



# FLIGHT FAX

VOL. 1, NO. 41

29 JUNE-5 JULY 1973

## When Silence Is Not So Golden

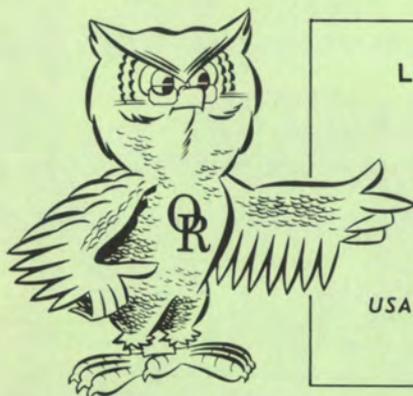
A UH-1H with a crew of five was cleared to land and the pilot initiated a descending right turn to base leg. At approximately 400 feet and 60 knots, a loud "screeching" noise was heard coming from the engine section. The aircraft yawed to the right 10° to 15° and then streamlined. The pilot felt the control responses as normal but immediately, and without comment, turned the controls over to the aircraft commander (AC). The AC initiated a precautionary landing and advised the tower of his intentions. As the airspeed dissipated to approximately 40-45 knots on the approach, the aircraft began an accelerating right turn, then started a flat spin to the right. Attempts to regain airspeed were futile, and the crew notified the tower they were going to crash.

The tower operator saw the aircraft hit the ground while in a right spin. It hit first on its left front side and rolled at least twice before coming to rest inverted. Four of the crewmembers received only minor injuries, but the fifth crewmember was killed. The aircraft was a total loss.

Established cause factors involved material failure and operation. Evidence indicated that the No. 1 hanger bearing failed in flight, resulting in separation of the tail rotor drive shaft at this location. The bearing showed visible evidence of excessive heat, the ball bearings were deformed and fused, the splined shaft and couplers were stripped, and circumferential marks were found on the forward shaft assembly and fire shield. There was no concrete evidence of maintenance or inspection error at the time of the investigation.

The operation cause factor lay in the AC's failure to analyze the in-flight problem and his decision to make an immediate precautionary landing. It is reasonable to assume that had the pilot told the AC about the normal control responses, the AC would have examined his options a little closer and possibly have continued flight to the airfield where he could have made a running landing. Golden silence turned to brass when the pilot failed to speak, the AC made a bad decision, and the aircraft was allowed to enter a nonrecoverable flight envelope.

### NATIONAL GUARD BRIEFS FOR JUNE-PAGE 5



#### LOSS OF COMBAT EFFECTIVENESS FROM THIS WEEK'S MISHAPS

INJURIES:	0
FATALITIES:	0
AIRCRAFT LOSSES:	0
ESTIMATED COSTS:	\$65,000

USAAAVS: AUTOVON 558-6510/4714  
Commercial AC 205, 255-6510/4714

U.S. ARMY AGENCY  
FOR  
AVIATION SAFETY  
FORT RUCKER, AL 36360

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# UTILITY/ATTACK

Fatalities: 0 ■ Accidents: 0  
Injuries: 0 ■ Estimated Costs: \$1,500

## DIVISION

■ MAJ Charles E. Toomer, Chief

*One incident, two forced landings, and 18 precautionary landings were reported.*

### UH-1

**2 FORCED LANDINGS** ■ Pilot heard loud explosion in engine compartment and engine failed. A successful autorotation was made to open field. Cause of failure unknown, pending teardown analysis. WELL DONE to CW2 Marvin C. King. ■ Pilot heard series of popping noises from engine as he turned base for landing. At 100 feet agl, noises were heard again and tower advised that flames were shooting from exhaust. Egt had risen to 900° at time of a safe landing. Suspect governor malfunction.

**17 PRECAUTIONARY LANDINGS** ■ Four engine chip detector light illuminations were reported. Normal wear fuzz was found on two detector plugs and special oil samples have been submitted for the other two aircraft. ■ Pilot noticed vapor coming from battery vent, and electrolyte spread over copilot's windshield. Caused by battery overheating. ■ Fire warning light illuminated in cruise flight. Caused by short in fire detection warning system. ■ Pilot and copilot smelled smoke in cockpit. Windshield wiper motor, P/N XW20173-2, had shorted. EIR submitted. ■ Engine chip detector light came on during hover. Pilot landed and engine failed. Cause unknown, pending teardown analysis. ■ Engine air inlet light came on. Caused by defective pressure switch, P/N 420128. ■ N1 dropped to zero, while all other instruments indicated normal. Electric indicator, P/N 8DJ81CAAC, failed. EIR submitted. ■ Transmission oil hot lights of two aircraft illuminated in flight. Both were caused by failure of thermostat flow control, P/N 8518329. EIR's submitted. ■ Tail rotor chip detector light illuminated in cruise flight. Suspect short in electrical wiring. ■ Transmission chip detector light came on. Caused by failure of chip detector, P/N B7674A. ■ Pilot experienced binding in antitorque pedals. Caused by worn bearing in tail rotor hub assembly. ■ N1 increased from 91.5% to 93.5% and, 2 minutes later, egt dropped to 300°. Inspection revealed loose connector plug. ■ Crew smelled hydraulic fluid and landed to investigate. After landing, hydraulic caution light illuminated and aircraft lost hydraulic pressure. Inspection revealed ruptured line, P/N 205-076-235-1. EIR submitted.

### AH-1

**1 INCIDENT** ■ Aircraft encountered high sink rate during approach and rpm built up during flare. Pilot rolled off throttle to maintain rpm and applied collective pitch, with resultant loss of power. Tail rotor struck vertical pylon assembly.

**1 PRECAUTIONARY LANDING** ■ Pilot heard noise coming from engine and aircraft yawed to left. Pilot entered power-on autorotation and noticed fluctuation of engine oil pressure and gas producer. Engine oil pressure stabilized at zero and engine oil pressure light illuminated. Chip detector light came on at 100 feet. Power loss was noted when initial pitch was applied prior to landing and complete electrical failure occurred during landing. Failure of No. 2 bearing seal is suspected cause. □

## LOH

Fatalities: 0 ■ Accidents: 2  
Injuries: 0 ■ Estimated Costs: \$50,000

## DIVISION

■ LTC David L. Boivin, Chief

*Two accidents, one forced landing, and 15 precautionary landings were reported.*

### OH-58

**1 ACCIDENT** ■ Engine failed in cruise flight over wooded area 18 minutes after takeoff. Pilot autorotated to open field and pulled pitch after flaring above grass 3 feet high. Aircraft struck ground on slight up-slope and rocked forward and rearward. Main rotor blades chopped off tail boom. Cause of engine failure unknown.

**10 PRECAUTIONARY LANDINGS** ■ Pilot detected odor in cockpit and noted an ammeter reading of 80 amps. After landing, crew chief saw smoke coming from battery compartment. OAT was 45° C. Inspection of battery revealed cell-connecting strap had arced, causing battery to overheat. ■ Engine oil bypass light flickered in cruise flight. Two minutes later, engine oil bypass light came on and engine oil temperature rose rapidly to red line. Power-on landing was made. Oil temperature was 135° at engine shutdown. Visual check of oil reservoir indicated complete loss of engine oil. Investigation revealed oil leak at oil return line fitting. ■ Pilot heard loud bang and felt shudder during takeoff. TOT was 749° at 40 pounds of torque. No. 2 bearing failed. Bleed valve failure is also suspected. ■ Hydraulic pressure lights of two aircraft came on. Caused by defective hydraulic pressure switches. EIR not reported on one switch. ■ Two engine chip detector light illuminations were reported. One was caused by fuzz on magnetic plug. Oil sample was submitted on the other aircraft and engine is being changed because of excessive wear indications. EIR submitted. ■ Tail rotor chip detector lights of three aircraft came on in flight. Two illuminations were caused by normal wear metal accumulation on magnetic plug, and the third was caused by frayed wire.

## OH-6

**1 ACCIDENT** ■ Deceleration and initial application of pitch during PRACTICE TOUCHDOWN AUTOROTATION left insufficient rotor rpm to cushion landing, and aircraft landed hard, severing tail boom and damaging main rotor blades.

**1 FORCED LANDING** ■ Engine seized after loud noise was heard from engine compartment. Suspect compressor blade failure.

**5 PRECAUTIONARY LANDINGS** ■ N1 went to flight idle and torque to 20 psi during cruise. Pilot lowered collective and checked for full throttle during 180° turn. He lined aircraft up with runway and autorotated. Full power came on when pitch was pulled to cushion landing. Aircraft was stabilized at low hover and moved to parking area. Caused by fuel control malfunction. EIR not reported. ■ Oil was seen leaking in passenger compartment during cruise flight. Oil tank filler seal (P/N 369A8322) came loose. ■ Engine oil temperature rose above red line to 120° and engine oil pressure dropped to 65 psi before power-on landing could be made. Engine oil cooler duct was broken. ■ Two engine chip detector light illuminations were reported. One was caused by carbon deposits on magnetic plug. The other aircraft had small metal particles on the plug. Oil sample submitted for analysis.

### THOUGHT FOR THE WEEK

**WHAT'S THE FLAP?** Many reports have been received concerning seat belt buckle damage to the OH-58A. The problem is caused when the crew does not check to see that all seat belts are fastened prior to flight. Unfastened seat belts left hanging outside the door flap during flight, causing damage to the sides of the aircraft. This problem is particularly serious when flying with the passenger doors removed. Action has been taken to investigate this problem and minimize the damage by using protective materials. A previous attempt to correct the problem by using reel type seat belts was unsuccessful. Recommend stencils be made at the unit level and the following caution note be added in 1-inch yellow letters to the backs of both crew seats on armor panel visible to the passengers: CAUTION: FASTEN SEAT BELTS AND CLOSE DOORS UPON EXITING.

Any penetration of the skin of a honeycomb member must be covered immediately with tape to prevent moisture and fuel entering and causing corrosion. Further information can be obtained from USAAVSCOM Technical Advisory Message for OH-58A Helicopters, No. 010, dated 051748Z July 1973.

**CRACKING UP**—OH-13 helicopters should be inspected for cracks in the forced web walls of the main rotor hub core (P/N 47-120-117-1) IAW USAAVSCOM Technical Advisory Message dated 141800Z Jun 1973. □

# CARGO

Fatalities: 0 ■ Accidents: 0  
Injuries: 0 ■ Estimated Costs: \$0

## DIVISION

■ LTC Edwin R. Widmer, Chief

*Four precautionary landings were reported.*

### CH-47

**3 PRECAUTIONARY LANDINGS** ■ Aft transmission chip detector light came on during flight. Caused by fuzz on chip detector plug. ■ Aircraft was in holding pattern during IFR flight when high side beep failure occurred. Rotor rpm increased to 225 for approximately 5 seconds. Emergency procedures were performed and aircraft was cleared for immediate straight-in approach. Both engines are being replaced due to over-speed. Cause of beep malfunction is unknown at this time. ■ Smoke was detected in cockpit during takeoff. Investigation could not disclose any defects or source.

### CH-54

**1 PRECAUTIONARY LANDING** ■ During cruise, EPR and fuel gauge became inoperative and transmission oil pressure indicated 4 psi. Upon landing, crew inspected wiring harness and cleaned cannon plug at station 210. Aircraft was returned to flight. □

# FIXED WING

Fatalities: 0 ■ Accidents: 0  
Injuries: 0 ■ Estimated Costs: \$0

## DIVISION

■ LTC Charles E. Humphries, Chief

*Nine precautionary landings were reported.*

### C-45

**2 PRECAUTIONARY LANDINGS** ■ Pilot was performing practice landings when he noticed slight right aileron pressure was required during left turns with flaps down. No other unusual circumstances were noticed. At termination of flight, left flap was noted to be disconnected from actuator and free to move throughout full travel. Caused by failure of taper pin and flap control mechanism assembly (P/N 894 18 7758). ■ IP simulated No. 2 engine failure by reducing throttle during VFR training flight. Pilot reacted by advancing throttle on No. 1 engine to 40 inches Hg. for approximately 15 seconds and overboosting engine by approximately 3.5 inches Hg. Overboost inspection was made and aircraft released for flight.

### C-47

**1 PRECAUTIONARY LANDING** ■ After approximately one hour of IFR training flight, No. 1 engine lost 300 rpm intermittently and was backfiring. Engine was secured. Caused by failure of left magneto on No. 1 engine (FSN PMJN 14K301, P/N 3F14LU7).

### OV-1

**1 PRECAUTIONARY LANDING** ■ Pilot noted total loss of hydraulic pressure and gear failed to extend during approach. Pilot used emergency pneumatic system and forced the gear down. Caused by ruptured hydraulic line.

### U-8

**3 PRECAUTIONARY LANDINGS** ■ No. 1 engine lost rpm and excessive amount of oil was seen on cowling during VFR training flight. Engine was shut down and aircraft landed at nearest available airfield. Caused by internal engine failure. Engine history: total time 2,874; since overhaul 401. Power settings: 3400 rpm/44 inches Hg. ■ No. 2 engine lost 200 rpm and oil was seen on cowling during VFR training flight. Engine was shut down and oil shutoff handle pulled. Postlanding check revealed engine failed

internally, cause unknown. Engine history: total time UNKNOWN; since overhaul 16 hours. Power settings: 2750 rpm/31.7 inches Hg. ■ Right main landing gear failed to fully extend and was manually extended. Postlanding check revealed right main gear actuator had no preload. Adjustment of gear was made and retraction test satisfactorily accomplished.

## U-21

**2 PRECAUTIONARY LANDINGS** ■ No. 2 engine chip detector warning light came on intermittently during IFR service flight. Postlanding check of magnetic plug revealed metal fuzz. Special oil sample was taken for analysis, plug was cleaned, oil screens cleaned, and engine flushed without evidence of metal. Aircraft was released for flight, pending oil analysis. ■ During test flight after completion of periodic inspection, pilot shut down No. 2 engine and checked auto-feather system, then restarted engine. He then shut down No. 1 engine and made three attempts to restart it, but got only 5% N1 on each attempt. He motored the starter while exercising the propeller to try to get it out of feather—unsuccessfully. Caused by failure of starter/generator (FSN 2925-087-3705, P/N 50-389-107).

### FIXED WING 360-DAY MISHAP DATA

	Last 30 Days	Last 90 Days	Last 180 Days	Last 360 Days
Injuries	0	1	3	5
Fatalities	0	0	15	19
Dollar Costs	\$1,539	\$366,081	\$1,070,243	\$3,735,816

## NATIONAL GUARD

Fatalities: 0 ■ Accidents: 1  
Injuries: 3 ■ Estimated Costs: \$32,979

### BRIEFS for Month of June

■ LTC Charles E. Humphries  
Chief, Fixed Wing Division

*One accident, four incidents, five forced landings, and 33 precautionary landings were reported.*

## OH-58

**1 ACCIDENT** ■ Aircraft was climbing to higher altitude during VFR training flight. Pilot of another aircraft saw white smoke coming from climbing aircraft's exhaust. Aircraft lost altitude and crashed into trees during autorotation, resulting in injuries to all three occupants. Cause was not reported, pending investigation.

**1 INCIDENT** ■ During tactical field training, pilot saw wires across road in takeoff path. Aircraft was banked left to avoid wires and settled to hard landing as airspeed bled off.

**2 FORCED LANDINGS** ■ N1 and torque started to decrease after 40 minutes of reconnaissance training mission. Engine-out warning light and low rpm audio came on. Aircraft was safely autorotated to open field. Postlanding check determined nothing. However, 3 days later, low rpm audio and engine-out light came on in cruise flight. Aircraft was successfully autorotated to field. Caused by compressor malfunction. Engine history: 854 hours total; 137 hours since overhaul.

**4 PRECAUTIONARY LANDINGS** ■ Master caution and fuel boost warning lights came on. Caused by inoperative fuel boost pump. ■ Master caution and fuel filter warning lights came on. Fuel was contaminated with dirt. Origin of dirt is unknown. ■ Engine chip detector warning light came on. Caused by metal fuzz on magnetic plug. Engine was flushed and refilled and oil sample scheduled after 5 flight hours. ■ Master caution and tail rotor chip detector warning lights came on. Small metal particles were found on tail rotor magnetic plug. Plug was cleaned and reinstalled, and 30-minute ground run made. Warning lights remained off and no metal was found when magnetic plug was rechecked. Oil sample was sent to ARADMAC for analysis.

## UH-1

**2 INCIDENTS** ■ Aircraft was being repositioned at hover prior to setting down. Main rotor struck and severed power line. ■ During local reconnaissance flight, unknown object struck underside of main rotor blade at mid-chord and ruptured skin, necessitating blade replacement. Construction workers in vicinity of final approach course were seen throwing rocks at aircraft.

