
  - a. Garter connections and proper positioning.
  - b. Restraint adjustment.
  - c. Lower Koch fittings function, adjustment and purpose.
  - d. Upper Koch fittings function and purpose.
  - e. SEAWARS purpose and function.
  - f. Shoulder restraint function, adjustment and purpose.
  - g. O2/communication cord, function, adjustment and purpose.
  - h. CRU-103 function, connection and purpose.
  - i. Safe/arm handle function and purpose.
  - j. MOR handle function and purpose.
  - k. Emergency O2 actuator function and purpose.
  - l. Seat adjustment function, purpose, and adjustment.
  - m. Canopy breakers.
  - n. Ejection handle.
  - o. Seat safety pin.
  - p. Seat kit (SKU).
    - (1) Release over land is not recommended.
    - (2) Contents:

- (a) Ground/air emergency card.
  - (b) Nylon cord.
  - (c) Bailing sponge.
  - (d) Combat casualty blanket.
  - (e) Survival kit (2) (medical/general).
  - (f) URT-140.
  - (g) Drinking water.
  - (h) Smoke and illumination signal.
  - (i) Sea dye marker.
  - (j) Surgical tubing.
  - (k) Vinyl envelope.
- q. Life raft release handle location and function.
- r. URT-140 function, location, and purpose.
- (1) Doesn't signal when submerged.
  - (2) Starts signaling automatically upon ejection.
3. Man-Mounted AI.SS.
- a. Mk-79.
  - b. Mk-149.
  - c. PRC-90-2.
  - d. Compass.
  - e. Shroud line cutter.
  - f. Flash light (Sidewinder).
  - g. Signaling mirror.

- h. 4 oz water.
  - i. Survival knife.
  - j. Whistle.
  - k. Strobe light.
  - l. CRU-103.
  - m. MBU-23/12/5.
  - n. HGU-68.
4. Ground emergency egress (without seat kit).
- a. Notify crew member.
  - b. Ejection seat SAFE/ARMED handle-SAFE.
  - c. Throttle – OFF.
  - d. PARKING BRAKE handle – PULL.
  - e. Canopy – OPEN.
  - f. If canopy cannot be opened – MDC firing handle – pull.
  - g. Evacuate without survival kit. Koch fittings – RELEASE UPPER AND LOWER.
  - h. Manual override handle – PULL.
  - i. Oxygen/communication hose – DISCONNECT.

## AEROMEDICAL ASPECTS OF EJECTION FOR NACES SEAT

1. Ejection decision
  - a. Out of control flight - eject by 10K AGL.
  - b. Controlled flight - eject no lower than 2K AGL.
  - c. Should be briefed prior to flight.
  - d. Psychological factors that cause ejection delay.
2. Ejection envelope
  - a. Zero airspeed zero altitude capability.
  - b. Tested at 136-213 lbs but OPNAV widens range to 136-245 lbs. NATOPS expands to 103-245lbs.
  - c. Functions from ground to 50,000 ft.
  - d. 550 KIAS maximum.
  - e. 250 KCAS is the optimum airspeed for ejection.
3. Optimal body position
  - a. Head firmly against headrest.
  - b. Elevate chin 10 degrees.
  - c. Press shoulders back against the seat.
  - d. Hold elbows firmly to sides.
  - e. Press buttocks firmly to the back of the seat.
  - f. Attempt to place thighs firmly to the seat.
  - g. Place heels firmly on the deck.
4. Ejection initiation
  - a. 40-60 lbs of force required to pull ejection seat handle.

- b. With command ejection selector in SOLO, if ejection seat handles are pulled simultaneously seats may collide.
  - c. In FWD BOTH/AFT SELF mode MDC firing handle should be pulled by forward seat if aft seat is ejected.
  - d. Use one of the 2 approved hand positions for ejection initiation.
  - e. Pull ejection handle up and towards abdomen keeping elbows close to sides.
5. Ejection sequence/phases/modes/drogue/stabilization
- a. 5 modes
    - (1) High altitude.
    - (2) Medium altitude.
    - (3) Low altitude (3 modes).
6. Seat/man separation and chute deployment
- a. High altitude (>18K).
    - (1) Seat/man separation and chute deployment occurs at 18K MSL.
    - (2) If over high terrain, consider using the MOR.
  - b. Low altitude (<18K). Seat/man separation and chute deployment occurs between .65-3.10 seconds depending on altitude and airspeed.
7. IROK/ADR/PLF.
- a. Over water
    - (1) Inflate LPU by pulling on the beaded handles. Pull out and away from body.
    - (2) Release raft and SSK by pulling on SSK handle.
    - (3) Discuss Options
    - (4) Release Koch fittings, once feet touch the water.
  - b. Over land
    - (1) Inflate LPU to help protect neck and torso.

(2) Release over land is not recommended due to snag hazards with trees and obstacles.

(3) Discuss Options

(4) Release Koch fittings once properly performed a PLF.

c. PLF

(1) Balls of feet.

(2) Side of calf.

(3) Side of thigh.

(4) Side of buttocks.

(5) Shoulder blade.

8. Hazards

a. Flash burn.

b. Cockpit missile hazards/loose gear.

c. Poor body position.

d. Excessively heavy or light body weight.

(1) Reduces stability of seat post ejection.

(2) Individuals >245 lbs may not clear aircraft during ejection.

(3) Heavy individuals have a higher descent rate after parachute deployment.

e. Wind blast injuries.

(1) Ensure mask is on and visor is down.

(2) Proper body position is key to reducing flailing injuries.

f. ALSS fit.

(1) DO NOT attempt to make adjustments to your torso harness. If you have fitting issues with the harness see your PR shop.

- g. Landing in winds in excess of 25 knots increases risk of severe injury or death.

### T-45C ANNUAL AEROMEDICAL TRAINING REQUIREMENT ROSTER

INSTRUCTOR \_\_\_\_\_

DATE \_\_\_\_\_

Rank, First Name, Last Name	NATOPS LOCATION	Sensory	Hypoxia	GTIP	Egress Eject
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

**LEVEL A ANNUAL AEROMEDICAL BRIEFS LEARNING OBJECTIVES**

1. Hypoxia Awareness Training Learning Objectives: Specific to the aircraft T/M/S and the environment in which it is flown.
  - a. Types of hypoxia
  - b. Signs and symptoms of hypoxia
  - c. Situations which could lead to hypoxia
  - d. Treatment of hypoxia
  - e. Hypoxia countermeasures
  
2. GLOC and GTIP Learning Objectives: Specific to the aircraft T/M/S and the environment in which it is flown.
  - a. Anti-G straining maneuver (AGSM)
  - b. Push-pull effect
  - c. G-suit fit
  - d. G-tolerance improvement procedures to include, hydration, nutrition, fatigue and exercises
  
3. Sensory Problems Learning Objectives: Specific to the aircraft T/M/S and the environment in which it is flown.
  - a. Spatial disorientation/misorientation
  - b. Visual scanning
  - c. Situational awareness (including low level flight issues)
  - d. Visual illusions
  - e. Disorientation countermeasures