FY10 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 2010 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.

NOTE: This year when referring to the Total Mishap or Total Flight Mishap cost the total cost figures minus the Class A mishap costs ($124,860,366) will be used. The cost of our five Class A mishaps was so high in FY10, excluding it will allow for more meaningful discussions and comparisons. The 4 graphs on pages 7 and 8 illustrate the impact of the Class A costs on the overall mishap costs.

This is not to downplay these five mishaps, but the FY10 Class A cost was not only the highest annual Class A cost CG aviation has ever experienced, it was more than the last 13 Class A Flight mishaps combined. Of course, that number was spread out over 16 years and 13 aircraft. The FY10 Class A mishap cost was also higher than the previous eight highest Class A Flight Mishap cost combined ($121,683,215).

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FROM THE CHIEF OF AVIATION SAFETY

During the period from FY83 through FY09 the Coast Guard averaged just one Class A flight mishap per year. In those twenty seven years there were nine years in which two Class A mishaps occurred, nine years in which one Class A mishap occurred, and nine years in which there were no Class A flight mishaps. See Figures 1 and 2 on page 2. In addition to providing enviably low five, ten, and twenty year mishap rates, the stability of our annual rates presented a tempting opportunity to assume that there was no need for fundamental change in the service's safety policies and programs. The five Class A flight mishaps that occurred in FY10 did more than end a stable mishap rate. This series of mishaps resulted in a unique examination of Coast Guard aviation to determine whether common factors connected these mishaps and what enterprise level changes could be made to improve aviation safety Coast Guard wide.

In May 2010, during the ongoing investigation of four Class A and one Class B mishaps, the Chief of Staff (CG-01) and Deputy Commandant for Operations (DCO) jointly chartered the Aviation Safety Assessment Action Plan (ASAAP). In the ASAAP Charter CG-01 and DCO recognized that

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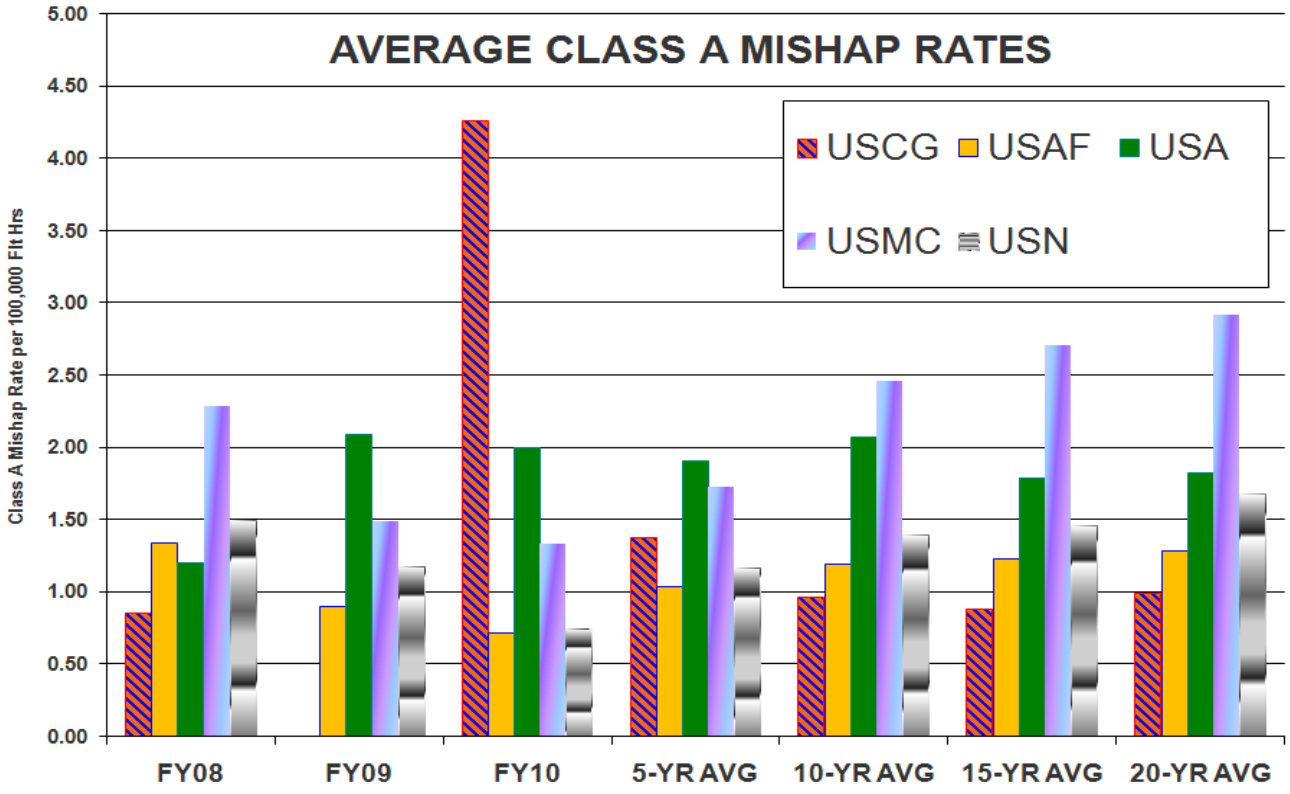


Figure 1

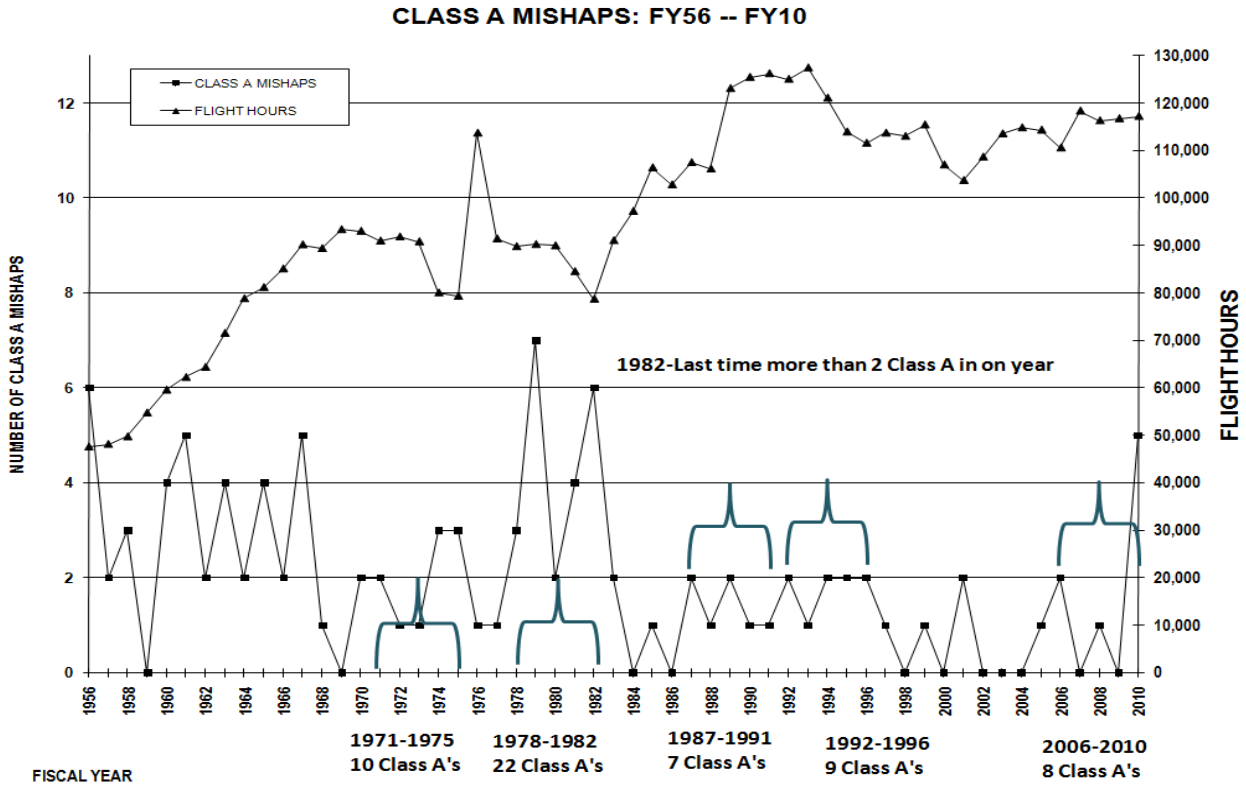


Figure 2

while individual mishap investigations would provide detailed information on specific casual factors of each mishap, they might not identify underlying common contributory factors present in the Coast Guard aviation environment.

To ensure a comprehensive review of all aspects of Coast Guard aviation the ASAAP was divided into five Analysis Components (AC). Each analysis component, supervised by an aviation flag officer, was designed to be completed independently. However, the analysis components use shared data sets to provide an opportunity for each to support findings of the others. The Analysis Components were organized as follows:

AC-1: Analysis Component One consisted of an Operational Hazard Analysis (OHA) of Coast Guard Aviation. The OHA is an enterprise level review to identify capacity and capability deficits that degrade mission execution. The OHA consisted of a review and analysis of aviation doctrine, personnel training and proficiency systems, and technology/infrastructure capacities to identify system deficiencies and develop recommendations for mitigation.

AC-2: Analysis Component Two provided the shared data sets for use by the other analysis components. The AC-2 data sets were generated from objective sources including personnel statistics, operational hour summaries, flight minimum requirements and historic aviation mishap rates. In addition more subjective information including mishap narratives, human factors commonality analysis and the results of a fleet-wide all ranks aviation survey was provided.

AC-3: Analysis Component Three involved analysis by a group of staff and field aviation experts organized as the Aviation Leadership Improvement Focus Group (ALIFG). The ALIFG examined each of the FY10 Class A and B flight mishaps in detail and, using AC-2 information, identified enterprise wide areas of concern and recommended corrective action. The ALIFG developed and ranked nine areas of concern. These areas of concern were then presented to the aviation community via the fleet-wide survey to determine if the ALIFG's findings were consistent with the perceptions of the community.

AC-4: For Analysis Component Four Booz Allen Hamilton (BAH) was contracted to conduct an independent review of Coast Guard aviation using the data generated through AC-2.
AC-5: The final analysis component leveraged the wide-ranging experience of the Coast Guard Aviation Association to provide analysis by a group familiar with both Coast Guard and aviation industry operations and policy.

A report of ASAAP findings has been signed by CG-01 and DCO and routed to the Commandant. The aviation flag officers are currently conducting unit visits to personally brief the ASAAP findings. Upon completion of those briefings a detailed report of findings and corrective action will be published. Although the ASAAP findings have not yet been published, many corrective actions are already underway. Efforts being undertaken in the Office of Safety and Environmental Health focus on Coast Guard Operational Risk Management (ORM) and Crew Resource Management (CRM) programs.

The Coast Guard Operational Risk Management Program is now more than 12 years old. The ASAAP found that Coast Guard risk assessment relies too heavily on operational experience and "on-the job" training and suffers from a lack of standardized risk assessment processes, and tools. CG-113 is working to develop a standardized risk assessment tool that reduces the subjectivity inherent in current models. CG-113 is also working with ATC Mobile and FORCECOM to develop a formal ORM training program.

Coast Guard CRM has traditionally been a strong and well supported program, but ASAAP analysis found problems caused by changes in CRM delivery. Over time the practice of delivering CRM refresher training to small aircrew groups (combining both officer and enlisted) had eroded to the point that most officers received CRM refresher training during ATC Mobile proficiency courses and most enlisted aircrew were trained at the unit by the Flight Safety Officer. CG-113 has worked with ATC Mobile to end CRM requalification training during proficiency courses to ensure officer and enlisted aircrew receive training together at the unit from either an ATC instructor or from the Flight Safety Officer.

ASAAP will result in a number of fundamental changes intended to remove hazards inherent in current Coast Guard aviation culture. Perhaps the greatest benefit of ASAAP may be the renewed realization that hazards will always be present and that mishaps are not prevented by a low mishap rate. Continual pursuit of improvement to policy, procedures, training, and equipment is required to prevent future mishaps.

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

ANNUAL RECAP

With five Class A Flight Mishaps the FY10 Coast Guard Class A Flight Mishap rate was 4.26 per 100,000 flight hours (117,271 hours). These mishaps are summarized on page 9. Because of our past consistent and fairly steady Flight Class A Mishap Rate this was a real (eye opener, attention getter). Coast Guard Aviation has proudly touted for over twenty years our little less than one Flight Class A mishap a year average. Because of our healthy and active program, even with FY10's performance, we have not fallen far short. See Figure 1 on next page 2. Our 15-and 20-year Class A Flight mishap rates per 100,000 flight hours are 0.88 and 1.00 respectively (for perspective, last year these rates were 0.71 and 0.82). The Coast Guard Aviation 5- and 10-year rates are 1.38 and 0.97 (see Figure 1).

