FY08 AVIATION SAFETY REPORT

The purpose of the Annual Aviation Safety Report is to inform and raise the awareness of Coast Guard aircrew members regarding aviation mishaps. Improving safety awareness is essential to improving operational performance and preventing aviation mishaps. This report contains fiscal year 2008 mishap information as well as prior years and DOD data for comparison. We hope everyone will use this report to evaluate our aviation mishap experience and become more involved in mishap prevention.

NOTE: Unless otherwise indicated, only flight mishaps are used for the annual statistics, instead of total mishaps (flight, flight-related and ground). This is the traditional way of reporting annual numbers within the aviation industry. The other categories of mishaps are still important, and are reviewed separately.

FROM THE CHIEF OF AVIATION SAFETY

I am very pleased to have the opportunity to introduce this year's aviation safety report. As all of you know change is a constant in Coast Guard Aviation, and the pace of change seems to be accelerating. We face challenges from new missions and aircraft and are in the midst of an unprecedented organizational modernization effort. The standup of FORCECOM is just around the corner, ATC Mobile pilots are standing the duty in the "Ocean Sentry" and AUF has expanded from HITRON to H65 and H60 units on both coasts. In light of all that, maintaining a commitment to classic mishap reduction tools like ORM, CRM, and MRM is essential. So is the need to use every tool at our disposal to analyze mishaps in an effort to understand causal factors to prevent future events.

Statistics provide an excellent way to order and explain groups of related events. The report that follows is filled with in-depth statistical analysis of Coast Guard aviation mishap rates and paints a very favorable picture of our efforts to identify and mitigate risks to prevent both human and material losses. For example, Coast Guard Aviation's Class A mishap rate averages slightly less than one mishap in every 100,000 flight hours, significantly lower than any of the DOD services.

While the events of FY08 maintain this enviable average, our low mishap rate does not lessen the impact of our first fatal mishap in more than 11 years.

On the business website edge.org Nassim Taleb writes: "Statistics is what tells you if something is true, false, or merely anecdotal; it is the "logic of science"; it is the instrument of risk-taking; you can't be a modern intellectual and not think probabilistically – but… let's not be suckers." Taleb argues that misunderstanding and misuse of statistics led to the current financial crisis. He asserts that by dismissing potential catastrophic events as "unlikely", financial industry analysts increased risk to the point of disaster. Financial institutions took greater risks because they had been convinced negative outcomes, though

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possible, would not happen. In aviation, we risk much more than personal fortune on the statistical analysis of risk, therefore it's vitally important that we don't make similar mistakes.

The biggest problem with statistics may be the temptation to rely too heavily on historical trends to predict future events; especially in the short term. Financial analysts looked at a trend of steadily increasing home values and concluded they could relax their scrutiny of future loans. In Coast Guard aviation we have a history of successful implementation of "new" programs like the expanded use of NVGs and implementation of AUF at HITRON. We must avoid the temptation to believe we will continue to be successful if we relax our vigilance. At headquarters we need to scrutinize both new and legacy programs to ensure we are not accepting unnecessary risk. At the unit level aircrews need to evaluate every mission, flight, and maneuver diligently.

As you read through the report that follows take pride in the successes we have achieved but remember that future positive trends don't come from historical data, they come from continuous hard work at every level of the organization.

CDR Joel Rebholz
Chief Aviation Safety Division (CG-1131).

ANNUAL RECAP

CG aviation experienced one Flight Class A, one Flight Class B and one Flight-Related Class A in FY08 (all HH65). See page 6 for a summary of these mishaps. Coast Guard Aviation has averaged one Class A mishap a year for the last twenty years. Our 15-and 20-year Class A Flight mishap rates per 100,000 fight hours are 0.83 and 0.90 respectively. The Coast Guard 5- and 10-year rates are also below 1.0. See the last two pages of this report to review the Coast Guard Class A and B mishaps since 1991. Figure 1 (below) compares Coast Guard 5, 10, 15 and 20-year Class A Flight mishap rates with the DOD services. These numbers are excellent and include enough hours to compare us with DOD rates.

CG Auxiliary Aviation reported no Class A or B mishaps in FY08. Auxiliary Aviation flight hours and mishaps are not used in figuring CG mishap rates in this report. See page 9 for more on the AUXAIR program.

Flight Mishap costs for FY08 were $14,108,548. Without the Class A Flight mishap, FY08 Flight mishap costs ($5,108.548) would have been lowest in the last four years. With the Class A Flight mishap, costs were $14,108,548. The Class A mishap rate for FY08 is 0.86. The number of Flight mishaps (342) reported this year was also lower than the previous four years. The Total Flight mishap rate of 0.29 (per 100 flight hours) was also down. Total Aviation mishap costs (Flight, Flight-Related and Ground) for FY08 was $14,932,108 with the Flight Class A. (see Figure 3 on page 4). Of the 520 aviation mishaps reported this year, 84 were Ground (includes seven ground mishaps not associated to a specific airframe) and 94 were Flight-Related.

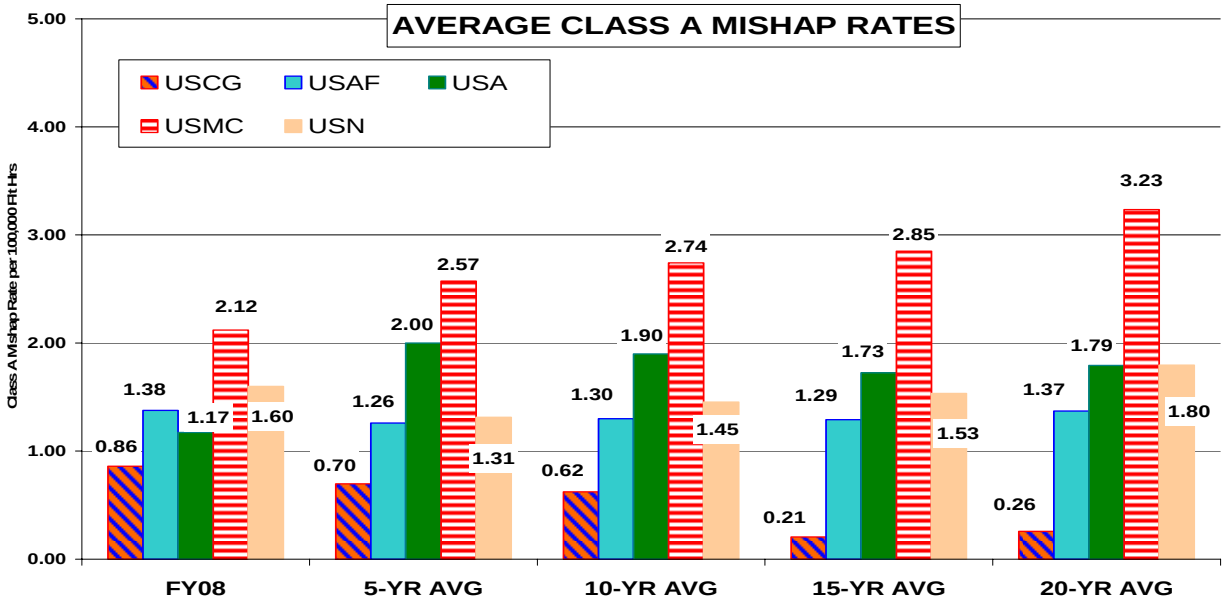


Figure 1

MISHAP CLASS COST BREAKDOWN

FY02-FY08

Class A $1,000,000 or greater or death
Class B $200,000 to $999,999 or serious injury
Class C $20,000 to $199,999 or minor injury
Class D Less than $20,000
Class E Engine damage only, regardless of cost

FY89-FY01

Class A $1,000,000 or greater or death
Class B $200,000 to $999,999 or serious injury
Class C $10,000 to $199,999 or minor injury
Class D Less than $10,000

MISHAP CATEGORIES

Flight Mishaps--Mishaps involving damage to Coast Guard aircraft and intent for flight existed at the time of the mishap. There may be other property damage, death, injury, or occupational illness involved.

Flight-Related Mishaps--Mishaps where intent for flight existed at the time of the mishap and there is **NO** Coast Guard aircraft damage, but there is death, injury, occupational illness, or other property damage.

Ground Mishaps--Mishaps involving Coast Guard aircraft or aviation equipment where **NO** intent for flight existed and the mishap resulted in aircraft damage, death, injury, occupational illness, or other property damage (e.g., towing, maintenance, repairing, ground handling, etc.)

Auxiliary Aviation Mishaps--Injuries or property damage sustained by an Auxiliarist while under official orders.

NOTE: Dollar values of mishap costs are actual annual costs -- not adjusted for inflation.

Table 1

As we say every year, we feel our conscientious and methodical reporting is what helps us achieve our low mishap rate. The lessons learned from reporting low/no cost incidents can greatly assist in averting high-cost incidents ("cost" being in terms of injuries, lost operation time and dollars). Reporting the low/no cost mishaps helps perpetuate what we believe is a very positive and proactive safety culture within the Coast Guard. We believe that our success in self reporting often identifies safety hazards at the early stages. Thus setting us on a course to avoid the major mishaps that often result in lost lives and airframes.

Maintenance Resource Management (MRM) training and mishap awareness continues to contribute to the increased reporting of minor incidents and keeping our losses as well as the Class ABC statistics down. Table 2 below, displays the FY08 Aviation mishap summary data. Figures 2 and 3 (on the next page) display mishap cost data for the last ten years for Flight mishaps and for Total Aviation mishaps (Flight, Flight-Related and Ground). These two charts break out the Class A and Class E costs to help illustrate how engine mishaps and Class A mishaps can impact the overall mishap costs. Engine mishaps have historically accounted for nearly half of the reported Coast Guard aviation mishaps costs.

The Class ABC flight mishap rate (per 100 flight hours) decreased to 0.02 this year. It has remained below 0.1 for 12 years. The relative stability of ABC flight mishap rate indicates that

when our mishaps increase or decrease it is mostly at the Class D and E. As we've said before, this is good sign since these mishaps are generally low cost and demonstrate our vigilance and mishap prevention efforts are paying off. This is also the level at which we can make the most difference, by breaking the chain and correcting or mitigating the hazards. This is a positive indication that the aircrews are diligent about reporting even the minor events.

Of the 342 Flight mishaps reported, 91% (293) were below the Class C threshold of $20,000 and accounted for 13% ($664, 111) of the Flight mishap costs (not counting the Class A mishap cost). Similarly, looking at total mishap numbers (Flight, Flight-Related and Ground), only 11%

FY08 GRAND TOTALS				
CLASS	# MISHAPS	COST	FATALS	INJURIES
A	2	$9,000,000	4	0
B	1	$331,734		1
C	47	$2,012,599		13
D	381	$675,984		15
E	89	$2,911,790		1
TOTAL	520	$14,932,108	4	30

TOTAL FLIGHT HOURS	116,362
CLASS A FLIGHT MISHAP RATE PER 100,OOO FLIGHT HRS	0.86
FLIGHT MISHAPS PER 100 FLIGHT HOURS	0.29
COST PER FLIGHT MISHAP	$41,253
COST PER FLIGHT HOUR	$121

FLIGHT MISHAPS			
CLASS	# MISHAPS	COST	INJURIES
A	1	$9,000,000	0
B	1	$331,734	1
C	26	$1,408,188	2
D	234	$493,200	1
E	80	$2,875,425	0
TOTAL	342	$14,108,548	4

GROUND MISHAPS			
CLASS	# MISHAPS	COST	INJURIES
A	0	$0	0
B	0	$0	0
C	14	$577,278	5
D	62	$134,820	9
E	8	$36,257	1
TOTAL	84	$748,355	15

FLIGHT-RELATED MISHAPS			
CLASS	# MISHAPS	COST	INJURIES
A	1	$0	0
B	0	$0	0
C	7	$27,133	6
D	85	$47,964	5
E	1	$108	0
TOTAL	94	$75,205	11

