

Flightfax

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REPORT OF ARMY AIRCRAFT ACCIDENTS



We must stop the BLEEDING!

During the first quarter of FY 93, the Army experienced nine Class A aviation flight accidents that resulted in 10 fatalities. That was four more Class As and six more deaths than for the same period last year. The questions are what happened, can we fix it, and are we going to get back on track with our responsibilities in force protection? Our leaders from sergeants to generals are busy identifying hazards and reducing risks. And with individuals of all ranks accepting responsibility for accident prevention and striving to repeat the outstanding year aviation experienced in FY 92, we can stop the bleeding.

The FY 92 record

During FY 92, there were a total of 22 Class A flight accidents, compared to 49 in FY 91 and 32 for the previous 3-year average (FY 88-90). This produced an

accident rate of 1.57, compared to 3.77 for FY 91 and 1.86 for the previous 3-year average. FY 92 was a great year in Army safety. Both the low number of Class A flight accidents and the low rate made the FY 92 record the new safety standard for the Army—a truly super job by all.

First quarter of FY 93

Then came 1 October 1992. We experienced nine Class As in less than 90 days. Soldiers' lives were being lost and precious resources damaged or destroyed at an alarming rate.

The red flags went up when analysis revealed that of these nine major accidents, only two (another remains under investigation) resulted from materiel failure—the remainder were the direct result of human error. And the same problem areas identified in previous human-error accidents (see article page 3) continued to persist. What happened to all of the

effective prevention tools we used last year? How could the trends reverse so quickly? I do not have scientific data to support my thoughts on these questions. But I believe it had something to do with personnel turbulence, changes in leadership positions and unit locations, and the fall increases in OPTEMPO. Combined, these circumstances caused us to let our guards down, and the results have not been good.

Although FY 92 had also started off a bit shaky, we were able to get our arms around our operational and personnel problems and achieve high goals and set new benchmarks for safety. But before we had time to enjoy the results of our accomplishments, we had already started an upward trend for FY 93. The eight Class A flight accidents within the first 45 days of FY 93 was much worse than anything since FY 84.

Senior leaders became concerned, and rightfully so. The Chief of Staff of the Army, General Gordon R. Sullivan, issued a message (see December 1992 *Flightfax*) urging leadership at all levels to accept the "challenge to reverse this accident trend and make FY 93 another safe year for soldiers."

Commanders at all levels are busy analyzing reports, data, and procedures and refocusing on the prevention process. Prompt action on the part of leaders and individuals at every level will help us redirect our attention to the requirement to perform every mission to standard.

A shared responsibility

Safety and accident prevention are shared responsibilities that everyone must accept in order to "protect the force." And a major part of force protection is declaring war on human-error accidents. But it's not a war that can be fought single-handedly. It takes a concerted effort from both elements of the safety equation—leaders and individuals. And it cannot be fought only once—it's an every day, 24-hour-a-day battle.

■ **Leaders.** Leaders must know their soldiers' and their unit's capabilities and limitations and pace their OPTEMPO and mission complexity accordingly. Safety begins with the command climate and the commander's approach toward safety. It then relates to the NCOs, officers, and troops and how they individually and collectively make safety part of everything they do. When safety is fully integrated into the Army's functions of acquisition, doctrine, training, sustainment, and warfighting, then "protection of the force" has direction. When it works, leaders ensure that risk management is being used and that proper risk assessments are completed before every mission. Do the benefits of performing the task really outweigh the potential costs?

Leaders at all levels must do what leaders are

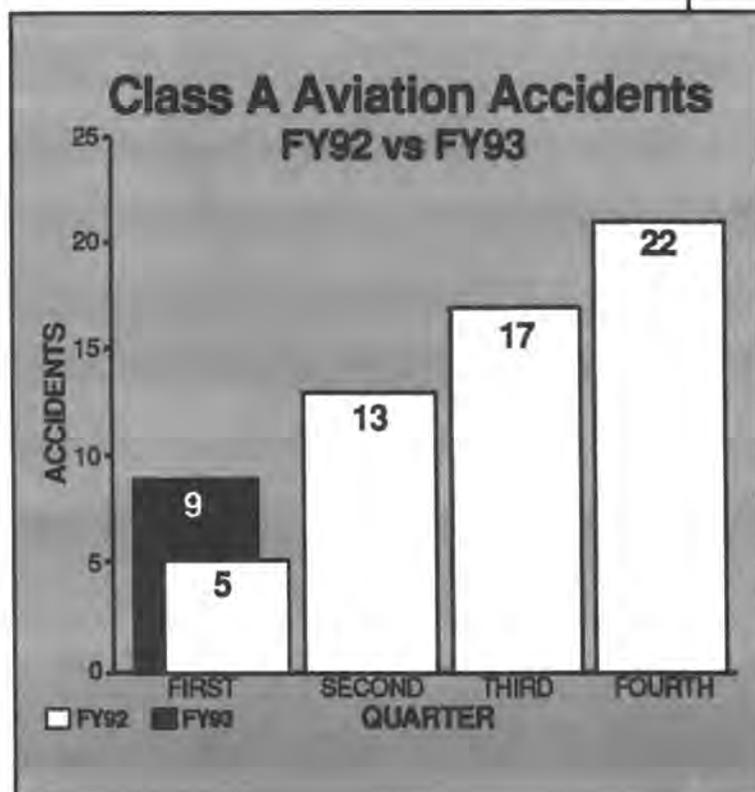
supposed to do: *lead*. Set the example by being safety conscious and demand involvement of everyone. Be a leader who is ready, willing, and able to enforce the standards, even when it is tempting to let minor violations slide. You might not win any points in the popularity contest, but you could save a life by stopping minor violations that, left unchecked, could escalate into a serious accident.