Figure 2 on page 2 displays our Class A Flight mishap history along with total flight hours since 1956. This graph also shows that we have not had more than two Flight Class A mishaps in one year since 1982. This graph is annotated to show previous five year periods where the number of Class A mishaps were high. Figure 3 on the next page, displays the Coast Guard aviation Class A Flight mishap rates for the past fifteen years.

Over the last 20 years we have had a total of twenty-three Flight Class A mishaps. (Or 29 Class A mishaps in the 25 years (or 40 last 20 or 30 in last 27 years) This year's Class A mishaps had an even stronger impacted on CG Aviation because of the numbers of lives we lost. The last time we lost ten aircrew in one year was FY82. The 6505 in FY08 was the first fatal mishap since FY97. Of the 38 Class A between FY82 and FY10, eleven were fatal mishaps with (44 lives lost). Of the last 15 years six years reported no Class A's. See the last two pages of this report to review the Coast Guard Class A and B mishaps since FY91.

Figure 1 on page 2, compares Coast Guard 5, 10, 25, and 20-year Class A Flight Mishap rates with the DOD Services. Figure 4 on page 5 provides a comparison of Coast Guard Aviation Class A Flight mishap rates to the DOD military services for the last ten years. These numbers are excellent and include enough hours to compare us with DOD rates.

Reported Flight Mishap costs for FY10 were $132,464,940, without the five Class A mishaps this figure would be $7,604,554 (this is the number used elsewhere in this report for comparisons). The number of Flight mishaps (245) reported this year was the lowest since FY03. The Total Flight Mishap Rate of 0.21 (per 100 flight hours) was also the lowest since FY03. Total Aviation mishap costs (Flight, Flight-Related and Ground) for FY10 were $8,540,848 without the five Class A mishaps. The actual Total Aviation Mishap cost was $133,401,234.

CG Auxiliary Aviation reported no Class A or B mishaps in FY10. Auxiliary Aviation flight hours and mishaps are not used in figuring CG mishap rates in this report.

MISHAP CLASS COST BREAKDOWN

FY10-Present

Class A	$2,000,000 or greater or death
Class B	$500,000 to $1,999,999 or serious injury
Class C	$50,000 to $499,999 or minor injury
Class D	Less than $25,000
Class E	Engine damage only, regardless of cost

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.

NOTE: Mishap Cost thresholds increased 1 Oct 2009

Table 1

Of the 407 aviation mishaps reported this year, only 63 were Ground (about average) and 99 were Flight-Related. Flight-Related mishaps were up from previous years, this appears to be a good thing. These reports represent events that were stopped before a more serious mishap occur. Of the 99 Flight-Related mishap reported, only one had cost above $100. Only nine Flight-Related.

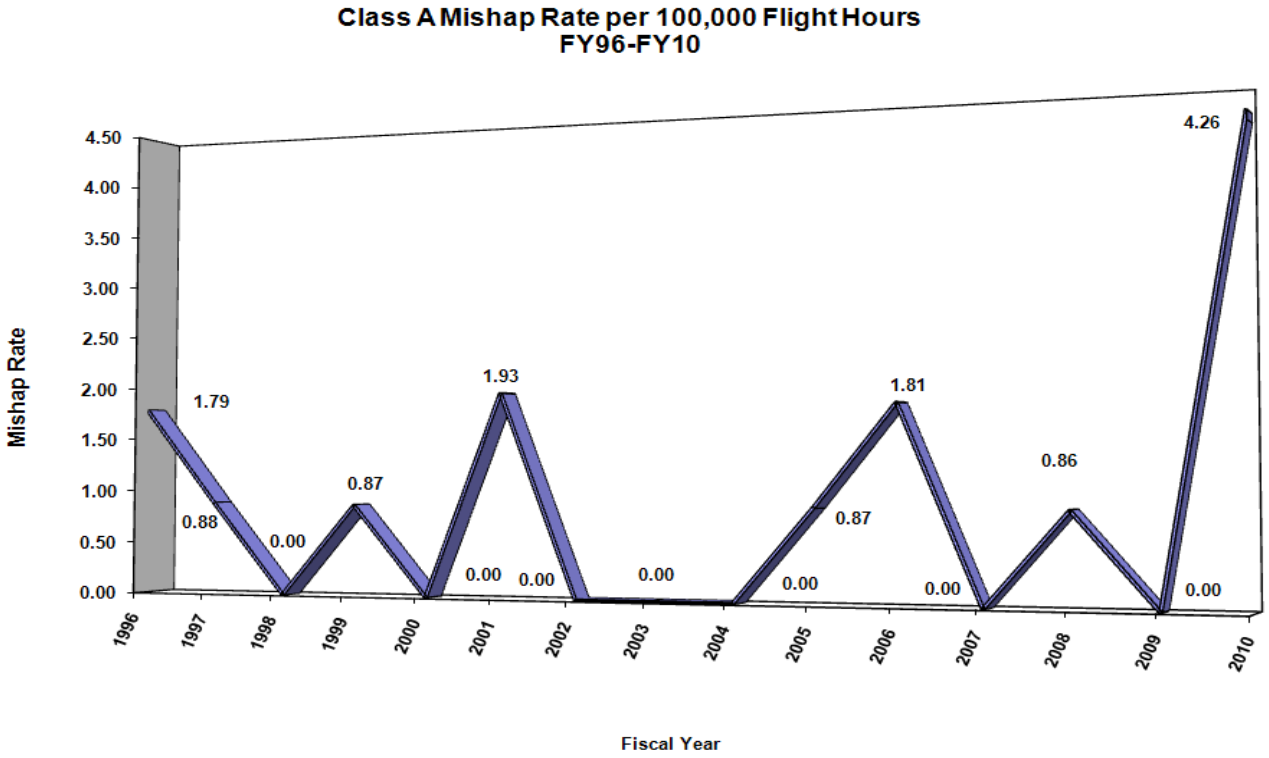


Figure 3

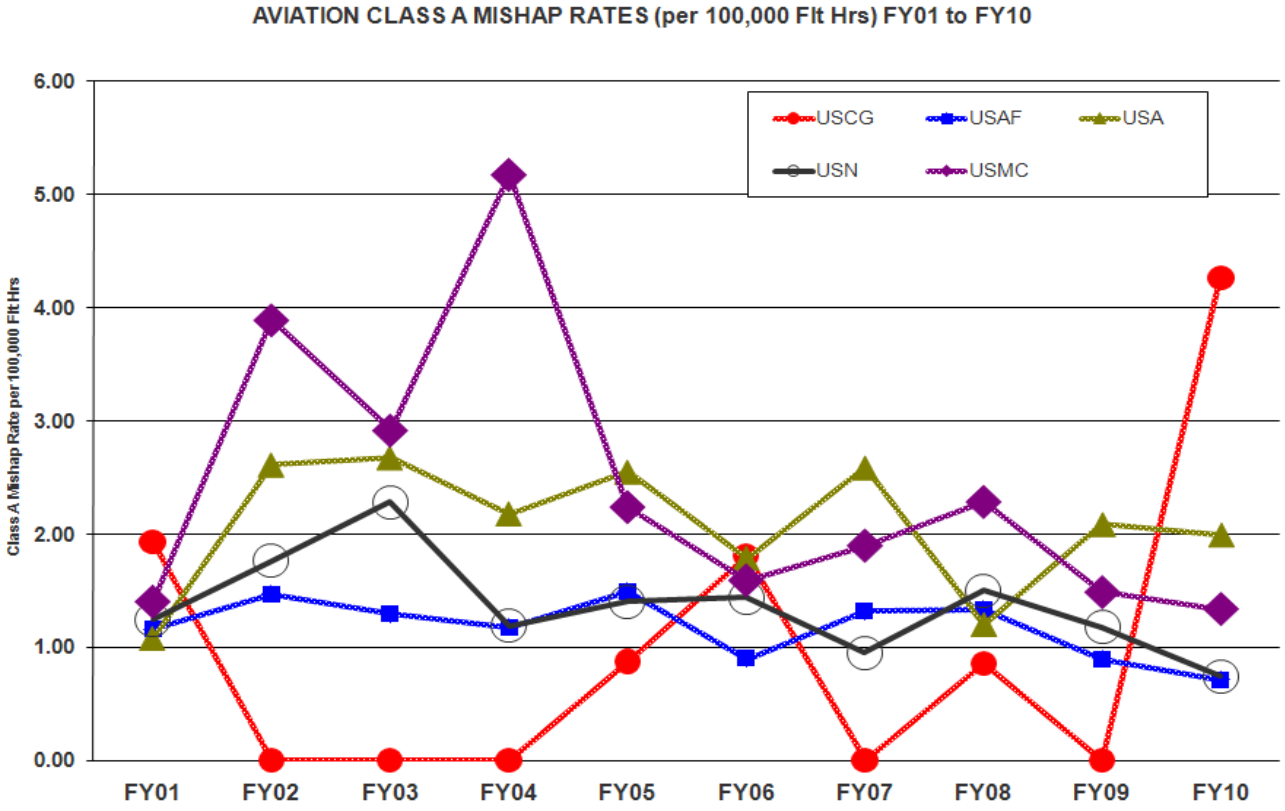


Figure 4

FY10 GRAND TOTALS				
CLASS	# MISHAPS	COST	FATALS	INJURIES
A	5	$124,860,386	10	7
B	3	$3,517,103		0
C	32	$2,372,571		16
D	309	$1,107,086		12
E	58	$1,544,089		1
TOTAL	407	$133,401,234	10	36

Total w/o Class A $$	$8,540,848
Flt w/o Class A $$	$7,604,554

TOTAL FLIGHT HOURS	117,271
CLASS A FLIGHT MISHAP RATE PER 100,000 FLIGHT HRS	4.26
FLIGHT MISHAPS PER 100 FLIGHT HOURS	0.21
COST PER FLIGHT MISHAP	$540,673
COST PER FLIGHT HOUR	$1,130

FLIGHT MISHAPS			
CLASS	# MISHAPS	COST	INJURIES
A	5	$124,860,386	7
B	3	$3,517,103	0
C	20	$2,210,505	4
D	165	$912,759	2
E	52	$964,188	0
TOTAL	245	$132,464,940	13

GROUND MISHAPS			
CLASS	# MISHAPS	COST	INJURIES
A	0	$0	0
B	0	$0	0
C	7	$162,066	5
D	50	$192,900	5
E	6	$579,901	1
TOTAL	63	$934,867	11

FLIGHT-RELATED MISHAPS			
CLASS	# MISHAPS	COST	INJURIES
A	0	$0	0
B	0	$0	0
C	5	$0	7
D	94	$1,427	5
E	0	$0	0
TOTAL	99	$1,427	12

Table 2

mishaps had cost above $50, the highest reported cost being $164 and seventy had zero cost associated with them. Table 2 above, displays the FY10 Aviation Mishap summary data.

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.

Figures 5 thru 8 (on page 7 and 8) display mishap cost data for the last ten years for Flight and Total Aviation Mishaps (Flight, Flight-Related and Ground). Figures 5 and 6 break out the Class A and Class E costs to help illustrate how, normally, engine 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.

In FY10, there were a few anomalies and the two additional graphs on page 8 are included to help illustrate. First we have a drastic reduction in Class E mishap costs, the number of reported Class E mishaps also decreased. We hope this is an indication that our various mishap prevention efforts and engineering fixes are making a difference. This decrease is also a reflection of the decrease in number of Falcons in our inventory and reported H65 engine mishaps have steadily decreased with the new engines. Next, we needed to reflect the increase in Class BCD mishap cost. This number is usually fairly stable from year to year, but as Figure 7 and 8 (on page 8) show there was a significant spike in the FY10 Class BCD mishap rate. This can be credited to the three Class B mishaps, each over a million dollars ($3,517,103) and the change in mishap cost thresholds which took effect in FY10 (see Table 1 on page 4). The good news is under the old thresholds these Class B mishaps would have been listed as three more Class A's. In Figures 7 and 8, the Class A and B mishap costs are removed. The graphs now show the drop in Class E mishap costs and the relatively stable Class C and D mishap costs.

Of the 245 Flight mishaps reported, 88% (215) were below the Class C threshold of $50,000 and accounted for only 15% ($1,135,493) of the Flight mishap costs (remember, this is without the Class A costs). Almost three quarters (178) had cost less than $10,000. Similarly, looking at Total Mishap numbers (Flight, Flight-Related and Ground), 90% (368) of the 407 mishaps reported costs below the $50,000 threshold and again accounted for only 15% ($1,286,168) of the Total Aviation mishap costs. Eighty-one percent reported costs below $10,000. Table 3 , on page 9, compares our mishap numbers for the last 5 years.