Table 2

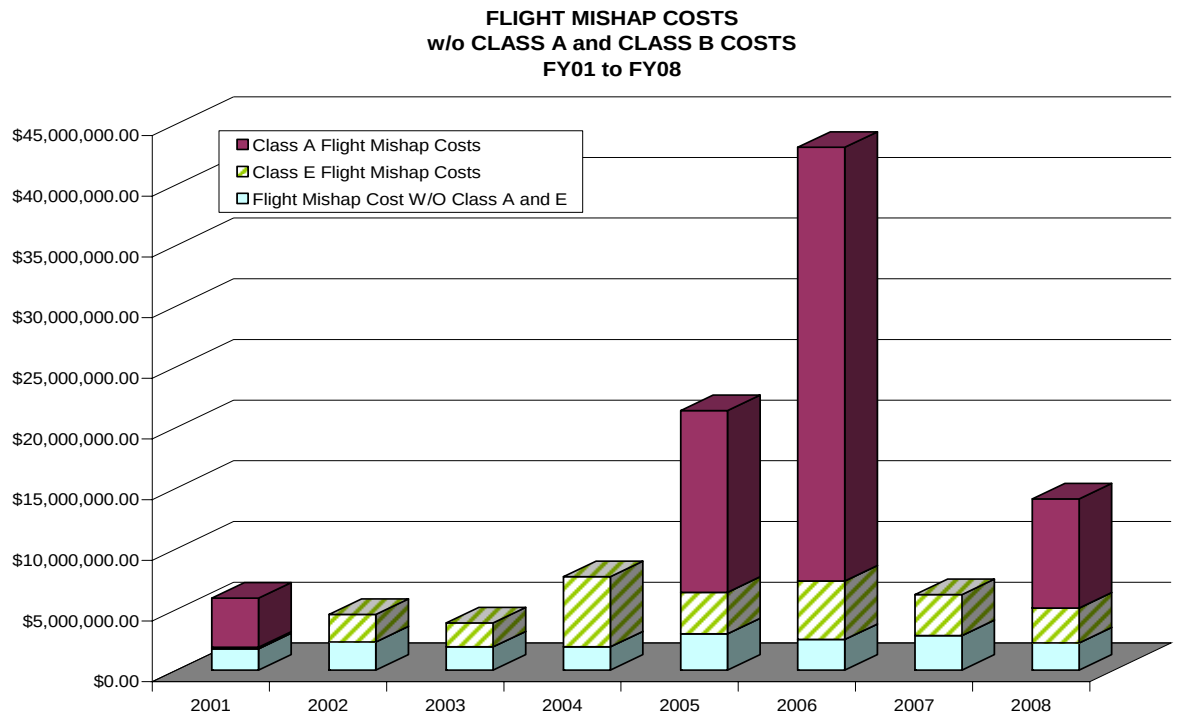


Figure 2

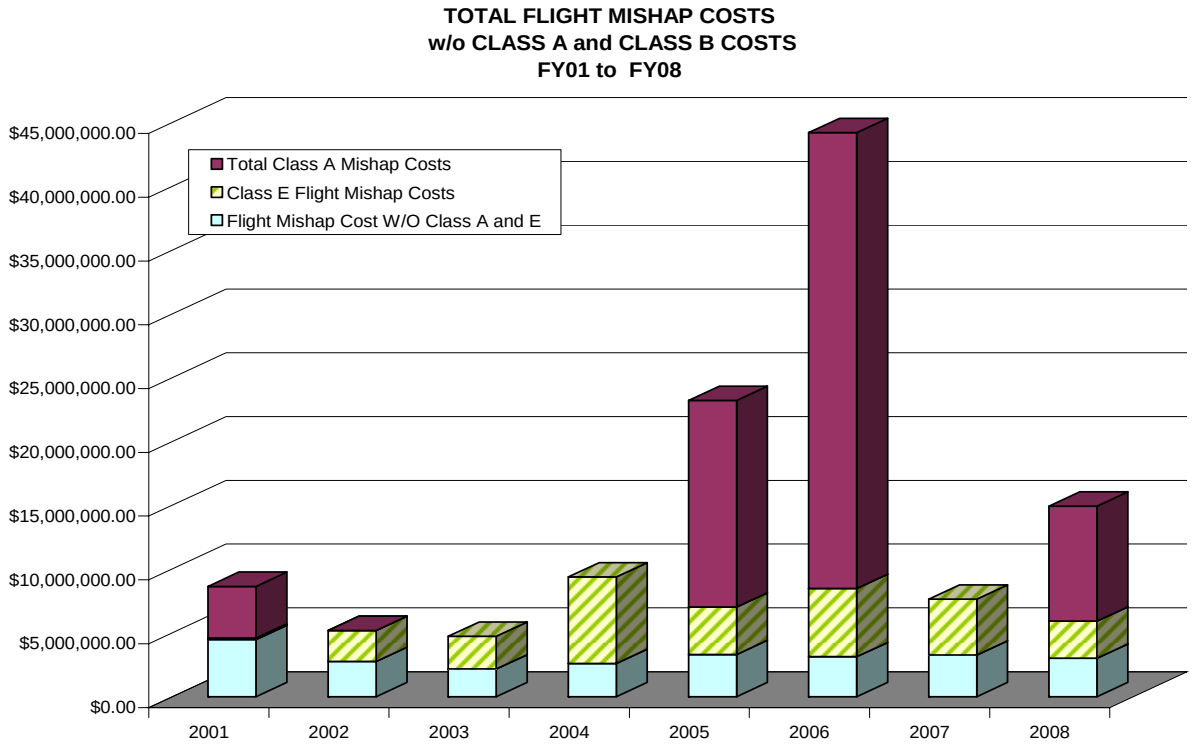


Figure 3

AVIATION FLIGHT MISHAP SUMMARY (A, B, C, D and E Mishaps)							AVIATION FLIGHT MISHAP SUMMARY (A, B and C Mishaps)						
ABCDE	NO. MISHAPS	COST	FLIGHT HOURS	MISHAPS/ 100 FLIGHT HOURS	COST/ MISHAP	COST/ FLIGHT HOUR	ABC	NO. MISHAPS	COST	FLIGHT HOURS	MISHAPS/ 100 FLIGHT HOURS	COST/ MISHAP	COST/ FLIGHT HOUR
FY04	684	$7,690,786	114,870	0.60	$11,244	$67	FY04	24	$1,147,984	114,870	0.02	$47,833	$10
FY05	711	$21,371,960	114,338	0.62	$30,059	$187	FY05	41	$17,210,091	114,338	0.04	$419,758	$151
FY06	542	$43,075,559	110,673	0.49	$79,475	$389	FY06	36	$37,638,922	110,673	0.03	$1,045,526	$340
FY07	368	$6,244,370	118,416	0.31	$16,968	$53	FY07	30	$2,079,763	118,416	0.03	$69,325	$18
FY08	342	$14,108,548	116,362	0.29	$41,253	$121	FY08	28	$10,739,922	116,362	0.02	$383,569	$92

Table 3

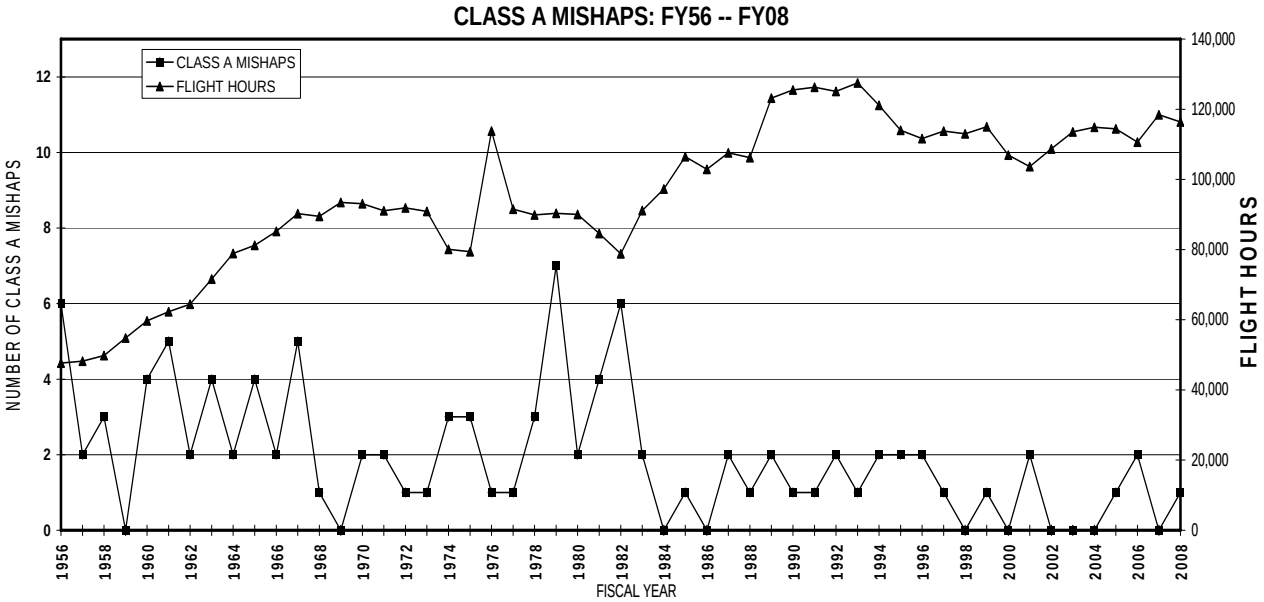


Figure 4

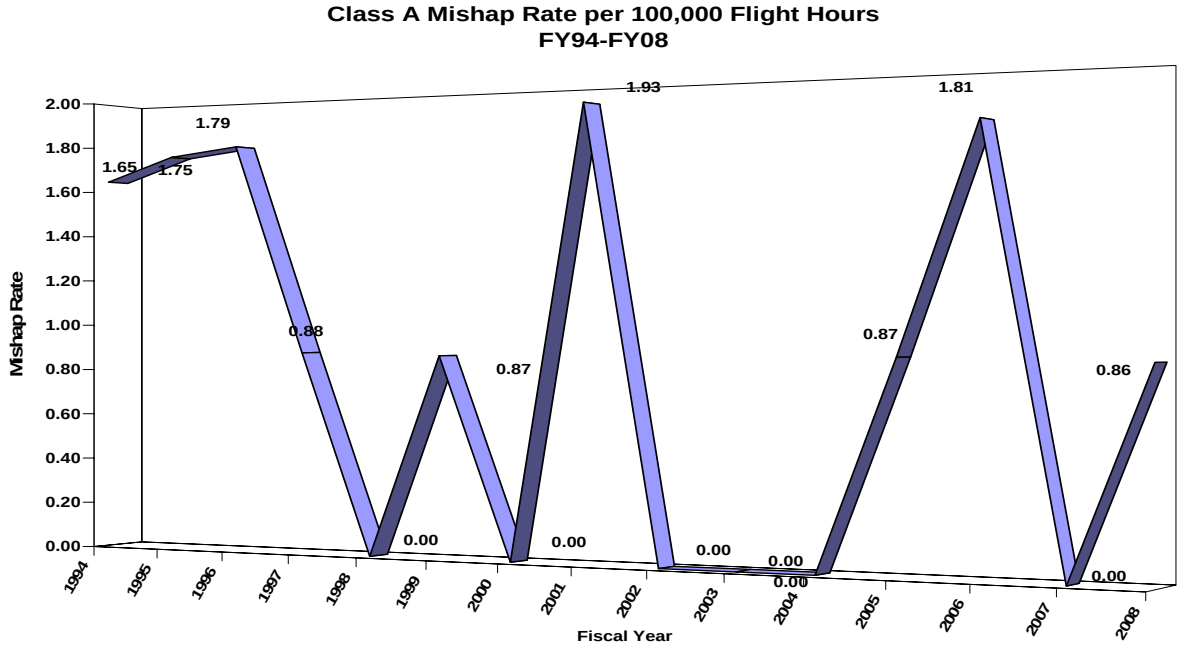


Figure 5

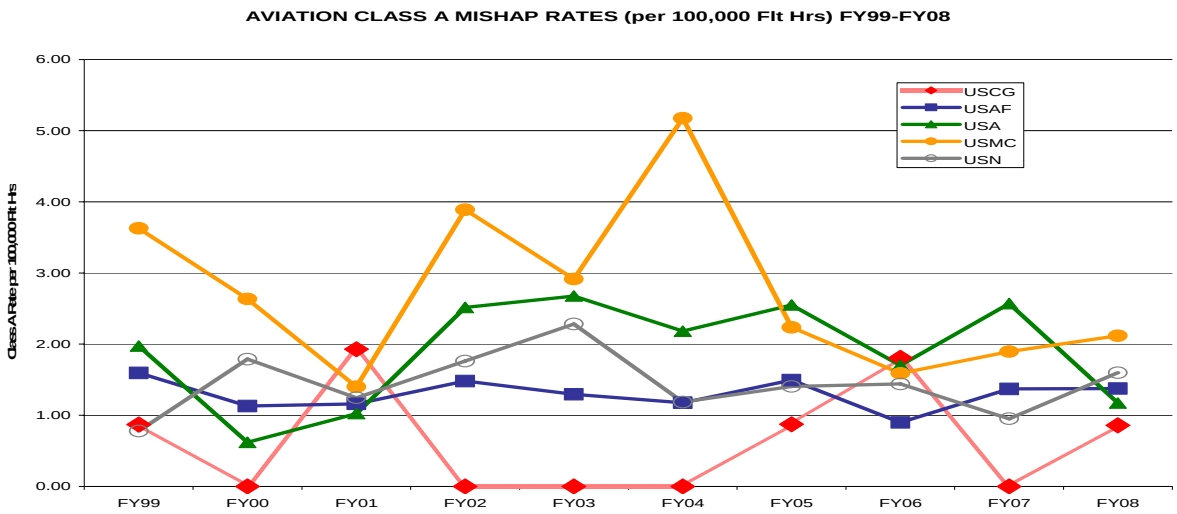


Figure 6

(58) of the 520 mishaps reported costs above the $20,000 threshold and accounted for 33% ($5,042,457) of the Total Aviation mishap costs. Table 3 on page 5, compares our mishap numbers for the last 5 years.

There were 89 reported Class E mishaps in FY08. Not only is the number of Class E mishaps dropping, but so is the cost. However, without the cost of the Class A mishap, Class E costs would still have been accounted for over half of the Flight (56%) and almost half of (49%) of the Total mishap costs. There were only nine Class E mishaps with cost over $100,000 ($2,634,956) representing %18 (with the Class A Mishap cost) of the total mishap cost (44% without it). Thirty-seven of the Class E mishaps had cost below $1,000.

