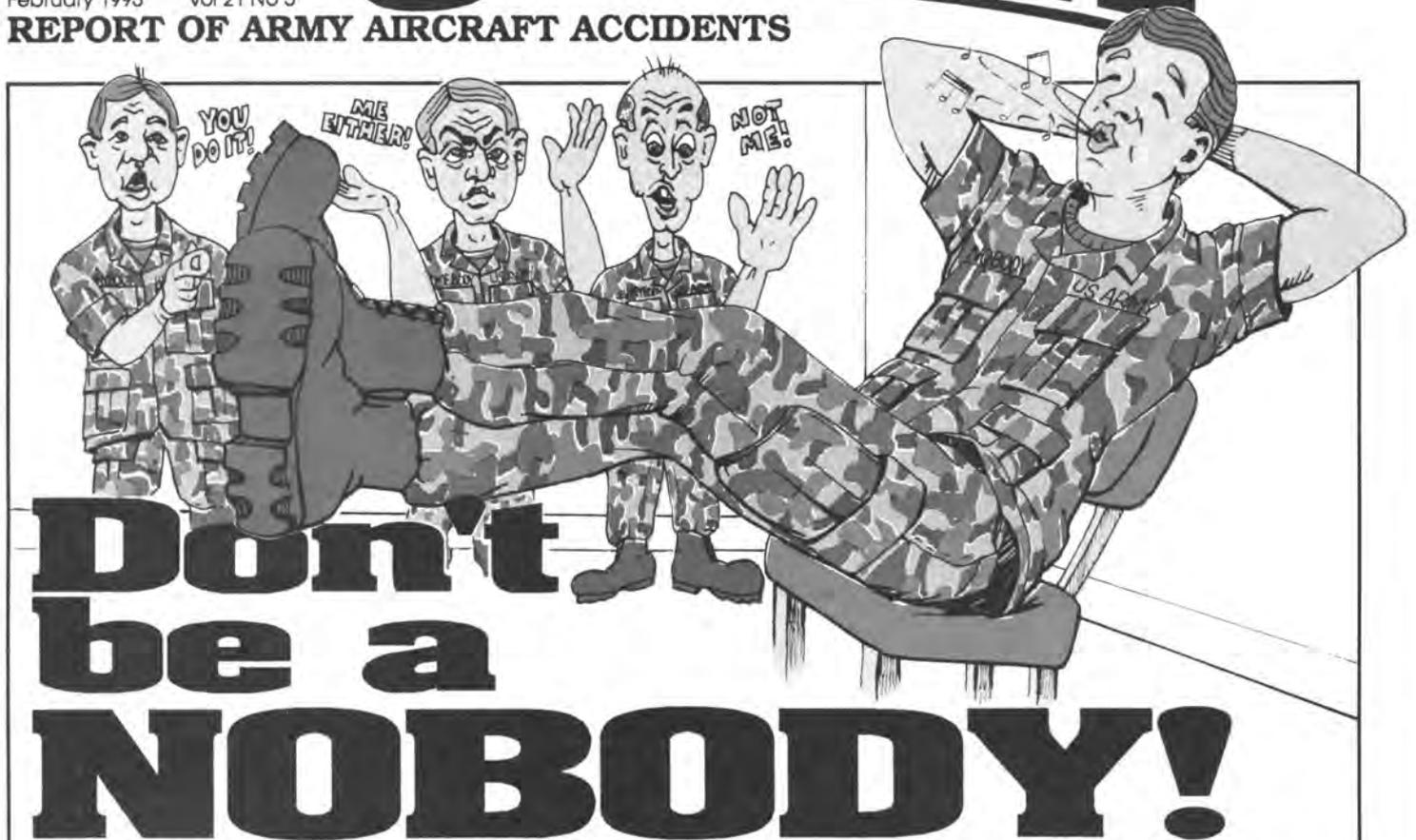


# Flightfax

February 1993 Vol 21 No 5

## REPORT OF ARMY AIRCRAFT ACCIDENTS



**I**t's not my job! How many times have you heard somebody say that? Well, in one case, it's true: writing an article for *Flightfax* or *Countermeasure* (the Army ground safety publication) isn't your job and it isn't mine. *It's our responsibility.*

The following little story illustrates the part you—the aviator, commander, crew chief—play in getting the word out on hot safety topics:

Four guys in the unit were named Everybody, Somebody, Anybody, and Nobody. There was an important job to be done, and Everybody was sure that Somebody would do it. Anybody could have done it, but Nobody did it. Somebody got angry about that because it was Everybody's job. Everybody thought Anybody could do it, but Nobody realized that Everybody wouldn't do it. It ended up that Everybody blamed Somebody when Nobody did what Anybody could have done.

The point is that you the field aviator, the unit

safety officer, the instructor pilot, or the NCO are more than just the "backbone of Army aviation" cliché. You are the men and women who on a daily basis experience the highs and lows of Army aviation. You live with the hours of sheer boredom, and you sweat the moments of stark terror. You've been there; you are there.

Your observations, experiences, hints, and tips are important. We need the lessons passed down to you from "the old guys," as well as the lessons you've learned the hard way.

As a unit pilot and safety officer, my favorite reason for not getting involved and writing for *Flightfax* or *Countermeasure* was always my lack of confidence in my basic writing skills. I relied on the shotgun technique with punctuation—if I put enough in, some were bound to hit the target.

Not to worry, the Army Safety Center has a fine group of writers, editors, and graphic artists. You provide the experience, the idea, and the draft (short or long—this is not Composition 101 in

which you have to meet a requirement for a certain number of pages or words). The editorial staff will polish your draft into an article that will clearly express your safety-related ideas. The folks in the media arts section will lay it out and provide illustrations if needed. And you get the credit. But most important, you might pass on a safety tip that could save a life.

Finally, if you need help getting data for your article or if you simply want to bounce your ideas off someone new, I'll be glad to help. Or if you need assistance with format, organization, or just plain getting started with an introduction, our writers and editors will be glad to "talk you through the tough spots." Write to: Commander, U.S. Army Safety Center, ATTN: CSSC-PT (CW4

Rauch) or ATTN: CSSC-PMA (*Flightfax*), Fort Rucker, AL 36362-5363.