There were 58 reported Class E mishaps in FY10 with a total reported mishap costs of $1,554,089. Not only is the number of Class E mishaps dropping, so is the associated mishap cost. Without the cost of the Class A mishap, Class E costs for FY10 accounted for only 13% of the Flight and 18% of the Total Aviation mishap costs. Unlike this year, in years past,

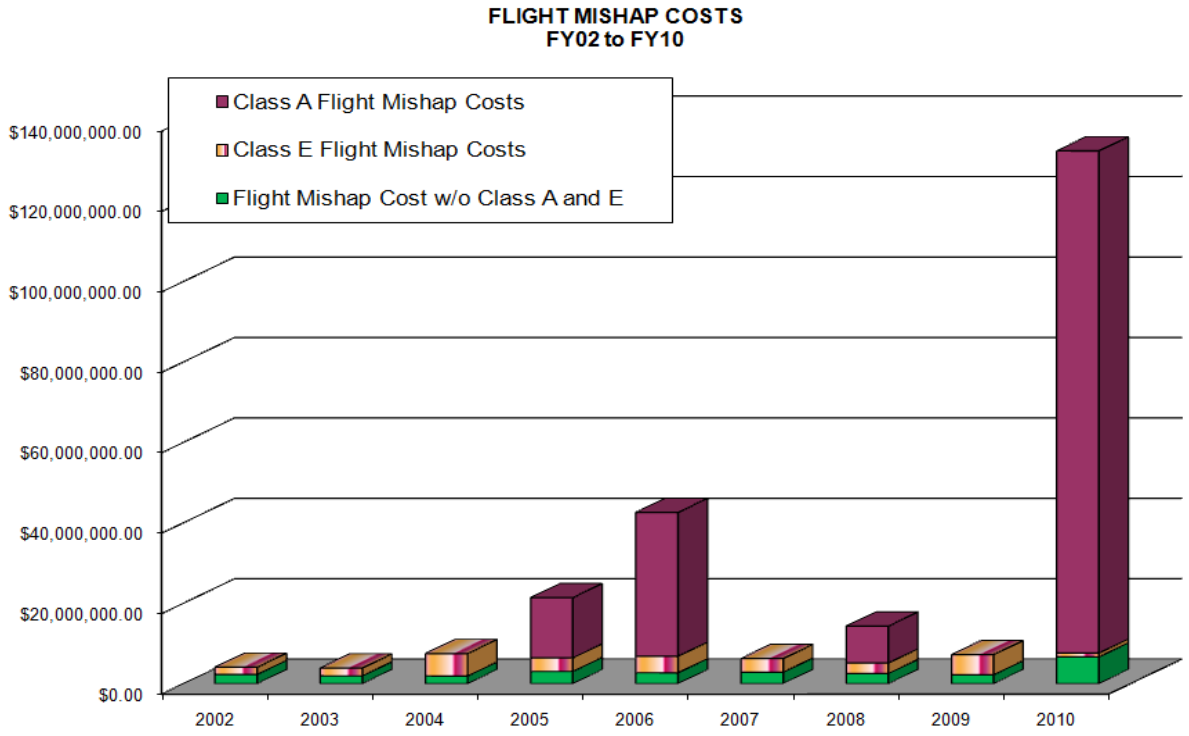
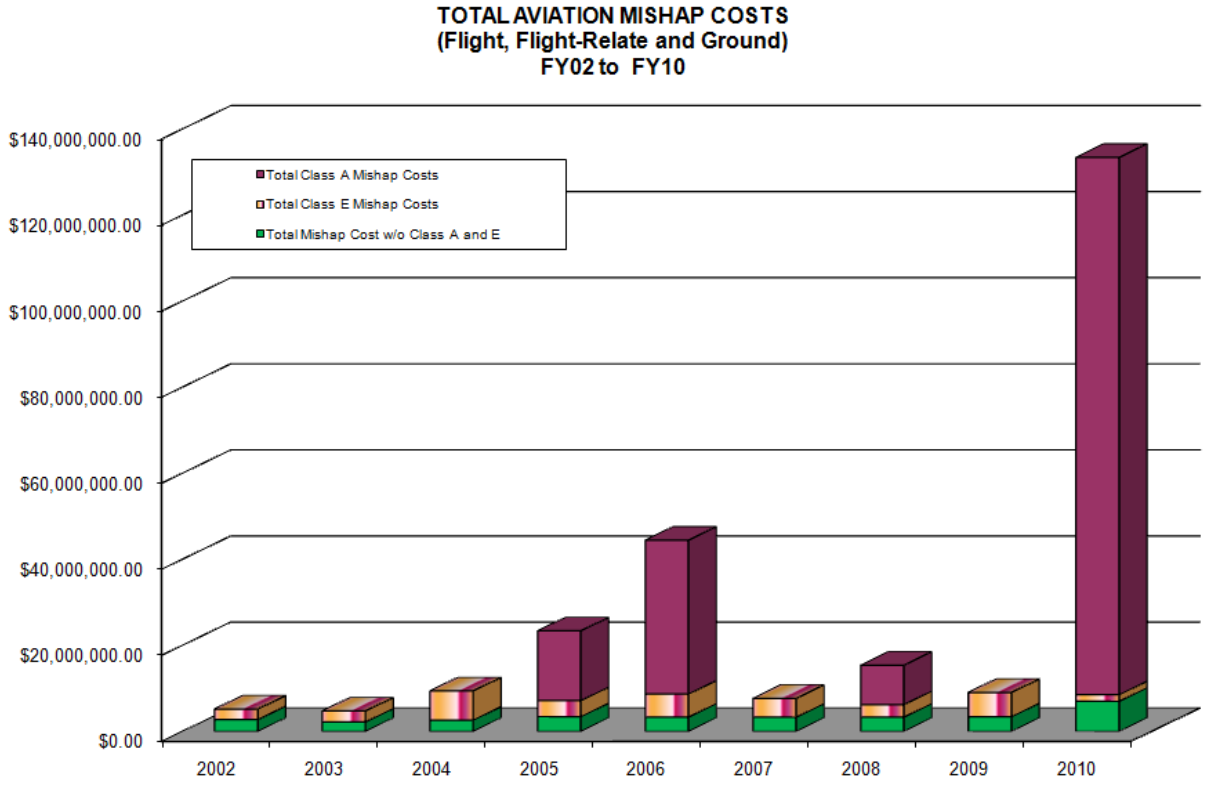


Figure 5



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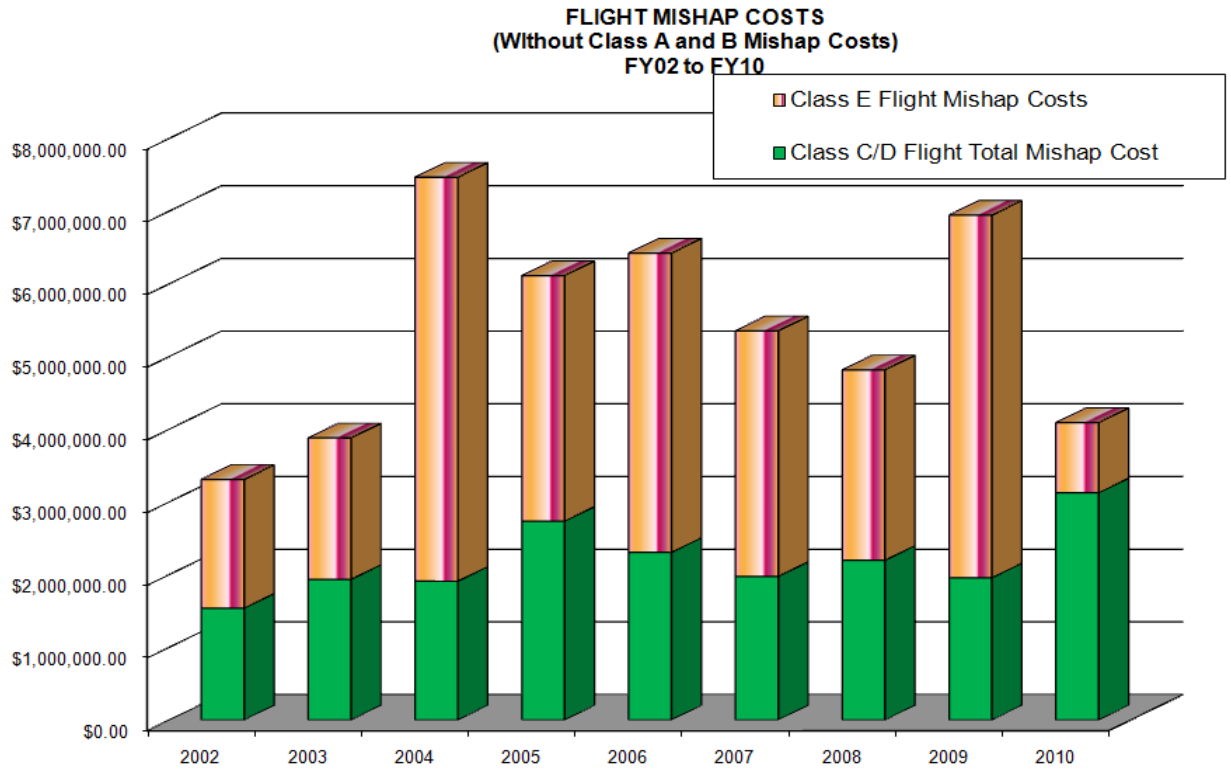


Figure 7

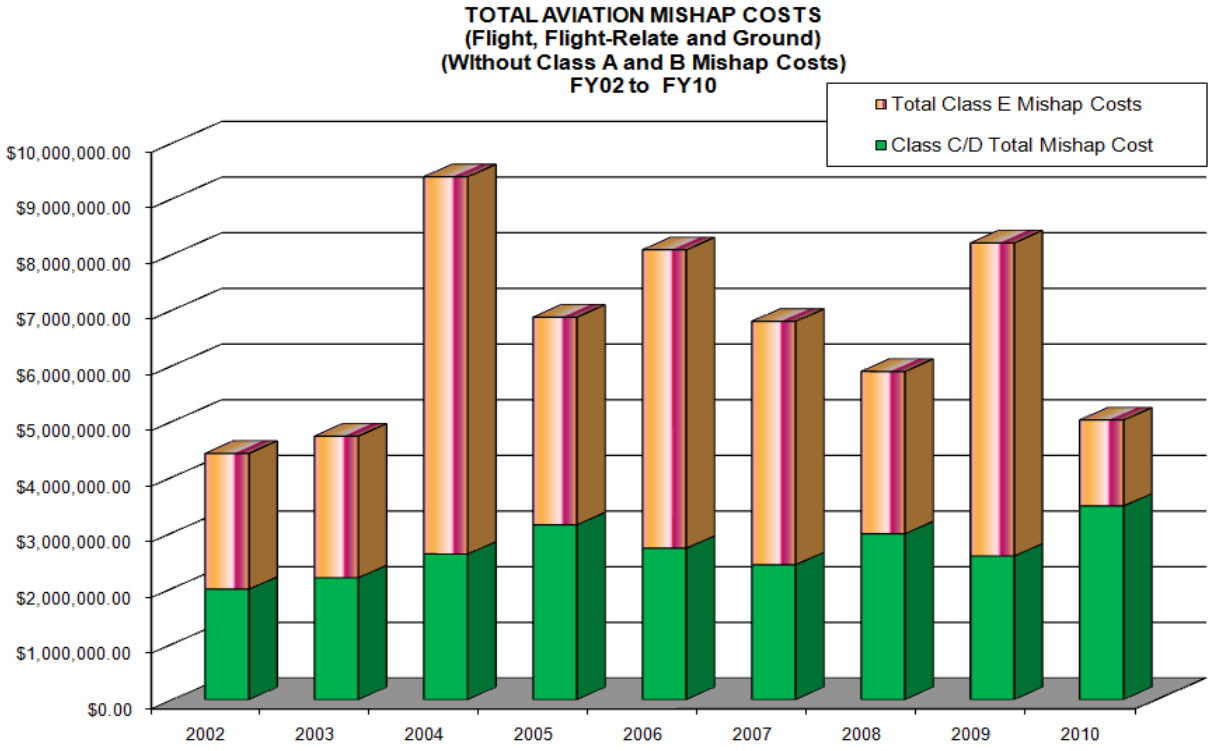


Figure 8

Class E mishap data has only been collected since FY02

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
FY06	543	$42,571,048	110,637	0.49	$78,400	$385	FY06	36	$37,846,362	110,637	0.03	$1,051,288	$342
FY07	367	$6,235,618	118,415	0.31	$16,991	$53	FY07	30	$2,079,331	118,815	0.03	$69,311	$18
FY08	349	$14,296,632	116,788	0.30	$40,965	$122	FY08	32	$11,178,350	116,788	0.03	$349,323	$96
FY09	267	$7,188,053	116,361	0.23	$26,922	$62	FY09	22	$1,673,753	116,361	0.02	$76,080	$14
FY10	245	$132,464,940	117,271	0.21	$540,673	$1,130	FY10	27	$130,587,993	117,271	0.02	$4,836,592	$1,114

Table 3

the Class E cost has represented close to half the Total Aviation Mishap and Total Flight Mishap Cost. There were only five Class E mishaps with cost over $100,000 ($1,023,809) representing 66% of the Total Class E mishap cost. Only ten Class E mishaps had cost above the Class C threshold of $50,000 and accounted for 87% the reported Class E costs.

