

Manual of the Medical Department (NAVMED P-117):

Chapter 15: Medical Examinations: Special Duty

15-65 Aviation Duty

15-65 Aviation Duty

Department of the Navy

Bureau of Medicine and Surgery

Peer Review Status: Internally Reviewed

- (1) Purpose. Aviation physical standards are developed to assure that only the most qualified personnel are accepted into naval aviation. Certain disease states and physical conditions are incompatible with the dual principles of sustaining safety of flight and maintaining the health of the individual. Aviation physical standards are established and maintained on this basis.
- (2) General. All personnel engaged in duties involving flying (including those assigned duty involving flying denied (DIFDEN)) and all candidates for such duty, must conform to the physical standards in this article. Certain nonflying aviation related occupations such as air traffic controllers (ATC) are also covered by this article.
 - (a) The aviation medical examination must be performed by an aviation designated medical officer who is authorized by BUPERS, or by proper authority of the Army or Air Force to conduct such examinations. Flight surgeons (FS), aviation medical examiners (AME), and aviation medical officers (AMO) are authorized to perform aviation medical examinations.
 - (b) An aviation medical examination is conducted to determine whether or not an individual is both physically qualified and aeronautically adapted to engage in duties involving flight. The extent of the examination is determined by the type of duty to be performed.
 - (1) Physically qualified describes those individuals who meet all physical qualifications outlined herein and possess the overall general health to satisfactorily perform in the naval aviation environment.
 - (2) Aeronautical Adaptability (AA)
 - (a) Aeronautical Adaptability is determined by a naval flight surgeon during an evaluation of overall qualification for duty involving flight. AA has its

- greatest utility in the selection of aviation officer candidates (AOCs), naval aviation cadets (NAVCADS), student naval aviators (SNAs), student naval flight officers (SNFOs), student naval flight surgeons (SNFSs), student naval aerospace physiologists (SNAPs), student naval aerospace experimental psychologists (SNAEPs), and enlisted air crew candidates.
- (b) Candidates or students must demonstrate reasonable perceptual, cognitive, and psychomotor skills on the AQT/FAR (officer applicants only) and must have the potential to adapt to the rigors of aviation by possessing the temperament, flexibility, and mature defense mechanisms to allow for full attention to flight and successful completion of training. Before selection, candidates are to be interviewed by the flight surgeon for evidence of early interest in aviation, motivation to fly, absence of motion sickness, and practical appreciation of flight beyond childhood fantasy. Evidence of positive stress coping skills and good interpersonal relationships should also be thoroughly evaluated. Results of the flight surgeon's interview are to be entered in item 73 of the candidate's SF-88, as illustrated in chapter 16.
 - (c) Designated aviation personnel are generally considered aeronautically adapted on the basis of demonstrated performance, ability to tolerate the stress of operational training and deployment, and long term use of mature defense mechanisms.
 - (d) The Field Naval Aviator Evaluation Board (FNAEB) is the normal mechanism for handling administrative difficulties encountered with aviator performance, motivation, attitude, technical skills, flight safety, and mission execution.
 - (e) When evaluation of designated aviation personnel suggests that an individual is no longer aeronautically adapted, refer the member to the Naval Aerospace Medical Institute (NAVAEROSPMEDINST). See article 15-65(6)(b).
 - (c) Candidates applying for training must meet the physical standards for general service outlined in section lilt
 - (d) The medical examination must state the specific duty for which the examinee is applying u is to perform.
 - (e) The report of the medical examination will be recorded on the SF 88 and a copy kept on tile by the facility performing the examination for 3 years.
 - (f) An military exchange officers, regardless of service, when on duty in the naval service must meet the standards in this section. In all other respects, the Navy will accept the physical standards of the military service by which the individual has been found qualified.

- (g) All aviation personnel (officer and enlisted) will undergo a complete aviation medical examination (SF-88 and SF 93 or NAVMED 6120/2, as appropriate) within 30 days of their birthday at ages 21, 24, 27, 30, 33, 36, 39, and annually thereafter.
 - (1) Student officers while in flight training will undergo annual aviation medical examinations within 30 days of their birthday.
 - (2) Candidates to all categories of aviation (including air traffic controllers), upon reporting to the Chief of Naval Air Training must hold a valid BUMED endorsed aviation medical examination in their Health Record before starting instructional flight.
 - (3) Naval aviation personnel are considered to have passed an aviation medical examination when the examiner determines they are physically qualified and aeronautically adapted for the duties of their designator or candidate status. This is indicated by issuing an Aeromedical Clearance Notice (NAVMED 6410/2).
- (h) When the flight status of an individual has been denied or restricted by BUPERS or CMC, this decision remains in effect until officially superseded by BUPERS or CMC.
- (3) Interval Annual Aeromedical Evaluation. Aviation officer personnel and the following enlisted personnel: aviation physiology technicians assigned to chamber duties; naval aircrew members assigned to sea air rescue (SAR) duties; personnel assigned to duties in aircraft equipped with ejection seats; air traffic controllers; aircrew responsible for or in control of flight instruments (e.g., flight engineers); aircrew assigned as helicopter crewchief; and any other aviation rated personnel involved in flight duties as determined at the local command level or by OPNAVINST 3710.7 series are required to be evaluated annually within 30 days of their birthday and certified physically qualified for continued aviation duties by the issuance of a NAVMED 6410/2. The following are minimum requirements for an annual aeromedical evaluation, but may be expanded as required, based on the interval medical history, health risk assessment, and whatever physical findings are noted.
 - (a) Distant and near visual acuity tested on the Armed Forces Vision Tester (AFVT) with and without corrective lenses.
 - (b) Review of ENT status (history of current or recent problems), including audiometric exam if not performed during the preceding 12 months.
 - (c) Cardiovascular status (history of current or recent problem).
 - (d) Pulse and blood pressure (sitting).
 - (e) Height/weight/percent body fat.