■ **Individuals.** Faced with the Army drawdown and uncertain careers, soldiers may have become preoccupied in some cases, causing safety to be left out. The downsizing is also resulting in more senior leaders retiring and leaving the service early, putting more responsibility on the shoulders of our junior work force. The answer is for everyone to understand that we all have a responsibility when it comes to safety—not just commanders and safety officers.

Professionalism and self-discipline are essential to preventing individual failures that result in accidents. Crewmembers in aircraft and soldiers in flight platoons and maintenance hangars are the ones who hold the keys. Each individual must exhibit the courage to follow the standards, even when nobody is watching. Soldiers must also care enough to ensure their fellow soldiers do the same. When you see violations or shortcuts being taken, you have the moral responsibility to do something about it. You could prevent the next accident. That is what the buddy system is all about.

The weapons

The weapons are in place to help us fight the war on



human-error accidents. Danger lurks in the environments in which we train, with poor crew coordination and complacency taking their toll this year. There is sufficient policy, procedure, and regulatory guidance to ensure we can perform missions safely. And we're rapidly spreading the word on the benefits of proper risk management. Daily we're instructing soldiers in risk management techniques that will help them identify and manage hazards and reduce human-error accidents. What we need now is strict self-discipline and professionalism to follow these known procedures.

Of course, we would have liked for FY 93 to be the milestone year in which our Class A aviation flight accident rate dropped below 1 percent per 100,000 flying hours. But rates are just numbers. Far more important than getting a rate down, we must continue to increase our safety awareness, integrate safety into our daily operations, and stop these preventable accidents that are injuring and killing our people and destroying our equipment. Help us keep safety in the METL business, and we can stop the bleeding. ♦

—BG R. Dennis Kerr, Director of Army Safety

Human error in Class A aviation flight accidents

The same problem areas identified in previous human-error accidents continued to persist in the FY 92 and early FY 93 Class A flight accidents. These problem areas include failure to effectively—

- Scan the flightpath
 - Maintain or recover orientation
 - Coordinate with other crewmembers
 - Perform adequate preflight planning
 - Perform adequate in-flight planning
 - Diagnose and respond to emergencies
 - Detect and avoid hazards or obstacles
 - Estimate distance and rate of closure
- Of these hazards, crew coordination failures and

inadequate preflight mission planning and briefing account for 46 percent of the 22 FY 92 and the first 8 FY 93 Class A flight accident causes. Improving pre-mission planning and briefing may make a major improvement in crew coordination. By assuring that all crewmembers are briefed on each aspect of the mission and know exactly what they are expected to do, everyone will be able to take an active role and assume responsibility for mission success. In turn, improved crew coordination can reduce accident-causing mistakes such as channelizing attention (failure to scan), failing to detect hazardous conditions, and diagnosing and responding to emergency conditions improperly. ♦

Another look at FY 92

In FY 92, the Army experienced 22 Class A aviation flight accidents, all of which except one involved loss of life, destruction of the aircraft, or both. However, a closer look at these 22 accidents reveals that only 5 (23 percent) were caused by materiel failure of the aircraft itself—mostly engine failures. Two more accidents involved failure of the aircraft to operate as designed, combined with human errors. All together, materiel failure was involved in only 7 (32 percent) of the 1992 Class A aviation flight accidents. (In one OH-58D accident in which both crewmembers were killed, the cause(s) of the accident could not be determined.)

Crew-error accidents

As usual, most of the FY 92 Class A accidents—15 or more than two-thirds—involved crew error. One other accident involved errors by civilian personnel

who improperly assembled and installed an aircraft component.

■ *Individual failures.* Accident investigations revealed that individual failures accounted for 47 percent of all crew errors that caused or contributed to these Class A accidents. Individual crewmembers knew the proper ways to perform the tasks but chose—for their own reasons—not to perform to the known Army standards. Failures by individual aircrewmembers who are trained to standard but elect not to perform to standard constitute the single largest source of the Army's Class A aviation flight accidents.

■ *Inadequate unit training.* The second largest source of crew error was inadequate unit training. In 25 percent of the FY 92 Class A aviation flight accidents, crewmembers were assigned missions and

attempted to perform tasks for which the unit had not properly trained them or had not provided adequate experience.

■ **Inadequate leadership, standards, and support.** Of the remaining 28 percent of the 1992 crew-error accidents, inadequate leadership (usually at the company/troop or battalion/squadron level) accounted for 18 percent, inadequate standards for 6 percent, and inadequate support for 4 percent.

So, while almost half (47 percent) of the crew errors must be attributed to individual crewmembers who knew how to perform to standard but did not, slightly more than half (53 percent) of the crew errors must be attributed to inadequate unit training, leadership, standards, and support.

If these sources of crew error had been eliminated, at least 59 percent and perhaps as much as 73 percent (includes the OH-58D with unknown causes) of the Class A flight accidents in FY 92 would not have occurred.

Can we improve on the FY 92 record?

That question is *very* difficult to answer because so many factors must be considered. FY 92's Class A flight accident rate of 1.57 per 100,000 flight hours, the lowest ever, was the result of a lot of hard work on the part of commanders at all levels, aircrews, maintenance personnel, and others to plan and execute missions following the risk management process. Even then, we still experienced 22 Class A

accidents.

We expect Armywide efforts to protect the force to remain at very high levels. But even with better and better applications of safety countermeasures aimed at identified hazards, it's still going to take significant effort—and maybe even some good luck—to beat our low accident rate set in FY 92. For warfighters, that good luck is enhanced by training to standard and ensuring that safety is in the METL business for individual, crew, and unit tasks.

No question about it, we'll continue working hard and our goal will always be to reduce accidents. But remember, the Class A rate has dipped below 3.0 only 12 times in the last 20 years and below 2.0 only 5 times. The average rate for the 10 years before FY 92 was 2.46 and 2.30 for the last 5 years before FY 92. These figures illustrate the dramatic reduction in the accident rate that 1.57 for FY 92 represents.

