

United States Army School of Aviation Medicine  
Fort Rucker, Alabama  
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STUDENT HANDOUT

TITLE: Quick Reference Guide FDME, Aeromedical Standards and AMS

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Aeromedical Continuation of SF 93, Alcohol (DA Form 4700)

Aeromedical Continuation of SF 93, Drugs (DA Form 4700)

Appendix B: Aeromedical Summary Templates

# STATEMENT OF PURPOSE

This guide is intended to provide the flight surgeon and his office staff all the tools necessary for accurately completing flight duty medical exams (FDME) and aeromedical summaries (AMS). It places the essential elements of the Aeromedical Policy Letters (APL) and Aeromedical Technical Bulletins (ATB) regarding FDME and AMS in one convenient place.

Additionally, you will find convenient flowsheets designed to ensure that FDMEs are performed correctly and completely thereby minimizing returns for errors. Please note that these flowsheets are technically still “drafts”. I expect them to be approved “as is” prior to your graduation from the course. Therefore, please annotate any corrections mentioned in class. Once approved, a final version of this guide will be available for download:

<http://usasam.amedd.army.mil>  
<http://www.army-avn-med.org>

In addition to guaranteeing a complete FDME, the flowsheets will ensure:

1. That other regulatory requirements are adhered to (annual pap smears for women, mammogram, retirement physical requirements, etc.) and
2. Important readiness issues are addressed (HIV, dental, eyeglass prescriptions).

A summary sheet of aeromedical standards is provided as well as a cycloplegic transposition table. These two tables should be utilized whenever you or your staff are reviewing FDMEs prior to mailing them to Ft. Rucker. It’s embarrassing to sign-off on a physical as qualified when one or more lab values, vision tests or audiometry are out of standards.

There are four “special tests” that you probably never heard of prior to becoming a flight surgeon and that are often performed poorly in the field. These are the reading aloud test, anthropometrics, cycloplegic refraction, and stereopsis. Each test is explained and is neatly laid out to facilitate your ability to hand out copies to those who need them. The same is done with CADRisk screening and the ATBs covering cardiac fluoroscopy and the aeromedical graded exercise test.

In order to help you complete high quality AMSs, there is a section covering the waiver process. Included are templates for both the complete AMS and the abbreviated AMS. This is followed by a brief discussion of the Aeromedical Consultation Service and the waiver authorities. This will help explain the disposition of AMSs / waiver requests.

Lastly, there are copies of all the necessary forms for completing the FDME. The downloadable file is in Microsoft Word. Some of the forms are only available on Delrina FormFlow but can be downloaded from the same site along with this document.

Your feedback on this document would be greatly appreciated. I can be reached at 334-255-7334 (DSN 558) or [otto.boneta@se.amedd.army.mil](mailto:otto.boneta@se.amedd.army.mil) or [joseph.mckeon@se.amedd.army.mil](mailto:joseph.mckeon@se.amedd.army.mil)

Sincerely,

Otto F.W. Boneta  
LTC, MC, SFS  
Director, US Army Flight Surgeon Course

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# The Army Flight Physical

## Definitions and Responsibilities Flying Duty Medical Examination (FDME):

The FDME is a periodic screening medical examination performed for occupational and preventive medicine purposes. The FDME is used as a starting point for the careful evaluation and treatment of aircrew members.

It promotes and preserves the fitness, deployability, and safety of aviation personnel.

The aircrew member is responsible for maintaining his medical certification. The following publications address the importance of the FDME as well as whose responsibility it is to accomplish it in a timely fashion.

1. AR 600-105 – Training for aviation service is voluntary. Army officers who enter aviation service must continually maintain medical and professional standards. Failure to maintain medical certification is reason to convene a Flying Evaluation Board (FEB). All officers regardless of component or whether or not assigned to operational flying duties must maintain certification for flying duty through timely FDME.

NOTE: AR 600-106 covers non-rated aircrews (crew chiefs, flight medics, etc.) and has similar stipulations.

2. IAW FM 1-300 - Individuals who do not have a current flight physical or flight physical extension will be suspended from flying status until medical clearance is given.

## Supporting Agencies:

**US Army Aeromedical Activity (USAAMA):** USAAMA is located at Ft. Rucker and is responsible for:

1. Writing, implementing and interpreting aeromedical policy
2. Review and disposition of class 1, 2 and 4 flight physicals
3. Final aeromedical recommendation regarding waiver recommendations in cases of disqualified aircrew.
4. Maintaining the Aviation Epidemiological Database Repository (AEDR) in conjunction with the US Army Aeromedical Research Lab (USAARL).

**US Army Aeromedical Center (USAAMC):** Consists of Lyster Army Community Hospital at Ft. Rucker and USAAMA. The commander of USAAMC is ultimately responsible for resourcing USAAMA and overseeing its operation.

## **Classes of FDME:**

The class of FDME refers to the medical standards applied that are applicable in that situation. The following is a list of classes and who falls into that class.

### **1. Class 1W/1A:**

Initial entrance physical examination for warrant officer candidates and commissioned officers respectively.

Valid for up to 18 months from date of examination.

### **2. Class 2:**

Annual FDME standards applied to rated aviators, flight surgeons, aeromedical physician assistants, and flight students. An annual FDME is generally valid for a period of 12 months. Exceptions will be discussed in following sections.

These standards are also applied to initial applicants for flight surgeons and aeromedical physician assistants. Just like a class 1 FDME, all **initial** FDMEs are valid for a period of 18 months.

Must take examination within a three-month period preceding the end of the birth month. All exams taken within this period are considered to have been taken within the birth month and will be good to the end of the birth month of the following year. For example, a "July baby" can commence his FDME 3 months prior to 31 July. That means he can start the process on 1 May and he **must** complete it no later than 31 July. By the same token, if he completes it in May it will still be valid until the last day of July in the following year -- "All exams taken within this period are considered to have been taken within the birth month..."

### **3. Class 3:**

Crewmembers, non-crewmembers and other personnel required by competent authority to fly in Army aircraft.

Again, an initial class 3 FDME is valid for a period of 18 months and an annual class 3 is generally valid for 12 months.

Must take examination within a three-month period preceding the end of the birth month. All exams taken within this period are considered to have been taken within the birth month and will be good to the end of the birth month of the following year.

#### **4. Class 4:**

These standards are applied to air traffic controllers, both military and civilian.

Again, an initial class 4 FDME is valid for a period of 18 months and an annual class 3 is generally valid for 12 months.

Must take their examination within a three-month period preceding the end of the birth month. All exams taken within this period are considered to have been taken within the birth month and will be good to the end of the birth month of the following year.

#### **Types of FDME:**

There are two types of FDME. The contents are essentially the same for all comprehensive FDMEs regardless of class. Similarly, all interim FDMEs are the same regardless of class.

##### **Comprehensive (Long):**

Performed at age 19,22,25,28,31,34,37,40,43,46, 49 and annually after age 49.

A comprehensive FDME is required for permanently disqualifying illness or injury, when requesting return to aviation service after medical termination, following aircraft accidents, and for retirement.

##### **Interim (Short):**

Performed during the interim years when comprehensive or initial exams are not required. For example, a crewmember will receive a comprehensive FDME for his 28<sup>th</sup> birthday and an interim FDME on his 29<sup>th</sup> and 30<sup>th</sup> birthday.

#### **Birthmonth Alignment**

Just as the type of FDME (comprehensive or interim) is aligned with a crew member's age, his FDME is aligned with his birth month. The FDME is completed in conjunction with his birth month (in the three-month window) and it is valid until the last day of the birth month the following year.

As noted, the period of validity for an FDME is 12 months. It is common for an FDME to be up to 14 months old -- remember that the crewmember had a three-month window in which to complete his FDME and that an FDME performed in this window is considered to have occurred in the birth month. However, there will be times when the FDME is not performed in this three-month window. For example:

1. Initial FDMEs (they are performed when needed and not with regard to birth month).
2. Deployment can impact and upset the birth month cycle.
3. FDMEs performed for termination of permanent medial suspension, FEB, or in conjunction with an accident investigation may not align with birth months.

In these cases, we want to **realign** the crewmember with his birth month without performing excessively frequent FDMEs. In these cases, the following table may be used. It will tell you when the crewmember needs his next FDME. In no case will an FDME be valid for more than 18 months. Remember, the goal here is to realign the crewmember with his birth month -- he must still complete the FDME prior to the end of the birth month in which it is due. For example, if his birth month is in July, but he just had an FDME post-mishap in February, the flight surgeon can use the following table to extend that FDME until July of the following year instead of performing another FDME in five months.

**NOTE:** This has nothing to do with **extensions** *beyond the end of the birth month*. That topic follows next. The FDME must be completed prior to the end of the birth month in which it is due.

### **Extensions**

In the eventuality that a FDME cannot be completed prior to the end of the birthmonth, the flight surgeon may grant a one calendar month extension. For example, our "July baby" fails to complete his FDME before 31 July. The flight surgeon may grant him an extension and upslip to cover him through 31 August. Under no condition can an extension exceed one calendar month nor can back to back extensions be granted. If on 31 August this crewmember still has not completed his FDME, he **must** be grounded -- no exceptions.

