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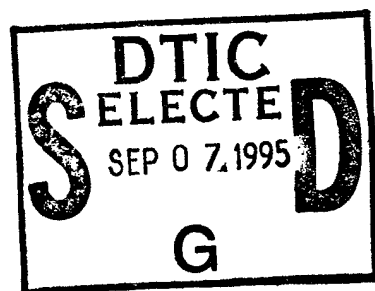


**A Comparison
of the Aeromedical Administrative Requirements
for U.S. Air Forces and Major Allies**

By

Kevin T. Mason

Aircrew Protection Division



December 1994

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**United States Army Aeromedical Research Laboratory
Fort Rucker, Alabama 36362-0577**

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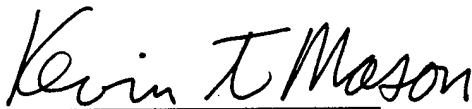
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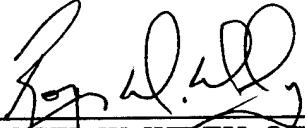
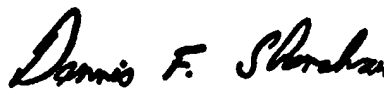
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Military relevance

Although numerous international agreements provide for interchangeability of aircrew medical categories for the medical examination of aircrew visiting or jointly serving with sister air forces or allied air forces, the basic administrative processes remain unique between air forces (Air Standardization Coordinating Committee, 1983; Air Standardization Coordinating Committee, 1986; North Atlantic Treaty Organization, 1988). Publication of information regarding aeromedical administration would facilitate an understanding of regulatory references, requirements, and terminology between air forces. A better understanding and sharing of information might provide for further standardization of basic administrative terms and processes for aircrew medical examination. The Air Standardization Coordinating Committee tasked Aviation Epidemiology Data Register project officers, U.S. Army Aeromedical Research Laboratory, to develop the publication.

Method

Aeromedical administration experts of the military forces for Australia, Canada, Germany, Great Britain, New Zealand, and United States of America, were asked to provide information shown in Table 1. The information was compiled. Each air force was provided an opportunity to review the final product. German regulations were translated to English by the German Air Force.

Table 1.
Basic architecture of aircrew medical examination administration.

Medical standards reference	What medical standards reference applies to examinees to determine their fitness for flying duties?
Scope of the examination	How detailed is the examination for each aircrew age group?
Periodicity of the examination	How often are aircrew medical examinations required?
Examination validity period	How long is the examination or medical certification valid?
Aeromedical disposition	What terminology describes the aeromedical disposition and/or medical certification upon completion of the examination?

Results

Royal Australian Air Force

Medical standards reference. ADFP 701, Recruit medical examination procedures.

Scope of the examination. Complete medical examination and physical fitness testing.

Periodicity of the examination. Annual.

Validity period of the examination. The examination is valid for 12 months. Aircrew with temporarily restricted medical categories are reviewed on a case by case basis. Aircrew are examined after an aircraft accident or incident where aeromedical aspects are suspected.

Aeromedical disposition. Table 2 shows the disposition categories. Employment standard designed by "A" indicate fitness for flying duties. Time qualifiers indicate duration of the condition with "T" reflecting temporary restriction not exceeding 2 years or duration unknown and "P" reflecting permanent restriction.

Table 2.
Aeromedical disposition categories of the Royal Australian Air Force.

Category	Description
A1	Medically fit for full flying duties.
A2	Medically fit for full flying duties with special precautions stated in the amplifying comments.
A3	Medically fit for restricted flying duties as stated in the amplifying comments.
A5	Medically unfit for flying duties (aircrew).
A9	Indicates the application for multiple 'A' factors with details stated in the amplifying comments.

Australian Regular Army

Medical standards reference. ADFP 701, Recruit Medical Examination Procedures.

Scope of the examination. Complete medical examination.