Performance to Army standards by individuals who assume more personal responsibility for safety and management of the risks associated with each mission will result in more effective and safer training. When *every* individual unit member becomes proficient in applying the risk management process and principles to each mission, then we'll see fewer human-error accidents. Then perhaps we will be able to get our Class A flight accident rate to approach 1.0 or less per 100,000 flight hours. ♦

Attention all maintenance personnel and test pilots

The Aviation Vibration Analyzer (AVA) is the newest piece of diagnostic equipment used for rotor tracking and balancing the Army's helicopter fleet. The AVA joins, and will replace, the Chadwick Helmuth Vibrex 177A and the Helitune as the only authorized rotor vibration analyzers for use on Army helicopters.

Since delivery of the first AVA kit to the field, several software changes have occurred. The purpose of this article is to ensure that every AVA user knows the current software available for each aircraft, to advise the field of some of the problem areas with the AVA, and to provide instructions for obtaining assistance with AVA equipment failures.

Current software

The current operating software version (displayed on the main menu screen) is the Rotor Analysis Diagnostic System—Advanced Technology (RADS-AT) VERSION 3.10CC35D, and the software by aircraft type is—

Aircraft Type	Software Versions
UH-60	UH60 5.5.1.1 R
UH-1H	UH1 1.23 R
OH-58A/C	OH58AC 5.4 R
OH-58D mast-mounted sight off	OH58D 5.3 R
OH-58D mast-mounted sight on	OH58DM 5.3 R
AH-64	AH64 1.23 R
CH-47	CH47 5.1 R
AH-1 Kaman blades	AH1S 1.22 R
AH-1 Kaman blades and stainless steel pitch change links	AH1SS 1.1 R
AH-1 540 blades	AH1SM 1.8 R
AH-1 540 blades and stainless steel pitch change links	AH1SSM 1.1 R

To obtain the current software updates for your AVA, call Mr. Bob Branchhof, DSN 693-2484, commercial 314-263-2484.

Problem areas

Units using the AVA on two-bladed main rotor systems should be aware of possible erroneous solutions provided by the diagnostics when both red and white blades display a "Y" in the edit adjustables page. To correct this problem, continue to use the AVA but turn off one of the blades using the toggle blade option (F3) on the edit adjustables page, and press DO to obtain a workable/usable diagnostic solution. If the blade that was chosen to be toggled off still requires some sweep, the AVA will automatically turn the sweep back on for this blade and will give the correct solution with no further operator input required. This is a normal function of the AVA program, which will not allow forward sweep in the diagnostic solutions. *Note:* Every time the AVA enters diagnostics, it returns to the default settings with both blades turned on.

There has been some confusion with the AH-1 programs on the pitch link adjustments. The adjustments are correct: (+) means increase the length of the pitch change rod, which will bring track down, and (-) means decrease the length of the pitch change rod, which will bring track up.

The UH-60 high-speed shaft photo cell bracket, P/N 29328300, (included in the UH-60 adapter kit) requires a modification that can be done at the user level. This modification information can also be obtained by calling Mr. Bob Branchhof.

Assistance with equipment failures

If assistance is required with the AVA components,

contact Scientific Atlanta at 1-800-VIB-ARMY. If it becomes necessary to return an AVA kit for repair, use the following procedures:

- Submit a Quality Deficiency Report (SF 368) for equipment failures of individual components.

- Obtain a return merchandise authorization (RMA) number from Scientific Atlanta.

- Ship unit or units that are agreed upon per the RMA number.

- If the repaired item(s) are not returned within 30 days, contact Scientific Atlanta, using the 1-800-VIB-ARMY number.

Points of contact

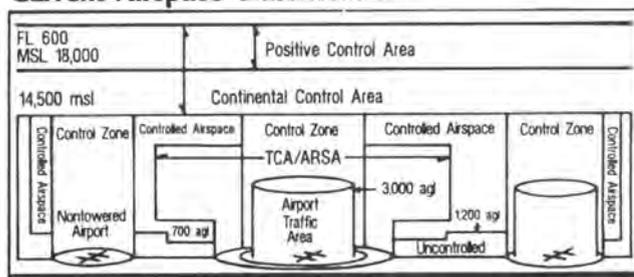
For further information regarding the use of the AVA, contact the Directorate of Evaluation and Standardization at Fort Eustis, VA, DSN 927-3266, commercial 804-878-3266, FAX extension 4164. For AVA training questions, points of contact and telephone numbers for aircraft specific sections within the Maintenance Manager or Maintenance Test Pilot Course at Fort Eustis are as follows:

Aircraft	Point of Contact	DSN
OH-58A/C	CW4 Bruce Bulger	927-3721
CH-47	CW4 Brad Johnson	927-5326
AH-1	CW4 Paul Petrakis	927-3482
AH-64	CW3 Bill Barron	927-1643
UH-1	CW3 Hal Dawkins	927-2605
UH-60	CW3 Gary Helson	927-4224
OH-58D	CW3 John Moltenberry	927-3721

Correction

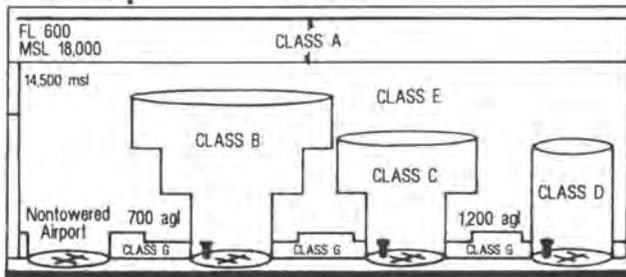
On page 6 of the November 1992 issue of *Flightfax*, the two charts showing FAA airspace classifications were incorrectly captioned and the effective date of the second chart was incorrect. The new airspace classification charts began appearing on 15 October 1992 and will become effective on 16 September 1993. The graphics with the correct captions are shown below.