Figure 4 on page 5, displays our Class A Flight mishap history along with total flight hours since 1956. Also on page 5, Figure 5 displays the Coast Guard aviation Class A Flight mishap rates for the past fifteen years. Figure 6 (above) provides a comparison of Coast Guard aviation Class A Flight mishap rates to the DOD military services for the last ten years.

FY08 CLASS A FLIGHT MISHAP

While conducting night trainer, CG6505 impacted water. All four crew members perished. Mishap investigation pends.

FY08 CLASS B FLIGHT MISHAP

A Corpus HH65 suffered significant airframe damage from a birdstrike. During a PWCS patrol, CP announced bird approaching at same altitude as the helo. PAC took evasive action, as did the bird. The bird impacted the aircraft, significantly damaging the pilots' windscreen and door. The crew maintained control of the acft and reviewed procedures for blade damage and windscreen cracks. Post flight inspection revealed significant structural damage to the 25 degree frame and the upper inside pilot windscreen frame. Aircraft was trailered to ALC for repairs.

FY08 CLASS A FLT-REL MISHAP

During recovery of numerous survivors from a sunken fishing vessel, non CG members fell from basket while being brought into cabin. Mishap investigation pends.

FLIGHT DATA RECORDERS/MFOQA

The Voice and Flight Data Recorder (VFDR) recapitalization program and Military-Flight Operations Quality Assurance (MFOQA) programs continue to press forward. Every aircraft in the Coast Guard inventory continues to fly with some form of a voice and/or flight data recorder:

H-65: Every H-65 in the fleet is outfitted with a GE (formerly Smith's) K-VADR. The K-VADR is capable of recording 25 hours of flight data and 4 hours of voice. Over 200 data points are recorded at a rate of 4 times per second. The 65 fleet is also completely outfitted with a separate Data Storage Unit (DSU), located on the Forward Avionics Tower. The DSU contains a PCMCIA card which contains a copy of the flight data recorder by the VADR. The PCMCIA card can be easily removed and the flight data transmitted to

ALC for analysis without removing the entire VADR.

H-60: The H-60J continues to utilize the older GE C-VADR, capable of roughly 30 minutes of audio and 4 hours of flight data. Only 42 flight parameters are recorded by the C-VADR. The H-60 Tango models are rolling off the PDM line with the same VADR/DSU system as the H-65 fleet. The new C-VADR will allow an additional 200+ parameters to be recorded.

HU-25: Currently the Falcon uses an L-3 Combination Voice and Data Recorder (CVDR). Under current configuration it is capable of recording 50 flight parameters for up to 25 hours and 2 hours of voice data. The addition of a Flight Data Acquisition Unit (FDAU) to the Falcon will allow roughly 75 more parameters to the CVDR. FDAU's have been installed on the 2110 (ALC) and 2139 (Corpus). The ACCB2 is completed and all Falcon's will be receiving a FDAU during their next trip to PDM.

C-130H: Most C-130H's currently only have a voice recorder. However, FDAU's similar to those installed on the HU-25, will remedy this situation. As part of the FDAU install, all C-130H models will have an Engine Indicating Display System (EIDS) installed as well. The EIDS will replace the "steam" gauges of the C-130H cockpit with 2 flat panel glass displays. The FDAU/EIDS has been installed on the 1790 and 1716, passed the ACCB process and is currently being installed in the 1704. All C-130H's will receive the install during a drop-in maintenance period scheduled by the C-130 Product Line.

C-130J: All C-130J's came equipped with separate flight data and voice recorders, also manufactured by L-3.

HC-144: The Ocean Sentry also came off the shelf with separate flight and voice recorders. The Flight Data Recorder is capable of capturing over 650 parameters at rates as high as 32 times per second.

2008 also witnessed the start of our MFOQA program. Air Station Atlantic City has been downloading and sending ALC all the flight data collected on their DSUs for the better part of the year. This data collection has not only proven the capability of the program, but has led to several engineering assists using the data. Efforts to install the capability at all H-65 units continues, although a setback has occurred due to the recent "No Flash Media" policy. Unfortunately, the DSU uses a PCMCIA card with flash memory. Workarounds for this policy are being tested. Hopefully, all H65 flight data will be transferred to ALC starting sometime this summer – with all other airframes to follow shortly after that. The data will be used to identify unrecorded over limit situations (i.e. Angle of Bank), provide feedback for engineering analysis, be available for Mishap reporting, and set a baseline for trend analysis.

Finally, the folks at ALC have really moved forward with the "Crash Lab" portion of the VFDR program. The lab now has the capability to download and analyze the data from all CG aircraft VFDRs. Animation for all CG aircraft is now available at ALC.

If you have any questions, please contact LCDR Chris Chase (ALC FSO), Mr. Tony Simpson (Flight Data Program Manager), or Mr. Jarred Cook (Flight Data Analyst). If you are ever in E-City, feel free to stop by the lab, located in the Safety Office in the Falcon/Jayhawk hangar, for a demonstration.

AVIATION SAFETY TRAINING

FY08 saw the first ever delivery of the consolidated aviation safety training program. Unlike past years, where we managed 68 quotas allocated to 12 commercial courses, in FY 2008 we were able to get 120 students from all sections of the aviation workforce to additional accident and investigation training in the program's four core courses:

1. Aircraft Accident Investigation Fundamentals
2. Helicopter Accident Investigations
3. Human Factors in Accident Investigations
4. Ramp and Maintenance Safety

As anticipated, the courses proved to be excellent forums for aviation officer and enlisted representatives from safety, engineering, operations, training and standardization backgrounds to get together with the common focus of increasing knowledge and understanding of aviation accident investigation and preparedness topics. In this respect, the program shift was a tremendous success and will prove to be even more valuable as the content is eventually shifted away from civilian and other military content to more specific Coast Guard policy and accident examples. Unfortunately this is not an overnight fix, and demands a significant amount of time and effort on the program's part (CG-1131) to ensure it is incorporated properly. Significant headway has already been made in the first year's curriculum review thanks to focused course critiques; however a more deliberate approach will be needed to truly make the shift to a predominately Coast Guard centric

curriculum. CG-1131 is reviewing each course with this objective in mind, but anticipates the need to charter several working groups in the future to ensure the courses offer valuable information to each of the diverse aviation career backgrounds.

The following is a short synopsis of the four core courses, their tentative schedules and additional highlights/changes anticipated for the course.

AIRCRAFT ACCIDENT INVESTIGATION

This course was originally developed to be a stand alone fixed wing specific accident investigation course with additional focus on accident investigation report writing. Since the first run of the course in FY2008, it has shifted to primarily on scene accident investigation techniques and fundamentals. It will be offered early in each fiscal year (most likely early December) to act as a primer for newly assigned FSOs who may not attend their primary ASO training until late in the fiscal year. It will also serve as a refresher for current FSOs and as the primary on scene accident investigation course for non-FSOs. This class will be offered in San Pedro, CA to use the contractor's crash lab.

HELO ACCIDENT INVESTIGATION

This course will remain as a helo specific accident investigation course, but will incorporate more CG specific material in the future. It will also shift some of the academic course work from aerodynamics and aircraft structures to a review of investigation techniques. It is not intended to be a substitute for the investigative techniques in the Aircraft Accident Course, but provide a review for FSOs and a basis for non FSOs who have not attended the other course. It will be offered in San Pedro, CA as well to use the contractor's crash lab, and is targeted to remain in February.

AVIATION HUMAN FACTORS

The content of this course will not change significantly in this fiscal year with the exception of incorporating more CG specific accident human factor case studies. It will be held at ATC Mobile again to allow access to ATC IPs and Stan members since their focus on a mishap board is the human factors related topics. The target month will be in the spring (most likely the month of May) to remain outside the summer SAR, PCS and Hurricane seasons.

RAMP AND MAINTENANCE SAFETY

This course was initially designed to offer safety program management topics to FSOs, maintenance managers and hangar deck personnel. After the first course, it was determined that the content was too focused on the civilian standards, and since the CG has the MRM Program, this course would be of more value if it was shifted to engineering topics in accident investigation. CG-1131 is currently working with SCSI and ALC members to incorporate the new material. Since a significant portion of the course will be devoted to CG specific aviation engineering casualties, the location of the course will be Elizabeth City, NC due to proximity of ALC resources. The course is forecasted to remain in the end of the fiscal year (most likely Sept) for flexibility outside the summer SAR and PCS season and to accommodate those who could not attend courses earlier in the fiscal year.

AVIATION SAFETY ADVANCED EDUCATION

The Coast Guard's Aviation Safety Advanced Education Program continues to make significant progress on all fronts. With five billets now identified for pay back tours (three at CG-1131 and the ALC and ATC Command Safety Officer billets) there will be ample opportunity for graduates to use their knowledge for all aviation's benefit. As for the number of education opportunities, in AY08 we benefited from a last minute opening and were able to send our primary and alternate candidates (LCDR Clint Schlegel and LT Shana Donaldson both enrolled in the MSSS in Prescott, AZ). In AY09 there is the distinct possibility of again sending the primary and alternate. Congratulations to LT Brian Potter for his selection as the primary candidate; we look forward to sending alternate candidate LCDR Scott Jones, too.

The AY10 (FY11) allocation for the Aviation Safety Training Allocation Billet (TAB) was recently approved and the solicitation message and guidelines for applicants will be released early this spring. Based on our demonstrated need, CG-1131's request for two TABs was approved. The competition for the TAB has been steadily increasing as well and is another positive sign of the healthy CG aviation safety culture.

Another sign of program vitality is the continued promotion and assignment of program graduates. This past summer CDR Kotson was assigned as Astoria OPS and this year CDR Nygra will lead the ATC Mobile HU-25 Branch. On the promotion side, both LCDR Chase and LCDR Glander were selected for commander. While not a program graduate, LCDR Glander's selection along with that of LCDR Chase demonstrate the organization views safety as a valid specialty within aviation.

The two identified graduate programs for this TAB will be explained in the solicitation message, but for more information on the specifics please visit the schools websites:

Master of Science in Safety Science, Embry Riddle Prescott Campus:
http://www.erau.edu/omni/pr/academicorgs/prssd/index.html

Master of Science in Aeronautics (MSA) with specialization in Aviation/Aerospace Safety Systems at the Embry Riddle Daytona Campus:
http://www.erau.edu/db/degrees/ma-aeroscience.html

LT Potter has earned acceptance to the Master of Science in Human Factors and Systems at the Embry Riddle Daytona Campus. We're excited to learn how that program will benefit aviation safety. http://www.erau.edu/db/degrees/ma-humanfactors.html

If you have any questions about the program, please feel free to contact the Program Manager, LCDR Jeremy Smith, or any of the current or past graduates of the program:
CDR Jeff Kotson
CDR Tony Nygra
CDR (s) Chris Chase
LCDR Roberto Torres
LCDR Clint Schlegel
LT Shana Donaldson
LT Brian Potter

AUXILIARY AVIATION PROGRAM

The Auxiliary Aviation Program (AUXAIR) consistently emphasizes safety as the first priority. Over the years, a number of initiatives have been undertaken to strengthen that emphasis. The AUXAIR Standardization (STAN) Team, consisting of selected members of the Auxiliary's National Operations Department, the Aviation Division and Active Duty members has undertaken many of these initiatives.

One such initiative, the recent message sent to all AUXAIR pilots clarifying Federal Aviation Regulations (FAA) regarding low level flight operations. Active Duty aircraft are exempted from the FAA minimum altitudes while on SAR missions. The regulations applicability to the AUXAIR was unclear, to correct any misunderstanding, the message explicitly indicates that this exemption does not apply to AUXAIR and that Auxiliary aircraft must observe a 500 ft AGL/AWL hard deck at all times, other than take off and landing. This message was widely distributed throughout the AUXAIR community and posted on the Auxiliary Aviation division website. Future revisions to the Auxiliary Operations Policy Manual will incorporate the clarifying language.

Mishap analysis is an important tool for improving Aviation Safety in both civil and military flying. In order to analyze mishaps, they must be reported. Although the Coast Guard's Active Duty aviation program has a mature and effective mishap reporting and analysis program, mishaps involving AUXAIR are frequently not captured. Part of the reason is rooted in the very word mishap and what that word means to different people.

According to the Safety and Environmental Health Manual (CIM 5100.47), a mishap is "Any unplanned, unexpected or undesirable event causing injury, occupational illness, death, or property damage/loss." This definition is consistent with most people's general understanding of the word. However, with regard to aviation, that definition encompasses many more things. Certain "aviation-specific events" are to be reported as mishaps, even though "these events usually do not have costs associated with them and do not involve injury or illness". Such reportable events, while not meeting the common definition of mishap, "can be used as indicators of possible trends and can teach valuable lessons.

There is a continuing need to educate Auxiliary aviators and the Auxiliary leadership in the meaning of the term "mishap" as it applies to CG aviation and to encourage the reporting of these events. The challenge is to most people, a "mishap" is a bad thing, an "undesirable event". Most pilots are naturally reluctant to report an event which will be perceived as undesirable. Many Auxiliary leaders, who are often not familiar with aviation, perceive any "mishap" with alarm and view a rise in reported mishaps as an increase in "accidents".