Remember, sharing your ideas through safety publications may not be your job, but it is Everybody's responsibility. Anybody can do it. But if you expect Somebody to do it, it might just end up being done by Nobody. Don't be a Nobody; be the Somebody who shares ideas. ♦

—POC: CW4 Stephen V. Rauch, Training Branch, DSN 558-2947/3367, commercial 205-255-2947/3367

*Editor's note: CW4 Rauch was assigned to the Army Safety Center's Training Section in August 1992, following a 6-year tour at Ansbach Army Heliport in Germany. We join CW4 Rauch, in urging all members of the aviation team to contribute material to our accident prevention publications. And, yes, he's right. We will gladly assist you. No degrees in English or Journalism are required. We just need your input—your ideas on how to make Army aviation safer.*

## Night vision goggle message

**F**ollowing is aviation safety action maintenance mandatory message (GEN-93-ASAM-02) adapted for publication in *Flightfax*. This message provides an update of information published in previous night vision goggle (NVG) messages and applies to all U.S. Army aircraft. (A forthcoming TB 1-1500-346-20 will supersede this message and TB 1-1500-346-20 dated 15 April 1992. The new TB 1-1500-346-20 will be effective until 31 December 1993 unless sooner rescinded or superseded.)

### Purpose

The purpose of this message is to consolidate information and provide the field with the most current update on aviation NVG messages. It is not intended to replace any publication. This message does not address NVGs used for ground operations.

### Status of messages

This message and the messages listed in the sidebar on page 3 are current and shall be complied with until expired as noted. Messages rescinded as a result of this message are also listed in a sidebar on page 5.

### Distortion testing

Individuals required to conduct NVG and ANVIS distortion checks must have viewed TVT 46-18, *Night Vision Goggle Distortion Inspection*. Perform distortion testing on AN/AVS-6 IAW TM 11-5855-263-23 & P. Perform distortion testing on AN/PVS-5 IAW CDRAVSCOM message 172225Z

Mar 89 paragraph 4c(1) and CDRAVSCOM message 172359Z Mar 89 paragraph 4c(2) until TM 11-5855-238-23 & P is published. This is a clarification of an existing requirement.

Use DD Form 1576: Test/Modification Tag to tag and return aviation goggles to the user after AVIM maintenance has changed either one or both image intensifiers in the system. Mark tag "Operational distortion evaluation is required prior to use."

TM 11-5855-263-23 & P will be changed to include the following corrections. However, these corrections should be implemented immediately.

■ *Page 2-15, paragraph 2-10.* Change the second sentence of the first paragraph to read "Only experienced ANVIS/NVG pilots are authorized to perform the distortion check."

■ *Page 2-16, paragraph 2-10 (continued).* Change the first sentence in the second paragraph from the top to read "...must first be evaluated by each of the pilots using..."

■ *Page 2-17, paragraph 2-10 (continued).* Change the sentence under *Personnel Required* to read "A minimum of two experienced ANVIS/NVG pilots."

■ *Page 2-19, paragraph 2-10 (continued).* Change the sentence under *Personnel Required* to read "A minimum of two experienced ANVIS/NVG pilots."

The distortion evaluator requirements for the AN/PVS-5 are changed to reflect the same requirements as the ANVIS. To accomplish this

action, make the first and second statements in paragraph 9 of CDRAVSCOM message 172225Z Mar 89 read "Select a minimum of two of the unit's most experienced and current ANVIS/NVG pilots to perform the evaluation. Each NVG and ANVIS device and every tube assembly must be evaluated by each of the pilots." This information will be in the forthcoming TM 11-5855-238-23 & P.

### **NVG maintenance training**

New equipment training for AN/AVS-6 was completed in February 1993. Commanders are now responsible for training and should contact their CECOM logistics assistance representatives (LARs). An exportable training package is scheduled for release in April 1993.

### **AN/PVS-5 NVGs**

■ *AN/PVS-5 goggle modified faceplate.* TM 11-5855-238-10 is scheduled for publication in April 1993. Upon publication of this manual, AN/PVS-5 goggles with modified faceplates will no longer be authorized for aviation use. TM 11-5855-238-10 will not contain pre-operational checks for modified faceplates. Distribution of AN/AVS-6 and/or GM-6 kits has been accomplished to meet unit requirements. If the loss of modified faceplates adversely impacts operational capabilities, contact PM-NVEO point of contact (POC), Mr. Glen Nowak, DSN 656-3277/4277, commercial 703-806-3277/4277, FAX 703-806-3284, for justified exceptions.

■ *AN/PVS-5 image intensifier tube (MX-9916) repair.* Rebuilt/overhauled AN/PVS-5 image intensifier tubes (MX-9916) are not authorized for aviation use. Rebuilt/overhauled assemblies are identified by a label stating "Overhauled by Sacramento Army Depot."

■ *AN/PVS-5 and GM-6 aviation maintenance.* Publication of TM 11-5855-238-23 & P has been delayed. The approved AN/PVS-5 and GM-6 aviation maintenance allocation chart

## **Current NVG messages**

**A** viation safety action maintenance mandatory message concerning updated information on night vision goggles messages for all U.S. Army aircraft (GEN-93-ASAM-02, 211830Z Dec 92) and the following messages are current and shall be complied with until expired as noted:

■ CDRAVSCOM message, 172225Z Mar 89, subject: Aviation Night Vision Goggle, Operational Evaluation, One-Time Evaluation of All AN/PVS-5A, 5B, and 5C Night Vision Goggles, AN/AVS-6 Aviator Night Vision Imaging System (ANVIS). This message has expired for ANVIS and will expire for AN/PVS-5 upon receipt of TM 11-5855-238-23 & P.

■ CDRAVSCOM message, 172359Z Mar 89, subject: Maintenance Advisory for AN/PVS-5A, 5B, and 5C Series Night Vision Goggles (NVG), AN/AVS-6 Aviator Night Vision Imaging System (ANVIS) Return for Unacceptable Distortion. This message expires upon the receipt of TM 11-5855-238-23 & P.

■ HQDA message, 042006Z Aug 89, subject: Airspace Management in Cantonment Areas, Training Areas, and Ranges. This message expires upon revision of TC 95-93, dated March 1989.

