

## CHAPTER 8

# Aeromedical and Survival

### 8.1 GENERAL

To improve the survivability of flight personnel, CNO (N78) has implemented the aircrew survivability enhancement program (ASEP). Sub-elements of this program are aviation life support systems (ALSS), CBRND, safety, human performance, and training. Guidelines and requirements contained here are considered minimum. Recommendations for changes or improvement in equipment, procedures, or training shall be addressed via the chain of command to COMNAVAIRFOR (N32) for evaluation and, if appropriate, implementation.

### 8.2 AVIATION LIFE SUPPORT SYSTEMS

The safety and survival equipment specified in paragraphs 8.2.1, 8.2.2, 8.2.3, and 8.2.4 of this manual are minimum requirements. Deviations shall be specified by the NATOPS flight manual for individual model aircraft. The latest available equipment, as authorized by aviation crew systems manuals, NAVAIR 13-1-6.1 through NAVAIR 13-1-6.10, shall be used by aircrew personnel and passengers for flight in all naval aircraft.

#### 8.2.1 Aircrew Personal Protective Equipment Requirements

##### 8.2.1.1 Aircrew

#### Note

Items marked \* may be omitted by flight personnel flying in fixed-wing cargo/transport class aircraft if such flight does not involve carrier operations.

- \*a. Protective helmet — The helmet and visor housing shall be 100 percent covered with white reflective tape except as modified by approved aircrew system changes. Up to 30 square inches of light-colored reflective tape may be applied so long as the white tape remains visible from all directions. The use of reflective tape may degrade night vision device

(NVD) performance. Temporary, nonreflective cloth covers may be worn over the reflective tape.

#### Note

Up to 65 square inches of nonwhite reflective tape is authorized on the HGU-64/P visor housing and a locally fabricated international orange cover is authorized for use on the HGU-64/P in Antarctic environment. Visor housings will be taped in accordance with previous paragraph and all covers removed while in CONUS.

- \*b. Aircrew safety/flyer boots.
- \*c. Fire-resistant (aramid) flight gloves.
- \*d. Fire-resistant flight suit (aramid) — Aramid or cotton-type undergarments shall be worn. Suitable fire-resistant unit issue clothing (aramid) may be substituted for the flight suit for flight personnel in fixed-wing cargo/transport class aircraft.
- \*e. Identification tags — Two tags on a chain worn around the neck.
- \*f. Survival knife — Do not wear exposed or attached to the life preserver.
- \*g. Personal survival kit — Appropriate to the area of operations.
- \*h. Signal device — Required for all night flights and flights over water or sparsely populated areas.
  - i. Survival radios and beacons
    - (1) Survival radios
      - (a) An approved voice-capable survival radio shall be carried by each aircrewman on all flights, unless otherwise directed by aircraft NATOPS manuals.
      - (b) A voice-capable radio shall be packed with all multiplace rafts.

(2) Emergency beacons

- (a) An approved automatically actuated line-of-sight emergency beacon shall be installed in all ejection seats.
- (b) An HF, beyond-the-line-of-sight, emergency beacon shall be packed with all multiplace rafts carried on board aircraft when performing extended overwater flights outside of normal oceanic air traffic routes.

j. Flashlight — Required for all night flights.

k. Antiexposure suits — The latest available type continuous-wear or quick-donning antiexposure suits, as appropriate, shall be provided for flight personnel of naval aircraft when in the event of a mishap there would be a significant risk of water entry and when any of the following conditions prevail:

- (1) The water temperature is 50 °F or below.

(2) The outside air temperature (OAT) is 32 °F (wind chill factor corrected or below; see Figure 8-1).

(3) If the water temperature is between 50 °F and 60 °F, the commanding officer of the unit concerned must determine whether anti-exposure suits are necessary (Figure 8-2) based on SAR factors as follows:

- (a) Assess maximum probable rescue time. This is a function of mission distance, SAR equipment, and SAR location.
- (b) Determine the lowest water temperature in the mission area during the time period of flight.

**Note**

Rescue swimmers shall not be deployed unless equipped with anti-exposure protection when any of the above stated conditions exist.

WHAT THE THERMOMETER READS (degrees F.)												
WIND SPEED MPH	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
	WHAT IT EQUALS IN ITS EFFECT ON EXPOSED FLESH											
CALM	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
5	48	37	27	16	6	-5	-15	-26	-36	-47	-57	-68
10	40	28	16	4	-9	-21	-33	-46	-58	-70	-83	-95
15	36	22	9	-5	-18	-36	-45	-58	-72	-85	-99	-112
20	32	18	8	-10	-25	-39	-53	-67	-82	-96	-110	-121
25	30	16	0	-15	-29	-44	-59	-74	-88	-104	-118	-133
30	28	13	-2	-18	-33	-48	-63	-79	-94	-109	-125	-140
35	27	11	-4	-20	-35	-49	-67	-82	-98	-113	-129	-145
40	26	10	-6	-21	-37	-53	-69	-85	-100	-116	-137	-148
<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">Little danger if properly clothed</div> <div style="text-align: center;">Danger of freezing exposed flesh</div> <div style="text-align: center;">Great danger of freezing exposed flesh</div> </div>												

3710-F05

Figure 8-1. Wind Chill Index

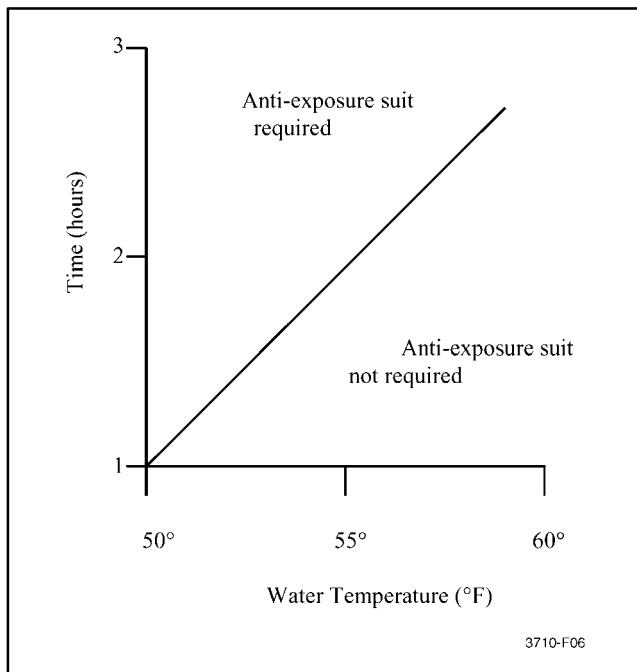


Figure 8-2. Antiexposure Suit Requirement

- (4) When water temperature is below 60 °F and antiexposure suits are not required, flight equipment ensemble shall include aramid undergarments. Wearing double layers of these undergarments can significantly improve antiexposure performance in a dry environment.

**WARNING**

Aramid undergarments alone provide a very minimal increase in thermal protection in a water survival situation. Immersion in water with a temperature of between 50° and 60° for as little as 2 hours can result in unconsciousness because of hypothermia. Wearing of the complete antiexposure ensemble as authorized by NAVAIR 13-1-6.7 is the only configuration that ensures adequate thermal protection with water temperatures below 60 °F.

- (5) Final determination with regard to actual wearing of antiexposure suits shall be made by the CO or officer in charge (OIC) of the unit concerned based on all pertinent factors (i.e.,

class aircraft, type and duration of assigned mission, ambient cockpit temperatures, suit ventilation features, combat versus noncombat environment, availability of SAR facilities).

- (6) Only approved combinations of antiexposure suit inner and outer liners authorized by NAVAIR 13-1-6.7, Aircrew Personnel Protective Equipment, shall be worn.
- (7) When antiexposure suits are not actually worn by occupants of aircraft in which the use of quick-donning suits is practical (i.e., large helicopters and patrol class aircraft) such suits shall be carried for each flight personnel as part of the aircraft survival equipment on flights conducted under the temperature conditions stated above. Exceptions to the above requirements are as follows:
- (a) Fleet tactical support squadrons and other commands operating transport class aircraft in routine transport operations. (Functional checkflights, flights for airlift of hazardous cargo, and flights in combat zones are examples of other than routine operations.)
- (b) When worn with approved inner garments, the full-pressure suit is authorized for use in place of the continuous-wear antiexposure suit.

**Note**

The wearing of full-body antiexposure rubber wetsuits can result in rapid onset of fatigue as a result of dehydration. Since fatigue is more prevalent with the wearing of wetsuits, the rest, sleep, and flight time requirements of paragraph 8.3.2 may not be sufficient.

- l. Antiblackout suits shall be worn and connected on all flights in aircraft equipped for their use.
- m. Inflatable life preservers shall be worn during all flights originating from or terminating on ships or landing platforms. Life preservers shall be readily available when operating from aerodromes in the vicinity of coastal waters or when operating from inland aerodromes where takeoff, route of flight, or approach path is over water. Occupants of ejection seat aircraft shall wear the appropriate life preserver at all times. Life preservers shall be

worn when mission requirements dictate operation over water below 1,000 feet exclusive of normal departures or approaches.

**WARNING**

The LPU life preserver automatic inflation device, FLU-8/P, is designed for use in ejection seat aircraft only. It shall not be worn in aircraft where ditching is a recommended procedure, in helicopters, or on COD flights.

- n. Laser eye protection (LEP) — LEP shall be worn as prescribed in OPNAVINST 5100.27/MCO 5104.1 as required in applicable flight clearances; and, when laser scenarios involve multiple aircraft.
- o. Helicopter emergency egress device (HEED) — HEED shall be worn by all helicopter, tilt-rotor, E-2, and C-2 aircrew during overwater flight. Aircrew must complete initial HEED training prior to being issued personal HEED equipment. The flight-approving authority may provide HEED equipment to any nonaircrewman who has successfully completed HEED and other prerequisite training.
- p. Appropriate aircrew CBRND protective equipment shall be worn or available for immediate use when operating in identified chemical, biological (CB) threat areas.

**8.2.1.2 Rescue Aircrewmembers Equipment.** The minimum personnel equipment to be carried by the rescue swimmer shall be in accordance with applicable aircraft type NATOPS manual and NWP 3-50.1.

**8.2.1.3 Passengers.** Passengers shall comply with the provisions of paragraph 8.2.1.1.m.

- a. Passengers in COD aircraft during shipboard launch and recovery and passengers in helicopters/tilt-rotors shall wear an approved protective helmet with reflective tape. The combat/parachutist helmet may be worn in lieu of the protective helmet with reflective tape, provided hearing protection is worn by all passengers. Waivers of this requirement may be granted by CMC/COMNAVAIRFOR only.

- b. During shipboard logistic, nontactical operations, passengers in COD/VOD aircraft (excluding FMF helicopters and tilt-rotors) shall wear appropriate antiexposure protection whenever antiexposure suits are required for aircrew. Competent authority is authorized to waive this requirement based on an operational risk analysis, which considers; rescue distance, expected rescue times, personal health factors, and other pertinent aircraft egress factors.
- c. For all other aircraft, passengers shall be equipped with the same items of safety and survival gear as the flight personnel.

**8.2.2 Liferrafts.** Liferrafts of sufficient capacity to accommodate passengers and crew shall be provided in all aircraft when there would be a significant risk of water entry in the event of a mishap. Officers in tactical command may waive this provision during troop movements between sea and shore when they deem it appropriate and adequate SAR facilities are available.

### 8.2.3 Parachutes

**8.2.3.1 Requirements.** Parachutes shall be provided for all occupants of naval aircraft except as follows:

- a. Multiengine transport and utility aircraft except for functional checkflights or as the unit commander directs.
- b. Fleet air reconnaissance aircraft (E-6B, only).
- c. Helicopters shall carry parachutes on flights involved in experimental or research operations.
- d. Appropriate CBRND protective equipment shall be available for all flights into, from, or in the vicinity of identified CB threat and/or CB weapons use areas.

**8.2.3.2 Responsibility of the Pilot in Command.** The pilot in command of a naval aircraft in which parachutes are required shall assure the following:

- a. A parachute is available to all flight personnel and passengers in a location convenient to the intended user.

- b. All flight personnel and passengers are familiar with the location, use of the type parachute provided, and bailout procedures for the aircraft in which embarked.

**8.2.3.3 Quick Attachable Chest-Type Parachutes (QAC).** At the discretion of the pilot in command, flight personnel and passengers of aircraft in which QAC-type parachutes are used may remove and stow their parachute harnesses in a readily accessible predesignated standard stowage space. Individuals performing pilot/copilot duties in such aircraft may remove their parachute harness only when both the following conditions prevail:

- a. The flight is conducted during daylight hours.
- b. The aircraft remains at or below 2,000 feet over open water or level terrain.

**8.2.4 Oxygen/Cabin Pressurization.** Except as stated in paragraph 8.2.4.1, all occupants aboard naval

aircraft shall use supplemental oxygen on flights in which the cabin altitude exceeds 10,000 feet.