The Auxiliary Aviation Division Safety Branch has undertaken to improve mishap reporting by educating Auxiliary Aviators about what events should be reported and why. At the same time, an effort is being made to educate the Auxiliary leadership about the need for mishap reporting and its important contribution to safety.

The C-Schools which support AUXAIR are under yearly review and rewrite. Course AUX-15 trains Auxiliary Aviation Coordinators (AACs) and Active Duty Auxiliary Liaison Officers (AUXLOs) in the policies and procedures AUXAIR. Together, the AACs and AUXLOs are on the front lines of AUXAIR safety as they manage the day

to day operations of each Air Stations AUXAIR squadron.

Course AUX-14 trains Auxiliarists as District Flight Safety Officers (DFSOs), the Auxiliary equivalent of the Active Duty FSO. The course focuses on the many facets of the DFSO experience with an emphasis on building a culture of safety within the AUXAIR program.

The AUXAIR STAN Team has developed a number of AUXAIR standards and continues to monitor AUXAIR and evaluate the need for modifications. The standards proposed and implemented cover a wide range of topics with special attention given the management of qualifications and currency, along with operational activities such as Operational Risk Management. The AUXAIR STAN Team will be looking at methods to evaluate the District AUXAIR programs. The team is interested in learning how the field is complying with the standards, problems and challenges encountered, as well as sharing best practices.

Keeping records regarding the qualification requirements for Auxiliary Aviators has proven to be challenging. The Auxiliary member information data system, AUXDATA, has limited capability to track the many AUXAIR currency requirements. The Operations Department is partnering with the Information Technology Department to develop new tools to record and monitor AUXAIR qualification and currency information. These tools will help individual Auxiliary Aviators better track their own currency and qualifications, as well as give the AUXAIR program tools to monitor and manage all aspects of the AUXAIR program. --- (Special thanks to Robert Shafer, DC-Od for writing this article)

FLIGHT RELATED MISHAP REVIEW

Although not included as part of the annual aviation mishap rates, flight-related mishaps are important. Flight-related mishaps are mishaps where there was intent for flight, but there is no aircraft damage. Included in this category are injuries (with no aircraft damage), near midair collisions, and other close calls or near mishaps. Flight-related mishap reports include no cost lessons learned and any incident having value to the rest of the fleet. These reports are valuable mishap prevention tools.

Aviation Injury

There were 31 aviation injury mishaps reported in FY08 involving injury to 31 aviation personnel. Over a third of these injuries involved improper procedures, the wrong tool or improper/poorly designed equipment. Inattention, complacency, awareness and motivation were factors in at least 40% of these incidents and 30% listed lack of training or experience as a factor. Comms and passdown was mentioned in at least a quarter of the incident as was supervision and QA.

Reported lost work time from these injury incidents totaled six days hospitalization, 45 loss work days and 205 days of restricted duty. Incidents involved cuts to fingers, eyes, faces and legs; as well as bruises, strains or sprains to shoulders, knees, arms and backs. Nine Rescue Swimmers were hurt during hoisting or other rescue operations (three of these incidents involved static discharge).

There were 5 incidents involving personnel being sprayed by fuel, wash solution or hydraulic fluid. While resulting in no lost worktime, proper PPE should have been worn in these incidents. Five Coast Guard crews reported being lased by ground lasers.

Near Midair Collision

There were ten near midair collisions (NMAC) reported in FY08. NMAC's involved one HH65, and nine HH60. NMAC involved nine civil and one military aircraft. Almost all reported NMAC were in the daytime during training mission.

BIRDSTRIKES

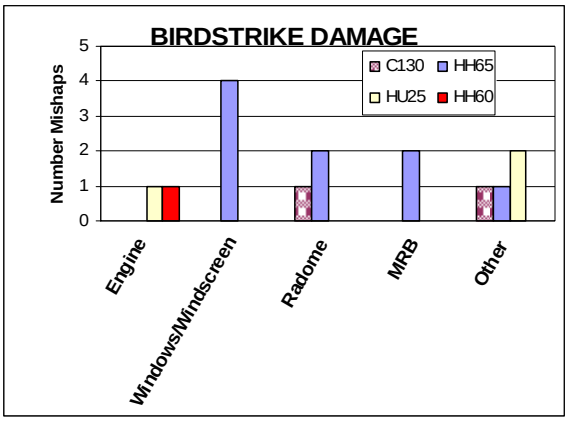


Figure 7

There were only 15 birdstrikes reported in FY08 with associated damage costs of $529,920. Six reports involved no or minimal airframe damage. Figure 7 shows breakouts of the FY08 birdstrikes by airframe. There was a fairly even split between day and night incidents. About two thirds of the birdstrikes occurred inflight while a quarter occurred in the airport environment (landing, in the pattern or takeoff phase).

FOD / TFOA MISHAPS

The twenty-five Foreign Object Debris (FOD) and sixteen Things Falling Off Aircraft (TFOA) incidents reported this year resulted in $712,964 in damage. Figure 8 and 9 shows a breakdown of the reported FOD/TFOA incidents. Foreign object debris mishaps involved three fuel systems ($11,407), nine engines ($569,251), three rotor

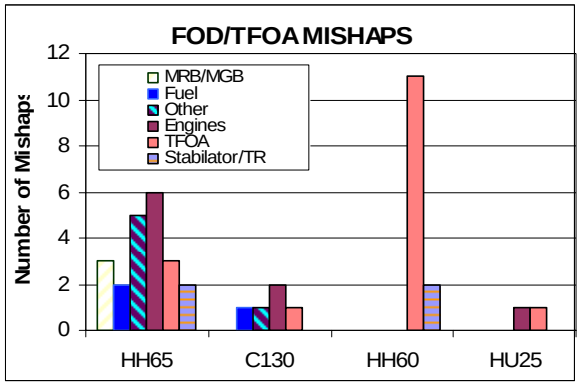


Figure 8

systems ($5,534), and four tail rotors ($31,131). Twenty-one HH65's, five C130's, two HU25, and thirteen HH60's suffered FOD damage this year. Parts (4), tools (7), flashlights (5) , plugs/covers (2), or rags/towels (3) left in the aircraft accounted for 21 mishaps. TFOA and departing panels account for 19 mishaps and $96175.84 of mishap costs.

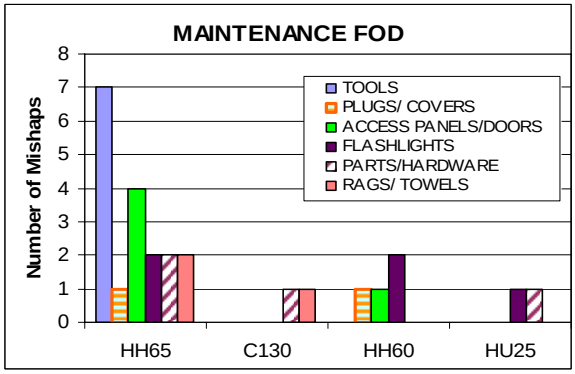


Figure 9

ENGINE MISHAPS

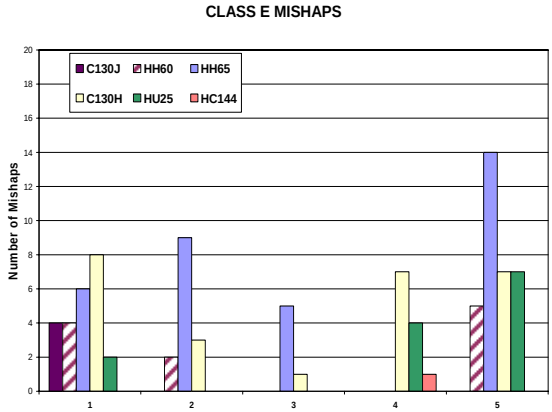


Figure 10

Class E mishaps accounted for only 17% (89) of the reported Total Aviation (ground, flight, flight-related) mishaps. Without the cost of the Class A, Class E mishaps would represent 49% ($2,311,790) of the Total Mishap costs in FY08. Engine mishaps historically account for half the mishaps cost each year. Figure 10 shows a breakdown of the Class E mishaps.

SHIP-HELO MISHAP REVIEW

There were twenty-eight mishaps totaling $122,546.64 reported in FY08 involving ship-helo operations. Only nine of these mishaps were unique to the ship-helo environment (e.g., aircraft damage due to ship movement, portable hangar, HIFR mishaps, flight deck issues and tiedowns). The remaining 19 were not the result of the ship-helo interface (e.g., landing gear problems, FOD, engine problems, indicator problems, etc.)

Ship-helo mishaps normally account for 5 to 10% of the total mishaps reported and less than 5% of the total costs. This year they accounted for 5.4% of the mishaps and 2% of the total mishap costs (without the Class A mishap cost).

GROUND MISHAP REVIEW

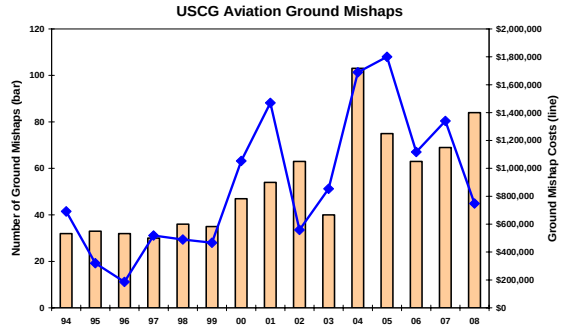


Figure 11

Eighty-four aviation ground mishaps were reported in FY08. The number of mishaps reported increased, but the cost of ground

mishaps decreased by almost 50%. Total cost for these mishaps was $747,355. (See Figure 11). Ground handling (ground support equipment (GSE), towing, blade folding, fueling, washing or jacking) accounted for 41% of mishaps (35), and 50% of the costs ($377,437).

All the ground mishaps listed some form of human factors as one of the cause factors. The wrong part, tool, equipment or procedures were factors for 44% (36) of the ground mishaps. Insufficient Q/A, review or supervision was cited in 20 (24%) of the mishaps. Sixteen (20%) of the ground mishaps listed awareness, complacency or inattention as a factor. Of the 82 ground mishaps reported this year, 75 ground mishaps reported cost below $20,000. Of the 50 reports with cost below $100, twenty-three listed zero costs. Of the nine reports over $20,000 none reported costs over $90,000.

WEATHER RELATED MISHAPS

Weather contributed to twenty-three reported mishaps resulting in $55,121 in damage. These incidents included parts prematurely failing due to corrosion, electronic malfunctions due to moisture, and airframes damaged by wind, ice, turbulence, winds and lightning.

MAINTENANCE HUMAN FACTOR EVENTS

One hundred and twenty five mishaps listed some type of maintenance human factor as a cause, total reported costs was $818.396. Thirty-two of the reported events had zero cost and 50 reported damage costs under $100. Only 15 of these events reported damage over $10,000. This year the most expensive reported MRM event was $84,000. These mishaps included incomplete passdown, poor communications, inappropriate procedures, improperly followed procedures, a lack of supervisor review, or Q/A problems (see Figure 12 below).

The wrong part, poor equipment/part design, cannibalization or lack of parts was listed as a cause in 50 (40%) of the mishaps. Twenty-one (16) mishaps were the result of FOD or poor tool control. Culture, norms or habits was listed as a factor in nineteen (15%) of the mishaps. Sixty-four (51%) of the mishaps involved, work arounds, incomplete, improperly followed inappropriate or unavailable procedures.

Inattention, complacency or awareness was a factor in fifty-seven (46%) of the incidents reported. Q/A review or supervision was cited as a cause factor in 36% (45) of the mishaps. Some form of inexperience, lack of training, or staffing issues were factors in 18% of the incidents. Workload, feeling rushed, or lack of resources was also mentioned in 30% (37) of the mishaps. Poor passdown, incomplete checklist, or poor communications were also listed in 18% of the mishaps. Ground handling, jacking or towing were listed in 21% (26) of the reported mishaps.

MAINTENANCE RESOURCE MANAGEMENT (MRM)

Reported MRM related mishaps increased from 86 in FY07 to 125 in FY08. The total cost of these mishaps was $818,396 (see figure 13 on the next page). The adjusted cost per event was $6,547; this is a decrease over FY07 average cost of $7,662 per event. The five year trend has 486 MRM related mishaps for a total of $4,477,324. That adjusts to $9213 per event. For the past five years, MRM related mishaps represent 15% of our total mishaps and account for 5% of our mishap costs. As we collect more data the variations introduced by reporting inconsistency are slowly smoothed. However, we believe the numbers support MRM as an effective loss prevention program and critical to aviation's overall success. Keep up the good work and keep reporting!