- (f) Summary of medical care required in previous 12 months.
 - (g) Summary of current or recent treatment required.
 - (h) Statement of qualification to assigned flight duties.
 - (i) Disposition entry on NAVMED 6150/2, Special Duty Medical Abstract.
 - (j) The results of the evaluation should be entered on the SF 600. If a disqualifying defect is discovered during this evaluation, the member must receive a full aviation medical examination.
- (4) Other Required Physical Examination Submissions. In the following situations a complete aviation physical examination must be completed and submitted to NAMI (Code 42) for BUMED endorsement:
- (a) As a result of a complete physical examination of Class I personnel, the flight surgeon recommends a temporary (in excess of 30 days) or permanent change in service group or flying status.
 - (b) A report to BUMED is specifically directed by proper authority.
 - (c) Naval aviation personnel, Class 1 and 2 are found disqualified and this status is expected to be in effect longer than 30 days.
 - (d) Naval aviation personnel who were disqualified and so reported to BUMED are subsequently found to be qualified.
 - (e) After the examination of aviation personnel of any classification, the flight surgeon or board of flight surgeons considers a review of the findings by BUMED advisable.
 - (f) Class 1 and 2 personnel have appeared before a medical board and have been found fit for full a limited duty.
 - (g) Following the discharge from the hospital of any Class 1 or 2 personnel.
 - (h) If the last BUMED endorsed SF-88 is over 3 years old, for those personnel requiring triennial endorsement.
- (5) Aeromedical Grounding Notice (NAVMED 6410/1) and Aeromedical Clearance Notice (NAVMED 6410/2). All aviation personnel admitted to the sicklist, hospitalized, a determined to be physically unable to perform flight duties will be issued a Aeromedical Grounding Notice, and an entry will be made in the members Health Record on the Special Duty Medical Abstract (NAVMED 6150/2). This grounding notice will remain in effect until the member has been examined by a flight surgeon and found physically qualified. At such time, an Aeromedical Clearance Notice will be issued recommending returning the member to flight status and a corresponding Health Record entry made on the NAVMED 6150/2.
- (a) Dental officers are authorized to issue a self expiring Aeromedical Grounding Notice when a member on flight status receives a local anesthetic.

- (b) All Medical Department personnel are authorized to issue an Aeromedical Grounding Notice.
- (c) Flight surgeons, aviation medical officers, and aviation medical examiners are the only personnel normally authorized to issue an Aeromedical Clearance Notice. In remote locations, where the services of the above medical officers are not available, any specifically designated Medical Department representative may issue an Aeromedical Clearance Notice provided prior approval is received from an aviation qualified medical officer.

(6) Boards of Flight Surgeons

(a) Local Board of Flight Surgeons

- (1) The purpose of the local board of flight surgeons is to provide a prompt and impartial recommendation as to the aeronautical adaptability and physical qualification of any member of the naval aviation community.
- (2) The local board of flight surgeons may be convened by the local aviation commander on the recommendation of the individual's flight surgeon or may be convened by higher authority.
- (3) Medical commanders must make every effort to provide the highest level of aviation designated medical personnel from local or nearby facilities for membership on the board.
- (4) The local board of flight surgeons will consist of a least three medical officers, two of whom must be flight surgeons. In the case of a member being followed by a specialist, recommend a medical officer designated in the appropriate specialty be assigned to the board.
- (5) The board will make a recommendation concerning the individual's ability to perform in their assigned flight status.
- (6) The recommendation of the board will be considered final unless overturned by higher authority. If the local board recommends that a waiver of physical standards is appropriate, the senior member of the board may issue an Aeromedical Clearance Notice to the individual pending final approval from BUPERS or CMC.
- (7) The findings of the board, along with a current SF 88 and SF 93 and all medical documentation considered by the board, will be forwarded to BUPERS or CMC, via the appropriate chain of command and NAVAEROSPMEDINST (Code 42) within 10 working days.

(b) Special Board of Flight Surgeons

- (1) The purpose of the Special Board of Flight Surgeons is to provide special consultative services to assist BUMED in evaluating aviation personnel and making recommendation to BUPERS or CMC.
- (2) The board will be convened by the Commanding Officer, NAVAEROSPMEDINST. The request to convene a special board will normally be made by the individual's commanding officer based on the recommendations of a Local Board of Flight Surgeons.
- (3) If approved by Commanding Officer, NAVAEROSPMEDINST, a recommendation will be made to BUPERS or CMC to order the member to NAVAEROSPMEDINST. I

(c) The Senior Board of Flight Surgeons at BUMED, is the final reviewing authority for all aeromedical dispositions. A standing board of senior flight surgeons will be maintained by BUMED for reviewing policy proposals to forward to CNO and CMC, and to serve as an appeal board to review aeromedical dispositions as requested by BUPERS, CNO, or CMC. The Board will consist of a minimum of five members, three of whom will be senior flight surgeons and one of whom is a senior line officer assigned by CNO (OP 59). The presiding officer will be the Assistant Chief, Fleet Readiness and Support Department (MED 02) assisted by the Director, Aerospace Medicine Division (MED 23). The medical recommendations of this board will be final and will be "awarded to BUPERS or CMC within 5 working days of the completion of the board. Individuals whose cases are under review will be offered the opportunity to appear before this board.

(7) Aviation Physical Standards In addition to the disqualifying defects listed in section III, the following will be considered disqualifying for all aviation duty:

(a) Ear, Nose, and Throat

- (1) Any acute disease or disorder.
- (2) Seasonal allergic rhinitis after age 12 or perennial rhinitis requiring medication for more than 3 weeks per year or immunotherapy for control, or resulting in sinus disease or eustachian tube dysfunction.
- (3) Chronic serous otitis media or eustachian tube dysfunction.
- (4) Chronic otitis media or history of cholesteatoma.
- (5) Presence of traumatic or surgical opening of the middle or inner ear except for PE tubes prior to age 12.
- (6) Auditory ossicular surgery.
- (7) Any nasal or pharyngeal obstruction.

(8) Chronic sinusitis, sinus dysfunction or disease, or surgical ablation of the frontal sinus.

(9) Speech impediment due to organic defects.

(10) Inability to equalize pressure due to any cause.

(11) Recurrent attacks of vertigo.