FY10 CLASS A FLIGHT MISHAPS

Air Station Sacramento HC-130H

While conducting search and rescue operations to locate an overdue boater, CGNR 1705 was involved in a midair collision with a USMC AH-1W Cobra Helicopter conducting a training exercise. Both aircraft were destroyed resulting in seven fatalities aboard the C-130 and two aboard the AH-1W. A joint mishap investigation with members from the Navy, Marine Corps and Coast Guard was convened consistent with the Joint Service Memorandum of Understanding.

Air Station Elizabeth City MH-60T

During cross-country flight CGNR 6028 impacted the ground in mountainous terrain. The aircraft was damaged beyond economical repair; two crew members were seriously injured.

Air Station Humboldt Bay MH-65

During a day practice fixed pitch tail rotor malfunction, CGNR 6581 impacted the runway and rolled over. The aircraft experienced serious damage, all crew members egressed without injury

Air Station Detroit MH-65

While transitioning to forward flight from a hover, during a night over water training flight CGNR 6523 impacted the water and sank, all crew members egressed without serious injury

Air Station Sitka MH-60T

During a ferry flight CGNR 6017 impacted electrical transmission wires and crashed into the surf. Three crewmembers were fatally injured and the aircraft was destroyed.

FY10 CLASS B FLIGHT MISHAPS

Air Station Corpus Christi HU-25

The nose strut of CGNR 2139 collapsed during landing while conducting a routine training mission. The aircraft was retired from service due to the high cost of repair

Air Station Houston MH-65

CGNR 6538 experienced 11 previous alternator failures and was unavailable for almost two months. The air station CO grounded the aircraft for lack of confidence. Troubleshooting led to rewiring the AC system, replacing 4 alternators, four alternator controls units and the MGB.

Air Station Kodiak MH-60T

During DLG training with cutter, CGNR 6013 experienced a high speed shaft failure in the number two engine while hovering approximately 80 yards off the port quarter of the cutter

FLIGHT DATA RECORDERS/FLIGHT DATA MONITORING

The Voice and Flight Data Recorder (VFDR) recapitalization program and Flight Data Management Program (otherwise known as Military-Flight Operations Quality Assurance / MFOQA) 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: The H-65 fleet is outfitted with a GE K3 VADR. The K3 VADR is capable of recording 25 hours of flight data and 4 hours of voice. For the

65C, over 150 data points are recorded at a rate of 4 times per second. On the 65D, there are over 250 parameters recorded at a rate of 16 times a second. These additional parameters on the 65D include an array of outputs from the newly installed Embedded GPS/INS (EGI), including Accelerations, Velocities and Rates. 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 containing a copy of the flight data recorded by the VADR. The PCMCIA card can be easily removed and the flight data transmitted to ALC for analysis without removing the entire VADR.

MH-60J: The H-60J continues to use the legacy 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.

MH60T: The H-60 Tango models are rolling off the PDM line with the newer K3 VADR/DSU system. The new K3 VADR captures 265 parameters.

HU-25: Currently the Falcon uses an L-3 Communications 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 150 more parameters to the CVDR. FDAU's have been installed on the 2110, 2139, 2121, 2104, 2113, 2127, 2112 and 2114. The ACCB2 is completed and all Falcons will be receiving a FDAU during their next trip through PDM.

C-130H: All HC-130H currently have an L-3 Communications Combination Voice/Data Recorder (CVDR). As on the HU-25, this recorder captures 25 hours of flight data and 2 hours of voice data. The same FDAU that is installed on the HU-25 is being installed in the HC-130H. This FDAU is enabling over 200 parameters to be recorded into the CVDR. As part of the FDAU install, all HC-130H models will also have an Engine Indicating Display System (EIDS) installed. 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, 1716, 1504, 1703, 1704, 1714, 1709, 1700, 1717, 1706, 1701, and the 1503. All HC-130Hs will receive the install during a drop-in maintenance period scheduled by the C-130 Product Line.

C-130J: All HC-130J's came equipped with separate L-3 Communications flight data and voice recorders. The Flight Data Recorder (FDR) captures just over 200 parameters and the Cockpit Voice Recorder captures 2 hours of audio data from 4 separate inputs.

HC-144: The Ocean Sentry also came off the shelf with separate Honeywell flight and voice recorders. The Flight Data Recorder is capable of capturing over 625 parameters at rates as high as 8 times per second. The Cockpit Voice Recorder is capturing 2 hours of audio data from 4 separate inputs.

Air Stations Atlantic City and HITRON continue to download and send ALC all the flight data collected on their DSUs for analysis. This data collection has not only proven the capability of the program, but has led to several engineering assists using the data. This capability will be available to all HH65 units once a culminating software is acquired that will autonomously analyze the data and report the findings to the applicable persons. 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, ALC continues to move forward with the "Crash Lab" portion of the VFDR program. The ALC lab now has the capability to download and analyze the data from all CG aircraft VFDRs. Animation for all CG aircraft is also available at ALC. The lab also has the capability to safely perform the necessary maintenance to extract the flight and voice data from the units. This may by simply downloading the data in a normal fashion or by disassembling the unit to remove the memory cards to a Gold chassis for decompression.

If you have any questions, please contact LCDR Clint Schlegel (ALC FSO), Mr. Tony Simpson (Flight Data Program Manager), or Ms. Brittany Mizelle (Flight Data Analyst). If you are ever in E-City, feel free to stop by the lab, located in the Safety Office in Building 79, for a demonstration.

AVIATION SAFETY ADVANCED EDUCATION

The theme of success continues for our Advanced Education program and its graduates. We once again competed favorably during the TAB allocation process and secured two billets for AY2012. Congratulations to our most recent selectees LCDR Frank Flood and LCDR Michael Rasch. Both have elected to attend the Masters of Science in Safety Science program in Prescott, AZ.

AVIATION SAFETY TRAINING

CG-1131 offers aviation Class C training consisting of four core safety classes. In FY10 these courses were facilitated by the Southern California Safety Institute (SCSI) in various locations across the USA.

Aircraft Accident Investigation Fundamentals
Helicopter Accident Investigations
Human Factors in Accident Investigations
Ramp and Maintenance Safety

These training courses are proving to be excellent forums for aviation officer and enlisted representatives from safety, engineering, operations, training and standardization backgrounds to come together with the common focus of increasing knowledge and understanding of aviation accident investigation and preparedness. Fortunately, and thanks to focused course critiques, a more deliberate approach was launched to shift to a predominately Coast Guard centric curriculum-in certain classes. CG-1131 is reviewing each course and how the subject matter will tie in to the needs of the CG.

For FY11, the C-school contract has been rewritten and the new contract solicited. There will be more to follow as soon as the specifics for the contract are finalized. Due to monthly changes in CG budget priorities, the C school schedule is delayed for a couple of months. We are working hard to get the proposed dates to the fleet so that schedules can be planned. The FY11 solicitation message should be released by March 2011.

The following is a short synopsis of the six possible courses that were written into the new C-school contract. Of these six classes, only four may be execute during any one fiscal year.

Aircraft Accident Investigation

This course was originally developed to be a stand-alone fixed wing specific accident investigation course with additional focus on accident analysis report writing. Since the first run of the course in FY08, it has shifted to primarily on scene investigation techniques and fundamentals. It will serve as a refresher for current FSOs and as the primary on scene accident investigation course for non-FSOs.

Gas Turbine Investigation

The course will discuss the basic modules of the jet engine including the inlet, fan, compression, burner, turbine and exhaust system. The course offers an in-depth understanding of all the leading causes of engine related incidents and accidents as well as an up-to-date understanding of the interaction between these causes, the aircraft and the flight crew. This course replaces the helicopter accident investigation class as a result of student surveys.

Aviation Human Factors

The content of this course will not change significantly in this fiscal year with the exception of incorporating more CG specific human factor mishap case studies.

AVENG Accident Investigation

This course was shifted to engineering accident investigation topics. In the past, CG-1131 coupled with SCSI and ALC members to incorporate new CG specific material and the course continues to be tailored based on course critiques.

Investigation Management

This course covers the issues and problems facing the investigation manager and presents some practical solutions for these problems and issues, citing real-world accidents of well managed investigations, as well as some that were not managed effectively.

Safety Management Systems

In this course you will learn the concepts that are central to a "system safety approach". These include the definition and elements of a system, the idea of acceptable level of risk, and the elements of the System Safety Process. You will transition from a review of the development of safety management system to an examination of the steps in implementing a systems approach to your safety program. You will learn the steps in identifying and effectively controlling hazards, the basis for effective safety programs.

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 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 lessons learned and any incident having value to the rest of the fleet. These reports are valuable mishap prevention tools.

Aviation Injury

There were 28 aviation injury mishaps reported in FY10 involving injury to 33 aviation personnel. There were 17 reports of aircraft being lased, involving the crews of one HU25, one H60, one C130 and 14 H65. Eleven mishaps reported injuries to rescue swimmers (two were static shock) and at least five people were exposed to fuels or other fluids. Almost half of these injuries involved improper procedures, the wrong tool or improper/poorly designed equipment. Inattention, complacency, awareness and motivation were factors in at least a quarter of the 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.

There were 9 reported days hospitalized, 151 reported loss work days and 125 days restricted duty. Incidents involved cuts to fingers, eyes, faces and legs; as well as bruises, strains or sprains to shoulders, knees, arms and backs. PPE prevented more extensive injury in at least seven cases and, if worn, might have reduced the severity of injury in four cases.

Near Midair Collision

There were only seven near midair collisions (NMAC) reported in FY10. NMAC's involved five HH65 and two C130H. NMAC involved four civil and one military aircraft, one commercial aircraft and one helicopter. Five of the NMAC occurred in the local pattern and one occurred during a search. All but one occurred during the daylight and four happened during training flights.

BIRDSTRIKES

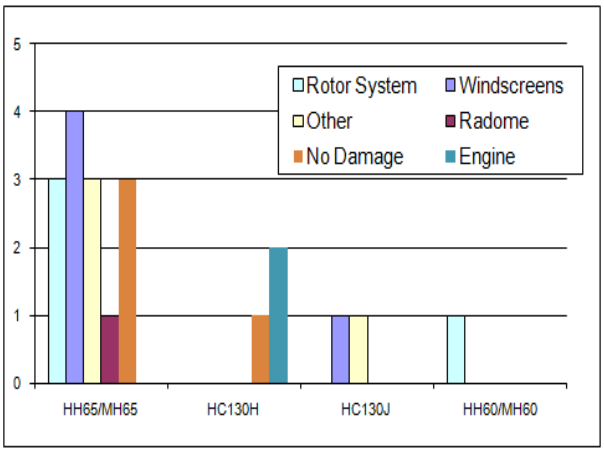


Figure 9

There were 20 birdstrikes reported in FY10 with associated damage costs of $246,700. Four reports involved no or minimal airframe damage. The majority (14) of the reported birdstrikes involved the H65. Figure 9 shows breakouts of the FY10 birdstrikes by airframe. Most (13) of the birdstrikes occurred during the day and about a third at night. About a third of the birdstrikes occurred in the airport environment (landing, takeoff or in the pattern), while half were during patrols, searches or over the water activity.

FOD / TFOA MISHAPS

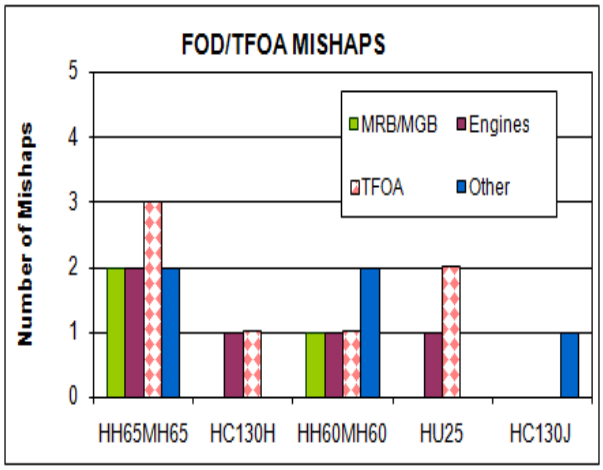


Figure 10

The thirteen Foreign Object Debris (FOD) and seven Things Falling Off Aircraft (TFOA) reported this year resulted in $17,751 in damage. Figure 10 and 11 shows a breakdown of the reported FOD/TFOA incidents. Nine H65's, two C130H's, one C130J , three falcons and five H60's suffered FOD damage this year. This involved damage to five engines, three rotor systems, one FLIR and 2 fuel systems. Parts/hardware (6), contaminated fluids (2), personal gear (3), panels/guard (2) or unidentified FOD (7) were involved in the 20 reported mishaps.