**8.2.4.1 Unpressurized Aircraft.** In unpressurized aircraft, the pilot at the controls shall use supplemental oxygen continuously when cabin altitude exceeds 10,000 feet. When oxygen is not available to other occupants, flight between 10,000 and 13,000 feet shall not exceed 3 hours duration, and flight above 13,000 feet is prohibited.

**8.2.4.2 Pressurized Aircraft.** Figure 8-3 governs the use of oxygen equipment in pressurized aircraft other than tactical jet aircraft flown above 10,000 feet pressure altitude. Oxygen shall be used when cabin altitude is maintained at 10,000 feet or greater except as modified by paragraph 8.2.4.3.

**8.2.4.3 Tactical Jet and Tactical Jet Training Aircraft.** Oxygen shall be used by all occupants from takeoff to landing. Emergency bailout bottles, when provided, shall be connected prior to takeoff.

AMBIENT ALTITUDE	SINGLE-PILOTED AIRCRAFT	PILOT	COPILOT	CREW ON DUTY	OTHER OCCUPANTS
FL 250 and below	R	R	R	R	N/A
Above FL 250 through FL 350	I	I	R	R	R
Above FL 350 through FL 400	O	I or O	I or R	R	R
Above FL 400 through FL 450	O	O	I	I	R
Above FL 450 through FL 500	O	O	I	I	I

LEGEND

R — Oxygen shall be readily available

I — Oxygen shall be immediately available. Helmets shall be worn with an oxygen mask attached to one side or an approved quick-donning or sweep-on mask properly adjusted and positioned for immediate use. Set oxygen regulator to 100 percent and ON.

O — Oxygen shall be used.

**Note**

In multipiloted pressurized aircraft if above FL 250, the pilot at the controls must be using 100 percent oxygen if the other seat is occupied by other than a qualified pilot, except for aircraft equipped with quick-donning masks at both pilot stations where the above rule shall apply above FL 350.

Figure 8-3. Oxygen Requirement for Pressurized Aircraft Other Than Jet Aircraft

**8.2.4.4 Quantity of Oxygen.** The quantity of oxygen aboard an aircraft before takeoff must be sufficient to accomplish the planned mission. In aircraft carrying passengers, there shall be an adequate quantity of oxygen to protect all occupants through normal descent to 10,000 feet.

**8.2.4.5 Loss of Pressurization.** If loss of pressurization occurs, an immediate descent shall be made to a flight level where cabin altitude can be maintained at or below FL 250 and oxygen shall be utilized by all occupants.

**8.2.4.6 Decompression Sickness.** When an occupant of any aircraft is observed or suspected to be suffering from the effects of decompression sickness, 100 percent oxygen will be started and the pilot shall immediately descend and land at the nearest civilian or military installation suitable for safe landing and obtain qualified medical assistance. See paragraph 8.3.2.12.b.

### **8.3 HUMAN PERFORMANCE AND AERO-MEDICAL QUALIFICATIONS FOR FLIGHT AND FLIGHT SUPPORT PERSONNEL**

**8.3.1 General.** Operational readiness and aviation safety are enhanced by assuring that flight crew and flight support personnel achieve and maintain an optimal state of physical and emotional health. Conditions which reduce that state can decrease performance and increase mishap potential. This section outlines basic guidelines that individuals and all levels of supervision and command can use to attain and monitor personnel performance.

#### **Note**

- The senior aviation commander responsible for conduct of tactical air operations may exceed these guidelines, should operational necessity dictate. Exceeding the guidelines increases the probability of crew fatigue, causing impaired judgment and reduced performance. When exceeding the guidelines, commanders shall manage the increased risk created by crew fatigue, and implement appropriate risk controls.
- Landing signal officers (LSOs) shall meet the physiological standards required for aircrew in a flight status to

perform the duties of a controlling or backup LSO. Maladies or injuries that do not impair mental acuity (such as minor sprains, etc.), but that preclude normal flight status may be waived by the flight surgeon on a case-by-case basis.

- Commanding officers and flight surgeons shall comply with applicable directives pertaining to mental health evaluation of servicemembers. (See DOD Directive 6490.1, Mental Health Evaluations of Members of the Armed Forces that is implemented by SECNAVINST 6320.24). Individuals who fall under "Military Whistleblower Protection" guidelines (DOD Directive 7050.6 that is enclosed in SECNAVINST 5370.7) may require additional administrative procedures in conjunction with evaluation. Commanding officers are encouraged to consult with local flight surgeons and legal officers.
- UAV flightcrews should comply with all sections of 8.3 and any other applicable sections.

**8.3.2 Factors Affecting Personnel Readiness and Qualifications.** Numerous complex factors affect the readiness of flight and support personnel. Those factors must be understood by all concerned and appropriate countermeasures established to assure they do not reduce personnel readiness. Flight personnel should report any physical indisposition to superiors and assume flight duty only when fit to do so. Since an individual may frequently be the poorest judge of personal fitness, commanding officers shall ensure that flight personnel are adequately observed and appropriate temporary grounding action is taken when necessary. The following guidelines and requirements should be considered for all aspects of naval aviation.

#### **8.3.2.1 Rest and Sleep**

**8.3.2.1.1 Flight Crew and Flight Support Personnel.** Commanders should make available eight hours for sleep during every 24-hour period. Schedules will be made with due consideration for watch standing, collateral duties, training, and off-duty activities.

**8.3.2.1.2 Flight Crew.** Ground time between flight operations should be sufficient to allow flight crew to eat and obtain at least 8 hours of uninterrupted rest. Flight crew should not be scheduled for continuous alert and/or flight duty (required awake) in excess of 18 hours. If it becomes necessary to exceed the 18-hour rule, 15 hours of continuous off-duty time shall be provided.

**8.3.2.1.3 Circadian Rhythm.** Circadian rhythms are cyclic fluctuations of numerous body functions that are set like a “biological clock” to a local time or sleep/awake periods. Changing local sleep/awake periods or rapidly crossing more than three time zones disrupts circadian rhythms and can cause a marked decrease in performance. This condition, called “jet lag,” is compounded by illness, fatigue, or drugs, and is resolved only by accommodation to the new local time or sleep/awake period. The accommodation period can be estimated by allowing 1 day for every hour in excess of 3. Accommodation begins when a new daily routine is established. During that period, aircrew are not grounded but can be expected to perform at a less than optimal level. Closer observation by the flight surgeon during the period may be desirable.

**8.3.2.2 Flight Time.** Precise delineation of flight time limitations is impractical in view of the varied conditions encountered in flight operations. Required preflight/postflight crew duty time must be given due consideration. The following guidelines are provided to assist commanding officers:

- a. Daily flight time should not normally exceed three flights or 6-1/2 total hours flight time for flight personnel of single-piloted aircraft. Individual flight time for flight personnel of other aircraft should not normally exceed 12 hours. The limitations assume an average requirement of 4 hours ground time for briefing and debriefing.
- b. Weekly maximum flight time for flight personnel of single-piloted aircraft should not normally exceed 30 hours. Total individual flight time for flight personnel of other aircraft should not exceed 50 hours. When practicable, flight personnel should not be assigned flight duties on more than 6 consecutive days.
- c. Accumulated individual flight time should not exceed the number of hours indicated in Figure 8-4.

PERIOD (DAYS)	SINGLE PILOTED AIRCRAFT	MULTI-PILOTED (PRESSURIZED) EJECTION SEAT AIRCRAFT	MULTI-PILOTED NON-PRESSURIZED AIRCRAFT	MULTI-PILOTED PRESSURIZED AIRCRAFT
1	6.5	12	12	12
7	30	50	50	50
30	65	80	100	120
90	165	200	265	320
365	595	720	960	1120

Figure 8-4. Maximum Recommended Flight Time

- d. When the tempo of operations requires individual flight time in excess of the guidelines in Figure 8-4 or paragraphs 8.3.2.2.a and 8.3.2.2.b, flight personnel shall be closely monitored and specifically cleared by the commanding officer on the advice of the flight surgeon. Aviation-capable ships that do not have access to flight surgeons for waiving flight time limitations should utilize available general medical officers for medical evaluation. Comments should be made with regard to stress level and adequacy of rest and nutrition. Authorization from the squadron commanding officer and flight surgeon can then be made via message. Commanding officers should assure equitable distribution of flight time commitments among assigned flight personnel, commensurate with additional ground duties that each may be assigned.

**Note**

Flight operations involving contour, nap of the earth, chemical defense gear, night and night vision devices, and adverse environmental factors (dust, cloud cover, precipitation, etc.) are inherently more stressful and demanding than flying day VFR. The resultant fatigue may have a profound physiological effect upon mission capability. Mission planners should take this physiological threat into account in making modifications to normal crew rest/crew day guidelines.

**8.3.2.3 Nutrition.** All flight and ground support personnel shall be provided a positive program of information for the establishment and maintenance of good dietary habits. Failure to eat within 12 hours

preceding end of flight may impair performance and ability to adequately control aircraft. Reducing diets should be under strict supervision of a flight surgeon.

**8.3.2.4 Exercise.** Planned physical fitness programs promote health. All levels of command are encouraged to establish approved physical fitness programs for all personnel in accordance with OPNAVINST 6110.1. Due consideration must be given to avoiding contact sports, skiing, etc. Adequate rest periods must be provided for aviators before flying following participation in competitive or particularly tiring sports activity. Twelve hours should normally be adequate.

**8.3.2.5 Drugs.** Drugs are defined as any chemical that when taken into the body causes a physiological response. All flight and support personnel shall be provided appropriate information by a command drug abuse education program.

a. Legal drugs are those medically prescribed or legally purchased for treatment of illness.

(1) Prescription drugs — Taking drugs prescribed by competent medical authority shall be considered sufficient cause for recommendation of grounding unless their use is specifically approved by a flight surgeon, or a waiver for specific drug use has been granted by CHNAVPERS or the CMC. Consideration shall be given to the removal of ground support personnel from critical duties, for the duration of the drug effects, if appropriate. Medicines such as antihistamines, antibiotics, tranquilizers, sleeping pills, etc., obtained by prescription shall be discarded if all are not used during the period of medication.

(2) Over-the-counter drugs — Because of the possibility of adverse side effects and unpredictable reactions, the use of over-the-counter drugs by flight personnel is prohibited unless specifically approved by a flight surgeon. Ground support personnel shall be briefed on the hazards of self-medication and should be discouraged from using such drugs.

(3) Alcohol — The well-recognized effects (i.e., intoxication and hangover) are detrimental to safe operations. Consumption of any type of

alcohol is prohibited within 12 hours of flight planning. Adherence to the letter of this rule does not guarantee a crewmember will be free from the effects of alcohol after a period of 12 hours. Alcohol can adversely affect the vestibular system for as long as 48 hours after consuming, even when blood-alcohol content is zero. Special caution should be exercised when flying at night, over water, or in IMC. In addition to abstaining from alcohol for 12 hours prior to flight planning, flightcrews shall ensure that they are free of hangover effects prior to flight. Detectable blood alcohol or symptomatic hangover shall be cause for grounding of flight personnel and the restriction of the activities of aviation ground personnel.

(4) Tobacco — Smoking has been shown to cause lung disease and impair night vision, dark adaptation, and increase susceptibility to hypoxia. Smoking is hazardous to nonsmokers, as the effects occur whether smoke is inhaled directly or secondarily. Persons desiring to smoke shall show due consideration for the desires of nonsmokers in the vicinity and abstain from smoking if asked. Further guidance on smoking is contained in paragraph 7.1.9 of this instruction.

(5) Caffeine — Excessive intake of caffeine from coffee, tea, cola, etc., can cause excitability, sleeplessness, loss of concentration, decreased awareness, and dehydration. Caffeine intake should be limited to not more than 450 mg per day, or 3 to 4 cups of coffee.

b. The use of illicit drugs is prohibited.

**8.3.2.6 Illness.** Acute minor illnesses such as upper respiratory infections, vomiting, or diarrhea can produce serious impairment of flight personnel. All illnesses shall be evaluated by competent medical authority. Recommendations for grounding shall be accomplished by the submission of a grounding notice (NAVMED 6410/1). Clearance notices (NAVMED 6410/2) shall be issued only by a flight surgeon. Where a flight surgeon is not available, clearance notices shall be handled in accordance with BUMEDINST 6410.5. Flight personnel who are hospitalized shall be evaluated in accordance with current BUMED directives and a clearance notice issued prior to flight. Ground support



personnel should be similarly monitored. Aircrew shall not fly for at least 48 hours after general, spinal, or epidural anesthetic. Return to flying status thereafter shall be upon the recommendation of a flight surgeon and at the discretion of the commanding officer.

**8.3.2.7 Dental Care.** Dental procedures that involve the use of injectable drugs (e.g., novocaine) shall be cause for grounding for a period of 24 hours.