**1 FORCED LANDING** ■ During practice instrument approach on VFR training flight, crew heard whining noise and muffled explosion, and engine quit. Suspect No. 4 bearing failure.

**16 PRECAUTIONARY LANDINGS** ■ During visual reconnaissance of riverbed, copilot sighted wires while aircraft was at approximately 50-75 feet agl. Immediate climb was established but aircraft struck four telephone wires strung 60 feet above riverbed, knocking out chin bubble and causing sheet metal damage below radio compartment. Flight controls were checked in flight and aircraft was landed in nearby field. Maintenance team assessed the damage and aircraft was flown to home base by maintenance officer. Riverbed had reportedly been checked from ground for obstacles 6 days before this mishap. Right chin bubble was broken, skin of one main rotor blade was punctured, and there was minor metal damage adjacent to right chin bubble. ■ IP noticed oil pressure gauge fluctuate during IFR training flight, and oil pressure master caution light came on. Aircraft was autorotated to airport. Oil pressure switch (FSN 5930-738-1640) was not properly torqued. ■ While leveling off at 2,500 feet, aircraft went into left spiraling dive. Left pedal was stuck in forward position. Suspect tail rotor servo control failure. ■ During VFR approach for landing, pilot noticed load meter reading was high when all electrical equipment was on. He noticed odor in cabin and some heat during downwind leg. On short final, smoke was seen coming from radio compartment and, at about the same time, battery fluid spewed out of vent onto windshield. Battery was removed from aircraft and examination revealed that soapy water had gotten into battery when aircraft had been recently washed, causing chemical reaction. ■ Aircraft was hovering at home base during training flight when crew chief noticed oil leaking from the 42° gearbox. Caused by failure of O-ring (FSN 5330-690-9594, P/N 1615 91 82676). ■ Master caution light came on and remained on. No segment lights came on. Master caution could not be reset. Wire was loose and some moisture was present on wires. When wires were cleaned and reconnected, master caution functioned properly. ■ Pilot noted unusual vibration in cruise flight. He immediately returned to unit training site and, when terminating, smelled unusual odor. Source of vibration and odor are unknown at this time. ■ Crew noticed high whining sound in cruise flight and suspected it was the hydraulic system. Hydraulic master caution light came on and aircraft lost hydraulics. A running landing was completed. Specific malfunction was not identified. ■ No. 1 hydraulic system warning light came on and smell of hydraulic fluid was noted. Running landing was made. Cause of warning light was not reported. ■ Smoke was seen coming from battery vent tube by ground personnel while aircraft was hovering. As aircraft hovered by, they signalled the pilot to land and shut down. Postlanding check revealed battery was swelled and exterior was too hot to touch. New battery was installed and corrected the fault. Voltage regulator had been properly adjusted for summer operation. Battery was faulty. ■ Engine chip detector warning light came on. Following landing, magnetic plug was removed, cleaned, and reinstalled. Engine was ground run and aircraft flown for 1 hour. ■ Master caution and tail rotor chip detector warning lights came on. Caused by short in magnetic plug. Magnetic plug was replaced and aircraft released for flight. ■ Master caution and transmission chip detector warning lights came on. Corrosion caused transmission magnetic plug to short out. ■ Master caution and fire warning lights came on. Power-on descent was made to open field. Caused by malfunction of fire warning relay. Relay was replaced and aircraft released for flight. ■ Master caution warning light came on. Chip detector switch was tested and master caution remained on in transmission chip detector position. Caused by moisture on transmission magnetic plug. Plug was cleaned and aircraft run up. ■ Transmission oil pressure warning light came on and transmission oil pressure dropped to zero during test flight. Caused by failure of transmission oil screen gasket (FSN 1615-340-6998, P/N 48-431-629-1).

## U-3

1 INCIDENT ■ Nose gear would not extend during landing. Nose gear push-pull tube had broken in two. Nose gear doors, nose of fuselage, and both propellers were damaged.

## OH-6

1 FORCED LANDING ■ Loud noise was heard from engine compartment. Subsequent engine failure resulted from suspected compressor blade failure.

9 PRECAUTIONARY LANDINGS ■ Bypass air warning light came on during takeoff. Takeoff was aborted. Suspect differential pressure due to aircraft attitude and partially clogged filter. ■ Low fuel caution light came on after approximately 2 hours and 35 minutes of flight. Postlanding check revealed aircraft was almost out of fuel. ■ Main transmission chip detector warning light came on. Aircraft was landed on beach and magnetic plug removed and inspected. Small amount of small metal particles was found, so main transmission was flushed and aircraft released for flight. ■ Generator failed and all flight instruments were turned off. Landing was made approximately 30 minutes later as a result of reduced visibility in the absence of necessary navigation instruments. ■ Main transmission chip detector warning light came on. Caused by metal chips on magnetic plug. Aircraft had a past history of high metal content in oil. Transmission is being changed. ■ After 30 minutes of flight, while cruising over an airport at 110 knots, 50 psi torque, 102% N2 and about 91% N1, N1 suddenly went to flight idle and torque to 20 psi. Pilot lowered collective to check for full throttle, turned 180°, lined up with runway, and entered autorotation. During pitch-pull to cushion landing, full power came on. Aircraft stabilized at low hover, and was hovered to parking ramp and shut down. Caused by fuel control malfunction. ■ Oil was seen leaking in passenger compartment. Postlanding check revealed transmission filler cap was leaking. Suspect it was not properly installed. ■ Transmission chip detector warning light came on during takeoff. Check revealed small metal particles on magnetic plug. Oil sample was taken and aircraft released for flight. ■ After approximately 45 minutes of test flight, two successive loud noises were heard from transmission area, followed by illumination of transmission oil pressure warning light. All other instruments remained normal. Aircraft was evacuated to home base by vehicle, where it was ground run for approximately 15 minutes with no unusual noises noted. Oil sample was taken from transmission for analysis. Oil screen was checked and no apparent stoppage or sludge was detected. Transmission oil was clear with no visible deposits. Aircraft is grounded, pending analysis of oil sample.

## OH-13

1 FORCED LANDING ■ Engine rpm decreased during final phase of landing at forward tactical area. Turbocharger had seized.

## CH-34

1 PRECAUTIONARY LANDING ■ Engine backfired twice and cylinder head temperature rose to 210° C. No further information was reported.

## CH-54

2 PRECAUTIONARY LANDINGS ■ During maintenance test flight, No. 2 engine control was placed in ground idle to facilitate power check on No. 1 engine. As power was being restored to No. 2 engine, pilot noted No. 2 speed decreasing, with a corresponding rapid rise of engine internal temperature (T-5). Engine was shut down with a maximum of 840° C. (T-5) noted. Engine was changed and EIR is forthcoming. ■ Engine pressure ratio and fuel gauge became inoperative and transmission oil pressure gauge indicated 4 psi. Gauges returned to normal during landing. Wiring harness was inspected and cannon plug at station 210 cleaned. MOC was okay and aircraft was released for flight.

# OV-1

**1 PRECAUTIONARY LANDING** ■ Hydraulic pressure was lost and gear would not extend at termination of infrared training flight. Without gear, flaps, speed brakes, or indication of hydraulic pressure, pilot made go-around, blew gear down with pneumatic emergency system, and landed. Caused by failure of hydraulic line.

## NATIONAL GUARD 360-DAY MISHAP DATA

	Last 30 Days	Last 90 Days	Last 180 Days	Last 360 Days
Injuries	3	5	5	13
Fatalities	0	0	0	6
Dollar Costs	\$61,979	\$263,536	\$269,745	\$1,136,664

**DEPARTMENT OF THE ARMY**  
UNITED STATES ARMY AGENCY  
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VOL. I, NO. 42

PRELIMINARY ARMY AIRCRAFT MISHAP DATA

# FLIGHT FAX

6-12 JULY 1973

## WHAT'S A LOSER?

A loser is a fellow who puts on his Nomex flight suit and rolls up the sleeves. A loser is a fellow who forgets his survival vest and flies without gloves. He doesn't fly with his visor down and leaves his survival knife in his tackle box. He kicks the tire and lights the fire. He's your copilot whose gaze wanders on a GCA to minimums. He's the pilot who preflights by memory instead of using the checklist.

You often hear a loser utter such pearls as "no sweat" following a hookup pass. He often refers to the way they "used to do it." His -10 manual looks brand new—and it's never been open past 1630. Finally, he's the fellow who will take the time to compute the time for the morning coffee to perk, and will guess at the length of his takeoff run. Strangely enough, this fellow is a nice guy, one of the gang. Loves

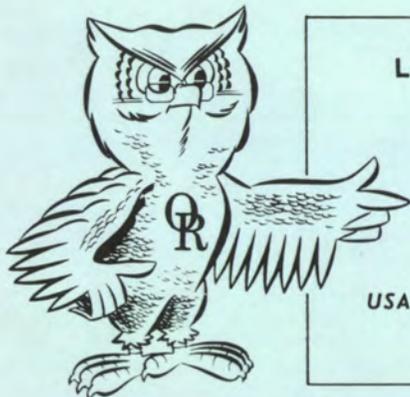
mother, apple pie, and pro football. But, as they say in the "Music Man," "he doesn't know the territory." And friend, this guy could be YOU. You get the AVIATION DIGEST and FLIGHT-FAX, thumb through them, and put them in the file box. Consider this. How much green does it cost to get a copy of the DIGEST or FLIGHT-FAX? Assuming you're a military aviator or aircrewman, the cost is nothing, zero green! What's more, you don't have to wade through 60 pages of ads, philosophy, and forum to get to the centerfold. The action is right there on page one and it goes all the way to the end. It doesn't cost anything but a few minutes of your time.

Remember the examples of a real loser.

Remember, too, there's no real reason for you to be a loser!

### AVSCOM FERRY FLIGHT KIT

The FY 74 AVSCOM Ferry Flight Kit is now available. It consists of purchase forms and a booklet of instructions listing crew and travel limitations, pickup and delivery procedures, en route purchasing procedures, en route maintenance support, reporting requirements, facility information, and other essential information. The kit is a MUST for all AVSCOM-directed ferry flights and is issued at the contractor or depot sites. To obtain either the kit or the booklet of instructions for flights to a depot/contractor/storage site or for advance crew briefings before departing for pickup of aircraft, call AVSCOM, Autovon 698-2727/2668/2963, or write to: Commander, USAAVSCOM, ATTN: AMSAV-QNDS, P.O. Box 209, St. Louis, MO 63166.



### LOSS OF COMBAT EFFECTIVENESS FROM THIS WEEK'S MISHAPS

INJURIES:	0
FATALITIES:	0
AIRCRAFT LOSSES:	0
ESTIMATED COSTS:	\$32,383

USAAAVS: AUTOVON 558-6510/4714  
Commercial AC 205, 255-6510/4714

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# UTILITY/ATTACK

Fatalities: 0 ■ Accidents: 1  
Injuries: 0 ■ Estimated Costs: \$24,643

## DIVISION

■ MAJ Charles E. Toomer, Chief

*One accident, five incidents, one forced landing, and 18 precautionary landings were reported.*

### UH-1

**1 ACCIDENT** ■ While attempting autorotation, pilot did not decelerate enough at 100 feet. Initial pitch was pulled at about 25-30 feet and IP told pilot of deficiencies. Pilot decelerated further and added more pitch at 15-20 feet, which caused tail rotor stinger to strike ground and aircraft to yaw left. Not having time to add power or align the aircraft, IP attempted side flare to halt forward momentum. With no collective pitch, the aircraft fell from 5 to 8 feet, damaging both crosstubes and transmission mounts.

**4 INCIDENTS** ■ Synchronized elevator was torn on underside by post during revetment training. ■ Master caution and transmission oil pressure lights came on in cruise flight. Oil pressure gauge confirmed low pressure, and precautionary landing was initiated. Aircraft was damaged during landing. Suspect main transmission internal oil filter gasket was improperly installed. ■ During first takeoff of second solo flight, at approximately 50 knots and 50 feet, student pilot heard series of loud bangs from rear of aircraft, followed by loss of power and altitude. SP maneuvered aircraft to avoid tall trees and deep ravine, landing on a slope of approximately 12°. Suspect compressor stall. WELL DONE to 1LT James F. Rosencrans. ■ Technical inspector noticed dents in tail rotor drive shaft cover during shutdown. Inspection revealed damage to hanger bearing, clamp, and tail rotor drive shaft. Caused by a screwdriver that was left under cover.

**1 FORCED LANDING** ■ Engine failed at 1,000 feet agl. Cause unknown. WELL DONE to CW3 Dean L. Hoover.

**14 PRECAUTIONARY LANDINGS** ■ Right fuel boost caution light came on during final approach. After aircraft was landed, small electrical fire around right fuel boost pump was found. Cause unknown, pending further inspection. ■ Rotor tachometer failed in flight. EIR submitted. ■ While conducting maintenance test flight, pilot increased collective pitch in hydraulics-off check. Master caution and engine fuel pump lights illuminated, along with drop in rotor rpm and rapid unwinding of N1. Pilot entered autorotation and accomplished engine restart at 1,400 feet agl. Metal particles were found in fuel filter, indicating probable failure of engine fuel pump. EIR submitted. ■ Aircraft began to lose power in cruise flight and yawed to left several times. When power was reduced, engine stabilized and yawing stopped. Inspection revealed inlet guide vane rod rubbing against fuel line, causing slight engine power loss. ■ Two cases of overheated batteries were reported. Both were caused by battery malfunctions. ■ Three engine chip detector light illuminations were reported. All were caused by normal wear fuzz. ■ Tail rotor chip detector light came on in cruise flight. Caused by normal wear fuzz. ■ Transmission oil hot lights of two aircraft illuminated. Contact points were replaced on one aircraft and cleaned on the other. ■ Aircraft lost hydraulic pressure on downwind. Collective pitch hydraulic pressure line, P/N 13262605-0210, ruptured. ■ Pilot smelled hydraulic fluid and landed without hydraulic pressure loss. Inspection revealed crack in "T" fitting which allowed hydraulic fluid to vent overboard.

### AH-1

**1 INCIDENT** ■ Main rotor blades struck tree during NOE training.

**4 PRECAUTIONARY LANDINGS** ■ Hydraulic pump began cavitating in flight. Suspect excessive pressure output of hydraulic pump. ■ Engine oil pressure fluctuated and oil bypass and fuel filter lights illuminated. Moisture was found in cannon plug, causing fluctuation and caution lights to illuminate. ■ Engine oil pressure gauge fluctuated erratically between 20 and 95 psi. All other instrument readings and power indications were normal. Maintenance personnel could not duplicate malfunction and aircraft was released for flight. ■ Tail rotor chip detector light came on. Small metal chips were found on 90° chip detector plug. Oil sample submitted for analysis. □

# LOH

Fatalities: 0 ■ Accidents: 0  
Injuries: 0 ■ Estimated Costs: \$4,000

## DIVISION

■ LTC David L. Boivin, Chief

*Two incidents and five precautionary landings were reported.*

### OH-58

**2 INCIDENTS** ■ Aircraft was flying straight and level at 60 knots during gunrun (firing 4,000 rounds per minute). Left front door popped open and four rounds penetrated lower portion of door. EIR submitted on failed latch. ■ Aircraft began to vibrate violently at 1,500 feet. Pilot entered autorotation; however, he slowly rolled throttle back on and made power-on landing to drive-in theater. Postflight inspection revealed small dent inboard of one tail rotor blade and bend on trailing edge of other blade. Suspect bird strike.

**3 PRECAUTIONARY LANDINGS** ■ Carbon on magnetic plug caused engine chip detector light to come on in flight. ■ Tail rotor chip detector light came on in flight and went off prior to landing. Inspection revealed nothing. Oil sample submitted for analysis. ■ The "20-minute" (don't ever believe that) warning light came on after 2+50 hours of flying time. Fortunately, the pilot set the aircraft down immediately after the light illuminated. The pilot feels that the winds exceeded the forecast of 30 knots. SURPRISE, SURPRISE, SURPRISE! Proper fuel planning can prevent surprises of this type. Pilot estimated 2+50 hours of flying time and assumed (not planned) 3+15 hours of fuel was on board (a violation, by the way, of AR 95-1, which specifies a 30-minute reserve on VFR flights). Winds may have been a factor, but not the only factor. It may be a surprise to some, but the handbook shows that under many normal mission conditions the OH-58 will not stay airborne for 2+50 hours. Other atmospheric conditions, altitude, weight, airspeed, and reserve should be calculated prior to flight instead of using a blanket 3+15 hours of fuel for all missions. The pilot's understanding of what the low fuel state warning light means kept this surprise on the pleasanter side. **DO YOU USE THE OPERATORS' HANDBOOK OR ARE YOU PLANNING TO SURPRISE YOURSELF?**

### OH-6

**2 PRECAUTIONARY LANDINGS** ■ Small metal particles on magnetic plug caused engine chip detector light to come on. ■ Transmission chip detector light came on during landing. Small metal particle found on magnetic plug. Suspect normal wear and tear.