Current Airspace Classification



msl - mean sea level
agl - above ground level
FL - flight level

New Airspace Classification



AAAA national individual award winners—*May*

Advanced composite materials (ACMs pose a danger to people exposed to aircraft crash sites)—*April*

A commander's safety philosophy (example of excellent safety philosophy statement)—*September*

A good safety program (elements of)—*September*

AH-1 midair collision (accident review)—*November*

AH-1 performance planning and directional control margin (STACOM 152)—*June*

AH-1 performance planning and directional control margin (tail rotor authority)—*June*

Air/Sea Rescue Award (CW3 Julian Council and CW3 Scott Berrier receive Lucas Aerospace-sponsored AAAA award for rescuing two downed aviators)—*May*

Airworthiness release for C-12C, C-12D, and C-12F—*July*

Airworthiness release needed for GPS—*March*

Alcohol and flying (the 48-hour rule)—*March*

A matter of judgment (with only one operative engine, crew elected to fly to destination rather than land at nearest airport)—*January*

Apaches strike wires (accounts of two AH-64 wire strikes during FY 91)—*June*

Army losses approaching \$1 billion per year (combined costs of accidents continue to rise; risk management is key to preventing continued losses)—*December*

Attention aviation safety officers (ASO submits makeup session idea for those who miss monthly safety meeting)—*May*

Attention Black Hawk crews (need for single-engine operation flight planning procedures and

proper engine cleaning deemphasized)—*November*

Attention medevac commanders and standardization officers (Medical Service Corps advisor for DES name and telephone numbers)—*April*

Attention NCOs (Aviation Accident Prevention Course for NCOs scheduled)—*January*

Aviation Accident Prevention Course schedule for FY 93—*October*

Aviation logistics corner (information adapted from *Aviation Logistics Newsletter*)—*March*

Aviation Night Vision Goggle Operations—*Desert Environment* (new NVG video available)—*February*

Aviation procedures that are most frequently violated (results of study)—*October*

Aviation safety action messages

■ CH-47D, MH-47D, and MH-47E one-time inspection of generator wire harness at the fire extinguisher discharge tube—*January*

■ CH-47C, CH-47D, MH-47D, and MH-47E rescission of airworthiness releases on tank assembly, 85SDSCC-D-0007-4, and related information—*January*

■ H-60 aircraft inspection for three unserviceable spindle assemblies—*February*

■ CH-54A one-time inspection of vertical hinge pins—*February*

■ OH-58A/C and OH-6 inspection of the fuel controls and governors on T63-A-700/720 engines—*February*

■ OV-1D information on AN/AYA-10 signal data converter connector maintenance improvement—*February*

■ U-8F, BE-65 series, and B-80 aircraft and U-21A/D/G/H, RU-21A/B/C/D/H, and Beech A90 aircraft one-time and

recurring inspection of nose wheel steering link assembly internal self-locking nut and one-time visual inspection of the main landing gear assemblies for improperly installed drag links—*February*

■ OH-58D aircraft with T703-AD-700/700A engines require inspection of engine main fuel filter for fuel leaks—*March*

■ General NVG informational message on the dual visor on aviator helmets—*May*

■ General informational message concerning use of discrepant lots of Syn-Tech grease, P/N 3913-G1, on all Army aircraft—*May*

■ UH-1H/V aircraft sent to Operation Desert Storm, report of serial numbers needed for scheduling in STIR program—*May*

■ OH-58A/C/D improper installation of GPS—*May*

■ AH-1E and F aircraft modified per MWO 55-1520-236-50-12 one-time inspection of centrifuge particle separator assembly inner gasket for proper sealing and inactivation of the bypass door—*June*

■ CH-47D, MH-47D, and MH-47E aircraft one-time and recurring inspection of cross-shaft adapters—*June*

■ AH-64 procedure to inspect/replace 45-degree bulkhead elbow fitting for APU fuel and nitrogen inerting unit—*June*

■ OH-58A/C nonconforming washplate bearing pivot bolts—*June*

■ C-12 and RC-12 flight limitations when operating in icing conditions—*June*

■ UH-60A and EH-60A T700-GE-700 gas generator rotor turbine blade failures/engine cleaning, engine life-limited components tracking, and

single-engine flight planning procedures—**July**

■ AH-1E and F series aircraft modified per MWO 55-1520-236-50-12 revision to one-time inspection of the centrifuge particle separator assembly inner gasket for proper sealing and inactivation of the bypass door—**July**

■ C-12 and RC-12 windshield anti-ice operating instructions—**July**

■ AH-1 one-time and recurring inspection of the improved particle separator scavenge tubes—**August**

■ AH-64A main rotor stretched strap assembly removal—**August**

■ CH-47D, MH-47D, and MH-47E replacement of Hi-Lok fasteners in left and right butt line 18 beams at fuselage station 83 to 120—**August**

■ All H-6 series aircraft with T63-A-700-720 engines inspection of fuel systems—**August**

■ OV-1D/RV-1D one-time and recurring inspection of nose landing gear outer cylinder drag brace attachment lugs—**August**

■ AH-1 one-time inspection of Kaman 747 blades—**September**

■ OH-58A/C airframe fuel filter installation—**September**

■ UH-1 aircraft one-time and repeat inspection of 90-degree gearbox attachment fitting—**October**

■ H-60 series aircraft inspection and replacement of main rotor blade expandable pin—**October**

■ AH-1 emergency procedures for engine inlet air master caution segment light—**October**

■ OH-58D one-time inspection of tail rotor drive shaft bearings for lubrication holes—**October**

■ OH-58D correction on one-time inspection of tail rotor drive shaft bearings for lubrication holes—**October**

■ UH-1H/V one-time and recurring inspection of droop

compensator jackshaft assembly—**November**

■ H-60 Army aircraft one-time inspection for proper hardware on the pedal adjuster assembly—**November**

■ H-60 Black Hawk one-time operational check of the transmission and gearbox chip detector system—**November**

■ AH-64A inspection of the mast support base for corrosion and shear bolts for torque check—**November**

