FY07 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 2007 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.

THE YEAR IN REVIEW, FROM THE HEADQUARTERS' PERSPECTIVE

Congratulations! CG Aviation experienced no Class A mishaps in 2007. We all know of course there are so many things that play a role in a mishap, that taking credit for a good accident record for only one year just doesn't feel right. The pace of change in aviation continues and your effort to accomplish it safely bodes well for our organizations future.

Editorial: I believe there are two key components to our aviation safety program. The first and most influential is our mishap reporting system. More than any other thing our candid reporting of mistakes even when not mandatory creates the culture that keeps us thinking about a safer way to operate. It has progressed to the point that leaders understand not reporting something that can benefit the rest of aviation is unacceptable, even if reporting highlights shortcomings in the air stations programs. In many ways this type of leadership is now taking hold at the hangar deck level and is indicated by our increasing MRM reporting numbers. This is a very positive trend and one we must continue to encourage.

The other key to our ability to do what we do well is our Instrument proficiency. Everything we do that is hard requires an excellent instrument scan and in the case of night hoisting a hybrid instrument/visual scan. Pilots who are comfortable with their instrument proficiency tend to fly in the clouds more often and therefore get even better instrument scans. Pilots who are uncomfortable with their instrument proficiency or the instrument capability of their aircraft tend toward continuing VFR into IFR conditions or to choose long low level transits around terrain in poor vis instead of an instrument enroute phase that terminates with a well planned, briefed and controlled instrument let down. The risk associated with inadvertent IMC close to the water or near terrain plays out in mishap reports across the aviation spectrum all the time. Though its true, weather does occasionally prevent IFR/IMC transits it is not always the case and both options should be carefully considered instead of automatically defaulting to the VFR option. What are the tendencies at your unit? Talk to your pilots; see if they are making decisions to avoid the clouds when they don't need to. Is it because they are uncomfortable the statistics we see in this report. Rather we must constantly assess the next threat. Is decaying instrument proficiency our next threat?

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Talk to your fellow pilots and try to get an understanding for how they operate when faced with poor weather. Is their decision making based on a true evaluation of both IFR and VFR options? If not then why not? Is the culture of your unit such that the IFR option is rarely considered? Its worth a review, if for no other reason it will provide you insight into your units comfort with level with IMC operations. This is not about minimums but operational effectiveness/pilot performance norms in poor weather. Historically CFIT or CFIW is our biggest cause of Class A fatalities. Our instrument proficiency and bad weather operational norms are directly related to avoiding that threat. I hope you will start a dialogue on this issue at your unit.

Communication plays a huge role in setting the right expectations and creating a healthy command climate. One method of getting the communication started on the right foot is publishing a Command Safety Policy or Statement. In this policy statement the CO can state what his/her safety philosophy is, making sure the other leaders in the unit are aligned and communicate the command's safety philosophy, unfiltered, to every rank. I encourage you to review this subject with your command and if appropriate help craft the statement. The improved Command Safety Survey can be of use in determining where on the safety spectrum your unit culture lies and the Command Safety Policy Statement can work toward pushing unit culture in the direction the CO wants.

Special Missions: As special mission responsibilities grow, we need to stay engaged to identify trends and norms associated with fielding new capabilities. Timely information from the field is critical to identifying developing hazards. Please take the time to push information up the chain when you uncover hazards, procedures, processes or equipment that is increasing risk.

E-AVIATRS and Mishap Reporting: The quality of our messages is excellent. Timeliness amidst an avalanche of collateral duties and high optempo continues to be a challenge. Please continue to use the preliminary mishap message as a means to getting important information out quickly and don't forget the value of a quick e-mail to the FSO bang list if you have something that the fleet can/should know about immediately.

VFDR: Progress continues regarding fleetwide voice and flight data recorder (VFDR) recapitalization. We have established an MFOQA test bed at Atlantic City and the aeronautical engineers are using data collected there to evaluate the impact RWAI maneuvers are having on the HH65C. Once again this year credit goes to LCDR Brian Glander, CDR Jeff Kotson and contractor Mr. Tony Simpson for their monumental effort in keeping this project moving along. BZ!

Crew Endurance management: CEM remains a front burner issue. CEM testing and data collecting was rolled into the stand up of the NCR mission via CG-1131 collaboration with CEM expert Dr. Tony Carvalhais. The data he mined from NCR crews played a key role in determining the right readiness posture for the NCR and was vetted at the highest levels of the CG. It was an important milestone in the program and demonstrated the CG's commitment to CEM

CRM update: We were fortunate enough to find the funding this year to enhance the CG CRM program (See page 22 for more). Early reviews are positive and this April, FSO's will get a formal training session from Convergent Technology Solutions on how to teach the course. The new material is oriented on CRM in modern cockpits and includes excellent human factors based information concerning error reduction. As always your candid review of this program is encouraged.

I'm on short final for my HH60 T-course and have only a few short months left in this job. I tell everyone who asks it's the best aviation O-5 job in HQ, I believe Brian and Jeremy would echo that it is challenging but very meaningful work. On top of that you get to work with CZ, who is a wealth of knowledge and always keeps it fun. If you're a top performer, even if you're resistant to considering a HQ tour, but would like a job that promises the chance to make a difference every day, CG-1131 is a great choice. I have thoroughly enjoyed it.

You are doing great things in a challenging environment and I am grateful to have been associated with your efforts. We are about the business of continuing to build a world class safety organization that protects lives and resources while building better ways to get the mission done. There is still plenty to do.

God Bless and remember….
SNFS.

CDR Tom Farris
Chief Aviation Safety Division (CG-1131).

ANNUAL RECAP

We experienced two Class B Flight mishaps in FY07 (both HH65), but no Class A mishaps. See page 7 for a summary of the two Class B mishaps.

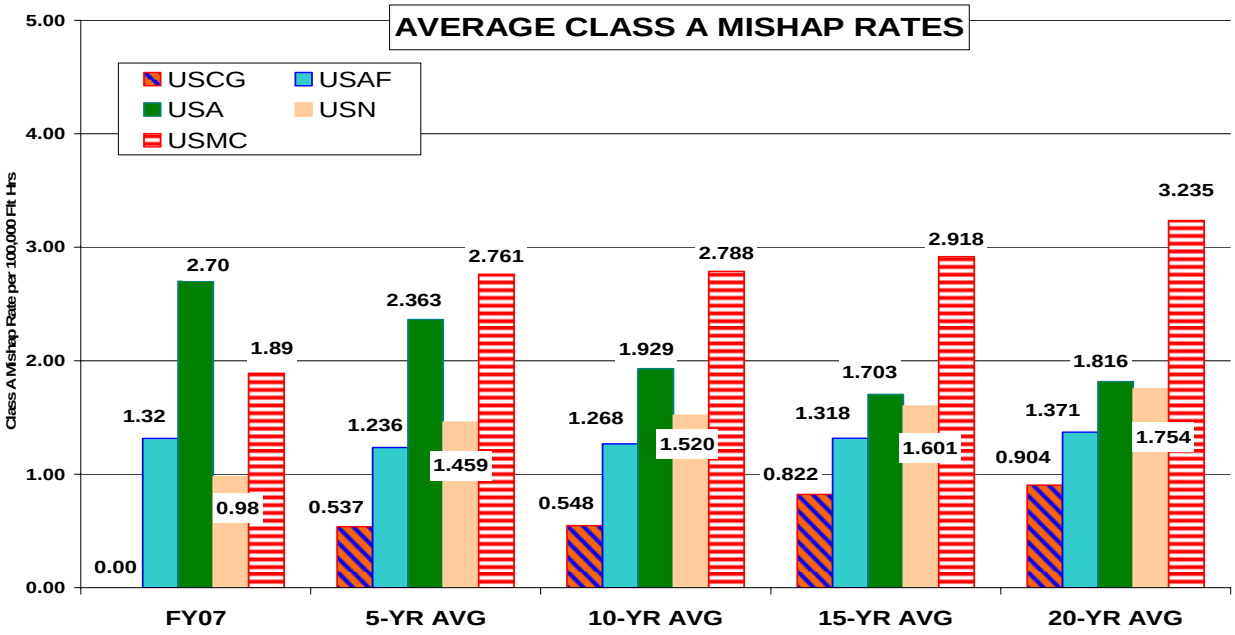


Figure 1

MISHAP CLASS COST BREAKDOWN

FY02-FY07

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

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 0.822 and 0.904 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 1990. Figure 1 (above) 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 for the sixth year in a row. Auxiliary Aviation flight hours and mishaps are not used in figuring CG mishap rates in this report. See page 10 for more on the AuxAir program.

Flight mishap costs for FY07 were $6,160,101, lower than the last three years in part because there were no Class A mishaps in FY07. The number of Flight mishaps (357) reported this year was also lower than the previous three years. The Flight mishap rate (0.30) and the mishap cost per flight hour were also down. Total Aviation mishap costs (Flight, Flight-Related and Ground) for FY07 were $7,605,571 lower than the last four years (see Figure 3 on page 5). Of the 512 aviation mishaps reported this year, 69 were Ground and 86 were Flight-Related.

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.

Resource Management (MRM) training and awareness continues to contribute to the increased reporting of minor incidents and keeping our losses as well as the Class ABC statistics down. MRM related mishap costs were more than double ($1,437,475) last year's (with no Class A or B mishaps involving MRM). Only ten of the 86 reported MRM events had mishap costs over $20,000, but accounted for 85% ($1,224,841) of the total MRM costs. These higher cost MRM incidents include five engine incidents totaling over $1,034,123. Two thirds of the MRM costs were from engine FOD mishaps. See page 13 and 14 for a discussion of the MRM program.