■ CDRAVSCOM message, 312000Z Jul 90, subject: One-Time Wiring Modification of All PVS-5 Series NVGs Utilizing the Aviation GM-6 Mount (NVG-90-01). This message expires upon receipt of TM 11-5855-238-23 & P.

■ CDRAVSCOM message, 292000Z Aug 90, subject: Clarification of One-time Wiring Modification of All AN/PVS-5A, 5B, and 5C Series Night Vision Goggles Utilizing the Aviation GM-6 Modification (NVG-90-02). This message expires upon receipt of TM 11-5855-238-23 & P.

■ CDRUSAAVNC message, 032330Z Jan 91, subject: Night Vision Goggle Scanning and Crew Coordination Errors. This message expires when the information is included in the next revision of TC 1-204, dated December 1988.

■ PMNVEO message, 221530Z Mar 91, subject: Aviation Night Vision Goggle (NVG) Maintenance. This message expires 1 June 1993.

■ CDRUSAAVNC message, 161345Z Jul 91, subject: Change to Training Requirements for AO/AFSO. This message expires when the information is included in the next revision of TC 1-215, dated March 1990.

■ PMNVEO message, 161700Z Mar 92, subject: Revised Operator and Maintenance Manuals for ANVIS. This message expires when incorporated into TM 11-5855-263-10, dated 15 September 1991 and TM 11-5855-263-23 & P, dated 15 January 1992.

■ CDRAVSCOM message 301400 Mar 92, subject: Night Vision Goggle Information Concerning the Dual Visor on Aviators' Helmets (GEN-92-ASAM-06). This message expires on 1 April 1993.

■ CDRATCOM message, 052130Z Nov 92, subject: Correction of Obvious Errors in DA Pam 738-751: Functional Users Manual for the Army Maintenance Management System—Aviation (TAMMS-A), dated 15 June 1992. This message will expire with the update to DA Pam 738-751 scheduled during the first quarter of FY 94. ♦

can be obtained from CECOM POC, Mr. Mike Ayers, DSN 992-2208, commercial 908-532-2407.

### Commercial NVGs

Commercial NVGs, including procured GSA-cataloged goggles and spare parts, are not authorized for aviation use. These nonstandard NVGs and parts have not been adequately tested for military use (for example, electromagnetic interference).

### AN/AVS-6 (ANVIS)

Newly fielded ANVIS that either fail the service upon receipt of material inspection or fail before the expiration of the warranty must be reported on an SF 368: Product Quality Deficiency Report (PQDR). The PQDR must be processed through the local CECOM LAR. This will ensure the unit submitting the PQDR will receive credit for that ANVIS.

The light interference filter (LIF) MS-11428/AN/AVS-6(V), NSN 6650-01-328-5135, is a laser-protective device designed for use with the ANVIS. If the unit receives this item, take the LIF kit and the selected ANVIS to the AVIM or direct support/general support (DS/GS) for installation. POC for this action is Mr. Glen Nowak, DSN 656-3277/4277, commercial 703-806-3277/4277, FAX 703-806-3284.

The LIF for the AN/AVS-6 should contain an accelerator for the adhesive. If you receive an LIF that does not contain an accelerator, you can order it using NSN 8040-01-230-1502 for the 1.75-ounce size. If you need to order additional adhesive, use NSN 8040-01-284-3984.

Modification of AN/AVS-6(V2), NSN 5855-01-138-4748, binoculars to an AN/AVS-6(V1), NSN 5855-01-138-4749, version by replacement of the pivot adjustment shelf is not authorized.

TM 11-5855-263-23 & P will be changed to include the following corrections. However, these corrections should be implemented immediately.

■ *Appendix B, Section III, Tools and Test Equipment.* Torque wrench, NSN 5120-01-618-4433, replaces item number 16. It is used to perform tasks on the AN/AVS-6 using the tube retaining wrench with the 1/4-inch drive.

■ *Appendix B, Section III, Tools and Test Equipment.* Soldering iron NSN 3439-01-183-4623 replaces the currently listed NSN.

■ *Page C-2-1, item 2 (P/N 1-1/2SC).* The correct NSN for "Eyepiece Lens Cap" is NSN 5340-01-058-5930.

■ *Page C-2-1, item 11.* The correct NSN for "Objective Lens Cap With Light Interference Filter (LIF) Adapter" is NSN 5340-00-558-4962. Change the part number listed to EC-23.

■ *Page C-2-1, item 11.* The correct NSN for "Objective Lens Cap Without Light Interference Filter (LIF) Adapter" is NSN 5855-01-152-5849. Change the part number listed to SF-10. This part must be altered by cutting out the inside ridge before use. This is authorized at the unit level.

■ *Appendix E.* Add the following fabricated tool to use as the screwdriver bit to accomplish the torque of the AN/AVS-6 inside the purge ports: "Fabricate screwdriver blade bit, NSN 5130-00-021-2015, by cutting the shank in half and welding 5 inches of 3/32 stainless steel rod between the two halves."

■ *Page 2-36, paragraph 2-14.* This paragraph describes the AN/AVS-6 power pack test. Clarification is required for the low battery indicator test. The -G1, P/N 66868-300680, version power packs cannot be tested using this method on the TS-3895A/UV (not the TS-3895/UV) for test set serial numbers 1001-1999. For these power packs, use the alternative power pack test listed in paragraph 2-15 on page 2-39 during the 180-day service.

### Battery and battery pack information

Batteries authorized for aviation NVG use are BA-5567/U lithium battery and BA-3058/U AA alkaline battery. No other batteries (nicad, mercury, carbon, etc.) are authorized for NVG aviation use. CECOM POC is Mr. John Christopoulos, DSN 994-4985, commercial 908-544-4985.

Stock contamination has occurred for the AN/AVS-6 AA battery pack cartridge shown in TM 11-5855-263-23 & P, figure C1, item 9. Orders are being filled with an incorrect item. Change the part number for item 9 on page C-1-1 to 5008902. CECOM is taking steps to get a new NSN assigned. Until that time, submit requisitions off line with a DD Form 1348-6: DOD Single Line Item Requisition System Document (Manual Long-Form) IAW DA Pam 710-2-1: Using Unit Supply System Manual Procedures, paragraph 2-10.

Repair of aviation goggle battery power packs for AN/AVS-6 or GM-6 systems is not authorized.