Periodicity of the examination. Aircrew require an annual Special Medical Board (SMB). A SMB or Reclassification Medical Board also is required after an aircraft accident, a pilot develops illness or injury which could affect efficiency as a pilot, or a medical officer considers the member's current PULHEEMS assessment to be incorrect.

Validity period of the examination. One year until the end of the month in which the next aircrew medical is due.

Aeromedical disposition. Aircrew are required to have an employment standard represented by a PULHEEMS profile of "22222/1 2/1 22," physical evaluation standard of "Fit Everywhere," and colour perception standard of 2.

Royal Australian Navy

Medical standards reference. ADFP 701, Recruit medical examination procedures.

Scope of the examination. Complete medical examination and adherence to weight standards.

Periodicity of the examination. All aircrew receiving flying pay are examined annually and:

- (1) Before returning to flying duties after a period on the sick list due to a condition that does not meet the flying duty medical fitness standards.
- (2) After an accident resulting in medical complications.
- (3) When the member selected for flying training has not commenced their training within 6 months of a previous medical for fitness to fly.
- (4) When aircrew appear before an Aircrew Medical Board.
- (5) Prior to proceeding overseas for exchange service or flying courses.

Validity period of the examination. One year.

Aeromedical disposition. Table 3 shows the aeromedical disposition categories. For example, qualifier "A1" is pilot fit for full flying duties.

Table 3.

Aeromedical disposition categories of the Royal Australian Navy.

1. Primary qualifiers	
A	Flying duties as a pilot
B	Flying duties other than pilot
2. Secondary qualifiers	
1	Fit for full flying duties.
2	Fit for limited flying duties with limitations stated in brackets.
t	Temporarily unfit.
h	Flying duties at Naval Air Station Nowra only, and no seaborne platform operations.
p	Permanently unfit for flying duties.

Canadian Forces

Medical standards reference. Canadian forces publication 154 and Canadian forces administrative order 34-30.

Scope of the examination. See Table A-1.

Periodicity of the examination. See Table A-1.

Validity period of the examination. Group "A" is valid for 2 years and Group "B" is valid for 5 years if under age 40.

Aeromedical disposition. Table 4 shows the aeromedical disposition categories (grade). The "A" factor is for aircrew, nonaircrew flying personnel and passengers.

Table 4.
Aeromedical disposition categories of the Canadian Forces.

Category	Description
A1	Pilots are medically fit for unrestricted duty in all CF aircraft.
A2	Navigators, flight engineers, observers and helicopter reconnaissance observers are medically fit for unrestricted duty in all CF aircraft where such positions are required.
A3	Aircrew with specified medical restrictions as stated.
A4	Aircrew are medically fit for unrestricted air-borne duty, but whose duties do not entail actual operation of the aircraft to which they are assigned. An A4 classification may be annotated "while so employed" (WSE) when it is awarded to members of trades which are not normally associated with flying (e.g., clerk assigned as flight attendant). Air traffic control and air weapons control personnel also must maintain an A4 category for unrestricted employment.
A5	Nonaircrew members of the CF medically fit to fly as passengers in CF aircraft.
A6	CF members medically unfit to fly in any capacity.
A7	Aircrew who are medically unfit for any flight.

Federal Armed Forces of Germany

Medical standards reference. Joint services regulation (Zdv) No. 46/6 specifies the medical requirements of the operational pilot, and supplements the special directives of the German Air Force Surgeon General. Class (WFV) I standards apply to pilot candidates, Class (WFV) II standards apply to active pilots, and Class (WFV) III apply to other aircrew members.

Scope of the examination. Class I examinations are conducted centrally at the German Air Force Institute of Aviation Medicine. The examination includes a complete physical examination, modern diagnostic procedures such as cardiac ultrasound, and psychological testing. Class II examinations are conducted annually by the flight surgeon, but every 3 years a more comprehensive examination is conducted centrally at the German Air Force Institute of Aviation Medicine up to age 40. After age 40, all examinations are conducted at the institute. Class III examinations are conducted by the flight surgeon. The scope of Class III examinations may depend on the duties performed at the discretion of the flight surgeon.