#### THOUGHT FOR THE WEEK

**MISMATCHED.** Copilot's door popped open and took four rounds during gunrun. The aircraft's serial number was dated late enough that the contractor had modified the original design of the door prior to delivery IAW MWO 55-1520-228-30/3 (dated 8 Sep 70) which required the latch rod to be reworked to prevent the door from opening during gunruns. However, this was not the door on the aircraft during the gunrun. The unit had a habit of stacking doors removed from aircraft into one pile without any identification as to which aircraft each door belonged. Doors then became intermixed and usually didn't fit well when reinstalled. This is a no-no. These doors are not interchangeable because of differences in manufacturing and changes to production line tolerances. To avoid doors flying into bullets or just leaving the aircraft, it is recommended that each door be stenciled inside with corresponding tail (serial) number of the aircraft to which it belongs to prevent a mismatch. □

# CARGO

Fatalities: 0 ■ Accidents: 0  
Injuries: 0 ■ Estimated Costs: \$0

## DIVISION

■ LTC Edwin R. Widmer, Chief

*Eight precautionary landings were reported.*

### CH-47

**6 PRECAUTIONARY LANDINGS** ■ Crew chief heard high-pitched noise coming from utility fan assembly, followed by hydraulic leak in the same compartment. Fan disintegrated when aircraft was on final. Investigation determined that failure was caused by fan assembly coming in contact with housing. Tests are being conducted to determine cause. ■ No. 1 hydraulic flight boost and No. 1 SAS systems failed. Hydraulic oil was seen coming from forward transmission area and landing was made without incident. Caused by broken line at No. 1 flight boost pressure reducer fitting and between reducer and No. 1 SAS

filter. ■ Transmission low oil warning light came on during flight. Oil pressure scan switch indicated transmission pressure at 19 psi. Caused by defective oil pressure scan switch. ■ In-flight oil pressure scan switch check revealed forward transmission pressure reading 100 psi. Caused by defective oil pressure transducer. ■ Pilot noted low side a.c. beep failure. Emergency procedures were initiated and aircraft returned to takeoff point. Droop potentiometer ohms resistance was set too high. ■ No. 2 flight hydraulic boost system failed. Caused by chafed line.

## CH-54

1 PRECAUTIONARY LANDING ■ Crew heard unusual noise coming from main rotor blades. Stick-on numbers used in strobex optical blade tracking came partially loose, creating whistling noise.

## CH-34

1 PRECAUTIONARY LANDING ■ Hydraulic pressure was lost on primary servo system. Pilot landed, using auxiliary servo system. Caused by ruptured hydraulic line. □

# FIXED WING

Fatalities: 0 ■ Accidents: 0  
Injuries: 0 ■ Estimated Costs: \$3,740

## DIVISION

■ LTC Charles E. Humphries, Chief

*One incident and one precautionary landing were reported.*

## U-21

1 INCIDENT ■ Landing gear knee assembly (FSN 1620-759-9076, P/N 50810323) failed during flight and right main gear separated from aircraft, resulting in damaged strut and bent propeller tips. As a result of this incident, the knee assemblies of four other U-21's on the same field were inspected. All but one of these aircraft had cracks in one or more knee assemblies. All of the cracks appeared at the small end of the lightening hole. Until some official corrective action is taken, it is suggested that U-21 users clean the knee assemblies of grease and dirt and inspect them for cracks with a magnifying glass during the Periodic Maintenance Inspection (PMI).

## T-41

1 PRECAUTIONARY LANDING ■ Engine began running rough after approximately 30 minutes of VFR service mission. Landing was made at available airfield. Caused by fouled spark plugs. Plugs were changed and aircraft continued mission.

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PRELIMINARY ARMY AIRCRAFT MISHAP DATA

# FLIGHTFAX

VOL. I, NO. 43

13-19 JULY 1973

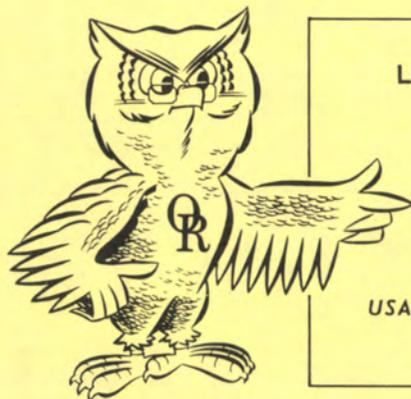


The National Transportation Safety Board released its findings on the crash of a light plane which was flying low over a residential area and struck the top of a 65-foot utility pole. Commenting on the accident, the Safety Board had this to say:

"A great deal of the pleasure of flying stems from a pilot's control of an added travel dimension—height. Since the earliest days of aviation, this pleasure has become—for all too many pilots—an irresistible temptation to sample the apparent thrill of low-level flight where the sensation of speed is the greatest.

"'Buzzing' or 'flat-hatting' is a deceptive thrill. Whatever his total time, the pilot may be supremely confident of his control of the aircraft and his ability to avoid any object on the surface—until he encounters an obstruction which he couldn't or didn't see. Then he often discovers tragically just how narrow is his margin of error at low altitude.

"The safe pilot always remembers that a price he pays for the pleasure of flying is reasonable care, and adherence to minimum flight altitudes is basic to such care."



## LOSS OF COMBAT EFFECTIVENESS FROM THIS WEEK'S MISHAPS

INJURIES:	5
FATALITIES:	2
AIRCRAFT LOSSES:	3
ESTIMATED COSTS:	\$2,058,506

USAAAVS: AUTOVON 558-6510/4714

Commercial AC 205, 255-6510/4714

U.S. ARMY AGENCY  
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# UTILITY/ATTACK

Fatalities:0 ■ Accidents:0  
Injuries:1 ■ Estimated Costs: \$11,440

## DIVISION

■ MAJ Charles E. Toomer, Chief

Six incidents, three forced landings, and 26 precautionary landings were reported.

### UH-1

**5 INCIDENTS** ■ Aircraft struck tree during low-level recon. Left chin bubble, fuel cell inspection panel, left synchronized elevator, and both tail rotor blades were damaged. One pilot received a slight eye abrasion from flying plexiglass. ■ Aircraft, at 1,500 feet and 100 knots, struck sea gull. Right chin bubble was broken. ■ Pilot executed simulated antitorque failure and forward cross tube broke on right side during touchdown. Failure appears to have been caused by fatigue on bottom side of tube assembly, outboard of attachment point. ■ Aircraft landed hard at termination of hovering autorotation. Skids, cross tubes, and skin on underside of aircraft were damaged. ■ Right cargo door came off during climbout. Sheet metal on right side of aircraft was torn.

**3 FORCED LANDINGS** ■ Engine failed in level flight. Suspect fuel control failure. EIR submitted. ■ Collective was lowered to full down position during final approach. High rpm warning light illuminated and pilot attempted to decrease rpm with governor increase-decrease switch. When switch was depressed, engine failed. Cause unknown, pending investigation. ■ Severe vertical vibrations occurred shortly after takeoff. Caused by seizure of white main rotor grip. Emergency EIR submitted.

**22 PRECAUTIONARY LANDINGS** ■ Aircraft vibrated severely in cruise flight. Inspection revealed failure of swash plate drive link trunnion bearing (P/N KSP 9001-3). EIR submitted. ■ Four fire warning light illuminations were reported. One was caused by moisture in electrical receptacle, one by loose cannon plug, one by malfunction of fire detector control box, and the other by electrical malfunction of fire warning system. ■ Two engine chip detector light illuminations were reported. Both were caused by normal wear fuzz. ■ Engine fuel pump caution lights of two aircraft illuminated. Engine fuel pump failed on one aircraft and maintenance is inspecting the other. ■ Master caution light came on with no segment caution light. Caution light panel was replaced and wiring checked, but no cause was found. ■ Transmission chip detector lights of two aircraft came on. One was caused by crack in detector plug, and the other had water in dust cover boot, causing short. EIR submitted for cracked chip detector. ■ Transmission oil pressure caution light illuminated and oil pressure dropped to zero. Internal transmission oil filter gasket (P/N 48-431-629-1) failed. ■ High engine oil temperature caused two precautionary landings. Both aircraft had bearing failures of the engine oil cooling fan (P/N A201523 and 132101-1). EIR's submitted. ■ Three tail rotor chip detector light illuminations were reported. One was caused by normal wear fuzz, one by metal particles, and no cause was determined for the other. ■ Heavy airframe vibrations occurred in cruise flight. Maintenance personnel inspected aircraft and found no cause for the vibrations. ■ Crew smelled hydraulic fluid and pilot made precautionary landing. Hydraulic system was one-half quart low of fluid. Maintenance inspection failed to reveal cause of fluid loss. ■ Two hydraulic failures were reported. One was caused by failure of tube assembly (P/N 205-076-160-1), and the other by failure of hydraulic pump (P/N 204-076-065). EIR submitted.

### AH-1

**1 INCIDENT** ■ Aircraft struck tree during NOE training, damaging nose section.

**4 PRECAUTIONARY LANDINGS** ■ Tail rotor chip detector light came on during landing. Loose sending unit caused light to illuminate. ■ Pilot noticed smoke coming from battery vent. Caused by partially clogged vent. ■ Pilot heard loud noise shortly after takeoff. Aircraft was test flown, but noise could not be duplicated and aircraft was released for flight. ■ As power was reduced for landing, hydraulic pump whined, followed by illumination of No. 1 pressure light. When power was increased, light went out and landing was made. Suspect No. 1 hydraulic pump failure. EIR submitted. □

## LOH

Fatalities:3 ■ Accidents:5  
Injuries:1 ■ Estimated Costs: \$369,586

## DIVISION

■ LTC David L. Boivin, Chief

Five accidents, one incident, and 12 precautionary landings were reported.

### OH-58

**3 ACCIDENTS** ■ Aircraft struck four power and telephone wires 30 feet above and across a river. After contact, aircraft pitched up, yawed left, and crashed on north bank of river. Passenger was killed and pilot received broken pelvis, bruises, and lacerations. Aircraft was destroyed. ■ Aircraft penetrated dense

tree line at night and crashed on edge of lake. Weather was a factor, with sky condition 500 broken, 1,000 overcast, and 2 miles ground fog. The occupants were killed and the aircraft was destroyed. ■ During PRACTICE TOUCHDOWN AUTOROTATION, pilot began to apply initial pitch at 12 feet and continued to pull pitch through 3 feet to cushion landing. Too much pitch was applied and descent was stopped at 2 feet. When IP took control, rotor rpm had decayed to point of ineffectiveness. Aircraft struck ground and bounced back into air. On subsequent landing, ground run was one-half helicopter length and rotor rpm only 200. Aft cross tube was bent and transmission cowling damaged by outer swash plate ring. Aircraft was inspected for pylon whirl and there were no signs of tail boom oscillation.

**9 PRECAUTIONARY LANDINGS** ■ Smoke was seen coming from aircraft during landing. Aft seal on short shaft failed, allowing grease to be slung out of coupling. EIR not reported. ■ Running landing was made when right pedal became stiff in flight. Secondary FM radio connector (cannon plug) was detached from securing clamp and became wedged between tail rotor push-pull tube and ADF antenna plug. ■ Pilot detected JP-4 fumes during flight. Cause unknown. ■ Engine oil bypass caution light came on after 1.5-hour flight. Hairline crack was found in oil tube assembly from accessory case. EIR submitted. ■ Engine oil bypass light came on in cruise flight, followed by fluctuation of engine oil pressure. Smoke was seen emitting from exhaust stacks during precautionary landing. Suspect internal engine failure. EIR submitted. ■ Oil pressure switch failure caused transmission oil pressure warning light to come on in flight. EIR submitted. ■ Metal fuzz accumulation on magnetic plug caused transmission chip detector light to illuminate. MOC okay. ■ Metal particles were found on magnetic plug after transmission chip detector light came on. Oil analysis revealed high metal content. Transmission was flushed and oil samples are to be sent to ARADMAC every 5 hours. ■ Tail rotor chip detector light came on. Caused by metal fuzz accumulation on magnetic plug. MOC okay.

## OH-6

**2 ACCIDENTS** ■ Aircraft struck two 12,000-volt electrical wires while flying low level without justification over river. Pilot landed on sand bar in middle of river. Major damage to main rotor assembly and blades, tail rotor blades, and upper vertical stabilizer. Miraculously, no one was injured. ■ Main rotor blade severed tail boom during termination of PRACTICE TOUCHDOWN AUTOROTATION. Aircraft touched down on skid heels, with no forward speed. Pilot was holding collective full up and full aft cyclic.

**2 PRECAUTIONARY LANDINGS** ■ Excess oil from filler vent of overfilled transmission leaked into cabin area. Oil was blown forward onto windshield by slipstream created by doors-off configuration. ■ Metal particle was found on magnetic plug after transmission chip detector light came on. Aircraft was grounded, pending further analysis.

## TH-55

**1 INCIDENT** ■ While SP was practicing hovering, aircraft struck ground hard and tilted rearward. IP took control and aircraft came to rest in upright position. Tail rotor blade, drive shaft and gearbox, tail skid, horizontal stabilizer, vertical fin, aft and front cross beam, two oleo struts, two skid gear strut assemblies and drag struts, right step, and lower rotating beacon were damaged.

**1 PRECAUTIONARY LANDING** ■ Radio receiver slowly lost volume, and alternator was recycled, with no effect. Radio operated properly after radio fuse was replaced. However, a few seconds later, both pilots smelled electrical fire fumes. All nonessential switches were turned off and landing made. Alternator wire had come loose and shorted out VHF radio.

### THOUGHT FOR THE WEEK: HOMESPUN IN WIRES

Some down-to-earth philosophy from an old crop duster whose famous last words were:

"From ashes to ashes and dust to dust

If the high wires don't get you then the barbwire must."

## CARGO

Fatalities: 0 ■ Accidents: 0  
Injuries: 0 ■ Estimated Costs: \$14,000

## DIVISION

■ LTC Edwin R. Widmer, Chief

One incident and two precautionary landings were reported.

## CH-47

**1 INCIDENT** ■ During touchdown from landing at stage field, pilot noticed aircraft was unstable and appeared to lean excessively toward right aft gear. Aircraft was lifted to hover and crew chief exited to inspect landing gear, and found link assembly and swivel hydraulic fitting broken. Swivel hydraulic fitting

failed as a result of the link assembly failure. Utility hydraulic pressure had dropped to zero. Aircraft was flown to home base where crew hovered aircraft while link assembly was replaced. Cause of failure is undetermined.

**1 PRECAUTIONARY LANDING** ■ Engine chip detector light came on in flight. Inspection revealed fuzz on magnetic plug.

## CH-54

**1 PRECAUTIONARY LANDING** ■ Transmission oil pressure dropped to zero. Caused by water in cannon plug.

Reference FLIGHTFAX dated 15-21 June 1973, CH-54 precautionary landing: Engine did not fail during test flight. Engine was shut down when pilot noted N2 speed was decreasing with corresponding rapid rise of engine temperature (T5) up to 840° C. □

## FIXED WING

Fatalities: 2 ■ Accidents: 1  
Injuries: 0 ■ Estimated Costs: \$2,033,066

### DIVISION

■ LTC Charles E. Humphries, Chief

*One accident and five precautionary landings were reported.*

## OV-1

**1 ACCIDENT** ■ During VFR photo mission, while positioning aircraft for photo pass, aircraft was seen to turn and dive into ground, exploding on impact. The two occupants were killed.

## T-41

**2 PRECAUTIONARY LANDINGS** ■ Engine chip detector warning light came on. Wire from magnetic plug had broken and grounded on aircraft, resulting in warning light illumination. ■ Engine chip detector warning light came on. All engine instruments were normal. During postlanding examination, magnetic plug was removed and four small pieces of metal were found. Oil screen was uncontaminated. Special oil sample and pieces of metal were submitted for analysis.