### 8.3.2.8 Pregnancy

- a. Because of the medical hazards of flight, pregnant flight personnel shall consult with their flight surgeon when they first suspect they are pregnant. Flight personnel are grounded during pregnancy unless a clearance to continue in flight status is granted by the aviation unit commanding officer. Consideration for such clearance should be based on desire of the pregnant aircrew member to continue flying; the formal recommendation and concurrence of her obstetrician; and the recommendation and concurrence of the local or unit flight surgeon. The member shall submit her request to her commanding officer with these endorsements. Her request should acknowledge an understanding of the potential risks of continued flying during pregnancy. A copy of the commanding officer's final action shall be forwarded to the appropriate BUPERS code or CMC (ASM) and to NAVOPMEDINST DET NAVAEROMEDINST (Code 342). If clearance to continue flying is not requested or granted, notification will be made to BUPERS or CMC and NAVOPMEDINST DET NAVAEROMEDINST (Code 342). In either case, an estimated date of delivery and return to full duty shall be included.
- b. Flying during pregnancy is prohibited in single-piloted aircraft, ejection seat aircraft, high performance aircraft that will operate in excess of 2gs, aircraft involved in shipboard operations or flights with cabin altitudes that exceed 10,000 feet.
- c. Clearance will be valid only until the start of the third trimester. Participation in aviation physiology, aviation water survival, or other survival programs is not permitted. If aviation physiology qualifications expire during the pregnancy, clearance for continued flying shall not be granted

beyond the date of expiration of those qualifications.

- d. Following completion of the pregnancy and return to full duty, a post-grounding physical shall be submitted to NAVOPMEDINST DET NAVAEROMEDINST (Code 342) for endorsement. This submission shall include information regarding any complications encountered during pregnancy as well as the health of the child and mother following delivery.
- e. If the aircrew member becomes pregnant during aviation training, she shall be grounded until after completion of the pregnancy and return to normal full duty.
- f. Normal uncomplicated pregnancy in female air traffic controllers is not considered physically disqualifying in itself. Specific duty modifications during the pregnancy if required should be managed locally.

**8.3.2.9 Emotional Upset.** Commanding officers must remain alert to the emotional and physical status of assigned personnel and take corrective action as may be necessary either for individuals or particular groups (i.e., referral for professional evaluation, short stand-down from flight duties, rest and recreation, leave, etc.).

#### Note

Commanding officers and flight surgeons shall comply with applicable directives pertaining to mental health evaluation of servicemembers (see SECNAVINST 6320.24, Mental Health Evaluations of Members of the Armed Forces). Individuals who fall under "Military Whistleblower Protection" guidelines (SECNAVINST 5370.7) may require additional administrative procedures in conjunction with evaluation. Commanding officers are encouraged to consult with local flight surgeons and legal officers.

**8.3.2.10 Immunization/Injections.** Flight personnel shall not participate in flight duties for 12 hours after receiving an immunization or injection unless cleared sooner by a flight surgeon. Those showing protracted or delayed reaction shall be grounded until cleared by a flight surgeon.

**8.3.2.11 Blood Donation.** Although blood donated in small quantities is quickly replaced and does not adversely affect ground activities, the hazards of hypoxia and reduced barometric pressure make it desirable to limit such donations by flight personnel in accordance with the following:

- a. Flight personnel shall not be regular blood donors.
- b. Flight personnel in combat or flying in a ship-board environment shall not donate blood within 4 weeks prior to such flying.
- c. Flight personnel shall not participate in flight duties or perform low-pressure chamber runs for 4 days following donation of 450 cc of blood (1 pint).

**8.3.2.12 Hypobaric Exposure.** The following restrictions to flight following low-pressure chamber flights or accidental hypobaric exposure (rapid decompression in flight) apply.

- a. Flight personnel shall not perform flight duties for 12 hours after exposure to low-pressure chamber flight in excess of 30,000 feet. They may fly during the 12 hours as passengers in aircraft where cabin altitude does not exceed 10,000 feet.
- b. Individuals who have experienced a reaction to decompression (vasomotor collapse, unconsciousness, bends, etc.) in flight shall be immediately referred to a flight surgeon. Grounding and clearance shall be in accordance with paragraph 8.3.2.6 of this instruction.

**8.3.2.13 Hyperbaric Exposure.** Under normal circumstances, flight personnel shall not fly or participate in low-pressure chamber flights within 24 hours following scuba diving, compressed air dives, or high-pressure chamber evolutions. Where an urgent operational requirement dictates, flight personnel may fly within 12 hours of scuba diving, provided no symptoms of aeroembolism/decompression sickness develop following surfacing and the subject is examined and cleared by a flight surgeon. Personnel participating in HEED/HABD may fly as passengers without restriction. Participation in flight duties is prohibited for 12 hours following HEED/HABD. The hyperbaric exposure flight restriction is not applicable

to routine ground pressurization checks conducted in P-3 and C-130 aircraft when completed without incident.

**8.3.2.14 Beards.** Beards are prohibited for those who use oxygen masks routinely. Flight personnel who do not wear masks routinely shall not wear a beard that would significantly interfere with safe oxygen mask functions during emergency use.

**8.3.2.15 Eyeglasses.** Corrective eyeglasses shall be worn as prescribed. The requirement to wear corrective lenses will be annotated on the clearance notice.

**8.3.2.16 Dehydration.** Of all causes of fatigue, one of the most treatable is dehydration. Early stages of dehydration can lead to emotional alterations and impaired judgment. Flightcrew should be aware of the following:

- a. Heavily sweetened drinks should be avoided since sugar can slow the absorption of water in the body.
- b. Alcohol and coffee (caffeine) are diuretics and will cause the body to lose more than it gains.
- c. Ingestion of plain water throughout the day will reduce probability of dehydration and resultant fatigue.

**8.3.2.17 Simulator Sickness.** Simulator exposure can cause perceptual sensory changes that may compromise safety. The experience of symptoms such as nausea, disorientation, and sweating has occurred in fighter, attack, patrol, and helicopter simulators. Symptoms of simulator sickness may occur during simulator flight and last several hours after exposure. In some cases, the onset of symptoms has been delayed as much as 18 hours. The symptoms have occurred in both motion base and fixed-base simulators to pilots and other aircrew as well as instructors. Preliminary data suggest that more experienced flight personnel may be at greater risk, as well as individuals who are new to the simulator. Flight personnel exhibiting symptoms of simulator exposure should abstain from same-day flying duties. Individuals who have experienced simulator sickness in the past have a greater probability of recurrence and should not be scheduled to fly for 24 hours following simulator exposure. Adaptation does occur over time.

**8.3.2.18 Height and Body Weight.** Applicants for all flight programs must meet the general height standards for entrance into naval service. Specific height guidance is found in OPNAVINST 3710.37.

The minimum and maximum nude body weight allowed for those on aviation duty are 100 pounds and 235 pounds, respectively. These limitations may be waived in accordance with NAVMED P117.

Navy and Marine Corps applicants, students, and designated personnel in all aviation programs shall also meet the standards as set forth in OPNAVINST 6110.1 or MCO 6100.12.

**WARNING**

Any person flying in an ejection seat aircraft whose nude body weight is below or above the COMNAVAIRSYSCOM-certified crew member weights for an ejection seat is at increased risk from ejection. COMNAVAIRSYSCOM-certified weights are depicted in Figure 8-5.

**8.3.3 Performance Maintenance During Continuous and Sustained Operations.**

Operational commitments may necessitate continuous and/or sustained operations in which sleep and circadian rhythms are disrupted, leading to potentially hazardous fatigue. NAVMED P-6410 (01 Jan 2000), Performance Maintenance During Continuous Flight Operations, A Guide for Flight Surgeons, provides background on the subject, strategies for fatigue reduction, and guidance in the use of sleep-inducing and anti-fatigue medications (“no-go pills” and “go-pills”) in aircrew. Commanding officers, in consultation with their Flight Surgeons, are authorized to use any of the strategies described in the guide when mission requirements and operational risk management indicate use would be appropriate. The use of stimulants and/or sedatives shall only be authorized following the commanding officer’s consultation with the wing commander or equivalent, and the flight surgeon. The flight surgeon, furthermore, shall have consulted with his/her supervisor in the aeromedical chain of command.

**8.4 NAVAL AVIATION SURVIVAL TRAINING PROGRAM**

**Note**

This section “combines” Naval Aviation Physiology Training Program (NAPTP) and Naval Aviation Water Survival Training Program (NAWSTP) into a single Naval Aviation Survival Training Program (NASTP).

- a. The Naval Aviation Survival Training Program (NASTP) includes four specific types of aviation physiology and water survival training.
  - (1) Initial training “N/NP” series.
  - (2) Specialized, Supplemental and/or Advanced continuation training “N” or “NP” series.
  - (3) Refresher continuation training for aircrew “R/RP” series.
  - (4) Adjunctive training that augments the basic refresher cycle of the NASTP and squadron aviation safety programs.
- b. Commanding officers shall ensure that all of the requirements are met and that all NASTP training is documented in the NATOPS flight personnel training/qualification jacket (OPNAV 3760/32).

**8.4.1 Training Requirements.** The NASTP shall prepare personnel authorized to fly in naval aircraft for the aeromedical aspects of flight, water survival, and proper employment of ALSS and survival procedures. The NASTP is divided into four different levels of training. Renewal is required every 4 years unless otherwise stated and may be accomplished within 60 days preceding expiration of current qualification. At 4 years, expiration date shall be on the last day of the month in which training was completed.

**Note**

There is no longer a differentiation between “Aviation Physiology” and “Water Survival” training courses. Therefore, combined curricula (e.g., R1/RP1, R2/RP2, etc.) must be scheduled and completed as a single training event, even if only a portion of the student’s prior qualification is due to expire.

AIRCRAFT	EJECTION SEAT(S)	NUDE WEIGHT (Pounds)
A-4/TA-4F/J	ESCAPAC IG-3	136 to 213
T/AV-8B	SJU-4/12/13	136 to 213
EA-6B	GRUEA-7	140 to 204
F-14A/B	GRU-7A	136 to 213
F-14D	SJU-17(V) 3/A,4/A	136 to 213
F/A-18A/B/C/D (BUNO 164068 and prior (pre-lot 13))	SJU-5/-6	136 to 213
F/A-18C/D/E/F (BUNO 164196 and up)	SJU-17(V) 1/A,2/A,9/A	136 to 213
F/A-18C/D/E/F (BUNO 164196 and up)	SJU-17A(V) 1/A,2/A,9/A	136 to 245
F-5E/F	NORTHROP Improved Rocket	132 to 201
S-3/ES-3	ESCAPAC IE-1	136 to 213
T-2	LS-1A	140 to 204
T-6	Martin Baker MK16 USLA	103 to 245
T-45A/C	SJU-17(V) 5/A,6/A	136 to 213
T-38A	NORTHROP Improved Rocket	132 to 201
T-45A/C	SJU-17(V) 5/A,6/A	136 to 213
T-45A/C	SJU-17A(V) 5/A,6/A	136 to 245

Figure 8-5. COMNAVAIRSYSCOM Certified Crewmember Weights

Additionally, NASTP requirements unless otherwise stated, are as follows:

- a. Appropriate courses for aircrew and non-aircrew are found in Appendix E, Figure E-1 and this Chapter. Unless otherwise noted, courses cannot be substituted for each other.
- b. All U.S. Military services and foreign military aviators and aircrew flying in USN/USMC aircraft shall meet U.S. Navy quadrennial refresher training requirements prior to flight.
- c. Personnel who do not fly in a crew position for a period of 18 consecutive months are considered expired and shall be retrained prior to resuming flight status.
- d. Personnel who transition to a different category aircraft or require additional qualifications for a different aircraft category (i.e., becoming dual qualified) as defined in Figure E-3 during their

4-year cycle shall require additional training. If initial (N1/NP1 or N5/NP2) and advanced continuation training (N6, N11, or N12 as applicable) have been completed, only the refresher course (R1/RP1, R2/RP2, R3/RP3, or R4/RP4 as applicable) for the transition aircraft needs to be completed. The date of the first qualification serves as the 4-year currency benchmark. Elements B, C, D, E, and I of the required refresher training in Figure E-2 do not need to be repeated, all other elements as listed must be successfully completed.

- e. Flight personnel being assigned to an out-CONUS duty station shall complete applicable NASTP training prior to leaving CONUS. Commanding officers of detaching personnel shall ensure that requirements are met prior to detachment or ensure that the individual is scheduled for NASTP completion in route. Training must be completed to ensure that NASTP currency will not expire during assigned out-CONUS tour.