**Number of months for which a flying duty medical examination (FDME) is valid:**

Birth Month	Month in which last FDME was given											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Jan	12	11	10	9	8	7	18	17	16	15	14	13
Feb	13	12	11	10	9	8	7	18	17	16	15	14
Mar	14	13	12	11	10	9	8	7	18	17	16	15
Apr	15	14	13	12	11	10	9	8	7	18	17	16
May	16	15	14	13	12	11	10	9	8	7	18	17
Jun	17	16	15	14	13	12	11	10	9	8	7	18
Jul	18	17	16	15	14	13	12	11	10	9	8	7
Aug	7	18	17	16	15	14	13	12	11	10	9	8
Sep	8	7	18	17	16	15	14	13	12	11	10	9
Oct	9	8	7	18	17	16	15	14	13	12	11	10
Nov	10	9	8	7	18	17	16	15	14	13	12	11
Dec	11	10	9	8	7	18	17	16	15	14	13	12

**Notes:**

Read down the left column to the examinee's birth month; read across to month of last FDME; intersection number is the maximum validity period.

**INTERNAL SUMMARY**

1. The period of validity for all FDMEs is determined by only one thing -- is it an initial physical or a period (annual) FDME. Regardless of class (1,2,3 or 4) or type (comprehensive or abbreviated) all initial FDMEs are valid for 18 months and periodics are valid for 12 months.
2. All FDMEs must be completed within the birthmonth window.
3. All FDMEs are valid until the last day of the birthmonth in the following year.
4. The period of validity of a periodic FDME may be extended up to 18 months in order to realign a crewmember with his birthmonth.
5. An extension for one calendar month beyond the birthmonth is possible. **NO MORE.**

## Completing the Paperwork

In order to ensure that a FDME is completed properly, it is best to use a checklist during completion of the FDME and during the review process. The next two pages provide checklists for both the FDME and Special Operations-type physicals. Both checklists are intended to aid the ancillary staff (front desk, technicians, etc...) in completing "PART 1" of the FDME. FDME are commonly broken down into two parts. This is an artificial breakdown and not required. It is however employed by most Army clinics.

PART 1 of a physical consists of compiling all the information/data that the flight surgeon will need. It covers:

- Personal information
- Past medical history
- Vital signs/Arthropometrics
- Vision testing
- Audiology
- ECG
- Dental
- Pap
- Lab

Ideally, all the above are completed and available for review by the flight surgeon when the patient returns for "PART 2" (the actual "hands on" physical exam). This way, once the flight surgeon performs the physical exam, he has a complete packet that is ready to ship to its final destination.

Notice that the checklists have several features to ensure accuracy and completeness.

- a. DOB and "age for this exam" noted at the very top. This will help you determine 3 things:
  1. Does he require a comprehensive or interim exam?
  2. Is the patient over 40 or over 50?
  3. Does the patient require an HIV test this year? (see b. below)

Remember that when a crewmember reports for his FDME, he is usually reporting one or two months prior to his birthmonth. In determining the type of physical (comprehensive or abbreviated) you must use his age for the upcoming birthday. Example: A crewmember is 38 today but will be 39 next month. Use 39 as the "age for this exam".

- b. Aviation requirements for HIV testing are identical to the Army Force Protection requirements - every two years. Of course, this does not match our three-year FDME cycle. Therefore, we can't just make it a requirement on comprehensive FDMEs. Our suggestion is to tie it to the persons age - perform an HIV screening if

the aircrew members' age is even (e.g. 34,36, 38,...) regardless if it is a comprehensive or interim exam.

- c. Good points of contact are noted in order to facilitate contact with the patient.
- d. Notice there are **only** 3 types of physical exams regardless of the class.
  - 1. Initial
  - 2. Comprehensive
  - 3. Interim

Select the applicable column and ensure all items in the column are completed.

- e. There are 3 additional sections that are age depended and may be applicable. If they are, ensure they are completed. These sections are listed immediately following the three main columns.
  - 1. Over 40
  - 2. Over 50
  - 3. Retirement/Separation
- f. The last section allows the front desk to note any additional tests or studies that may be required. The easiest way to determine this is to ask the patient if he has any "waivers". In addition, the front desk should review the medical record. If the air crewmember has a waiver, a copy should be kept in the HREC. Additionally, there should be a copy of the Army Epidemiology Data Registry (AEDR) printout attached to the last qualified FDME in the HREC. The AEDR printout will also mention if any waivers are in effect and if any additional tests or studies are required (**see example at appendix XX**). If any additional tests, or studies are required, the front desk should order them now to ensure the results are back in time for "PART 2". If there are questions reference any additional requirements, now is the time to ask the flight surgeon.

The second checklist is similar in concept to the first checklist. It addresses the specific requirements for Special Forces physicals commonly done by the flight surgeon that must be reviewed by the USASOC Surgeon's Office. Please note that the waiver and review authority for these physicals is NOT AAMA. Sending these physicals to Ft Rucker will result in great delay.

## The Required Forms

A comprehensive FDME is performed on the same SF 88 and 93 that other military physicals are performed on. When the crewmember shows up for part one of his FDME, he should fill out all the demographic data on these forms. All entries (dental, optometry, etc.) should be placed on this form. As noted on the check sheet, all initial FDMEs must also have the SF 93 continuation, history, sheet attached. This continuation sheet is an overprint on DA Form 4700.

In addition to the SF 93 continuation sheet, history, we also have three other overprints on the DA Form 4700:

1. Seasonal Allergic Rhinitis
2. Alcohol
3. Drugs

These three continuation sheets must be attached to all FDMEs when first reporting a problem with seasonal allergic rhinitis, alcohol, or drugs.

The SF 88, SF 93, any required continuation forms, and the ECG interpretation must be reviewed and signed by the flight surgeon.



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### Aeromedical Vision Standards

Cycloplegic Refraction, DQ if:				Visual Acuity, DQ if worse than:		Phorias, DQ if:		
Class	Hyperopia	Myopia	Astigmatism	Distant	Near	Eso	Exo	Hyper
1/1A*	>+3.00	>-0.75	>+/- 0.75	20/50	20/20	>8	>8	>1
2/3/4	<b>NOT REQUIRED (NR)</b>			20/400	20/400	>8	>8	>1

Class	Cover-Uncover Test	Cross-Cover Test	NPC DQ if:	Color Vision DQ if:
1 and 2/2F/3/4 Initial	Must be orthotropic	Must be orthophoric	>100 mm	<b>PIP:</b> 5 or more errors out of 14 plates <b>FALANT:</b> any errors out of 9 presentations or 3 or more errors out of 18 presentations
2/3/4 Other	<b>NR</b>	<b>NR</b>	<b>NR</b>	<b>NR</b>

### All Classes of Aeromedical Standards

Field of Vision, DQ if:	Any Defects
Depth Perception, DQ if:	>40 seconds of arc at 20 feet: <ul style="list-style-type: none"> <li>• Any error in blocks B thru D of the AFVTA, Titmus II or Optec 2300, or</li> <li>• Any errors in 8 Verhoeff sets, or</li> <li>• Any errors in lines 1 thru 7 of the 10 Level Randot Circles test</li> </ul>
IOP, DQ if:	23 mmHG or greater in either eye or, 4 or more mmHg difference between eyes

### Aeromedical Audiology Standards

#### Qualified if Equal or Better than:

Class	500Hz	1000Hz	2000Hz	3000Hz	4000Hz	6000Hz
1/1A	25 dB	25 dB	25 dB	35 dB	45 dB	45 (see APL)
2/3/4	25 dB	25 dB	25 dB	35 dB	55 dB	65 (see APL)

### Laboratory Normal Values, All Classes

<b>HCT</b>	Male 40% - 52%	Female 37% - 47%
<b>FBS</b>	<115 mg%	
<b>UA Dipstick</b>	Gluc Neg	Prot Neg
	<b>UA Micro</b>	<5 RBC
		<5WBC

### Percent Body Fat - Upper Limits, All Classes (per AR 600-9)

Age	17-20 y.o.	21-27 y.o.	28-39 y.o.	>40 y.o.
<b>Male</b>	20%	22%	24%	26%
<b>Female</b>	30%	32%	34%	36%

### Anthropometric Standards

#### Class 1/1A and Class 2/2F Qualified if:

<b>Total Arm Span, (TAS)</b>	Greater than or equal to 164cm
<b>Crotch Height, (CH)</b>	Greater than or equal to 75cm
<b>Sitting Height, (SH)</b>	Less than or equal to 95cm for career transition to OH58 / TH67 Less than or equal to 102cm for all others

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# REFRACTION TRANSPOSITION TABLE