(12) Radical mastoidectomy.

(13) Recurrent calculi of any salivary gland.

(b) Eyes

(1) Chorioretinitis or history thereof.

(2) Inflammation of the uveal tract, acute, chronic, recurrent or history thereof.

(3) Pterygium which encroaches on the cornea more than 1 mm except in SNA and SNA candidates where no pterygium is allowed.

(4) Optic neuritis or history thereof.

(5) Herpetic corneal ulcer or keratitis or history of recurrent episodes.

(6) Xerophthalmia.

(7) Elevated intraocular pressure.

(8) Visual migraine or other recurrent, transient suppression of vision.

(9) Artificial intraocular lens implants (unilateral or bilateral).

(10) Dislocation of the ocular lens.

(11) History of eye muscle surgery in aviation per sonnet whose physical standards require stereopsis.

(c) Lungs and Chest wall

(1) Congenital and acquired defects (including bul lae) of the lungs, spine, chest wall, or mediastinum which may restrict pulmonary function, cause air trapping, or affect the ventilation perfusion balance.

(2) Chronic or restrictive pulmonary disease of any type.

(3) Pneumothorax (traumatic pneumothorax 1 year after occurrence is NCD).

(4) Chronic mycotic diseases unless completely healed without sequelae.

(5) Surgical resection of the lung parenchyma (lobe thereof. or segmental technique) requires thorough documentation of the reason, the procedure, and the result, including pulmonary function assessment.

(d) Heart and Vascular

(1) A substantiated history of paroxysmal supraventricular dysrhythmias such as;

paroxysmal atrioventricular nodal reentry tachycardia, nonparoxysmal junctional tachycardia, atrial flutter or atrial fibrillation.

- (2) A history of ventricular tachycardia.
- (3) Cardiac enlargement or dilated cardiomyopathy as determined by complete cardiac evaluation, including M-mode or two dimensional echocardiography.
- (4) Blood pressure
 - (a) Hypertension
 - (1) Systolic of 140 mm Hg or greater.
 - (2) Diastolic of 90 mm Hg or greater.
 - (b) Hypotension
 - (1) Systolic of less than 90 mm Hg.
 - (2) Diastolic of less than 60 mm Hg.

(5) EKG findings of

- (a) Right bundle branch block unless congenital and the individual is documented to be free of disease.
- (b) Wolff Parkinson White syndrome or other preexcitation syndrome predisposing to paroxysmal arrhythmias.

(e) Abdominal Organs and Gastrointestinal System

- (1) Enlargement of the liver, except when liver function tests are normal with no history of jaundice (other than the neonatal period or associated with viral hepatitis), and the condition does not appear to be caused by active disease.
- (2) Peptic or gastric ulcer or history thereof.
- (3) Cholecystectomy within the preceding 60 days.
- (4) Cholelithiasis.
- (5) Gastrointestinal hemorrhage or history thereof.

(f) Endocrine and Metabolic Disorders

- (1) Hypothyroidism, hyperthyroidism or history thereof
- (2) Hyperuricemia.
- (3) Hypoglycemia or history thereof.

(g) Genitalia and Urinary System

- (1) Urinary tract stone formation or history thereof.
- (2) Hematuria or history thereof, unless curable and corrective measures have been successfully accomplished.

(h) Extremities

- (1) Internal derangement of the knee resulting in instability or restricted range of motion as determined by comprehensive orthopedic evaluation 1 year after surgical repair.
- (2) Chronically dislocating shoulder.

(i) Spine

- (1) Chronic or disabling back pains or history thereof.
- (2) Herniated nucleus pulposus or history thereof.
- (3) Scoliosis greater than 25 degrees (scoliosis of 2-25 degrees requires full x ray and orthopedic evaluation).
- (4) Kyphosis over 40 degrees.
- (5) Fracture or dislocation of cervical spine or his
- (6) Cervical arthritis, disc disease a history thereof.
- (7) Cervical fusion, congenital or surgical.
- (8) Fracture a dislocation of thoracic or lumbar spine (a single vertebral compression fracture of 25 percent or less is NCD).

(j) Neurologic Disorders**(1) Applicants for Aviation Programs and Student Aviators.**

- (a) History of unexplained syncope.
- (b) History of convulsive seizures of any type due to any causes; except that single simple secure associated with febrile illness before age 5 years may be acceptable if the electroencephalogram is normal.
- (c) History of recurrent or incapacitating headache or facial pain (including migraine, cluster headache) or any headache associated with impairment of motor, sensory, visual, or other neurologic function (such as hemiplegic, basilar artery, or ophthalmoplegic migraine).
- (d) History of diagnostic or therapeutic craniotomy or any procedure involving penetration of the dura mater or the brain substance.
- (e) Any defect in the bony substance of the skull, regardless of cause.
- (f) Encephalitis, unless 6 years have elapsed since recovery, and no sequelae or residual was present 6 months after recovery from the acute phase of the illness, and a current complete neurological evaluation is normal in all respects.
- (g) Meningitis, unless 1 year has elapsed since recovery, and no residual or sequelae was present 1 month after complete recovery from the acute phase of the illness, and a current complete neurological evaluation is normal in all respects.
- (h) Any history of metabolic or toxic disturbances of the central nervous system until reviewed by NAVAEROSPMEDINST (Code 42).

- (i) Any history of dysbarism (decompression sickness) with neurological involvement.
- (j) Electroencephalographic abnormalities of any kind, borderline or questionable tracings until reviewed by NAVAEROSPMEDINST (Code 42).