### Test sets

TS-4348/UV and TS-3895A/UV test sets require calibration every 12 months. To identify the first

calibration due dates for the TS-4348/UV, locate the warranty date on the TS-4348/UV body. Subtract 6 months. This is the date that the first calibration is due. If there is no warranty label, calibration is due immediately. Subsequent calibrations are tracked with DA Label 80: U.S. Army Calibrated Instrument that is attached to the body. Notify your local calibration shop when the test set is first received.

TS-3895/UV (not the "A" version) test set does not require calibration. DA Label 80 must be stamped with "CNR" (calibration not required) and affixed to the main plate. The test set must be serviced annually by the AVIM or DS/GS IAW chapter 5 of TM 11-5855-264-14 dated 15 October 1990.

For maintenance guidance on TS-3895A/UV, TS-3895/UV, or TS-4348/UV, contact U.S. Army Test, Measurement, and Diagnostic Equipment Activity POC, Mr. Tom Stonich, FAX 205-876-3070, commercial 205-876-3054 or PM-NVEO POC, Mr. Glen Nowak, DSN 656-3277/4277, commercial 703-806-3277/4277, FAX 703-806-3284.

The alternate test method for checking resolution IAW PMNVEO message 041500 Feb 88 (paragraph 13a) is no longer authorized for aviation-modified AN/PVS-5s.

*Note:* During crewmember pre-operational checks, the TS-4348/UV may be used as an optional check to assist in evaluating image-intensifier resolution and clarity. Operate the test set IAW TM 11-5855-263-10 and TM 11-5855-299-12.

### Modification work orders

The following modification work orders (MWOs) must be applied to aircraft prior to NVG operations. (For aircraft with NVG-compatible components that have been replaced since initial application of the NVG MWO, see the *Note* in the paragraph on red and white lighting.)

■ *UH-60A and UH-60L.* Aircraft serial number 85-24462 and subsequent are authorized for NVG use when delivered. Aircraft serial number 85-24461 and prior—along with 85-24745 through 85-24750, 85-25511, and 85-25512—are required to have MWO 55-1520-237-50-20 installed for NVG use.

■ *UH-1H.* Concurrent installation of MWO 55-1520-210-50-7 and MWO 55-1520-210-50-11 or installation of MWO 55-1520-210-50-10 is required for NVG use.

■ *UH-1V.* MWO 55-1520-210-50-12 is required for NVG use.

■ *OH-58A.* MWO 55-1520-228-50-31 or MWO 55-1520-228-50-22 is required for NVG use.

■ *OH-58C.* MWO 55-1520-228-50-32 is required for NVG use.

■ *OH-58D.* All aircraft are acceptable or safe for NVG use from production. No MWO is required.

■ *OH-6.* MWO 55-1520-214-50-16 is required for NVG use.

■ *CH-47C.* MWO 55-1520-227-50-27 and MWO 55-1520-227-50-33 are required for NVG use.

■ *CH-47D.* All CH-47D aircraft are authorized for NVG use when delivered with the exception of aircraft serial number 84-24187 and prior, which are required to have MWO 55-1520-240-50-3 installed for NVG use.

## Rescinded NVG messages

**A**s a result of aviation safety action maintenance mandatory message concerning updated information on night vision goggles for all U.S. Army aircraft (GEN-93-ASAM-02, 211830Z Dec 92), the following messages are rescinded:

■ PMNVEO message, 041500Z Feb 88, safety-of-use operational message, subject: Alternative Test Method for AN/PVS-5 Night Vision Goggles.

■ CDRAVSCOM message, 092100Z Dec 88, maintenance information message (UH-1-88-MIN-08), subject: Night Vision Goggle Operation for all UH-1/EH-1 Series Aircraft.

■ CDRCECOM message, 231015Z Feb 91, subject: Maintenance Level Authorization for the Installation of AN/AVS-6 Light Interference Filter (LIF).

■ CDRCECOM message, 202200Z Dec 91, safety-of-use message (CECOM-91-12-20), subject: AN/AVS-6 ANVIS Night Vision Goggles.

■ CDRCECOM message, 2201820 Apr 92, safety-of-use message (92-04-03), subject: Monocular Housing Assembly, NSN 5855-01-149-4100, Part of the AN/AVS-6 ANVIS.

■ CDRCECOM message, 291800 Apr 92, safety-of-use message (92-04-03), subject: Monocular Housing Assembly, NSN 5855-01-149-4100, Part of the AN/AVS-6 ANVIS.

■ CECOM message, 061900Z Aug 92, subject: AN/AVS-6(V1) and AN/AVS-6(V2) ANVIS Monocular Housing Assemblies (MHAs).

*Note:* Aircraft serial numbers 81-23381 through 81-23384 are not authorized for NVG use.

■ *AH-1S.* MWO 55-1520-234-50-1 and MWO 55-1520-234-50-4 are required for NVG use.

■ *AH-1E, F, and P.* MWO 55-1520-236-50-4 and MWO 55-1520-236-50-5 are required for NVG use.

### Lighting

■ *Red or white lighting.* Red or white lighting of any radio control panel, switch panel, instrument, master caution light, etc., must be taped, filtered, or turned off to eliminate effects of red or white lighting before conducting NVG operations.

*Note:* Aircraft with components that have been replaced since initial application of the NVG MWO and do not meet interior lighting requirements are prohibited from NVG operations. In this case, a circle red X entry will be required, restricting the aircraft from NVG operations. An example of this entry is "UHF radio control panel is red lighted; aircraft restricted from NVG operations unless panel is taped, filtered, or turned off." Variation in wording is acceptable. This circle red X entry may be cleared by taping, filtering, turning off, or replacing the component with an NVG-compatible component.

Effective 30 December 1993, unless rescinded or superseded, the following policy will replace the previous *Note*. Aircraft with components that have been replaced since initial application of the NVG MWO and do not meet interior lighting requirements are prohibited from NVG operations. In this case, a circle red X entry will be required, restricting the aircraft from NVG operations. An example of this entry is "UHF radio control panel is red lighted; aircraft restricted from NVG operations unless panel is replaced or modified for NVG compatibility." Variation in wording is acceptable. This circle red X entry may not—repeat—may not be cleared by taping or turning off. Only replacing the component or modifying the component IAW the applicable NVG MWO is acceptable. Efforts are being made to provide the field with a standard NVG configuration of the cockpit for each aircraft system and replacement NVG-compatible components.