## Class 1 / 1A

SPH	CYL	-1.00	-0.75	-0.50	-0.25	SPH	+0.25	+0.5	+0.75	+1.00
-1.00		DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
-0.75		DQ	DQ	DQ	DQ	Q	Q	Q	Q	DQ
-0.50		DQ	DQ	DQ	Q	Q	Q	Q	Q	DQ
-0.25		DQ	DQ	Q	Q	Q	Q	Q	Q	DQ
0.00/Plano		DQ	Q	Q	Q	Q	Q	Q	Q	DQ
+0.25		DQ	Q	Q	Q	Q	Q	Q	Q	DQ
+0.50		DQ	Q	Q	Q	Q	Q	Q	Q	DQ
+0.75		DQ	Q	Q	Q	Q	Q	Q	Q	DQ
+1.00		DQ	Q	Q	Q	Q	Q	Q	Q	DQ
+1.25		DQ	Q	Q	Q	Q	Q	Q	Q	DQ
+1.50		DQ	Q	Q	Q	Q	Q	Q	Q	DQ
+1.75		DQ	Q	Q	Q	Q	Q	Q	Q	DQ
+2.00		DQ	Q	Q	Q	Q	Q	Q	Q	DQ
+2.25		DQ	Q	Q	Q	Q	Q	Q	Q	DQ
+2.50		DQ	Q	Q	Q	Q	Q	Q	Q	DQ
+2.75		DQ	Q	Q	Q	Q	Q	DQ	DQ	DQ
+3.00		DQ	Q	Q	Q	Q	DQ	DQ	DQ	DQ
+3.25		DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ

**Transposition only applies to cycloplegic refractions.**

**Only class 1 / 1A get cycloplegic refractions.**

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# READING ALOUD TEST

## **BACKGROUND:**

Administer the reading aloud test (RAT) to aviation training applicants as a standardized assessment of an individual's ability to communicate clearly in the English language, in a manner compatible with safe and effective aviation operations. Current communication systems degrade speech intelligibility. The radio environment separates the speaker and the listener from the benefits of watching lips and body language cues. Those with marginal English skills have problems communicating effectively in the operational aviation environment.

Failure of the screening RAT by applicants with English as their native language may indicate undiagnosed or concealed learning disabilities. Administration of the RAT occasionally reveals immature, indecisive, careless, or excessively introverted personalities, which may indicate a high risk for aviation training failure.

When administered to aviation personnel, to include ATC personnel, the RAT will be used to determine the individual's ability to clearly enunciate, in the English language, in a manner compatible with safe and effective aviation operations.

The RAT appears to be a nonsense story, but was designed as a phonetic exercise. Assessment by the flight surgeon is subjective. Applicants should read the RAT clearly, deliberately, without hesitation, error, or stuttering. The test is scored as "RAT-PASS" or "RAT-FAIL."

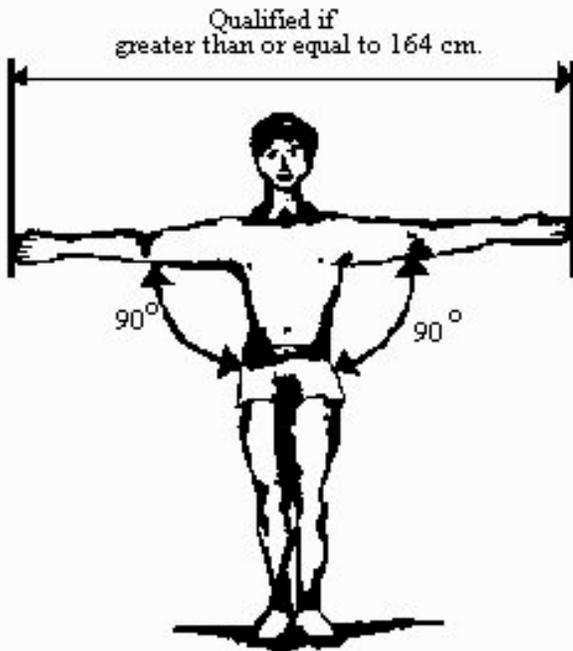
The examining physician will consult with a local instructor pilot or ATC supervisor in questionable cases.

## **PROCEDURE:**

- a. Have the examinee stand erect, face the examiner across the room and read aloud, as if he / she were confronting a class of students.
- b. If he / she pauses, even momentarily, on any phrase or word, the examiner immediately and sharply says, "What's that?" and requires the examinee to start again with the first sentence of the test. The true stammerer usually will halt again at the same word or phonetic combination and will often reveal serious stammering.
- c. Have the applicant read aloud as follows:

**"You wished to know all about my grandfather. Well, he is nearly 93 years old; he dresses himself in an ancient black frock coat, usually minus several buttons; yet he still thinks as swiftly as ever. A long flowing beard clings to his chin giving those who observe him a pronounced feeling of the utmost respect. When he speaks, his voice is just a bit cracked and quivers a trifle. Twice each day he plays skillfully and with zest upon our small organ. Except in winter when the ooze of snow or ice is present, he slowly takes a short walk each day. We have often urged him to walk more and smoke less, but he always answers, "Banana oil!" Grandfather likes to be modern in his language."**

# ANTHROPOMETRICS

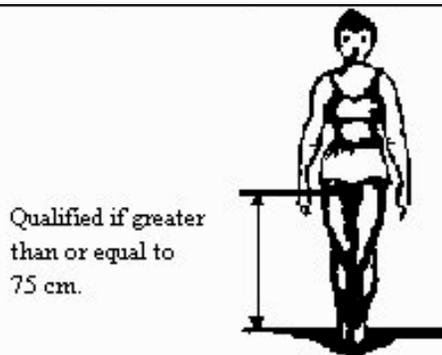


**TOTAL ARM REACH** - The subject must stand erect against a wall, arms outstretched at a 90° angle and parallel with the wall. The elbows be locked. The fingertips of one hand must be in contact with the adjacent wall in corner of that room. The horizontal distance between fingertips is recorded in centimeters in Block 73 of the SF 88.

**SITTING HEIGHT** - The subject must sit on a hard flat surface, facing outward, feet flat on the floor, with buttocks, shoulders, and back of head against the wall. Using a right angle ruler on the head the distance between the sitting surface and the top of the head is recorded in centimeters and recorded in Block 73 of the SF 88.



95 cm for aeroscouts



**CROTCH HEIGHT** - The subject must stand completely erect against a wall, heels together, weight evenly distributed, and knees locked. The measurement is taken parallel with the wall from the floor to a point where light contact is made with the perineum in the midline. Results should be recorded in centimeters in Block 73 of the SF 88.

# ATB 5

## AEROMEDICAL CYCLOPLEGIC REFRACTION

1. This technical bulletin standardizes the method approved by the US Army Aeromedical Center for the aeromedical cycloplegic refraction. The local flight surgeon should insure that all supporting ophthalmology/optometry consultants are briefed on following this procedure when doing the cycloplegic examination on US Army aircrew members.
2. The procedure for the aeromedical cycloplegic examination is as follows:
  - a. Instill one drop of a topical ophthalmologic anesthetic into each eye.
  - b. Instill one drop of 1% cyclogel into each eye and wait five minutes.
  - c. Instill a second drop of 1% cyclogel into each eye and wait 45 minutes.
  - d. Perform either an objective cycloplegic refraction with a retinoscope or subjective cycloplegic and record the results on the SF 88 (Report of Medical Examination Form). Auto-refractions are not acceptable tests.
3. If the initial examination is within  $\pm 0.25$  D of standards, repeat the examination twice at least 72 hours apart. For those applicants undergoing the repeat cycloplegic examinations, please provide the following:
  - a. Specific history regarding soft or hard contact lens wear, or the use of orthokeratology or retainer lenses. Negative responses must also be recorded.
  - b. Submit keratometry of both corneas.
5. A final disposition will be made by the Cdr, USAAMC, following the submission of the above information.

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# ATB 7

## Binocular Depth Perception Testing

1. Currently there are three tests for binocular depth perception (stereopsis) accepted for the Flying Duty Medical Examination (FDME) - Armed Forces Vision Testing Apparatus (VTA), Verhoeff Stereometer Test, and Randot Circles Stereotest. It is recommended that the VTA test be employed first, with either of the others used in the event of failure.

2. Armed Forces Vision Testing Apparatus (VTA):

a. Of the entire VTA battery of tests, stereopsis testing is the most difficult to give and interpret. Examinees with normal stereopsis may have to learn to see the apparent depth employed in this test. Passing scores can be reliably accepted as evidence of stereopsis; however, even complete failure is not always indicative of impaired stereopsis, unless supported by other tests. For these reasons, appropriate administration of the test is crucial.

b. Prior to administration, the VTA apparatus must be set up properly. The device should be placed on a sturdy table with ample legroom, and the examinee provided a straight back chair allowing comfortable viewing. The examinee should place his/her forehead against the headrest, allowing clear view through the center of the eyepiece. The lens housing must be in the up position, viewing the distant drum and the eye occluder handle in the center position, allowing for binocular vision. The prism levers should be in the converge position, each pointing toward the center. Drum position 5 or 5A of the far drum must be used for this test. Examinees should be allowed to wear corrective spectacles when used for flying or ATC duties.

c. The first step is to demonstrate the test using the accompanying plastic plate containing four black circles. One circle appears nearer than the other four. Once the examinee understands the demonstration, he/she should be allowed to look into the instrument with attention to group A. This group is used for further demonstration. The examinee should be given ample time to examine this group, sometimes greater than one minute for the perception of depth to develop. The examinee is then asked to identify by number, counting from left to right, each circle in the subsequent groups which appears to be nearest or is elevated above the rest.

d. The examinee must be able to correctly identify the nearest circle in groups B thru group D to obtain a passing score. Level D is 25 seconds of arc of stereopsis. Record on the FDME in block 65 as "VTA B-D PASS" (Group A is not counted). The use of no corrective lenses or corrective lenses should be noted in the adjoining block. If this test is failed, the examinee should undergo either of the two other tests below.