■ H-60 series aircraft inspection and replacement of main rotor blade expandable pin—**December**

■ AH-1 one-time and recurring inspection of pitch horn bushing—**December**

■ OH-58D one-time inspection of MMS cable standpipe assembly—**December**

■ OH-58A/C crew seat cover installation and replacement—**December**

Aviation safety (message from GEN Sullivan issuing challenge to make FY 93 another safe year for soldiers)—**December**

Aviation safety training (information on dates, locations, and POCs for aviation safety training presented by Army Safety Center)—**February**

Black Hawk crews get update on avoiding droop stop pounding—**July**

Black Hawk crews reminded of need for single-engine operation flight planning and proper engine cleaning—**November**

Broken Wing awards (recipients and synopses of emergencies for which awarded)—**January, March, April, June, July, October**

C-12 Class A accident (the Army's first)—**August**

C-12 crew elects to fly to destination rather than land at nearest airport even though they had only one operative engine—**January**

C-12 has outstanding record (not

a single Class A accident since 1975)—**January**

CH-47D and MH-47D extended-range fuel system tank assembly (seepage in vicinity of weld in tank skin)—**October**

CH-47 cargo hook accidents (review of two accidents where failure to follow established procedures and lack of communication led to injuries)—**July**

CCAD hot line and ESC support (information on hot line and requirements and procedures for reporting)—**April**

Chlorofluorocarbons/Freon (aviation safety action message)—**August**

Cold weather is on the way (now is the time to prepare)—**September**

Computers (use of portable ones on Army aircraft)—**June**

Congratulations Marne Eagles (10 years without a Class A aviation accident)—**October**

CPO cyclic lockout (interim guidance about flight with CPO cyclic in the lockout position)—**April**

Crashfax video available (reminder about video on *Surviving in the Wire Environment*)—**June**

Current NVG messages (list of current messages as outlined in GEN-92-ASAM-02, 192230Z Dec 91)—**February**

CY 91 *Flightfax* index—**January**

CY 91 STACOM index (STACOM 150)—**January**

Design failures result in human-error accidents (examples of designs recognized as having the potential to cause human-error accidents)—**September**

Design to reduce human error—**September**

Distribution of DA Form 759: Individual Flight Record and Flight Certificate—Army (STACOM 154)—**October**

Engine flushes required!

(accidents reveal engine flushes not being performed as required)—**November**

Entering the date of the Army Aviation Annual Written Examination (AAAWE) on DA Form, Part IV, Block 2 (STACOM 153)—**July**

Extended-range fuel system tank assembly on CH-47 and MH-47 aircraft (seepage in vicinity of weld in tank skin)—**October**

Failures lead to accidents (multiple individual failures led to UH-60 accident)—**April**

Flightfax index for CY 91—**January**

Flightfax 20 years old—**September**

Flu season requires preventive medicine (get your flu shot)—**December**

Followups (information on accidents previously reported)—**January, April, May, August**

Frustration, pride, and overconfidence—a deadly combination (AH-1 midair collision)—**November**

FY 91 safety report (review of accident statistics, problem areas, and countermeasures)—**February**

FY 93 Aviation Accident Prevention Course schedule—**October**

Good aviators die when...(lessons on wartime safety)—**March**

GPS (airworthiness release needed)—**March**

Guide to Aviation Resources Management and Aircraft Mishap Prevention (twelfth edition now available)—**June**

HEED inspections (suggested preflight and postflight inspection procedures)—**May**

HEED—make a decision (why do some helicopter crewmembers choose not to use their HEED bottle?)—**May**

HEED update (needed for multi-engine aircraft flights too and reminder about

training)—**May**

Inspection of OH-58/OH-6 fuel systems (ASAM requiring continuous recurring inspections for contamination)—**June**

Integration of newly graduated IERW aviators into unit ATPs (STACOM 151)—**March**

It's coming...(the snow and ice of winter are just a few short weeks away and now is the time to prepare)—**September**

It's that time again (winter brings on flu season; get your flu shot)—**December**

Kiowa information needed (help ATCOM complete data base of installed equipment)—**November**

Lasers and NVGs—**April**

Lessons on wartime safety. Good aviators die when...(they forget basic aviation safety rules; parallels between India-China airlift in 1944 and Desert Shield/Storm)—**March**

Logging of flight time in the OH-58D Kiowa Warrior (STACOM 153)—**July**

Maintenance test pilots should conduct autorotative rpm checks on prepared surfaces—**January**

Make a decision—why do some helicopter crewmembers choose not to use their HEED bottle? (reprint from December 1991 issue of *Approach*, the Naval Safety Center's monthly publication)—**May**

Marne Eagles—congratulations (10 years without a Class A aviation accident)—**October**

Medical Service Corps advisor for DES—**April**

Midair collision (AH-1 accident review)—**November**

Midair collisions (pilot's role in collision avoidance)—**November**

Most frequently violated aviation procedures (results of study)—**October**

New NVG video available (*Aviation Night Vision Goggle Operations—Desert Environment* video now available)—**February**

NVG current and rescinded messages as outlined in GEN-92-ASAM-02, 192230Z Dec 91—**February**

NVG message update (GEN-92-ASAM-02, 192230Z Dec 91)—**February**

NVGs and lasers—**April**

NVG video available (*Aviation Night Vision Goggle Operations—Desert Environment*)—**February**

OH-58/OH-6 fuel system inspection (ASAM requiring continuous recurring inspections for contamination)—**June**

OH-58A/C information needed (help ATCOM complete data base of installed equipment)—**November**

OH-58 sand ingestion—**March**

Parts is parts! (terms associated with parts service life, how initial service life is established, and what affects how parts perform in service)—**July**

Perceived or real...urgency can kill (UH-1 crew allowed perceived sense of urgency to influence their judgment to continue the mission in deteriorating weather)—**August**

Performance planning and directional control margin (tail rotor authority for AH-1)—**June**