■ *Supplemental lighting.* Supplemental lighting is defined as additional blue-green interior lighting that may consist of lip lights (microphone lights), finger lights, flashlights with filters, and other similar devices. Lip or microphone lights and finger lights do not fulfill the flashlight

requirement of AR 95-1: Army Aviation Flight Regulations.

The use of supplemental lighting is authorized. The specific lighting configurations authorized by unit commanders must be defined in unit SOPs. Additionally, unit commanders must ensure crewmembers receive instruction in the use of authorized supplemental lighting, including flashlight filters. As a minimum, the training must include:

- Operation and use of lighting.
- Cautions or warnings associated with the lighting.
- Demonstration of degradation of NVG performance caused by supplementary lights.
- A means to verify knowledge of use.

*Note:* At the discretion of the pilot-in-command, flashlights with red or white light may be used for ground operations or in the cargo compartment of UH-1, UH-60, or CH-47 aircraft.

The following steps outline a method for evaluating the effects of supplemental lighting with ANVIS:

1. At night in an aircraft located in an area of low ambient light (landing zone, etc.) with interior lighting set for NVG operation and with the ANVIS prepared for use, position a reflective material (for example, a map sheet, note card, or vinyl checklist) at reading distance (about 12 to 18 inches) from your eyes.
  2. Shine the supplemental light onto the material. With the unaided eye, look at the resultant reflection cast on the windscreen.
  3. Observe this same reflection through the ANVIS. An acceptable supplemental light source will allow ANVIS-aided vision through the reflection. The reflection can even disappear.
  4. If the reflection blocks ANVIS-aided vision, the light source should be deemed unacceptable.
- Note:* The AN/PVS-5 series NVGs do not have a minus-blue filter, so they are slightly degraded by all cockpit and supplemental lighting, including ANVIS-acceptable filtered light.

■ *Flashlight filters.* Any blue-green flashlight filter may be used on flashlights during NVG flight until an Army standard filter is fielded. It should be noted that some blue-green filters cause degradation to the NVGs. The use of multiple blue-green filters may be required to gain the desired effect.

■ *Current evaluations.* Evaluations of various types of lights and filters that may be used with AN/AVS-6 NVGs are continuing.

■ **Infrared (IR) bandpass filters.** The IR filter (pink light), P/N EGO-0931-1, may be installed on either the searchlight or landing light based on operational requirements as determined by the user. Units are authorized to use the bulb from the following list that best suits their operational environment and mission:

P/N	NSN	Voltage	Wattage	Candle-power
4571	6240-00-690-1094	28.0	150	7,000
4551	6240-00-583-3334	28.0	250	75,000
4553	6240-00-816-4808	28.0	250	300,000

Note: The maximum permissible wattage is 250 watts. The beam spread should be as follows:

P/N	Horizontal	Vertical
4571	80 degrees	25 degrees
4551	50 degrees	10 degrees
4553	11 degrees	12 degrees

#### Physical security

Units should use the following references and their local requirements for NVG and ANVIS security and accountability:

■ Physical Security Update 2 in AR 190-51: Security of Army Property at Unit and Installation Level.

■ Unit Supply Update 13 in AR 710-2: Supply Policy Below the Wholesale Level and AR 735-5: Policies and Procedures for Property Accountability.

For further guidance, contact the local physical security manager or officer.

#### Miscellaneous information

■ AN/PVS-7s are not authorized for aviation use.

■ NVG operations in the AH-64 aircraft will be conducted IAW the interim statement of airworthiness qualification dated 20 October 1992.

■ NVG maintenance documentation errors referenced in CDRATCOM message 052130Z Nov 92, paragraph 4c(12), will be corrected in a forthcoming consolidated maintenance message. This forthcoming message will rescind PMNVEO message 221530Z Mar 91 paragraph 4c(7). A *Flightfax* article will follow the consolidation message with illustrations and further guidance on the use of appropriate forms.

■ The only black spot target authorized for use

has a machine-printed NSN 5855-01-305-9524 in the lower right corner and "Do Not Reproduce" in the lower left corner. Stock for the target has been contaminated with targets that have the wrong spot sizes. These defectively produced targets have the NSN handwritten in the lower corner.

#### Points of contact

POCs for this message are:

■ PM-NVEO, Mr. Glen Nowak, DSN 656-3277/4277, commercial 703-806-3277/4277, FAX 703-806-3284.

■ Aviation Training Brigade, MW4 Rodney Rowe, CW4 Malcolm Colbert, or SFC Sherman Loney, DSN 558-5858/5812, commercial 205-255-5858/5812.

■ CECOM, Mr. Jay Hanrahan, DSN 992-0084, commercial 908-532-0084.

■ ATCOM, supplemental lighting, Ms. Kelly Jeanotte, DSN 693-1130, commercial 314-263-1130.

■ ATCOM, Mr. Brad Meyer, DSN 693-2085, commercial 314-263-2085.

■ After hours, ATCOM Command Operations Center, DSN 693-2066/2067, commercial 314-263-2066/2067.

■ Night Vision Forward Office for U.S. Army—Europe, Mr. Larry Marshall, DSN 370-3618, commercial 49-6221-57-7618.

■ Army Safety Center, MW4(P) Robert A. Brooks, DSN 558-3262, commercial 205-255-3262. ♦

## Aviators needed

The U.S. Army Aeromedical Research Laboratory (USAARL) at Fort Rucker, Alabama, is in the process of conducting a variety of research protocols. Aviator volunteers are needed to participate in these studies.

Many of these studies will require a 2-week commitment. And participants will be able to acquire either simulator or aircraft time, depending on the study.

Temporary duty funds and travel funds will be provided by USAARL on a case-by-case basis. Anyone interested in participating in the research should contact Mr. Larry Woodrum, DSN 558-6834, commercial 205-255-6834. ♦

# UH-60 configurations

**W**ith the introduction of various configurations of the UH-60, how does the operator know how the aircraft is configured and what capabilities the aircraft has based on that configuration? The following information should help answer many questions that are currently circulating among the UH-60 community concerning the operators manual, TM 55-1520-237-10. This STACOM does not take precedence over any limitations in the TM; this is a summary of the information in the operators manual.