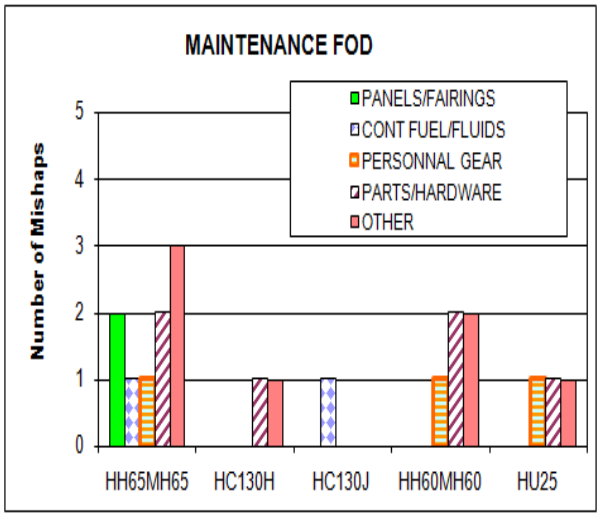


Figure 11

ENGINE MISHAPS

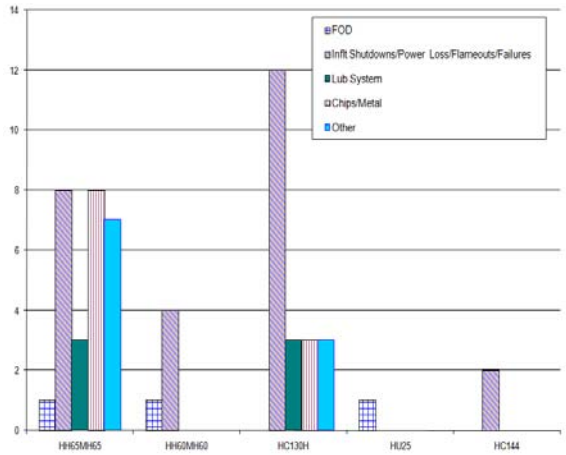


Figure 12

Class E mishaps accounted for only 14% (58) of the reported Total Aviation (ground, flight, flight-related) mishaps. This year Class E mishaps made up only 18% ($1,544,089) of the Total Mishap costs (excluding the cost of the Class A mishaps). Engine mishaps have historically accounted for 50% or more of the mishaps cost each year (see Figures 5 thru 8 on page 7 and 8). As noted earlier, we think this drop in cost is a reflection of the decrease in number of Falcons in our inventory and the steady decrease of reported H65 engine mishaps. Figure 12 shows a breakdown of the Class E mishaps. Twenty-seven of these mishaps had cost under $1,000. The ten mishaps with cost over the Class C threshold ($50,000) accounted for 87% ($1,338,852) of the total class E cost. Half (29) of the reported Class E mishaps had costs below $2,000

WEATHER RELATED MISHAPS

Weather contributed to twenty-two reported mishaps resulting in $306,611 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.

SHIP-HELO MISHAP REVIEW

There were eighteen mishaps for a total mishap cost of $440,955 reported in FY10 involving ship-helo operations. Ten 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 eight 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% of the mishaps and 5% of the total mishap costs.

GROUND MISHAP REVIEW

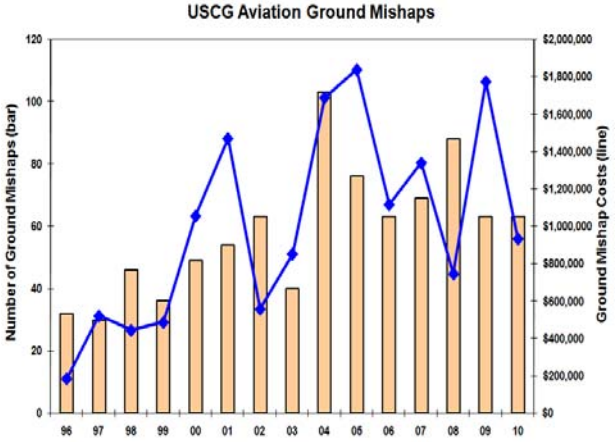


Figure 13

Sixty-three aviation ground mishaps were reported in FY10. The number of mishaps reported stayed about the same (See Figure 13). Four Class E mishaps represented over half ($579,901) the total ground mishap costs ($934,867). Ground handling (ground support equipment (GSE), towing, blade folding, fueling, washing or jacking) accounted for 65% of mishaps (41), and 14% of the costs ($133,912).

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 21% (13) of the ground mishaps. Insufficient Q/A, review or supervision was cited in 20 (32%) of the mishaps. Thirty-three (52%) of the ground mishaps listed awareness, complacency or inattention as a factor and nineteen (30%) listed norms, habit patterns or culture as a cause. Of the 63 ground mishaps reported this year, 12 reported costs above $10,000 and of those 7 reported cost above $50,000, the Class C threshold. There were 36 reports (40%) with costs below $1,000, fifteen had zero costs.

MAINTENANCE HUMAN FACTOR EVENTS

Eighty-seven mishaps listed some type of maintenance human factor as a cause, total reported costs was $1,110,100. Eighteen of these events had zero cost and 51 reported damage costs under $1,000. Only eight MRM reports listed damage over $50,000. Four of the MRM events reported costs over $100,000 all

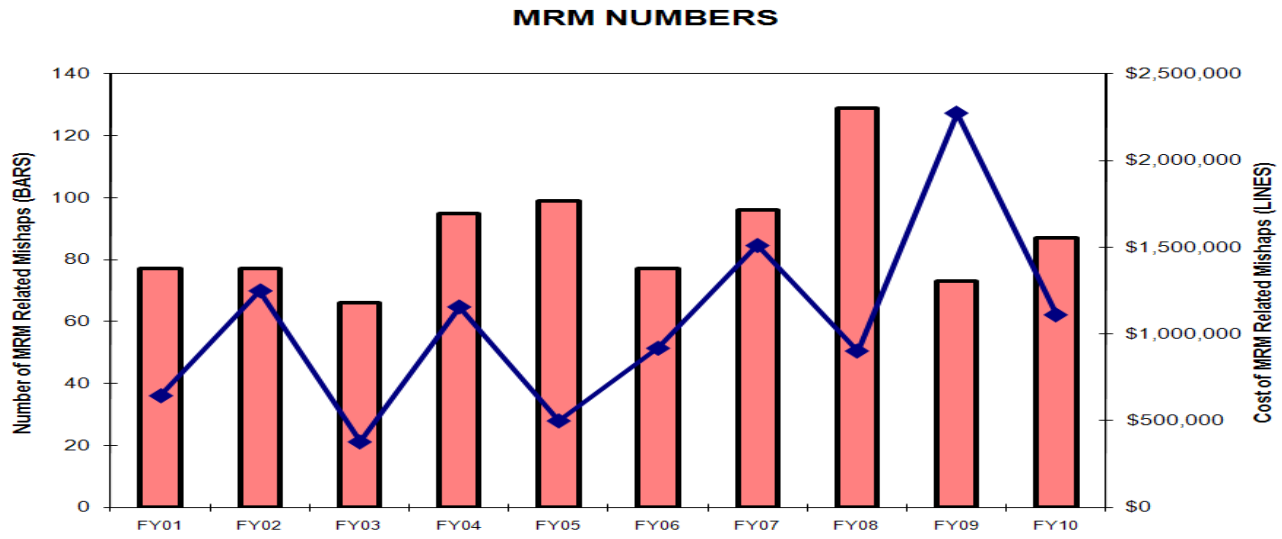


Figure 14

Class E and represented 52% of the total MRM costs ($572,513). MRM events included incomplete passdown, poor communications, inappropriate procedures, improperly followed procedures, a lack of supervisor review, or Q/A problems (see Figure 14 below).

The wrong part, poor equipment/part design, cannibalization or lack of parts was listed as a cause in 22 (26%) of the mishaps. Ten (12%) mishaps were the result of FOD or poor tool control. Culture, norms or habits was listed as a factor in eighteen (21%) of the mishaps. Eighteen (21%) of the mishaps involved, work arounds, incomplete, improperly followed inappropriate or unavailable procedures.

Inattention, complacency or awareness was a factor in Thirty-eight (45%) of the incidents reported. Q/A review or supervision was cited as a cause factor in 35% (30) of the mishaps. Some form of inexperience, lack of training, or staffing issues were factors in 21% of the incidents. Workload, feeling rushed, or lack of resources was also mentioned in 27% (23) of the mishaps. Poor pass down, incomplete checklist, or poor communications were also listed in 17% of the mishaps. Ground handling, jacking or towing were listed in 34% (29) of the reported mishap

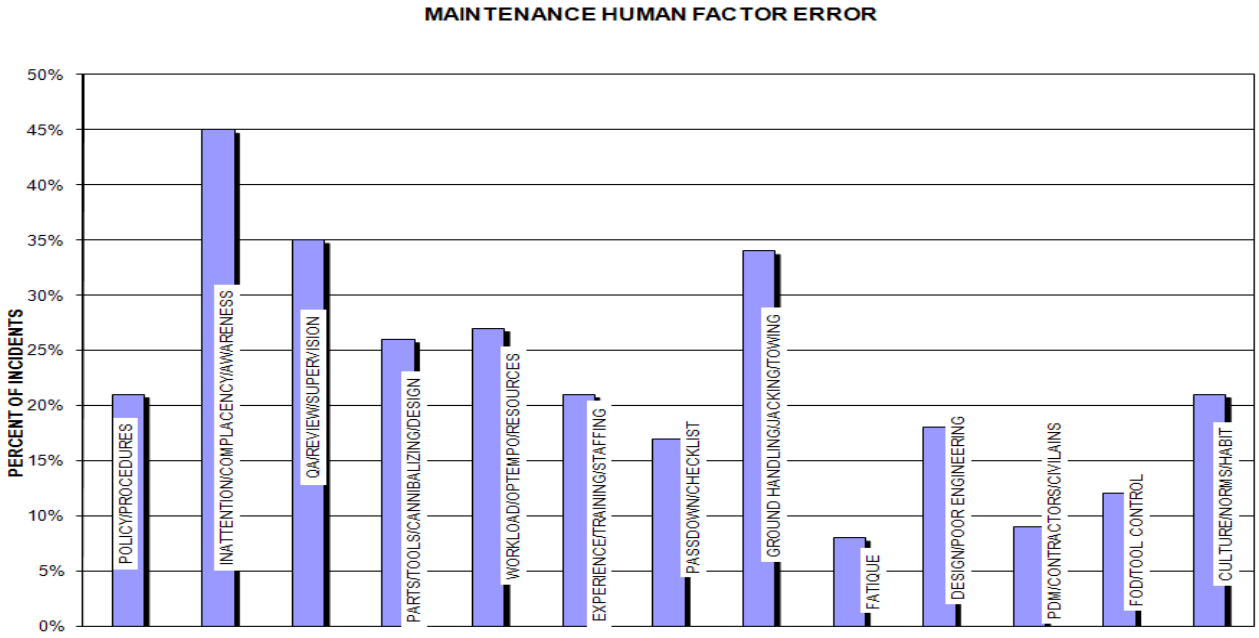


Figure 15

FY10 FLIGHT MISHAP PERCENTAGES				
CLASS	MISHAPS	% of TOTAL MISHAPS	COST	% of TOTAL COST
A	5	2%	$124,860,386	94%
B	3	1%	$3,517,103	3%
C	20	8%	$2,210,505	2%
D	165	67%	$912,759	1%
E	52	21%	$964,188	1%
TOTAL	245		$132,464,940	

Table 4

FY10 FLIGHT MISHAP PERCENTAGES						
AIRCRAFT	MISHAPS	% of TOTAL MISHAPS	COST	% of TOTAL COST	FLIGHT HOURS	% of FLIGHT HOURS
HH60/MH60	24	10%	$57,336,016	43%	23,915	20%
HH65/MH65	156	64%	$24,450,138	18%	55,094	47%
C130H	42	17%	$48,999,605	37%	16,228	14%
C130J	9	4%	$20,136	0%	3,720	3%
HU25	10	4%	$1,639,022	1%	10,232	9%
C37A/C143	0	0%	$0	0%	1,088	1%
HC-144A	4	2%	$20,023	0%	6,995	6%
TOTAL	245		$132,464,940		117,271	

Table 5

SUMMARY INFORMATION

Tables 4 and 5 on this page, display mishap summary information for FY10 associated with each airframes. Figures 16 and 17, on page 16, illustrate the percentage of total mishaps, flight hours and total mishap costs for each airframe for the past 10 years and in FY10. The HC130J and HC-144A have not been in the Coast Guard inventory long enough to accumulate the data need to be included in the following discussions.

AIRFRAME REVIEW

Pages 17-21 contain mishap data for each major aircraft type. In reviewing these pages, it should be noted that with only twenty-one 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 thirteenth year that the ABC mishap rate has been under 0.05.