## U-8

**2 PRECAUTIONARY LANDINGS** ■ Engine began running rough in cruise flight, accompanied by popping noise. Power reduction lessened vibration and aircraft was returned to home base. Caused by failure of cylinder and piston assembly (FSN 2810-954-3965, P/N 73191-3). ■ When gear handle was placed in "up" position, gear failed to fully retract. This was indicated by a light in the gear handle and all three gear lights off. The smell of burning wires was noticed. Gear handle was placed in "down" position with no effect. Pilot pulled landing gear relay circuit breaker, manually extended gear, got a safe indication with three green lights and no light in gear handle, and landed. Relay solenoid (FSN 5945-258-1408) had burned out.

## U-9

**1 PRECAUTIONARY LANDING** ■ Crew smelled unusual odor in flight. Ammeter was seen at 90 amps on each engine. Crew began turning electrical equipment off, but when ammeter pegged out high, generator was turned off and landing was made at nearest airfield. Postlanding check revealed battery was shorted internally. □

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# FLIGHTFAX

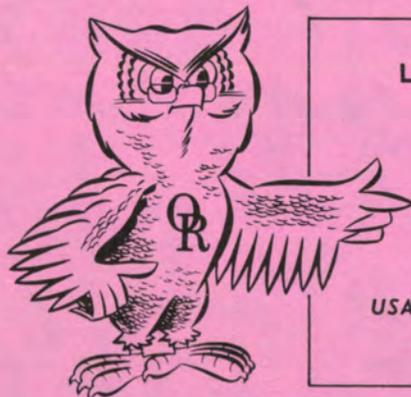
VOL. I, NO. 44

20-26 JULY 1973

## USAAAVS SAFETY PUBLICATIONS

All along we have many queries about available safety publications. In addition to *Flightfax* and *Maintenance Fax*, which are weekly and monthly mishap summaries, the following publications are currently available from USAAAVS, ATTN: FDAR-EP, Fort Rucker, AL 36360:

- *Guide to Aviation Resources Management for Aircraft Mishap Prevention*, Third Edition—Prepared for commanders, staff officers, and leaders of the varied activities in Army aviation. As its name implies, it serves as a guide for preventing aircraft mishaps through the judicious and skillful use of aviation resources.
- *Sample Aviation Accident Prevention Program*—Prepared for aviation unit commanders and safety supervisors to implement effective accident prevention programs. Developed from aviation accident prevention programs submitted by Army units.
- *Flight Surgeon's Newsletter*—Published quarterly for flight surgeons and other personnel interested in aviation safety, human factors, life support equipment, and aviation medicine.
- *System Safety Newsletter*—Published quarterly for the exchange of newsworthy items in the field of system safety as it applies to Army aviation.
- *Technical Report 71-1, Army Midair Collisions*—An analysis of 56 Army midair collisions that occurred from January 63 through November 69.
- *Technical Report 71-2, Wire Strike Report*—Study of factors and circumstances causing or contributing to Army aircraft wire strikes.
- *Technical Report 72-4, Aviators With Two or More Pilot-Error Accidents*—A study of personal characteristics of aviators who had two or more pilot-error accidents in a 30-month period.
- *Technical Report 72-6, Crashworthy Fuel System Mishap Data*—An analysis of mishaps involving aircraft equipped with crashworthy fuel cells, 1 June 70 through 31 August 71.
- *Ten Points for Command Attention*—Ten accident-prevention "do's" and "don'ts" for commanders/supervisors, drawn from analyses of pilot-error accidents.
- *Inability to Fly Basic Instruments*—Analysis of accidents involving pilots not proficient in instrument flight, IMC being a cause factor in the accidents.
- *Improving Initial Distribution of Aviation Publications*—Designed to assist units in obtaining aviation publications and containing "how to" details (reprint from *Flightfax*).
- *Mishap Experience Reports* for the following aircraft (statistics, analyses, and selected mishap briefs for a given period): CH-54, June 73; AH-1G, January 73; OH-58, November 72; OV-1, October 72.



### LOSS OF COMBAT EFFECTIVENESS FROM THIS WEEK'S MISHAPS

FATALITIES:	0
INJURIES:	2
AIRCRAFT LOSSES:	0
ESTIMATED COSTS:	\$145,025

USAAAVS: AUTOVON 558-6510/4714

Commercial AC 205, 255-6510/4714

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# UTILITY/ATTACK

Fatalities: 0 ■ Accidents: 2  
Injuries: 2 ■ Estimated Costs: \$132,025

## DIVISION

■ MAJ Charles E. Toomer, Chief

Two accidents, two incidents, and 19 precautionary landings were reported.

### UH-1

**2 ACCIDENTS** ■ During night exercise, No. 3 aircraft turned out of formation and crashed on ridgeline approximately 1 mile short of LZ. Pilot and crew chief received injuries. Investigation is in progress.

■ Tail rotor struck ground upon termination of low-level autorotation.

**1 INCIDENT** ■ Pilot heard loud bang and aircraft lost power shortly after takeoff. Altitude was approximately 300 feet agl and airspeed was 40 to 50 knots when pilot entered autorotation. In order to clear trees which bordered airfield, pilot bled off rpm, resulting in hard landing. Suspect governor malfunction.

**16 PRECAUTIONARY LANDINGS** ■ Compressor stalled during takeoff. Caused by fuel control malfunction. EIR submitted. ■ Rpm bled to 5950 during hover. Pilot tried unsuccessfully to beep rpm up, then landed. With full reduction of pitch, rpm surged to 7700. Suspect governor malfunction. EIR submitted. ■ Hydraulic caution lights of three aircraft illuminated in flight. All three had defective hydraulic pressure switches (P/N 91002-2). One EIR submitted. ■ Pilot felt moderate one-to-one lateral vibration in cruise flight. Caused by loose main rotor blade tip weight. ■ Pilot smelled grease while conducting engine topping check. No further information was given. ■ Severe lateral vibration occurred during climbout. Cause unknown. ■ Pilot smelled fuel fumes in cockpit. Fuel system was thoroughly checked and no discrepancies were found. ■ Three tail rotor chip detector light illuminations were reported. Normal wear fuzz was found on two detector plugs and the 90° gearbox was changed due to excessive metal particles on the third. ■ Transmission oil pressure dropped to 42 psi, then fluctuated between 42 and 38 psi. Maintenance inspected aircraft and found no cause for pressure drop. ■ Fire warning light illuminated in cruise flight. Fire warning box was replaced and aircraft was released for flight. ■ Engine chip detector light came on in cruise flight. Normal wear fuzz was found on plug. ■ Fuel boost pump light illuminated during hover. Caused by failure of fuel boost pump. EIR submitted.

### AH-1

**1 INCIDENT** ■ Battery access door was damaged when aircraft collided with a now dead buzzard.

**3 PRECAUTIONARY LANDINGS** ■ No. 2 hydraulic system warning light came on in cruise flight. Cause unknown, pending maintenance inspection. ■ Tail rotor chip detector light illuminated. Small metal sliver from oil can was found on plug. ■ Engine egt rose above red line and oil pressure dropped below limits during maintenance test flight. Suspect engine oil pump malfunction. □

## LOH

Fatalities: 0 ■ Accidents: 1  
Injuries: 0 ■ Estimated Costs: \$12,000

## DIVISION

■ LTC David L. Boivin, Chief

One accident, one incident, one forced landing, and nine precautionary landings were reported.

### OH-58

**1 INCIDENT** ■ Pilot received erroneous report from departing passenger that seat belts were secured inside passenger cabin. During flight, pilot was unaware that right rear seat belt was inadvertently left outside closed cabin door. Postflight inspection revealed damage to lower cabin shell. *Passengers say and do the strangest things—so pilots beware.*

**1 FORCED LANDING** ■ While in cruise flight, pilot felt aircraft yaw to left, then right, as engine lost power. After initiating autorotation, pilot attempted throttle increase but only the TOT responded. Suspect internal failure of engine. WELL DONE for a successful power-off emergency landing to CW2 Ronald R. Freeman, Louisiana National Guard.

**6 PRECAUTIONARY LANDINGS** ■ Pilot was on short approach to road when pedestrian suddenly appeared in flight path from nearby trees. Evasive maneuvers were taken to avoid pedestrian and main rotor struck tree. Pilot made immediate landing to nearby bean field. Four bean plants were destroyed by tail rotor strikes. Damage to main rotor or tail rotor could not be visually detected. ■ During PRACTICE TOUCH-DOWN AUTOROTATION, IP heard loud banging noises coming from rear of aircraft, accompanied by N1 fluctuating from 63 to 67 percent. Check valve failed. EIR submitted. ■ Misrouted oil line grounded terminal on transmission oil pressure sending unit and caused warning light to illuminate intermittently on takeoff. ■ Fuel line worked loose at fuel pump, allowing fuel to be pumped into engine compartment. Fuel was then lost overboard through engine deck drains. Fuel line was improperly attached. ■ Hydraulic switch failures caused hydraulic caution lights of two aircraft to come on.

## OH-6

**2 PRECAUTIONARY LANDINGS** ■ Pilot smelled fumes in cockpit as battery overheated. Caused by failure of cell. EIR not reported. ■ Main transmission chip detector light came on in flight. Wire had shorted out at chip detector plug.

## TH-55

**1 ACCIDENT** ■ Engine ran rough and failed to deliver sufficient power to recover from simulated forced landing. IP attempted to extend glide path and aircraft landed hard in tail-low attitude. Main and tail rotor blades, tail boom, tail rotor drive shaft, engine basket, skid gear, and cockpit were damaged. Magnets were out of time; however, this has not been determined to be the sole cause of the engine running rough.

**1 PRECAUTIONARY LANDING** ■ Severe medium frequency vibration was noted during flight. Forward upper bearing of upper pulley assembly failed. EIR submitted.

### THOUGHT FOR THE WEEK

**IT'S THE REAL THING.** Practice forced landings have been known to result in the real thing—usually due to engine failure. IP's should anticipate this happening and take the precaution of giving simulated forced landings only over terrain where safe landing area(s) can be made in case such an emergency arises. *Practice your emergency procedures to divorce yourself from emergencies—not to marry them until death do you part!* □

## CARGO

Fatalities: 0 ■ Accidents: 0  
Injuries: 0 ■ Estimated Costs: \$0

## DIVISION

■ LTC Edwin R. Widmer, Chief

*Six precautionary landings were reported.*

## CH-47

**4 PRECAUTIONARY LANDINGS** ■ No. 1 engine chip detector light came on during flight. Inspection revealed normal wear metal on plug. ■ During approach, crew chief noted smoke coming from utility hydraulic cooler fan. Cause of smoke is unknown. ■ Transmission chip detector light came on in flight. Inspection revealed metal pieces on magnetic plug. ■ During flight, crew detected hydraulic oil odor in cockpit. FE stated hydraulic oil was leaking at utility hydraulic safety relief valve. Caused by failure of adapter straight tube to boss (FSN 4730-203-9235).

## CH-54

**2 PRECAUTIONARY LANDINGS** ■ Application of brakes during normal landing rollout resulted in warped brake disc. Caused by failure of brake disc (FSN 1630-168-6049). ■ Crew chief notified pilot there was oil on the left main gear fairing. Engine was shut down and landing was made. Caused by improper installation of N1 speed sense tower shaft "O" ring (FSN 5330-882-1684). □

# FIXED WING

Fatalities: 0 ■ Accidents: 0  
Injuries: 0 ■ Estimated Costs: \$1,000

## DIVISION

■ LTC Charles E. Humphries, Chief

One incident and three precautionary landings were reported.

### U-8

**1 INCIDENT** ■ Aircraft touched down with gear still up, resulting in damage to both propellers, both inboard flaps, left outboard flap, and antenna. Both pilots reportedly saw three green lights on downwind, reported three green lights, and confirmed three green lights on final.

### OV-1

**2 PRECAUTIONARY LANDINGS** ■ Gear would not retract during takeoff. Postlanding check revealed hydraulic system contained air lock. After correction, a satisfactory retraction test was made and aircraft was released for flight. ■ While taxiing into position for takeoff, crew smelled fumes from electrical malfunction. Aircraft was returned to the ramp and, during shutdown, cockpit was filled with smoke. Caused by voltage regulator failure.

### U-21

**1 PRECAUTIONARY LANDING** ■ During climbout after takeoff, when power levers were retarded, No. 2 engine remained at 1,200 pounds torque, 700° ITT, and 92 percent N1. Repeated attempts to control power failed, so engine was secured. Postlanding check revealed fuel control had malfunctioned and required replacement.

#### FIXED WING 360-DAY MISHAP DATA

	Last 30 Days	Last 90 Days	Last 180 Days	Last 360 Days
Injuries	0	0	3	5
Fatalities	2	2	17	21
Dollar Costs	\$2,037,806	\$2,143,238	\$3,106,695	\$5,746,770

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# FLIGHTFAX

VOL. I, NO. 45

27 JULY-2 AUGUST 1973

## REPORTING PRECAUTIONARY LANDINGS



Early this year, the requirements specified in AR's 385-40 and 95-5 for submitting DA Forms 2397-1 and 2397-2 to Commander, USAAAVS, Fort Rucker, AL 36360, on forced and precautionary landings were deleted. A complete crash facts message is now the only information required for these types of mishaps. When the cause of these mishaps cannot be determined within the required 8-working-hour time frame for submitting crash facts messages, DA Forms 2397-7 and 2397-7A must be submitted with any supplemental information within 5 working days from the date of the mishap. However, in many instances, the requirement for supplemental

information is not being complied with, particularly that dealing with maintenance and materiel data.

While AR 385-40 gives guidance as to when precautionary landings will be made and reported, it does not cover every circumstance which would warrant such landings. For example, a crash facts message is not required when a landing is made to avoid flight into adverse weather. This is a matter of professional judgment on the part of the pilot. USAAAVS strongly encourages that a precautionary landing be made and reported anytime, when in the judgment of the pilot, further flight is inadvisable for any reason.

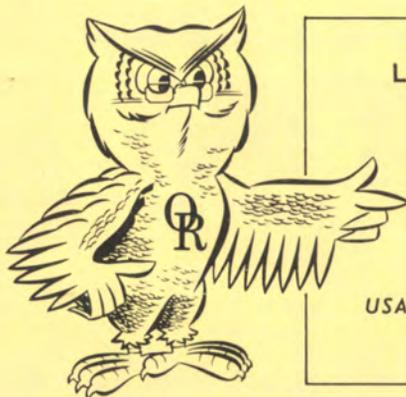
A crash facts message on this type of information is equally vital to the Army accident prevention effort as it furnishes data on which decisions are made to improve current aircraft and design of future aircraft.

USAAAVS urges aviators to use their best judgment at all times. When you feel you have a problem that may affect safety of flight, set the aircraft down and report the event.

### USAAAVS ACCIDENT PREVENTION COURSES-FY 74

Reminder: The Aviation Accident Prevention Course (AAPC) and the Aviation Accident Prevention Management Course (AAPMC) are conducted monthly, except December and June, at Fort Rucker, Alabama. The AAPC is taught in room 110, building 4905, USAAAVS Headquarters. The AAPMC is taught in one of the Aviation School's classrooms. Due to anticipated changes in the classroom assignment, students scheduled for the AAPMC are requested to report to USAAAVS on their arrival at Fort Rucker to obtain the classroom and building numbers for the assigned training.

The AAPC and AAPMC schedules for FY 74 were printed in the 23-29 March 1973 issue of FLIGHTFAX.



### LOSS OF COMBAT EFFECTIVENESS FROM THIS WEEK'S MISHAPS

FATALITIES:	1
INJURIES:	6
AIRCRAFT LOSSES:	1
ESTIMATED COSTS:	\$256,874

USAAAVS: AUTOVON 558-6510/4714

Commercial AC 205, 255-6510/4714

U.S. ARMY AGENCY  
FOR  
AVIATION SAFETY  
FORT RUCKER, AL 36360

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# UTILITY/ATTACK

Fatalities: 1 ■ Accidents: 1  
Injuries: 6 ■ Estimated Costs: \$251,576

## DIVISION

■ MAJ Charles E. Toomer, Chief

*One accident, one incident, and 23 precautionary landings were reported.*

### UH-1

**1 ACCIDENT** ■ Aircraft crashed and was destroyed. Six occupants were injured and one is missing. Cause unknown. Investigation is in progress.