- f. Personnel shall complete their training prior to commencement of a deployment if their qualifications will expire during that deployment.
- g. Aircrew in a DIFDEN status are not required to maintain currency in NASTP training. Personnel under DIFDEN waivers are required to be current in NASTP.
- h. Common elements of NASTP and USAF Original and Refresher Physiology training shall be recognized as meeting either service's requirements. Common elements are items B-E, V, X, Y of Figure E-2. Not recognized are aviation water survival items and aircraft/service specific training, such as ejection seat, emergency egress and ALSS training. For designated aircrew trained in USAF Physiology and Water Survival (S-V86-A or S-V90-A) appropriate NASTP refresher curriculum (Figure E-3) less the common elements shall be completed prior to flight. For non-aircrew, the appropriate Initial course less the common events shall be completed prior to flight. USAF Officer Cadet Initial Training and USAF Passenger Training is not recognized as meeting any NASTP requirements.
- i. For USAF-trained aircrew selected to fly in Category 1 aircraft (Figure E-3), if Original USAF Physiology Training and USAF Water Survival course S-V86-A have been successfully completed, R1/RP1 shall be required prior to flight duties in naval aircraft. If these courses have not been completed, the appropriate required training is N5/NP2 and N6 prior to flight.
- j. For USAF-trained aircrew selected to fly in Category 2 aircraft (Figure E-3), if Original USAF Physiology Training and USAF Water Survival course S-V90-A have been successfully completed, R2/RP2 shall be required prior to flight duties in naval aircraft. If these courses have not been completed, the appropriate training is N5/NP2 and N11 prior to flight.
- k. For USAF-trained aircrew selected to fly in Category 3 aircraft (Figure E-3), if Original USAF Physiology Training and USAF Water Survival courses S-V90-A and S-V84-A have been successfully completed, R3/RP3 shall be required prior to flight duties in naval aircraft. If these courses have not been completed, the appropriate training is N5/NP2 and N12 prior to flight.
- l. For USAF-trained aircrew selected to fly in Category 4 aircraft (Figure E-3), if Original USAF Physiology Training and USAF Water Survival course S-V90-A have been successfully completed, R4/RP4 shall be required prior to flight duties in naval aircraft. If these courses have not been completed, the appropriate training is N5/NP2 and N11 prior to flight.
- m. Civilian contractor DOD flight operations are governed by this document, NAVAIRINST 3710.1 and must also comply with US Title Code, Office of Management and Budget (OMB), DOD, SECNAVINST and other OPNAV instructions concerning reimbursement to the Navy for provided training.
- n. DOD civilians are authorized training per Figure E-1 if duties require flight aboard USN/USMC, other U.S. Military, USCG, or NASA-owned aircraft.
- o. Non-DOD civilians are authorized training if authorized flight aboard USN/USMC, other U.S. Military, USCG, or NASA-owned aircraft (reimbursement may be required).
- p. The NASTP curricula shall indicate those elements which constitute elements specific to overwater flights. For orientation flights approved with aviation water survival training waived (i.e., flights are overland only), those elements specific to overwater flights are not required.
- q. The common elements of NASTP and Foreign military aviation physiology training shall be recognized as meeting either service's requirements per the STANAG 3114 Aeromedical Training of Flight Personnel agreement. Common elements are items B-E, V, X, Y of Figure E-2. Not recognized are aviation water survival items and aircraft/service specific training, such as ejection seat, emergency egress and ALSS training. For foreign-trained aircrew, appropriate NASTP curriculum (N5/NP2 with N6, N11, or N12) less the common elements shall be completed prior to flight. For non-aircrew (selected passengers or project specialists), appropriate NASTP curriculum (N3/NP3 or N4/NP4) less the

common elements listed above shall be completed prior to flight. This policy is in effect for the following countries: Belgium, Canada, Denmark, France, Germany, Greece, Italy, Netherlands, Norway, Portugal, Turkey, and United Kingdom. For all others, the applicable NASTP course shall be completed in its entirety.

- r. Completion of Canadian or United Kingdom Aviation Water Survival training is recognized as meeting Initial NASTP Aviation Water Survival training requirements. For designated Canadian and/or United Kingdom aircrew, if their aviation physiology and water survival training has been successfully completed in their native country, the applicable NASTP refresher curriculum (R1/RP1, R2/RP2, R3/RP3, or R4/RP4) shall be completed prior to Navy flight duties. If initial aviation physiology and water survival has not been completed, the aviator shall be enrolled in N5/NP2 with appropriate follow on advanced training (N6, N11, or N12).
- s. No NASTP training is required for UAV flight crews.

**8.4.2 Records.** Flight personnel reporting for NASTP training at an ASTC shall deliver their NATOPS jacket with a current Aeromedical Clearance Notice (BUMED 6410/2) to the training site. The ASTC shall ensure that appropriate training entries are made in the NATOPS jacket. All training documentation forms are to be retained as a permanent part of the NATOPS jacket. Personnel completing Adjunctive training shall have required annual training documented in their NATOPS jacket, other Adjunctive training may also be documented there.

#### **8.4.3 Physical Prerequisites for Participation in the NASTP**

- a. All prospective and designated flight personnel on competent flight orders shall have an Aeromedical Clearance Notice prior to participation in any dynamic training of the NASTP. The documentation shall be signed by a naval flight surgeon (FS), aviation medical officer (AMO), or aviation medical examiner (AME). Battalion surgeons are authorized to provide medical clearance letters for FMF personnel participating in

special underwater egress training (N7, N8, N9 and N10).

- b. With regard to naval aviator and enlisted aircrew candidates entering initial training through either the CNATRA or USAF AETC pipeline, exceptions to paragraph 8.4.3.a are authorized as determined by NAVOPMEDINST and approved by BUMED. In no case shall they be allowed to commence actual flight training until any required waiver is approved by NAVPERSCOM or CMC (ASM) and an Aeromedical Clearance Notice is issued by a flight surgeon.
  - (1) For cases where NAVOPMEDINST has a completed flight physical but cannot issue an Aeromedical Clearance Notice pending administrative processing, NAVOPMEDINST may certify the candidate physically qualified to commence Initial training using NAVOPMEDINST 6120/2.
  - (2) Naval aviator candidates and enlisted aircrew candidates awaiting waiver approval for a physical defect may be transferred from NAVAVSCOLSCOM to further aviation pipeline training only upon recommendation from NAVOPMEDINST and NAVAVSCOLSCOM. In no case shall they be allowed to commence actual flight training until any required waiver is approved by BUPERS or CMC (ASM) and an Aeromedical Clearance Notice is issued by a flight surgeon.
- c. Non-aircrew personnel, government contractors, Federal Government agencies (except NASA) and civilian agencies shall have an Aeromedical Clearance Notice or Medical Clearance for Non-aircrew/Non-military Personnel to Fly in USN/USMC Aircraft (OPNAV 3710/18 (3-04), Figure 8-6) for participation in the NASTP. The medical clearance is valid for 1 year.
- d. Appropriate medical clearances for other U.S. military, USCG or NASA personnel participating in the NASTP may be signed by those services' or agencies' medical officers, signifying that the individual is physically qualified for participation in high- or moderate- risk NASTP.

**CLEARANCE FOR NON-AIRCREW/NON-MILITARY PERSONNEL  
TO FLY IN USN/USMC AIRCRAFT**

**THIS FORM SHALL BE PROVIDED BY THE FLIGHT APPROVING AUTHORITY**

TO THE APPLICANT PLEASE READ CAREFULLY: You are requesting clearance to fly in military aircraft as a nonaircrew observer. Prior to flying, you are required to complete aviation physiology and aviation water survival training. These training programs require a high level of fitness and stamina. You will be required to complete training in complete flight gear, including helmet, gloves, boots, flight suit, parachute harness, and survival vest. Training includes a 25-yard surface swim, treading water for 2 minutes, drownproofing for 2 minutes, and orally inflating your life preserver. Underwater egress training requires you to swim 15 yards underwater in a flight suit and boots. Additionally, you may receive hypoxia recognition training in a hypobaric chamber to simulated altitude of 25,000 feet. Actual flight may be in high performance ejection seat aircraft capable of sustained high g-force maneuvering. To obtain clearance to fly in military aircraft, you are required to obtain a physical examination. Civilian personnel may be required to bear the cost of this examination. Please fill out the medical questionnaire and have your physician fill out the physical examination section of this form. You must then present this completed form to a Navy Flight Surgeon for endorsement for training and flight.

YES NO Medical Questionnaire - Do you have or have you ever had:

- 1. Disease of the eyes, ears, sinuses, seasonal allergies, hayfever, difficulty with clearing your ears, or pain in your ears or sinuses from diving or flying?
- 2. Chest pain, angina, heart attack, heart disease, heart murmur, palpitations, cardiac catheterizations, or pacemaker?
- 3. Hypertension, stroke, blood clots in legs, swelling in feet, or excessive fatigue with mild exertion?
- 4. Asthma, wheezing, emphysema, chronic cough, tuberculosis, collapsed lung, or shortness of breath with mild exertion?
- 5. Disease of the bowel, ulcers, rectal bleeding, chronic abdominal pain, hernia, kidney stone, or painful or frequent urination?
- 6. Arthritis, joint deformity, chronic back pain, or limitation of use of your back or extremities?
- 7. Paralysis, weakness of muscles, seizures, epilepsy, migraine or other severe headaches, loss of consciousness, or amnesia?
- 8. Mania, depression, schizophrenia, suicide attempt, alcoholism, panic attacks, fear of flying, fear of heights, fear of enclosed spaces?
- 9. Anemia, diabetes, cancers, arterial gas embolism, bends, surgery, hospitalization, or other chronic medical conditions not listed?
- 10. Are you currently pregnant?
- 11. Are you taking any medication? List:
- 12. Can you jog 15 minutes continuously and swim 100 yards?

Applicant's Name \_\_\_\_\_ Age \_\_\_\_\_ Sex \_\_\_\_\_

Address \_\_\_\_\_ Phone \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

Figure 8-6. Clearance for Nonaircrew/Nonmilitary Personnel to Fly in USN/USMC Aircraft (Sheet 1 of 2)

**TO THE EXAMINING PHYSICIAN**

This person is seeking clearance to fly military aircraft as a nonaircrew observer. He or she will be required to complete aviation physiology and water survival training. These training programs are designed as High Risk Training (described on the front of this form) and require a high degree of physical and psychological stamina. Completion of these training programs may lead to actual flight in high performance ejection seat aircraft capable of sustained high g-force maneuvering. The purpose of this evaluation is to clear this individual for the required training as well as actual flight.

Please Complete and Elaborate on all Abnormal Findings and Positive Responses

Height \_\_\_\_\_ Weight \_\_\_\_\_ Temp \_\_\_\_\_ Pulse \_\_\_\_\_ Resp \_\_\_\_\_ B/P \_\_\_\_\_

Corrected Visual Acuity: Right \_\_\_\_\_ Left \_\_\_\_\_ Hearing (Normal/Abnormal) \_\_\_\_\_

HGB or HCT \_\_\_\_\_ Urinalysis: Glucose \_\_\_\_\_ Protein \_\_\_\_\_ Ketone \_\_\_\_\_ Sp. Gravity \_\_\_\_\_

EKG (within last 12 months) \_\_\_\_\_ Chest XRAY (within last 3 years) \_\_\_\_\_

NL	ABN		Elaboration and Comments
<input type="checkbox"/>	<input type="checkbox"/>	HEENT (include Eustachian tube patency)	_____
<input type="checkbox"/>	<input type="checkbox"/>	Heart and Vascular	_____
<input type="checkbox"/>	<input type="checkbox"/>	Chest and Lungs	_____
<input type="checkbox"/>	<input type="checkbox"/>	Abdomen, Genitalia, and Hernia	_____
<input type="checkbox"/>	<input type="checkbox"/>	Spine, Extremities, and Musculoskeletal	_____
<input type="checkbox"/>	<input type="checkbox"/>	Neurological	_____
<input type="checkbox"/>	<input type="checkbox"/>	Mental Status	_____

I find no contraindication to this person's participation in required aviation physiology and water survival training as well as actual flight in high performance military aircraft.

Phone# \_\_\_\_\_

Examining Physician's Signature \_\_\_\_\_ Date \_\_\_\_\_

Flight Surgeon's Endorsement: Type Aircraft \_\_\_\_\_ Qualification PQ NPQ  
For physiology and water survival training, and flight in military aircraft as a selected passenger.

Signature \_\_\_\_\_ Date \_\_\_\_\_  
(Note: Scope of examination at the discretion of the Flight Surgeon)

Physiology Training: Curriculum \_\_\_\_\_ Qualification Q CQ UQ

Authorized Signature \_\_\_\_\_ Date \_\_\_\_\_

Water Survival Training: Curriculum \_\_\_\_\_ Qualification Q CQ UQ

Authorized Signature \_\_\_\_\_ Date \_\_\_\_\_

Commanding Officer's Endorsement: Type Aircraft \_\_\_\_\_ Approved  Disapproved

Signature \_\_\_\_\_ Date \_\_\_\_\_

Figure 8-6. Clearance for Nonaircrew/Nonmilitary Personnel to Fly in USN/USMC Aircraft (Sheet 2)



- e. Physical prerequisites for other personnel not identified above shall be determined on a case-by-case basis by COMNAVAIRFOR (N32) or CMC (ASM).
  - f. The same human factors/aeromedical qualifications concerning rest and sleep, drugs, and alcohol that appear in paragraph 8.3.2 shall apply to the NASTP training.
  - g. The general NASTP swimming ability prerequisite is U. S. Navy 2nd Class swimmer, USMC CWS-1 or better. For USMC assault troops, USMC CWS-3 (to include survival flotation instruction) or better is required. Enlisted or prospective aircrew on DIFCREW/DEFTEM orders shall pass the initial swim screening at Naval Aircrew Candidate School (CIN Q-050-1500) prior to enrolling in the intermediate swim course (CIN Q-050-0605). Officer and enlisted aircrew receiving pre-flight training at Naval Aviation Schools Command shall pass the intermediate swim course (CIN Q-050-0605) prior to enrolling in either the N1/NP1 or N5/NP2 courses.
  - h. Personnel participating in NASTP lectures only do not require medical clearance.
- b. Training waivers and qualification extensions for R/RP training shall be submitted to the appropriate TYCOM.
  - c. COMNAVAIRFOR or CMC may grant a waiver/qualification extension if the previously designated waiver authorities are not in the chain of command.
  - d. COMNAVAIRFOR (N32) shall be an information addressee on all waiver/qualification extension requests.