Table 2 below, displays the FY07 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. It has remained below 0.05 for 11 years now and below 0.10 since FY90. 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. 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 357 Flight mishaps reported, 87% (311) were below the Class C threshold of $20,000 and accounted for 14% of the Flight mishap costs. Similarly, looking at Total mishap numbers (Flight, Flight-related and Ground), only 12% (59) of the 512 mishaps reported costs above the $20,000 threshold and accounted for 87% ($6,590,214) of the Total Aviation mishap costs. Table 3 on page 6, compares our mishap numbers for the last 5 years.

Reported Class E mishaps decreased drastically this year, only 81 Class E mishaps in FY07 compared to hundreds each of last three years. However the cost of Class E mishaps still account for over half of the Flight (50%) and Total (54%) mishap costs. Only thirteen of the Class E mishaps had costs over $100,000, but these incidents represented almost half (44%)

FY07 GRAND TOTALS				
CLASS	# MISHAPS	COST	FATALS	INJURIES
A	0	$0	0	0
B	2	$882,467		0
C	48	$1,443,228		19
D	381	$1,202,142		12
E	81	$4,077,735		0
TOTAL	512	$7,605,571	0	31

TOTAL FLIGHT HOURS	118,416
CLASS A FLIGHT MISHAP RATE PER 100,000 FLIGHT HRS	0.00
FIGHT MISHAPS PER 100 FLIGHT HOURS	0.30
COST PER FLIGHT MISHAP	$17,255
COST PER FLIGHT HOUR	$52

FLIGHT MISHAPS			
CLASS	# MISHAPS	COST	INJURIES
A	0	$0	0
B	2	$882,467	0
C	26	$1,156,572	1
D	259	$1,060,323	0
E	70	$3,060,739	0
TOTAL	357	$6,160,101	1

GROUND MISHAPS			
CLASS	# MISHAPS	COST	INJURIES
A	0	$0	0
B	0	$0	0
C	9	$200,862	3
D	50	$129,736	7
E	10	$1,015,851	0
TOTAL	69	$1,346,449	10

FLIGHT-RELATED MISHAPS			
CLASS	# MISHAPS	COST	INJURIES
A	0	$0	0
B	0	$0	0
C	13	$85,794	15
D	72	$12,083	5
E	1	$1,145	0
TOTAL	86	$99,021	20

Table 2

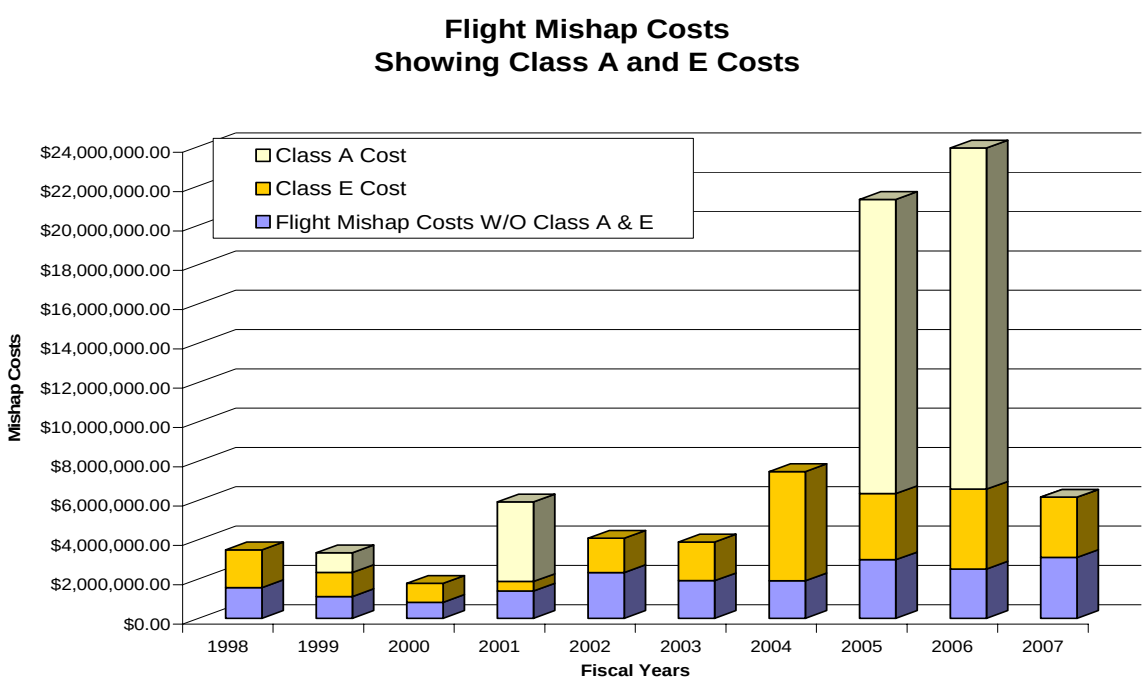
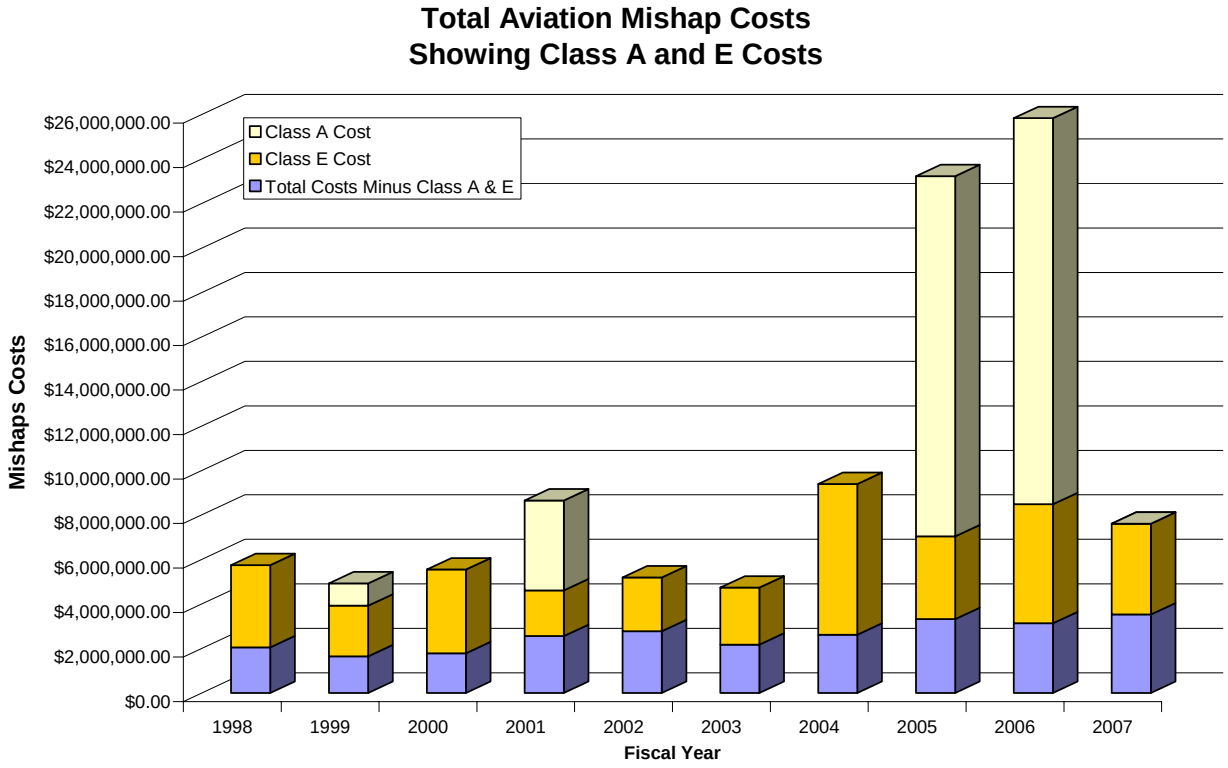


Figure 2



Note: Class E mishap cost are broken out to show the portion of Class E (engine only) mishaps costs related to the total mishap costs for each year.