**21 PRECAUTIONARY LANDINGS** ■ Pilot noticed unusual vibration and sound coming from main rotor system. Bonding separation was found on one main rotor blade from tip to 4 inches inboard and 4 inches cordwise. EIR submitted. ■ Compressor stalled at 91% N1 and 25 psi torque. Caused by compressor blade erosion. EIR submitted. ■ Fumes and smoke were detected in cockpit on final approach. During shutdown, loud, grinding noise was heard coming from tail rotor drive shaft. Inspection revealed seal on No. 1 hanger bearing failed, allowing grease to escape and bearing to disintegrate. EIR submitted. ■ Engine rpm fluctuated in flight. Engine tachometer was replaced and aircraft released for flight. ■ Main rotor blade struck tree during takeoff from confined area. Aircraft was inspected and no damage found. ■ Four engine chip detector light illuminations were reported. One aircraft had a faulty engine chip detector plug. Another had metal sliver on plug. Special oil sample was submitted. No cause was given for the remaining two. ■ Fuel boost pump lights of three aircraft illuminated. Suspect boost pump failure caused two illuminations and the third was caused by short in engine electrical harness. Two EIR's submitted. ■ Transmission oil pressure dropped to zero. Cannon plug was loose at transmission oil transmitter. ■ Transmission oil hot light came on in cruise flight. Oil temperature thermostat (P/N 12411-2-230) was replaced and aircraft was released for flight. EIR submitted. ■ Pilot noted excessive cyclic feedback during servos-off approach. Suspect servo malfunction (P/N 204-076-038-7). EIR submitted. ■ Aircraft developed severe rotor vibrations in cruise flight. Suspect internal failure of left friction damper (P/N 204-031-920-2). EIR submitted. ■ Two tail rotor chip detector light illuminations were reported. One aircraft had small metal chip on plug and is grounded, awaiting oil sample results. No information was given for the second aircraft. ■ Hydraulic caution lights of two aircraft illuminated, with no loss of pressure. One was caused by internal failure of hydraulic pressure switch (P/N 91002-2), and the cause for the second is unknown. ■ Master caution light came on in flight. Caused by failure of fuel pressure switch (P/N 204-061-610-2).

### AH-1

**1 INCIDENT** ■ Main rotor blades struck tree during NOE training, damaging blades.

**2 PRECAUTIONARY LANDINGS** ■ Pilot felt high frequency vibration in tail rotor pedals during takeoff. Drive shaft coupling was repacked and aircraft released for flight. ■ No. 1 hydraulic caution light came on and pedals became stiff. Locknut on hydraulic tube fitting loosened because of improper torque and allowed hydraulic fluid to be lost.

USAAVSCOM message, 021740Z Aug 73, subject: Department of the Army Technical Bulletin, One-Time Replacement of Connecting Link and Inspection of Scissors Lever Bearing, Mixing Lever Bearings, and Rotor Hub Feathering Bearings for All UH-1C/M Helicopters. This TB requires a one-time change-out of connecting links, rigid, P/N 540-011-428/-5. It also requires the inspection of scissors, sleeve scissors levers, and stabilizer bar mixing levers before change-out to assure rotor hub feathering action. Change-out of the tube assemblies is to be repeated if the helicopter is operated with the hub feathering bearings stiff enough to cause rotor feedback through the controls or if the helicopter is operated with a connecting link so stiff that it cannot be rotated by hand. Appropriate maintenance manuals will be updated to reflect this information.

USAAVSCOM message, 091830Z Jul 73, subject: Maintenance Kits, FSN 1560-169-6962 and FSN 1560-169-6963, UH-1 Aircraft. These maintenance kits are no longer authorized for stockage. Users must requisition the individual parts by federal stock number. A breakdown of parts formerly available in these kits is given in TM 55-1520-210-20P-2 and TM 55-1520-210-34P-3. □

# LOH

Fatalities: 0 ■ Accidents: 0  
Injuries: 0 ■ Estimated Costs: \$417

## DIVISION

■ LTC David L. Boivin, Chief

One incident and 11 precautionary landings were reported.

### OH-58

**1 INCIDENT** ■ Aircraft struck ground in high vertical rate of descent, causing incident damage to landing gear cross tubes. Copilot, whose collective stick was removed, was demonstrating to his junior-time pilot how to fly the aircraft crosshanded. Copilot was making an approach using his cyclic control and the pilot's collective. *This unauthorized type of "cross training" made an impression on no one but the ground. A copilot without proper flight controls installed has lost his license to fly.*

**7 PRECAUTIONARY LANDINGS** ■ Pilot was unable to maintain altitude as N2 rpm would bleed off when power was applied and N1 would not exceed 90 percent. Torque available was 44 pounds and TOT was 520°. Aircraft was flown 8 miles to nearest airfield and autorotated to runway. *Wouldn't it have been safer to make a power approach to the terminal end of the runway?* ■ Hydraulic sensor switch failure caused caution light to illuminate in flight. ■ Transmission chip detector light came on. Caused by broken wire at magnetic plug. ■ Engine chip detector lights of four aircraft came on in flight. One was caused by metal shavings on magnetic plug during break-in period of new engine. Second aircraft had metallic fuzz on magnetic plug due to normal wear. Bearing failure was suspected on third aircraft and engine was replaced. EIR submitted. Fourth aircraft had large metal particles on magnetic plug, subsequent to metallic fuzz accumulation the day before. Engine replaced. EIR submitted.

### OH-6

**4 PRECAUTIONARY LANDINGS** ■ Pilot saw oil running down cargo compartment side of fire wall in vicinity of oil cooler during flight. Oil cooler tank return hose was replaced. On the next flight of the day in the same aircraft, pilot noticed oil leaking again in the same area. Cracked oil cooler had to be replaced. ■ Tail rotor chip detector light came on. Caused by metal chips on magnetic plug. Oil sample submitted. ■ Metal fuzz on magnetic plug caused transmission chip detector light to come on.

#### THOUGHT FOR THE WEEK

**THE SCORE ON TOUCHDOWNS:** Some units have the *mistaken impression* that power-off touchdown autorotations in the OH-58A are prohibited. USAAVSCOM message dated 171910Z Jul 72 authorized the resumption of power-off touchdown autorotations with applicable restrictions outlined in Change 1 to paragraph 7-21, OH-58A dash 10. However, local SOP's may place further restrictions on the performance of these autorotations. Command guidance should emphasize proficiency, not precision, when touchdown autorotations are to be conducted for standardization, currency, and transition flights. Specific guidance for overall TOUCHDOWN AUTOROTATION training is provided in DA safety-of-flight advisory message dated 062120Z Apr 73, subject: Practice Touchdown Autorotations. □

# CARGO

Fatalities: 0 ■ Accidents: 0  
Injuries: 0 ■ Estimated Costs: \$2,231

## DIVISION

■ LTC Edwin R. Widmer, Chief

One incident and two precautionary landings were reported.

### CH-47

**1 INCIDENT** ■ Combining transmission doors were ripped from aircraft in cruise flight. Suspect materiel failure.

**2 PRECAUTIONARY LANDINGS** ■ Improperly installed O-ring caused hydraulic leak in SAS pressure reducer, located at station 120. ■ Pilot experienced 1:1 vertical vibration during cruise flight. Aircraft was test flown, but vibration could not be duplicated. □

# FIXED WING

Fatalities: 0 ■ Accidents: 1  
Injuries: 0 ■ Estimated Costs: \$2,650

## DIVISION

■ LTC Charles E. Humphries, Chief

*One accident, one incident, and five precautionary landings were reported.*

### U-8

**1 ACCIDENT** ■ When pilot attempted to raise gear during climbout, nose gear would not retract. Gear was recycled, but without success. When pilot attempted emergency manual extension of gear, manual handle fractured and became detached. Fuel starvation then caused No. 2 engine to fail. Pilot landed with nose gear extended and main gear partially retracted.

**2 PRECAUTIONARY LANDINGS** ■ Crew detected smoke in cockpit. Mechanical drive assembly on UHF radio failed. ■ No. 1 engine chip detector warning light came on. Caused by fuzz on magnetic plug.

### OV-1

**1 INCIDENT** ■ Aircraft was straight and level at approximately 500 feet agl when pilot heard thud. All engine instruments were checked and found normal. Pilot looked out left entrance hatch and saw small hole on leading edge of left wing next to No. 1 engine. Cause of hole was not reported.

**3 PRECAUTIONARY LANDINGS** ■ Pilot lost hydraulic fluid to No. 2 propeller, resulting in total loss of No. 2 propeller control. Cruise rpm had increased from 1450 to 1650. Attempt to reset cruise rpm with propeller lever had no effect on propeller rpm. Engine was secured and propeller feathered. ■ Pilot attempted to extend speed brakes to initiate descent for radar surveillance approach to land. There was no response and he noted zero hydraulic pressure. He informed approach control of his difficulty and aborted the approach. He then reviewed procedures for a no-hydraulics landing with a unit SIP through the tower radio, pneumatically extended the gear, and landed. Postlanding check revealed hydraulic line (P/N 134-H-10014-256-LGU-6) in left wheel well had fatigue crack. ■ When landing gear was extended during maintenance test flight, nose gear in-transit indicator stayed on. A low pass by the tower confirmed the gear was only partially extended. Pilot recycled gear but it still did not appear down to tower personnel. The pilot slowed the aircraft to 100 knots and got a nose gear indication of down and locked. Another pass of the tower confirmed the gear to be fully extended. On final, pilot safe-sided gear position by actuating pneumatic emergency system. During postlanding check, when aircraft was jacked and gear exercised, nose gear actuator made loud and unusual noise during both extension and retraction. Nose gear actuator was replaced, gear cycled successfully, and aircraft released. □

DEPARTMENT OF THE ARMY  
UNITED STATES ARMY AGENCY  
FOR AVIATION SAFETY  
FORT RUCKER, ALABAMA 36360

OFFICIAL BUSINESS



POSTAGE AND FEES PAID  
DEPARTMENT OF THE ARMY  
DOD-314

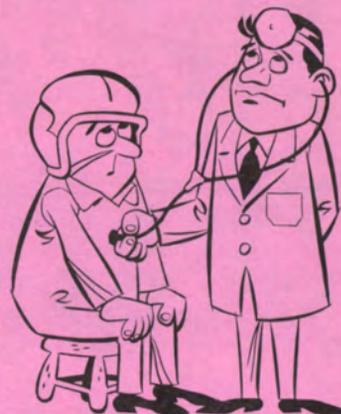


# FLIGHT FAX

VOL. 1, NO. 46

3-9 AUGUST 1973

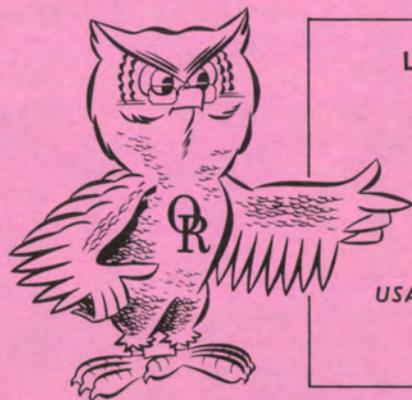
## Changes to AR40-501, STANDARDS OF MEDICAL FITNESS



Portions of AR 40-501, Standards of Medical Fitness, have been changed, effective 1 July 1973. Following are some of these changes:

Paragraph 10-7c is amended to read: "Medical examinations accomplished for the purpose of entering into flight training (class 1 and 1a) will be accomplished only at medical facilities of the Armed Forces under the supervision of assigned or attached aviation medical officers or flight surgeons who will sign the Report of Examination (item 79 or 80, SF 88). Medical examinations accomplished for flight duty (class 2 and 3) may be supervised or conducted by physicians other than aviation medical officers or flight surgeons. In all such cases the report of examination will be reviewed by an aviation medical officer or flight surgeon who will sign item 82 of the SF 88."

Paragraph 10-23c(1) is amended to read: "An individual, whether or not on active duty, who is qualified for and continues to function under class 2 medical fitness standards for flying duty, or as a marine diver, will undergo a periodic medical examination during the anniversary month of his birthday ages as follows: 19, 21, 23, 25, 27, 29, 31, 33, 35 and annually thereafter. In addition to this requirement, each individual so qualified will undergo annually an eye examination and audiometric and electrocardiographic tests."



### LOSS OF COMBAT EFFECTIVENESS FROM THIS WEEK'S MISHAPS

FATALITIES:	0
INJURIES:	0
AIRCRAFT LOSSES:	1
ESTIMATED COSTS:	\$517,375

USAAAVS: AUTOVON 558-6510/4714  
Commercial AC 205, 255-6510/4714

U.S. ARMY AGENCY  
FOR  
AVIATION SAFETY  
FORT RUCKER, AL 36360

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# UTILITY/ATTACK

Fatalities: 0 ■ Accidents: 1  
Injuries: 0 ■ Estimated Costs: \$509,833

## DIVISION

■ MAJ Charles E. Toomer, Chief

*One accident, two forced landings, and 13 precautionary landings were reported.*

## UH-1

**1 FORCED LANDING** ■ Engine failed at 550 feet agl. Smoke, flames, and engine part were seen flying from engine exhaust prior to stoppage. Cause of failure is unknown, pending teardown.

**11 PRECAUTIONARY LANDINGS** ■ Crew smelled JP-4 fumes in cockpit and cabin area during takeoff. Visual inspection and MOC revealed no leaks. Suspect solvent residual from engine cleaning. ■ Pilot heard unusual noise, accompanied by high frequency vibration. Suspect defective hydraulic pump. ■ Two precautionary landings were caused by hydraulic fluid odors in cockpit. Hydraulic fluid was leaking at fitting on one aircraft and irreversible valve (FSN 4810-130-5964) of other aircraft failed internally. EIR submitted. ■ Instructor pilot smelled smoke during runup and immediately shut aircraft down. Caused by failure of starter generator (FSN 2925-927-9483). EIR submitted. ■ Fire warning lights of two aircraft illuminated in flight. One was caused by chafing of fire detector wire (FSN 1560-869-8989), and the other had a short in the electrical receptacle (FSN 5935-778-2317). EIR submitted. ■ Engine chip detector light came on in cruise flight. Caused by normal wear fuzz. ■ Two tail rotor chip detector light illuminations were reported. One was caused by loose wire on plug and 90 degree gearbox was changed on the other aircraft. ■ Crew smelled oil in cruise flight. Aircraft was landed and oil was found leaking from bleed band. Suspect failure of No. 1 or No. 2 bearing seal.

## AH-1

**1 ACCIDENT** ■ Aircraft was cruising over water 20 miles from land when rpm deteriorated and low rpm audio activated. Pilot followed emergency procedures for low side governor failure, with negative results. Aircraft crashed in water with zero airspeed and immediately rolled to right, floating inverted for approximately 2 minutes. Cause unknown. Investigation is in progress. Both pilots escaped uninjured due to the fine rescue efforts of the Coast Guard. Rescue helicopter was at the accident scene within 7 minutes of the crash.

**1 FORCED LANDING** ■ During lift to hover, rpm deteriorated to 6000 and engine failed. Cause unknown, pending teardown analysis.

**2 PRECAUTIONARY LANDINGS** ■ Transmission oil pressure caution light, transmission oil bypass light, and master caution light illuminated during takeoff. Transmission internal oil filter seal (P/N 205-040-1873) failed. EIR submitted. ■ Tail rotor chip detector light came on in cruise flight. Inspection revealed some fuzz on detector plug, and O-ring had slipped out of its seat and allowed oil to drain from 90 degree gearbox. EIR submitted.

**TROSCOM message, R070504Z Jul 73, subject: Nozzle Assembly, Closed Circuit Refueling, FSN 4930-478-5728.** This message directs the return of these nozzles to: Transportation Officer, Sharpe Army Depot, Lathrop, California 95330, marked for AMXSH-P (Walter Baker). A prior message reported a failure which presented a potential fire hazard and deadlined the use of the closed circuit refueling nozzles until corrective action can be taken. Approximately 1,000 of these nozzles remain in the field and must be returned to the address above. □

# LOH

Fatalities: 0 ■ Accidents: 0  
Injuries: 0 ■ Estimated Costs: \$5,542

## DIVISION

■ LTC David L. Boivin, Chief

*Four incidents, one forced landing, and 12 precautionary landings were reported.*

## OH-58

**4 INCIDENTS** ■ Rotor rpm bled off during maximum takeoff. Pilot turned right to return to takeoff point; however, aircraft settled to ground and landed hard. ■ During nap-of-the-earth training mission, one main rotor blade struck top of tree. ■ Pilot was practicing takeoffs and landings from hover when aircraft struck ground in tail-low attitude, damaging vertical fin, tail skid, and rear cross tubes. ■ Pilot was simulating firing from hover when he heard loud noise. Postflight inspection revealed tail rotor had struck 1/8-inch powerline.