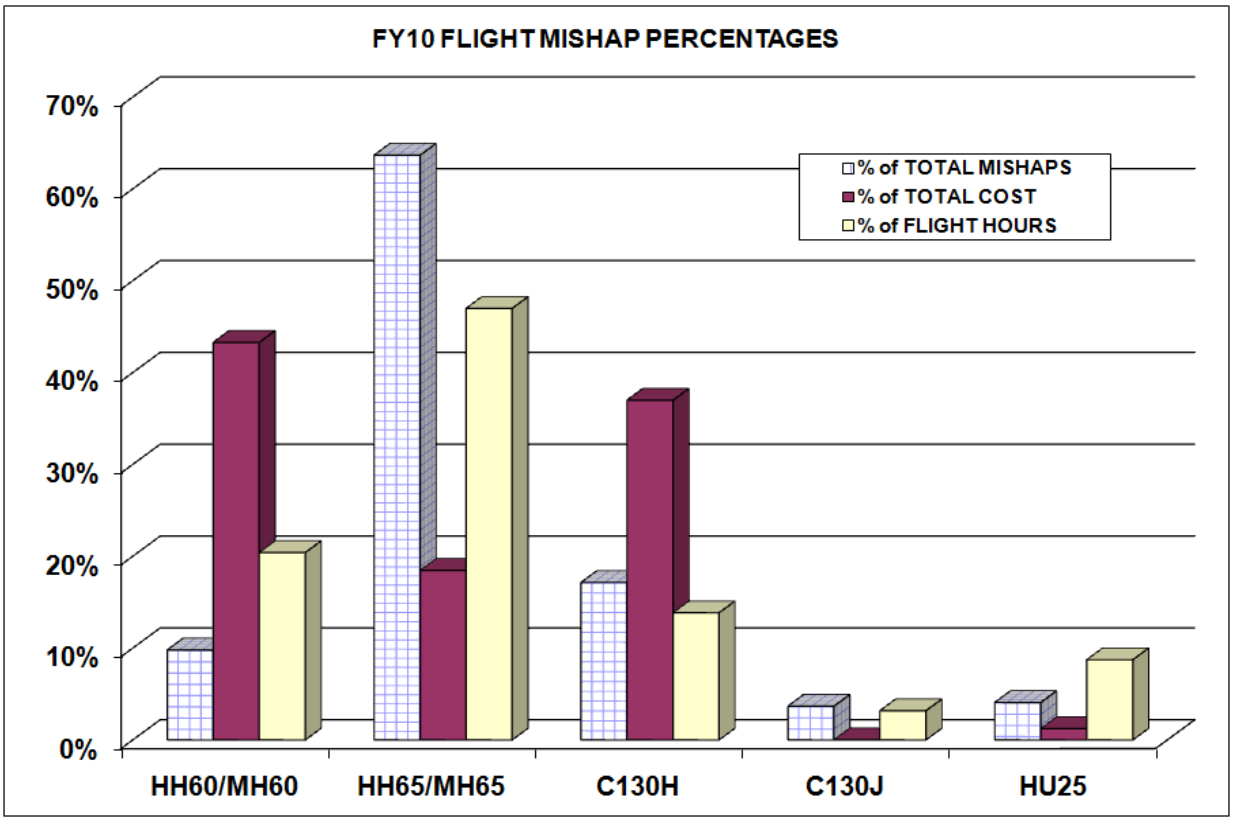


Figure 16

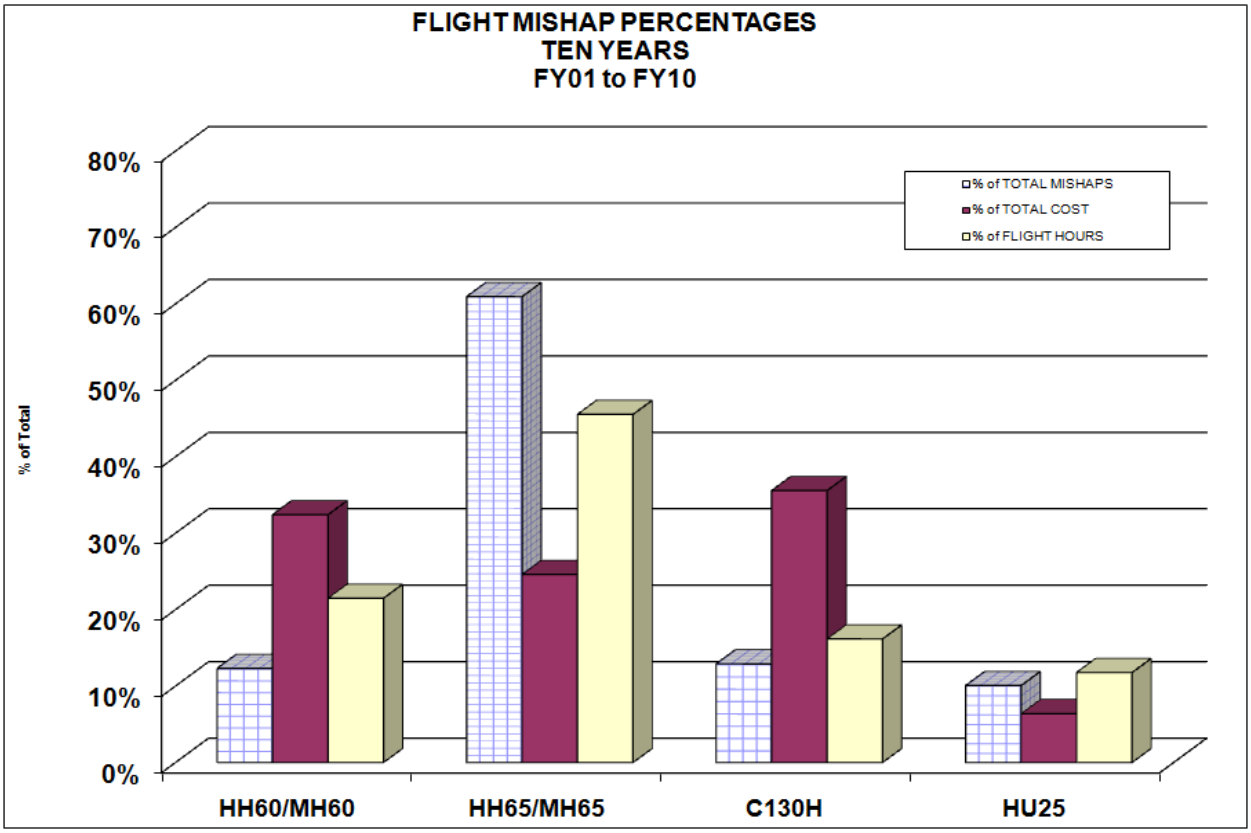


Figure 17

HH60/MH60 MEDIUM RANGE RECOVERY (MRR)

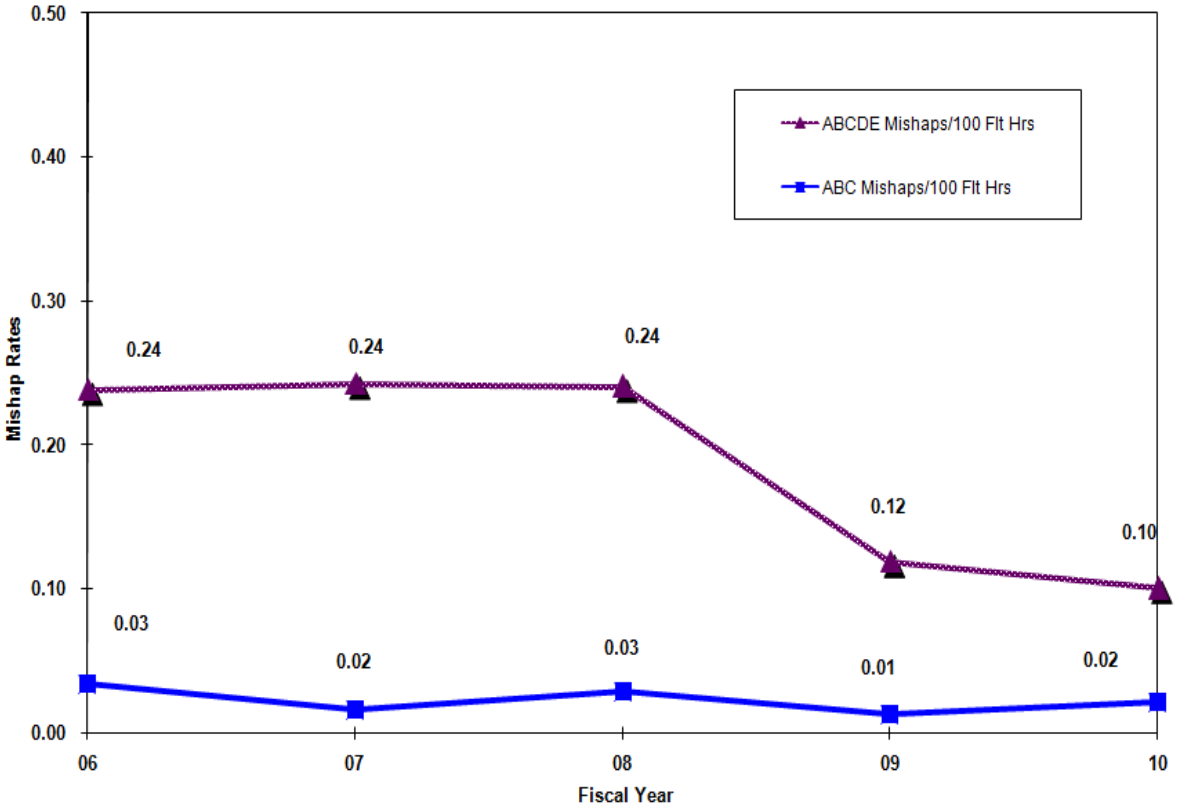
The H60 flew 23,915 hours (20% of the total flight hours) and reported 24 flight mishaps (only 10% of total reported flight mishaps). The H60 had a mishap rate (0.10), down for the sixth year. The H60 mishap cost was up this year due to two Class A, one Class B and one high cost Class E ($451,296). The H60's mishap cost accounted for 43% of the total FY10 Flight Mishap costs. Of the 24 H60 Flight Mishaps reported only ten had costs above $10,000 and only six of those had costs above $50,000 (the Class C dollar threshold). See mishap summaries on page 9.

HH60 / MH60 Flight Mishaps for FY10

Aircraft	Class	No. Mishaps	Cost
HH60J	A	2	$ 55,560,386
	B	1	$ 1,000,000
	C	2	$ 187,337
	D	15	$ 105,906
	E	4	$ 482,387
Totals		**24**	**$ 57,336,016**

Table 6

H60 Flight Mishap Data



HH60/ MH60 ABCDE	NO. MISHAPS	COST	FLIGHT HOURS	MISHAPS/ 100 FLIGHT HOURS	COST/ MISHAP	COST/ FLIGHT HOUR	HH60/ MH60 ABC	NO. MISHAPS	COST	FLIGHT HOURS	MISHAPS/ 100 FLIGHT HOURS	COST/ MISHAP	COST/ FLIGHT HOUR
FY06	57	$1,269,815	23,949	0.24	$22,277	$53	FY06	8	$342,464	23,949	0.03	$42,808	$14
FY07	61	$802,722	25,165	0.24	$13,159	$32	FY07	4	$60,763	25,165	0.02	$15,191	$2
FY08	60	$1,702,990	24,970	0.24	$28,383	$68	FY08	7	$368,767	24,970	0.03	$52,681	$15
FY09	29	$320,011	24,472	0.12	$11,035	$13	FY09	3	$222,671	24,472	0.01	$74,224	$9
FY10	24	$57,336,016	23,915	0.10	$2,389,001	$2,397	FY10	5	$56,747,723	23,915	0.02	$11,349,545	$2,373

Figure 18

HH65 / MH65 SHORT RANGE RECOVERY (SRR)

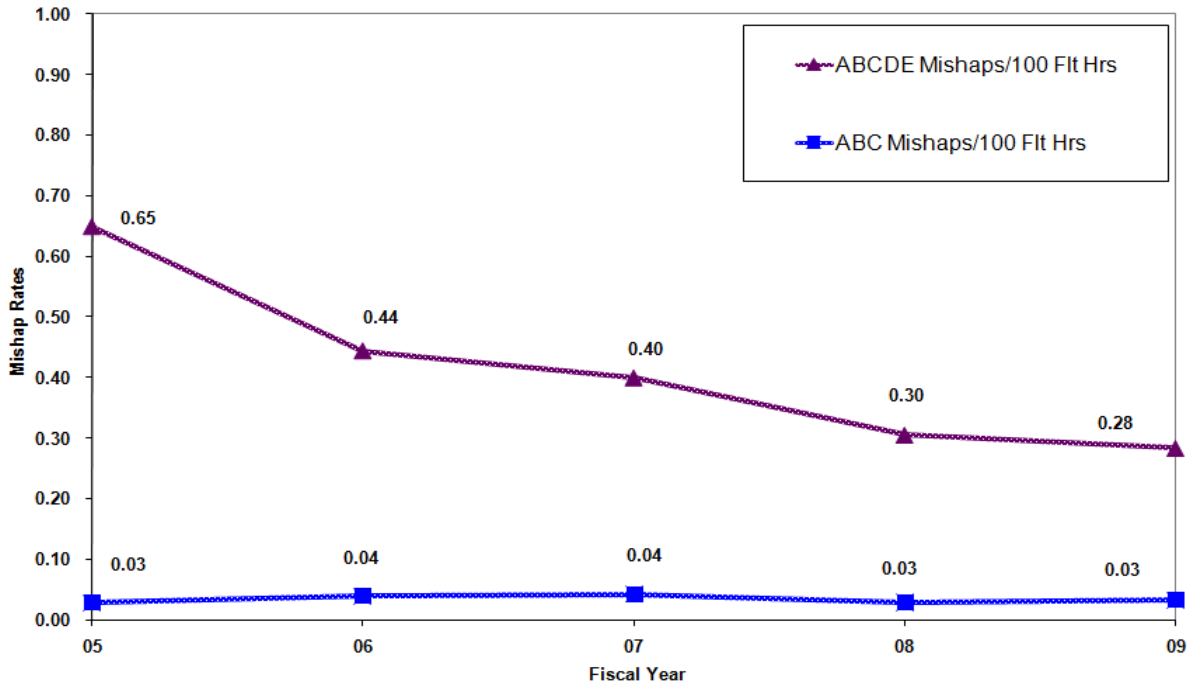
The H65 flew 55,094 hours (the most hours flown) (47% of the total flight hours). The H65 reported 64% (156) of the Flight Mishaps, but only 18% ($24,450,138) of the Flight Mishap costs. The two FY10 Flight Class A and one Class B mishaps account for over $22,000,000 of the H65 mishap costs (see mishap summaries on pages 9). The Dolphin mishap rate (0.28) decreased again for the seventh year, but was still the highest of all the major airframes. Of the 156 H65 flight mishaps reported in FY10, 137 reported mishap costs less than $50,000 (the Class C dollar threshold) and seven of these reports had costs over $100,000. None of the twenty-five Class E mishaps reported cost over $75,000.