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
FY03	202	$3,884,702	113,569	0.18	$19,231	$34	FY03	26	$1,431,049	113,469	0.02	$55,040	$13
FY04	680	$7,464,588	114,870	0.59	$10,977	$65	FY04	24	$1,147,984	114,870	0.02	$47,833	$10
FY05	703	$22,537,447	114,338	0.61	$32,059	$197	FY05	41	$18,437,475	114,338	0.04	$449,695	$161
FY06	532	$23,923,329	110,634	0.48	$44,969	$216	FY06	35	$19,251,882	110,634	0.03	$550,054	$174
FY07	357	$6,160,100	118,413	0.30	$17,255	$52	FY07	28	$2,039,028	118,413	0.02	$72,822	$17

Table 3

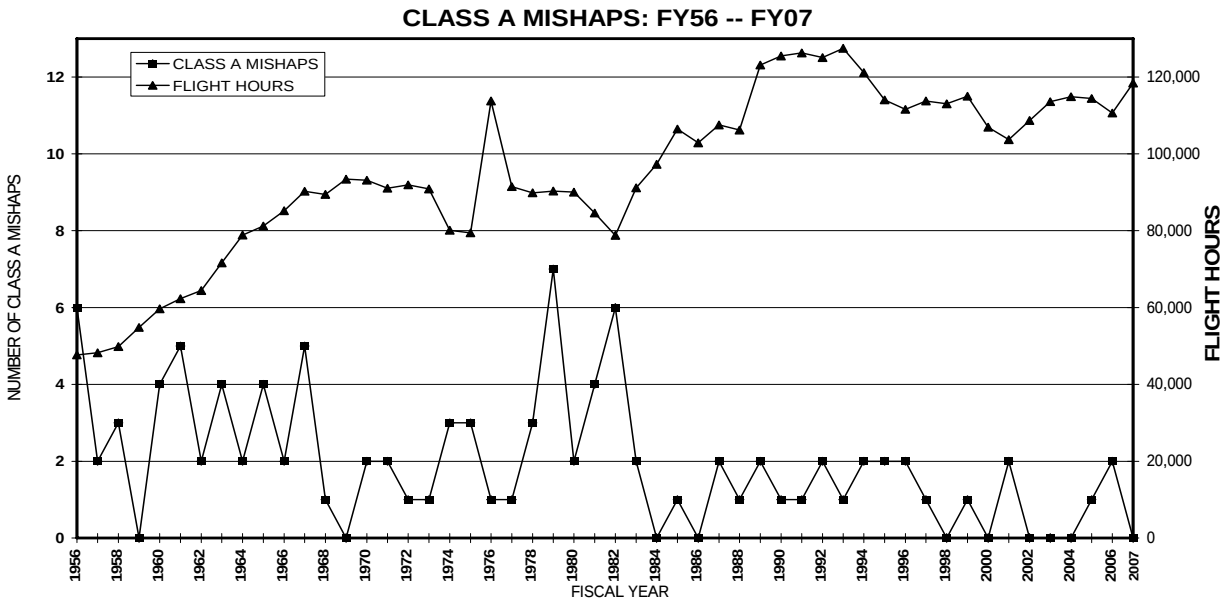


Figure 4

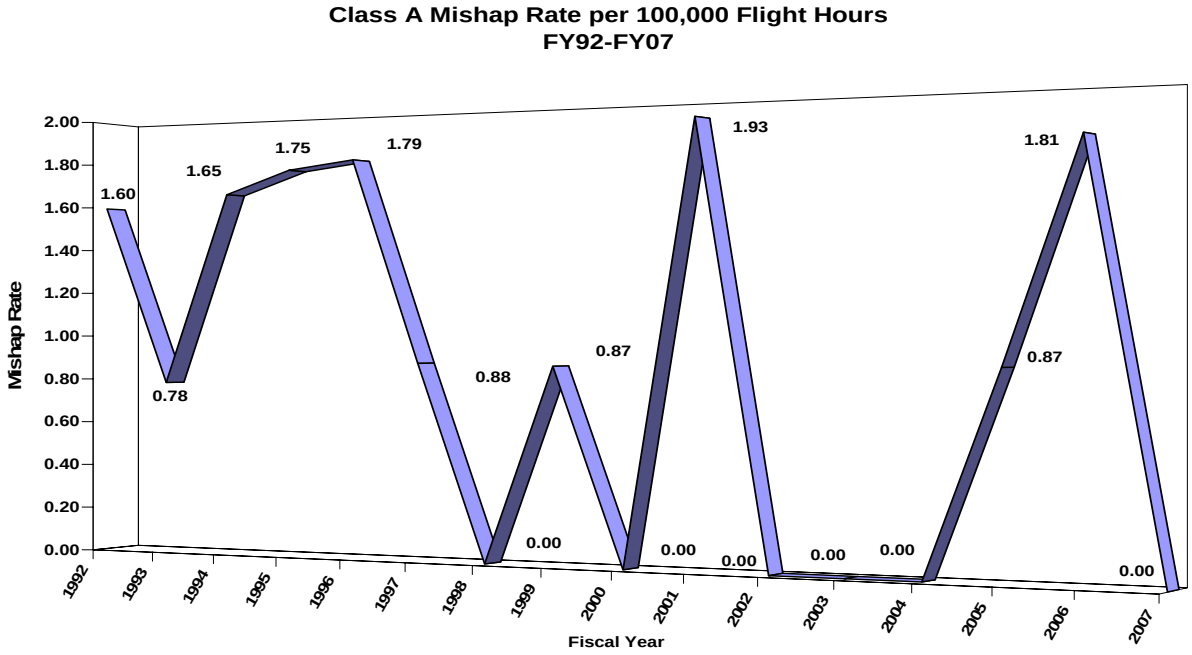


Figure 5

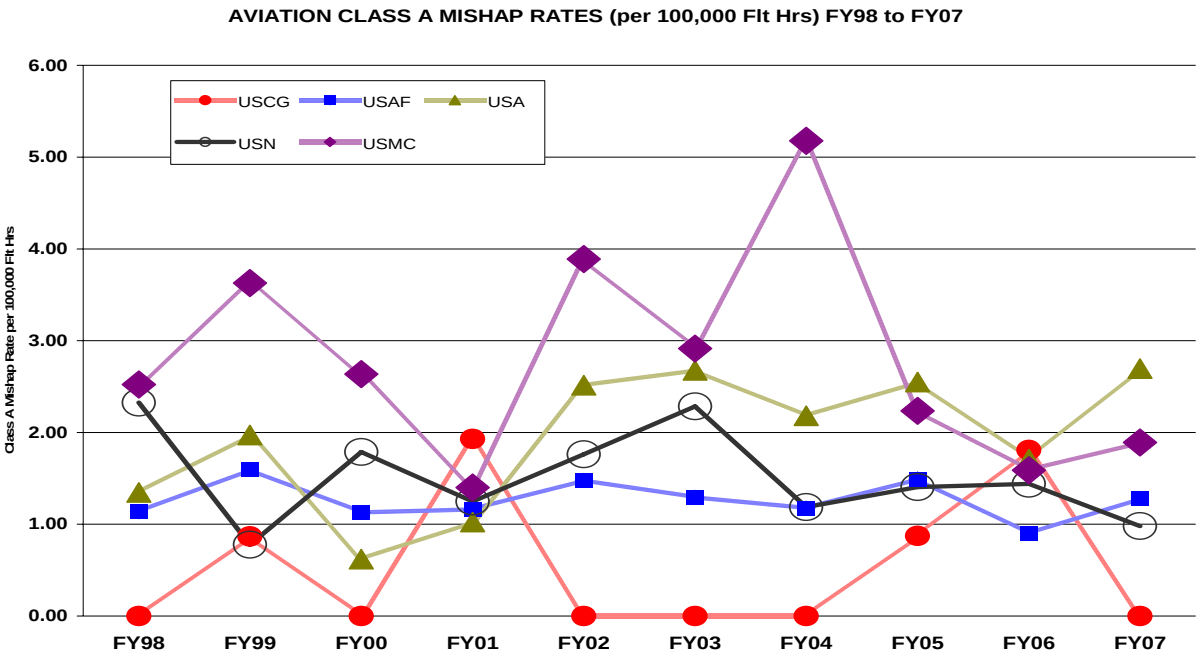


Figure 6

($3,360,488) of the Total Aviation mishap costs for FY07 and 82% of the total Class E costs. Many of these incidents would have been reported as Flight-Related mishaps before we added the Class E mishap category in FY02.

Figure 4 on page 6, displays our Class A Flight mishap history along with total flight hours since 1956. Also on page 6, 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.

FY07 CLASS B MISHAP

NOLA CG6589 Gear Collapse

CG6589 was on deck at home unit disembarking passengers, when the right main landing gear strut collapsed into the wheel well as a result of the hydraulic strut actuator suffering a mechanical failure. The PAC had the collective locked and the landing gear pinned down when the incident occurred, the main rotor system was in the continuous operating range. The aircraft was shutdown and everyone egresses without injuries. Initial onsite investigation revealed that the actuator rod itself fractured approximately one inch inside of the actuator housing. The actuator assembly was sent to ARSC for analysis.

Lessons learned from this mishap: Units should reemphasize the risks associated with ramp evolutions and procedures especially when non aviation person will be involved. Units should review and discuss general safety precautions associated with operating in and around aircraft; this includes the importance of maintaining positive control of unfamiliar personnel during embarkation and debarkation.

Savannah CG3553 ULY

6553 experienced an uncommanded left yaw (ULY) while in a pedal turn. After completing patrol of the local area and all of the maneuvers required for an RT-1 (day pattern work) flight, crew commenced hover practice over the runway. While completing the third 360 degree pedal turn, (the second to the left), with AFCS and manual trim secured and NR in high, the aircraft entered a rapid left yaw as the tail came through the wind line. The aircraft made three complete turns with the right main and nose landing gear contacting the runway prior to full

recovery. Crew egressed without injuries, overtorque and hard landing inspections were completed. Aircraft returned to service after replacing the NLG, right MLG and several other components due to signs of stress or overtorque.

Lessons learned from this mishap: Once a crew identifies something as a higher risk, it is imperative, they take the time to sufficiently address mitigation strategies. The risk associated with realistic hover training should be evaluated against the environmental conditions and the experience of the aircrew. As is always the case, communications are key. All crews are reminded of the importance of using operational risk management principles to properly evaluate and brief all flight evolutions. All crews should pre-brief ULY recovery procedures prior to commencing any training maneuvers in flight regimes susceptible to ULY.