**1 FORCED LANDING** ■ Aircraft had been refueled the day before and was being repositioned to parking area when engine quit. Fuel analysis revealed excessive amount of water in fuel system. *Fuel sample bottle?*

**9 PRECAUTIONARY LANDINGS** ■ Engine chip detector light illuminated during cruise flight. Cannon plug was found cross-threaded, chafing on lower electrical connection, and grounding chip detector. ■ Engine chip detector light came on. Sliver of metal was found. As this was a new engine, the oil was changed and aircraft returned to flyable status. ■ Transmission chip detector lights of two aircraft came on. Frayed wires shorted out plugs. ■ Broken wire caused transmission oil hot light to come on. ■ Transmission oil temperature warning light illuminated during climb. Suspect clogged transmission oil cooler bypass valve. ■ Aircraft was cruising at 90 knots and 3,000 feet when engine malfunctioned. Aircraft was landed in wheat field. ■ Engine began surging and went from 95 percent to 108 percent. Throttle was retarded and aircraft was landed. Engine surge was caused by governor malfunction. ■ Pilot was making power recovery from autorotation during test flight when hydraulic pressure caution light came on. Suspect pressure switch malfunction.

## OH-6

**2 PRECAUTIONARY LANDINGS** ■ Pilot heard loud bang and felt severe vibration in cruise flight. Suspect internal malfunction of tail rotor gearbox. ■ Low fuel warning light illuminated after 2 hours and 5 minutes of flight. Suspect inaccurate fuel gauge and high fuel consumption rate.

## TH-55

**1 PRECAUTIONARY LANDING** ■ During cruise flight, rpm dropped to 2600 and engine began running rough. Caused by broken exhaust valve spring on No. 3 cylinder.

### THOUGHT FOR THE WEEK

**IF YOU MUST ASK YOURSELF WHY'RE YOU THERE? THEN YOU BETTER ALSO ASK: WIRE-YOU THERE?** Just as the spider weaves a web to trap a fly, people string wires that trap aircraft. To avoid becoming the entangled prey of the spider people, a pilot must always assume wires are present whenever two poles or trees are reasonably close together. Just because a recon was made of the area yesterday is no assurance that wires will not be there today. For example, an aviator landed at a field site, got out of his helicopter, and went into operations. Fifteen minutes later, he aborted his takeoff because three strands of comms wire, which were strung after he landed, surrounded the helipad. It is time to forget that jungle land of past operations and come back to the land of reality and wires. Orval Right, who has never had a wire strike, feels that without proper recon your chances of striking a wire are based on altitudes flown: At 1,000 feet, chances are one in a million; one in a thousand at 500 feet; two in a thousand at 400 feet; four in a thousand at 300 feet; 16 at 200 feet; 256 at 100 feet; and if you have been following

the trend, you can readily determine that without a good recon you don't stand a chance of avoiding a wire strike below 100 feet. So, to avoid losing the spider/fly game—as the fly usually does—you should wise up and fly up when not authorized by your commander to fly low-level in interest of mission accomplishment. If it's not authorized, then why're you there? □

## CARGO

Fatalities: 0 ■ Accidents: 0  
Injuries: 0 ■ Estimated Costs: \$0

### DIVISION

■ LTC Edwin R. Widmer, Chief

*Four precautionary landings were reported.*

## CH-47

**4 PRECAUTIONARY LANDINGS** ■ Crew heard blade whistle while aircraft was in flight. Caused by loss of tip cap screw, which was improperly torqued. ■ An increase in power and an airspeed of over 120 knots resulted in severe vertical vibration. Cause not determined. ■ Cyclic froze in cruise flight and could not be moved laterally to right unless cyclic control centering switch was depressed. Control centering could not be overridden by either pilot. Caused by failure of cyclic control, roll axis, magnetic brake (FSN 1680-907-8399). ■ No. 2 engine chip detector light came on. Maintenance check was made but there was no metal or fuzz on magnetic plug. Special oil sample was taken and aircraft was grounded, pending result of oil analysis. □

## FIXED WING

Fatalities: 0 ■ Accidents: 0  
Injuries: 0 ■ Estimated Costs: \$2,000

### DIVISION

■ LTC Charles E. Humphries, Chief

*One incident and four precautionary landings were reported.*

## U-21

**1 INCIDENT** ■ After 5.5-hour IFR flight, aircraft was nearing its destination for a visual approach and landing. Pilot noticed that gyro horizon had tumbled and RMI "OFF" flag had appeared. Crew suspected inverter failure. No caution or warning lights had come on. Pilot switched to No. 2 instrument inverter without regaining power, then switched to No. 2 aircraft inverter. He received no other indication of problems until crew chief told him smoke was coming from right center wing section. Crew smelled the smoke and determined that an electrical fire was in progress. All electrical systems were turned off. Smoke around center wing section was much thicker during final approach. Pilot then secured No. 2 engine. After aircraft came to full stop on runway, alerted crash rescue crews extinguished fire in right center wing section. Battery (FSN 6140-753-2251, P/N BB-433A) had caught fire in flight.

## OV-1

**1 PRECAUTIONARY LANDING** ■ No. 1 hydraulic pressure was noted to be low on before-landing check, and no-hydraulic landing was initiated. Just prior to touchdown, both hydraulic pressures dropped to zero. Caused by failure of hydraulic fitting (FSN 6685-516-1892, P/N SP 8553-1).

## T-41

**2 PRECAUTIONARY LANDINGS** ■ Engine chip detector warning light came on and went off intermittently during cruise flight, then stayed on until just before landing, when it went off. Small metal particles were found on magnetic plug. ■ Engine chip detector warning light came on during cruise flight. Fuzz found on magnetic plug was the result of a new engine that had recently been installed.

## U-8

**1 PRECAUTIONARY LANDING** ■ While preparing to land during a VFR training flight, the right main gear failed to show a safe condition. After landing it was found that the down limit wire was loose due to a broken screw causing the unsafe indication.

### FIXED WING 360-DAY MISHAP DATA

	Last 30 Days	Last 90 Days	Last 180 Days	Last 360 Days
Injuries	0	0	3	4
Fatalities	2	2	17	20
Dollar Costs	\$2,038,716	\$2,146,619	\$2,845,024	\$3,717,732

## NATIONAL GUARD

Fatalities: 3 ■ Accidents: 6  
Injuries: 8 ■ Estimated Costs: \$655,617

### BRIEFS for Month of July

■ LTC Charles E. Humphries  
Chief, Fixed Wing Division

*Six accidents, five incidents, four forced landings, and 28 precautionary landings were reported.*

### OH-58

**2 ACCIDENTS** ■ Aircraft penetrated dense tree line at night and crashed on edge of lake, resulting in fatal injuries to pilot and passenger and total loss of aircraft. Weather was a factor, with sky condition 500 feet broken, 1,000 feet overcast, and visibility 2 miles with ground fog. ■ Aircraft struck four wires 30 feet above and across a river. Aircraft subsequently pitched up, yawed left, and crashed on bank of river. Passenger was killed and pilot sustained serious injuries. Aircraft was destroyed.

**2 INCIDENTS** ■ Aircraft vibrated violently at 1,500 feet. Pilot lowered collective, rolled off throttle, and entered autorotation to drive-in theater for landing. He slowly rolled throttle back on and made power-on landing. Postlanding check revealed small dent inboard of one tail rotor blade and bend in trailing edge of other blade. Bird strike is suspected. Tail rotor was replaced. ■ Aircraft struck ground with high vertical rate of descent during landing, damaging landing gear cross tubes.

**1 FORCED LANDING** ■ Aircraft yawed left, then right, in cruise flight at 100 knots and 2,000 feet, followed by a power loss. Pilot entered autorotation and reduced throttle to flight idle. N1 was below 60 percent and N2 was low (exact reading not observed). Pilot then increased throttle but got only an increase in TOT without N1 or N2 response. Throttle was again reduced to flight idle and autorotation was completed to open field. Engine history: total time 514 hours, since overhaul 214 hours.

### UH-1

**1 ACCIDENT** ■ Aircraft crashed approximately 5 minutes after takeoff on VFR service mission. Surviving crew and passengers sustained minor injuries. Investigation and recovery operations continue.

**1 INCIDENT** ■ Aircraft struck tree during low-level recon. Left chin bubble, fuel cell inspection panel, left synchronized elevator, and both tail rotor blades were damaged. Pilot sustained slight eye abrasion from flying plexiglass.

**3 FORCED LANDINGS** ■ Collective was lowered to full down position during final approach. High rpm warning light came on. Pilot attempted to decrease rpm with governor increase-decrease switch and engine failed. Cause of engine failure has not been determined. ■ Aircraft was on maintenance test flight. After reaching translational lift on takeoff, white main rotor grip seized on hub, followed by severe vertical vibrations. Aircraft was landed straight ahead with power. ■ Pilot heard series of popping noises from engine during approach for landing, and aircraft shuddered. All instruments were checked and found to be in the green. At 100 feet agl, noises became louder and at 50-75 feet agl, tower advised that flames were shooting halfway down tail boom. Egt had risen to 900° at time of landing. Postlanding check revealed N2 governor failure. Suspect fuel control failed also.

**13 PRECAUTIONARY LANDINGS** ■ Tail rotor chip detector warning light came on. Caused by fuzz on magnetic plug. ■ Transmission oil warning light came on and transmission oil pressure went to zero.

Caused by failure of gasket (FSN 1615-340-6998, P/N 48-431-629-1). ■ Aircraft vibrated severely in cruise flight. Power-on descent was made to open field. Caused by failure of swashplate drive link trunnion bearing. ■ Engine chip detector warning light came on. Caused by small metal particles on magnetic plug. Plug was cleaned and maintenance operational check made, with no additional caution light indications. Special oil sample was submitted for analysis. ■ Hydraulic control was lost on downwind. Collective pitch hydraulic pressure line had ruptured and all hydraulic fluid was lost. There was no evidence of chafing on the line. ■ Pilot smelled hydraulic fluid and landed. Elbow in hydraulic pump (FSN 4730-807-0691) cracked and allowed hydraulic fluid to vent overboard. ■ Master caution and tail rotor chip detector warning lights came on during power recovery from a simulated forced landing. Postlanding check revealed small metal chips on magnetic plug. Plug was cleaned and reinstalled, and aircraft was ground run. Plug was reinspected and aircraft released by maintenance officer for one-time flight to maintenance facility. Special oil sample was submitted and aircraft was grounded, pending results of oil analysis. ■ Engine chip detector warning light came on during climbout. Engine oil temperature rose to 91° C. Engine compartment deck was covered with oil from two leaking O-rings (FSN's 530-726-4152/530-726-4153, P/N's MS 29561-237/29561-017). Magnetic plug contained accumulation of fuzz. ■ Crew felt severe lateral vibration for about 10 seconds during climb. All engine and transmission gauges remained normal and no warning lights illuminated. Postlanding check revealed uniball tension on rotor head was less than normal. ■ Pilot smelled burning grease while conducting topping check. Caused by short shaft failure. ■ *Crash facts report:* Pilot landed when tail rotor chip detector caution light came on. *Information provided telephonically:* Magnetic plug contained fuzz. Plug was cleaned and reinstalled. ■ Tail rotor gearbox chip detector warning light came on. Special oil sample was taken and forwarded for analysis. Further disposition was not reported. ■ Engine chip detector warning light came on. Caused by fuzz on magnetic plug.

## OH-6

**3 ACCIDENTS** ■ During termination of standard straight-in autorotation to ground, main rotor blade flexed down and severed tail boom. Main rotor blades, horizontal stabilizer, and tail rotor were also damaged. ■ Aircraft struck two 12,000-volt powerlines and a ground wire while flying low level over river. Landing was made to sandbar in middle of river. Major damage to tail rotor blades, main rotor assembly and blades, and upper vertical stabilizer. ■ Deceleration and initial application of pitch during PRACTICE TOUCHDOWN AUTOROTATION left insufficient rotor rpm to cushion landing, and aircraft landed hard, severing tail boom and damaging rotor blades.

**11 PRECAUTIONARY LANDINGS** ■ Engine oil temperature rose above red line to approximately 120° and engine oil pressure dropped to 60 psi before landing could be made. Caused by cracked scroll around transmission oil cooler. ■ Transmission chip detector and master caution lights came on. Following landing at intended helipad, transmission magnetic plug and oil filter were inspected. Small metal flake was found on magnetic plug. Oil sample was taken and submitted for analysis. Transmission oil was drained, and filter and magnetic plug were cleaned and replaced. Special oil samples will be taken after 5 and 10 hours. ■ Engine chip detector warning light came on. Small metal particles were found on magnetic plug. ■ Engine chip detector warning light came on. Caused by carbon on magnetic plug. ■ Transmission chip detector warning light came on. All instruments were checked and found OK. Metal particle was found on magnetic plug. Aircraft was grounded, pending further analysis. ■ Crew smelled fumes in cabin during final approach. Fire rescue team assisted in removal of battery. Examination revealed that one cell had failed, causing battery to overheat. ■ Main transmission chip detector warning light came on. No further information was reported. ■ Pilot saw oil running down cargo compartment side firewall in vicinity of engine oil cooler. Postlanding check revealed oil was leaking from oil cooler area. Oil cooler tank return hose was replaced. ■ Same aircraft was continuing flight when oil was again seen leaking down firewall in cargo compartment. Postlanding check revealed oil cooler was cracked and required replacement. ■ Engine chip detector warning light came on. Caused by small metal particles on engine magnetic plug.

Disposition of engine was not reported. ■ Excess oil from filler vent of overfilled transmission leaked into cabin area. Oil was blown forward onto windshield by slipstream created by doors-off configuration.

## OV-1

**1 INCIDENT** ■ Pilot heard thud during straight and level flight. All engine instruments were checked and found normal. Pilot looked out left entrance hatch and saw small hole on leading edge of left wing next to No. 1 engine. Cause of hole was not reported.

**1 PRECAUTIONARY LANDING** ■ Hydraulic fluid to No. 2 propeller was lost, resulting in total loss of No. 2 propeller control. Cruise rpm had increased from 1450 to 1650. Attempt to reset cruise rpm with propeller lever had no effect on propeller rpm. Engine was secured, propeller feathered, and aircraft was landed.

## CH-47

**1 INCIDENT** ■ While landing at training field, pilot noticed aircraft was unstable and appeared to lean to right rear upon touching down on aft gear. Aircraft was brought to hover and flight engineer lowered ramp and inspected gear. Right aft gear upper link assembly (FSN 1620-887-6148, P/N 114L2087-1) failed and swivel hydraulic fitting broke as result of this failure. Utility hydraulic system had dropped to zero. Aircraft was flown to home base where crew hovered aircraft while link assembly was replaced.

## CH-54

**2 PRECAUTIONARY LANDINGS** ■ Transmission oil pressure gauge indicated zero. Caused by failure of transmission oil pressure sending unit. ■ Crew heard unusual noise coming from main rotor blades. Stick-on number applied to outer end of blades for identification during tracking came loose and caused whistling sound. Loose tape was removed and aircraft returned to home base.

## CH-34

**1 PRECAUTIONARY LANDING** ■ Hydraulic pressure was lost on primary servo system. Pilot landed, using auxiliary servo. Caused by ruptured hydraulic line.