3. Verhoeff Stereometer Test:

a. The next test of stereopsis is the Verhoeff Stereometer Test. This test consists of a 2 x 4 x 8 inch box with a small lighted aperture in the front through which three black posts may be viewed. One post is always seen to be forward or back of the other two. Four combinations of posts may be presented by moving a lever on the back of the stereometer. The device is then turned upside down to allow a total of 8 different combinations.

b. It is important to set this test up correctly to prevent erroneous results. The room must be either dark or diffusely lighted. The subject should be seated in a chair with a chin rest to prevent any head motion. Allowing shadows on the aperture or head motion will invalidate the test by providing monocular clues to depth perception. The Verhoeff Stereometer should be placed one meter from the subject on a stand at eye level. Placing the device closer than eighty centimeters to the subject increases the angle of stereopsis sufficiently that nearly anyone can pass the test. The tester should be sure that there is adequate illumination of the aperture (i.e. fresh batteries).

c. The examinee should then be allowed to view each of the eight combinations of posts. Between viewing each combination the aperture should be covered with the hand to prevent the examinee from seeing the posts change. The examinee should be asked which post is nearer or farther away than the other two (e.g. "left forward" or "middle back").

d. The examinee must correctly identify all eight combinations to pass this test. The score should be recorded in block 65 of the SF 88 by identifying the test, the number missed over the number attempted, and pass or fail (e.g. Verhoeff 0/8 pass or Verhoeff 3/8 fail). The use of corrective lenses or not should be recorded in the adjoining

block. If the examinee fails or the Verhoeff Stereometer is not available, the Randot Circles Stereotest should be performed.

#### 4. The Randot Circles Stereotest

a. If the Verhoeff Stereometer Test is failed or unavailable, the Randot Circles Stereotest is acceptable for the FDME. The Randot test comes in several types (Forms, Animals, and Circles), but the Circles are the only allowable test for the FDME. The Randot Circles Stereotest requires the examinee to extract a figure from the background without the help of monocular clues via a computer generated random dot pattern. The other types of tests, the Forms and the Animals, add monocular contour required by children to provide disparity and thus are not valid for testing stereopsis in aircrewmembers.

b. This test is accomplished by holding the test card upright before the subject to maintain the proper axis of polarization. The examinee should not be allowed to tilt his head to the side. The card should be held approximately sixteen inches from the examinee though small variations should have little effect on the score. Examinees should be allowed to wear corrective lenses when applicable and those with bifocals should position themselves properly for near point viewing. Adequate light must be provided; however, reflection should be avoided. A dark area or curtain behind the examinee is recommended. The examinee will then be asked to view each of ten levels of targets containing three circles each. One circle has crossed disparity so that when viewed binocularly, should appear to stand forward of the other circles. Each proceeding target requires an increasing degree of stereopsis. The subject should be asked to identify which circle appears to float forward or appears different from the others. Once the examinee misses a target, the tester should return to the preceding target and test again to establish the level of stereopsis. At this point the test is completed and the level of stereopsis should be recorded.

c. The aeromedical standard for this test is 40 seconds of arc or better at sixteen inches. Below is the scoring table for the Randot Circles Stereotest.

Level #	1	2	3	4	5	6	7	8	9	10
Arc (in sec)	400	200	140	100	70	50	40	30	25	20

The examinee must therefore identify to and including the seventh target correctly in order to pass this test. The results of this test should be recorded in block 65 of the SF 88 by the test, the level attained, and pass or fail (e.g. Randot 1 thru 10- Pass or Randot 1 thru 4- Fail). Alternately, the seconds of arc can be recorded (e.g. Randot 30 sec Pass, or 50 sec Fail). The use of corrective lenses or not should be noted in the adjoining block.

5. Accurate stereopsis testing is an important part of the Flying Duty Medical Examination. Failure of the above depth perception tests represents impaired stereopsis and requires an ophthalmology consultation to determine the underlying cause of the impaired stereopsis (see APL 8-89, Extraocular Motility Disorders) and submission of an aeromedical summary to Cdr, USAAMC. Those performing these tests must be intimately familiar with their proper administration to prevent error. Any further questions concerning binocular depth perception testing should be referred to the U.S. Army Aeromedical Activity, ATTN: MCXY-AER, Fort Rucker, AL, 36362-5333, AV 558-7430 or COMM (334)-255-7430; or Chief, Ophthalmology, US Army Aeromedical Center, Fort Rucker, AL, 36362-5333; AV 558-7186 or COMM (334)-255-7430.

# **AEROMEDICAL:POLICY LETTER: CARDIOVASCULAR SCREENING PROGRAM**

**AEROMEDICAL CONCERNS:** Coronary artery disease (CAD) is the leading cause of permanent suspension from flying duties and non-accidental, premature death in aircrew members. The first signs and symptoms of CAD are often dramatic, incapacitating, or even fatal. The FAA and USAF have documented numerous incidents of in-flight incapacitation due to CAD. A CAD screening program for asymptomatic aircrew members is vital for the prevention of these in-flight incapacitation's with a secondary benefit of timely intervention and, it is hoped, reversal or arrest of the disease process.

**WAIVERS:** Waivers for rated aircrew members are required only for documented CAD. (See CAD APL) Failure of any screening level with the subsequent passage of the following level is filed "Information Only". FDMEs submitted without completion of CAD screening will be returned disqualified as incomplete. Failure of Level 1 CAD screening may be locally returned to FFD; abnormal Level 2 CAD screening, i.e., abnormal GXT or CF, may be returned to flying with a second rated pilot pending completion of Levels 3 and 4 after approval by USAAMA. Aircrew members declining to complete any level of the screening program will normally be considered for permanent medical suspension.

**INFORMATION REQUIRED:** All aircrew members are required to undergo CAD screening at 40 years or greater. Civilian ATCs failing level one are counseled on risk factor modification. Military ATCs failing Level one will be further evaluated as per AR 40-501, 8-25f. Further evaluation is indicated for ATCs only with documented evidence of CAD. (see AR 40-501, 4-15e)

**LEVEL 1:** Annual submission of risk factors to include: age, family history, blood pressure, smoking history, serum lipids (See Hypercholesterolemia APL), blood sugar, ECG findings of Left Ventricular Hypertrophy (LVH).

If Framingham risk index is 7.5 or greater, serum cholesterol 270 or greater, or total cholesterol/HDL ratio is 6.0 or greater, rated aircrew members (except ATCs) will proceed to Level 2. (AR 40-501, 4-15f) Those rated aircrew members with borderline elevations of cholesterol or decreased HDL may use the average of 3 laboratory tests obtained over a six month period to calculate their risk index and ratio. If their risk factors are within standard as calculated with these average values they need not undergo AGXT or Cardiac Fluoroscopy at that time. If, however, the aircrew member at the time of his next FDME again has borderline failure of level 1 proceed to Level 2

**LEVEL 2:** AGXT and Cardiac Fluoroscopy. If either are abnormal, proceed to level 3 and 4. Borderline abnormalities should be referred to USAAMA.

**LEVEL 3 & LEVEL 4:** 24-hour Holter Monitor, 2-D M-mode ECHO and cardiac catheterization. These studies should be completed concurrently. A normal Level 3 evaluation does not eliminate the need for cardiac catheterization! Nor does a normal catheterization eliminate the need for Holter or ECHO, if not already completed.

**FOLLOW-UP:** Continued failure of Level 1 CAD screening after a normal subsequent work-up will necessitate the submission of a repeat Level 2 CAD screening every 3 years.

**TREATMENT:** Borderline levels of increase total cholesterol or diminished HDL cholesterol may often respond diet and exercise. See Hypercholesterolemia APL.

**DISCUSSION:** The Framingham CAD Risk Index calculator is a computer generated, weighted multiple regression formula available from USAAMA and the U.S. Army Health Care Systems Support Activity. USAAMA will load and return "CADRISK" on a computer disk you send to CDR, USAAMC, ATTN: MCXY-A (Director), Fort Rucker, AL 36362. The U.S. Army Health Risk Appraisal System (HRA) software program is available from CDR, HQ, HCSSA, ATTN: HSHS-0SM (HRA), 2455 N.E. Loop 410, Suite 150, San Antonio, TX. 78217-5607.