**UH-60A.** UH-60A aircraft with serial numbers 77-22715 through 82-23748 were produced without the external stores support system (ESSS) hardpoints and the improved airspeed sensing canted (wedge-mounted) pitot tube installation. These aircraft cannot accept the ESSS installation and may have up to a 10 KIAS error when operating at high gross weights. These aircraft are scheduled to be modified to the upgraded configuration with the canted pitot tube installation beginning in FY 93 and the ESSS hardpoints at some future date.

If the UH-60A does not have the wedge-mounted pitot tubes, then the aircraft can be operated to a maximum gross weight of 20,250 pounds.

If *both* engines on your UH-60A have the stud mount balancing modification work order (MWO) applied (verified by a review of the historical records) along with the installation of the wedge-mounted pitot tubes, then the aircraft may be operated up to a gross weight of 22,000 pounds. If the application of the stud mount balancing MWO to *both* engines cannot be verified and/or the wedge-mounted pitot tubes are not installed, then the aircraft is still restricted to 20,250 pounds.

UH-60A aircraft with serial numbers 77-22715 through 84-23934 were produced without the hover infrared suppressor system (HIRSS) or hardpoints. The hardpoints for the HIRSS were incorporated on serial numbers 84-23935 and subsequent, and the completed HIRSS was incorporated on serial numbers 87-24583 and subsequent. Retrofit actions are currently in progress to equip all remaining UH-60A aircraft



with HIRSS.

At the present time, UH-60A aircraft do not have biased tail rotors and, therefore, must operate according to paragraph 5-25d(2) of the operators manual. On 5 January 1993, the Aviation and Troop Command issued an aviation safety action maintenance mandatory message that incorporates biasing of the tail rotors of all UH-60A and L series aircraft. This will allow for sideward and rearward flight limitations in paragraph 5-25d(1) and eliminate figure 5-5.

**UH-60L.** Currently there are two versions of the UH-60L aircraft. All UH-60L aircraft are equipped with engine drive shaft balance bolts (stud mount balancing). Retrofit kits are now being applied to all UH-60A aircraft. All UH-60A and L series aircraft with *both* engine drive shafts balanced within 0.5 inches per second (along with the wedge-mounted pitot tubes) are authorized to operate at up to 22,000 pounds gross weight.

The *unplacarded* UH-60L, production models from serial numbers 91-26354 to the present, have the wedge-mounted pitot system, engine stud mount balancing, ESSS hardpoints, HIRSS, tail rotor bias, and the improved main rotor flight controls. Operators of this particular version may apply the torque limits of 120-percent dual engine at or below 80 KIAS and 100-percent dual engine above 80 KIAS. In addition, the sideward and rearward flight limit chart in figure 5-5 does not apply. For sideward and rearward flight, refer to paragraph 5-25d(1).

*Note 1:* All UH-60Ls prior to serial number 91-26354 (placarded aircraft) are restricted to the placard limits until scheduled retrofits can be completed. Retrofits, which will involve the installation of the improved strength main rotor flight controls, are scheduled to start in FY 93.

Note 2: Those UH-60Ls prior to serial number 91-26354 (placarded aircraft) operating under an airworthiness release (AWR) will continue to operate according to the provisions of the AWR until the provisions of the AWR are incorporated into the operators manual or the AWR is rescinded.

The placarded UH-60L aircraft will be operated according to the placard torque limitations regardless of airspeed. If the tail rotor is biased, then refer to paragraph 5-25d(1); otherwise, the sideward and rearward flight limits in figure 5-5 apply. These restrictions are due to the increased load levels and increased antitorque requirements at the higher torque settings.

Under the present configuration-management system, there is no positive way to know precisely how a particular UH-60A or L series aircraft is configured (that is, stud mount balancing, tail rotor biasing, or improved main rotor flight controls) unless it can be verified

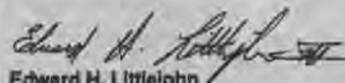
through a research of the aircraft historical records. Without proper verification of the configuration, one can only assume these MWOs have not been applied and the aircraft would be restricted accordingly.

If additional information is required, Directorate of Evaluation and Standardization point of contact is CW3 Richard Gotz, ATTN: ATZQ-ESF, Fort Rucker, Alabama 36362-5208, DSN 558-2442/6309, commercial 205-255-2442/6309. ♦

STACOM 157

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Prepared by the Directorate of Evaluation and Standardization, USAAVNC, Fort Rucker, AL 36362-5208, DSN 558-6309/3504. Information published here generally precedes the formal staffing and distribution of Department of the Army official policy. This information is provided to all commanders to enhance aviation operations and training support.



Edward H. Littlejohn  
COL, Aviation  
Director, DES

## Update on release of chlorofluorocarbons/Freon

In June 1992, Aviation Systems Command (AVSCOM) issued an aviation safety action informational message concerning the use of recovery/recycle equipment on all air-conditioning or refrigerant systems that use chlorofluorocarbons (CFC)/Freon (UH-60-92-ASAM-04, 161330Z Jun 92). The content of the message also appeared in article format in the August 1992 issue of *Flightfax*.

The original message and subsequent *Flightfax* article contained an error. Paragraph 4d(4) of the message and bullet four of the *Flightfax* article state "Inform units that the MOS to be trained for this equipment will be 67T." The statement in the message and the subsequent article should have read "Inform units that the MOS to be trained for this equipment will be 52C."

An agreement that 52C is the MOS to be trained was reached by the Environmental Protection Agency and the Army during negotiations to determine who is eligible for certification to use the recovery/recycling equipment. To ensure that intermediate level maintenance units will have the required personnel, a check was made of the

modified table of organization and equipment to verify that these units are authorized both MOS 67T and 52C.

Information pertaining to points of contact (POCs) has been updated due to the reorganization of Troop Support Command and AVSCOM into one command, Aviation and Troop Command (ATCOM). For information concerning training and certification conducted by ATCOM logistics assistance representatives, contact Mr. Helmuth Ruppe, DSN 693-1221, commercial 314-263-1221. The POCs for other issues are Mr. James Vincent or Mr. Terry Blackmore, DSN 693-3266, commercial 314-263-3266.