Crash crew at this airfield is 24/7, however, the airfield tower was closed at the time of the incident, and nobody was visually monitoring the entire runway. As a result of this investigation, Base Ops has determined that no unit is allowed to complete practice emergency procedures requiring crash crew while the tower is closed.

FLIGHT DATA RECORDERS/MFOQA

(Military Flight Operation Quality Assurance)

The Voice and Flight Data Recorder (VFDR) recapitalization program reached a long awaited and crucial milestone this year. No longer is the concept of easily downloading flight data on a routine basis an abstract or notional objective. It is a very real capability poised to become an integral part of how this organization manages some maintenance, operations, training, and safety functions. It will soon be hard to believe how we did business without it. In the simplest terms, Phase I of the VFDR modernization program (acquisitions) is nearing completion and Phase II (management of the data and systems) is just getting started.

Before going into the specific accomplishments of this past year and explaining where the program will be going in the near future, it is important to thank Mr. Tony Simpson and CDR Jeff Kotson for so diligently managing the acquisitions portion of the program. Without their foresight, dedication and attention to detail, the program would not be where it is today; ready to provide almost real time flight data on demand, to users across the aviation community.

On a macro scale, the capability to download the flight data at the unit level will be possible for the entire rotary wing community before the end of this summer. The fixed wing community follows close behind on a PDM cycle basis. Specific community milestones are as follows:

HH65: The K3 VADR is installed on the vast majority of HH65 and MH65 aircraft. Installations occur during PDM or through an ARSC team on a unit basis. All aircraft will be outfitted with the new VADR by the end of the summer.

HH60: The prototype is being fielded. Once the evaluation is complete they will be rapidly deployed since the installation is a simple unit level TCTO.

HU25: Installation of Flight Data Acquisitions Unit (FADU which converts analog system information into digital format) will start in January 2008 during the PDM cycle and will be several months before the capability is completely available.

HC-130H: Installation of FADUs will also be on a PDM cycle basis and will be several months before achieving full operational capability. The good news however, is that the prototype of the new digital engine and performance cockpit displays that comes with the upgraded VFDR is going very well. CGAS Sacramento received the first aircraft with the new Engine Indicating Display System (EIDS) and is receiving excellent reviews. The EIDS was a bonus to the delivery of the FADU. The display will be in the same format, but on a digital screen that has the option of easily changing into other format.

In March 2007, a working group was chartered by the Tri-P to begin the test and evaluation process for the unit level deployment of the new capability and to gather all possible uses of the flight data. CGAS Atlantic City was selected as the site for the test, and they have been collecting flight data on a routine basis since the middle of last summer. Valuable flight information has helped in several difficult to diagnose maintenance discrepancies, resulting in a significant reduction in troubleshooting man hours. The flight data has also been instrumental in the initiative to develop a baseline mission profile for both new and legacy HH65 missions. This will allow the ARSC Test Management Oversight Team (TMOT) to formulate factual based models to help answer difficult questions on structural and component lifecycle issues.

As part of the test and evaluation, CGAS Atlantic City was provided with the software needed to view the flight data as well as permission to use

the data at the unit level within prescribed guidelines. It is anticipated this same capability will be available to all units in some form in the future, but will be dependent on the outcome of the test and evaluation and the approval of the program structure.

Additional strides have also been made in the capability of the ARSC Safety office's "Crash Lab" to animate flight data without the need to outsource the task to the USAF. This is anticipated to be available before the end of February 2008.

In conclusion, one of the biggest bright spots for the program's acceleration is the effort to hire contract support. Before the end of the winter, it is anticipated that three people will be hired for managing the overall program, analyzing the flight data and developing the policy and supporting infrastructure that will be need to manage a fully developed program.

Until the fleet wide program is deployed, it should be noted that the new systems will still allow each unit to download the flight data using a much simpler procedure (vice removing the entire VFDR unit for shipping) to send electronically to ARSC for analysis. Interested units are highly encouraged to request flight data when needed to support the greater initiative of defining all of the possible ways the data can be used.

AVIATION SAFETY TRAINING

Fiscal year 2007 was a great year for the AFC-56 Aviation Safety Training Program. In addition to the 68 commercial quotas available for various aviation safety training specialties, we were able to obtain additional funds to put on two separate Coast Guard exclusive courses for another 60 people. (Helicopter Accident Investigation Course in May and Human Factors in Accident Investigation Course in September) The increased number of quotas allowed not only Flight Safety Officers to attend the valuable training, but also opened up opportunities for other members of the unit's permanent mishap analysis board. Spreading the base of knowledge for accident prevention and investigation to more personnel will only help to provide a more prepared and competent workforce.

To build on the momentum of the past few years, FY08 promises to be an even better one as the process to institutionalize the quota increase is already underway. The cost benefit analysis & justification package for the new program was recently approved by the training and funds managers. The only thing remaining to do as the New Year starts is to complete the contracting requirements. As you can imagine lumping a couple hundred thousand dollars into one single purchase comes with a few administrative hurdles, but in the long run it will free up a tremendous amount of man hours that was devoted to the former process for training quota management. Hopefully before this report is published, at least one of the new courses will have been delivered.

In the future we will focus on a longer period of time outside of the summer months to deliver the training, but due to the delays in making the program change this year, the target training months for Aviation Safety will be March, April, May and September. Anticipate one course for up to 30 people each month with a possible fifth class in September, if additional funds are obtained at the end of FY08.

In the shift from a single Coast Guard member's attendance at a commercial course to a course delivered exclusively for CG personnel, each course will contain a fusion of commercial and military standards and examples with Coast Guard policies, procedures and case studies. The following is a brief description of each of the four courses to be delivered:

AVIATION HUMAN FACTORS
COURSE CODE: 341226
PURPOSE: Provide the CG accident investigator with training on subjects recommended in FAA Advisory Circular 120 51A (problem solving/decision making, judgment training, situational awareness, procedural compliance), and topics recommended in ICAO Human Factors Digest. Emphasis will be placed on using the Human Factors Analysis and Classification System (HFACS), which is required for documenting all Class A and B mishaps.
PREREQUSITES: Pilots and aircrew assigned to aviation coded billets that may be assigned to a Commandant Mishap Analysis Board for accident investigation purposes.
LOCATION: Aviation Training Center, Mobile, AL or Aviation Technical Training Center, Elizabeth City, NC

AIRCRAFT ACCIDENT INVESTIGATION
COURSE CODE: 341220
PURPOSE: Provide the CG accident investigator with training on all aspects of the investigation process, to including NTSB, CASB & ICAO procedures. Investigative techniques will focus on fixed wing aircraft with topics to include jurisdictions, wreckage patterns, crash dynamics, blood-born pathogens exposure, accident

photography, control and recording systems, structural, technological and human aspects.
PREREQUSITES: Pilots and aircrew assigned to aviation coded billets that may be assigned to a Commandant Mishap Analysis Board for accident investigation purposes.
LOCATION: Southern California Safety Institute and Crash Lab, Torrence, CA.

HELO ACCIDENT INVESTIGATION
COURSE CODE 341230
PURPOSE: Provide the CG accident investigator with investigative skills and techniques specific to helicopter operations and accidents to include rotor systems, controls, aerodynamics, materials, wreckage patterns, crash dynamics, accident photography, control and recording systems, structural, technological and human aspects.
PREREQUSITES: Pilots and aircrew assigned to aviation coded billets that may be assigned to a Commandant Mishap Analysis Board for accident investigation purposes.
LOCATION: Southern California Safety Institute and Crash Lab, Torrence, CA.

RAMP AND MAINTENANCE SAFETY
COURSE CODE 250551
PURPOSE: Provide unit level maintenance supervisors with all aspects of aviation safety program management as they relate to flight operations and aviation maintenance.
PREREQUSITES: Unit Flight Safety Officers or unit level maintenance supervisors.
LOCATION: Aviation Training Center, Mobile, AL or Aviation Technical Training Center, Elizabeth City, NC.

AVIATION SAFETY ADVANCED EDUCATION

Another significant milestone for the Coast Guard's Aviation Safety Program will be reached in AY09. In recognition of the rapid developments in aviation and the positive impact of Aviation Safety advanced education graduates, CG-1131 will be gaining an additional billet to be assigned in AY09. With five billets now identified for pay back tours, as more officers graduate from the program there will be ample opportunity to use that knowledge for all aviation's benefit. Another sign of program vitality is the promotion of program graduates. Paving the path blazed by CDR Kotson, LCDR Nygra's selection to CDR is evidence the organization views safety as a valid specialty within aviation. Now it is up to LCDR Chase and LCDR Smith to continue the trend and prove safety's intrinsic value.
LCDR Roberto Torres started classes at the Embry Riddle Daytona Campus this past fall and LCDR Clint Schlegel (newly selected) will start next fall (location TBD). The FY10 allocation for the Aviation Safety Training Allocation billet (TAB) was recently approved and the solicitation message and guidelines for applicants should be released early this spring. Due to various competing resources, CG-1131's request for two TABs was not approved. However, based on demonstrated need the program was placed number six on the "stand-by" list. Last year the Training and Education office dipped to number twelve on the "stand-by " list, so, this year's alternate has a "reasonable expectation" of being called for a last minute decision. The competition for the safety TAB has been steadily increasing as well and is another positive sign in the health of the CG aviation safety culture. Stand by . . .