Periodicity of the examination. Annually. Nonperiodic examinations are conducted following a flight mishap, after the sudden occurrence or aggravation of disease, and in the case of physical performance deterioration which cannot be tolerated according to regulation. Special followup examinations may be required at the German Air Force Institute of Aviation Medicine.

Validity period of the examination. Medical certification is valid for 1 year until the day before the pilot's birthday.

Aeromedical disposition. Table 5 shows the aeromedical disposition categories. For Classes II and III, aircrew members may be issued special authorizations to fly. The flight surgeon might impose additional restrictions and/or obligations that might limit flying duties or assignments.

Table 5.
Aeromedical disposition categories of the German Federal Armed Forces.

Category	Description
Fit for flying duties	Applies to Classes I and II.
Fit for aircrew member duties	Applies to Class III only.
Duty not in flight	Temporary nonfitness for flying duties.
Not fit	Permanent nonfitness for flying duties.

New Zealand Army, Air Force, and Navy

Medical standards reference. DM-18, Defense council orders for medical services for officer aircrew and airman aircrew.

Scope of the examination. Complete annual examination with annual audiogram, chest X-ray initially, and then every 5 years. Electrocardiogram initially, and at ages 20, 25, 30, 35, 40; then every 2 years thereafter.

Periodicity of the examination. All Army and Navy commissioned and noncommissioned aircrew, including parachute jumping instructors, complete an annual medical assessment aligned to their birth month. A proposal under evaluation may extend the period between medical assessments to 2 years for certain categories of aircrew.

Validity period of the examination. Medical certification is valid for 12 months.

Aeromedical disposition. Table 6 shows the aeromedical disposition categories. Aircrew will maintain a medical employment standard not less than A3.

Table 6.

Aeromedical disposition categories of the New Zealand Army, Air Force, and Navy.

Category	Description
A1	Medically fit for full flying duties.
A2	Medically fit for full flying duties with special precautions stated in the amplifying comments.
A3	Medically fit for restricted flying duties as stated in the amplifying comments.
A5	Medically unfit for flying duties.

Royal Air Force and Army (United Kingdom)

Medical standards references. AP 1269A, Assessment of medical fitness and JSP346, Systems of medical classification.

Scope of the examination. The periodic medical examinations (PME) is a physical examination carried out by a service medical officer. Special requirements are outlined in Table 7.

Table 7.
Special requirements for United Kingdom air forces examinations.

Timing	Test (blood taken after 10 hour fast)*
All aircrew, at all testing	ESR**
Aircrew selection	Sickle cell, bilirubin, EEG, and Chest X-ray
Ages 30, 40, and 50	TSH
Aircrew selection, age 25 and 30; every 2 years to age 40; and then annually	Hb, PCV, MCV, MCHC, WBC, and platelets; total protein, albumin, uric acid, creatinine, calcium, glucose, cholesterol, triglycerides, alkaline phosphatase, SGOT, SGPT, and GGTP; and electrocardiogram (every 6 months over age 50 if flying)

* Royal Navy does not have mandatory blood testing at PME.

** Where ESR is not feasible, attempt to obtain a C-reactive protein or plasma viscosity.

Periodicity of the examination. PMEs are performed annually, aligned with the birth month. Air traffic controllers and fighter controllers who do not fly on AWACs are classed as groundcrew, but have an annual PME to confirm their medical employment standard (MES).

Validity period of the examination. Medical certification is valid for 12 months.

Aeromedical disposition. Aircrew hold an MES consisting of 3 factors: A - Air, G - Ground, Z - Zone. Each factor is allotted a number which indicates the fitness of an individual to operate in each area. For aircrew, the important factor is the A factor, which may be as shown in Table 8.