Pilot's role in collision avoidance—**November**

Recap of 3d quarter FY 92 AVSCOM SOF messages—**August**

Recap of 4th quarter FY 91 AVSCOM SOF messages—**January**

Release of chlorofluorocarbons/Freon (AVSCOM ASAM)—**August**

Reminder for maintenance test pilots (conduct autorotative rpm checks on prepared surface)—**January**

Reminder: *Surviving in the Wire Environment* video available—**June**

Rescinded night vision goggle messages as outlined in GEN-92-ASAM-02, 192230Z Dec

91)—**February**

Retention assemblies for SPH-4 flight helmet (old assemblies should be purged from supply system and replaced with new universal retention assembly)—

April

Risk assessment survey being developed by Safety Center (Next Accident Test will be another tool commanders can use to determine who will have the next accident, what kind of accident it will be, and what can be done about it)—**December**

Risk management is key to preventing continued rising cost of accidents)—**December**

Risk management rules and process)—**December**

Safety-of-flight messages

■ Technical message concerning engine support bracket on all AH-64 aircraft)—**April**

■ Operational message concerning flight limitations because of overstress conditions experienced during flight for certain specified OV-1D and RV-1D aircraft)—**April**

■ Technical message concerning one-time inspection of all OH-58A/C and H-6 series aircraft for compressor cases to be returned to manufacturer for correction)—**May**

■ Technical message concerning ungrounding of all OH-58D aircraft)—**October**

■ Operational message concerning fuel crossfeed system in all AH-64A aircraft)—**November**

■ Emergency message concerning immediate grounding of CH-47 and MH-47 series aircraft)—**November**

■ Technical message concerning ungrounding of CH-47D, MH-47D, and MH-47E aircraft)—**November**

■ Technical message concerning one-time and recurring inspection of BUCS SPAD)—**December**

Safety-of-use message

■ Mandatory operational message concerning AN/ALQ-144A (V)1 (NSN 5865-01-229-5859, LIN J01849) and AN/ALQ-144A (V)3 (NSN 5865-01-229-5860, LIN J01917) countermeasures set)—**January**

Safety philosophy statement (one commander's example)—**September**

Safety report for FY 91 (review of accident statistics, problem areas, and countermeasures)—**February**

Safety schools (information on dates, locations, and points of contact for aviation safety training presented by Army Safety Center)—**February**

See the supports and avoid wires—the French solution)—**June**

Share those good ideas and safety tips (tips on how ASOs and managers can increase safety awareness in units)—**October**

Single-engine operation flight planning procedures and need for proper engine cleaning procedures reemphasized for UH-60 crews)—**November**

SPH-4 flight helmet retention assemblies (old retention assemblies should be purged from supply system and exchanged for new universal retention assembly)—**April**

STACOM index for CY 91)—**January**

STACOMs—**March, June, July, October, December**

Survival radio requirement for each crewmember delayed)—**December**

Surviving in the Wire Environment video available)—**June**

TC 1-210: Aircrew Training Program, Commander's Guide to Individual and Crew Training (STACOM 154)—**October**

TC 1-210 interim change (STACOM 155)—**December**

The 48-hour rule for alcohol and flying)—**March**

The Army's first C-12 Class A

accident)—**August**

The pilot's role in collision avoidance)—**November**

There I Was (an Army aviator tells his story of an in-flight emergency, ditching at sea, and how the crew survived)—**May**

Thunderstorm do's and don'ts review)—**May**

Tips on how ASOs and managers can increase safety awareness in units)—**October**

UH-1 crew let a perceived or real sense of urgency force them to press on in deteriorating weather to reach port of debarkation (accident review)—**August**

UH-60 maintenance crew and aircrew individual failures led to crash)—**April**

Underwater egress training for Army helicopter crews (how to obtain training quotas)—**May**

Update on avoiding droop stop pounding in the Black Hawk)—**July**

Updated Guide now available (twelfth edition of *Guide to Aviation Resources Management and Aircraft Mishap Prevention* ready for distribution)—**June**

Urgency! A powerful enemy)—**August**

Urgency can kill whether it's perceived or real (urgency to reach port of debarkation resulted in UH-1 crew continuing to press on in deteriorating weather until the aircraft crashed)—**August**

Use of portable computers on Army aircraft)—**June**

Violated procedures (study revealing specific procedures that are most frequently violated)—**October**

Wear of Broken Wing award)—**March**

What makes a good aviation safety program?—**September**

Wire strikes (accounts of two AH-64 wire strikes during FY 91)—**June**

Wire strikes (the French solution)—**June** ♦

Information based on preliminary reports of aircraft accidents

Utility

UH-1 Class C

H series - At 60 knots and about 400 feet AGL with cargo hook emergency release switch in arm position, hook released load. On shutdown at airfield, crew found cargo hook in open position with shear pin sheared.

V series - During take-off from unimproved LZ, aircraft browned out. Pilot was on controls and attempting to land when PC increased collective. Pilot noticed torque as it was dropping below 60 pounds. Crew completed landing without further

damage. Overtorque inspections in progress.

UH-60 Class B

A series - While conducting low-level flight training and multiple practice instrument approaches to airfield, crew encountered no abnormal conditions, heard no unusual noises, and felt no vibrations. However, as aircraft was being towed into hangar, crew noticed that all four rotor blades had voids in the honeycomb and trailing edge areas. Investigation continues. 9308

UH-60 Class C

A series - During ground taxi to parking, all

four rotor blades struck utility pole.

