Flightfax

ARMY AVIATION RISK-MANAGEMENT INFORMATION

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The OH-58D community is flying more hours and going more places than ever before. Yes, we're having our share of mishaps, but we're also accomplishing our share of successful missions under very challenging conditions, night in and night out.

SPOTLIGHT

OH-58D safety performance review

Spotlight: OH-58D safety performance review

Army aviation's Class A accident rate has climbed steadily from the best ever in FY96—0.74 accidents per 100,000 flying hours—to 1.57 through the first three quarters of FY98. We in the OH-58D community have contributed to this increase. Table 1 shows how we compare with the rest of the Army in terms of Class A accidents and flying hours.

Table 1. Class A accidents by type aircraft (first 3 quarters, FY98)

Type aircraft	Class A accidents	Flying hours
UH-60	5	161,749
OH-58D	3	63,322
AH-64	3	79,300
OH-58A/C	1	67,599
AH-1F	1	15,220

Table 2 tells the OH-58D Class A-C story. These figures reflect one ground-related Class A, a wire strike, two engine failures, two collisions with the ground, three tree strikes, a couple of hard landings resulting from simulated engine failure (SEF) at altitude, a broken oil line, a door falling off, one overtorque, and a hot start.

Table 2. OH-58D accidents (first 3 quarters, FY98)

Class	Number	Fatalities	Injuries	Cost
A	3	0	2	$10,190,122
B	1	0	0	$ 344,498
C	11	0	0	$ 535,548

A look back

The OH-58D has undergone significant changes over the past 10 years. Starting out as a slick aerial platform used mainly for directing artillery fire, the aircraft has become an armed reconnaissance aerial platform that can carry Hellfire missiles, 2.75-inch rockets, a .50-caliber machinegun, outside seats for troops, and sling loads. The OH-58D has outdistanced its former counterpart, the OH-58A/C, in systems technology by leaps and bounds, having gone from analog to digital in only a few years.

Has this leap in technology affected OH-58D safety performance? Table 3 displays 10 years' data that show that all this technology has not resulted in accident reductions. Such events as tree strikes, engine failures, and hard landings are still plaguing the OH-58D community.

Table 3. OH-58D Class A-C accident experience

Fiscal year	Flying hours	Class A	Class B	Class C	Total
89	22,852	2	2	2	6
90	25,852	4	1	4	9
91	18,619	4	1	4	9
92*	21,079	2	0	4	6
93	24,635	1	1	5	7
94	38,694	0	1	3	4
95	46,655	1	3	8	12
96	62,516	1	1	3	5
97	63,065	1	4	8	13
98**	63,322	3	1	11	15

*Introduction of OH-58D(I)
**Through 3rd quarter

Workload

Although OH-58D technology has greatly enhanced our capabilities to find and destroy the enemy, that capability has come at a price in terms of pilot workload. More and more often we see "loss of situational awareness" or "task overload" cited as a factor in accident reports. For example, why did two OH-58Ds collide in midair during aerial gunnery operations? Both aircraft had instructor pilots on board. Was it because the IPs were busy conducting training? Or were they overwhelmed by the technology in the aircraft? Were they operating the mast-mounted sight, lazing targets, and putting rounds down range rather than flying the aircraft?

OH-58D drivers may be thinking, "But that's our mission." And that's true; all those things *are* part of our mission. However, we must never forget that flying the aircraft is the most important part of the mission. It does us no good to fly to a battle position ready to launch rounds at the enemy and then realize we're in a right spin because we just drifted into a tree.

Mishap trends

Tables 4 through 6 present a snapshot of OH-58D Class A-C accident experience over the past 4 years.

Table 4. OH-58D tree strikes

FY	Class A	Class B	Class C	Fatalities	Injuries
95	1	0	1	0	2
96	0	0	1	0	0
97	1	1	2	1	1
98*	1	0	2	0	0
Total	3	1	6	1	3

*Through 3rd quarter

Table 5. OH-58D engine failures

FY	Class A	Class B	Class C	Fatalities	Injuries
95	0	3*	0	0	0
96	0	0	0	0	0
97	0	0	1	0	0
98**	0	1	1	0	0
Total	0	4	2	0	0

*Two of the three occurred during simulated engine failure
**Through 3rd quarter

Table 6. OH-58D simulated engine failures

FY	Class A	Class B	Class C	Fatalities	Injuries
95	0	2	0	0	0
96	0	1	0	0	0
97	0	2	2	0	0
98*	0	0	4	0	0
Total	0	5	6	0	0

*Through 3rd quarter

Selected accident briefs

■ **Tree strike.** During an in-ground-effect stationary hover, the IP, using ANVIS NVGs, allowed the OH-58D to drift to the right rear approximately 182 feet. The main-rotor blades of the armed aircraft hit a lone tree at about 20 feet agl, and the aircraft descended to ground impact, coming to rest upright. The two crewmembers were not injured, but the aircraft sustained $2.9 million damage.