#### 8.4.4 Training Waivers/Qualification Extensions.

Personnel delinquent in the NASTP training requirements shall not be scheduled to fly unless a qualification extension has been granted by the appropriate TYCOM or in accordance with this instruction as follows:

- a. Training waivers for required N, NP, or N/NP training shall be submitted to COMNAVAIRFOR (N32) or CMC (ASM) as appropriate. Waivers for individuals participating in orientation/indoc-trination flights will be handled per paragraph 3.2. If a waiver is granted, the pilot in command shall ensure that the individuals are thoroughly briefed on installed life support systems (i.e., oxygen systems, parachutes, life vests, exposure suits), emergency egress systems (i.e., ejection seats, canopy jettison system), and ditching, crash landing and bailout procedures. NASTP requirements are waived for passengers in aircraft not equipped with ejection seats or personal oxygen systems used for primary life support.

**8.4.5 Coordination.** Type Commanders, commanding officers, aerospace physiologists, flight surgeons, training and safety officers shall monitor the NASTP to ensure that the curricula support their requirements. NASTP curricula shall be submitted to COMNAVAIRFOR (N32) for approval. Curricula shall be developed by the Naval Survival Training Institute (NSTI), which is the course curriculum model manager (CCMM) for all NASTP training, and sent to COMNAVAIRFOR via BUMED (NASTP Training Agent). The curricula shall be developed with the technical advice of other naval activities as necessary. COMNAVAIRFOR-approved curricula shall be distributed by NAVOPMEDINST for implementation. NASTP N, NP, N/NP and R/RP training shall be accomplished only through the approved ASTCs listed in Appendix E, Figure E-4. NAVOPMEDINST shall, in coordination with BUMED, evaluate and standardize all approved curricula, procedures, equipment and devices. NAVOPMEDINST is also responsible for the development/distribution/duplication of academic support materials for the NASTP curricula. The NASTP model manager shall conduct annual evaluations as directed by COMNAVAIRFOR (N32) of all CNO-authorized NASTP ASTCs.

**8.4.6 Graded Elements.** Elements of training identified as GRADED ELEMENT in Appendix E, Figure E-2, are considered graded and must be satisfactorily demonstrated in accordance with standards established in CNO-approved curricula. Other elements of training (though not graded) must be successfully completed.

#### 8.4.7 Approved Curricula

**8.4.7.1 Initial (N/NP).** Required initial training for all prospective active-duty USN and USMC aeronautically designated personnel and for USAF and USCG personnel in the Navy pipeline. Required initial training

for non-aircrew personnel. The category classification for these personnel is illustrated in Appendix E, Figure E-1. Initial courses shall not be substituted for one another. Naval Aviation Water Survival Training requirements for USAF Student Military Aviators attending Navy primary flight training at NAS Whiting Field is waived. USAF students enroute to Advanced Maritime Pilot Training at NAS Corpus Christi, or attending Navigation training at Training Air Wing SIX, shall complete N1 prior to transfer or attend the USAF water survival course.

- a. N1/NP1 — Initial NASTP training for all officer aircrew students. Provides basic introductory training, appropriate follow on course specific to aircraft pipeline (N6, N11, or N12) must also be completed prior to flight.
- b. N5/NP2 — Initial training for all enlisted aircrew students and personnel on flight orders. Provides basic introductory training, appropriate follow on course specific to aircraft pipeline (N6, N11, or N12) must also be completed prior to flight. Replaces previous N1 and NP1 courses for enlisted aircrew. N5/NP2 is the appropriate initial training for all aircrew or personnel on flight orders who have not completed N1/NP1 training. Required for all prospective military/civilian aeronautically designated personnel or other individuals on flight orders (e.g., enlisted noncrewmembers on flight orders) including USMC helicopter aerial gunners/observers, and initial training for exchange aircrew (other U.S. Military services, and foreign services). The specific aircraft category of training received (Figure E-3) shall be documented (e.g., “N5/NP2 — Cat 3” would indicate no low pressure chamber flight for the trained helicopter aircrew).
- c. N2/NP7 — Required training for Midshipmen participating in orientation flights or a summer cruise with the possibility of flying. The training is specific for the type of aircraft to be flown and good for one flying indoctrination period of time on the selected aircraft type only. The qualification is good for only 180 days. Upon expiration, this course is to be repeated to maintain currency. The specific aircraft category of training received (Figure E-3) shall be documented (e.g., “N2/NP7 — Cat 1”).

- d. N2/NP8 — Required training for VIPs, military non-aviators, and non-military personnel selected for orientation flights. Training is specific for type of aircraft being flown and is good for a period up to 90 days for the selected aircraft type only. Upon expiration, this course is to be repeated to maintain currency. The specific aircraft category of training received (Figure E-3) shall be documented (e.g., “N2/NP8 — Cat 1”).
- e. N3/NP3 — Required training for Selected Passengers. The training is good for 4 years. Training is specific to ejection seat aircraft and dynamic high risk training is required (e.g., Low Pressure Chamber, Dynamic Ejection Seat Trainer). Upon expiration, this course is to be repeated to maintain currency.
- f. N4/NP4 — Required training for Project Specialists. The training is specific for the type of aircraft to be flown (Figure E-3). The training is good for 4 years on the specific aircraft type. Upon expiration, this course is to be repeated to maintain currency. The specific aircraft category of training received (Figure E-3) shall be documented (e.g. “N4/NP4 — Cat 2”).
- g. Intermediate Water Survival Course Q-050-0605 — Required prerequisite for all officer and enlisted personnel participating in Aviation Preflight Indoctrination or Aviation Enlisted Aircrew Training School at Naval Aviation Schools Command.
- h. Initial Training Course (Q-050-1500, CDP 806E, Aviation Enlisted Aircrew Training School) — Mandatory for all USN enlisted aircrew or prospective aircrew on DIFCREW/DEFTEM orders and all USMC enlisted crew members excluding those identified in paragraph 8.4.7.1.b.

**8.4.7.2 Specialized, Supplemental or Continuation (N or NP).** Mission Specific required specialized, supplemental or continuation training for aircrew and non-aircrew personnel.

- a. NP5 — Centrifuge-based Flight Environment Training (CFET). Required initial training for all tactical jet aircrew flying AV-8, EA-6, F-5, F-14, F-16, or F/A-18 aircraft prior to reporting for FRS training. Documented CFET training completed as a student at NADC Warminster, Holloman AFB, or Brooks AFB is recognized as meeting

- CFET requirements. Tactical jet aircrews who have not received dynamic CFET training (NP5) shall receive this course as soon as operationally practical.
- b. NP6 — Physiology training for special operations personnel conducting high altitude parachute operations. The training is good for 4 years and meets USAF/USA HAP physiology training requirements.
  - c. N6 — Advanced continuation training for aircrew selected for tactical jets. Prerequisite is completion of either N1/NP1 or N5/NP2 (these are to be used for determination of the 4-year training interval). Once completed, appropriate Refresher training is R1/RP1. Completion of this training has been previously documented as completing either N1 and N6 or N1 and R1. Students receiving this training for flight in the T-6 aircraft shall have their training documented as “N6 — T-6.” This training does not meet the N6 training requirements for flying in other USN aircraft. Standard N6 training must be completed prior to flying in other Category 1 aircraft. All crew members, regardless of the currency of other indoctrination or refresher qualifications, require documented N6 — T-6 training prior to flight in the T-6 Texan aircraft. This training may be conducted in conjunction with R/RP training in the case of refresher students.
  - d. N7 — Advanced underwater egress training for personnel authorized to use the Helicopter Aircrew Breathing Device (HABD) or Helicopter Emergency Egress Device (HEED). Minimum prerequisite training is successful completion of Module N of Figure E-2. Training is good for 4 years. More frequent training may be given when requested in writing by the student’s parent command.
  - e. N8 — Basic Aviation Water Survival Skills, Remedial and Adjunctive training. Provides both supplemental training in survival skills, equipment usage and/or remediation in specific water survival training elements. Training available upon request or as required.
  - f. N9 — Underwater egress training in device 9D5A or METS or other CNO-approved Multi-place Underwater Egress Trainers for heliborne combat troops, flag staff officers, embarked staff, chaplains, doctors, dentists, etc.; and other authorized personnel whose duty assignments necessitates frequent overwater helicopter or tiltrotor flights. Training is good for 4 years. More frequent training may be given when requested in writing by the student’s parent command.
  - g. N10 — Advanced water survival training for aircrew utilizing the CBR ensembles. Prerequisite training is successful completion of N6, N11, or N12. Training is good for 4 years. More frequent training may be given when requested in writing by the student’s parent command.
  - h. N11 — Advanced continuation training for aircrew selected for fixed wing non-ejection seat aircraft. The prerequisite is completion of either N1/NP1 or N5/NP2 (these are to be used for determination of the 4-year training interval). Once completed, appropriate Refresher training is R2/RP2 or R4/RP4 depending upon parachute availability in aircraft. Completion of this training was previously documented as completing N1. The specific aircraft category of training received (Figure E-3) shall be documented (e.g. “N11 — Cat 2” for parachute equipped aircraft training).
  - i. N12 — Advanced continuation training for aircrew selected for Helicopters. Prerequisite is completion of either N1/NP1 or N5/NP2 (these are to be used for determination of the 4-year training interval). This course includes required HABD/HEED training. Once completed, appropriate Refresher training is R3/RP3. Completion of this training was previously documented as completing N1 and N7.
  - j. N13 — USMC “Non-Aircrew” Personnel Underwater Egress Familiarization/Orientation Course. This course is authorized only for USMC personnel. This Underwater Egress Familiarization/Orientation course is designed specifically to provide USMC Expeditionary Forces familiarization with underwater egress procedures from a multi-place underwater egress trainer. This course does not satisfy the required Underwater Egress training (N9) for aircrew personnel. Prerequisites are completion of CWS3 or higher and documentation of survival flotation training.

- k. N14 — Advanced Underwater Egress and Survival Procedures Course. This course will provide advanced training in underwater egress procedures from helicopters that are specific to the equipment worn or carried. Prospective students are Special Operations Forces to include; USMC Force Reconnaissance, USN Spec War (SEAL), and U. S. Army Special Forces. Prerequisites are Force Reconnaissance Basic Underwater Egress and HABD training, NASTP N9 and N7 courses, or basic USN or USA SCUBA course.

#### 8.4.7.3 Refresher Continuation (R/RP).

Required continuation training for aeronautically designated personnel. Prerequisite is completion of advanced continuation training (N6, N11, or N12). Training requirements per paragraph 8.4.1 apply for USAF, other U.S. Military and foreign students.

- a. R1/RP1 — Platform specific scenario based continuation training for aircrew flying in ejection seat equipped aircraft (Category 1 of Figure E-3).
- b. R2/RP2 — Platform specific scenario based continuation training for aircrew flying in non-ejection parachute equipped aircraft (Category 2 of Figure E-3).
- (1) Aircrew assigned to the E-2 shall complete this course. The curriculum shall contain aviation water survival elements specific to the E-2 airframe that are not required by others (e.g., HABD). Completion of the E-2 specific syllabus shall be documented (e.g., “R2/RP2 — E-2”).
- (2) Successful completion of R2/RP2 E-2 syllabus also satisfies the R2/RP2 C-2 training requirements.
- c. R3/RP3 — Platform specific scenario based continuation training for aircrew flying in helicopters (Category 3 of Figure E-3). Training includes required HABD/HEED (N7) training which will not be documented separately.
- d. R4/RP4 — Platform specific scenario based continuation training for aircrew flying in pressurized (oxygen available) non-parachute equipped aircraft (Category 4 of Figure E-3). This course’s requirements were previously met by completion of RP2 and either R2 or R3.

- (1) Aircrew assigned to the V-22 shall complete this course, the curriculum shall include aviation water survival elements specific to the V-22 airframe that are not required by others (e.g., HABD). Completion of the V-22 specific syllabus shall be documented (e.g. “R4/RP4 — V22”).
- (2) Aircrew assigned to the C-2 shall complete this course. The curriculum shall contain aviation water survival elements specific to the C-2 airframe (e.g., HABD) but does not include parachute training. Completion of the C-2 specific syllabus shall be documented (e.g., “R4/RP4 — C-2”).
- (3) In the case of aircrew seeking qualifications for multiple aircraft categories, with the exception of unique V-22 and C-2 water survival training requirements, successful completion of either R1/RP1 or R2/RP2 satisfies the R4/RP4 training requirements. R3/RP3 training does not satisfy this requirement.