UH-60 Class E

A series - During external load training with pathfinder students, aircraft was hovering over load with cargo hook well lights and cabin lights on. Crew chief was observing hookup procedure through cargo hook access. Student, who was holding static discharge wand to remove electrical charge from cargo hook, inserted wand up through cargo hook access and into cabin. Wand struck crew chief in face, knocking off his NVGs. As student withdrew wand, end of wand contacted crew chief's eyeball, causing corneal abrasion.

flight during NVG training mission, crew flew aircraft over set of 150-foot-high wires. PC was flying from front seat and thought aircraft could clear obstacle. While over wires at about 200 feet AGL and 40 knots, crew heard rumble and popping sounds and saw sparks aft of crew compartment. PC saw N2 at 95 percent and initiated power-on descent. As PC lowered collective, N2 returned to 100 percent, and he continued gradual descent to open field. While at 40 feet AGL and below ETL airspeed, PC increased power to terminate approach and engine experienced sudden and severe power drop. PC lowered collective full down momentarily and then pulled all collective pitch at 10 feet AGL. Aircraft descended vertically at high rate and impacted in slightly nose-up, wings-level attitude. Aircraft bounced once while rotating 33 degrees clockwise around nose and moving about 10 feet laterally to left.

Attack

AH-1 Class C

F series - Before engine start, voltmeter indicated 22 volts. During engine start sequence, about 10 to 15 seconds elapsed before any indication of N1 or TGT was displayed. After about 15 seconds, TGT began to rise and spike (oscillate). TGT spiked several times before reaching 750°, at which time crew turned ignition key off. At 20 seconds, crew aborted start when TGT continued to rise and N1 was not increasing. Crew shut off fuel and motored engine. Verification of TGT indicated temperature was in excess of 1,000°. Crew shut off throttle and motored engine for additional 10 seconds until TGT decreased to normal ranges. Crew completed normal shutdown.

F series - While in cruise

AH-64 Class A

A series - At 500 feet AGL and 90 to 100 knots while en route to maintenance test flight area, No. 2 engine failed. Crew performed single-engine emergency procedures and was returning to home base when No. 1 engine flamed out. Crew completed forced landing with aircraft touching down with forward airspeed and traveling 100 yards before coming to rest. During ground run, right landing gear strut collapsed. Aircraft sus-

Class A Accidents through December

Month	Class A Flight Accidents		Army Military Fatalities	
	FY92	FY93	FY92	FY93
October	1	6	0	2
November	3	2	4	8
December	1	1	0	0
January	3		0	
February	1		0	
March	4		2	
April	1		0	
May	1		1	
June	2		2	
July	2		1	
August	1		0	
September	2		0	
Total	22	9	10	10

tained extensive airframe damage. 9309

Cargo

CH-47 Class C

D series - During NVG hookup operation, aircraft contacted HMMWV and knocked hookup person off load. Hookup person sustained back injuries, and left doors of HMMWV were damaged.

Observation

OH-58 Class A

D series - During tactical training flight at 100 feet AGL and 20 knots, engine lost power. Aircraft was unable to maintain altitude and crashed into 75-foot-tall trees. One crewmember was seriously injured, and one sustained minor injuries. 9310

OH-58 Class C

C series - During NOE flight, main rotor blades contacted trees, tearing off both rotor tips. Pilot landed aircraft nearby without further incident.

Fixed wing

C-12 Class A

F series - While performing nonradar approach, crew became disoriented and descended earlier than they should have. Aircraft impacted ground. Eight fatalities. 9311

Messages

■ Aviation safety action maintenance mandatory message prohibiting use of Brayco 599 corrosion preventative concentrate (GEN-93-ASAM-01, 011905Z Dec 92). Summary: Brayco 599 corrosion preventative concentrate is currently specified in the preservation of AH-1, UH-1, OH-58, OH-58D, and OH-6

gearboxes and engines during aircraft storage. Information also indicates that Brayco 599 is being used in operating engines and gearboxes as a corrosion preventative in the field. A possibility also exists that other Army aircraft may have been serviced with Brayco 599. Brayco 599 has been linked to high iron content in oil analysis samples. The corrosion preventatives in the Brayco 599 containers are contaminated with iron from an unknown source and are contributing to erroneous high iron readings in oil analysis samples. In many cases, engines and gearboxes are being condemned and removed due to the false oil analysis results. The purpose of this message is to prohibit the use of Brayco 599 on all Army aircraft and to direct the reservicing of gearboxes and engines that are known to have Brayco 599 added. Contact: Ms. Terese McGrew, DSN 693-2258/2085, commercial 314-263-2258/2085.

■ Aviation safety action informational message concerning status of new DA Pam 738-751: Functional Users Manual for the Army Maintenance Management System—Aviation (TAMMS-A), dated 15 June 1992, on all U.S. Army aircraft (GEN-93-ASAM-03, 061300Z Jan 93). Summary: DA Pam 738-751 was issued 1 September 1992. Since then, ATCOM has received numerous DA Form 2028s with recommended changes. All recommended changes have been resolved and will be included in the September 1993 edition of DA Pam 738-751. To eliminate confusion and cause less burden on aviation units and activities, we are provid-

ing a list of all approved changes to DA Pam 738-751. Authority for the use of these changes is granted to all U.S. Army aviation units and activities, contract support maintenance units and activities, and related audit and inspection activities. A copy of this message will be inserted in DA Pam 738-751 for reference and use. About every 3 months until the new DA Pam 738-751 is issued, an additional list of new changes will be published and provided. *Note:* Units will continue to use guidance in AVSCOM message 221530Z Mar 91 and *Flightfax* dated June 1991 to complete forms and records for aviation night vision goggles. Contact: Mr. Brad Meyer, DSN 693-2258/2085, commercial 314-263-2258/2085.

■ Aviation safety action maintenance mandatory message concerning revision to UH-60-92-ASAM-06 on one-time inspection for proper hardware on the pedal adjuster assembly, P/N 70400-01613, on all H-60 Army aircraft (UH-60-93-ASAM-04, 011900Z Dec 92). Summary: The pedal adjuster assembly, P/N 70400-01613, on some aircraft have recently been found with the input arm, P/N 70400-01610-042, partially slid off the pedal adjuster mechanism due to deformation of the securing washer. The washer deforms because the nut used to secure the components together is not large enough. With sufficient force, the washer could deform around the nut and allow the input arm to slide off the mechanism. The purpose of this message (revision to UH-60-92-ASAM-06) is to advise the field that due to unforeseen circumstances the delivery of replace-

ment hardware has been delayed and to require a recurring inspection of pedal adjuster assemblies with undersize nuts until proper hardware can be installed. Contact: Mr. Lyell Myers or Mr. Roger H. Heidenreich, DSN 693-2258, commercial 314-263-2258.