- (k) Injury of one or more peripheral nerves, unless not expected to interfere with normal function or flying safety.
- (l) History of head injury associated with any of the following:
 - (1) Intracranial hemorrhage or hematoma, (subdural or intracerebral) or subarachnoid hemorrhage.
 - (2) Any penetration of the dura mater with or without brain substance injury.
 - (3) Radiographic or other evidence of retained intracranial foreign bodies or bony fragments or parenchymal brain damage.
 - (4) Any skull fracture (linear or depressed), with dural penetration or post traumatic epilepsy (early or late).
 - (5) Post traumatic syndrome as manifested by personality changes, impairment of higher intellectual functions, anxiety, or disturbances of equilibrium, delirium, disorientation, confusion, or impairment of judgment or intellect. Duration of symptoms of:
 - (a) Forty eight hours or more are permanently disqualifying.
 - (b) More than 12 but less than 48 hours is disqualifying until at least 2 years have elapsed since the injury and a current complete neurological evaluation is normal in all respects.
 - (c) Less than 12 hours is disqualifying until at least 6 months have elapsed since the injury and a current complete neurological evaluation is normal in all respects.
 - (6) Post traumatic headaches/persistence of headaches for:
 - (a) Fourteen days or more are permanently disqualifying.
 - (b) More than 7 but less than 14 days, is disqualifying until at least 2 years have elapsed since the injury and a current complete neurological evaluation is normal in all respects.
 - (c) Less than 7 days, is disqualifying until at least 6 months have elapsed since the injury and a current complete neurological evaluation is normal in all respects.
 - (7) Cerebrospinal fluid rhinorrhea or otorrhea, leptomeningeal cyst, arachnoid cyst, brain abscess, or arteriovenous fistula.
 - (8) Loss of consciousness for:
 - (a) Two hours or more.

- (b) Less than 2 hours but more than 15 minutes, is disqualifying until 2 years have elapsed since the injury and complete neurological evaluation is normal in all respects.

(2) Designated aviation personnel. Same as aviation candidate with the following modifications:

- (a) Fainting a syncope of any type due to any cause until appropriate consultations have been accomplished and the case reviewed by NAVAEROSPMEDINST (Code 42).
- (b) All acute infections of the central nervous system (meningitis, encephalitis, etc.) until the disease is completely resolved and the case has been reviewed by NAVAEROSPMEDINST (Code 42).
- (c) Electroencephalographic abnormalities in otherwise apparently healthy individuals are not necessarily disqualifying with the exception of
 - (1) Spikewave complexes.
 - (2) Spike or sharp waves.
- (d) Head Injury
 - (1) Head injury resulting in the following will be cause for permanent disqualification for flying duty including all causes listed in 15-65(7)(j) with the following modifications:
 - (a) Depressed skull fracture with unconsciousness for more than 5 minutes.
 - (b) Post traumatic syndrome as manifested by changes in personality, impairment of higher intellectual functions, anxiety, headaches, or disturbances of equilibrium which does not resolve within 1 month after the injury.
 - (c) Combined period of unconsciousness and antegrade amnesia exceeding 72 hours.
 - (d) Cerebrospinal fluid rhinorrhea or otorrhea persisting more than 7 days.
 - (e) Permanent cranial nerve deficit, until reviewed by NAVAEROSPMEDINST (Code 42).
 - (2) Head injury associated with any of the complications below will be cause for removal from flying duty for at least 2 and 1/2 years (30 months). Electroencephalograms will be obtained as soon after the injury as possible and at 1 year intervals until completely normal or until the examinee is determined to be permanently disqualified. Prior to return to flying status, a current complete neurological evaluation by a qualified neurologist or neurosurgeon, including skull x rays, electroencephalogram and neuropsychological test battery (e.g. Halstead Reitan), will be completed and

the case forwarded for review by NAVAEROSPMEDINST (Code 42).

- (a) Linear or basilar skull fracture with loss of consciousness for more than 1 hour.
 - (b) Depressed skull fracture without parenchymal brain damage and less than 5 minutes of unconsciousness.
 - (c) Post traumatic syndrome, as manifested by changes in personality, impairment of higher intellectual functions, anxiety, headaches, or disturbances of equilibrium, which persists for more than 2 weeks, but resolves within 1 month of the injury.
 - (d) Combined period of post traumatic (anterograde) amnesia (PTA), delirium, disorientation, or impairment of judgment, plus unconsciousness greater than 24 hours, but less than 72 hours.
- (3) Head injury associated with any of the following will be cause for removal from flying duties for at least 12 months. Complete evaluation by a qualified neurologist or neurosurgeon is required just prior to return to flying duty. An electroencephalogram will be obtained as soon after the injury as possible and another at the time of consideration for return to flying duty. If an abnormality is found in any portion of the evaluation (neurologic examination, skull x rays, electroencephalogram, or neuropsychological test battery), the examinee will not be cleared for return to flight duties but will be referred back to the consultant at appropriate intervals for reevaluation until cleared u determined to be permanently disqualified.
- (a) Linear or basilar skull fracture (x ray or clinical diagnosis) with loss of consciousness for less than 60 minutes.
 - (b) Post traumatic syndrome, as manifested by changes in personality, impairment of higher intellectual functions, anxiety, headaches, or disturbances of equilibrium, which persists for more than 48 hours, but resolves within 14 days of the injury.
 - (c) Post traumatic headaches alone which persist more that 14 days after the injury, but resolve within 1 month.
 - (d) Combined period of post traumatic or anterograde amnesia, delirium, disorientation, contusion, plus unconsciousness for more than 60 minutes but less than 24 hours.
 - (e) Cerebrospinal fluid rhinorrhea or otorrhea which clears within 7 days of injury, provided there is no evidence of cranial nerve palsy.
- (4) Head injury associated with any of the following will be cause for removal

from flying duty for at least 4 weeks. Return to flying duty will be contingent upon a normal neurological evaluation by a qualified neurologist or neurosurgeon, including skull x rays, electroencephalogram, and

neuropsychological test battery at which time the defect will be NCD.

- (a) Post traumatic syndrome, as manifested by changes in personality, impairment of higher intellectual function or anxiety, which resolves within 48 hours of injury.
- (b) Post traumatic headaches alone, which resolve within 14 days of injury.
- (c) Combined period of amnesia (posttraumatic or anterograde, patchy, a complete), delirium, a disorientation, confusion plus unconsciousness lasting less than 60 minutes, and more than 5 minutes.