Table 8.
Aeromedical disposition categories of the Royal Air Force and Army.

Category	Description
A1	Fit for full flying duty.
A2	Fit for full flying duty, but eye and/or hearing standards are below A1 standard.
A3	Fit for flying duties with specified temporary or permanent flying duty limitations. Temporary limitation may only be held for a maximum period of 18 months.
A4	Fit for aviation groundcrew duties and "fit for passenger flying duty." A4 applies to certain categories of personnel not classed as aircrew, but who fly without operating aircraft controls, for example, flight nursing attendants.

Royal Navy (United Kingdom)

Medical standards references. BR 1750A, Handbook of naval medical standards and JSP346, Systems of medical classification.

Scope of the examination. The periodic medical examinations is a physical examination carried out by a service medical officer. Special requirements are outlined in Table 7.

Periodicity of the examination. Annual.

Validity period of the examination. One year. Valid until the last day of the 12th month.

Aeromedical disposition. Table 9 shows aeromedical disposition categories.

Table 9.
Aeromedical disposition categories of the Royal Navy.

1. Primary qualifiers	
A	Pilot duties.
B	Aircrew duties other than pilot.
2. Secondary qualifiers	
1	Full flying duties.
2	Limited flying duties, limitation stated.
t	Temporarily unfit.
h	United Kingdom disembarked flying.
p	Permanently unfit for flying.

United States Air Force

Medical standards reference. AFR 160-43, Medical examination and medical standards. Major commands may issue more stringent standards as required. Categories of medical fitness standards include: Class I- pilot applicants, Class IA- navigator applicants, Class II- pilots and navigators (students and trained), applicant and trained flight surgeons, and Class III- all other aircrew, such as loadmasters, flight engineers, flight nurses, etc.

Scope of the examination. Comprehensive examinations are done on initial consideration for flying duties, then every 3 years. Abbreviated screening examinations are done in the interim years when a comprehensive examination is not required. Physical examination is not done unless deemed necessary by the local flight surgeon. Electrocardiograms are required on the initial examination, then annually after age 35. Intraocular pressure measurement is required annually after age 29. Stool hemocult testing is required annually after age 40.

Periodicity of the examination. Annually, aligned with the birth month. Additional examination may be required after aircraft mishap, upon discovery of an interim medical disqualification, or prior to a flying evaluation board.

Validity period of the examination. Initial examinations are valid for 24 months. For all other examinations, the medical certification is valid until the last day of the next birth month.

Aeromedical disposition. Table 10 shows the aeromedical disposition categories.

Table 10.
Aeromedical disposition categories of the U.S. Air Force.

1. Qualified	
2. Disqualified by failure to meet a medical standard, but is acceptable with a waiver	
Class II waiver	Unrestricted
Class IIA waiver	Fly tanker, transport, bomber only
Class IIB waiver	Fly non-ejection seat aircraft only
Class IIC waiver	Fly with specific restrictions
3. Disqualified	
DNIF	Temporary duties not to include flying for a period not to exceed 1 year
Disqualified	Indefinitely suspended from flying duties

United States Army

Medical standards reference. Chapters 2, 4, and 6 of Army Regulation AR 40-501 specify the medical standards of fitness for flying duty. Aeromedical Policy Letter series for specific disease categories provide detailed regulatory guidance. Classes of medical fitness standards are shown in Table 11.

Table 11.
Classes of medical fitness, U.S. Army.

Class	Description
1	Warrant officer applicants to Army aviator training.
1A	Commissioned officer applicants to Army aviator training.
2	Student aviators, and trained Army and civilian aviators controlling Army aircraft.
2F	Flight surgeons and aeromedical physician assistants.
2S	Aeroscout observers who operate aircraft flight controls.
3	All other aircrew who do not operate aircraft flight controls.
4	Military and civilian air traffic controllers operating in Army air traffic control facilities.