#### 8.4.7.4 Adjunctive Training. Mission Readiness Training for all aeronautically designated personnel.

- a. Level A — Required annual training for all aircrew personnel. Training topics are listed in Appendix E, Figure E-5.

#### Note

Sensory Problems (Figure E-5, Module c) training may be substituted with appropriate Instrument Ground School (IGS) syllabus training.

- (1) Ejection Seat Training — In addition to the required 4 year NASTP ejection seat training, commanding officers shall ensure that static ejection seat/egress and emergency ground egress training is conducted annually. The training is to be provided by ejection seat mechanics and aviators who use the system. Flight surgeons, aerospace physiologists, or aeromedical safety officers (AMSOs) should address the aeromedical aspects of ejection/ground egress. Renewal may be accomplished within 60 days preceding expiration of current qualification. Qualification will expire after 12 months (expiration date is the

last day of the month trained). When transitioning to aircraft with a different type of ejection system, commanding officers shall ensure that a thorough brief on the new system is conducted before the initial flight. The transition training shall concentrate on the differences in the system (i.e., ejection decisions, the envelope of the new system, seat-man separation, ejection initiation, ejection sequence, normal operations and malfunctions)

### Note

Aviators, aircrew and selected passengers flying with NVDs in ejection seat aircraft require additional egress training. Failure to remove NVDs prior to ejection may result in serious injury or death. NVD removal training shall be incorporated into initial training and annual ejection seat/egress training. This training will include actual drills on removal of NVDs prior to ejection. The pilot in command of NVD demonstration flights shall ensure that selected passengers or non-NVD qualified aircrew are thoroughly briefed and shall demonstrate proper technique of removing NVDs for ejection situations. Documentation of annual or transition ejection seat training with NVDs shall be made on OPNAV form 3760/32F.

(2) Emergency Egress Training — In addition to the required 4 year NASTP egress training, commanding officers shall ensure that lectures/drills on bailout/emergency ground/water egress for other than ejection seat equipped aircraft is conducted annually. Training can be conducted by staffs who are most familiar with egress procedures and devices. Flight surgeons, aerospace physiologists, or aeromedical safety officers (AMSOs) should address the aeromedical aspects of emergency procedures and survival concerns. Renewal training may be accomplished within 60 days preceding expiration of a current qualification and is valid for 12 months from the last day of the month in which the current qualification expires. Otherwise, Emergency Egress Training shall be valid for 12 months from the last day of the month in which the training is conducted. Specific training shall

be conducted for flight personnel with regard to assisting passengers and non-essential aircrew.

- b. Level B — Recommended annual training for aircrew as part of mission training. Training provided by unit flight surgeon, ASTC or AMSO
- c. Level C — Recommended training for aircrew as part of deployment work-ups. Training provided by unit flight surgeon, ASTC or AMSO.
- d. Level D — Recommended training for aircrew as part of deployment work-ups. Training provided by unit flight surgeon, ASTC or AMSO.

### 8.4.7.5 Grading

- a. With the exception of course NP5, personnel who complete all elements of the required N, NP, or N/NP training shall be classified as Qualified (Q). Personnel who do not successfully complete all portions of N, NP, or N/NP training shall be classified as Unqualified (U) except for the conditions set forth in paragraph 8.4.7.5.d.
- b. Refresher (R/RP) personnel shall be graded as follows:
  - (1) Qualified (Q) — Individuals who successfully complete all aspects of required training shall be classified as Qualified.
  - (2) Conditionally Qualified (CQ) — Individuals who fail to successfully complete any of the required elements in Appendix E, Figure E-2, shall be classified as Conditionally Qualified. Failure to achieve a grade of Qualified in the deficient area within 90 days will result in a grade of Unqualified and the individual shall repeat the entire curriculum. Consecutive grades of CQ are not permitted within the current refresher cycle. Personnel designated as CQ may continue on flight status for this 90-day period. CQ grades shall be marked in red ink in NATOPS jackets.
  - (3) Unqualified (U) or (UQ) — Individuals who fail to successfully complete two or more of the items in Appendix E, Figure E-2, or fail to qualify within 90 days after receiving a grade of CQ, shall be classified as Unqualified. Failure to achieve a grade of Qualified in the

deficient area within 90 days will result in the individual repeating the entire curriculum. Personnel in a UQ status shall be grounded until they successfully achieve a grade of Q or CQ. UQ grades shall be marked in red ink in NATOPS jackets.

- (4) No Grade (NG) — If a student begins NASTP training, but due to unforeseen circumstances is unable to complete the course, an entry in the record of NG shall be made. Those items not completed shall also be listed in the record. If any training element was attempted and failed, NG shall not be used, a grade of UQ shall be entered. Personnel designated as NG may continue on flight status until their original qualification expires. Failure to complete training within 90 days will result in the individual repeating the entire curriculum. NG grades shall be marked in red ink in NATOPS jackets.
- c. Remediation and completion of training elements may take place at any CNO-approved ASTC. Upon successful completion of training, the ASTC providing remediation shall then upgrade the student's status.
- d. NP5 training is marked based on completion of specific CFET profiles. A stamp labeled "CFET/ NP5/A B C D E/[write in aircraft type]" shall be used to document the profiles completed and the type of aircraft for which the profiles were created. Each profile successfully completed will be circled, profiles not successfully completed will be "X"ed out. Additional training is recommended for those with "X"ed-out profiles. The traditional grades of "Q," "CQ," and "UQ" are not used.
- e. Adjunctive Training is upgrade training. Squadron NATOPS or training officers shall record the required specific annual training with a completion date in the NATOPS jacket (OPNAV form 3760/32F). Other Adjunctive training may also be recorded here.
- f. Inoperative Devices/Inclement Weather — Personnel participating in N, NP or N/NP training must complete all devices and training elements to receive a grade of Qualified (Q). Those persons who are unable to complete a particular device

because of equipment malfunction (not a CAS-REP or previously known or planned for repair) or inclement weather, may receive an overall grade of Qualified only if the device requirement was waivable by COMNAVAIRFOR as indicated in the approved curricula or Figure E-2 of this document. Personnel participating in R/RP training who miss a particular training device for the above reasons may receive a grade of Qualified (Q) if they successfully complete approved alternate training and meet all other requirements. Notation of the device training not received shall be made in the individual's NATOPS jacket.

- g. Where feasible, a plain language letter documenting completion of any NASTP curricula may be substituted for entries on OPNAV 3760/12F.

**8.4.7.6 Environmental Exposure.** Flight personnel shall not participate in flight duties for 12 hours after completion of the following NASTP training or training devices: 9D5 or METS, CFET, MSDD, 9E8, dynamic HEED/HABD training, and/or low pressure chamber flights in excess of 30,000 feet. Personnel may fly as passengers in aircraft during this 12-hour period however; the cabin altitude shall not exceed 10,000 feet for personnel who have been exposed to a low pressure chamber flight in excess of 30,000 feet. The low pressure chamber exposure flight restrictions do not apply to personnel completing simulator physiology who received hypoxia training via a reduced oxygen breathing device in lieu of a low pressure chamber flight.

## **8.5 FLEET AIR INTRODUCTION/LIAISON OF SURVIVAL AIRCREW FLIGHT EQUIPMENT (FAILSAFE) PROGRAM**

Commanding officers shall ensure that aircrews receive indoctrination whenever new or modified ALSS is introduced to the fleet. ALSS technical data indoctrination packages (TDIPs) provided by Naval Air Systems Command to Aeromedical Safety Officers (AMSO) and Aviation Survival Training Centers (ASTC) will be used to satisfy requirements.

## **8.6 NVD TRAINING PROGRAM**

Indoctrination and refresher NITE Lab training are strongly encouraged for all aircrew involved in NVD operations.

- a. Indoctrination training is defined as the student's first attendance at a NITE Lab training facility, typically occurring during the student's FRS or night attack/systems training syllabus.
- b. Refresher training is defined as subsequent training provided at NITE Lab facilities, as required by the applicable USMC Training and Readiness Manual, USN TYCOM/Type Wing instruction or as requested by unit commanders.
- c. Personnel participating in initial/refresher NITE Lab training shall be graded as follows:
  - (1) Qualified (Q) — Scoring 80 percent or higher on the sensor course examination.
  - (2) Unqualified (U) — Failing to score at least 80 percent on sensor course examination. Disposition of students in this status will be at the discretion of the command.
- c. The Rescue Swimmer School Training Program (RSSTP) shall prepare designated aircrew and selected aircrew candidates for SAR swimmer duties. This is accomplished through lectures, demonstration, practical experience in CNO-approved rescue procedures/techniques and hands-on training using aviation life support and rescue equipment.
- d. The NAVAVSCOLSCOM is designated the Rescue Swimmer School Model Manager (RSSMM). The RSSMM establishes RSSTP procedures for approval by COMNAVAIRFOR (N32), provides oversight of the RSSTP, and ensures standardization through the following:
  - (1) Instructor Training — The RSSMM shall conduct the Rescue Swimmer Instructor Course and issue the RSSTP Core Unique Instructor Training Program.
  - (2) Curricula Management — NETC shall coordinate the training requirements of CMC, TYCOMs, CNATRA, and the USCG; the RSSMM shall chair curricula conferences. The RSSMM shall develop and revise RSSTP curricula for COMNAVAIRFOR (N32) approval via CNATRA and COMNAVED-TRACOM based upon the needs of the commands noted above, utilizing the procedures established by the SARMM, and employing the technical advice of BUMED.
  - (3) Training Analysis — The RSSMM shall monitor the attrition, rollback, and mishap trends of the RSSTP.
  - (4) Site Evaluations — The RSSMM shall conduct annual evaluations of CNO-approved training sites at HC-3; COMHWSWINGLANT; Fleet Training Center, San Diego; and NAVAVSCOLSCOM, Pensacola.

## 8.7 SEARCH AND RESCUE PILOT/RESCUE SWIMMER TRAINING

- a. The purpose of this program is to promote standardization of SAR procedures and to establish a minimum SAR training program for personnel assigned search and rescue duties aboard aircraft. Units involved are those that are established primarily to fulfill search and rescue mission responsibilities or that may be assigned search and rescue responsibilities in conjunction with other mission areas. The search and rescue model manager (SARMM), Helicopter Combat Support Squadron THREE (HELCSUPPRON THREE/HC-3) establishes SAR procedures and ensures standardization. Type commanders shall designate SAR evaluation units within their command to train, evaluate, and assist individual units/commands in developing and implementing search and rescue programs.
  - b. Requirements for training, proficiency, and qualifications for the SAR pilot and the rescue swimmer are presented in OPNAVINST 3130.6 and shall be considered minimum standards. Commands are encouraged to supplement those listed requirements with additional training pertinent to local mission requirements.
- 8.7.1 Definitions.** The following terms contained in the Glossary are relevant: competent authority, designations, DIFCREW, enlisted crewmember (USMC), naval aircrewman (NAC).
- 8.7.2 Training Requirements.** RSSTP includes initial and refresher training programs. All Category I aviation rescue swimmer school training shall be conducted at Naval Aviation Schools Command, NAS

Pensacola. Category II aviation RSS training shall be conducted at HC-3, NAS North Island and COMH-SWINGLANT, NAS Jacksonville.

### 8.7.3 Prerequisites

- a. Initial Training — Satisfactory completion of NACCS within the preceding 6 months or be designated a naval aircrewman. Must have a current flight physical, aeromedical clearance notice (NAVMED 6410/2), and be current in all aviation water survival and aviation physiology training in accordance with the provisions of this chapter.
- b. Refresher Training — Be a graduate of a CNO-approved rescue swimmer school. Must be designated a naval aircrewman, have a current flight physical and aeromedical clearance notice (NAVMED 6410/2), and be current in all aviation water survival and aviation physiology training in accordance with the provisions of this chapter.

## 8.8 AVIATION PHYSICAL EXAMINATIONS AND QUALIFICATIONS

**8.8.1 General Requirements.** Physical standards as established by BUMED are to be met as a continuing requirement, not solely at the time of the required physical examination. Physical qualification as certified by an appropriate physical examination is a prerequisite for flight for all aircrew personnel. Commanding officers shall suspend from flight duties all aircrew personnel who have not met annual flight physical qualifications. The physical may be accomplished starting the first day of the month preceding the birth month. Flight personnel who have not initiated an aviation physical examination by the last day of their birth month shall be considered not to have met annual flight physical qualifications. Flight personnel delinquent in receiving an aviation physical examination shall not be scheduled to fly unless a waiver has been granted by BUPERS/CMC. UAV flightcrew shall follow provisions of this section. Specific flight physical requirements for UAV flightcrew can be found in MANMED.