■ **Engine failure.** It was a routine flight until the aircraft shuddered and a "HIGH TORQUE LIMIT" message appeared and audio sounded. Moments later, the "AC GEN FAIL" message and audio came on, alerting the crew to a low-rotor condition. The PI, who was on the controls in the right seat, entered an autorotative descent and landed in a planted field. As the aircraft came to a halt, the main-rotor blades struck the tail boom, severing it from the fuselage.

■ **Simulated engine failure.** During ATM training, the IP (left seat) was demonstrating a simulated engine failure at altitude. When he applied initial collective pitch at 20 to 30 feet agl, the low rotor rpm audio sounded, alerting the crew that the throttle was still at the idle position. The IP leveled the aircraft and began to roll the throttle back on but then decided to roll the throttle back to the idle position. He applied all remaining collective pitch to cushion the landing, but the aircraft landed hard on the heels of the skids and slid 70 feet along the runway. The aircraft sustained damage to the main-rotor blades, tail-rotor drive shaft, drive-shaft cover, GPS antenna, and skid tubes.

Personnel challenges

Our experience level in the OH-58D community is not what it used to be. The initial fill of pilots into the OH-58D program during the mid 80's was mostly mid-level, experienced, high-time aviators. Many of these aviators have since retired or left the Army for other reasons, and their vacancies have been filled by less-experienced aviators.

Manpower reductions have also resulted in a reduction in pilot-in-command experience, not just in the OH-58D community but in Army aviation as a whole. Records show that PC flight hours of pilots involved in Class A and B accidents are lower than they used to be. In FY92, for instance, the average PC involved in a Class A or B accident had 1327 flight hours; in FY97, that number was down to 536.

Still another challenge involves "mentorship." The guidance that young pilots once received from senior warrants is not as prevalent as it used to be. New pilots are left on their own a lot more—they have less flight time to train (currency vs. proficiency) than in the past, not to mention the challenge of staying up with the fast pace of today's technology.

Materiel issues

The latest problem in the field stems from aircraft doors not staying on the aircraft during gunnery. During aerial gunnery (firing the .50-caliber machinegun) at Fort Rucker, a left door separated from the aircraft. This incident prompted a data search, which revealed that four left doors and one right door had reportedly fallen off OH-58Ds during gunnery operations. Kiowa PM is presently working this issue to come up with a fix for the doors.

In a recent Class E mishap, the .50-caliber gun fired a single cookoff round approximately 30 seconds after engagement. The crew had confirmed MASTER switch STBY, but had not placed the GUN switch in SAFE as instructed by the operators manual. Fortunately, no one was injured and no damage was sustained in this mishap.

Headspace and timing

The one self-induced mishap we see over and over again is associated with ATM Task 1053: Simulated engine failure at altitude (SEF). Indications are that

IPs are failing to recover the throttle to full operating rpm prior to termination with power. These mishaps have resulted in Class E through Class B mishaps, with damage ranging from engine overtorques to major aircraft damage.

An April 1997 message from the Aviation Branch Safety Office to OH-58D units addressed the number of mishaps related to Task 1053. The message modified the ATM task description in an effort to prevent further mishaps without affecting training. Unfortunately, despite this action, we had as many Class A-C SEF mishaps during the first three quarters of FY98 as we had during the entire year in FY97 (see table 6).

Risk management

Let's talk a bit about risk management—not in great detail, but as it applies in everyday scout operations. (For a detailed discussion of risk management, see last month's *Flightfax*). First, let's review the five steps of the process:

- **Step 1. Identify the hazards**
- **Step 2. Assess the hazards**
- **Step 3. Develop controls and make risk decisions**
- **Step 4. Implement controls**
- **Step 5. Supervise and evaluate**

As a community, we seem to be doing a pretty good job of completing steps 1, 2, 3, and 5. However, OH-58D accident experience suggests that we don't do as well with step 4. Even when controls are developed and briefed, they're not always fully implemented by the aircrews. For example, despite constant aircrew briefings about drift during hover, drift is the leading cause of tree strikes in the OH-58D. Factors such as "crew coordination," "loss of situational awareness," and "task overload" appear over and over in tree-strike-mishap reports.

Let's face it. We OH-58D pilots are very busy in the cockpit and can become overwhelmed, especially during night gunnery operations. However, until a fix comes along that will assist us in hovering the aircraft, we are going to have to implement all possible controls that will help us bring the aircraft and crew home. We may have to use the IR searchlight, drop chemical lights, or use other means to help maintain a steady hover.

Conclusion

The train is full speed ahead, and there's little relief in sight. We're operating our aircraft at max gross weight, and, just when we've learned the new version of software, here comes a newer version.

The OH-58D community is flying more hours and going more places than ever before. Yes, we're having our share of mishaps, but we're also accomplishing our share of successful missions under very challenging conditions, night in and night out.