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# ATB 6

## Aeromedical Graded Exercise Test

1. The indications for the Aeromedical Graded Exercise Test (AGXT), also called graded exercise treadmill (GXT), have been described in AR 40-501 (4 - 15 and 8 27), APL 2, and APL 28. The guidelines for performing an aeromedical GXT are outlined below to apply a uniform standard in the performance and interpretation of this test on aircrew members.
2. Prior to the AGXT, the aircrew member should be briefed by the local flight surgeon as to the indications for the test, the procedure, and the significance of the results. The patient should sign an informed consent statement.
3. The following conditions should be assured prior to testing:
  - a. Serum potassium level should be drawn 24 hours before the treadmill, should be normal (between 3.5 - 4.7 mEq/L, and annotated on SF 88, Item 73, Notes, or in the aeromedical summary.
  - b. Minimum of four hours fasting prior to test.
  - c. No tobacco or caffeine products for one hour prior to test.
4. The aeromedical GXT must be a maximal effort, limited only by symptoms, exhaustion or objective signs (medically significant ectopy, dysrhythmia, or blood pressure response). Exercise should not be halted on attainment of a predicted maximal heart rate.
5. All original component ECG tracings of the AGXT should be labeled according to patient's activity and/or workload at that time and forwarded along with the FDME and/or aeromedical summary to CDR, USAAMC, ATTN: MCXY-AER, Fort Rucker, AL, 36362-53333, for review and disposition. A AGXT report from the local attending physician/consultant must accompany the ECG tracings. The local flight surgeon should place a copy of the tracings in the health record until the originals are returned from USAAMC.
6. A copy of Aeromedical Graded Exercise Test Report Form (enclosure 1) and Letter to the Attending Physician (enclosure 2) of this ATB should be forwarded with the patient to the attending physician conducting the AGXT.
7. Aeromedical standards for interpretation of treadmill exercise tests in Army aircrew members.
  - a. Baseline: The location of three consecutive coplanar ST segments, measured 80 milliseconds after the "J" junction, following 30 seconds of standing hyperventilation. This baseline may be on, above, or below the PQ segment, but must be parallel to it.
  - b. Borderline Abnormal: 0.5 to 0.9 millimeters of ST depression in three consecutive coplanar complexes, measured 80 milliseconds after the "J" junction, irrespective of slope.
  - c. Abnormal: 1.0 or more millimeters of ST depression in three (3) consecutive coplanar complexes, measured 80 milliseconds after the "J" junction, irrespective of slope.

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# ATB 9

## Cardiac Fluoroscopy

1. Historical perspective. Cardiac fluoroscopy was utilized until the late 1970's as a diagnostic test for coronary artery disease by imaging cardiac calcifications with a fluoroscope. It was considered a poor diagnostic test since there was no correlation between the degree of coronary artery calcification and the degree of coronary artery occlusion. Major disease could exist when the cardiac fluoroscopy was normal. Thus it fell out of favor and many young radiologists have never performed the test. However, cardiac fluoroscopy is an excellent screening test for coronary artery disease when performed on properly selected aircrew.
2. Purpose. The cardiac fluoroscopy is a simple, noninvasive screening test used for the detection of coronary artery disease in asymptomatic aircrewmembers. The test is performed on aircrew who are stratified into a high risk group for coronary artery disease after risk assessment by Level 1, Aeromedical Cardiovascular Disease Screening Program, see APL 28. This strategy minimizes the number of aircrew exposed to the test and enhances the predictive value of a positive test for the presence of coronary artery disease defined later by diagnostic cardiac angiography.
3. Contraindications. Relative contraindications (none absolute) are in aircrew with:
  - a. Age less than 35 years old.
  - b. A history of abnormal cardiac fluoroscopy.
  - c. A history of cardiac fluoroscopy being performed within the last three years.
  - d. A history of a completely normal coronary angiography, demonstrating no coronary artery occlusions of any degree, within the last five years.
  - e. A history of coronary artery disease of any degree, graded by coronary angiography.
4. Technique (1,2). The examination is conducted with a standard fluoroscopic unit, with a triple field image intensifier and TV monitor, such as a GE Fluorocon 300. The exposures are at 2-4 mA and 70-110 kV for an average of 1.8 minutes, resulting in a total average of 5 rads (0.05 Gy) skin entrance dose. The images are recorded HSXY-A with video tape and/or spot radiographic films. The aircrewmembers heart is viewed in the antero-posterior and left lateral positions with respiration held in the inspiratory phase. The aircrewmember is then slowly rotated from the left lateral position back to the antero-posterior position under fluoroscopic surveillance.
5. Interpretation(1,3). The cardiac fluoroscopy is abnormal if small, dense shadows consistent with calcification of any degree are noted to move synchronously with the cardiac pulsations and which remain in the cardiac silhouette from different angles of view. With a knowledge of three dimensional cardiac anatomy, the radiologist estimates the location of the calcification in the valves or major coronary arteries. Most coronary artery calcifications are seen in the major, proximal vessels and are larger than 1-2 mm. Small calcifications are best detected during the rotation phase of examination. Abnormal cardiac size or motion can be inferred by cardiac fluoroscopy.
6. False positive test. False positive test for coronary artery disease may be due to:
  - a. Calcification of the coronary artery wall without measurable occlusion of the artery lumen by cardiac angiography. It may represent an early atherosclerotic plaque or long, tubular narrowing with partial calcification.
  - b. Perimyocardial calcifications due to infarction, infection, or neoplasm.
  - c. Hilar or aortic calcifications superimposed on the cardiac silhouette.
  - d. Shadow of the left anterior descending coronary artery seen "en face."
7. Results. The value of cardiac fluoroscopy as a screening tool in a properly selected asymptomatic population was demonstrated in three recent studies; two specifically studied aircrew.
  - a. Loecker(1) performed screening cardiac fluoroscopy in 1,466 aircrew referred to the Aeromedical Consult Service, USAFSAM, Brooks AFB, TX, for serial EKG changes, abnormal graded exercise treadmill tests, and/or elevated cardiac risk indices (1982-1988). There were 239 abnormal cardiac fluoroscopies. 56 aircrew declined further evaluation and were grounded. Of the 183 aircrew with abnormal cardiac fluoroscopies who underwent diagnostic coronary angiography, 158 had coronary artery disease, for a predictive value of a positive test for aircrew of 86%. Of the 158 with disease, 32 (20%) had

initial roughening only and 126 (80%) had aeromedically significant disease (occlusions greater than 10%). Of the 126 with disease, 69 had clinically significant disease (occlusions greater than 50%). Inclusion HSXY-A of 1988-1990 cases has demonstrated no change in the positive predictive value of 86% (personal communication with Dr. Loecker, Oct, 1990).

b. Wortham(4) performed cardiac fluoroscopy in 700 Army soldiers referred for after designation as high risk by Level 1 of the Army-wide Over-40 Cardiovascular Disease Program (1981-1985) due to elevated cardiac disease risk indices, serial EKG changes, marked hypercholesterolemia, or abnormal cardiac history and physical. Coronary angiography was performed in 9 patients with an abnormal graded exercise treadmill test and abnormal cardiac fluoroscopy. All 9 had coronary artery disease, and 8 of the 9 had clinically significant obstructive coronary artery disease.

c. Mason(5) reviewed screening cardiac fluoroscopy (CF) and graded exercise treadmill (GXT) tests performed in 91 Army aviators referred to the Army Aeromedical Consultation Service for abnormal Level 1 assessment by the Army Aeromedical Cardiovascular Disease Screening Program (1988-1990), due to elevated cardiac risk indices, serial EKG changes, or abnormal cardiac history. All underwent diagnostic coronary angiography due to abnormal CF, abnormal GXT, or both. Of the 46 aircrew with abnormal CFs, 40 had gradable coronary artery disease for a predictive value of a positive test of 87%. The predictive value of a positive GXT was 50%. This aircrew study is consistent with the findings of Loecker.

# REVIEW AND DISPOSITION OF FLIGHT PHYSICALS

## Disqualification's for Classes 2 and 4 (Unfitness for Flying Duty)

Whenever a crewmember does not meet the medical standards set forth in AR 40-501, chapter 4 and the aeromedical policy letters, or he is unable to safely perform his duties. This is referred to as a medical disqualification.

**Temporary Disqualification:** Imposed by the flight surgeon/APA for a disqualifying medical condition, which is expected to last less than 12 months prior to resolution. When condition resolves, the flight surgeon recommends return to flying duty with DA Form 4186 (up-slip). Examples are the common cold, ankle sprain, minor back injuries, and uncomplicated pregnancies.

**Permanent Disqualification:** Imposed when a medical condition is expected to last longer than 12 months or is disqualifying per AR 40-501, Chap. 4. The flight surgeon performs a thorough medical evaluation of the condition and submits his/ her recommended disposition to the Army Aeromedical Activity (AAMA). This request can either be for a waiver and continued flight status, or for permanent disqualification and removal from flight status. Examples include diabetes, heart attack, or HIV seropositivity, hypertension, Seasonal Allergic Rhinitis (SAR). Some of these conditions (e.g. hypertension and SAR) when properly treated will not present a danger to aviation safety and these crewmembers can get a waiver (see waiver below). Other conditions such as heart attacks, strokes, or HIV infection will present a danger to aviation safety and will not get a waiver.

**Waiver:** A document from PERSCOM or the NGB, which grants continued flight status in spite of disqualifying defect. Waivers are not granted for Class 1W or 1A standards. If a Class 1 or 1A applicant does not meet medical standards, he must get an exception to policy. It may seem like a matter of semantics but it is more than that. An exception to policy is much more difficult to obtain.