(k) Psychiatric

- (1) Diagnoses listed in the latest revision of the American Psychiatric Association Diagnostic Statistical Manual (APA/DSM) as Axis I normally result in a determination of NPQ per section III of this chapter. Examples include, but are not limited to: eating disorders, gender identity disorders, dementia, speech disorders, alcohol and drug dependence, mood disorders or history thereof, anxiety disorders, somatoform and dissociative disorders, and psychoses.
- (2) Diagnoses listed in APA/DSM as Axis II are cause for rejection of candidates, as in section III, and potential disqualification of already commissioned students, since true disorders in this axis involve significant difficulty with interpersonal relationships, acting out, or other maladaptive behavior. Examples of Axis II diagnoses are: developmental disorders and personality disorders.
- (3) Personality disorders or prominent personality traits manifested by patterns of chronic maladaptive behavior, emotional instability, or impaired judgment in designated aviation personnel would result in a determination of not aeronautically adapted (NM) only if safety of flight, crew coordination, or mission execution were affected. Apparent loss of aeronautical adaptability in a veteran aviator may be indication of a serious underlying emotional or physical problem; referral for complete evaluation is imperative.
- (4) Unacceptable behavior outside the arena of aviation safety and mission execution, whether or not associated with a maladaptive style or personality disorder, is administrative in nature and should be handled following existing directives, JAGMAN, and MILPERSMAN.

(l) Systemic Disease & Miscellaneous Condition

- (1) Sarcoidosis a history thereof.
- (2) Motion sickness severe or incapacitating or history thereof.

- (3) Decompression sickness. Type II or recurrent type I decompression sickness (in candidates and students for all aviation programs any decompression sickness is disqualifying).

(m) Anthropometry

- (1) Height. Candidates for all flight programs must meet height standards outlined in article 15 62.
- (2) Weight/Body Fat
 - (a) Navy candidates, students, and designated personnel in all aviation programs except air traffic controller. Must meet the body fat requirements in OPNAVINST 6110.1 series, and weight standards captured in Table I.
 - (b) Navy designated air traffic controller personnel. No specific weight a body fat requirements. Must comply administratively with OPNAVINST 6110.1 series.
 - (c) USMC candidates and designated. Must meet the standards in MCO 6110.10 series.

Male Aviation Height (inches) and Weight (pounds)

Height	Max Wt	Min Wt
60	161	100
61	163	102
62	166	103
63	168	104
64	173	105
65	181	106
66	183	109
67	184	111
68	193	115
69	200	119
70	203	123
71	208	127
72	215	131
73	221	135
74	230	139
75	235	143
76	235	147
77	235	151

78 235 153

Female Aviation Height (inches and Weight (pounds)

Height Max Wt Min Wt

58 126 100

59 128 100

60 131 100

61 135 100

62 138 100

63 142 100

64 145 106

65 149 106

66 153 108

67 156 111

68 160 114

69 163 117

70 167 119

71 171 122

72 175 128

73 178 128

74 185 130

75 190 133

76 196 136

77 201 139

78 206 141

Body Fat

Males: Less than or equal to 22 percent

Females: Less than or equal to 30 percent

(3) Anthropometric standards. All aviation candidates (except air traffic controllers) and all designated individuals flying ejection seat aircraft must meet the following:

(a) Sitting Height (SH)

(1) Minimum 32.0 inches.

(2) Maximum 41.0 inches.

(b) Buttock knee length (BKL)

(1) Minimum 21.9 inches.

(2) Maximum 28.0 inches.

(c) Buttock leg length (BLL)

(1) Minimum 36.0 inches.

(2) Maximum 50.0 inches.

(d) Functional Reach (FR)

(1) Minimum 28.0 inches.

(2) Maximum none

(n) Blood Pressure and Pulse Rate

(1) Blood Pressure . Will be determined after examinee has been supine at least 5 minutes and then after examinee has been standing motionless for 3 minutes. If a member becomes symptomatic during transition from supine to standing, it will be considered disqualifying.

(2) Pulse rate. Will be determined in conjunction with blood pressure. If pulse is less than 50 or over 110, an electrocardiogram will be obtained. Persistent resting pulse of 100 or standing pulse rate of 110 must be evaluated. A pulse rate of 50 or less in the presence of a negative cardiac history and negative medical or electrocardiographic finding will not in itself be considered disqualifying.

(8) Standards for Specific Categories of Aviation Personnel

CLASS ONE PERSONNEL

(a) Service Group I. In addition to the standards in section III and the general aviation standards, Service Group I aviators must meet the following standards.

(1) Vision

(a) Distant visual acuity. 20/70 each eye uncorrected. Must correct to 20/20 or better each eye, correction must be worn and member must carry an extra pair of spectacles. The first time distant visual acuity of less than 20/20 is noted a manifest refraction will be performed recording the correction required for the aviator to see 20/20 in each eye, as well as the refraction required to obtain the best corrected visual acuity possible. Additionally, a thorough mydriatic funduscopic examination will be performed.

(b) Refractive limits. Manifest refraction must not exceed 1.50 diopters (sum of sphere and cylinder) in any meridian, or +4.00 diopters sphere. Total cylinder not to exceed +/- 1.50 diopters. May have no more than 3.5 diopters of anisometropia.

(c) Near visual acuity. Must correct to 20/120 in each eye (with best correction in place) using either the Armed Forces Vision Tester or standard 16' Snellen u Sloan notation nearpoint card.

(d) Depth perception. Verhoeff, must pass 8 of 8, first trial or 16 of 16 on

combination of second and third trial.

- (e) Field of vision. Must have full field of vision.
- (f) Oculomotor Balance

- (1) No esophoria or exophoria more than 10.0 diopters.
- (2) No hyperopia more than 1.50 diopters.
- (3) If esophoria/exophoria is 10.00 diopters or greater, or if hyperopia is 1.00 diopter or greater, a full ocular motility workup is required.

- (g) Color vision. Must pass FALANT.
- (h) Fundoscopy. No pathology present.
- (i) Intraocular pressure. Must be less than 25 mm Hg. A difference of 5 mm Hg or greater between eyes requires an ophthalmology consult, but if no pathology noted, is not considered disqualifying.