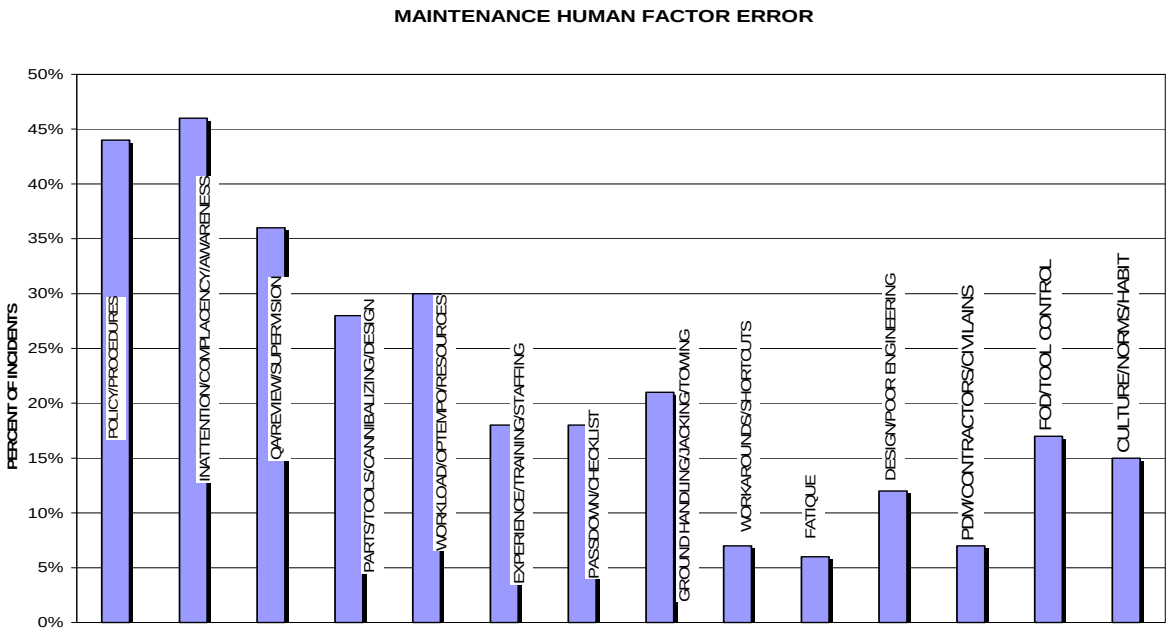


Figure 12

MRM Initial is still taught at ATTC in each of the "A" schools. Unit level facilitated instruction is given once a year via a "C" school. That solicitation message comes out after the PCS season to ensure each unit has the opportunity to select the best instructor candidates.

The goal is to train enough personnel each year to provide each air station with a qualified instructor for each airframe, and an additional instructor for air stations with more than five of any one type of aircraft. Facilitator qualifications are good for three years, while refresher training is required by all maintenance personnel every two years. Changes to the Aeronautical Engineering Maintenance Management Manual (COMDTINST M13020.1) chapter 6, have been made that requires a CG-41 waiver to conduct aircraft maintenance if the biennial refresher is not completed.

While MRM provides the knowledge and awareness of human factors on the hangar deck, in the shops and on the flight line, it does not provide a systems approach to analyzing events that provide clues to the potential source of a future mishap. Every day "events" occur (e.g., a missed or improperly executed step in a maintenance procedure, improper use of a tool or machine, etc.) that constitute errors but fall short of causing a reportable mishap under our safety reporting requirements (the portion of the "iceberg" that lies above the waterline).

Maintenance Event Trend Analysis (META) is an event investigation process, trend analysis and database tool designed specifically for Aeronautical Engineering use. It provides a simple means of tracking those human error events that "lie below the waterline." By concentrating our attention there, we can make policy and process improvements and increase awareness before a mishap occurs. As it exists now, this tool is a paper form that can be used for collecting and analyzing trends at the unit level. This form is available on ATTC's website at: http://cgweb.arsc.uscg.mil/attc/MRM.htm. CG-1131 continues to seek funding sources to integrate an electronic META graphical user interface and database program with ALMIS for the purposes of collecting this data CG-wide and analyzing it at the macro level. Additional personnel for larger air stations and CG-1131

have also been requested as part of this Resource Proposal.

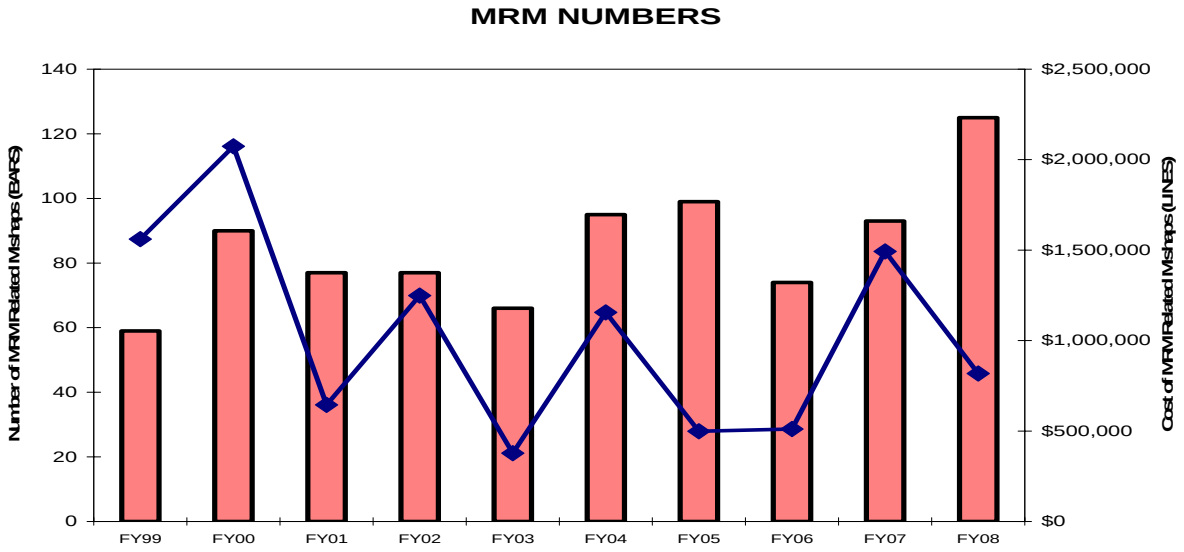


Figure 13

SUMMARY INFORMATION

Tables 4 and 5 on the next page, display mishap summary information for FY08 associated with each of the four major airframes. Figures 13 and 14, below, illustrate the percentage of total mishaps, flight hours and total mishap costs for each airframe in FY08 and for the past 10 years. As expected the percentages for each factor is roughly the same for per airframe.

AIRFRAME REVIEW

Pages 15-18 contain mishap data for each major aircraft type. In reviewing these pages, it should be noted that with only fifteen reportable Flight Class A's and Class B's in the last ten years, the ABC Flight mishap rate for all aircraft is made up mostly of Class C mishaps. The ABC Flight mishap rate for each airframe and CG aviation is fairly stable with a slight downward trend. This is the twelfth year that the ABC mishap rate has been under 0.05.

FY08 FLIGHT MISHAP PERCENTAGES				
CLASS	MISHAPS	% of TOTAL MISHAPS	COST	% of TOTAL COST
A	1	0%	$9,000,000	64%
B	1	0%	$331,734	2%
C	26	8%	$1,408,188	10%
D	234	68%	$493,200	3%
E	80	23%	$2,875,425	20%
TOTAL	342		$14,108,548	

Table 4

FY08 FLIGHT MISHAP PERCENTAGES						
AIRCRAFT	MISHAPS	% of TOTAL MISHAPS	COST	% of TOTAL COST	FLIGHT HOURS	% of FLIGHT HOURS
HH60	58	17%	$1,583,321	11%	24,970	21%
HH65	212	62%	$11,064,960	78%	54,351	47%
MH68	1	0%	$12,503	0%	796	1%
C130H	41	12%	$1,027,071	7%	17,877	15%
C130J	4	1%	$7,120	0%	2,408	2%
HU25	25	7%	$411,963	3%	13,876	12%
C37A/C143	0	0%	$0	0%	1,201	1%
HC-144A	1	0%	$1,610	0%	881	1%
TOTAL	342		$14,108,548		116,361	