■ Aviation safety action informational message concerning one-time inspection for tail rotor drive shaft viscous damper bearings on all H-60 Black Hawk aircraft (UH-60-93-ASAM-05, 171800Z Dec 92). Summary: A number of Black Hawk tail rotor drive shaft viscous damper bearings, P/N SB1138-101, manufactured by MRC Bearings (cage code 38443) and issued by the Defense Logistics Agency have incorrect cleaning and lubrication instructions marked on the packaging. These bearings are not to be cleaned or lubricated by field personnel before they are installed in the aircraft. Any attempt by field personnel to clean or lubricate these bearings before they are installed may lead to a premature bearing failure. These bearings have all required cleaning and lubrication accomplished by the manufacturer before they are shipped. The purpose of this message is to inform the field of the improper cleaning and lubrication instructions on the bearing packaging and to provide disposition instructions in the event a suspect bearing has been installed on the aircraft. Contact: Mr. Lyell Myers, DSN 693-2285, commercial 314-263-2285.

■ Aviation safety action maintenance mandatory message concerning one-time inspection to remove suspect tail rotor pitch beams from all H-60 Army

aircraft (UH-60-93-ASAM-06, 171900Z Dec 92). Summary: A dimensional discrepancy has been identified on the tail rotor pitch beam assembly. This discrepancy could cause the pitch beam assembly to be loose after the attaching hardware has been torqued. The purpose of this message is to inspect for discrepant tail rotor pitch beams and remove them from service. Contact: Mr. Lyell Myers, DSN 693-2285, commercial 314-263-2285.

■ Aviation safety action maintenance mandatory message to bias tail rotor rigging 3 degrees on all UH-60A, EH-60A, and UH-60L helicopters built prior to S/N 91-26354 (UH-60-93-ASAM-08, 052000Z Jan 93). Summary: There are currently two Army H-60 tail rotor rigging procedures in use: one for UH-60A/EH-60A and one for UH-60L helicopters. ATCOM conducted flight testing that substantiated the UH-60L tail rotor rigging 3 degrees bias is beneficial to the UH-60A/EH-60A fleet. Aircraft to be corrected are all UH-60A, EH-60A, and UH-60L aircraft built prior to serial number 91-26354, except MH-60K serial

number 89-26194. Aircraft serial numbers 91-26354 and subsequent are rigged to 3 degrees bias by the contractor during production and therefore records for aircraft serial numbers 91-26354 (including 89-26194) and subsequent will not require identification of this action. The purpose of this message is to provide instructions necessary for mandatory tail rotor rigging to incorporate the 3-degree bias. Contact: Ms. Terese McGrew, DSN 693-2085/2258, commercial 314-263-2085/2258.

■ Aviation safety action informational message concerning aft and combiner transmission oil cooler fan bearings on all CH-47D and MH-47D aircraft (CH-47-93-ASAM-01, 031700Z Dec 92). Summary: TM 55-1520-240-23-5 erroneously reads: Apply Syn-Tech grease (E190.1) to the aft and combiner transmission cooler fan bearings. It should read: Apply wide-temperature range MIL-G-81322 (E190) to the aft and combiner transmission cooler fan bearings. The purpose of this message is to provide corrections to TM 55-1520-240-23-5. Contact: Ms. Terese McGrew, DSN 693-

2085/2258, commercial 314-263-2085/2258.

■ Aviation safety action maintenance mandatory message concerning one-time inspection of main rotor mast nut, screw, and washer on all OH-58A/C aircraft (OH-58-93-ASAM-03, 152000Z Dec 92). Summary: A Category 1 Quality Deficiency Report has been received reporting improperly manufactured screws. The screws retain the main rotor mast nut washer. The screw head protrudes above the top surface of the washer, causing metal to be gouged from the screw during application of torque of the main rotor mast nut and depositing metal particles between the nut and washer. This causes improper torquing. The purpose of this message is to remove all improperly manufactured screws from service and to assure that none are installed on aircraft. Contact: Ms. Terese McGrew, DSN 693-2085/2258, commercial 314-263-2085/2258.

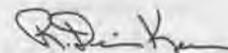
■ Aviation safety action maintenance mandatory message concerning main rotor hub latch bolts with insufficient threads on OH-58A/C helicopters (OH-58-93-ASAM-04, 162000Z Dec 92). Sum-

mary: A Category I Equipment Improvement Recommendation has been received reporting that a bolt, P/N 206-010-169-1, had insufficient threads to allow proper sweep adjustment. The source of the deficient bolt could not be determined. The purpose of this message is to advise users to check their stock for bolts, P/N 206-010-169-1, to assure proper length of the thread. 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.



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STACOM

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STACOM 150: CY 91 STACOM index—*January*

STACOM 151: Integration of newly graduated IERW aviators into unit ATPs—*March*

STACOM 152: AH-1 performance planning and directional control margin—*June*

STACOM 153: Entering the date of the Army Aviation Annual Written Examination (AAWE) on DA Form 759, Part IV, Block 2; and Logging of flight time in the OH-58D Kiowa Warrior—*July*

STACOM 154: TC 1-210: Aircrew Training Program, Commander's Guide to Individual and Crew Training; and Distribution of DA Form 759:

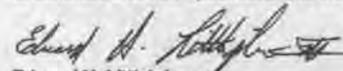
Individual Flight Record and Flight Certificate—*Army—October*

STACOM 155: TC 1-210 Interim Change—*December*

STACOM 155

January 1993

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