HH65 / MH65 Flight Mishaps for FY10

Aircraft	Class	No. Mishaps	Cost
HH65	A	2	$ 21,000,000
	B	1	$ 1,013,214
	C	15	$ 1,572,170
	D	113	$ 565,012
	E	25	$ 299.742
Totals		**156**	**$ 24,450,138**

Table 7

H65 Flight Mishap Data



AVIATION FLIGHT MISHAP SUMMARY (A, B, C, D and E Mishaps)							AVIATION FLIGHT MISHAP SUMMARY (A, B and C Mishaps)						
HH65/MH 65 ABCDE	NO. MISHAPS	COST	FLIGHT HOURS	MISHAPS/ 100 FLIGHT HOURS	COST/ MISHAP	COST/ FLIGHT HOUR	HH65/MH 65 ABC	NO. MISHAPS	COST	FLIGHT HOURS	MISHAPS/ 100 FLIGHT HOURS	COST/ MISHAP	COST/ FLIGHT HOUR
FY06	324	$6,199,900	49,962	0.65	$19,135	$124	FY06	14	$4,517,387	49,962	0.03	$322,671	$90
FY07	227	$3,002,972	51,139	0.44	$13,229	$59	FY07	20	$1,827,078	54,138	0.04	$91,354	$34
FY08	217	$11,390,704	54,351	0.40	$52,492	$210	FY08	23	$10,756,305	54,351	0.04	$467,665	$198
FY09	168	$4,440,946	55,091	0.30	$26,434	$81	FY09	16	$1,248,416	55,091	0.03	$78,026	$23
FY10	156	$24,450,138	55,094	0.28	$156,732	$444	FY10	18	$23,585,383	55,094	0.03	$1,310,299	$428

Figure 19

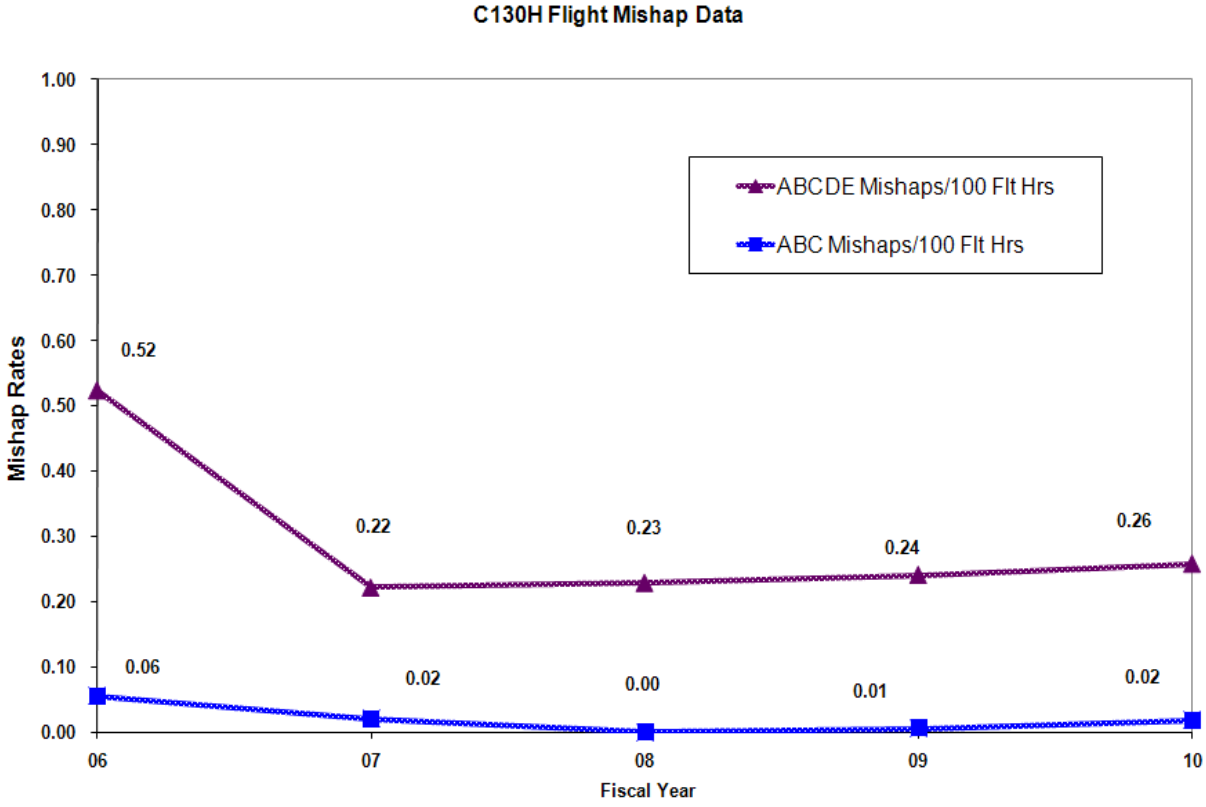
HC130H LONG RANGE SURVEILLANCE (LRS)

The HC130H flew 16,228 hours and reported 42 mishaps. The C130H mishap rate (0.26) increased for the first time in six years. The C130 mishap cost and cost per flight hour would have been the lowest in seven years without the cost of the Class A Flight mishap. Only four mishaps reported cost above the Class C threshold of $50,000 and 25 mishaps reported costs below $5,000. Only one of the 20 Class E mishaps reported costs above $50, 000. See mishap summaries on page 9.

HC130H Flight Mishaps for FY10

Aircraft	Class	No. Mishaps	Cost
HC130	A	1	$ 48,300,0000
	B	0	$ 0
	C	2	$ 368,983
	D	19	$ 162,740
	E	20	$ 167,882
Totals		**42**	**$ 48,999,605**

Table 8



AVIATION FLIGHT MISHAP SUMMARY (A, B, C, D and E Mishaps)							AVIATION FLIGHT MISHAP SUMMARY (A, B and C Mishaps)						
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
FY06	94	$33,875,647	17,949	0.52	$360,379	$1,887	FY06	10	$32,786,327	17,949	0.06	$3,278,633	$1,827
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	$775,271	17,877	0.23	$18,909	$43	FY08	0	$0	17,878	0.00	$0	$0
FY09	40	$1,046,521	16,558	0.24	$26,163	$63	FY09	1	$73,200	16,558	0.01	$73,200	$4
FY10	42	$48,999,606	16,228	0.26	$1,166,657	$3,019	FY10	3	$48,668,983	16,228	0.02	$16,222,994	$2,999

Figure 20

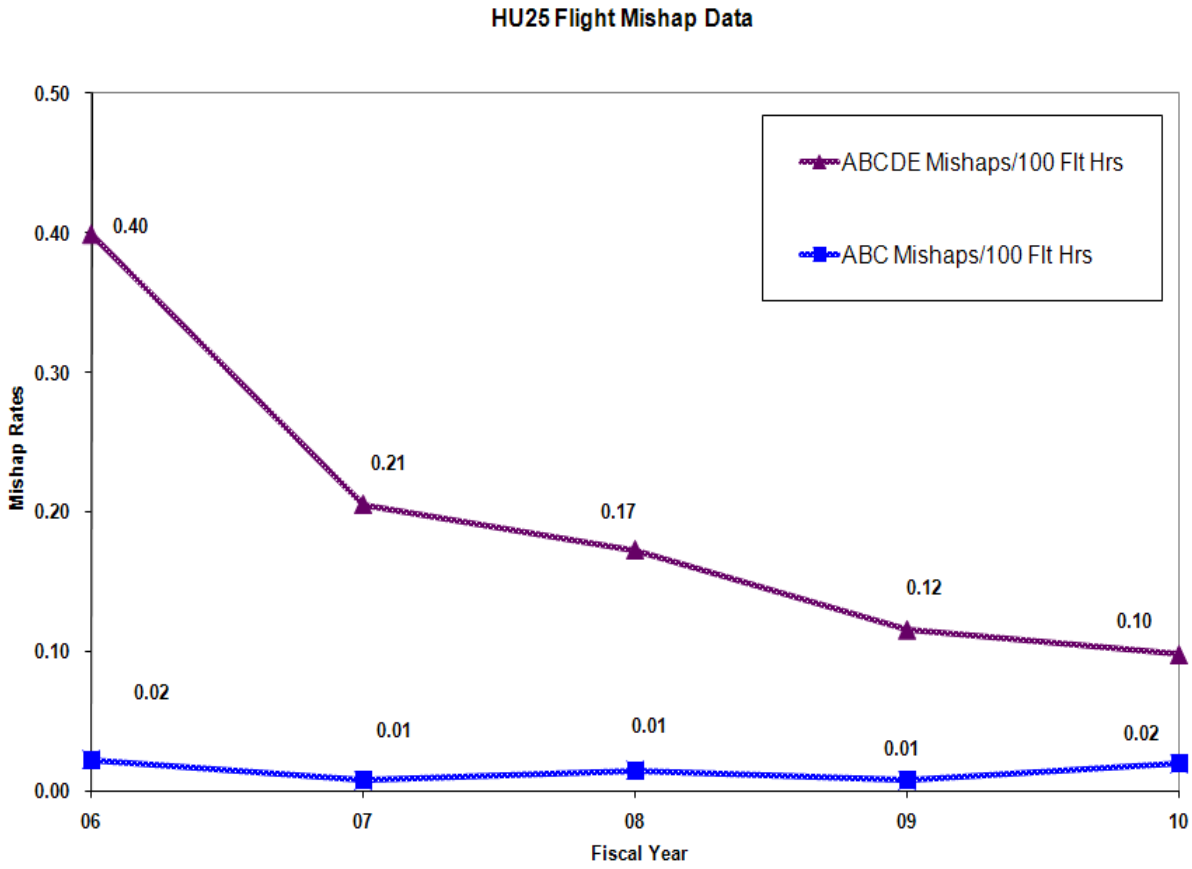
HU25 MEDIUM RANGE SURVEILLANCE (MRS)

The HU25 flew 9% (10,232) of the total hours and reported only 10 (4%) of the total flight mishaps. The Falcon mishap rate (0.10) decreased again this year. The Falcon's total mishap cost ($1,639,022) was the highest in over twenty years, without the Class B it would have been the lowest in the Falcon's history. All but two mishaps reported cost under $50,000 (the Class C threshold), the other 8 mishaps reported cost under $15,000. See mishap summaries on page 9).