Table 5

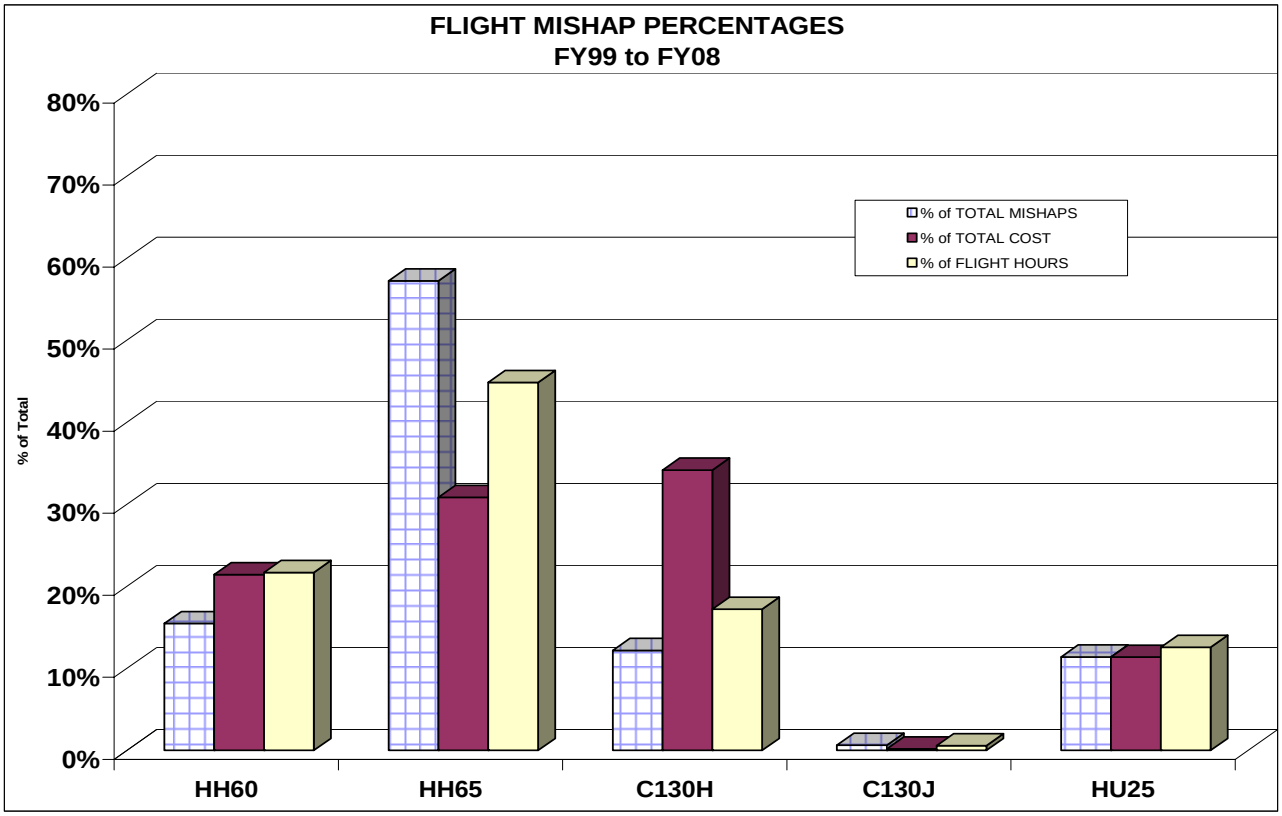


Figure 14

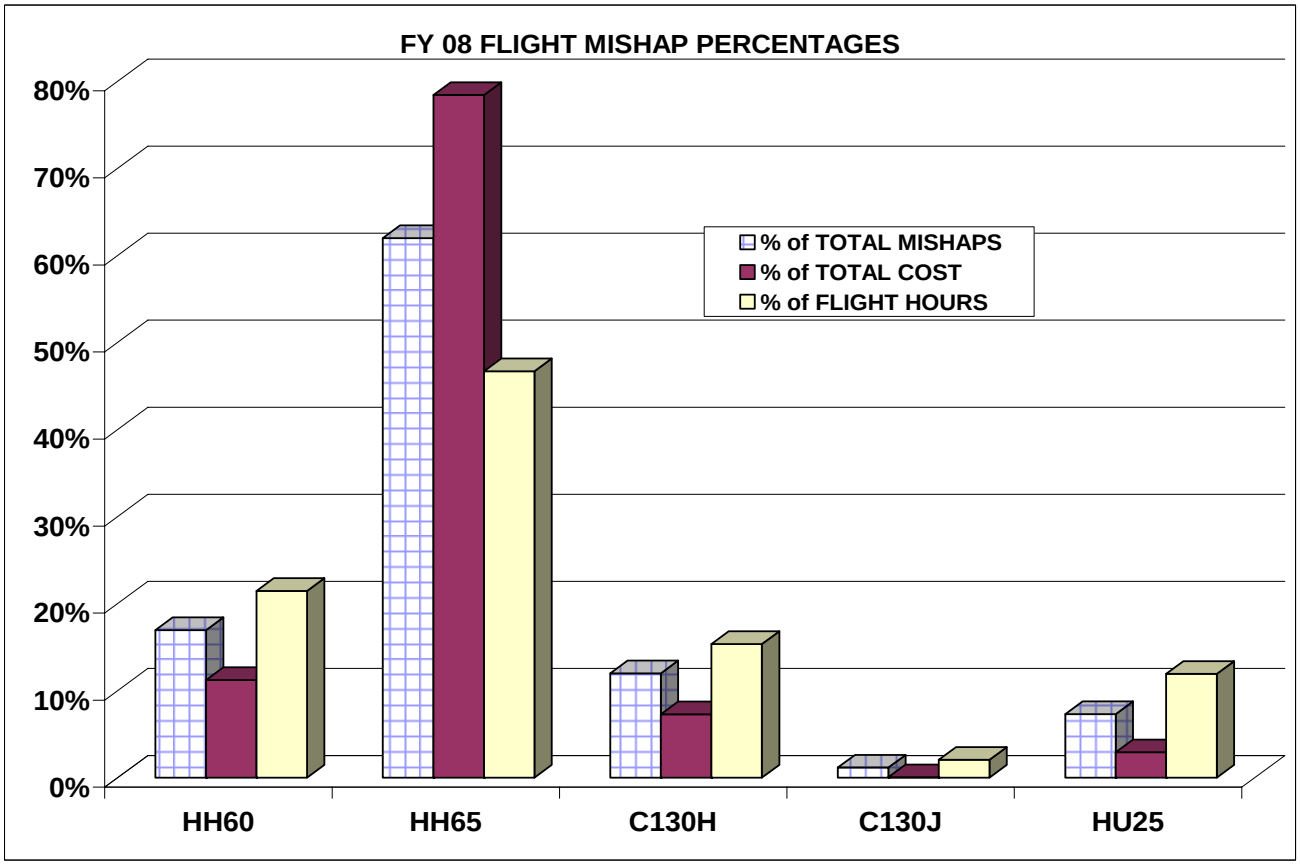


Figure 15

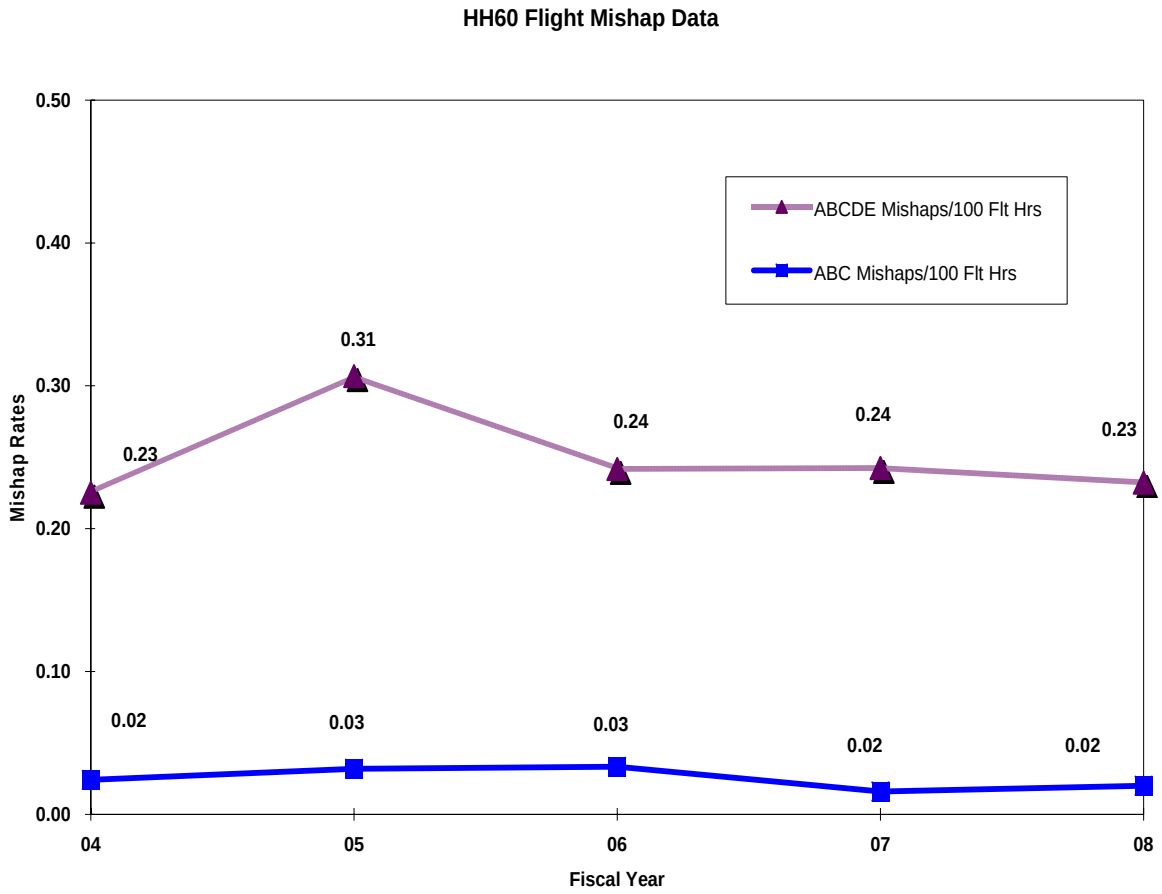
HH60/MH60 MEDIUM RANGE RECOVERY (MRR)

The HH60J flew 24,970 hours (21% of the total flight hours) and reported 58 flight mishaps (only 17% of total reported flight mishaps). The HH60J had a mishap rate (0.23), down again this year. Although the number of HH60 mishaps dropped, the total mishap cost increased. The HH60J mishap cost account for only 11% of the total FY08 Flight mishap costs. Of the 58 HH60J flight mishaps reported 46 had costs less that $20,000 (the Class C dollar threshold); only 18 had less than $1,000. Of the eleven Class E mishaps all but four three reported cost under $40,000.

HH60J Flight Mishaps for FY08

Aircraft	Class	No. Mishaps	Cost
HH60J	A	0	$ 0
	B	0	$ 0
	C	5	$ 249,098
	D	42	$ 179,256
	E	11	$ 1,154,967
Totals		**58**	**$ 1,583.321**

Table 6



HH60 ABCDE	NO. MISHAPS	COST	FLIGHT HOURS	MISHAPS/ 100 FLIGHT HOURS	COST/ MISHAP	COST/ FLIGHT HOUR	HH60 ABC	NO. MISHAPS	COST	FLIGHT HOURS	MISHAPS/ 100 FLIGHT HOURS	COST/ MISHAP	COST/ FLIGHT HOUR
FY04	56	$688,428	24,869	0.23	$12,293	$28	FY04	6	$347,958	24,869	0.02	$57,993	$14
FY05	77	$159,630,364	25,101	0.31	$2,073,122	$6,360	FY05	8	$15,371,712	25,101	0.03	$1,921,464	$612
FY06	58	$1,299,564	23,985	0.24	$22,406	$54	FY06	8	$342,464	23,985	0.03	$42,808	$14
FY07	61	$798,966	25,165	0.24	$13,098	$32	FY07	4	$57,007	25,165	0.02	$14,252	$2
FY08	58	$1,583,321	24,970	0.23	$27,299	$63	FY08	5	$249,098	24,970	0.02	$49,820	$10

Figure 16

HH65 / MH65 SHORT RANGE RECOVERY (SRR)

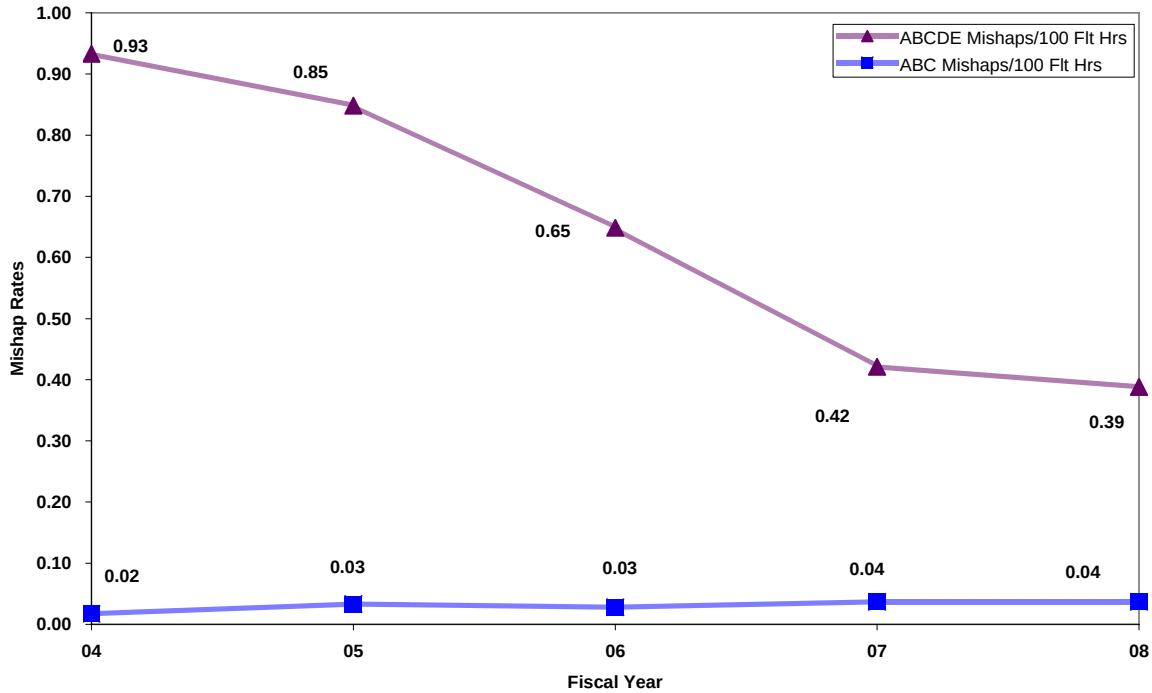
The HH65 flew 54,351 hours (the most hours flown) and represented 47% of the CG total flight hours. The HH65 reported 62% (212) of the mishaps, and 78% ($11,064,960) light mishap costs (48% without the cost of the Class A Mishap). On a positive note, the Dolphin mishap rate (0.39) decreased again for the fifth year, but was still the highest of all the major airframes. Of the 212HH65 flight mishaps reported in FY08, 185 reported mishap costs less than $20,000 (the Class C dollar threshold), 122 of these reported costs less than $1,000.

Twenty-three of the 29 Class E mishaps reported cost under $20,000 and only one Class E mishaps had cost over $100,000.

HH65 Flight Mishaps for FY08

Aircraft	Class	No. Mishaps	Cost
HH65	A	1	$ 9,000,000
	B	1	$ 331,734
	C	19	$ 1,105,812
	D	162	$ 248,886
	E	29	$ 378,527
Totals		**212**	**$ 11,064,960**

Table 7



H-65 ABCDE	NO. MISHAPS	COST	FLIGHT HOURS	MISHAPS/ 100 FLIGHT HOURS	COST/ MISHAP	COST/ FLIGHT HOUR	H-65 ABC	NO. MISHAPS	COST	FLIGHT HOURS	MISHAPS/ 100 FLIGHT HOURS	COST/ MISHAP	COST/ FLIGHT HOUR
FY04	487	$4,740,167	52,196	0.93	$9,733	$91	FY04	9	$377,962	52,196	0.02	$41,996	$7
FY05	435	$3,082,699	51,275	0.85	$7,087	$60	FY05	17	$702,626	51,275	0.03	$41,331	$14
FY06	324	$6,574,196	49,962	0.65	$20,291	$132	FY06	14	$4,504,398	49,962	0.03	$321,742	$90
FY07	228	$3,007,250	54,138	0.42	$13,190	$56	FY07	20	$1,798,790	54,138	0.04	$89,690	$33
FY08	212	$11,064,960	54,351	0.39	$52,198	$204	FY08	21	$10,437,546	54,351	0.04	$497,026	$192

Figure 17

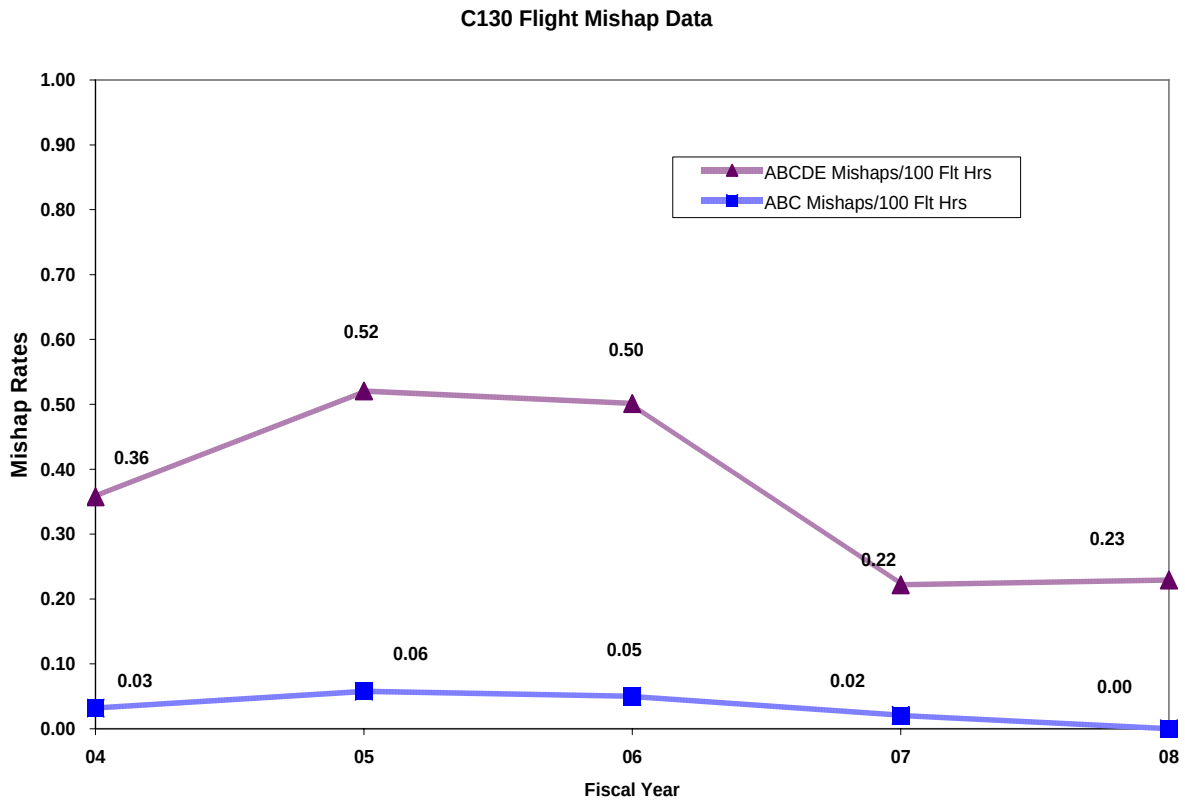
HC130H LONG RANGE SEARCH (LRS)

The HC130H flew 17,877 hours and reported 41 mishaps. The C130 mishap cost and cost per flight hour was the lowest in five years. The C130H mishap rate has continued to decreased the last five years. All of the C130 mishaps were either Class D or E mishaps, only seven of the 41 HC130H flight mishaps had costs above $20,000. Only four mishaps had costs greater than $100,000. Of the 25 Class E mishaps reported, only seven involved costs of more than $20,000.