Scope of the examination. Army Aeromedical Technical Bulletin 2, Army flight surgeon AEDR data entry and office administration guide, and Chapter 6, Army regulation 40-501, Medical fitness standards, specify the requirements for examinations. Comprehensive examinations are required on all initial aircrew examinations, then every 3 years at ages 19, 22, 25, 28, 31, 34, 37, 40, 43, 46, 49; then annually beginning age 50. Abbreviated interim examinations are required in years when comprehensive examinations are not required. Additional screening tests for cardiovascular disease, glaucoma, breast carcinoma, colorectal carcinoma, prostate carcinoma, and diabetes are required annually beginning at age 40.

Periodicity of the examination. Class 1 and 1A are performed as required based on period of validity. All other examinations are performed annually and are aligned with the birth month. Additional examinations may be required when a medical condition does not meet the flying duty medical fitness standards and results in a permanent medical disqualification, an accident/mishap results in medical complications, the aircrew member appears before a flying evaluation board due to nonmedical disqualifications, or a major medical disqualification is discovered.

Validity period of the examination. Class 1 and 1A physicals are valid for 18 months. For all other examinations, the medical certification is valid for 1 year until the last day of the next birth month.

Aeromedical disposition. Table 12 shows the aeromedical disposition categories.

Table 12.
Aeromedical disposition categories of the U.S. Army.

1. Qualified	
QU	Qualified. Fit for full flying duties.
QS	Qualified, spectacles. Fit for full flying duties with corrective lenses worn in flight.
QI	Qualified, Information only. Fit for full flying duties, but a potentially disqualifying condition was reviewed and found fit during that examination.
2. Disqualified (DQ) due to failure to meet the medical standards of fitness for flying duty. Disqualification may result in:	
DNIF	Temporary medical suspension from flying duties due to a temporary unfitness.
WR	Waiver recommended for a permanent medical disqualification, but flying duties are permitted with or without restrictions stated in the waiver letter.
SR	Medical termination from aviation service (medical suspension) recommended for a permanent medical disqualification.
ME	Medical elimination from aviation training programs.

United States Navy

Medical standards reference. Manual of the Medical Department, U.S. Navy NAVMED P-117, specifies the medical standards of fitness for flying duty. Different medical standards apply to aircrew with a grouping as shown in Tables 13 and 14.

Table 13.
Classes of medical fitness, U.S. Navy.

1. Class I	Student and trained Naval aviators controlling Navy aircraft. They are placed in one of three Service Groups.
Group I	These aviators meet Service Group I medical standards.
Group II	These aviators meet Service Group II medical standards.
Group III	These aviators meet Service Group III medical standards.
2. Class II	Naval flight officers, Naval flight surgeons, aerospace physiologists, aerospace experimental psychologists, other nonrated naval aircrew.

Scope of the examination. Comprehensive examinations are required on all initial aircrew examinations, then every 3 years at ages 21, 24, 27, 30, 33, 36, and 39; then annually beginning age 40. Student aviator officers undergo a comprehensive examination annually. Abbreviated interim examinations are required in years when comprehensive examinations are not required. The examination is expanded as required based on interval medical history, health risk assessment, and physical findings.

Periodicity of the examination. Examinations are performed annually and are aligned with the birth month. Additional examinations are required when a disqualifying medical condition is discovered.

Validity period of the examination. Medical certification is valid until the last day of the next birth month.

Aeromedical disposition. Table 14 shows the aeromedical disposition categories.

Table 14.
Aeromedical disposition categories, U.S. Navy.

1. PQ	Physically qualified.
Service Group I	These aviators have unlimited and unrestricted flight duties.
Service Group II	These aviators are restricted from shipboard aircrew duties, except helicopters.
Service Group III	These aviators are restricted to aircraft with dual controls and must be accompanied by a pilot or copilot in Service Groups I or II.
2. NPQ	Not physically qualified
Waivers	Waivers may be granted based on the medical condition, needs of the service, experience, performance, and aviation safety.
Temporary waivers	Temporary waivers may be granted by a local board of flight surgeons pending final review by the Naval waiver authority.