—CW5 Bill Ramsey and CW5 Bill Altman, Aeroscout Branch, Aviation Systems & Investigation Division, DSN 558-2785 (334-255-2785), altmanw@safety-emh1.army.mil (CW5 Ramsey recently PCS'd from the Safety Center to Eighth Army in Korea)

Safety success or safety failure: Risk management makes the difference

A III/V platoon with an attached armament platoon was operating a 24-hour forward area rearm/refuel point (FARP) to support aerial gunnery operations. During these operations, a .50-caliber machinegun malfunctioned and accidentally discharged while an OH-58 was in the FARP. What could have been a safety failure turned out to be, instead, a safety success.

Good risk management during mission planning resulted in countermeasures being in place that made the difference between a serious accident and a minor incident with no injuries or property damage. The hazard of an accidental weapons discharge in the FARP had been identified during mission planning. As a result, the unit had developed and implemented the following controls:

- Select a FARP site that places a hill downrange of the FARP.
- Place ammunition and fuel on opposite sides of the FARP and outside the gun target line.
- Place fuel lines below the gun target line.
- Require copilots to stay inside the cockpit to avoid the .50-caliber machinegun.
- Require armament specialists to stay behind the machinegun and be supervised by an armament NCO, who will stay within arm's reach of the specialist.

The unit accepted the fact that they could not eliminate every hazard. But, by identifying the hazards and then developing, implementing, and supervising control measures, this unit prevented injury to soldiers and damage to property.

And that's how the risk-management process works in the real world.

—CW3 Stew Milligan, Operations Officer, USASC, DSN 558-2539 (558-255-2539), milligad@safety-emh1.army.mil

Drift during hover results in tree strike

THE OH-58D(I) was one of 10 aircraft conducting a multiship NVG area recon. The IP was on the controls in the right seat, establishing the aircraft in a stabilized out-of-ground-effect hover at 45 to 65 feet over trees. The PI, who was also the air mission commander for the flight, was planning for a mission change and preparing to move his platoon forward.

Suddenly, the aircrew heard a "weed-eater"-like sound coming from the rear of the aircraft. Realizing that they had drifted into a tree, the PI began to come on the controls with the IP to assist as needed. However, the IP was already moving the aircraft up and away from the trees. As he did so, the PI heard the noise again, but much louder than at first; this time, it did not stop.

The tail rotor and vertical fin assembly separated, and the aircraft began a right spin, descending out of control through the trees until impact. The aircraft came to rest in a right-side-low attitude, and a severed fuel line in the engine area immediately caused a postcrash fire. The PI had received only minor injuries and was able to extract himself from the aircraft. The IP, however, was killed during the crash sequence; the PI got him out before the aircraft was destroyed by fire.

Lessons learned

Lack of situational awareness played a major role in this accident. At the critical moment when the aircraft was closest to the obstacles, the IP's attention became diverted. Why? We'll never know for sure; that question only raises other questions, among them the following:

- Was he looking into the cockpit to help the platoon leader with the mission planning?
- Was he not scanning properly?
- Was he focused on a single hover reference point and not detecting the aircraft drift?
- Could it have been that he was intentionally repositioning the aircraft to a new location and simply did not see the trees that were struck by the tail rotor?

These questions will never be answered in this accident. However, lessons can be learned that can help others avoid such accidents in the future.

Crew coordination is, as always, a key ingredient in accident prevention. This crew functioned well and planned properly. Extensive mission briefings and rehearsals had been conducted before the mission, and, though not battle rostered, the crew had flown several missions together and were confident that each knew his responsibilities during the flight. However, as this accident proves again, the pilot on the controls must maintain awareness regarding the position of the aircraft and the location of all obstacles.

The bottom line is that, when performing operations at terrain-flight altitudes, the pilot on the controls must scan, scan, and scan some more to detect and avoid obstacles and prevent drift.

—MAJ Harry Trumbull, Aviation Systems & Investigation Division, DSN 558-9854 (334-255-9854), trumbulh@safety-emh1.army.mil

OH-58D digital transfer cartridge

Integrated into the OH-58D aircraft is a data transfer system (DTS). The system has several components, two of which are the data transfer unit (DTU) (or data receptacle) and a solid-state data transfer cartridge (DTC) (or data transfer module). DTU and DTC are the most familiar terms and will be used throughout this article.

Description

The DTU is an interface between the DTC and the military standard 1553 data bus. The DTU allows data to be retrieved from and stored to the DTC via 1553 commands. The DTC may have one of several versions of memory cartridge (a 64, 256, or 512 kilobyte or a 1 megabyte, 16 bit, CMOS memory cartridge) that allows temporary storage of data; however, visual inspection alone won't tell you which type you have.

The DTC is not a crash-hardened flight data recorder (FDR) and is not protected against impact, fire, or water damage.

Capabilities

The DTC is used to transport mission data between the aircraft and the Avionics Mission Planning Station (AMPS) on the ground. This data includes checklist, navigation way-points, communication frequencies, weapons data, laser codes, airborne target hand-over system data, engine history, and caution/warning/advisory history data.