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

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 (sel) Tony Nygra
LCDR Chris Chase
LCDR Roberto Torres
LCDR Clint Schlegel

AUXILIARY AVIATION MISHAP REVIEW POLICY

The Auxiliary is an integral component of team Coast Guard that actively assists aviation units in both support roles and direct aviation operations. Auxiliarists, like their active duty counterparts are subject to mishaps, and in order to promote aviation safety actively participate in the Aviation Safety Program including mishap reporting.

The CG aviation mishap message is more than just a means of reporting an event for statistical data gathering, it is one of the most important avenues available to spread the word and help keep safety awareness alive. Each message helps raise safety awareness and serves to promote mishap prevention. Most Auxiliarists do

not have access to the Coast Guard Message System (CGMS) and therefore do not have ready access to mishap reports. Recently, a process was developed to provide Auxiliary aviation mishap information to Auxiliarists in a timely manner. The newly developed process allows the transmission of an abbreviated mishap report generated from the Coast Guard **AV**iation **I**ncident and **A**ccident **TR**acking **S**ystem (**AVIATRS**).

The abbreviated report contains only factual data and has been approved for release outside the Coast Guard system. Abbreviated messages will be distributed to Auxiliarists via the Auxiliary Aviation Standardization Team and the Auxiliary District Flight Safety Officer (DFSO). Auxiliarists are encouraged to view CG auxiliary aviation mishap messages in their entirety and these should be available for review through the Air Station Flight Safety Officer (FSO), due to the possible privileged information content of a mishap message they can not be released outside the Coast Guard system.

As mishap messages may contain privileged information and are classified For Official Use Only (FOUO) they can not be transmitted outside protected Coast Guard systems. An understanding of the concept of privilege as used in the Safety Program is essential for the proper investigation of mishaps. If the causal factors and the sequence of events that culminated in a mishap are to be determined and similar mishaps prevented, it is imperative that all parties involved in the mishap, the investigation and review process, and the distribution and handling of mishap messages or reports honor the privileged nature of the information**.** These concepts are critical to the success of the Safety Program. The concept of privilege is intended to prevent the unnecessary disclosure of privileged safety information outside the safety program. To promote conjecture, speculation and frank discussions by safety investigators, safety investigation boards, endorsers and reviewers of safety investigations, the USCG will not disclose privileged safety information. Information obtained during a mishap investigation is for the sole purpose of mishap prevention and must be protected.

DFSO and Air Station FSOs are encouraged to work cooperatively to facilitate the viewing of aviation mishap messages. DFSOs should coordinate regular visits to air stations and facilitate FSO support during Aux training events to provide briefings and viewing of mishap messages.

While Auxiliary review of mishap messages is authorized and encouraged, accountability of these documents must be emphasized. All members of team Coast Guard are reminded that these documents should be controlled and protected from unauthorized copy or distribution in order to maintain the integrity of the Aviation Safety Program and the continued promotion of aviation safety.

(Special thanks to CDR Val Welicka and LTJG Shannon Scaff CG-54212 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 35 reported aviation related injury mishaps in FY07 involving injury to 35 aviation personnel, one boat crew and two “fast ropers”. Over two thirds of these injuries involved improper procedures, the wrong tool or improper/poorly designed equipment. Inattention, complacency, awareness and motivation were factors in at least half of these incidents as well, and 45% listed lack of training or experience as a factor. Comms and passdown was mentioned in at least a third of the incident as was supervision and QA.

Reported lost work time from these injury incidents totaled nine days hospitalization, 170 loss work days and 138 days of restricted duty. Incidents involved cuts to fingers, hands, faces, legs and arms; as well as bruises, strains or sprains to shoulders, legs, knees, arms, backs and necks. Sixteen people were hurt during hoisting ops (ten Rescue Swimmers, two boat crew, two Flight Mechs and two fast ropers).

There were 3 incidents involving personnel being sprayed by fuel or hydraulic fluid. While resulting in no lost worktime, a trip to the hospital might have been adverted had proper PPE been worn in all three incidents. One C130 and two HH65 crews reported being lased by ground lasers. Thee were no reported cases of static discharge shock during hoisting, this year.

Birdstrikes

There were only ten birdstrikes reported in FY07 with associated damage costs of $147,808. Five reports involved no or minimal airframe damage. Figure 7 shows breakouts of the FY07 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). The Aux Air also reported 3 bridstrikes (not included in graphs), all during the day.

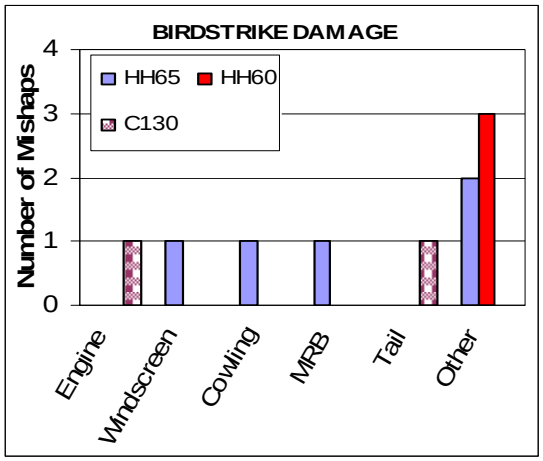


Figure 7

Near Midair Collision

There were six near midair collisions (NMAC) reported in FY07. NMAC's involved four HH65, one Falcon and one HH60. NMAC involved three civil and two military aircraft. In additional the Aux Air reported three NMAC in FY07. Almost all reported NMAC were in the daytime during training mission.

FOD Mishaps

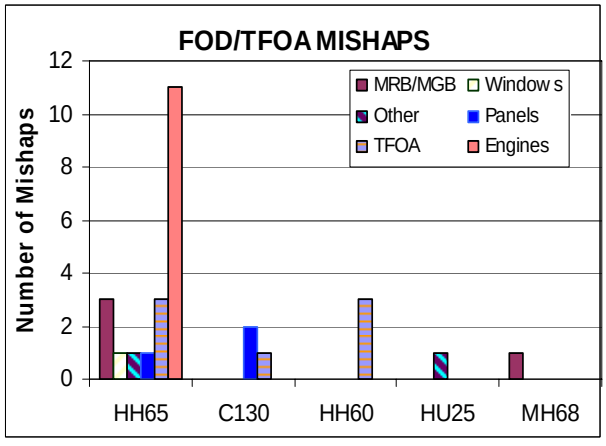


Figure 8

The twenty-eight Foreign Object Debris (FOD) and Things Falling Off Aircraft (TFOA) incidents reported this year resulted in $958,110 in damage. Figure 8 shows a breakdown of the reported FOD/TFOA incidents. Foreign object debris mishaps involved one windscreen, four rotor systems, and eleven engines. Twenty HH65's, three C130's, one HU25, three HH60's and one MH68 suffered FOD damage this year. Parts, tools , plugs, flags or other maintenance supplies left in the aircraft accounted for eleven mishaps and TFOA and departing panels account for seven mishaps and $146,829 of mishap costs. (see Figure 9).

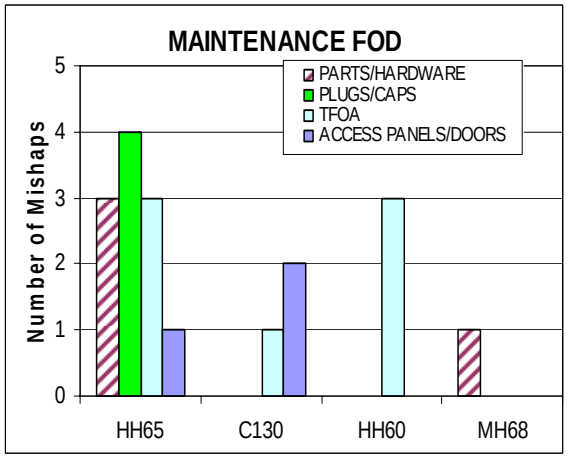


Figure 9

ENGINE MISHAPS

Class E mishaps accounted for only 16% (81) of the reported Total Aviation (ground, flight, flight-related) mishaps but 54% ($4,077,735) of the Total mishap costs in FY07. Engine mishaps historically account for half the mishaps cost each year. The number of Class E mishaps has dropped significantly since completing the HH65 re-engining.

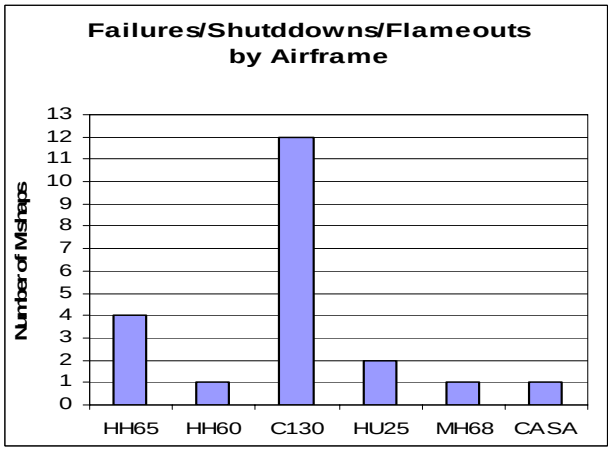


Figure 10

There were 21 engine inflight shutdowns, failures or flameouts reported in FY07, resulting in $473,097 of mishap costs. Figure 10 shows a breakdown of these 21 mishaps by aircraft type.

Figure 11 shows a breakdown of all Class E mishaps.