**8.8.2 Required Evaluations.** Flight surgeons shall keep flight personnel under surveillance so that physical illness, fatigue, and emotional upset will be readily detected. Commanding officers shall establish

administrative procedures to assure that all flight personnel report to a flight surgeon whenever their fitness to fly is questionable. Flight surgeons shall conduct interviews and/or physical examinations of aircrew personnel and make recommendations to the member's commanding officer as follows.

### Note

Commanding officers and flight surgeons shall comply with applicable directives pertaining to mental health evaluations of servicemembers (see SECNAVINST 6320.24, Mental Health Evaluations of Members of the Armed Forces). Individuals who fall under "Military Whistleblower Protection" guidelines (SECNAVINST 5370.7) may require additional administrative procedures in conjunction with evaluation. Commanding officers are encouraged to consult with local flight surgeons and legal officers.

### 8.8.2.1 Periodic Flight Physical Examination.

All aircrew and duty involving flight denied (DIFDEN) personnel shall be examined at regular intervals as prescribed by MANMED.

### Note

Physical examinations that have been conducted but are not completed because of additional consultation or administrative reasons shall be considered to have met the requirements for annual certification, unless the individual is found to be not physically qualified during the examination, or the determination of physically qualified must be held in abeyance awaiting consultation. A clearance notice shall be issued in support of satisfying the requirements.

**8.8.2.2 Check-In.** Upon reporting (including TAD for flying only) to a new unit or base.

**8.8.2.3 Postgrounding.** Following grounding for medical reasons.

**8.8.2.4 Post Hospitalization.** Following return to duty after any admission to the sick list or hospital (including medical boards). A grounding notice (NAVMED 6410/1) shall be issued for all admissions and a clearance notice (NAVMED 6410/2) shall be



issued when aircrew personnel are returned to flight duties.

**8.8.2.5 Postmishap.** As necessary to meet the requirements of OPNAVINST 3750.6.

**8.8.2.6 As Directed by Higher Authority.** When required of competence for duty, follow-up for waivers, etc.

**8.8.3 Scope of Examinations.** The extent of these examinations shall be determined by the flight surgeon, as directed by MANMED or OPNAVINST 3750.6. Notation of such examinations shall be entered in the individual's health record and reported to the commanding officer and, as required, via NAVOPMEDINST DET NAVAEROMEDINST (Code 342) to BUPERS/CMC.

#### Note

All Class I aviation personnel will receive a manifest refraction to best visual acuity (BVA) at the time of their annual flight physical. In the case where spectacles are worn, if the current spectacles do not correct to 20/20 or better in both eyes, the aviator is grounded until a current prescription can be obtained. In the case where spectacles had not previously been required, the aviator is grounded until spectacles are obtained to correct the visual acuity to 20/20 or better in both eyes.

#### 8.8.4 Disposition of Aircrew Found Not Physically Qualified (NPQ)

**8.8.4.1 Physical Standards.** Aircrew personnel are expected to maintain appropriate physical standards at all times. However, medical conditions may preclude such physical qualifications for short or long periods. When aircrew personnel are unable to meet required physical standards for periods exceeding 60 days, an aviation physical examination shall be completed. Typed Standard Form 88 (SF 88) with appropriate consultations and flight surgeon recommendations shall be forwarded to NAVOPMEDINST DET NAVAEROMEDINST (Code 342). NAVOPMEDINST DET NAVAEROMEDINST (Code 342) shall review and make a recommendation to BUPERS or CMC as appropriate.

#### Note

Personnel not physically qualified for flight will normally continue to receive aviation career incentive pay (ACIP) for up to 180 days from the date of incapacitation. Final determination on ACIP eligibility resides with BUPERS/CMC and the PAYPERSMAN.

**8.8.4.2 Waiver of Physical Standards.** Aircrew personnel who do not meet physical standards may be considered for a waiver of such standards. Such a waiver may be granted on the need of the service, consistent with training, experience, performance, and proven safety of the aircrew personnel. In such cases, the following procedures shall be followed:

- a. A request for waiver of physical standards may be initiated by the member, the commanding officer or by a flight surgeon. If the waiver is not initiated by the commanding officer, the commanding officer shall submit a forwarding endorsement. The request shall contain recommendations as to the operational advisability of the waiver, including limitations as to aircraft type, in-flight duties, etc. Included in this waiver request shall be an appropriate aeromedical evaluation by the supporting medical treatment facility. The evaluation shall be presented on a typed SF 88, with appropriate consultations. A flight surgeon shall include medical recommendations as outlined in the MANMED. The waiver request shall be forwarded via the appropriate chain of command and NAVOPMEDINST DET NAVAEROMEDINST (Code 342) to BUPERS, or CMC (ASM), as appropriate.
- b. NAVOPMEDINST DET NAVAEROMEDINST (Code 342) shall review the medical evaluation and forward a recommendation to BUPERS, or CMC (ASM), as appropriate.
- c. BUPERS, or CMC (ASM), as appropriate, shall review the request and recommendations and take appropriate action. In general, one of the following dispositions shall be made:
  - (1) Grant a waiver of standards to permit continued unrestricted flight status.
  - (2) Grant a waiver of standards to a restricted flight status that may include limitations in service group, aircraft type, mission type,

in-flight duties, duty location, operational tempo, or other requirements.

- (3) Restrict from all duties involving flight with a statement concerning whether the disqualifying defects are considered temporary or permanent.

**8.8.4.3 Flight Status.** In cases where flight status is terminated, BUPERS, or CMC (ASM), as applicable, shall determine if the individual is to be retained within the aeronautical organization or assigned to duty outside the aeronautical organization.

**8.8.4.4 Disposition.** For aircrew personnel whose aeromedical disposition is considered uncertain by the examining flight surgeon, consideration shall be given to appearance before an appropriate board of flight surgeons (see MANMED).

**8.8.4.5 Limited Duty (LIMDU).** Aircrew personnel placed on LIMDU status by medical board action shall be considered to be physically incapacitated for all duty involving flight and all related training until such time as returned to flight status by medical board action and endorsement of a current flight physical by NAVOPMEDINST DET NAVAEROMEDINST (Code 342). The LIMDU board report and a typed SF 88 and SF 93, or BUMED 6120/2, shall be forwarded to NAVOPMEDINST DET NAVAEROMEDINST (Code 342) for appropriate action as soon as possible. Flight personnel placed in a LIMDU status strictly for geographical constraints (i.e., remain in or near proximity to a naval medical treatment facility for specialized treatment or follow-up treatment) and who are otherwise physically qualified and aeronautically adapted, may request a waiver to remain in a flight status. Waivers of geographical LIMDU will be considered on a case-by-case basis and may be granted by BUPERS/CMC (ASM) upon written request with supporting medical documentation submitted via NAVOPMEDINST DET NAVAEROMEDINST (Code 342) as stated in this section.

**8.8.4.6 Temporary Medical Waivers.** Temporary waivers for any medical disability may be granted by the local board of flight surgeons based on type aircraft, mission, and patient review, pending final approval/disapproval by BUPERS/CMC (ASM).

**8.8.5 Medical Service Groups.** The physical standards for aviation personnel in each of the following medical service groups are outlined in MANMED. The medically-related definitions and policies that shall, in general, be employed in this assignment of aviators to flight duties, are as follows.

**8.8.5.1 Medical Service Group I.** Aviators who meet the physical standards specified in MANMED shall be classified as Medical Service Group I. Those aviators may be assigned to flight duties of an unlimited or unrestricted nature.

**8.8.5.2 Medical Service Group II.** Those aviators who meet the physical standards outlined in MANMED, and those aviators of Service Group I who temporarily meet the physical standards of Service Group II. All aviators in Service Group II are restricted from shipboard aircrew duties (including V/STOL aircraft) except in helicopters.

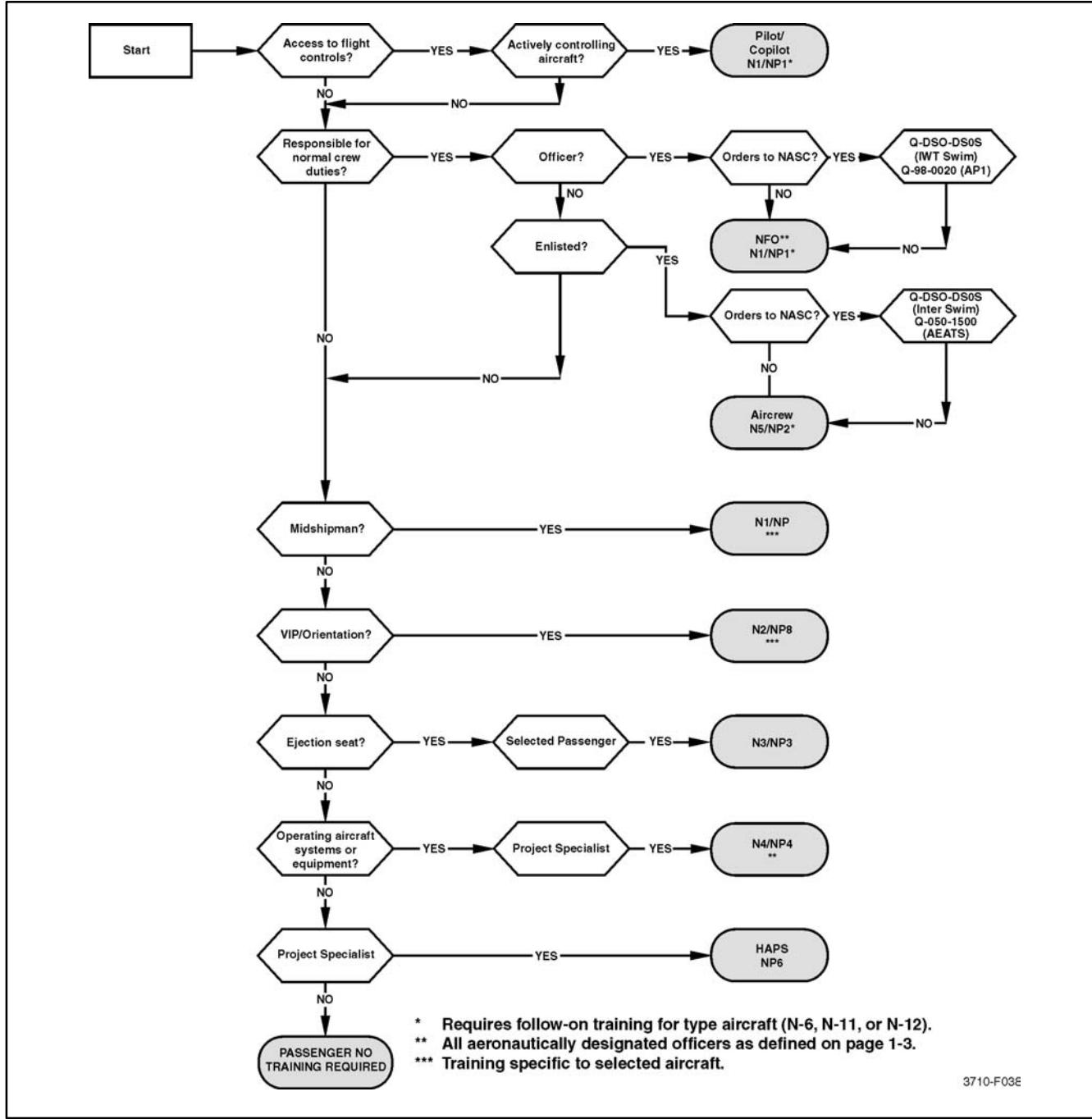
**8.8.5.3 Medical Service Group III.** Those aviators who meet the physical standards outlined in MANMED. Medical Service Group III aviators shall operate only aircraft equipped with dual controls and be accompanied on all flights by a pilot or copilot of Medical Service Group I or II, qualified in the model aircraft operated. A waiver is required to act as pilot in command of multipiloted aircraft.

**8.8.6 Medical Service Group III Pilot in Command Requests.** Waiver requests for Medical Service Group III pilot in command duties may be made to CHNAVPERS (PERS-43C) or CMC (ASM) via NAVOPMEDINST DET NAVAEROMEDINST (Code 342) with justification. The requests must be accompanied by a typed SF 88 detailing an aviation physical examination performed within the previous 6 months. Pilot in command authorizations are issued on an individual basis and automatically expire upon billet reassignment or failure to maintain the physical qualifications under which the authorization was issued, whichever occurs first. The request shall contain date of designation as a naval aviator and background experience pertinent to the type of waiver being requested. UAV flightcrew shall follow provisions of this section. Specific flight physical requirements for UAV flightcrew can be found in MANMED.

APPENDIX E

# Naval Aviation Survival Training Program (NASTP) Requirements (For use with Chapter 8)

E.1 NASTP TRAINING STATUS



\* Requires follow-on training for type aircraft (N-6, N-11, or N-12).  
\*\* All aeronautically designated officers as defined on page 1-3.  
\*\*\* Training specific to selected aircraft.