### NATIONAL GUARD 360-DAY MISHAP DATA

	Last 30 Days	Last 90 Days	Last 180 Days	Last 360 Days
Injuries	8	14	14	21
Fatalities	3	3	3	8
Dollar Costs	\$626,617	\$1,067,273	\$1,074,273	\$1,746,927

**COMPARISON OF HOURS FLOWN AND ACCIDENT AND INCIDENT RATES BY COMMAND**

COMMAND	ALL AIRCRAFT						ROTARY WING						FIXED WING					
	12 MONTHS ENDING 72-06			12 MONTHS ENDING 73-06			12 MONTHS ENDING 72-06			12 MONTHS ENDING 73-06			12 MONTHS ENDING 72-06			12 MONTHS ENDING 73-06		
	FLYING HOURS X 1,000	RATE		FLYING HOURS X 1,000	RATE		FLYING HOURS X 1,000	RATE		FLYING HOURS X 1,000	RATE		FLYING HOURS X 1,000	RATE		FLYING HOURS X 1,000	RATE	
A C D T		I N C D	A C D T		I N C D	A C D T		I N C D	A C D T		I N C D	A C D T		I N C D	A C D T		I N C D	
WORLDWIDE	2,836	11.9	17.8	1,687	7.4	14.6	2,377	12.4	18.1	1,431	7.3	13.7	459	10.0	16.3	256	8.2	19.6
1st ARMY	77	9.1	12.9	74	6.8	14.9	54	11.2	11.2	59	5.1	16.9	23	4.3	17.0	15	13.7	6.9
3rd ARMY	640	4.2	10.6	485	4.5	10.3	536	4.3	10.3	429	4.7	8.6	104	3.8	12.5	56	3.6	23.2
5th ARMY	393	9.7	17.8	358	6.7	18.2	350	8.6	18.9	330	6.7	17.9	43	18.5	9.3	28	7.2	21.6
6th ARMY	67	16.5	22.4	78	2.6	14.1	47	21.1	12.7	66	3.0	12.1	20	5.1	46.3	12		25.1
8th ARMY	55	7.3	34.7	66	9.1	18.2	51	7.8	27.4	61	9.8	14.6	4		133.6	5		64.8
USARAL	18	22.1	16.6	26	19.3	19.3	13	7.7	15.5	21	14.0	23.4	5	58.1	19.4	5	44.2	
USAREUR/7th	154	10.4	9.7	167	7.2	14.4	137	11.7	8.8	152	7.3	10.6	17		17.5	15	6.5	52.2
USARSO	10	10.0	20.1	11	8.9	8.9	7		13.9	9	11.5	11.5	3	36.3	36.3	2		
USARPAC	29	6.8	13.7	43	4.7	14.0	19	5.3	15.9	34	3.0	14.9	10	9.7	9.7	9	10.6	10.6
VIETNAM	1,247	16.6	22.7	226	13.7	15.9	1,090	17.6	23.8	193	15.5	18.6	157	9.5	15.3	33	3.0	
USAMC	74	14.8	8.1	81	8.6	17.2	42	16.4	14.1	47	10.5	12.6	32	12.6		34	5.9	23.6
ARADCOM	12	8.7	8.7	12		15.9	6	16.6		7		13.5	6		18.1	5		19.5
HQ DA	10	10.0		10		9.7	6			5			4	24.1		5		18.8
MDW	30	6.7	10.1	23	17.6	8.8	10			10		21.1	20	10.0	15.0	13	30.1	
* USAAVNS	483	3.9	9.7	274	3.7	9.9	431	3.7	9.3	251	4.0	7.6	52	5.8	13.4	23		34.2
* USAPHS	229	5.7	16.6	148	4.1	12.1	224	5.8	16.1	148	4.1	12.1	5		37.1			
** RESERVE	53	3.8	5.6	63	9.5	17.4	30	6.6	9.9	51	7.9	15.8	23			12	15.9	23.8
** NAT'L GD	256	12.5	7.8	305	5.2	8.8	219	10.5	8.7	281	4.6	8.5	37	24.4	2.7	24	12.3	12.3

\*Included in 3rd Army and 5th Army  
 \*\*Not included in Worldwide

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PRELIMINARY ARMY AIRCRAFT MISHAP DATA

# FLIGHTFAX

VOL. 1, NO. 51 ■ 26 SEP 1973

mishaps for the period of 7-13 SEP 1973

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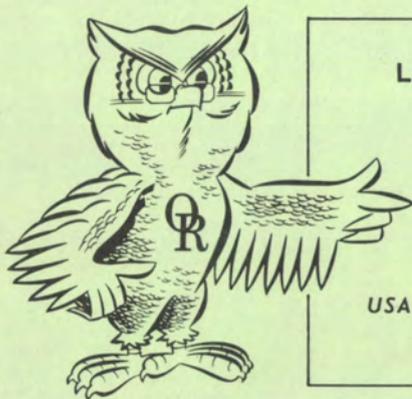


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### LOSS OF COMBAT EFFECTIVENESS FROM THIS WEEK'S MISHAPS

FATALITIES:	0
INJURIES:	2
AIRCRAFT LOSSES:	1
ESTIMATED COSTS:	\$398,898

USAAAVS: AUTOVON 558-6510/4714  
Commercial AC 205, 255-6510/4714

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## SAFETY-OF-FLIGHT ADVISORY

USAAVSCOM message, 262049Z July 1973, subject: Safety-of-Flight Advisory for UH-1 Aircraft Equipped With Internal Rescue Hoist BL 8300-2, FSN 1680-977-1504, or BL 8300-4, FSN 1680-938-3141. This message emphasizes that hoists should be operationally restricted to "LIFE OR DEATH" rescue missions or "NONCRITICAL" training or demonstration missions. "NONCRITICAL" means use in such a way that cable failure cannot result in injury or death to personnel on the cable or ground, i.e., pickup less than 10 feet over water or dummy pickup from cleared field. If "LIFE OR DEATH" missions must be accomplished, personnel will assure that all applicable maintenance and inspections on the hoist have been complied with prior to the mission. All hoist users should obtain the complete message for specific information.

## UTILITY/ATTACK

Fatalities: 0 ■ Accidents: 2  
Injuries: 2 ■ Estimated Costs: \$397,545

### DIVISION

■ MAJ Charles E. Toomer, Chief

*Two accidents, two incidents, one forced landing, and 22 precautionary landings were reported.*

### UH-1

**1 ACCIDENT** ■ On final approach at 350 feet agl, crew experienced peculiar lateral vibration with yawing left and right and loss of power. IP began autorotative descent and aircraft crashed short of LZ. Cause of power loss is unknown. IP and pilot were slightly injured and aircraft had major damage to all components.

**1 INCIDENT** ■ Chin bubble was broken when aircraft flew into flock of birds at 2,000 feet agl.

**1 FORCED LANDING** ■ Engine lost power while aircraft was being hovered to runway for takeoff. Cause unknown, pending engine teardown.

**16 PRECAUTIONARY LANDINGS** ■ While conducting engine topping check, pilot heard loud bang and noted sudden rise in egt. Autorotation was initiated and power-on landing was made. Inspection revealed fuel shutoff drain valve separated from hot end section of engine. EIR submitted. ■ Main rotor blade hit tree during landing in unimproved area. No damage. ■ A series of compressor stalls was experienced in level flight with no abnormal instrument indications. Suspect dirty particle separator. ■ Main inverter failed during landing. EIR submitted. ■ Three aircraft had batteries to overheat. All were caused by malfunction of voltage regulator (P/N 1589-1F). EIR's submitted. ■ Two aircraft had hydraulic failures in flight. One was caused by failure of hydraulic pump (P/N 204-076-065) and the other by a broken line (P/N 205-076-201-1). EIR's submitted. ■ Two boost pump failures were reported, one left and one right (P/N 205-060-606-3 and 205-060-607-5). One EIR submitted. ■ Pilot smelled transmission oil and crew saw oil being thrown from transmission housing. Five seconds later, warning/caution light illuminated. Inspection revealed internal transmission oil screen gasket (P/N 484-316-291) was torn. ■ Transmission chip detector light illuminated after landing. Normal wear fuzz was found on detector plug. ■ Engine chip detector light came on in flight. Normal wear fuzz was found. ■ Tail rotor chip detector light illuminated. Normal wear fuzz was found on 42° gearbox detector plug. ■ Fire warning light came on in cruise flight. Caused by malfunction in control alarm (P/N 227-28-5). EIR submitted.

### AH-1

**1 ACCIDENT** ■ During simulated antitorque failure, aircraft hit runway, bounced, spun to right, and landed upright, with extensive damage to tail rotor, tail rotor drive shaft, tail boom, and skids. There were no injuries.

**1 INCIDENT** ■ IP ran out of left pedal during TOUCHDOWN AUTOROTATION and tail rotor struck vertical fin. Both tail rotor blade tips were damaged and vertical fin skin was torn slightly. Tail rotor was found to be out of rig.

**6 PRECAUTIONARY LANDINGS** ■ While pilot was hovering to firing position, main rotor blades struck tree. No damage was found on postflight inspection. ■ Tail rotor chip detector light illuminated in flight. Small sliver of metal was found on detector plug. Plug was cleaned, special oil sample taken, and MOC performed. Aircraft was released for flight. ■ No. 2 hydraulic system failed and running landing was made.

Caused by failure of hydraulic pump (P/N PUB 044-2). ■ Engine oil pressure light came on without drop in engine oil pressure. Caused by malfunction of pressure switch (P/N 204-060-541-3). ■ Engine chip detector light illuminated and pilot heard loud whining noise. Normal wear fuzz was determined as cause for chip detector illumination and low fluid level in No. 2 hydraulic reservoir was cause of whining noise. Five days later, engine chip detector light came on again. Suspect contaminated oil system. □

## LOH

Fatalities: 0 ■ Accidents: 0  
Injuries: 0 ■ Estimated Costs: \$84

### DIVISION

■ LTC David L. Boivin, Chief

*One incident and 15 precautionary landings were reported.*

## OH-58

**14 PRECAUTIONARY LANDINGS** ■ Engine oil bypass light came on. Power-on landing was made as engine oil temperature rose to 150° and engine oil pressure dropped to zero. Suspect internal failure of oil seal or line. EIR submitted. ■ Engine oil bypass light came on as engine oil and torque pressure dropped and oil temperature rose slightly. Power-on landing was made. Suspect failure of internal oil seal. EIR submitted. ■ During cruise flight, TOT rose to 750° while other engine readings remained normal. Cause is being investigated. ■ Fuel control was changed after TOT, N1, N2, and torque fluctuated in flight. EIR submitted. ■ Pilot lowered pitch and beeped engine up for landing when he heard rpm deteriorating and noted the following readings: 95 percent N1, 90 percent N2, 300 M/R rpm, and 700° TOT. Engine was changed due to faulty torque meter. EIR submitted. ■ TOT rose to 940° during landing after pilot noted it had been high during cruise. Caused by improper installation of elbow assembly (P/N B9T8B) to bleed air system for heater. ■ Engine oil bypass light came on as oil temperature rose and oil pressure dropped. Loose oil line from scavenger pump to reservoir caused loss of eight pints of oil. Engine was flushed and oil sample submitted. Aircraft was returned to service after MOC and test flight. ■ Hydraulic caution lights of two aircraft illuminated because of faulty pressure switches. EIR's submitted. ■ Pilot smelled hydraulic fluid in cockpit. Faulty hydraulic pressure switch allowed fluid leakage onto transmission deck. Failed to submit EIR. ■ Hydraulic return line from filter to reservoir failed, causing caution light to illuminate. ■ Two transmission oil pressure warning light illuminations were reported. Caused by faulty low pressure switches. EIR's submitted. ■ Small metal flakes on magnetic plug caused transmission chip detector light to come on. Aircraft was released for flight after plug was cleaned and MOC and test flight performed.

## TH-55

**1 INCIDENT** ■ Main rotor blade struck tail boom tube during termination of PRACTICE TOUCHDOWN AUTOROTATION.

**1 PRECAUTIONARY LANDING** ■ Lateral vibration during hover was caused by faulty main rotor damper. EIR submitted.

**CHANGE:** OH-58 dash 10's should contain Change 3, dated 2 July 73, which addresses *loss of engine oil* in paragraph 4-25-1 and *landing lights* in paragraph 6-5-c; and Change 4, dated 30 July 73, which incorporates *passenger seat belts and doors* into the *before takeoff* checklist.

### THOUGHT FOR THE WEEK

**HERE'S A BOMB THREAT THAT CAN RUFFLE YOUR FEATHERS:** High flight will reduce the hazards of wire strikes, yet bird strikes must always be considered a flight hazard. Though not reported by an LOH pilot, a large bird was seen flying at 21,000 feet! This is unusual; however, birds are frequently found at altitudes up to 12,000 feet! If you find your aircraft on a collision course with one or more feathered flyers, you should initiate a climb in conjunction with decreasing your airspeed. Bird brains may react by flying in any direction but usually will dive to avoid collision. Also, a bird's reaction time to avoid your approaching aircraft is reduced as your speed increases. You should be aware of where bird concentrations are likely to occur in your normal operating areas and steer clear when possible. Also

beware that this is the migratory season and those birds will fly at different altitudes (agl) because of their instinct to remain in the same pressure gradient. SAVE FACE—prevent the threat of a feathered bomb bursting into your smile. Pilots look and feel better flying with HELMET VISORS DOWN than with feathers in their teeth. □

## CARGO

Fatalities: 0 ■ Accidents: 0  
Injuries: 0 ■ Estimated Costs: \$0

### DIVISION

■ LTC Edwin R. Widmer, Chief

Five precautionary landings were reported.

## CH-47

**5 PRECAUTIONARY LANDINGS** ■ Materiel failure of No. 2 hydraulic SAS boost line was caused by malfunction of system pressure reducer. Hydraulic system was repaired and aircraft returned to service. ■ No. 2 engine N1 dropped to 72 percent. Engine would not respond to a.c. or d.c. beep, and aircraft was landed without incident. Suspect N2 actuator cannon plug came loose in flight. Plug was reconnected, aircraft MOC conducted, and aircraft returned to service. ■ No. 2 engine chip detector light came on during flight. Chip detector plug was cleaned and aircraft returned to service. ■ No. 2 engine chip detector light illuminated. Suspect internal failure of engine. ■ Aircraft had dual high side engine beep trim failure in cruise flight. Cause unknown. □

## FIXED WING

Fatalities: 0 ■ Accidents: 0  
Injuries: 0 ■ Estimated Costs: \$1,269

### DIVISION

■ LTC Charles E. Humphries, Chief

Three incidents and seven precautionary landings were reported.

## OV-1

**1 INCIDENT** ■ Right hatch opened shortly after aircraft began descent from 7,500 feet to enter traffic pattern during VFR test flight. Aircraft was slowed to 120 knots for the balance of the descent. Post-landing check revealed hatch lock had not been placed in full lock position (full back) by technical observer when he boarded, resulting in incident damage to hatch.

## U-1

**1 INCIDENT** ■ Pontoon-mounted aircraft was being taxied in river channel with strong outgoing current when current swept aircraft into parked barge, causing hole in right pontoon and damage to right wing.

## U-21

**1 INCIDENT** ■ Small bird was struck by left windshield while aircraft was making approach for landing, cracking windshield.

**2 PRECAUTIONARY LANDINGS** ■ Fuel cap (which cap was not identified) popped loose, permitting fuel to seep out. Postlanding check revealed extension of fuel cap was improper. Cap was adjusted and aircraft released for flight. *This is not an uncommon occurrence and is directly attributed to an inattentive preflight. This can pose a serious in-flight fire hazard and has caused numerous aborted missions, so insure fuel caps all seat snugly and lock firmly in place. A simple adjustment inside the cap can assure mission accomplishment without hazard.* ■ During VFR training flight at normal cruise, IP shut down No. 2 engine for maneuvering practice. After approximately 5 minutes, an attempt to restart was initiated. After the third attempt to restart without success, which included preheating the spark igniters, aircraft was returned to home base. Caused by malfunction of spark igniter (FSN 2925-157-1602, P/N 3014054). There was no apparent failure of basic engine components.

## C-47

**1 PRECAUTIONARY LANDING** ■ As power was reduced to climb power after takeoff, No. 1 engine began to run rough. Tower was advised and aircraft returned and landed. Postlanding check revealed cylinder head separation resulted from worn cylinder.

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## T-41

**1 PRECAUTIONARY LANDING** ■ Engine sputtered and lost fuel pressure and power in cruise flight. Auxiliary fuel pump was turned on and aircraft was flown to nearest available airfield. Fuel fumes were extremely strong inside the aircraft. Postlanding check revealed fuel injector line to No. 6 cylinder had broken through fatigue. *Several cracked and broken fuel lines have been reported recently in the T-41 and should be an item for careful inspection during all maintenance inspections as well as during preflight. An in-flight fire is not a remote possibility and certainly could ruin one's entire day.*

## T-42

**1 PRECAUTIONARY LANDING** ■ Approximately 5 minutes after takeoff on VFR training flight, as power was reduced for cruise, No. 2 engine fuel pressure decreased and engine ran rough and stopped. Single-engine landing was made at home base. Loose fuel line had resulted in loss of fuel pressure and was attributed to a negligent daily inspection.

## U-3

**1 PRECAUTIONARY LANDING** ■ Landing gear would only retract about halfway during go-around from low approach. Loud grinding noise was heard under cabin. Gear would not extend when activated. Pilot followed emergency procedures, manually lowered gear, and landed. Gear output (P/N 0843400-10) and gear actuator (P/N 0843400-30) failed through excessive wear.

## U-8

**1 PRECAUTIONARY LANDING** ■ No. 1 engine began vibrating during cruise flight. Pilot reduced power and chip detector light came on. Engine was secured and aircraft landed. Caused by failure of counterweight assembly (FSN 210-632-5456, P/N 71905).