Flight data is formatted, time-tagged, and stored so that the last 45 minutes of flight information are available on the DTC at any given time. Currently, only the Army Safety Center uses AMPS software to process DTC FDR information.

The DTC has an FDR component that handles sampling, compressing, and storage of 79 parameters—27 analog and 52 discrete (table 1). The DTC records and stores between 64 and 100 kilobytes of flight data. A continuous recorder, it is always overwriting the oldest recorded flight information.

A record is like a row on a spreadsheet with a sample or entry for each of the parameters (see table 2). Sometimes the entry for a particular parameter in a record is blank. That's because the DTC's recording algorithm records different parameters at different rates. For example, all the discrete (ON or OFF) parameters are sampled at 1 Hz or one sample every second while the analog parameters are sampled at 12.5 Hz.

Software

Two developments in the Kiowa Warrior system have necessitated changes in DTS software. First, the OH-58D program manager recently upgraded the aircraft's control display subsystem to version 7.0 (fielding completed in May 98). Second, the recently fielded OH-58D(R) uses a different version of the DTC, which requires a new version of software. The Army Safety Center recently upgraded its ground-station software and hardware to permit downloading of any version of the DTC or DTS software.

Maintenance & storage

Maintenance personnel should—

- Always store the DTC in a dry, well-ventilated place free of dust and other contaminants.
- Replace batteries (two AAA alkaline) every 90 days of continuous use. A simple log organized by DTC serial number will help keep track of when to replace batteries.
- Remove batteries before shipping or storing the DTC for more than 30 days.

Operational checks

Before use, flight crews should—

- Visually inspect the DTC for cracks or dents that could affect recording capability.
- Check the battery replacement date to ensure batteries have been replaced within the past 90 days.
- Ensure the 29 pin receptacles on the blue board are undamaged and free of obstructions. Do this by lifting the back cover and inspecting the pin connections. The two pins on either side of the blue board should be straight and undamaged.
- While holding the back cover open, ensure that the black toggle switch is set to the "0" position.

—Mr. Joseph Creekmore, Research Analysis and Maintenance, Inc., prime contractor on DSC Demonstration Program for U.S. Army Safety Center, DSN 558-2259 (334-255-2259), creekmoj@safety-emh1.army.mil

Table 1. DTC parameters list

Analog parameters (27)		
Collective position	Lateral cyclic position	Pressure altitude
Engine torque	Left cyclic position feedback	Radar altitude
Fore and aft cyclic position	Longitudinal acceleration	Right cyclic position feedback
Free air temperature	Mast torque	Roll attitude
Fuel quantity	Measure gas temperature (tgt)	Roll rate
Gas producer speed (Ng)	Pedal position	Rotor tachometer (Nr)
Heading (yaw attitude)	Pitch attitude	Vertical acceleration
Indicated airspeed	Pitch rate	Yaw position feedback
Lateral acceleration	Power turbine speed (Np)	Yaw rate

Discrete parameters (52)		
AC generator fail caution	Engine oil temperature high caution	Low rotor rpm warning
ADU fail caution	Engine out warning	Master caution
AHRS fail caution	Force trim switch position	Master warning
ATAS master arm switch arm	Fuel boost fail caution	MCPU 1 fail caution
ATAS master arm switch safe	Fuel boost switch position	MCPU 2 fail caution
Chips, engine lower caution	Fuel control caution	Pitch/roll disengage caution
Chips, engine upper caution	Fuel control fail advisory	Rectifier fail caution
Chips, free-wheel caution	Fuel filter bypass caution	SCAS disengage caution
Chips, tail rotor gearbox caution	Fuel low caution	SCAS failed
Chips, transmission mast caution	Heading hold engage	SCAS pitch/roll engage
Chips, transmission sump caution	Heater switch position	SCAS release
Communication emergency switch position	High rotor rpm warning	SCAS yaw engage
DC generator fail caution	High temperature tail rotor gearbox caution	Tgt over-temperature warning
Engine anti-ice	High tgt time limit caution	Transmission oil pressure low caution
Engine oil bypass caution	High torque time limit caution	Transmission oil temperature caution
Engine oil low caution	Inverter fail caution	Transmission overtorque warning
Engine oil pressure high caution	Low hydraulic pressure caution	Yaw disengage caution
Engine oil pressure low caution		

Table 2. Sample DTC download (data fields continue downward and to right)

Time	Engine torque	Rotor rpm	Master caution	Force trim
			1=on, 0=off	1=on, 0=off
01:03:34.0000	93.45	99.56	0	1
01:03:34.0625	93.45	99.56	-	-
01:03:34.1250	93.45	99.56	-	1
01:03:34.1875	93.45	99.56	-	-
01:03:34.2500	93.45	99.56	-	-
01:03:34.3125	93.45	99.67	-	-
01:03:34.3750	93.45	99.67	1	-
01:03:34.4375	93.45	99.56	-	-
01:03:34.5000	93.45	99.56	-	-
01:03:34.5625	93.45	99.56	-	-
01:03:34.6250	94.05	99.56	-	-
01:03:34.6875	94.05	99.56	-	-
01:03:34.7500	94.05	99.84	-	0
01:03:34.8125	95.08	99.86	-	-
01:03:34.8750	95.22	99.92	-	-
01:03:34.9375	95.47	99.98	-	-
01:03:35.0000	96.78	100.00	1	1

Technology-demonstration flights

Changes coming!