3710-F03E

Figure E-1. Determination of NASTP Training Status for Personnel

**E.2 NASTP TRAINING REQUIREMENTS**

COURSE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
N1/NP1	X	X	X	X	X				X	X			X	X				X	X						X
N5/NP2	X	X	1	X	X				X	X			X	X				X	X						X
N2/NP7	X	X	1		X	X	X	X		X	X	X	X		X	X		X			2				
N2/NP8	X	X	1		X	X	X	X		X	X	X	X	3	3	3	3	X		3	2,3				
N3/NP3	X	X	X		X	X	X	X		X	X	X	X		X	X	X	X		X	X				X
N4/NP4	X	X	1		X	X	X	X		X	X	X	X		X	X		X							X
NP5	X						X															4			X
NP6	X	X	X	X																					X
N6	X					X	X	X			X	X			X	X	X			7	X			6	X
N7	X					X						X											X		X
N8	X									X	X	X	X					X	X	X					
N9	X					X	X				X	X	X	X											
N10	X					X	X						X										5		X
N11	X					X	X	X			X	X			X	X	X			7			5	6	X
N12	X					X	X	X			X	X	X							7			X		X
N13	X					X				X				X											
N14	X					X				X		X	X	X									X		X
R1/RP1	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X		X	X				X
R2/RP2	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X		X			5		X
R3/RP3	X	X		X	X		X	X	X	X	X	X	X	X				X		X			X		X
R4/RP4	X	X	X	X	X		X	X	X	X	X	X	X	X				X		X			5		X

Notes:

1. Not required for helicopter flight.
2. Required for personnel flying in ejection seat aircraft.
3. Device training upon request by flight approving authority.
4. Required for all aircrew flying AV-8, EA-6, F-5, F-14, F-16 and F/A-18 aircraft.
5. Required for all personnel authorized to carry the HEED/HABD.
6. Parasail training is available only in Pensacola and is only applicable if this course is conducted in conjunction with N1/NP1. Waiverable requirement for Navy personnel due to inoperative devices or inclement weather.
7. Live helicopter hoist requirement waiverable due to unavailability, inoperative devices or inclement weather.

Figure E-2. NASTP Training Requirements

## E.2.1 NASTP CURRICULA OUTLINE

A — NASTP OVERVIEW. Classroom presentation on the content and requirements of the Naval Aviation Survival Training Program. During this period, the students will complete student screening questionnaires and be briefed on the Drop on Request and Training Time Out policies as required for high- and moderate-risk training.

B — AVIATION PHYSIOLOGY. Classroom presentation on the effects of altitude on the human body. The principles of cardiovascular and respiratory physiology are emphasized. Presentation primarily covers hypoxia, hyperventilation, trapped gas, evolved gas (decompression sickness) and acceleration phenomena.

C — LOW PRESSURE CHAMBER (LPC) BRIEF/ FLIGHT. Classroom and Laboratory presentation on the various oxygen systems, proper equipment use, a review of the LPC flight profile, and reinforcing the effects of altitude on the human body with the corrective action required. The training device evolution is a simulated altitude flight in the LPC. LPC Flight profiles are per the CNO approved curricula. Reduced Oxygen Breathing Device (ROBD) training, when available, can be substituted for the LPC Flight.

D — STRESS AND HUMAN PERFORMANCE. Classroom presentation discussing the various aspects of physiological, (self-imposed) psychological, environmental, and mission stressors, and their effect on performance along with the general NATOPS requirements. Special emphasis for each type of aircraft community factors and missions such as noise and vibration, circadian rhythms, time zone shifts.

E — SENSORY PHYSIOLOGY. Classroom presentation on the effects of the flight environment on the human body's sensory systems. Specifically, the stressors that affect sensory adaptation (acceleration, darkness, lack of visual cues, visual illusions, NVD, LASERS, etc.) are covered. Disorientation, misorientation, temporal distortion, motion sickness caused by flight, and situational awareness are also discussed. The training laboratory evolutions may include a Barany Chair, the Multi Station Disorientation Demonstrator (9B6; at Pensacola only), or computer-based flight simulators to demonstrate visual and vestibular phenomena.

F — EMERGENCY EGRESS. Presentation on emergency ground egress with emphasis on crash and mishap survival. Differences between over land and over water procedures are distinguished

G — AVIATION LIFE SUPPORT SYSTEMS (ALSS). Classroom and laboratory presentation covering ALSS which includes helmets, anti-exposure systems, general flight clothing, survival vests, flotation devices, life rafts and contents, and CBR protective systems as applicable. Specific course content determined by CNO-approved curricula.

H — SIGNALING DEVICES. Classroom and Laboratory presentation covering the operating characteristics and use of current signaling and rescue devices. Specific course content determined by CNO-approved curricula.

I — COMBAT/SURVIVAL (SELF-AID) FIRST AID. Classroom and laboratory presentation using survival equipment and improvised first aid items available to the aircrew.

J — AVIATION SURVIVAL SWIMMING SKILLS. Review of basic aviation survival swimming skills and in-water practice period for swim strokes, treading water, and drown proofing. Specific distance and drills are determined by the CNO-approved curricula.

K — FLIGHT EQUIPMENT SWIM. Wearing appropriate NATOPS required flight equipment demonstrate, ability of using three survival strokes (breaststroke, sidestroke, and backstroke). Specific distance and drills are determined by the CNO-approved curricula. GRADED ELEMENT

L — AVIATION WATER SURVIVAL SKILLS. Wearing the appropriate NATOPS required flight equipment, demonstrate ability to function, inflate and stay afloat. Times and drills are determined by the CNO-approved curricula. GRADED ELEMENT.

M — UNDERWATER PROBLEM SOLVING SKILLS. Wearing the appropriate NATOPS required flight equipment, demonstrate ability to problem solve simple egress exercises while underwater. Laboratory requirements and drills are determined by the CNO-approved curricula. GRADED ELEMENT.

N — MULTIPLACE AIRCRAFT UNDERWATER EGRESS. Classroom presentation and practical experience in procedures for underwater escape from

multiplace aircraft. The training evolution includes device 9D5 or METS. Laboratory requirements and drills are determined by CNO-approved curricula. Device 9E8 is authorized for use for Refresher Students (in lieu of the 9D5 or METS) at ASTC Whidbey Island. Specific requirements and drills are determined by the CNO-approved curricula. GRADED ELEMENT.

O — PARACHUTE DESCENT TRAINING. Classroom, Laboratory presentations and practical experience in overwater and overland parachute descent training. Procedures practiced while suspended from Parahang trainers, Virtual Reality trainers, Lateral drift trainers, Swing Landing Trainers, and/or Slide trainers. Specific laboratory requirements and drills are determined by CNO-approved curricula.

P — PARACHUTE LANDING PROCEDURES. Classroom, Laboratory presentations and practical experience with parachute landing procedures and parachute avoidance/disentanglement. The training includes water and land (PLF) evolutions.

Specific laboratory requirements and drills are determined by CNO-approved curricula.

Q — PARACHUTE DRAG. Practical experience with parachute on-land and in-water release procedures. The training evolution includes device 9F2. Laboratory requirements and drills are determined by CNO-approved curricula.

R — LIFE RAFT ORGANIZATION. Classroom and Laboratory presentation and practical experience in single place and multiplace life rafts righting, boarding and organization (as appropriate for aircraft type). Specific laboratory requirements and drills are determined by CNO-approved curricula. Where feasible, night/storm scenario training will be included in all refresher courses.

S — EXTENDED SEA SURVIVAL. Classroom and Laboratory presentation in extended sea survival priorities and techniques. Laboratory requirements and drills are determined by CNO-approved curricula.

T — RESCUE DEVICES AND SIMULATED HELICOPTER HOIST. Classroom and practical experience with rescue devices and a simulated helicopter hoist. The training evolution includes device 9H1. An actual helicopter hoist is conducted only at Pensacola as part of N6, N11, and N12 training. Laboratory requirements and drills are determined by CNO-approved curricula.

U — EJECTION SEAT TRAINING. Classroom presentation covering the psychological aspects of the ejection decision, aeromedical aspects of ejection, wind blast and flailing injuries, and seat-man separation. The training device evolution includes static firing of an ejection seat emphasizing proper body position and a dynamic firing on device 9E6 for some courses. Laboratory requirements and drills are determined by CNO-approved curricula.

V — CENTRIFUGE-BASED FLIGHT ENVIRONMENT TRAINING (CFET). Classroom and laboratory presentation covering the physiological affects of acceleration and the counter-measures employed in the high G environment. The training device evolution includes device 9A16 (CFET) and is accomplished at the ASTC Lemoore prior to reporting to the respective FRS. Laboratory requirements and drills are determined by CNO-approved curricula.

W — HELICOPTER AIRCREW BREATHING DEVICE (HABD)/HELICOPTER EMERGENCY EGRESS DEVICE (HEED). Classroom presentation and practical experience in procedures for underwater egress using the HABD/HEED. Laboratory requirements and drills are determined by CNO-approved curricula. GRADED ELEMENT.

X — PARASAIL. Classroom presentation and practical experience in actual parachute (parasail) descent and landing.

Y — FINAL EXAMINATION. Written test administered in all courses, unless otherwise specified in CNO-approved curricula, a passing score of 80 percent must be achieved. GRADED ELEMENT.

**E.3 AIRCRAFT CATEGORIES**

Category 1 Ejection Seat (N6, R1/RP1)	Category 2 Non-Ejection Seat, Para- chute Equipped (N11, R2/RP2)	Category 3 Helicopters (N12, R3/RP3)	Category 4 Pressurized (or Oxygen Available/Required) Non-parachute Equipped (N11, R4/RP4)
A-4 AV-8 EA-6 F/A-18 F-14 F-16 F-35 F-5 S-3 T-2 T-38 T-45 T-6	E-2C* C-130 P-3 T-34	AH-1 H-3 H-46 H-53 H-60 TH-57 UH-1	C-12 C-2* C-20 C-21 C-26 C-35 C-37 C-40 C-9 E-4 E-6 T-1 T-39 T-44 V-22*
*CNO Approved Curriculum addresses unique Aviation Water Survival Requirement Aircraft not listed above shall be categorized and trained based on which Category is most applicable.			

Figure E-3. Curriculum Definition by Aircraft Category

**E.4 ASTC CURRICULUM CAPABILITIES**

Course:	N1	N5	N2	N2	N3	N4			N6	N7	N8	N9	N10	N11	N12	N13	N14	R1	R2	R3	R4
ASTC:	NP 1	NP 2	NP 7	NP 8	NP 3	NP 4	NP 5	NP 6										RP 1	RP 2	RP 3	RP 4
MCAS CHERRY POINT, NC	Q	Q	Q	Q	Q	Q		Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
NAS JACKSONVILLE, FL	Q	Q	Q	Q	Q	Q		Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
NAS LEMOORE, CA	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
MCAS MIRAMAR, CA	Q	Q	Q	Q	Q	Q		Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
NAS OCEANA AIR DET NORFOLK, VA	Q	Q	Q	Q	Q	Q		Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
NAS PATUXENT RIVER, MD	Q		Q	Q		Q		Q		Q											
NAS PENSACOLA, FL	Q	Q	Q	Q	Q	Q		Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
NAS WHIDBEY ISLAND, WA	Q		Q	Q	Q	Q		Q	Q	Q	Q		Q	Q	Q			Q	Q	Q	Q

Figure E-4. Aviation Survival Training Centers and Curriculum Capabilities

**E.5 NASTP ADJUNCTIVE TRAINING TOPIC GUIDE**

Each course is a stand alone training module. Level A is required annual training. Levels C, B, & D are recommended annual training.

**Level A — Required Annual Training**

- a. Aeromedical aspects of ejection and emergency ground egress
- b. Emergency ground egress — impact, acceleration, survivability and egress
- c. Sensory problems — spatial disorientation/misorientation, visual illusions, visual scanning, situational awareness and disorientation countermeasures (may be fulfilled during instrument ground school training)

**Level B — Recommended Annual Mission Training (as applicable for aviators and aircrew)**

- d. Night vision/NVD
- e. LASER/LEP
- f. CBRND
- g. Low level flight — NOE, TERF

**Level C — Recommended Deployment Work-up Training**

- h. Pre-deployment syndrome — AMSO/flight surgeon roles
- i. Circadian rhythms/long duration flights/fatigue
- j. Sustained Operations/Combat stress
- k. Survival/combat first aid
- l. Land survival — geographically specific emphasizing hypo/hyperthermia in jungle, mountain, desert and arctic environments.
- m. Water survival — geographically specific emphasizing hypo/hyperthermia

**Level D — Recommended Annual Safety Briefs**

- n. Stress management, Self-imposed stress
- o. Situational awareness — anomalies of attention/complacency, learning, memory improvement, temporal distortion
- p. Exercise/cardiovascular fitness/strength training
- q. Nutrition/weight control
- r. Simulator sickness/motion sickness
- s. GTIP
- t. Noise and vibration

COURSE	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t
<b>Level A</b>	1	2	X																	
<b>Level B</b>				X	X	X	X													
<b>Level C</b>								X	X	X	X	X	X							
<b>Level D</b>														X	X	X	X	X	X	X

NOTES:

- 1. Required for ejection seat only.
- 2. Required for non-ejection seat.

Figure E-5. NASTP Adjunctive Training