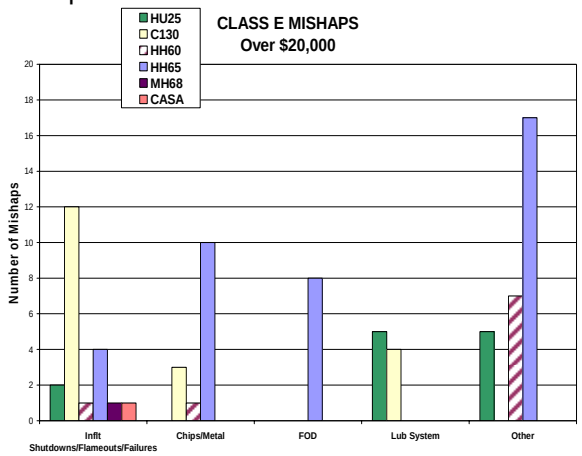


Figure 11

SHIP-HELO MISHAP REVIEW

There were twenty-three mishaps totaling $198,667 reported in FY07 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 14 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 4.7 % of the mishaps and 3.0% of the total mishap costs.

GROUND MISHAP REVIEW

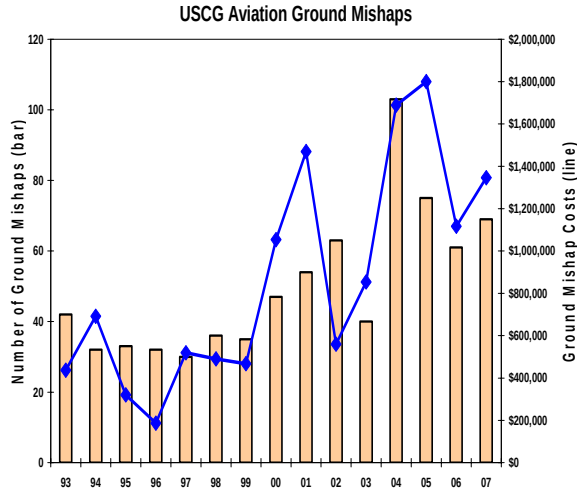


Figure 12

Sixty-nine aviation ground mishaps were reported in FY07. Both the number and the cost of ground mishaps rose slightly this year. Total cost for these mishaps was $1,464,490. (See Figure 12). Ground handling (ground support equipment (GSE), towing, blade folding, fueling, washing or jacking) accounted for 52% of mishaps (36), and 16% of the costs ($233,253).

Virtually all of 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 65% (45) of the ground mishaps. Insufficient Q/A, review or supervision was cited in 29 (42%) of the mishaps. Thirty-one (45%) of the ground mishaps listed awareness, complacency or inattention as a factor. Of the 69 ground mishaps reported this year, 57 were below $20,000 in cost, totaling $148,419. Conversely, only two ground mishaps reported costs in excess of $100,000 for a total of $793,828 (both engine mishaps).

WEATHER RELATED MISHAPS

Weather contributed to twenty-three reported mishaps resulting in $545,825 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

Eighty-six mishaps listed some type of maintenance human factor as a cause. These mishaps included incomplete passdown, poor communications, inappropriate procedures, improperly followed procedures, a lack of supervisor review, or Q/A problems (Figure 13 on the next page). The wrong part, poor equipment/part design, cannibalization or lack of parts was listed as a cause in over half (46) of the mishaps. Fourteen (18%) mishaps were the result of FOD or poor tool control. Culture, norms or habits was listed as a factor in twelve (15%) of the mishaps. Sixty-seven (83%) of the mishaps involved incomplete, improperly followed, work arounds, inappropriate or unavailable procedures.

Inattention, complacency or awareness was a factor in fifty-six (70%) of the incidents reported. Q/A review or supervision was cited as a cause factor in 56% (45) of the mishaps. Some form of inexperience, lack of training, or staffing issues were factors in 28% of the incidents. Workload, feeling rushed, or lack of resources was mentioned in 50% (40) of the mishaps. Poor passdown, incomplete checklist, or poor

communications were also listed in 28% of the mishaps. Ground handling, jacking or towing were listed in 36% (29) of the reported mishaps.

MAINTENANCE RESOURCE MANAGEMENT (MRM)

Reported MRM related mishaps increased from 74 in FY06 to 86 in FY07. The total cost of these mishaps was $1,437,475. This is a substantial increase over the FY06 associated cost of $683,959 (see Figure 14 below). However, two of those events involved engines (one HU-25 and one HH-65) and cost a combined $793,828. Without those anomalies, the MRM related cost to the Coast Guard was $643,647. The adjusted cost per event was $7,662; this is a decrease over FY06 average cost of $9,243 per event. Perhaps most important are the pre-MRM and post-MRM numbers. From FY95 to FY00, before MRM's introduction, the Coast Guard recorded 431 events totaling $5,416,699. The per event cost averaged $12,568. Following MRM's implementation in FY01, the FY01 to present reported events are 577 for a total cost of $6,029,076. The post-MRM per-event average

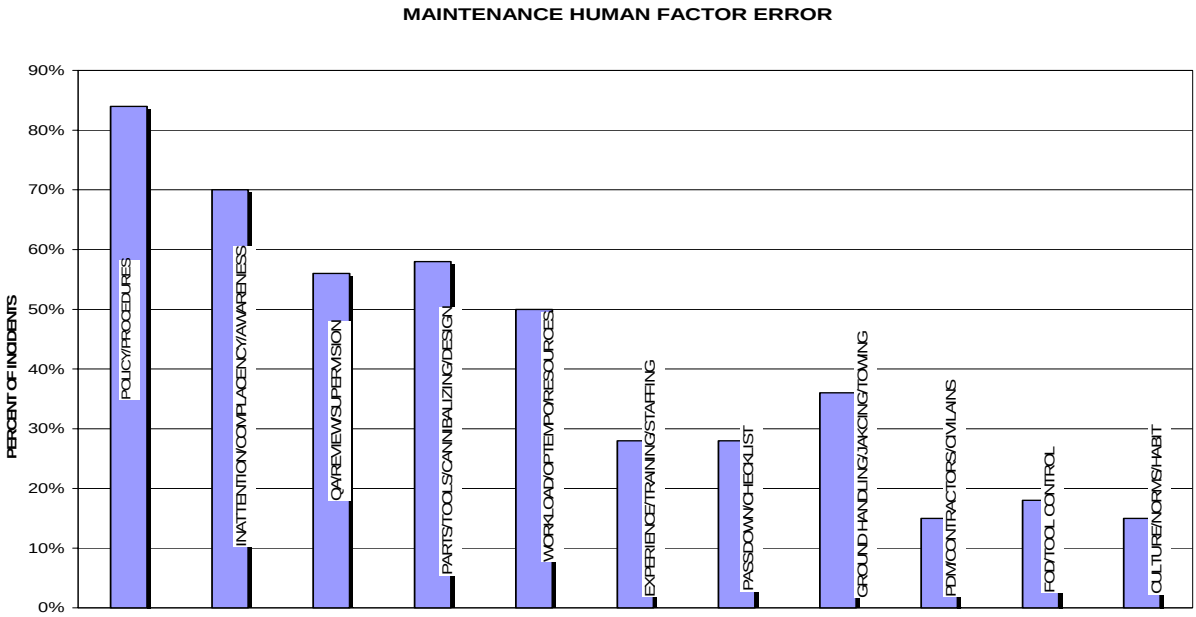


Figure 13

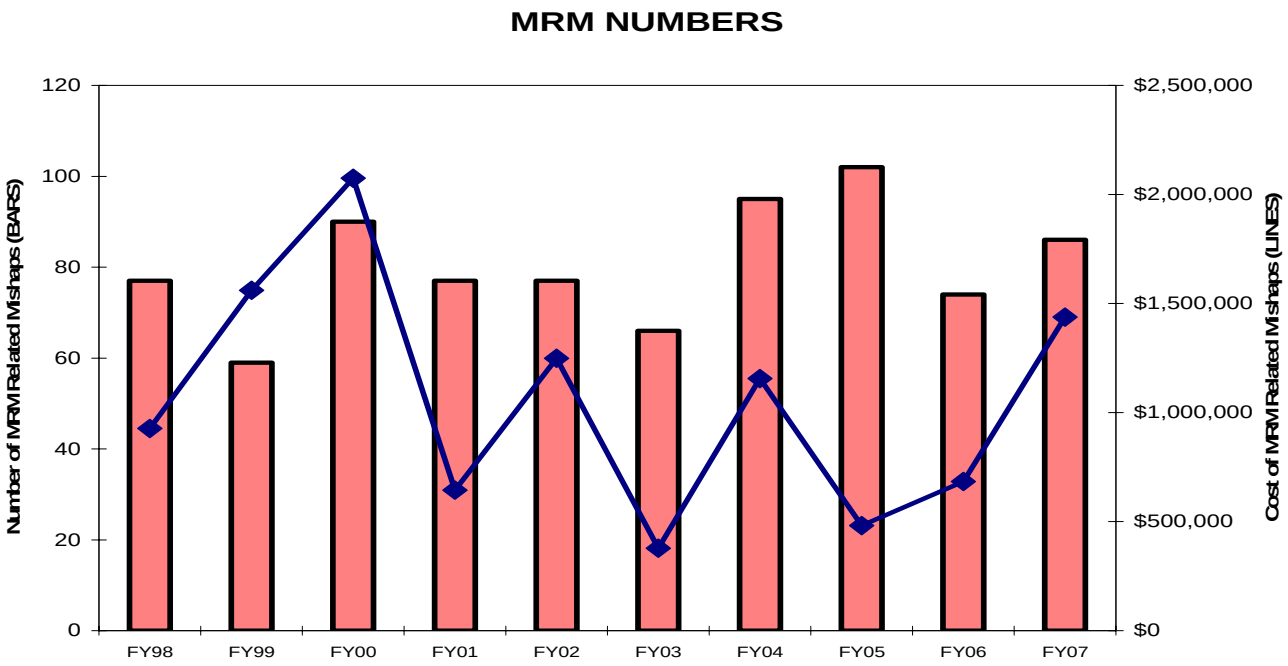

MRM NUMBERS
Number of MRM Related Mishaps (BARS)
Cost of MRM Related Mishaps (LINES)
120
100
80
60
40
20
0
$2,500,000
$2,000,000
$1,500,000
$1,000,000
$500,000
$0
FY98
FY99
FY00
FY01
FY02
FY03
FY04
FY05
FY06
FY07

Figure 14

cost is currently $10,449; while pre-MRM each event was averaging $12,568. The two numbers, by themselves, are not significant. However, they descriptively show a decrease in the cost associated with MRM events.