## Disqualification's for Class 3 (Unfitness for Flying Duty)

The same basic concepts apply for class 3 as class 2 and 4 aircrew. However, the waiver process for class 3 aircrew is a local process and does not generally involve USAAMA. The aeromedical recommendation goes from the flight surgeon to the local commander for approval.

For specifics, see the APL on class 3 aircrew that is found in the miscellaneous section of the APLs.

## THE WAIVER PROCESS

**GENERAL:** The waiver process has been developed to ensure the consistent and proper management of disqualified aviation personnel. This process has been responsible for the safe return of countless aviators to flying duties once effective treatment has been achieved. It also has been responsible for clearly identifying those individuals with medical conditions incompatible with continued safe flying or their continued good health. It allows for consistent health care management of individuals who routinely receive their health care from many different health-care providers. With proper utilization of senior health-care consultants, it ensures the highest level of health care and provides quality assurance. Most importantly, it ensures the maintenance of a readily mobile effective fighting force.

**WAIVER AUTHORITY:** Waivers are granted by PERSCOM; Chief, National Guard Bureau; or by the local Commanding Officer, depending upon the status of the aircrew member. USAAMA, much like the local flight surgeon, only recommends a course of action. Generally, the waiver authority concurs with the medical recommendation. On occasion, the waiver authority may non-concur based on personnel or mission requirements.

**THE PROCESS:** The entire waiver process normally starts at the local flight surgeon's office at the time of the discovery of a disqualifying medical condition. Local evaluations and consultations must be obtained to support the flight surgeon's recommendation. Once this packet is forwarded to USAAMA, it can take several different routes depending on the nature of the disqualification.

Most waiver requests are routine waivers (those that have clear policy established) and require little more than review and endorsement, and then are forwarded with recommendations for appropriate follow-up or restrictions to the waiver authority.

Occasionally waiver requests are forwarded for review to the designated Army medical consultant, the Naval Operational Medicine Institute (NOMI), Pensacola, FL, or the Aerospace Medicine Consultation Service (AMCS), Brooks AFB, TX.

Cases which are unusual, potentially precedent setting, involve flight or other operational limitations, and all Class 1 Exceptions to Policy are presented to the Aeromedical Consultants Advisory Panel (ACAP). The decision of the ACAP is reviewed and approved/disapproved by Commander, USAAMC and forwarded to the appropriate waiver authority. The waiver authority will then take appropriate action, normally producing a formal letter of waiver or termination notification.

## **AEROMEDICAL SUMMARY GUIDE TO COMPLETION**

**THE PACKAGE:** An Aeromedical Summary (AMS) is required for any action which requires waiver, permanent medical disqualification (permanent termination from flying), termination of permanent termination from flying ("requalification"), and request for aeromedical consultation. An abbreviated AMS may be used in certain minor actions, e.g., hearing loss, pregnancy, seasonal allergic rhinitis (SAR), hypertension controlled by diet or waiverable medications, and any other uncomplicated condition. Templates for both AMS formats follow this section. You will notice that the big difference is that the abbreviated AMS is more focused. The abbreviated AMS consolidates and abbreviates the occupational, aviation, social, family, and past medical history as well as the chief complaint and physical exam findings. [See templates.](#)

The AMS must be TYPED on either Optional Form 275 or SF 502 - Narrative Summary. Continuation sheets should be used as necessary. This will facilitate the incorporation of the AMS into Health Records. An original and three copies of the summary and supporting documents should be made. The original is forwarded to USAAMA. One copy of the AMS goes to the Health Record until it is replaced by the actual waiver/disqualification letter; the second goes to the aircrew member; and the third copy should be placed on file in the flight surgeon's office for a minimum of 3 years. This redundancy should help minimize problems with lost mail or PCSs of either the aircrew member or his flight surgeon.

**NOTE:** Legibility is key. Altered (white out, erased, blocked out, etc.) records are not accepted.

An FDME is not always required since the AMS contains significant history or physical findings. Your recommendations should include any restrictions, follow-up, date of incapacitation, or request for consultations which you feel are appropriate.

**ORGANIZATION OF DOCUMENTS:** In order to expedite processing of the aeromedical summary, it is important to place documents neatly labeled, tabulated and collated preferably in chronological order, earlier dates first. This will allow the reviewer to follow chronologically the development/resolution of the defect or condition. The documents should be assembled in the following order:

1. Cover letter, if included.
2. Aeromedical Summary.
3. Enclosures:
  - a. Any available supportive consultations;
  - b. Reports of all operations;
  - c. Lab reports, pathology report, tissue examinations;
  - d. Actual tracings, x-rays, pictures, films, or tapes of all procedures (ECG, AGXT, Holter, ECHO, cardiac scans and catheterization);
  - e. Hospital summaries and past medical documents (e.g., hospital summaries, X-rays, ECGs); reports of any proceedings (tumor board, MEB, PEB, FEB);
  - f. Letters of recommendation.
  - g. DA Form 759 - Individual Flight Record,

h. ORB - Officer Record Brief.

**NOTE:** AMSs for civilian/contract personnel should indicate whether the individual is also in the Reserves or National Guard so that the waiver can be forwarded to all appropriate waiver authorities. This may require the submission of two summaries concurrently.

It takes time to process a waiver. At USAAMA the waiver package must pass through 9 - 11 essential workstations and at PERSCOM another 5-7. Bottlenecks are inevitable. Complicated cases or cases which have no precedent often take additional time due to the need for specialty consultation or literature review. Remember, most routine waivers may be granted temporary clearance pending waiver (**See Temporary Clearance Pending Waiver**), and telephonic approval is often available for the uncertain cases. If you need a rush disposition, you may send the waiver packet via overnight mail or Federal Express. Please ensure the package is complete. FAX copies are generally not accepted due to their poor quality and the ease with which they may be altered.

## WAIVER CRITERIA

**INTRODUCTION:** Factors commonly used in the consideration of granting a waiver include feasibility of treatment and follow-up requirements in a field environment in addition to in-flight safety and mission completion.

To be considered waiverable, any disqualifying physical or psychological defect must pass the following screening criteria:

1. The disqualifying defect must not pose a risk of sudden incapacitation.
2. It must not pose any potential risk for subtle incapacitation that might not be detected by the individual but would affect alertness, special senses, or information processing.
3. It must be resolved or stable at time of the waiver (i.e., non-progressive).
4. It must not be subject to aggravation by military service or continued flying.
5. It must not lead to significant loss of duty such as precludes unsatisfactory completion of training and/or military service.
6. It cannot require the use of uncommonly available tests, regular invasive procedures, or non-routine medication especially during deployment or assignment to austere areas.
7. If the possibility of progression or recurrence exists, the first signs or symptoms must be easily detectable and cannot constitute an undue hazard to the individual or to others.
8. It cannot jeopardize the successful completion of a mission.

**THE RECOMMENDATION:** The first aeromedical disposition is made by the local flight surgeon in all cases. For class 3 aircrew, that is also the only aeromedical review. The local commander is the approval authority. For class 2 and 4 waivers (as well as ALL exception to policy), the package is forwarded to AAMA for review.

The local flight should make a simple declarative statement of what he believes will be the best for the individual, flying safety, and the Army. The recommendations should be concrete and positive. The flight surgeon should state the specific chapter/paragraph regulating the condition and any appropriate APLs. The flight surgeon must remain strictly objective and not allow his personal likes or dislikes, any outside pressure, or personal biases to influence his decision making.

**SUMMARY:** Just because the APLs suggest a waiver may be possible does not mean that it will inevitably be granted. In considering a waiver, the waiver authorities will take into account the above criteria, the condition or combination of conditions concerned, the treatment given to the patient and other relevant factors. If necessary, they will consult medical specialists and line authorities. A consensus of opinion will be developed and forwarded for approval through Commander, USAAMC to the waiver authority (PERSCOM, National Guard Bureau, or other command authority).

Also, it should be noted that USAAMA is required to pass to the Federal Aviation Administration the names of all aviators who are disqualified from flying duties in the US Army. Flight surgeons should brief patients who are facing likely disqualification accordingly.

## AEROMEDICAL CONSULTATION SERVICE

### PURPOSE:

1. To provide worldwide telephonic, written, and in-house aeromedical consultation services to any flight surgeon or other health care providers treating aircrew members.
2. To provide expeditious answers to questions concerning aeromedical standards, medical fitness for aviation duties, aeromedical policies and technical bulletins.
3. To provide for the primary review and disposition of aeromedical summaries.

**AUTHORITY:** The aeromedical consultation authority is:

Commander

USAAMC, ATTN: MCXY-AER

Fort Rucker, AL 36362-5333

Commercial 334-255-7430 (DSN 558).