(2) Hearing(ANSI 1969)

Freq(Hz)	Better Ear (dB)	Worse Ear (dB)
500	35	35
1000	30	50
2000	30	50

- (3) Chest X-Ray. Required at ages 21, 24, 27, 30, 33, 36, 39, and annually thereafter.
- (4) EKG. Required at ages 27, 30, 33, 36 and annually thereafter.
- (5) Hemocult. Required annually after age 35.
- (6) Dental. Must have no defect which would react adversely to changes in barometric pressure (Type I or II dental examination required).
- (7) Self Balance Test (SBT). Must pass.
- (8) SF-93 or NAVMED 6120/2, as appropriate. The following items will be added to the SF 93 after periods of unconsciousness; family history of diabetes, allergic reaction to insect stings, are you currently taking any medications.
- (9) NAVAEROSPMEDINST (Code 42) Submission. The aviation triennial medical examination must be submitted with a completed, typed SF-88 and the original handwritten SF 93 or NAVMED 6120/2 at ages 21, 24, 27, 30, 33, 36, 39, and annually thereafter. If the most recent BUMED endorsed SF 88 is over 3 years old before age 40, submission of a full aviation physical examination is directed. Full aviation physical examinations for all personnel on waivers, and all personnel 16 and above must be submitted annually regardless of age.

(b) Service Group II. Must meet the same standards as Service Group I with the following modifications:

(1) Distant Visual Acuity. Must be 20/100 or better, each eye corrected to 20t20 or better. Correction must be worn and member, must carry an extra pair of spectacles while flying.

(2) Refractive Limits. None

(c) Service Group III. Must meet the same standards as Service Group I with the following modifications:

(1) Distant Visual Acuity. Must be 20t200 or better each eye corrected to 20t20 each eye. Correction must be worn and member must carry a second pair of spectacles while flying.

(2) Refractive Limits (None)

(d) Student Naval Aviator (SNA) and Candidates Must meet Service Group I standards except as follows

(1) Vision

(a) Distant and Near Visual Acuity. Uncorrected visual acuity must not be less than 20/30 each eye correctable to 20/20 each eye, and the correction must be worn at all times while flying Binocular visual acuity will be noted on the initial physical examination

(b) Refractive Limits. While under the effects of 1 percent Cyclogel, the candidate must read 20/20 with each eye with a total myopia not greater than 1.00 diopters in any meridian, a total hyperopia no greater than +3.0 diopters in any meridian, and an astigmatism no greater than 0 75 diopters The astigmatic correction will be repeated in minus cylinder format It uncorrected DVA is less than 20/20 each eye, a manifest refraction must be recorded for the correction required to attain 20/20 each eye Total myopia may not be greater than 1 00 diopters in any meridian, total hyperopia no greater than +3 00 diopters in any meridian, or an astigmatism no greater than 0 75 diopters

(c) Near Point of Convergence 100 mm or less

(d) Slit lamp examination is required

(2) Hearing (ANSI 1969)

Freq (Hz)	Better Ear (dB)	Worse Ear (dB)
500	25	25
1000	25	25
2000	25	25
3000	45	45
4000	30	60

(3) Reading Aloud Test. Required if speech impediment exists

(4) SF-93. The following statement will be added to the SF 93 in item 8 and signed by the applicant

I certify that I Wear contact lenses Yes/No

Have worn contact lenses Yes/No

Am aware that my vision has been worse than 20/20 Yes/No

Have had any eye surgery Yes/No

If the applicant cannot sign this statement, a full explanation by the examining flight surgeon will be included

(5) Psychological Test. Must pass an Aviation Selection Test Battery as directed by BUMED CLASS II PERSONNEL CONTACT LENS. The wearing of contact lenses to correct visual acuity is authorized at the option of the individual concerned. The contact lens must be procured as a personal expense. The individual must be fully adapted to the wearing of the lens, vision must be adequately corrected, and the flight surgeon must authorize the wearing of the lens by an appropriate statement on the NAVMED 6410/2. At least one pair of corrective spectacles must be carried by the individual wearing contact lenses. The wearing of contact lenses to purposely produce a change in corneal curvature (orthokeratology) is prohibited.

(e) Student Naval Flight Officer (SNFO) or Candidate, Candidate Marine Officer Aerial Observer (AO), and Candidate Supporting Arms Coordinator (SAC(A)). Must meet Service Group I standards except as follows

(1) Vision

(a) Distant Visual Acuity. Must correct to 20/20 each eye with standard lenses and correction must be worn while flying (If 20/100 or worse must carry, an extra pair of spectacles)

(b) Refractive Limits. Manifest refraction must not exceed +/- 5.50 diopters in any meridian (sphere and cylinder) with astigmatism no greater than +/- 3.00 diopters. Must have no more than 3.50 diopters of anisometropia

(c) Depth Perception Not required

(d) Oculomotor Balance. Must have no obvious heterotropia or symptomatic heterophoria (NOHOSH)

(2) Silt Lamp Examination. Required

(3) Hearing Same as SNA

(4) Read Aloud Test. Required if speech impediment exists

(5) Psychological Must pass an Aviation Selection Test Battery as directed by BUMED

(6) Must submit SF 93 to include contact lens statement per 15 65(7) (d) (4) with SF 88

(f) Designated Naval Flight Officer (NFO), Marine Officer Aerial Observer (AO), and Supporting Arms Coordinator (SAC(A)). Meet Service Group I standards except as

follows Vision:

- (1) Distant Visual Acuity Must correct to 20/20 each eye
- (2) Refractive Limits. None
- (3) Oculomotor Balance NOHOSH
- (4) Depth Perception. Not required

(g) Student Naval Flight Surgeon, Student Naval Aerospace Physiologist and Student Naval Aerospace Experimental Psychologist. Must meet Service Group I standards except as follows:

- (1) Vision
 - (a) Distant Visual Acuity. Same as designated NFO
 - (b) Refractive Limits. None
 - (c) Oculomotor Balance NOHC meet Service Group I standards to solo)
 - (d) Depth Perception Not required (must meet Service Group I standards to solo)
- (2) Hearing Same as SNA

(h) Designated naval Flight Surgeon, naval Aerospace Physiologists, and naval Aerospace Experimental Psychologist. Same as designated NFO.**(i) Naval Aircrew Candidate and Designated (Fixed Wing). Must meet Service Group I standards except as follows:**

NOTE. Candidate naval aircrew medical examinations will encompass physical standards for all aircrew duties.