We believe this is further evidence that MRM training continues to drive the cultural change in which mistakes and near misses are more freely admitted and that the lessons learned from these incidents are acted on earlier resulting in changes to maintenance norms, procedures and practices before they injure someone or become high-dollar mishaps.

The main focus of MRM is a two-pronged attack that mirrors that of CRM. ATTC's cadre of MRM Instructors continues to deliver MRM Initial training to each "A" School student. They also conduct an annual course to qualify unit MRM Facilitators who are responsible for conducting regular MRM refresher training at the unit level for all of the aviation maintenance personnel in the Coast Guard.

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.

SUMMARY INFORMATION

Tables 5 and 6 on the next page, display mishap summary information for FY07 associated with each of the four major airframes. The pie charts on the next page, (Figures 15, 16 and 17) illustrate the percentage of total mishaps, flight hours and total mishap costs for each airframe. As expected the percentages for each factor is roughly the same for per airframe.

AIRFRAME REVIEW

Pages 17-20 contain mishap data for each major aircraft type. In reviewing these pages, it should be noted that with only seventeen 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. Note the ABC Flight mishap rate for each airframe and CG aviation is fairly stable with a slight downward trend. This is the eleventh year that the ABC mishap rate has been under 0.05.

FY07 FLIGHT MISHAP PERCENTAGES				
CLASS	MISHAPS	% of TOTAL MISHAPS	COST	% of TOTAL COST
A	0	0%	$0	0%
B	2	1%	$882,467	14%
C	26	7%	$1,156,571	19%
D	259	73%	$1,060,323	17%
E	70	20%	$3,060,739	50%
TOTAL	357		$6,160,100	

Table 4

FY07 FLIGHT MISHAP PERCENTAGES						
AIRCRAFT	MISHAPS	% of TOTAL MISHAPS	COST	% of TOTAL COST	FLIGHT HOURS	% of FLIGHT HOURS
HH60	55	15%	$773,642	13%	25,165	21%
HH65	223	62%	$2,959,928	48%	54,138	46%
MH68	4	1%	$36,000	1%	3,446	3%
C130H	42	12%	$1,166,763	19%	19,366	16%
C130J	3	1%	$13,278	0%	1,247	1%
HU25	29	8%	$1,208,689	20%	13,624	12%
C37A/C143	0	0%	$0	0%	1,063	1%
CASA	1	0%	$1,800	0%	366	0%
TOTAL	357		$6,160,100		118,416	

Table 5

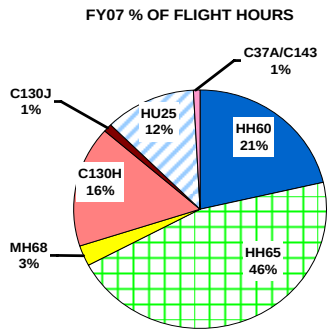


Figure 15

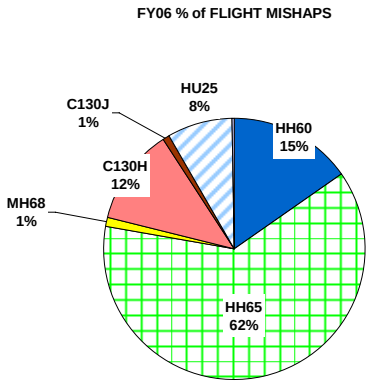


Figure 17

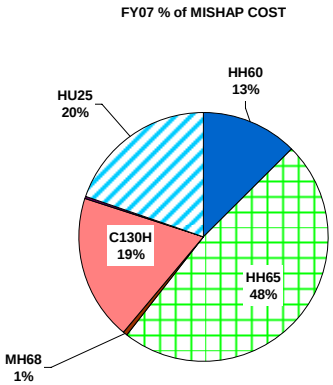


Figure 16

HH60J MEDIUM RANGE RECOVERY (MRR)

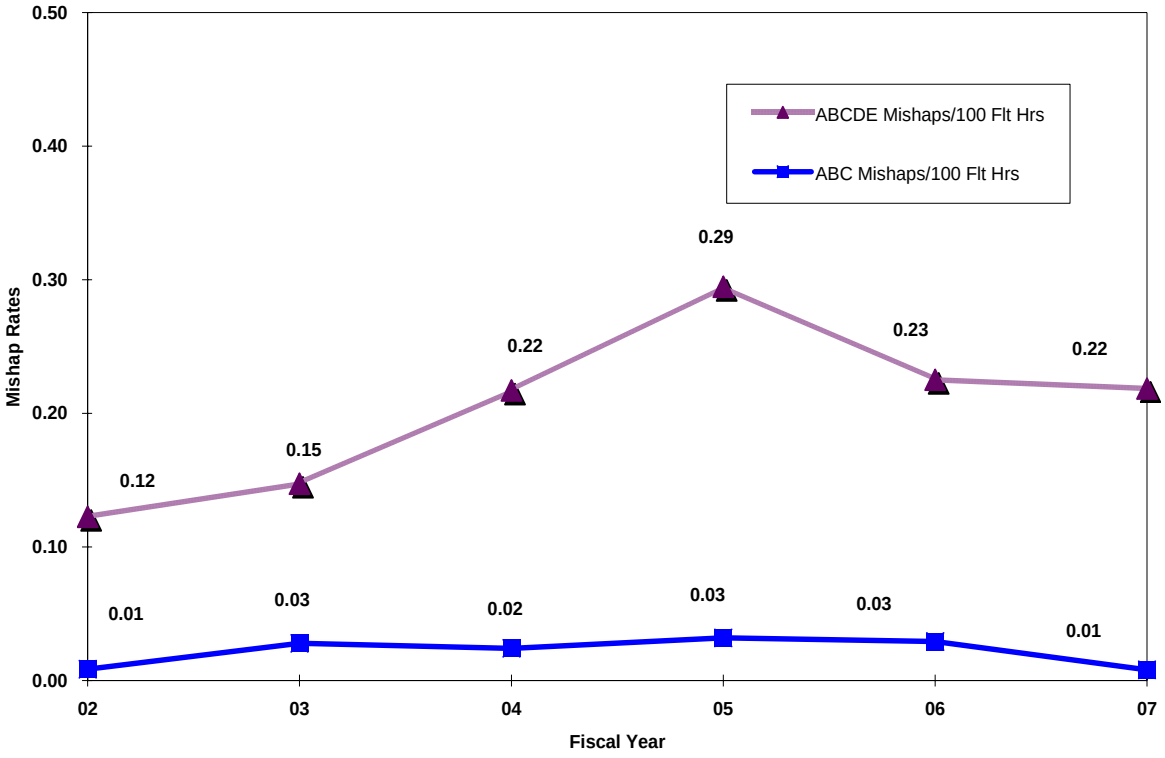
The HH60J flew 25,162 hours (21% of the total flight hours) and reported 55 flight mishaps (only 15% of total reported flight mishaps). The HH60J had a mishap rate (0.22), down again this year as was its ABC rate (0.01), the lowest yet. The Jayhawk had the lowest cost per flight hour ($31) of all the major airframes. The HH60J mishap cost was down from the last two years and accounts for only 13% of the total FY07 Flight mishap costs. Of the 55 HH60J flight mishaps reported 49 reported costs less that $20,000 (the Class C dollar threshold) and 28 cited costs of less than $1,000. Of the seven Class E mishaps only three reported cost over $20,000.

HH60J Flight Mishaps for FY07

Aircraft	Class	No. Mishaps	Cost
HH60J	A	0	$ 0
	B	0	$ 0
	C	2	$ 54,779
	D	46	$ 423,942
	E	7	$ 294,921
Totals		**55**	**$ 773,642**

Table 6

HH60 Flight Mishap Data



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
FY03	37	$1,370,502	25,098	0.15	$37,041	$55	FY03	7	$508,426	25,098	0.03	$72,632	$20
FY04	54	$682,270	24,869	0.22	$12,635	$27	FY04	6	$347,958	24,869	0.02	$57,993	$14
FY05	74	$15,923,313	25,100	0.29	$215,180	$634	FY05	8	$15,371,712	25,100	0.03	$1,921,464	$612
FY06	54	$1,267,832	23,949	0.23	$23,478	$53	FY06	7	$340,835	23,949	0.03	$48,691	$14
FY07	55	$773,642	25,165	0.22	$14,066	$31	FY07	2	$54,779	25,165	0.01	$27,389	$2

Figure 18

HH65 SHORT RANGE RECOVERY (SRR)

The HH65 flew 54,138 hours (the most hours flown) and represented 46% of the CG total flight hours. The HH65 reported 62% (223) of the mishaps, and 48% ($2,959,928) of the mishap cost. The Dolphin mishap rate (0.41) decreased again this year, and the lowest it has been in 4 years, but was still the highest of all the major airframes. Of the 223 HH65 flight mishaps reported in FY07, 198 reported mishap costs less than $20,000 (the Class C dollar threshold). The really good news for the HH65 is the decrease in Class E mishaps!