HC130H Flight Mishaps for FY08

Aircraft	Class	No. Mishaps	Cost
HC130	A	0	$ 0
	B	0	$ 0
	C	0	$ 0
	D	16	$ 22,046
	E	25	$ 1,005,025
Totals		**41**	**$ 1,027,071**

Table 8



HC130H ABCDE	NO. MISHAPS	COST	FLIGHT HOURS	MISHAPS/ 100 FLIGHT HOURS	COST/ MISHAP	COST/ FLIGHT HOUR	HC130H ABC	NO. MISHAPS	COST	FLIGHT HOURS	MISHAPS/ 100 FLIGHT HOURS	COST/ MISHAP	COST/ FLIGHT HOUR
FY04	67	$1,602,704	18,748	0.36	$23,921	$85	FY04	6	$244,790	18,748	0.03	$40,798	$13
FY05	99	$1,210,032	19,009	0.52	$12,223	$64	FY05	11	$554,451	19,009	0.06	$50,405	$29
FY06	90	$33,770,422	17,949	0.50	$375,227	$1,881	FY06	9	$32,581,877	17,949	0.05	$3,621,320	$1,816
FY07	43	$1,178,387	19,366	0.22	$27,404	$61	FY07	4	$129,904	19,366	0.02	$32,476	$7
FY08	41	$1,027,071	17,877	0.23	$25,051	$57	FY08	0	$0	17,878	$	$0	$0

Figure 18

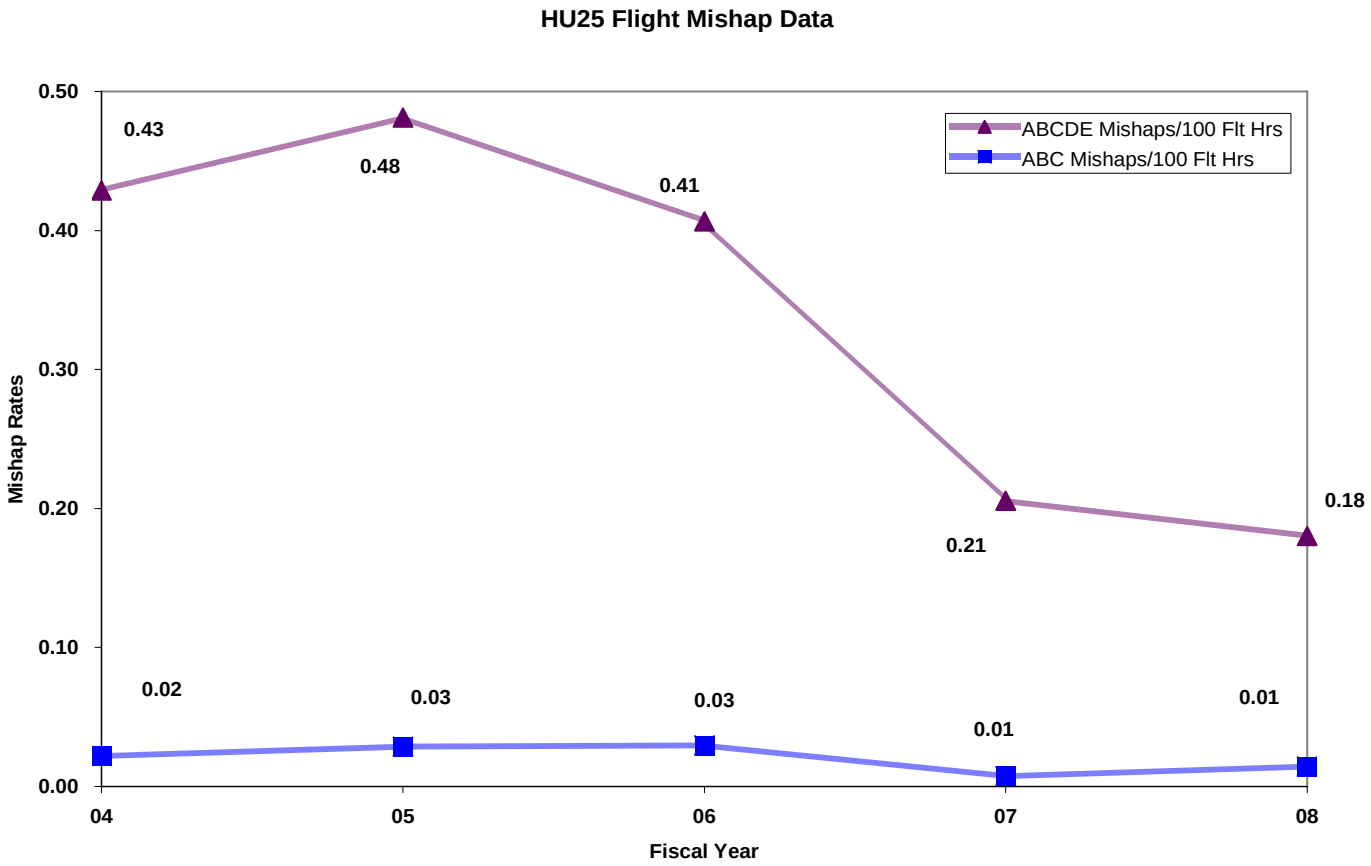
HU25 MEDIUM RANGE SEARCH (MRS)

The HU25 flew 12% (13,876) of the total hours and reported only 25 (7%) of the total flight mishaps. Again, the Falcon had the lowest mishap rate (0.11) of the major airframes and its lowest mishap rate ever in FY08. The Falcon's total mishap cost ($411,963), cost per flight hour ($30) and cost per mishap ($16,479) were down this year. All but three of the reported mishaps were below the $20,000 Class C threshold. One Class E mishap accounted for 65% ($285,723) of the HU25 Flight mishap costs

HU25 Flight Mishaps for FY08

Aircraft	Class	No. Mishaps	Cost
HU25	A	0	$ 0
	B	0	$ 0
	C	2	$ 53,279
	D	12	$ 28,418
	E	11	$ 330,266
Totals		**25**	**$ 411,963**

Table 9



HU25 ABCDE	NO. MISHAPS	COST	FLIGHT HOURS	MISHAPS/ 100 FLIGHT HOURS	COST/ MISHAP	COST/ FLIGHT HOUR	HU25 ABC	NO. MISHAPS	COST	FLIGHT HOURS	MISHAPS/ 100 FLIGHT HOURS	COST/ MISHAP	COST/ FLIGHT HOUR
FY04	59	$620,157	13,761	0.43	$10,511	$45	FY04	3	$177,274	13,761	0.02	$59,091	$13
FY05	67	$919,690	13,923	0.48	$13,727	$66	FY05	4	$467,784	13,923	0.03	$116,946	$34
FY06	55	$970,131	13,529	0.41	$17,639	$72	FY06	4	$164,196	13,529	0.03	$41,049	$12
FY07	28	$1,208,689	13,624	0.21	$43,167	$89	FY07	1	$25,586	13,624	0.01	$25,586	$2
FY08	25	$411,963	13,876	0.18	$16,479	$30	FY08	2	$53,279	13,876	0.01	$26,639	$4

Figure 19

FLIGHT SAFETY PROGRAM

Primary FSO and Aviation Command Training Update

⇒ Traditional FSO training will continue at the Navy's School of Aviation Safety with the ASO Course located at NAS Pensacola, FL. New FSOs should plan on reviewing the Safety and Environmental Health Manual, the Mishap Investigation Guide (MIG), and the e-AVIATRS Guide during the course to ensure they are prepared for CG reporting requirements.

⇒ Aviation COs will continue to receive the Aviation Safety Command Course at the Navy's School of Aviation Safety (NAS Pensacola, FL).

⇒ We have started using the Air Force Board President course for CO's and potential Mishap Board Presidents. As space and schedules permit, CG-1131 will also offer both courses to current Air Station XOs, OPS, and EOs.

Safety Standardization Visits

⇒ CG-1131 Safety Stan Visits are determined by CO turnover (every three years for O-6 commands and every two years for O-5 commands). The goal is to complete all visits within nine months of each Air Station change of command.

⇒ CG-1131 completed eleven Safety Stan Visits in FY08.

⇒ The Safety Stan visits focus on the flight safety program requirements contained in the Air Ops Manual, ORM Instruction and the Safety & Environmental Health Manual.

⇒ The checklist used during the Aviation Safety Stan Visits is available on the CG-1131 Website. http://www.uscg.mil/hq/cg1/cg113/cg1131/default.asp

⇒ Units may request unscheduled or informal assist visits and safety training at any time.

⇒ See chapter 2.F.1.b (2) (i) of COMDTINST M5100.47 for more information on Safety Stan Visits.

"CG-1131.COM"

http://www.uscg.mil/hq/cg1/cg113/cg1131/default.asp

⇒ Our web site is available from any internet-capable computer. Accordingly, CG-1131 carefully reviews content for general public viewing, and can only post internet-releasable, non-privileged information.

Laser Hazard Control Program

⇒ ALCOAST 290/08 continues to remain the only Coast Guard directive addressing laser hazards. It specifically prohibits class 3b and 4 lasers until a comprehensive policy is promulgated.

⇒ IAW the ALCOAST, an organizational inventory of all class 3b and 4 lasers has been completed and awaiting individual reviews by the Laser Hazard Control Review Committee.

⇒ A memo requesting program managers to assign a representative to the Laser Hazard Control Review Committee is being routed for approval. Once signed, it is anticipated that systems will be reviewed on a quarterly basis.

⇒ Several aviation members from HITRON and ALC have received the Navy's Administrative Laser Safety Officer (ALSO) course. All FSOs received additional training at last years FSO STAN/ Requal Course. Expect more training at each FSO/STAN Requal Course to provide a mechanism for passing laser program information.

⇒ Although it is anticipated that each unit with class 3b and 4 lasers will be required to have a designated laser safety officer, it is not anticipated that they will be required to attend the Navy course to fulfill that role.

CRM

⇒ The CRM program is in the second stage of its major upgrade. The core curriculum was delivered last year. In the next two years we will use the material and collect feedback to make continuous improvements.

⇒ A CG Central FSO micro site has been established to serve as a central depository for CRM-related material. On the site is the Way Forward document that outlines the program and how to run it. Also on the site: CRM courseware modules, case studies and videos.

⇒ FSOs will continue to receive their Refresher CRM facilitator qualification during the annual FSO Stan Course. This training qualifies them to provide unit level Refresher CRM training.

⇒ ONLY FSOs currently in a FSO billet and who attended the last FSO Stan Course are qualified to teach unit level Refresher CRM. This is an annual re-qualification requirement and does not follow the

individual once they leave the FSO billet.

⇒ New requirements for pilots, aircrew and AMS CRM refresher took effect with promulgation of the new Air Operations Manual (COMDTINST M3710.1F). Don't forget to look at Change 1 for the most recent requirements.

AVIation Accident TRacking System (e-AVIATRS)

http://apps.mlca.uscg.mil/kdiv/aviatrs/

⇒ We're into year six of **E-AVIATRS**. The first mishap report was submitted to the new database on 21 November 2003. CG-1131 maintains and reviews aviation mishap information.

⇒ The programming staff at MLCLANT continues to make minor updates throughout the year, but at least once a year major revisions are made based on input and suggestions from the users.

⇒ The Recommended Action Tracking System (RATS) module is still being populated. CG-1131 is working to update data, enter old records and developing policies and procedures.