- (1) Vision. Same as designated NFO except uncorrected near visual acuity no restriction. A manifest refraction must be recorded.
- (2) Hearing. Candidate flight engineer, airborne sonar operator, and flight communications operator must meet SNA standards. All others, Service Group I standards.
- (3) Anthropometric Standards. If flying in ejection seat aircraft, must meet SNA standards. Otherwise no requirement.
- (4) NAVAEROSPMEDINST (Code 42) Submission. There is no routine submission requirement except for candidates and re affiliations.

(j) Helicopter Aircrew Candidate (Navy). Same as fixed wing candidate except as

follows:

(1) Vision

- (a) Distant Visual Acuity. Must be 20/70 (binocular) or better corrected to 20/20 each eye. Correction must be worn while flying.
- (b) Near Visual Acuity. Must be 20/70 (binocular) or better corrected to 20/20 each eye. Correction must be available while flying.
- (c) Depth Perception. Must meet Service Group I standards.

(2) Hearing. (ANSI 1969)

Frequency (Hz)	Decibel (dB)
500	Maximum average level in these three frequencies not greater than 30 dB. with no level greater than 35 dB
1000	
2000	
3000	45
4000	60

(3) Age. No restriction. Must meet physical requirement only.

(k) Helicopter Aircrew Candidate (USMC), Marine Enlisted Aerial Observer (AO) Candidate, and Aerial Gunner Candidate e. Must meet Navy helicopter standards with the following exception. USMC candidates vision may be as low as 20/100 in one eye and 20/70 in the better eye correctable to 20/20 each eye. Correction must be worn while flying.

(l) Designated Helicopter Aircrew, Marine enlisted Aerial Observer Gunner. Same as candidate except, distant visual acuity must be 20/200 or better, corrected to 20/20 in each eye. Correction must be worn while flying.

(m) Helicopter Rescue Aircrewman (SAR) Candidate. Same as Navy helicopter aircrew candidate except as follows:

- (1) Temperament. Must be evaluated for emotional and intellectual fitness, reaction to stress, maturity, motivation, and aeronautical adaptability.
- (2) Physique. Must be of muscular physique with no tendency toward exogenous obesity.

(n) Designated Helicopter Rescue Aircrewman (SAR). Same as Navy helicopter aircrew candidate except, distant visual acuity must be 20/200 or better, corrected to 20/20. Must pass FALANT.

(o) Aerospace Physiology Technician Candidate. Same as naval aircrew candidate except as follows.

- (1) Hearing. Same as SNA
- (2) Age. Under 32 years of age.
- (3) Special. Must have normal baseline sinus f/ms submitted with medical examination
- (4) Color Vision. Not required
- (5) NAVAEROSPMEDINST (Code 42) Submission Candidate's medical examination with sinus films attached must be submitted prior to assignment to training.

(p) Designated Aerospace Physiology Technician. Same as designated naval aircrewman.

(q) Search and Rescue Corpsman (SAR) candidate and designated. Same as designated naval aircrewman.

(r) Parachute Jumper (Basic) Candidate and Designated. Medical examination may be performed by any privileged provider. Must meet standards in section III and the following additional standards:

- (1) Vision Distant Visual Acuity
 - (a) Navy. Must correct to 20/20. If 20/40 or worse, correction must be worn at all times while jumping.
 - (b) Marine Corps. Corrected to at least 20/20 in one eye and 20/100 in the other.
- (2) Personnel who are parachute jumpers and also members of special forces (SEALs/Recon) must also meet standards in article 15-66 and, in this case the examination may be completed by the examiners, and at the frequency, listed in article 15-66.

(s) Naval Test Parachutist/High Altitude Low Opening (HALO)/Military Free Fall (MFF)-Candidate and Designated. Must meet the same standards as naval aircrewman except as follows:

- (1) Vision Distant Visual Acuity. If less than 20/20 correction must be worn while jumping.
- (2) Personnel who are in HALO or MFF program and also members of special forces

(SEALs/Recon) must also meet standards in article 15-66 and, in this case, the examination may be conducted by the examiners, and at the frequency, listed in art. 15 66.

(t) Flight Deck Personnel (Director, Spotter, Checker, and Other Critical Personnel as specified by the unit Commanding Officer). Must meet the standards in section III except as follows:

(1) Vision

(a) Distant Visual Acuity. 20/400 (binocular) corrected to 20/20 and correction must be worn at all times.

(b) Field of V or Must have full field of vision.

(c) Depth Perception Must pass Verhoeff 3/8 or AFVTB.

(d) Oculomotor Balance - NOHOSH

(e) Cola Vision Must pass FALANT.

(2) Chest X rays. Required at ages 21, 24, 27, 30, 33, 36, 39, and annually thereafter.

(3) NAVAEROSPMEDINST (Code 42) Submission. No routine submission requirements.

(u) Flight Deck Personnel - (Noncritical). Must meet the standards in section 111 except; vision must be 20/400 or better corrected to 20/40 in the worse eye and 20/30 in the better eye and correction must be worn at all times.

(v) Flight Deck Personnel (Special). Nonaircraft carrier helicopter detachment personnel (to include nonpilot landing signal officer). Same requirements as critical flight deck personnel except, no distant visual acuity limits. Must correct to 20/20 in each eye.

(w) Air Traffic Controllers (ATC) - (DON Civilian and Military). The general requirements are those for active duty in the military service or in civilian service employment, as amended by this article.

(1) Vision

(a) Distant Visual Acuity. Must correct to 20/20 or better each eye and correction must be worn.

(b) Near Visual Acuity. Must correct to 20/20

(c) Depth Perception. Not required.

(d) Color Vision. Must pass FALANT.

(e) Oculomotor Balance

(1) No esophoria or exophoria more than 10.0 diopters.