References

- Air Standardization Coordinating Committee. 1983. Interchangeability of aircrew medical categories. Washington, DC: Air Standardization Coordinating Committee. ASCC AIR STD 61/32.
- Air Standardization Coordinating Committee. 1986. Medical examination of aircrew following an aircraft accident or incident. Washington, DC: Air Standardization Coordinating Committee. ASCC ADV PUB 61/56.
- North Atlantic Treaty Organization. 1988. NATO STANAG 3526. Brussels: Military Agency for Standardization. Agreement No. MAS(AIR)40-AMD/3526.

Appendix A.

Table A-1.
Scope and periodicity of aircrew examinations - Canada.

MILITARY OCCUPATIONAL SPECIALTY	MOC	MINIMUM MEDICAL PROFILE	TYPE 1 MEDICAL	TYPE 2 MEDICAL	PERIODICITY (see bottom for definitions)				Cardiac Risk Evaluation		
					LAB GROUP 1	AGE <=40	Full Eye Examination AGE >40	AGE >50		AGE <40	AGE >40
					NO GLASSES	WITH GLASSES					
GROUP A											
Pilot	32	122/22/1	C	B	D	C	C	A	D	C	A
Air Nav	31	322/22/1	C	B	D	D	C	C	D	C	A
Flt Eng	65/091	322/22/2	C	B	D	D	C	C	D	C	A
AESO	081	322/22/2	C	B	D	D	C	C	D	C	A
TAC HEL OBS	011/021	222/22/2	C	B	D	C	C	A	D	C	A
ATC	63	322/33/4	C	B	D	C	C	A	D	C	A
AWC	64	322/33/4	C	B	D	C	C	A	D	C	A
ATCA	161	322/33/4	C	B	D	C	C	A	D	C	A
Loadmaster	933 OSQ	322/22/4	C	B	D	D	C	C	D	C	A
SAR Tech	131	222/22/2	C	B	D	C	C	A	D	C	A
*AMTO	56	433/33/4	C	B	D	D	C	C	D	C	A
*AEROMED TECH	717	322/22/4	C	B	D	D	C	C	D	C	A
*(While employed in chamber)											
GROUP B											
AEROMED TECH	717	322/22/4	E	F	E	E	E	C	E	E	C
AMTO	56J	433/33/4	E	F	E	E	E	C	E	E	C
MED A	711 OSQ	322/22/4	E	F	E	E	E	C	E	E	C
Flt Attendant		333/33/4	E	F	E	E	E	C	E	E	C
Steward	862	333/33/4	E	F	E	E	E	C	E	E	C
Flt Surg	55	433/33/4	E	F	E	E	E	C	E	E	C
Flt Nur	57	322/22/4	E	F	E	E	E	C	E	E	C
AWACS (MSE)	521,524	333/33/4	E	F	E	E	E	C	E	E	C

Periodicity A - every year
Type I Medical - Questionnaire, BMI, BP, Audiogram, Visual lab group 1, Flight Surgeon clinical review

Periodicity B - odd year ages
Type II Medical - Questionnaire, BMI, BP, Audiogram, Visual acuity

Periodicity C - even year ages

Periodicity D - every 4 yrs to age 40, then every 2 yrs

Periodicity E - every 5 yrs to age 40, then every 2 yrs

Periodicity F - odd years after age 40,

Lab Group 1 - CBC, Urinalysis, Cr, GGT
Cardiac Risk Evaluation - ECG, FBS, Total and HDL cholesterol, smoking, family history of CAD before 60 yrs old.
Info to be forwarded to DCIEM once completed.

Eye examination - except where indicated, required only when visual acuity is less than 6/6, 6/9 (VI or corrected equivalent).

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