⇒ The HFACs module went live in December 2007. This incorporates the DOD Human Factors Analysis and Classification System (HFACS) as part of both CG mishap reporting databases.

⇒ Currently, HFACS is only required for Class A and B mishaps, but can now be used for all CG aviation mishaps. FSO have entered HFACS for 91 mishaps.

⇒ Aviation related injuries shall be reported only in **e-AVIATRS.**

⇒ **E-AVIATRS** auto-generates the body of the CGMS message from the data entered. All the drafter has to do is enter the correct PLAD and appropriate AIG.

⇒ Aviation mishap reports can be submitted to the database without a CGMS message being sent if the report is for trending and tracking only. Remember these reports will not get the visibility with the Aviation Program Managers and ALC of a mishap message.

⇒ All information reported in the mishap message is captured in **e-AVIATRS** and can be searched and retrieved.

⇒ There are over 13,600 records dating back to FY79 in the database. All legacy data from the **AVIATRS** database has been converted to **e-AVIATRS.**

⇒ Users can use the **e-AVIATRS** search capabilities or can continue to contact CG-1131 for data searches and aviation mishap information. (Contact Miss Zimmerman at cathie.zimmerman@uscg.mil)

⇒ We encourage comments and suggestions. Almost all suggestions have been a positive improvement and are incorporated into the.

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Your ideas and suggestions related to this report or other safety issues are valuable. Please pass them to your unit Flight Safety Officer (FSO) or contact the Aviation Safety Staff at Headquarters)

Hail and Farewell: Last Spring we said farewell to Capt Farris and welcomed Cdr Joel Rebholz as the new Chief of Aviation Safety

CLASS A MISHAP SUMMARY

DATE	ACFT	SUMMARY	CAUSE FACTORS
AUG 1991	HH65	During daylight, low speed photo pass, aircraft experienced uncommanded left yaw and impacted ice.	Aircrew
JAN 1992	C130	Uncontained failure of # 3 reduction gearbox shortly after takeoff. Prop and front half of gearbox departed nacelle, struck fuselage resulting in explosive decompression and severing of MLG hydraulic line. Aircraft landed without further damage.	Overhaul Procedures, Material
MAR 1992	HH65	Aircraft impacted water during practice MATCH to water at night.	Fatigue, Disorientation, CRM, Supervisory & Aircrew
AUG 1993	HH65	During daylight delivery of ATON personnel and equipment, aircraft crashed while landing on elevated helipad.	Aircrew, CRM, Training
JUL 1994	HH65	Aircraft impacted side of cliff in low visibility during night SAR mission to assist S/V aground.	Communications, Situational Awareness, CRM, Aircrew
AUG 1994	HH65	Hardlanding during daylight practice autorotation, aircraft impacted ground, slid and rolled on side.	Aircrew, CRM, Training
JAN 1995	HH65	During night pollution surveillance flight, with two MSO personnel on board, aircraft experienced engine fluctuations. While analyzing problem, aircraft flown into water.	Situational Awareness, CRM, Aircrew, Mechanical
AUG 1995	HH65	During daylight, deployed helo experienced rapid left yaw while conducting left pedal hover. Acft accelerated through wind line, spin could not be countered, impacted water.	Design, CRM, Aircrew, Situational Awareness, Trng
DEC 1995	RG-8	While conducting patrol, sensor operator and pilot detected smoke in cockpit. Pilot determined engine was on fire, secured engine and crew bailed out (as required by emergency procedures). Crew recovered within an hour entering water. Acft lost at sea.	Cause of engine fire unknown, Training, Design
APR 1996	HH65	At end of 5-hour mission, pilot and crewman were practicing hover maneuvers over taxiway. During third hover, entered left turn; unable to counter and impacted ground.	Aircrew & Supervisory, Fatigue, Procedures, Design
JUN 1997	HH65	Night SAR in high winds and seas for sailboat taking on water. Shortly after arriving on scene, acft went lost comms. Crew did not egress, helicopter sank in 8,500 feet of water.	Aircrew & Supervisory, Design, Trng, Assignment, Policy/Procedures, Material
AUG 1999	HU25	Rear compartment fire lite illuminated during touch and go. Crew continued T/O, called out boldface procedures. Fire lite remained illuminated, emergency declared. Rear compartment fire lite extinguished approx 10 sec after fire extinguisher activated. Hyd sys lite illuminated during "before landing checks." Acft landed, crew egressed, fire dept extinguished fire. Major fire damage.	Maintenance, QA, Procedures, Trng, Mechanical, Supervision,
JAN 2001	HH60	Lightning strike during airway trainer. Investigation revealed damage to numerous components as well as widespread magnetization of airframe and components.	Environmental Conditions
JAN 2001	HH65	After fifth night shipboard landing, crew signaled for primary tiedowns. Prior to attachment of tiedowns, helo rolled to the right. Main rotor blades impacted flight deck and helo spun approx 140 degrees counter clockwise and came to rest on right side.	Dynamic rollover, Policies, Environment, Procedures
DEC 2004	HH60	During 7th hoist of remaining crewmembers on M/V in danger of running aground in high winds and heavy seas, acft was engulfed by heavy sea spray erupting from large swell striking the bow of M/V. Acft departed controlled flight and crashed into sea. Vessel's master and RS still on M/V witnessed mishap were rescued later. HH-65A hovering above mishap acft recovered downed aircrew and one M/V crewmember.	Environmental Conditions, Trng, Fatigue, Attention
SEP 2005	HH65 Ground	During maint ground run, acft became light on MLG and began right yaw, spinning clockwise on deck. Right MLG departed ramp during the second revolution, left horizontal stabilizer, vertical fin, and MRB contacted the ground. Acft came to rest on left side approx. 225 degrees from original heading. Crew consisting of pilot, BA and 3 contractor techs egressed acft unassisted after all motion stopped, mishap pilot who was assisted.	Aircrew
Feb 2006	HH65	Responding to 4 PIW, helo crashed into surf approx 40 yards off beach. RS had been direct deployed and hoisted to beach to commenced CPR. As helo was attempting to recover fourth PIW, No. 1 eng was inadvertently shutdown resulting in rapid power loss and loss of further flt. Crew made a controlled descent into the surf and helo slowly rolled onto right side and crew successfully egressed and reached the beach without injuries.	Policy, Design, Aircrew, ORM
Jun 2006	C130H	During ldg to deliver 5000 gallon acft refueling truck, acft swerved left and departed paved runway surface. After departing runway surface, acft continued parallel to runway on gravel surface, swerved left again, struck departure end VASI, and continued into soft ground. During final left swerve, right wing dipped, striking ground, no. 4 propreller struck ground and departed acft. Acft came to rest 248 feet left of runway edge. Crew egressed.	In mishap review process
Mar 2008	H65 FltRel	During recovery of numerous survivors from a sunken fishing vessel, non-CG members fell from basket while being brought into cabin.	Investigation Pends
Sept 2008	HH65	While conducting night trainer, CG6505 impacted water. All four crewmembers perished.	Investigation Pends

Note: Mishaps are seldom, if ever the result of a single cause, they are a combination of several cause factors. Each cause factor often appears insignificant. A mishap is a sequence of events (which may seem unrelated) that results in tragic consequences.

Table 10

CLASS B MISHAP SUMMARY FY91-FY08

DATE	ACFT	SUMMARY	CAUSE FACTORS
Mar 1991	HH65	While delivering passengers to Navy vessel, pilot pulled excessive collective overtorquing MGB and overspeeding both engines. Pilot was mistakenly advised to return to CG Cutter. Aircraft experienced hard landing upon return to CG cutter.	Supervisory & Aircrew, CRM, Training, Situational Awareness, Procedures
May 1992	HU25	Aircraft landed with left MLG up after MLG failed to extend. MLG unlock control cable separated, preventing MLG door from opening and stopping landing gear sequence.	Material, Aircrew, CRM, Procedures,
May 1992	HH60 FltRel	During live litter hoist from RHI, litter cables failed, dropping litter approx 30ft to water.	Procedures, Maintenance, Supervisory,
Dec 1992	C130	Engine turbine wheel failed inflight. Damage limited to engine. Failure attributed to material fatigue and manufacturing processes.	Material, Procedures, Manufacture
Mar 1993	HH65	At end of offshore SAR, pilot misdiagnosed and improperly managed #2 eng indicating sys failure and secured #2 eng. Situation further aggravated by series of uncoordinated inputs by both pilots. FM recognized situation, advanced FFCL, allowing remaining eng to regain power.	Mechanical, Aircrew, CRM, Training, Procedures
May 1993	HH65	During instrument approach to hover over water, rotorwash engulfed aircraft in salt spray. Pilots lost visual contact w/surface resulting in MGB overtorque and overspeeding both eng during ITO.	Aircrew, Procedures, CRM, Environment, Disorientation
Aug 1993	HH3	During flood relief support, MRBs contacted hangar, as crew completed turn into parking space. Crew had parked in same position several times.	CRM, Aircrew, Situational Awareness, Procedures
Mar 1994	HH65	Fenestron contacted runway during practice single engine landing for annual Stan check ride.	Awareness, Training, Supervisory & Aircrew
Sept 1994	HU25 FltRel	DMB dropped to aid in relocating lone raft at sea, acft departed scene for fuel. Unknown to crew, DMB struck female in raft. Rafters later rescued, female underwent surgery and survived.	Supervisory & Aircrew, Procedures
Apr 1995	HH60	MRB tipcap departed inflight. Returning along coast from trng flt in VFR conditions, crew felt abnormal vibration. Vibrations so severe, pilots had difficulty reading instruments and controlling acft. Acft damaged during ldng on boulder-strewn beach.	Material Failure
Jul 1995	HH65	Deployed acft taxied into side of Navy hangar. Five navy personnel inside hangar received minor shrapnel injuries. Acft sustained shrapnel and sudden stoppage damage.	Aircrew & Supervisory, Procedures, Distractions, CRM,
Aug 1995	HH65	PAC was attempting to park helo between two other aircraft. MRB struck chain link fence. Two other aircraft and several buildings sustained shrapnel damage.	Aircrew, CRM, Distractions, Situation Awareness
Dec 1996	HH60 FltRel	Acft diverted from trng flt to assist F/V reported taking on water and sinking. Two PIW were recovered using basket, third PIW recovered using direct deployment. Victim's survival suit was improperly donned and filled with water. FM and RS encountered difficulties victim, added weight caused victim to slip out of strop and fall to water.	Environment, Procedures, Design, Equipment,
Jan 1997	HH65 FltRel	Acft was launched on early morning SAR to assist F/V aground and breaking up. First victim was located face down in debris, unconscious and unresponsive. Victim had improperly donned PFD and slipped out of quick-strop while being brought in cabin. FM and RS tried to hold the victim, but he slipped out of PFD and quick-strop.	Procedures, Aircrew, Training, Design
Mar 1998	HU25	Fan spinner departed in flight. Large section of fan spinner lodged in engine bellmouth, resulted in engine, fuselage, wing and horizontal stabilize damage.	Material, Design, Procedures, Aircrew
Jun 2002	MH68	During T-course day flt, crew entered an uncontrollable ground resonant state due to failure of dynamic rotor head component. As acft was shutdown, left MLG collapsed, helo came to rest on left MLG structure. MRB and TRB did not impact ground. Crew safety egressed with no injuries.	Material, Maintenance
May 2005	HU25	During warm-up syllabus in local area, crew observed an unsafe right MLG indication during extension. After extensive troubleshooting, acft was landed. As acft entered gradual left turn to exit rwy right MLG collapsed, causing right wing tip to scrape rwy and right inboard gear door broke off. All aircrew egressed safely with no injuries.	Material, Procedures, Aircrew
Jan 2006	HU25	Acft suffered damage during inspection/test of repairs performed by ARSC team. The original damage occurred when a civilian G-V being towed struck the left horizontal stabilizer. Damage required ARSC level repairs.	Fatigue. Resources, Environment, Policy
Jul 2006	HH65	FMI noticed high freq hum and vib. Following extensive trouble shooting, MGB, forward T/R driveshaft and T/R takeoff flange replaced. T/R takeoff flange lock nut securing pins were broken during PDM/Charlie mod, allowing T/R takeoff flange lock nut to back off. Tension from ECS belt was holding T/R takeoff flange to MGB.	PDM, Procedures, Maintenance, QA
Feb 2007	HH65	After completing day local area patrol and all maneuvers required for RT-1, crew commenced hover practice over rwy. During third 360 degree pedal turn, (AFCS and manual trim secured, NR high) acft entered rapid left yaw as tail came thru wind line. Acft made 3 complete turns, rt MLG and NLG contacted rwy prior to recovery.	Environment, Design, Aircrew, Procedures
Mar 2007	HH65	MLG strut collapsed into the wheel well as a result of hyd strut actuator failure. Acft was on deck disembarking 2 passengers. PAC had collective locked and LG pinned	Material
Mar 2008	HH65	During PWCS patrol, CP announced bird approaching at same altitude as helo. PAC took evasive action, as did the bird. Bird impacted acft, significantly damaging windscreen and pilot door. Crew maintained control of acft and reviewed procedures for blade damage and windscreen cracks. Acft RTB and landed, acft suffered significant structural damage and was trailered to ARSC for repairs.	Birdstrike

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Table 11