This is the last monthly Flightfax you'll see. Beginning with the November-December issue, Flightfax will be published every other month. More about this and other changes next month!

As the Kiowa Warrior is being fielded, the need arises to familiarize leaders and soldiers with its unique capabilities—and its limitations. Technology-demonstration flights are good morale builders, foster better understanding among combat arms branches, and give commanders a close-up look at the combat capabilities of Kiowa Warrior equipped units.

Although it's a single-pilot aircraft, hazards arise when we bring nonrated passengers into the cockpit for demonstration rides. However, we can set this mission up for success by simply implementing a few controls.

All passengers should be thoroughly briefed, not just on the aircraft's capabilities, but also on their individual responsibilities as passengers. Aviation life support equipment, lap and shoulder restraints, entering and exiting the aircraft, and movement inside the cockpit should be addressed. Passengers should be escorted to the aircraft and assisted into and out of the cockpit. A crewmember should also ensure that doors and side panels are closed and latched and that restraints are properly adjusted and fastened. In addition, the copilot cyclic should be locked out and the copilot collective removed to reduce the risk of inadvertent manipulation by passengers.

—CW3 Stew Milligan, Operations Officer, USASC, DSN 558-2539 (334-255-2539), milligad@safety-emh1.army.mil

STACOM

STACOM 172 ◆ October 1998

Attention DES ME designees

DES ME Designees are required to keep their current military address on file with DES at all times. We are currently updating our data base, and we need for all ME Designees to send us the following by 15 January 1999:

- A copy of your ME Designee orders.
- Unit of assignment and location.
- Military address and phone number.

You may mail this information to Commander, USAAVNC, ATTN: ATZQ-ES, Fort Rucker, AL 36362-5000; or fax it to DSN 558-3113 (334-255-3113). Failure to update your records will result in revocation of your DES ME Designee status.

If you were previously a DES ME Designee but are no longer due to an aircraft transition, please notify us of your previous designation as well as your current aircraft type and duties performed.

The updated list will appear on the DES web site (www-rucker.army.mil/DES/DES/htm) when compiled, so be sure to check for your listing.

POC: CW3 Jim R. Burhans, DES, DSN 558-2532 (334-255-2532), james_burhans@rucker-emh4.army.mil

Similar aircraft

AR 95-1, paragraph 4-19 has generated several questions from the field concerning similar-aircraft currency. This paragraph states, "Currency in one series aircraft will satisfy the requirement for all aircraft within the series or group."

This paragraph applies only when the aviator meets the following requirements:

- Has completed qualification training in each aircraft for which currency is maintained.
- Is designated by the commander to perform duties in each aircraft for which currency is maintained.
- Has demonstrated proficiency to an IP/SP in all base tasks and selected mission/additional tasks that are different between the individual aircraft series during the aviator's previous APART evaluation or RL progression.

In addition, for the purposes of maintaining currency, the OH-58D(R) is considered to be in the same grouping as the OH-58D and the OH-58D(I).

POC: CW4 Alan Davis, DES, DSN 558-2531 (334-255-2531), alan_davis@rucker-emh4.army.mil

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Shortfax
Keeping you up to date

Poster available

A crash-rescue poster for the OH-58D(I) is now available from the Army Safety Center. ASOs, crash-rescue personnel, and fire departments may request copies from Ms. Sharrel Forehand, DSN 558-2062 (334-255-2062), forehans@safety-emh1.army.mil, fax DSN 558-2266 (334-255-2266).

Apache web site online

For the past 18 months, the Army Aviation Logistics School at Fort Eustis, AMCOM, and PEO-Aviation have been working together to improve troubleshooting techniques and skills. Early on, we determined that an effective way to improve troubleshooting abilities in Army aviation was to implement some sort of information-sharing system. After several months of working out the details, we are pleased to announce the recent launching of the Apache Homepage. It's located at

http://www.peoavn.redstone.army.mil/aah/new/homepage/homepage.htm

The web site includes—or soon will include—the following:

- "Hot" news from various sources.
- Lessons learned.
- Aircraft, TADS, PNVS, and EGI troubleshooting tips.
- Current list of circuit breakers and their "hidden" functions.
- Maintenance-information and safety-of-flight messages for reading or downloading.
- Airworthiness releases.
- Material fielding plans.

Other areas will be added in the future. Please take advantage of the information available at this site, and help us improve it by submitting new lessons learned.