- (2) No hyperphoria more than 1.50 diopters.
- (3) If esophoria/exophoria is 6.00 diopters or greater or if hyperphoria is 1.00 diopter or greater, a full ocular motility workup is required.

- (2) Intraocular Pressure. Must meet Service Group I standards.
- (3) Hearing. Must meet Service Group I standards
- (4) Reading Aloud Test. Required for candidates only
- (5) Special
 - (a) Head Injury. must meet Service Group I standards.
 - (b) Pregnancy. Pregnant ATCs are to be considered physically qualified, barring medical complications, until such time as the medical officer, the member, or the command determines that the member can no longer perform as an ATC.
 - (c) Alcoholism and Alcohol Abuse. Controllers who are diagnosed as alcohol abusers will be disqualified until successful completion of an alcohol rehabilitation program. Controllers diagnosed as alcohol dependent will be permanently disqualified from ATC duties. Waiver may be requested upon successful completion of an alcohol rehabilitation program and at least 3 months demonstrated sobriety. When diagnosed as alcohol abuser or dependent, a medical examination must be completed and "awarded to NAVAEROSPMEDINST to disposition.
 - (d) Prescription Drugs. Use of prescription drugs will follow general NATOPS, OPNAVINST 3710.1 series.
 - (e) Aeronautical Adaptability. Must meet air crew standards.
- (6) NAVAEROSPMEDINST 42 Submission. Typed, completed SF 88 and SF 93 must be submitted every 3 years for BUMED endorsement.
- (7) Special. DON civilian ATC standards and documentation requirements:
 - (a) There are no specific height, weight, or body fat requirements.
 - (b) When a civilian who has been ill in excess of 30 days returns to work, a formal flight surgeon's evaluation will be performed prior to returning to ATC duties. NAVMED 6410/2 will be used to communicate clearance for ATC duties to the commanding officer.
 - (c) Waiver requests for disqualifying defects will be completed per section V of this chapter. The action addressee for Marine Corps civilians is CMC (Code ASA) and for Navy civilians is OPNAV (OP 554). All waivers will be forwarded via NAVAEROSPMEDINST (Code 42) for endorsement. The inclusion of medical records from civilian sources is encouraged to assist in making a medical recommendation and to avoid redundancy of clinical studies.

(x) Selected Passenger Project Specialists and Other Personnel

- (1) When ordered to duty involving flying for which special requirements have not been prescribed, personnel will, prior to engaging in such duties, be examined to determine their physical qualification to aerial flights, an entry made in their Health Record and a NAVMED 6410/2 issued if qualified. The examination will relate primarily to the circulatory system, musculoskeletal system, equilibrium, neuropsychiatric stability, and patency of the eustachian tubes, with such additional consideration as the individual's specific flying duties may indicate. The examiner will attempt to determine not only the individual's physical qualification to fly a particular aircraft or mission, but also the physical qualification to undergo all required physical and physiological training associated with flight duty. No individual will be found fit to fly unless fit to undergo the training required in OPNAVINST 3710.7 series, for the aircraft or mission.
- (2) Vision. The visual acuity will be at least 20/150 with or without correction in the best eye and if uncorrected visual acuity is 20/100 or less, an extra pair of corrective spectacles must be available on the person at all time while flying .
- (3) The examination and its evaluation will be entered on the NAVMED 6150/2 in the individual's Health Record.

(y) Technical Observer. Candidate for orders as, and those ordered to duty involving flying as, technical observers must meet the physical standards of the designation for which they are training. When the ultimate designation as naval aviation observer is not appropriate, and the need for officers and civilian employees to perform in flight duties is justified by reason of special qualifications, they must meet the cardiovascular and neurocirculatory standards of Service Group I. They must also meet any special requirements for particular aircraft type, ejection seat. In all other respects they will be required to meet the standards of general service.

- (9) Vision Testing Procedures for Aviation Personnel. The following procedures outline the requirements for performing the aviation vision tests.
 - (a) Distant Visual Acuity
 - (1) SNA Candidates. The examinee is placed 20 feet from the Goodlite eye chart. The nontested eye is covered and the examinee is directed not to squint. If the candidate persists in squinting after being instructed not to, direct attention to a Snellen chart and record the best vision at which the candidate does not squint. The examinee is then directed to read one of the 10 letter lines on the Goodlite chart. If any letter or a combination of letters is missed, the examinee is informed that letters were missed and given the opportunity to read the line again. The score should be recorded as 20/~0 if no letters are missed. If letters are missed, then the number of letters missed will be recorded in place of the zero. This

procedure is repeated with the other eye.

(2) SNFO Candidates. May be tested on the AFVT and the lowest line read with two misses should be recorded as uncorrected vision. The examinee's corrected vision should then be tested and recorded.

(3) Designated Aviation Personnel. Are to be tested on the AFVT both with and without correction and results recorded on the SF 88.

(b) Near Visual Acuity. All personnel are to be tested on either the AFVT or with a standard 16' Snellen or Sloan notation nearpoint card and the results (including the type of test used) recorded on the SF 88.

(c) Depth Perception. May be tested using either the AFVT or the Verhoeff stereopter. (The Verhoeff stereopter is the only acceptable test for candidates, students, and designated naval aviators.) When the AFVT is used, the examinee must pass A through D. When using the Verhoeff stereopter, the Verhoeff must first be displayed to the examinee and the testing procedures explained. During testing, the Verhoeff must be kept 39 inches from the examinee at eye level and the test presented in a random manner. The examinee must pass 8 of 8 on the first trial. If the examinee is not successful, the examinee must be retested twice and must pass 16 of 16 (no misses) on the retest.

(d) Color Vision. The FALANT is the only acceptable test for color vision. The examinee must be placed 8 feet from the FALANT. The presentation of the different lights must be done in a random manner each time the test is given. The member must pass 9 of 9 on the first trial. If the examinee misses any presentations, the examinee must be allowed to retest. On the retest, the examinee will be given a series of 18 presentations (9 twice) and must score 16 of the 18 correctly to pass.

To Index