HU25 Flight Mishaps for FY10

Aircraft	Class	No. Mishaps	Cost
HU25	A	0	$ 0
	B	1	$ 1,503,889
	C	1	$ 82,015
	D	7	$ 40,026
	E	1	$ 13,092
Totals		**10**	**$ 1,639,022**

Table 9



AVIATION FLIGHT MISHAP SUMMARY (A, B, C, D and E Mishaps)							AVIATION FLIGHT MISHAP SUMMARY (A, B and C Mishaps)						
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
FY06	54	$969,411	13,529	0.40	$17,952	$72	FY06	3	$164,196	13,529	0.02	$54,732	$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	24	$405,536	13,876	0.17	$16,897	$29	FY08	2	$53,279	13,876	0.01	$26,639	$4
FY09	15	$562,653	12,982	0.12	$37,510	$43	FY09	1	$43,926	12,982	0.01	$43,926	$3
FY10	10	$1,639,022	10,232	0.10	$163,902	$160	FY10	2	$1,585,904	10,232	0.02	$792,952	$155

Figure 21

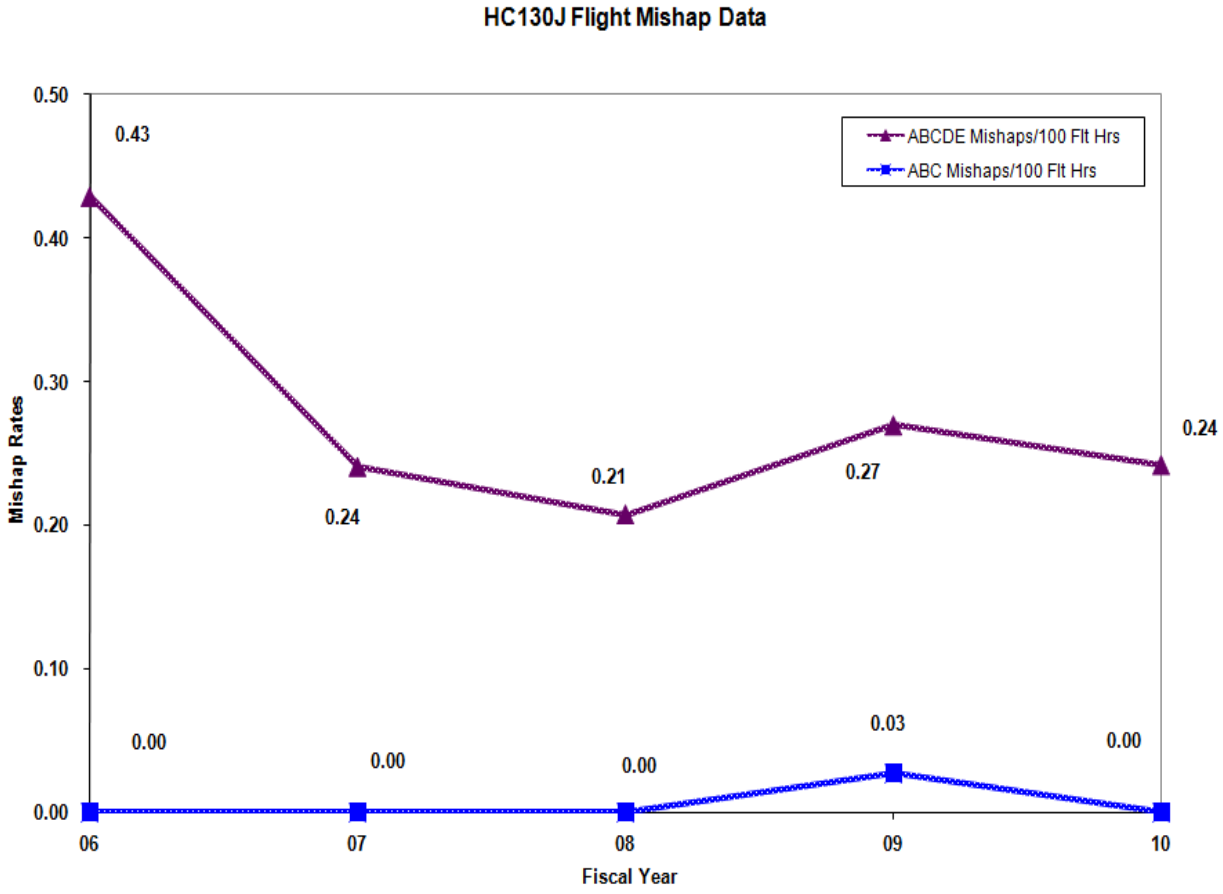
C-130J LONG RANGE SURVEILLANCE (MRS)

The HC-130J flew 3,720 hours and reported 9 mishaps. The HC130J is starting to accumulate enough mishap data to be included in the annual report, but not enough (5 years) to really support detailed comments. All the mishaps reported in FY10 had costs under $5,000.

HC130J Flight Mishaps for FY10

Aircraft	Class	No. Mishaps	Cost
C130J	A	0	$ 0
	B	0	$ 0
	C	0	$ 0
	D	9	$ 20,136
	E	0	$ 0
Totals		**9**	**$ 20,136**

Table 10



AVIATION FLIGHT MISHAP SUMMARY (A, B, C, D and E Mishaps)							AVIATION FLIGHT MISHAP SUMMARY (A, B and C Mishaps)						
HC130J ABCDE	NO. MISHAPS	COST	FLIGHT HOURS	MISHAPS/ 100 FLIGHT HOURS	COST/ MISHAP	COST/ FLIGHT HOUR	HC130J ABC	NO. MISHAPS	COST	FLIGHT HOURS	MISHAPS/ 100 FLIGHT HOURS	COST/ MISHAP	COST/ FLIGHT HOUR
FY06	4	$3,356	932	0.43	$839	$4	FY06	0	$0	932	0.00	$0	$0
FY07	3	$13,278	1,247	0.24	$4,426	$11	FY07	0	$0	1,247	0.00	$0	$0
FY08	5	$8,018	2,409	0.21	$1,604	$3	FY08	0	$0	2,409	0.00	$0	$0
FY09	10	$202,906	3,709	0.27	$20,291	$55	FY09	1	$85,540	3,709	0.03	$85,540	$23
FY10	9	$20,136	3,720	0.24	$2,237	$5	FY10	0	$0	3,720	0.00	$0	$0

Figure 22

FLIGHT SAFETY PROGRAM

FSO and Aviation Command Training

⇒ Traditional FSO training will continue at the Navy's School of Aviation Safety with the ASO Course located at NAS Pensacola, FL.

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

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.

Laser Hazard Control Program

⇒ ALCOAST 501/09 updated ALCOAST 290/08 for administrative. The ALCOAST 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 individual systems have started to be reviewed by the Laser Hazard Control Standing Committee to the Coast Guard Safety and Occupational Health Council (CG-SOHC).

⇒ The COMDTINST is going through the final administrative checks prior to signing and should be completed before the summer. The LHCSC continues to review systems as requested.

⇒ COMDTINST 5100.27 includes specific language and requirements cited in a program meeting with the Center for Radiological Health (CDRH) of the Food and Drug Administration (FDA) in November. The main content is the CG will not be authorized to self exempt similar to DOD services. The FDA will be the final authority for CG laser systems requiring exemptions intended for use in the domestic theater.

⇒ 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 they will be required to attend the Navy course to fulfill that role. FSOs should anticipate receiving basic laser safety training and program information at the annual FSO/STAN Requal Course.

"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.

CRM

⇒ COMDTINST 3750.1 (proposed) CRM is currently being routed within headquarters. CG-1131 expects to have a promulgated document NLT summer 2011 for fleet distribution. CG-1131, CG-711, CG-41 ATTC, ATC, and the rating force master chiefs held a technical meeting that tackled the new changes within CRM and MRM. Some of the notable changes to CRM:

CRM Initial Training

⇒ For pilots, CRM initial will be facilitated by an ATC Mobile instructor and required before any pilot designation in a Coast Guard aircraft;

⇒ For aircrew, CRM initial will be facilitated by an ATTC Elizabeth City instructor and required before graduation from A School and/or before receiving any aircrew designation in a Coast Guard aircraft;

⇒ For Aviation Mission Specialists (AMS), CRM initial is required prior to designation as AMS;

⇒ For Auxiliary pilots and aircrew, initial is required before designation.

CRM Refresher Training

- ⇒ For pilots, required annually and must be completed within 15 calendar months of CRM initial or subsequent CRM refresher training to be completed by a unit FSO or in conjunction with annual ATC Mobile unit standardization visit;
- ⇒ For aircrew, required annually and must be completed within 15 calendar months of CRM initial or subsequent CRM refresher training to be completed by a unit FSO or in conjunction with annual ATC Mobile unit standardization visit. Pilots in a DIFPRO status shall receive CRM refresher every two years.
- ⇒ For AMS, required annually and must be completed within 15 calendar months of CRM initial or subsequent CRM refresher training to be completed by a unit FSO or in conjunction with annual ATC Mobile unit standardization visit.
- ⇒ For Auxiliary pilots and aircrew, during annual unit safety fly-in.

⇒ Failure to meet CRM refresher training requirements will cause the member to lapse in qualification per COMDINST 3710.1 (proposed).

⇒ The CG Portal continues to serve as the main data and information transfer between FSOs.

⇒ 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.

MRM

⇒ CG-1131 is currently drafting a COMDTINST for MRM. More on this during the 2011 FSO Annual Stan Training in Seattle.

ORM

⇒ This will be one of the most *dynamic* changes on the horizon in aviation safety. Dr. Carvalhais and Dr. Comperatore from CG-1133 have completed approximately 50% of field testing on the new CG ORM models for the aviation and surface communities. CG-1131 and other HQ subject matter experts have been directly involved with the analysis and data collection. Expect a demonstration at the 2011 FSO Annual Stan Training.

AVIation Accident TRacking System (e-AVIATRS)

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

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

⇒ 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.

⇒ Two new functions were added this fall, "Mishap Reporting Notification" and "Extension Request". These functions will make initial notification of mishaps easier and aid the FSO in requesting extensions. At the same time these functions are also increasing CG-1131's awareness of pending mishap reports.

⇒ The Recommended Action Tracking System (RATS) module is still being populated and updated. New report generators will be added to RATS in Summer FY11 and

⇒ 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.

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

⇒ 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 almost 14,500 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 database.

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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: This summer we said farewell to Cdr Brain Glander and welcomed LCDR Shana Donaldson to the staff.

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 #3 reduction gearbox failure shortly after takeoff. Prop and half of gearbox departed nacelle, struck fuselage resulting in decompression and severing of MLG hyd line.	Overhaul Procedures, Material
MAR 1992	HH65	Aircraft impacted water during practice MATCH to water at night.	Fatigue, Disorientation, CRM, Supervisory, Crew
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, Crew, Situational Awareness CRM
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	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	During patrol, sensor operator and pilot detected smoke. Pilot determined eng was on fire, secured eng, crew bailed out (per EP). Crew recovered. 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, Trng, Design, Assignment, Policy/Procedures, Material
AUG 1999	HU25	Rear compartment fire light during T/O, crew performed boldface, light remained illuminated, emergency declared. Rear compartment fire light extinguished after fire extinguisher activated. Hyd sys light illuminated. Acft landed, crew egressed, fire dept extinguished fire.	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 right. MRBs impacted deck, 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 ground run, acft became light on MLG and began right yaw, spinning clockwise on deck. Right MLG departed ramp during second revolution, left horiz stab, vert fin, and MRB contacted ground. Acft came to rest on left side approx 225 degrees from original heading. Crew (pilot, BA and 3 contractor techs) egressed acft.	Aircrew
Feb 2006	HH65	Responding to 4 PIW, helo crashed into surf approx 40 yards off beach. As helo was attempting to recover fourth PIW, #1 eng was inadvertently shutdown resulting in rapid power loss and loss of further flt. Crew made controlled descent into surf and helo slowly rolled on side, crew successfully egressed and reached beach without injuries.	Policy, Design, Aircrew, ORM
Jun 2006	C130H	During lndg, acft swerved and departed paved runway surface and continued parallel to runway on gravel, swerved left again, struck departure end VASI, and continued onto soft ground. During final left swerve, right wing dipped, striking ground, #4 prop struck ground and departed acft. Acft came to rest 248 feet left of runway edge.	Aircrew, CRM, Trng, Habit, Procedures/Policies, Design
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, hoist cable snagged on trng boat, acft impacted water. All four crewmembers perished.	Material/Equip, Aircrew, CRM, Design, Procedures
Oct 2009	HC130	During SAR for overdue, acft involved in midair collision with USMC AH-1W Cobra conducting trng. Both acft were destroyed resulting in 7 CG fatalities and 2 USMC.	Joint Investigation Pends
Mar 2010	MH60	During cross-country flight acft impacted the ground in mountainous terrain. Acft damaged beyond economical repair; two crew members were seriously injured.	Investigation Pends
April 2010	MH65	While transitioning to forward flight from a hover, during night over water training flight acft impacted the water and sank, all crew members egressed without serious injury	Investigation Pends
April 2010	MH65	During day practice fixed pitch tail rotor malfunction, acft impacted runway and rolled over. Aircraft experienced serious damage, all crew members egressed without injury.	Investigation Pends
July 2010	MH60	During ferry flight, acft impacted electrical transmission wires and crashed in surf. Three crewmembers were fatally injured and the aircraft was destroyed.	Investigation Pends

Table 11

CLASS B MISHAP SUMMARY FY91-FY10

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 stabilizer 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 damaged during inspection/test of repairs performed by ARSC. Original damage occurred when civilian G-V was towed into 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	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
Nov 2009	HU25	Nose strut collapsed during landing while conducting a routine training mission. The aircraft was retired from service due to the high cost of repair	Investigation Pending
Feb 2010	MH65	Acft experienced 11 previous alternator failures and was unavailable for almost two months. CO grounded acft for lack of confidence. Troubleshooting led to rewiring AC system, replacing 4 alternators, four alternator controls units and the MGB.	Investigation Pending
Sept 2010	MH60	During DLG training with cutter, acft experienced high speed shaft failure in #2 engine while hovering approximately 80 yards off the port quarter of the cutter	Investigation Pending

Table 12