—CW3 Al Anderson, Department of Attack Helicopter Training, Fort Eustis, VA, DSN 927-1603 (757-878-1603), andersona@eustis.army.mil

ALSE user conference coming up

The 1998 ALSE User's Conference will be held at Redstone Arsenal, Alabama, 3-5 November. Commanders, ALSE officers and technicians, and unit safety officers are invited.

If you plan to attend, please notify Mr. Bernard Roberson by 16 October. You can reach him at Fort Rucker's Directorate of Combat Developments:

- Phone: DSN 558-9130 (334-255-9130)
- Fax: DSN 558-9191/2916 (334-255-9191/2916)
- E-mail: bernard_roberson@rucker-emh4.army.mil

Billeting arrangements, including statements of nonavailability, are being handled by Ms. Julia Story, Redstone Billeting Office, DSN 746-5713 (256-876-5713). Please contact her directly.

Survival-radio requirement delayed

AR 95-1, paragraph 8-12b, requires that each aircraft crewmember be equipped with a survival radio. However, an HQDA message dated 251202Z August 1998 authorized delay in complete implementation of this requirement until 30 September 2000. This action was taken to allow continued Armywide redistribution of AN/PRC-90 and AN/PRC-112 survival radios to alleviate shortages where possible.

Pilots in command will continue to ensure that not less than one fully operational survival radio is on board the aircraft. In addition, PCs will ensure that crewmembers without radios have other means of signaling (flares, mirror, etc.). According to the message, crewmembers should carry additional radios on board aircraft as assets become available.

POCs: MAJ John E. James, Jr., HQDA, DSN 227-0487 (703-697-0487); and Mr. Jim MacElderry, CECOM, DSN 992-4605 (732-532-4605)

Accident briefs

Information based on *preliminary* reports of aircraft accidents

AH1

Class C

F series

■ Aircraft landed hard during simulated engine failure to the runway. Aircraft was returned to ramp and, during normal shutdown, landing gear buckled and aircraft belly contacted runway. Inspection also revealed possible damage to tail rotor.

Class E

E series

■ After first flight period, aircraft was taken to hot refuel pad for fuel and student change. While aircraft was on pad, visual check revealed that crosstube was broken just above right-front skid cuff. Cause not reported.

■ As aircraft was sliding to stop during low-level, high-speed autorotation, front crosstube seemed to be vibrating more than normal and attitude felt left-front-skid low. Front-seat pilot opened door and noted that front crosstube was broken off at bottom of skid cuff and that crosstube was sitting on ground. Maintenance replaced front crosstube and skid cuff.

AH64

Class C

A series

■ Crew noted excessive vibration within speeds of 60 to 140 knots during limited test flight for replacement of lead-lag dampeners. After landing, No. 1 engine intake panel was found open. Damage still being assessed.

Class E

A series

■ No. 1 engine fuel caution light came on during formation flight at cruise altitude. Within 10 to 15 seconds, No. 1 engine-out light illuminated. Crew informed flight of situation and departed formation for home station. About 5 minutes later, No. 2 engine fuel caution light flickered. Crew selected nearby civilian airfield to make roll-on landing. At about 50 feet agl and 80 knots, No. 2 fuel light illuminated. Within 2 to 5 seconds, at 10 feet agl and 50 knots, No. 2 engine-out light came on. Crew made autorotative roll-on landing without further incident. Caused by fuel starvation.

■ During low-level cruise flight, crew attempted to transfer fuel from aft tank to forward tank. Fuel transfer green information status light came on briefly and extinguished. Immediately thereafter, amber fuel transfer caution light blinked, indicating transfer inoperative. Caused by low fuel in forward tank.

■ At flat pitch on ground with IP on controls, cyclic moved about ½-inch right of center without input from either pilot. IP disengaged DASE. When the uncommanded movement continued, IP turned off force trim, but movement continued. Force trim was re-engaged and aircraft was taxied to parking. Magnetic brake assembly was replaced.

CH47

Class E

D series

■ As aircraft picked up to hover, rotor wash caused unsecured tunnel cover panel on adjacent CH-47 to blow open, causing damage to strut assembly on tunnel cover.

■ While aircraft was hovering over external load, ground personnel noticed fluid leaking from bottom of aircraft. Caused by crack in hydraulic line leading to power-transfer unit. Line was replaced.

■ During hover over external load, CP misunderstood flight engineer's commands, resulting in aircraft bumping load. Postflight inspection found center hook adjustment bolt on keeper was bent.

■ During approach for landing, pilot noticed static torque indication of No. 2 engine. Pilot attempted normal engine beep trim without success, then performed emergency engine trim. Aircraft landed without further incident. Caused by failure of N2 control box.

OH58

Class C

D(I) series

■ As IP was terminating approach for completion of demonstrated simulated engine failure (SEF) at altitude, aircraft landed hard, damaging WSPS and landing gear. ECOD pending.

■ Aircraft landed hard during SEF to runway. Main-rotor blades flexed on touchdown and contacted tail-rotor drive shaft. Damage to one main-rotor blade, tail-rotor drive shaft and cover, GPS antenna, and aft crosstube.