### FIXED WING 360-DAY MISHAP DATA

	Last 30 Days	Last 90 Days	Last 180 Days	Last 360 Days
Injuries	0	0	1	4
Fatalities	0	2	2	20
Dollar Cost	\$2,364	\$2,049,812	\$2,436,344	\$3,583,686

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PRELIMINARY ARMY AIRCRAFT MISHAP DATA

# FLIGHT FAX

VOL. 1, NO. 52 ■ 3 OCT 1973

mishaps for the period of 14-20 SEP 1973

## PROPER WEAR AND USE OF PERSONAL EQUIPMENT

Many times people are so eager to arrive at their destination that they tune out any warning of danger. For instance, have you ever noticed the passengers on a commercial airliner unfasten their seat belts while the aircraft is being taxied to the terminal even though the sign "Fasten Seat Belt" is still lit up? Why? Lack of self-discipline regarding their personal safety.

Commercial passengers, however, are not the only ones guilty of ignoring safety precautions pertaining to personal equipment. Despite the training and emphasis by the Army on the proper wear and use of equipment, some crewmembers apparently haven't gotten the word.



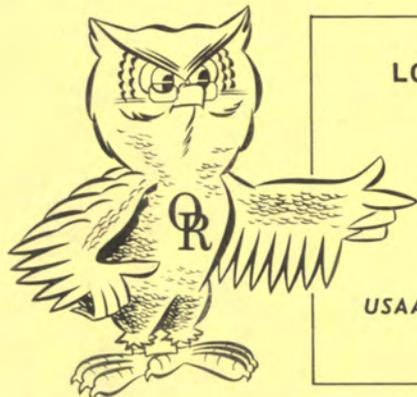
blades struck one of the revetment walls. The aircraft rose into the air, went over the revetment wall, and burst into flames. None of the enlisted crewmembers were wearing restraints and they were tossed around inside the aircraft, sustaining injuries. Two of the crewmen had removed their Nomex gloves while taxiing from the refueling area to the revetment area and one of them was wearing his Nomex shirt on the outside of his trousers, which resulted in second-degree burns to his back and hands. Had the shirt been properly tucked into his trousers and had the gloves been worn, the burns could have been greatly reduced or prevented. Wearing the shirt on the outside of the trousers acted as a vacuum, sucking the flames up inside the shirt.

continued on back page



A good example of such a case is a CH-47 accident. The pilot had just refueled and was taxiing within the confines of a revetment area when the helicopter turned left and the rotor

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### LOSS OF COMBAT EFFECTIVENESS FROM THIS WEEK'S MISHAPS

FATALITIES:	0
INJURIES:	0
AIRCRAFT LOSSES:	0
ESTIMATED COSTS:	\$133,026

USAAAVS: AUTOVON 558-6510/4714  
Commercial AC 205, 255-6510/4714

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# UTILITY/ATTACK

Fatalities: 0 ■ Accidents: 0  
Injuries: 0 ■ Estimated Costs: \$4,400

## DIVISION

■ MAJ Charles E. Toomer, Chief

*Two incidents and 27 precautionary landings were reported.*

### UH-1

**2 INCIDENTS** ■ One main rotor blade was damaged when marker panel was blown up into main rotor system during takeoff from LZ. ■ Engine would not accelerate when power recovery was attempted from simulated forced landing. IP completed power-off autorotation and right chin bubble was broken during touchdown. Suspect fuel control failure (P/N 81700 C3). EIR submitted.

**23 PRECAUTIONARY LANDINGS** ■ Twenty-minute fuel warning light illuminated after 2 hours of flight and 15 minutes ground time at flight idle. Fuel gauge indicated 400 pounds of fuel. After approximately 10 more minutes of flight, gauge indicated 140 pounds of fuel and pilot made precautionary landing. Aircraft was serviced and released for flight. ■ Engine oil pressure fluctuated between 30 and 90 psi. After precautionary landing, engine was found to be 7 quarts low of oil. Inspection revealed fuel control special drive shaft seal (FSN 2840-570-9811) in N1 gearbox was missing and apparently had not been installed. Oil started leaking when retaining seal failed. ■ Pilot heard unusual noise and felt high frequency vibration during takeoff. Maintenance could not duplicate malfunction and aircraft was released for flight. ■ Two batteries overheated in flight. One overheated because of internal failure of battery and the other overheated because voltage regulator was set too high. ■ Three tail rotor chip detector light illuminations were reported. Short in wiring at 42° gearbox caused one illumination, 90° gearbox in second aircraft was changed because of unusual wear, and excessive metal particles were found in 90° gearbox of third aircraft. EIR's submitted. ■ During cruise flight, cyclic moved left and rearward with intermittent binding. Right lateral servo and irreversible valve were replaced (P/N 205-076-038-7). EIR submitted. ■ Hydraulic caution lights of seven aircraft illuminated, with five of the seven aircraft having hydraulic pressure loss. Two were caused by failure of pressure switch (P/N 204-076-057-1), one was caused by internal failure of irreversible valve (P/N 42550-2) which allowed fluid to be lost, two were caused by ruptured lines (P/N 124030-6D0096 and P/N 205-076-201-1), one was caused by fluid leak in accumulator valve, and one was caused by failure of hydraulic pump (P/N PU 3044-8). Five EIR's submitted. ■ Four engine chip detector light illuminations were reported. One was caused by short in wiring. One was caused by fuzz on plug and aircraft is grounded, pending results of special oil sample. One engine is being replaced due to excessive metal in oil. No cause could be determined for the fourth illumination. ■ Transmission oil temperature fluctuated repeatedly from normal to maximum. Transmission oil temperature gauge was replaced and aircraft released. Two days later oil temperature fluctuation was noted again. Aircraft has been sent to DS maintenance for evaluation. ■ Transmission oil hot light came on in cruise flight. Caused by failure of thermal switch (P/N 12411-230). EIR submitted.

### AH-1

**4 PRECAUTIONARY LANDINGS** ■ After landing, crew discovered left inboard rocket pod missing. ■ Engine chip detector and engine oil bypass light illuminated in cruise flight. Caused by short in electrical wiring. ■ Two aircraft had hydraulic failures. One was caused by failure of preformed packing at No. 2 servo check valve (P/N MS 28778-6), and the other was caused by failure of hydraulic pressure line (P/N AN 628909). EIR's submitted.

# LOH

Fatalities: 0 ■ Accidents: 1  
Injuries: 0 ■ Estimated Costs: \$21,626

## DIVISION

■ LTC David L. Boivin, Chief

*One accident, two incidents, two forced landings, and 10 precautionary landings were reported.*

### OH-58

**1 ACCIDENT** ■ Pilot was attempting to remain VFR over highway at night when he inadvertently encountered IMC. A 180° turn was initiated and pilot became disoriented. He lowered collective pitch and came out of clouds, with aircraft simultaneously striking the ground in a near level attitude. Aircraft bounced after impact and came to rest on left side, resulting in major damage. Weather was other than forecasted. *Lucky strike! Miraculously, there were no injuries!*

**1 FORCED LANDING** ■ Engine-out audio was heard as low rotor rpm light illuminated during cruise flight. Pilot called Mayday as he entered autorotation at 2,500 feet. Aircraft yawed to right when auto-relight system attempted to relight engine (three times). Smoke and flames were coming from engine exhaust as forced landing was terminated to 8-foot-wide road in pineapple field. Aircraft's fire extinguisher was used to extinguish fire. EIR submitted on engine failure. WELL DONE for a successful power-off emergency landing goes to CW2 George J. Athan of the 25th Infantry Division, Hawaii.

**8 PRECAUTIONARY LANDINGS** ■ Low rotor rpm warning light came on when pilot applied pitch to terminate descent at 200 feet agl (to comply with clearance through control zone). Pilot tried to beep N2 up with no success. Aircraft was flown one-half mile and landed on sandbar. MOC indicated engine was operating normally. Suspect pilot inadvertently rolled throttle slightly off when reducing pitch, which allowed manual control to override governor. ■ Torque and N1 began fluctuating in cruise flight. TOT rose to 825°, then dropped to 720° when pilot decreased power. EIR submitted on compressor failure. ■ EIR submitted on fuel boost pump failure during flight. ■ Cause unknown for rise in TOT during flight. ■ Carbon and oil deposits were removed from engine chip detector plug after light illumination. However, 5 miles out from airport, light came on again, with additional illumination of hydraulic pressure caution light. Caused by hydraulic pressure switch failure. EIR not reported. Suspect minute particles of metal accumulation (due to normal wear) caused chip detector light to come on the second time. ■ Power-on landing was made after transmission oil hot light came on during flight. Transmission oil pressure light illuminated when throttle was retarded after landing. Numerous metal chips were found in oil filter. Aircraft was grounded and special oil sample submitted. ■ Transmission chip detector lights of two aircraft came on. Caused by minute metal particles on magnetic plug. Oil samples submitted for analysis.

### OH-6

**1 INCIDENT** ■ Pilot's windshield shattered when aircraft struck bird at 2,500 feet altitude. *When feathered flyers become flying feathers (through a windshield), a pilot's only "visible" means of protection is his helmet visor worn down.*

**2 PRECAUTIONARY LANDINGS** ■ Main rotor blade struck bird flying at 2,000 feet altitude. ■ Carbon on magnetic plug caused engine chip detector light to come on.

### TH-55

**1 INCIDENT** ■ Hard landing occurred during performance of PRACTICE TOUCHDOWN AUTOROTATION. Aft cross beam assembly was bent out of tolerance.

**1 FORCED LANDING** ■ Engine quit immediately after student pilot reduced collective pitch for entry to approach. Aircraft was released for flight after the two spark plugs in No. 2 cylinder were changed. WELL DONE for a successful power-off emergency landing goes to Doss IP Larry K. Rutland of USAAVNS, Fort Rucker, Alabama.

## THOUGHT FOR THE WEEK

**IT'S TOO LATE TO TURN BACK NOW!** This week, a pilot was apparently forced by personal desire to continue flight against his better judgment. He should have realized the weather was deteriorating because as he pressed on, he also was pressed down closer to the highway he was attempting to follow due to the decreasing visibility. But the pilot either failed to observe and/or heed the surrounding adverse weather cues until it was too late. Only after entering a cloud mass (close to the ground) did he make a 180° turn. However, it was too late; he became disoriented and crashed. Only luck saved his life. The aircraft was not as fortunate. It's frightening to think of forcing yourself to fly at night with rapidly deteriorating weather conditions in an aircraft not equipped for instrument flight and perhaps your personal instrument proficiency questionable. This flight as a dream would have been a nightmare. Pilots, wake up before it's too late! When unprepared for flight into weather, the turning point is before, not after, entering IMC. The ideal turning point is when you can still make a controllable landing into a safe area which will save both you and the helicopter. □

## CARGO

Fatalities: 0 ■ Accidents: 0  
Injuries: 0 ■ Estimated Costs: \$0

### DIVISION

*Nine precautionary landings were reported.*

■ CW4 Gerald D. Verbeek,  
Acting Chief

## CH-47

**9 PRECAUTIONARY LANDINGS** ■ No. 2 engine oil low warning light came on during level flight. Loose wire caused false indication. Connection was repaired and mission continued. ■ No. 1 engine chip detector light illuminated, with simultaneous malfunction of No. 2 engine torque indicator. Caused by normal wear accumulation on No. 1 engine chip detector plug and failure of No. 2 engine torquemeter drive assembly. Plug was cleaned, torquemeter drive assembly replaced, and aircraft returned to service. ■ No. 1 engine chip detector light illuminated in flight. Caused by accumulation of normal wear on plug. Plug was cleaned and aircraft returned to service. ■ During cruise, moderate hydraulic leak was discovered from No. 1 SAS extensible link authority cover. Two of four screws holding authority cover to extensible link were broken due to overtorque, allowing cover to vibrate loose and leak hydraulic fluid. Screws were replaced and aircraft returned to service. ■ Aircraft was climbing through 2,000 feet msl when No. 2 engine fire warning light illuminated, followed by smoke and fuel odor in cargo and cockpit compartment. Emergency radar vector back to final approach fix was requested and single-engine landing was made. Caused by improperly positioned fire detection harness which shorted due to chafing. Suspect smoke and fuel odor occurred after No. 2 engine "T" handle was pulled. Fire detection harness was replaced and aircraft returned to service. ■ Fire warning light flickered and came on steady. Crew check indicated negative fire and landing was made. Caused by failure of sensing element. ■ Aircraft, in cruise flight, experienced excessive hydraulic leak from utility hydraulic thermal relief valve. Overtorque caused elbow fitting to crack. ■ Loud squeal was heard from flight control closet area. Air trapped in hydraulic flight control system was being forced through hydraulic pressure reducers. Measures taken to correct problem were: (1) SAS and hydraulic function switches were recycled unsuccessfully. (2) Corrective action was taken to bleed the systems of trapped air at system bleed points. ■ No. 1 engine chip detector light came on. Caused by accumulation of normal wear on chip detector plug. Plug was cleaned and aircraft returned to service.

## FIXED WING

Fatalities: 0 ■ Accidents: 1  
Injuries: 0 ■ Estimated Costs: \$107,000

### DIVISION

*One accident and seven precautionary landings were reported.*

■ LTC Charles E. Humphries, Chief

## U-21

**1 ACCIDENT** ■ Both main landing gear collapsed during landing rollout. Nose wheel remained down and

locked. Lower aft fuselage section, wing flaps, and main gear wheel well were damaged. Investigation is in progress.

**1 PRECAUTIONARY LANDING** ■ No. 2 propeller started to feather during takeoff for IFR service mission. Engine was secured and propeller manually feathered. Aircraft remained in traffic pattern and single-engine landing was made. Postlanding check revealed secondary idle stop switch had failed. The secondary low pitch stop light did not illuminate.

## T-28

**1 PRECAUTIONARY LANDING** ■ Engine chip detector warning light came on and engine quit during cruise flight. Engine was restarted and aircraft was flown to nearby airfield. Adjustments were made to carburetor and aircraft was flown to home base, although engine would not develop full power. Engine is presently awaiting examination by representatives of the rebuild facility. Engine history: time since overhaul 3:45; last overhaul 22 August 1973; preserved 22 August 1973; depreserved 10 September 1973.

## T-41

**1 PRECAUTIONARY LANDING** ■ During climbout from takeoff on VFR training flight, engine rapidly lost power. IP took control, regained partial power, and landed. Valve assembly, fuel manifold, and air throttle and fuel metering assembly malfunctioned and required replacement.

## U-8

**2 PRECAUTIONARY LANDINGS** ■ Engine rpm fluctuated and cylinder head temperature dropped to 70° within 10-15 seconds in cruise flight. Postlanding examination could determine no significant mag drop, but max power check indicated 400 rpm low. Cause remains undetermined, pending analysis of engine by maintenance. Engine identification was not reported. ■ Nose wheel indicator indicated "down" when gear was in "up" position. Tower confirmed gear was in "up" position. When gear was lowered for landing, gear lights showed safe indication. Nose wheel indicator bushing sleeve was out of position.

## OV-1

**1 PRECAUTIONARY LANDING** ■ No. 1 propeller rpm increased and propeller control lever was retarded without effect. Power was reduced and effectively held the propeller at 1500 rpm. Approach to home base was initiated and, during approach, propeller rpm began to decrease. When landing was completed, No. 1 propeller was at minimum rpm. Propeller control failure was caused by failure of washer, segment, thrust (FSN 1610-751-8684, P/N 535292).

## C-47

**1 PRECAUTIONARY LANDING** ■ No. 1 engine chip detector warning light came on during landing approach. Oil pressure dropped to 15 psi and oil temperature rose to 100° C. Landing and shutdown were made. Postlanding check of magnetic plug revealed accumulation of metal. Suspect failure of master rod bearing (P/N 195860). Engine is being DX'd.

### FIXED WING 360-DAY MISHAP DATA

	Last 30 Days	Last 90 Days	Last 180 Days	Last 360 Days
Injuries	0	0	1	4
Fatalities	0	2	2	20
Dollar Costs	\$109,014	\$2,156,288	\$2,523,702	\$3,690,686

continued from front page

The injuries sustained during this accident strongly indicate that protective clothing and equipment are a must until a flight has been completed; that is, when the aircraft is in the chocks and the engine is secured. For the maximum protection, the two-piece Nomex flight clothes should be worn with the tail tucked into the trousers, the trouser legs closed snugly over the boots at the ankles, and the wrist openings

closed snugly over the Nomex gloves. Any deviation, such as sleeves rolled up and shirttail out, means that much less protection in the event of an accident.

Crewmembers must remember that the best equipment available can't help prevent injuries if it's not being properly used or worn when needed.

A professional approach to personal safety is presented in the article "Just Pure Hell," September 1973 AVIATION DIGEST.

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