The limited resources of recovery/recycle equipment that were available to ATCOM have been exhausted. Recovery/recycle equipment, NSN 4130-01-338-2707, can be requisitioned as a stock fund item from the Defense Logistics Agency, Defense General Supply Center, Richmond, VA.

—POC: Mr. Terry Blackmore, ATCOM, Weapon Systems Management Office for Environmental Control & Refrigeration Equipment

**Information based on preliminary reports of aircraft accidents**

**Utility**

**UH-1 Class D**

H series - About 2 minutes into hover taxi, crew heard engine wind up and noticed engine tachometer needle drop to zero. Rotor tachometer needle climbed to 7,000 on engine scale, and crew entered autorotation. Inspection revealed overspeed governor and tachometer drive assembly had failed.

H series - Crew started engine with main rotor blade tied down. At about 35 percent N1, tiedown broke and blades began to rotate.

Tiedown rod, still attached to main rotor blade, hit tail rotor blades during 5 to 10 rotations before main rotor blades stopped.

**UH-1 Class E**

V series - During IMC flight and while descending through 3,000 feet MSL at 400 feet per minute and in a 10-degree left bank, aircraft experienced severe right 30-degree yaw. Rotor and N2 RPM increased, engine noise increased, and RPM warning light came on. PC took controls and reduced throttle with no effect on

RPM. PC then placed governor switch to emergency position and maintained manual throttle control. Crew saw N2 at 6900 RPM, and it appeared pegged at gauge limit. All other systems were within limits. Highest N1 reading was 92 percent. Crew declared an emergency and was given radar vectors for final approach to destination. Inspection revealed overspeed governor had failed

**UH-60 Class C**

A series - While on approach to land at tactical LZ, aircraft encountered brownout and crew lost visual reference with LZ. Pilot took controls and initiated go-around. On climbout, main rotor blades struck trees along left side of road.

aircraft stating that they saw glowing chunks and sparks coming from exhaust. Crew landed aircraft without further incident and performed emergency shutdown. Inspection revealed bolt and washer in improved particle separator and shank of bolt in compressor section.

**AH-64 Class A**

A series - During night vision system zone reconnaissance training mission, aircraft experienced tail rotor malfunction and settled into trees. Aircraft came to rest on its left side. Main rotor system was destroyed, tail rotor was destroyed, left wing was torn off, and one canopy was broken. No injuries. 9312

**AH-64 Class C**

A series - While in climb at about 15,600 feet density altitude and 60 knots during experimental test flight, crew felt high-frequency vibration throughout aircraft. Crew elected to terminate testing and return to airfield. During descent, about 20 seconds after vibration began, crew heard loud bang and vibration stopped. Crew performed controllability check with normal responses, and chase aircraft saw no visible damage to aircraft. At onset of vibration, master caution light had come on briefly but extinguished before crew

**Class A Accidents through January**

	Month	Class A Flight Accidents		Army Military Fatalities	
		FY92	FY93	FY92	FY93
1st Qtr	October	1	6	0	2
	November	3	2	4	6
	December	1	1	0	0
2d Qtr	January	3	1	0	0
	February	1		0	
	March	4		2	
3d Qtr	April	1		0	
	May	1		1	
	June	2		2	
4th Qtr	July	2		1	
	August	1		0	
	September	2		0	
	<b>Total</b>	<b>22</b>	<b>10</b>	<b>10</b>	<b>8</b>

**Attack**

**AH-1 Class C**

F series - During hot refueling, refueler removed fuel nozzle from port and fuel sprayed on side of aircraft. Exhaust ignited fuel. Pilot, who was standing fireguard, extinguished fire with fire extinguisher.

F series - While performing maintenance test flight hover operations, TGT rose past 950°C and torque rose from 72 to 90 percent. Both crewmembers noticed burning odor throughout cockpit. Another aircraft and control tower made radio calls to

could identify accompanying segment light. No other warning or caution segment lights came on for remainder of flight. Crew elected to perform high-speed run-on landing in case problem involved tail rotor or flight controls. After landing, high-frequency vibration returned and pilots smelled smoke in cockpit. Crew completed emergency engine shutdown. Inspection revealed major damage to aircraft. Investigation continues.

#### **AH-64 Class D**

A series - As aircraft was approaching rearm pad, tail wheel struck concrete culvert. Crew felt jolt and immediately landed aircraft. Neither crewmember nor ground guide could see culvert, which was in 3-foot drainage area and obscured by tall brush. Inspection revealed minor damage to tail wheel assembly. Rearm pad was relocated and hazard marked.

#### **Cargo**

#### **CH-47 Class D**

D series - On post-flight inspection, crew discovered No. 1 tunnel cover was missing. Further inspection revealed damage to No. 2 sync shaft. Suspect crew chief failed to secure tunnel cover, and PC failed to physically ensure security of all cowlings and covers during preflight.

#### **CH-47 Class E**

D Series - During take-off, crew chief noticed fluid coming from for-

ward pylon area. Crew made precautionary landing. During shutdown, oil was running out of forward yellow blade pitch varying housing. Further inspection revealed inner seal had failed.

#### **Observation**

#### **OH-58 Class B**

D series - During NVG landing to ship, pilot gave direction for "no more slip left." PC either did not hear or misunderstood. Aircraft continued to slip left and struck ship's landing light extension pole. Aircraft sustained extensive damage to all four main rotor blades, drive shaft, and 45- and 90-degree gearboxes.

#### **OH-58 Class E**

A series - At NOE altitude, crew increased collective from about 70 to 80 percent torque. As torque increased, N2 drooped to about 94 percent, activating RPM warning light and audio. Crew reduced collective and landed aircraft. Inspection revealed linear actuator was out of rig.

A series - While in cruise flight, pilot began acceleration to Vne and applied too much collective, resulting in over-torque of 102 percent for 2 seconds. IP reduced collective and made precautionary landing.