■ Aircraft landed hard during SEF at altitude. Landing gear was damaged.

Class E

C series

■ Engine rumbled when throttle was increased after being at idle. Suspect defective five-stage bleed air control.

■ When amp meter increased to 50 amps during cruise flight, battery was turned off and amps went to zero. Aircraft landed and emergency shutdown was performed. Caused by broken wire on generator.

D(I) series

■ Maintenance test pilot was unable to determine source of high-frequency vibration while attempting to smooth tail rotor. Maintenance personnel inspected drive train while engine was running and saw oil cooler fan vibrating. Further inspection after shutdown found loose oil cooler fan, cracked structural panel, and delamination around oil cooler fan mounting bolts. Inspection of unit's other aircraft found similar cracks on 13 other aircraft. Maintenance notified Kiowa Warrior PM and submitted QDR to AMCOM.

■ During pre-combat checks at OGE hover, crew noted engine oil temperature in high range. After 10 minutes at hover, hot engine oil temperature caution light came on. When condition persisted after transitioning to forward flight, aircraft was landed and shut down. Maintenance replaced oil filter, drained and replaced oil, and flushed engine oil cooler.

■ Three minutes into OGE hover power check, hot engine oil temperature caution message displayed. Crew, unable to transition to forward flight due to other traffic, landed. Aircraft remained at flat pitch for 1 minute before message went away. Maintenance replaced oil filter, drained and replaced oil, and flushed engine oil cooler.

■ Aircraft was No. 2 in flight of four

when crew felt shudder followed by engine failure. PI lowered collective to enter autorotational descent, and other pilot confirmed throttle was full open. When crew decelerated and pulled initial pitch for autorotation, engine spooled back to 100 percent. Crew made emergency landing without further incident. Cause not reported.

D(R) series

■ Aircraft was hovering in steep terrain with swirling winds at 16 knots gusting to 27. Mast torque time limit caution began to momentarily display, and crew repositioned to find a more favorable wind condition. After fifth caution, transmission overtorque warning displayed. Crew landed without further incident. Peak mast torque was 108 percent; cumulative time above 100 percent was 13 seconds. Maintenance inspection did not find any damage, and aircraft was released for flight.

UH1

Class E

H series

■ On short final, smoke and boiling liquid began coming from transformer on left side of instrument pedestal and above left pedals. Crew executed electrical-fire emergency procedures with immediate landing and emergency shutdown. Caused by failure of voltage capacitor.

■ As aircraft came to hover, it began slowly rotating to right. Pilot increased left pedal to stop turn, but aircraft continued to slowly turn right even after reaching pedal limit. Pilot allowed aircraft to rotate approximately 270 degrees before putting it back on ground. Caused by malfunction of control assembly.

■ HIT check registered +36°C during runup. Caused by failure of engine de-ice solenoid valve .

UH60

Class C

A series

■ Upon activation of SAS No. 1 during engine runup with engines at 100 percent, crew noted flames emanating from No. 2 a.c. bus on overhead console. Flames were extinguished with onboard fire extinguishers following emergency shutdown.

■ Main-rotor blades contacted tree during departure from confined area. All four tip caps were damaged; one was destroyed, two were sent to depot for repair, and one was repaired locally.

Class D

L series

■ Postflight inspection revealed damage to one tail-rotor tip cap and blade and the stabilator. Suspect tail-rotor blade strike during previous night's NVG air assault training flight.

Class E

A series

■ During shutdown of No. 2 engine after landing, tail wheel strut failed. Caused by failure of upper strut assembly.

■ During postflight, 2-inch hole was discovered in tail-rotor gearbox cover, and six camlock fasteners in a row were disconnected. Maintenance replaced fasteners, and aircraft was released for flight.

■ During climbout, stabilator failed to process in auto mode. Crew initiated emergency procedures and returned to base. Inspection revealed that stabilator actuator cannon plug was loose.

L series

■ During cruise flight, copilot noticed cockpit door sliding window had vibrated open. When he attempted to close it, sliding Plexiglas portion of window broke in half. Window slide had been slightly modified (shaved) during previous maintenance to accommodate new door and window sliding bracket assembly. Suspect failure was caused by suction (pressure) created from forward flight combined with degraded window integrity.

■ During cruise at 120 KIAS, aircrew felt aircraft roll uncommanded to left and stop. Within 2 seconds, it happened again. SAS 1 was turned off, and aircraft returned to base. Caused by failure of pilot's vertical gyro.

C12

Class E

F series

■ When power levers were reversed during landing rollout, aircraft veered left and crew smelled burning odor. No. 2 propeller began to feather, and fire was seen coming out of exhaust stacks. Pilot was able to taxi clear of runway, and fire went out when engine was shut down. Engine was replaced. Cause is under investigation.