### PROCEDURES:

1. The Aeromedical Consultation Service (AMCS) makes primary use of the Aeromedical Consultant's Advisory Panel (ACAP) and other designated Aeromedical Consultants in multiple specialty fields around the world to ensure proper disposition of cases is made by the CDR, USAAMC to PERSCOM and the National Guard Bureau.
2. Occasionally, aircrew are required to undergo direct examination by a consultant. These consultations may be required upon request of and in coordination with Chief, AMCS, and can be accomplished at USAAMC, Fort Rucker, or at other selected MEDCENs, or at the Aeromedical Consultation Service (AMCS), Brooks AFB, TX, or at the Naval Aeromedical Institute (NAMI), Pensacola Naval Air Station, FL.
3. Arrangements for government transportation to USAAMC or other MEDCENs should be made through the aeromedical evacuation office of the closest military medical facility, which will communicate with the Aeromedical Evacuation Center at Scott AFB, IL, (DSN 576-6211 or COMM 618-256-6211). Those outside of CONUS must submit requests through the Joint Services Medical Regulating Office (JSMRO) in their region. Aeromedical evacuation requires an accepting physician at USAAMC or other MEDCENs prior to transport. Individuals must usually travel through holding facilities and must often remain overnight. The aircrew member's unit may send the patient on TDY by commercial travel or arrange other government transportation. Aircrew who are referred to AMCS or NAMI should arrange for TDY utilizing commercial transportation since neither accept patients by the government aeromedical evacuation system.

**THE AEROMEDICAL EPIDEMIOLOGICAL DATA REPOSITORY:** This is a computer database maintained by the U.S. Army Aeromedical Research Laboratory and U.S. Army Aeromedical Activity containing extensive medical information concerning the physical and historical data related to Army aviators. This database often serves the basis of development of aeromedical policies and has enormous research potential. Requests should be directed through the Aeromedical Consultation Service to USAARL or directly to USAARL at the following address:

Commander

USAARL, ATTN: SGRD-UAB-CB

Fort Rucker, AL, 36362

Commercial (334) - 255-6879, (DSN 558).

### WAIVER STEPS

1. The flight surgeon prepares an aeromedical summary (AMS). The AMS is submitted to AAMA. AAMA may refer the AMS to its Review and Disposition Service or to the Aeromedical Consultant Advisory Panel (ACAP).
2. The AAMA Review and Disposition Service consists of a physician assigned to AAMA. This service expedites routine cases (vision out of standards, but correctable, high frequency hearing loss etc.) that have clear-cut answers.

3. Complicated cases are referred to the Aeromedical Consultant's Advisory Panel (ACAP) which is composed of Aerospace Medicine Specialists, Clinical Medicine Specialists and two Master Aviators. ACAP meets in formal session and reviews complicated medical cases and formulates/recommends aeromedical policy.
4. AMS along with AAMA's waiver recommendation is forwarded from AAMA to PERSCOM, NGB, or other waiver authority for final waiver approval or disapproval.

## WAIVER AUTHORITY

### **ACTIVE ARMY OR USAR CLASSES 1/1A AND CLASS 2**

THRU  
 Commander,  
 USAAMC,  
 ATTN: MCXY-AER,  
 Fort Rucker, AL 36362-5333  
 FOR  
 Commander,  
 PERSCOM,  
 ATTN: TAPC-PLA,  
 200 Stovall Street,  
 Hoffman Building, Room 3N25  
 Alexandria, VA 22331-0413

### **ACTIVE ARMY OR USAR CLASSES 2F & ETC \***

THRU  
 Commander,  
 USAAMC,  
 ATTN: MCXY-AER,  
 Fort Rucker, AL 36362-5333  
 FOR  
 Commander,  
 PERSCOM,  
 Health Services Division,  
 ATTN: TAPC-OPH-MC,  
 200 Stovall Street,  
 Hoffman Building, Room 9N68,  
 Alexandria, VA 22331-0413

### **ACTIVE ARMY OR USAR CLASSES 2S/4 & CLASS 3 (FOR DRUG ALCOHOL ONLY)\*\***

THRU  
 Commander,  
 USAAMC,  
 ATTN: MCXY-AER,  
 Fort Rucker, AL 36362-5333  
 FOR  
 Commander,  
 PERSCOM,  
 ATTN: TAPC-EPL-T  
 2461 Eisenhower Ave  
 Alexandria, VA 22331-0453

### **ARNG CLASSES 1/1A/2//2F/2S/4, AND CLASS 3 (DRUG AND ALCOHOL ONLY)\*\***

THRU  
 Commander,  
 USAAMC,  
 ATTN: MCXY-AER,  
 Fort Rucker, AL 36362-5333  
 FOR  
 Chief,  
 National Guard Bureau,  
 ATTN: NGB-AVN-OP  
 111 South George Mason Drive,  
 Arlington, VA 22204-1382

### **Contract Civilians All CLASSES**

THRU  
 Commander,  
 USAAMC,  
 ATTN: MCXY-AER,  
 Fort Rucker, AL 36362-5333  
 THRU  
 Contracting Representative Officer  
 FOR  
 Commanding General, or  
 his Designated Waiver Authority  
 (i.e., air field commander or  
 command aviation officer).  
 Send final copy to  
 Contracting Office & Firm.

### **DAC ALL CLASSES**

THRU  
 Commander,  
 USAAMC,  
 ATTN: MCXY-AER,  
 Fort Rucker, AL 36362-5333  
 THRU  
 Aviation Unit Commander  
 FOR  
 Commanding General,  
 or his designated waiver authority  
 (air field commander or command  
 aviation officer).  
 Send final copy to  
 local civilian personnel office.

\* - Includes aviation audiologists, dentists, optometrists, and psychologists.

\*\* - Class 3: Several other conditions require submission to USAAMA for final review and disposition to include:

- Alcohol and Drug abuse or dependence as above.
- Type II decompression sickness.
- Coronary disease, suspected or proven.
- HIV seropositivity. (Civilian employees are not disqualified based solely on the presence of the HIV virus.)
- Any other condition for which the FS or local aviation commander requests consultation.

- Waivers for other than drug and alcohol abuse/dependence and the above conditions are submitted through the local FS, for the local aviation unit commander. (See [Class 3 Aircrew Members APL](#))

## **APPENDIX B AEROMEDICAL SUMMARY TEMPLATES**

The following pages are templates for Aeromedical Summaries and Abbreviated Aeromedical Summaries.

### **EXPLANATION OF TEMPLATE:**

1. ADDRESS of originating facility - (Very important if USAAMA needs to contact the flight surgeon.)
2. GENERAL INFORMATION - (Facilitates the coding and rapid identification of all AMSs.)
3. MILITARY/OCCUPATIONAL HISTORY - State you are providing a copy of an ORB (officers) or DA Form 2 (enlisted) as enclosure.
4. AVIATION HISTORY - State that you are providing a copy of DA Form 759 as enclosure.
5. SOCIAL and FAMILY HISTORY - This should include the pertinent/significant use of alcohol, tobacco and caffeine, significant family diseases, social status (married, divorced, children, etc.), and current exercise program if relevant to the case. Use NC if non-contributory. For example, the number of cigarettes he smokes has no correlation with high frequency hearing loss; however, smoking correlates with coronary artery disease.
6. PAST MEDICAL HISTORY - Summarize the individual's significant past medical and surgical history if relevant to the case, excluding the present problem. If the aircrew member has been given a waiver for any medical problem unrelated to the current evaluation, this must be discussed and the status of the waiver mentioned. For example, appendectomy and cholecystectomy are significant problems in small bowel obstruction but not in high frequency hearing loss or hypertension. Use "NC" if otherwise non-contributory.
7. PRESENT PROBLEM - Give a concise but complete chronology of the present complaint to include relevant events preceding and following the onset of the problem. Pertinent negatives are important.
8. PHYSICAL EXAMINATION - Describe the patient's physical condition and findings on the physical examination relevant to the present problem. Be specific in describing deformities, limitations of motion, etc.
9. LABORATORY AND X-RAY DATA Comment on pertinent laboratory, ECG, and x-ray findings, including normal or negative results. It is important to include the actual tracings, cassettes and films on all cardiac tests.
10. DISCUSSION - This portion focuses on the individual's ability to perform in the aviation environment without undue risk or compromise to aviation safety. Each specific concern should be addressed. (See **Waiver Criteria**)
11. RECOMMENDATION - This is the conclusion of your analysis and is the main purpose of this entire process.

12. SYNOPSIS - Brief summary table which will assist USAAMA in quick coding and processing:

<b><u>Diagnosis:</u></b>	<b><u>Tests:</u></b>	<b><u>Procedure:</u></b>	<b><u>Medications:</u></b>

13. ENCLOSURES - e.g. Discharge Summary, Outpatient Reports, Pathology Reports, Specialty consultations, Tests/Lab reports (include actual original tracings, ECHO videos, cardiac cineangiograms, etc.), ORB (officers) / -2 (enlisted), DA Form 759, Letters of support from the command, Senior Instructor Pilots (SIPs), etc., as required.



DRAFT

11. Recommendation:

12. Synopsis:

<b><u>Diagnosis:</u></b>	<b><u>Tests:</u></b>	<b><u>Procedure:</u></b>	<b><u>Medications:</u></b>

13. Enclosures:

E.g.: Discharge Summary, Outpatient Reports, Pathology Reports, Specialty consultations, Tests/Lab reports (include actual original tracings, ECHO videos, cardiac cineangiograms, etc.), ORB (officers) / -2 (enlisted), DA Form 759, Letters of support from the command, SIPs, etc., as required.