#### **Messages**

■ Aviation safety action maintenance mandatory message concerning one-time inspection of cartridge-

type fuel boost pump system on all OH-58D helicopters (OH-58-93-ASAM-05, 121400Z Jan 93). Summary: An incident has occurred where the shut-in arm of the cartridge-type fuel boost pump was found bent. This condition is unacceptable and may result in power loss or flameout because of a restriction of the fuel flow. The aircraft involved also had a defective fuel pressure switch, and the fuel-boost-fail caution message may not have been activated. The purpose of this message is to require a one-time inspection of the cartridge-type boost pump and fuel pressure caution system. Contact: Mr. Roger H. Heidenreich, DSN 693-2285, commercial 314-263-2285.

■ Aviation safety action maintenance mandatory message concerning recall of suspect fuel hoses that may be installed on OH-58A/C and H-6 series aircraft with T63-A-720 engines (OH-6-93-ASAM-06 and OH-6-93-ASAM-01, 121600 Jan 93). Summary: TB 1-2840-241-20-11 (SOF messages OH-58-92-04/OH-6-92-03) was published to recall 50 T63-A-720 fuel hose assemblies, P/N 23005205 (TM 55-2840-241-23 & P, figure 12, item 29), that may have been manufactured incorrectly. Although TB 1-2840-241-20-11 has been rescinded, all suspect hoses must still be replaced.

The suspect hoses may have an internal

leak that could allow fuel to leak from the center Teflon core and result in bulging of (and possible leakage from) the rubber fire sleeve. The fuel leakage is a potential fire hazard. The purpose of this message is to remind users that not all hoses from the lot number identified in this message have been returned to the contractor, and users are to replace these suspect hoses on T63-A-720 engines that bear serial numbers as listed in this message. Contact: Mr. Lyell Myers, DSN 693-2258, commercial 314-263-2258.

For more information on selected accident briefs, call DSN 558-3262, commercial 205-255-3262.

#### **Followups**

Information on accidents previously reported

#### **UH-1 Class A**

Reported in April 1992 issue as 9216 - While air taxiing into tactical parking area, PC made improper decision to land abeam another operating aircraft without having a visual, fixed reference point to use in maintaining clearance from the other aircraft. Without a visual reference point and without receiving clearance information from right-seat pilot, PC lost sight of other aircraft in blowing snow. Ground track carried aircraft too close to aircraft operating at engine idle in its designated parking area. As aircraft settled into loose snow, its rotor blades contacted rotor blades of parked aircraft, causing

extensive damage to both aircraft. Crew had just completed cold refueling in subzero temperatures and were extremely uncomfortable. PC was anxious to secure the aircraft and move out of the cold.

### AH-64 Class A

Reported in December 1991 issue as 9205 - During a day VFR post-phase general maintenance test flight (MTF), crew had completed rotor track checks and determined results were satisfactory. For autorotation RPM check, MP directed pilot to climb to 3,500 feet pressure altitude (PA) and maintain airspeed of 80 knots. Once established on downwind leg for selected emergency landing area, pilot transferred controls to MP. After confirming less than 54 percent dual engine torque, MP repositioned No. 2 engine power lever to idle position. No. 2 engine Ng (N1) readings indicated engine was still running. On final approach, heading 270 degrees, MP entered autorotation by lowering collective. Triple tachometer indicated Nr of 98 percent. Aircraft was at 80 knots and in trim. MP then repositioned No. 1 engine power lever to idle position. As aircraft descended through 2,000 feet PA, Nr was recorded as 94 percent. At about 1,500 feet PA, MP recovered aircraft by repositioning both engine power levers to fly position. While MP was advancing power levers, Nr continued to decrease

well below normal operating RPM. Automatic stabilator horn sounded, indicating that generators had come off line because of low rotor RPM. MP observed airspeed between 65 and 70 knots and pushed forward on cyclic in an effort to regain airspeed. MP stopped both engine power levers about 1 inch from fly position because he feared an engine overspeed. At about 200 feet PA, MP applied small amount of collective pitch to clear wires. MP then decided to commit to full touchdown autorotation. He lowered collective pitch and repositioned both engine power levers to idle position. Impending impact point appeared to be in tree line on upwind edge of selected emergency landing area. To clear tree line, MP again applied collective pitch and changed aircraft heading about 50 degrees right, attempting to land in small cotton field. MP misjudged autorotative glide angle because of a lack of unit training in executing autorotations from altitude to unimproved areas—even with power recoveries. (This was also MP's first postphase general MTF.) As the aircraft began to descend into 75-foot-tall pine trees, MP applied remaining collective pitch to cushion the touchdown. Aircraft impacted ground in nose-low attitude with almost no forward momentum and came to rest upright on its three landing gears.

### OH-58 Class A

Reported in March 1992 issue as 9214 - At 20 to 30 feet above trees and 20 to 40 knots while en route to tactical landing area on ridgeline, aircraft experienced malfunction of engine fuel control (P/N 2524911-4). Pilot observed low rotor RPM light and heard audio warning when engine lost power and main rotor RPM started slowing. Crew regained rotor RPM by reducing collective in descending right turn toward clear area at lower elevation. Rotor RPM warning light and audio again activated during approach to intended landing area. Pilot attempted low-level autorotation, which terminated approach short of intended landing area with resultant hard landing and major aircraft damage. Subsequent testing of fuel control duplicated malfunction, but teardown analysis failed to determine exact cause. Due to aircraft history and condition of fuel pump, it is suspected undetected sand in fuel control caused malfunction.

### C-12 Class B

Reported in December 1991 issue as 9207 - During roundout for power approach precision landing, crew heard unusual scraping and ticking sound and noticed aircraft fuselage was lower to ground than normal. Crew then realized landing gear was not extended and a safe go-around could not be accomplished. Pilot held aircraft off runway

as long as possible and then touched down in level attitude. After aircraft slid to stop, crew shut down engines and egressed through main exit. During traffic pattern flight, IP had failed to follow procedures. He did not orally call out checklist items and verify action using pilot's checklist IAW TM 55-1510-221-10, paragraph 8-10. As a result, landing gear was not extended during before-landing checks and illumination of landing-gear-down indicator lights was not verified during landing check. After observing illumination of red landing gear warning light, IP still did not recognize that it indicated a gear-unsafe condition. Pilot also failed to associate light display with an unsafe condition. Therefore, crew allowed aircraft to land without landing gear extended.



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A handwritten signature in black ink, appearing to read "R. Dennis Kerr".

R. Dennis Kerr  
Brigadier General, USA  
Commanding General  
U.S. Army Safety Center