G series

■ At 1600 feet during descent from FL 180, elevator fluttered. Pilot reduced airspeed and flutter ceased. Controllability was confirmed, and inspection of viewable wing structure revealed that battery access cover on right wing was loose. Airspeed was reduced further and flaps were set to approach to check controllability. Landing was made at destination without incident. Postflight inspection revealed that panel was loose and distorted.

C26

Class C

B series

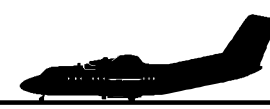
■ Right main landing gear left runway surface during landing at destination airport. Damage to gear noted on postflight inspection upon return to home station.

Class E

B series

■ During climbout after initial takeoff, No. 1 engine egt and torque fluctuated excessively, and aircraft yawed slightly. Aircraft was landed without further difficulty. Cause not reported.

O5



Class E

DHC-7

■ Aircraft was flying through area of light buildups and light to moderate rain. During descent for landing, aircraft was struck by lightning. Landing was completed without further incident.

■ During approach, cabin pressure dumped, and airstair-unlocked light came on. Flight attendant reported to cockpit crew that door had started to open and handle had raised about 15 to 20 degrees from the floor. She stepped on the handle and held it down for the rest of the flight. After landing, maintenance re-rigged airstair door handle and control linkage.

For more information on selected accident briefs, call DSN 558-2785 (334-255-2785). Note: Information published in this section is based on *preliminary* mishap reports submitted by units and is subject to change.

Aviation messages

Recap of selected aviation safety messages

Aviation safety-action message

OH-58-98-ASAM-01, 251540Z Aug 98, maintenance mandatory

AMCOM has established new retirement change limits for the gas-producer turbine wheels on T703-AD-700, -700A, and -700B engines. This message changes the limit from 1250 to 1500 hours. It also clarifies the start cycle limits for all engine components and modifies other published engine component limits. It is imperative that units accurately track hours, cycles, and hot-section-factor counts as directed by this message.

AMCOM contact: Mr. Ron Price, DSN 788-8636 (256-842-8636), price-sf@redstone.army.mil

Maintenance-information messages

AH-64-98-MIM-07, 192001Z Aug 98

Change 6 to TM 1-1520-238-PM introduced several discrepancies into the manual. This message corrects the following: phase interval, gearbox and main-transmission input and output flange inspections, tail-rotor gearbox mounting stud inspection, SDC oil filter replacement, hydraulic filter replacement, and decoupler shear pin inspection.

AMCOM contact: Mr. Ken Muzzo, DSN 897-4812 (256-313-4812), muzzo-kw@avrdecr.redstone.army.mil

AH-64-98-MIM-08, 021607Z Sep 98

This message corrects errors in a 30 July 98 ISAQ regarding main transmission clutch assembly retirement interval. The correct retirement interval for main transmission clutch assembly is "on condition."

AMCOM contact: Mr. Larry Powitzky, DSN 897-4801 (205-313-4801), powitzkyl@avrdecr.redstone.army.mil

OH-58D-98-MIM-05, 181637Z Aug 98

Mishap data for the past 2 years shows an increase in door loss after gun firing. If a door is not recovered, replacement cost constitutes a Class C mishap. The purpose of this message is to emphasize preflight and maintenance inspections of the crew door jettison safety wire and jettison rod extension through hinge halves, especially before gun-firing missions. The message also changes progressive phase maintenance inspection interval for the door jettison mechanism.

AMCOM contact: Mr. Kevin Cahill, DSN 645-9802 (256-955-9802), cahill-kt@avrdecr.redstone.army.mil

GEN-98-MIM-03 (revised), 011538Z Sep 98

(This message rescinds 242100Z Aug 98 message with same number.) Maintenance documentation requires the use of methyl ethyl ketone (MEK) in the repair and overhaul of aviation weapons systems. However, due to new aerospace national emissions standards for hazardous air pollutants that became effective 1 September, AMCOM has identified interim substitutes for MEK that can be used in maintenance procedures. The use of these substitutes is not mandatory and authority to use them applies only to MEK; no deviation for other cleaning processes and chemicals is authorized without approval from AMCOM. The purpose of this MIM is to alert users to the approved interim substitutes for MEK in advance of TB 1-1500-351-23-1.

AMCOM contact: Mr. Edward Allen, DSN 645-0660 (256-955-0660), allen-ek@redstone.army.mil

POV-fatality update through August

Speed ⊙
Fatigue ⊙
No seatbelt ⊙

No new causes, just new victims

FY98	FY97
108	81

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Class A Accidents through August

		Class A Flight Accidents		Army Military Fatalities	
		97	98	97	98
1ST QTR	October	0	2	0	0
	November	0	1	0	0
	December	1	2	0	2
2D QTR	January	2	1	2	0
	February	0	1	0	0
	March	2	1	1	0
3D QTR	April	2	0	2	0
	May	1	1	1	0
	June	3	2	0	4
4TH QTR	July	1	1	8	0
	August	0	0	0	0
	September	0		0	
	TOTAL	12	12	14	6

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