Flight Surgeon Signature Block



Intentionally

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**MEDICAL RECORD - SUPPLEMENTAL MEDICAL DATA**

For use of the form, see AR 40-400; the proponent agency is the Army Surgeon General

Report title: Aeromedical continuation of SF 93, History

TSG approved 1 April 1995

**CAUTION: Concealment of medical history** during flying duty medical examinations results in the mandatory **permanent medical disqualification** for Unsatisfactory Aeronautical Adaptability.

1. Have you ever been disqualified by a flying duty medical examination (FDME)?	Yes ___	No ___
2. Since your last FDME or in the last 18 months, were you sick, injured, hospitalized, consulted a doctor, or used medication?	Yes ___	No ___
3. Have you ever used or experimented with illegal drugs, such as, but not limited to cocaine, marijuana, PCP, heroin, downers, speed, peyote, LSD, or any other substance considered illegal or dangerous by the US government?	Yes ___	No ___
4. Have you ever been evaluated for or had any mental health illness, such as depression, stress, anxiety, panic attacks, nervous breakdown, or fear of flying?	Yes ___	No ___
5. Have you ever used alcohol resulting in legal problems (such as driving under the influence), absence from school or work, medical problems (such as stomach ulcers, liver disease, blackouts, memory loss), or marital problems? Have you been treated for alcohol abuse or dependence?	Yes ___	No ___
6. Have you ever had surgery to correct cross eyes (strabismus), or poor eyesight to include surgical or laser procedures to change the shape of the cornea (clear eye part) to improve vision, such as radial keratotomy or laser keratoplasty?	Yes ___	No ___
7. Have you ever worn contact lens, including hard contact lenses to change the shape of the cornea (clear part of the eye) in order to improve vision?	Yes ___	No ___
8. Have you ever had a seizure or convulsion, vertigo or spinning dizziness, fainted or lost consciousness, or head injury with concussion and/or skull fracture?	Yes ___	No ___
9. Have you ever had a migraine, cluster headache, or other severe headache?	Yes ___	No ___
10. Have you ever been in special education classes, or had learning disabilities or difficulties, such as dyslexia?	Yes ___	No ___
11. Have you ever had asthma or wheezing, hayfever (allergic nasal problems), or sinus problems that required the use of medications, doctor visits, use of nasal steroid sprays, or allergy shot series?	Yes ___	No ___

*(Continue history on reverse, if required)*

Flight surgeon name stamp:	Flight surgeon signature:	Date:
Patient name and social security number:	Patient signature:	Date:

**DA FORM 4700 1 APRIL 1995**

**MEDICAL RECORD - SUPPLEMENTAL MEDICAL DATA**

For use of the form, see AR 40-400; the proponent agency is the Army Surgeon General

Report title: Aeromedical continuation of SF 93, History (Side 2)

*(Continue history here, if required)*

**DA FORM 4700 1 April 1995**

Report title: Aeromedical continuation of SF 93, Allergic rhinitis TSG approved 1 April 1995

**CAUTION: Concealment of medical history** during flying duty medical examinations results in the mandatory **permanent medical disqualification** for Unsatisfactory Aeronautical Adaptability.

1. Have you ever had hayfever or sinus problems? If yes, complete the form.	Yes ___	No ___
2. State the age that you first had symptoms.	Age =	
2a. State the age that your symptoms last occurred.	Age =	
3. How many total weeks per year would your symptoms persist?	Weeks =	
3a. Circle the months your symptoms occurred. NOV	JAN	MAR
	MAY	JUL
	SEP	FEB
	APR	JUN
	AUG	OCT
	DEC	
4. Check items that aggravate your symptoms. Grass ___ Weeds ___ Trees ___ Molds ___ House dust ___ Mites ___ Cats ___ Dogs ___ Feathers ___ Wool ___ Smoke ___		
5. Have doctors and/or nurses treated your symptoms?	Yes ___	No ___
6. Did you ever have allergy skin or allergy blood tests?	Yes ___	No ___
6a. Test results were?		
7. Check medications you have used. Decongestants ___ Antihistamines ___ Nasal steroids ___ Steroid shots ___ Inhaled cromolyn (Spinhaler) ___ Allergy shots ___		
7a. How many weeks per year would you use medication?	Weeks =	
7b. How many years did you take allergy shots?	Years =	
8. Check other problems you have had. Nasal polyps ___ Sinusitis ___ Sinus surgery ___		
Flight surgeon: record current test results- Patient have symptoms during your testing? Yes ___ No ___ Nasal smear for eosinophils- Blood eosinophil count- Serum IGE level- Sinus X-ray series-		

*(Continue history on reverse, if required)*

Flight surgeon name stamp:	Flight surgeon signature:	Date:
Patient name and social security number:	Patient signature:	Date:

**DA FORM 4700 1 April 1995**

MEDICAL RECORD - SUPPLEMENTAL MEDICAL DATA

For use of the form, see AR 40-400; the proponent agency is the Army Surgeon General

Report title: Aeromedical continuation of SF 93, Allergic rhinitis (Side 2)

*(Continue history here, if required)*

MEDICAL RECORD - SUPPLEMENTAL MEDICAL DATA

For use of the form, see AR 40-400; the proponent agency is the Army Surgeon General

Report title: Aeromedical continuation of SF 93, Alcohol

TSG approved 1 April 1995

**CAUTION: Concealment of medical history** during flying duty medical examinations results in the mandatory **permanent medical disqualification** for Unsatisfactory Aeronautical Adaptability.

1. Have you ever felt you should cut down on your drinking alcohol?	Yes ___	No ___
2. Have people ever annoyed you by criticizing your drinking?	Yes ___	No ___
3. Have you ever felt bad or guilty about your drinking?	Yes ___	No ___
4. Have you ever had problems at, or missed school/work due to drinking?	Yes ___	No ___
5. Have you ever had to drink alcohol in the morning to steady your nerves or treat a hangover?	Yes ___	No ___
6. Have you ever been arrested for problems due to alcohol misuse, such as driving under the influence, disorderly conduct, or family fighting?	Yes ___	No ___
6a. If so, when?		
7. Have you ever attended Alcoholics Anonymous, Al-Anon, Al-Ateen, or similar organizations because of your own drinking?	Yes ___	No ___
8. Have you ever been in an outpatient or inpatient alcohol abuse or alcohol dependence treatment program?	Yes ___	No ___
8a. If so, when and where?	Yes ___	No ___
9. How old were you when you had your first drink?	Age =	
10. Describe your current drinking habit. Check all of those that apply to your habit. What do you drink? Beer ___ Wine ___ Liquor ___ When do you drink? Daily ___ Weekly ___ Weekends/Days off only ___ Monthly ___ Rarely ___ With whom do you drink? Alone ___ With family ___ With friends ___ With bar patrons ___ State how much you drink in one sitting. Compared to past years, do you? Drink the same ___ Drink less ___ Drink more ___		

Flight surgeon comments:
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*(Continue history on reverse, if required)*

Flight surgeon name stamp:	Flight surgeon signature:	Date:
Patient name and social security number:	Patient signature:	Date:

DA FORM 4700 1 April 1995

MEDICAL RECORD - SUPPLEMENTAL MEDICAL DATA

For use of the form, see AR 40-400; the proponent agency is the Army Surgeon General

Report title: Aeromedical continuation of SF 93, Alcohol (Side 2)

*(Continue history here, if required)*

**DA FORM 4700 1 April 1995**

Report title: Aeromedical continuation of SF 93, Drugs

TSG approved 1 April 1995

**CAUTION: Concealment of medical history** during flying duty medical examinations results in the mandatory **permanent medical disqualification** for Unsatisfactory Aeronautical Adaptability.

1. Have you ever used illegal drugs, such as but not limited to, marijuana, cocaine, LSD, barbiturates, amphetamines, PCP, etc? If yes, complete the form.	Yes ___	No ___
2. What drugs did you use? Describe frequency and total amount of drugs used (ex. weekly for 1 year). Marijuana: _____ Cocaine: _____ Speed: _____ LSD: _____ Others (name them): _____		
3. Have people ever annoyed you by criticizing your drug use?	Yes ___	No ___
4. Have you ever felt bad or guilty about using illegal drugs?	Yes ___	No ___
5. Have you ever had problems at, or missed school/work due to drug use?	Yes ___	No ___
6. Have you ever been arrested for problems due to drug misuse, such as driving under the influence of drugs, disorderly conduct, or family fighting?	Yes ___	No ___
6a. If so, when?		
7. Have you ever attended drug abstinence support organizations because of your own drug use?	Yes ___	No ___
8. Have you ever been in an outpatient or inpatient drug abuse or drug dependence treatment program?	Yes ___	No ___
8a. If so, when and where?	Yes ___	No ___
9. How old were you when you first used drugs?	Age = _____	
10. How old were you when you last used drugs?	Age = _____	

Flight surgeon comments:

*(Continue history on reverse, if required)*

Flight surgeon name stamp:	Flight surgeon signature:	Date:
Patient name and social security number:	Patient signature:	Date:

**DA FORM 4700 1 April 1995**

MEDICAL RECORD - SUPPLEMENTAL MEDICAL DATA

For use of the form, see AR 40-400; the proponent agency is the Army Surgeon General

Report title: Aeromedical continuation of SF 93, Drugs (Side 2)

*(Continue history here, if required)*