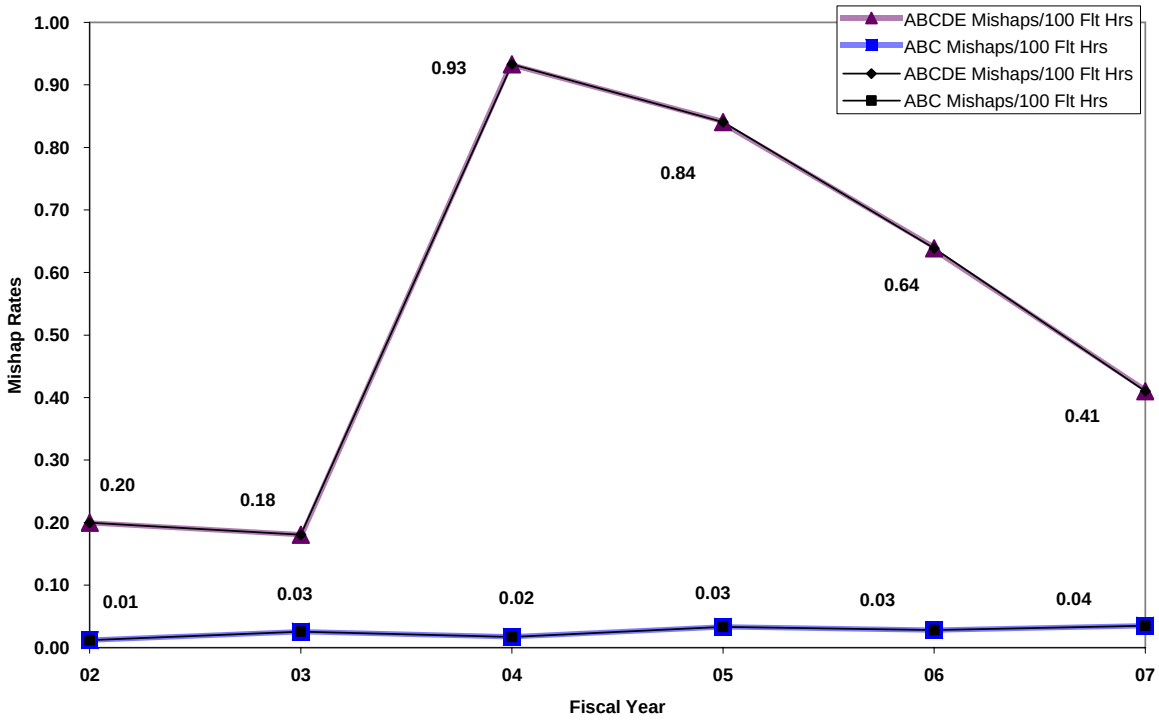
Twenty-four of the 31 Class E mishaps reported cost under $20,000 and only two Class E mishaps had cost over $100,000.

HH65 Flight Mishaps for FY07

Aircraft	Class	No. Mishaps	Cost
HH65	A	0	$ 0
	B	2	$ 882,467
	C	18	$ 910,302
	D	172	$ 439,040
	E	31	$ 728,119
Totals		**223**	**$ 2,959,928**

Table 7

HH65 Flight Mishap Data



HH65 ABCDE	NO. MISHAPS	COST	FLIGHT HOURS	MISHAPS/ 100 FLIGHT HOURS	COST/ MISHAP	COST/ FLIGHT HOUR	HH65 ABC	NO. MISHAPS	COST	FLIGHT HOURS	MISHAPS/ 100 FLIGHT HOURS	COST/ MISHAP	COST/ FLIGHT HOUR
FY03	92	$1,097,536	51,019	0.18	$11,930	$22	FY03	14	$722,489	51,010	0.03	$51,606	$14
FY04	487	$4,740,167	52,196	0.93	$9,733	$91	FY04	9	$377,962	52,196	0.02	$41,996	$7
FY05	431	$4,292,923	51,276	0.84	$9,960	$84	FY05	17	$1,930,010	51,276	0.03	$113,530	$38
FY06	319	$4,770,714	49,962	0.64	$14,955	$95	FY06	14	$3,148,732	49,962	0.03	$224,909	$63
FY07	223	$2,959,928	54,138	0.41	$13,273	$55	FY07	20	$1,792,769	54,138	0.04	$89,638	$33

Figure 19

HC130H LONG RANGE SEARCH (LRS)

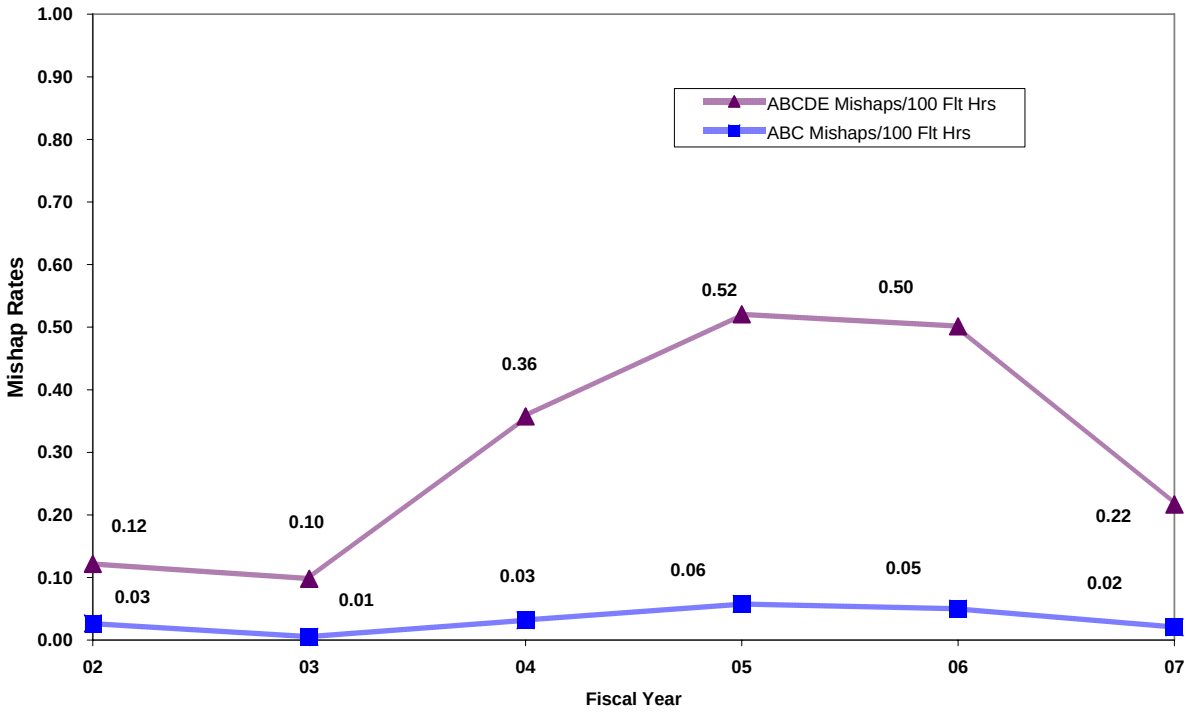
The HC130H flew 19,366 hours and reported 42 mishaps. The C130 mishap cost and cost per flight hour was the lowest its been in four years. The C130H mishap rate has decreased for the last four years. Only eight of the 42 HC130H flight mishaps had costs above $20,000 representing 85% of the total HC130H flight mishap cost. Only three mishaps had costs greater than $100,000 ($828,446). Of the 19 Class E mishaps reported, only four involved costs of more than $20,000.

HC130H Flight Mishaps for FY07

Aircraft	Class	No. Mishaps	Cost
HC130	A	0	$ 0
	B	0	$ 0
	C	4	$ 129,904
	D	19	$ 115,291
	E	19	$ 921,568
Totals		**42**	**$ 1,166,763**

Table 8

C130 Flight Mishap Data



C130 ABCDE	NO. MISHAPS	COST	FLIGHT HOURS	MISHAPS/ 100 FLIGHT HOURS	COST/ MISHAP	COST/ FLIGHT HOUR	C130 ABC	NO. MISHAPS	COST	FLIGHT HOURS	MISHAPS/ 100 FLIGHT HOURS	COST/ MISHAP	COST/ FLIGHT HOUR
FY03	19	$941,794	19,353	0.10	$49,568	$49	FY03	1	$70,789	19,353	0.01	$70,789	$4
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	$16,650,446	17,946	0.50	$185,005	$928	FY06	9	$15,562,127	17,946	0.05	$1,729,125	$867
FY07	42	$1,166,793	19,366	0.22	$27,781	$60	FY07	4	$129,904	19,366	0.02	$32,476	$7

Figure 20

HU25 MEDIUM RANGE SEARCH (MRS)

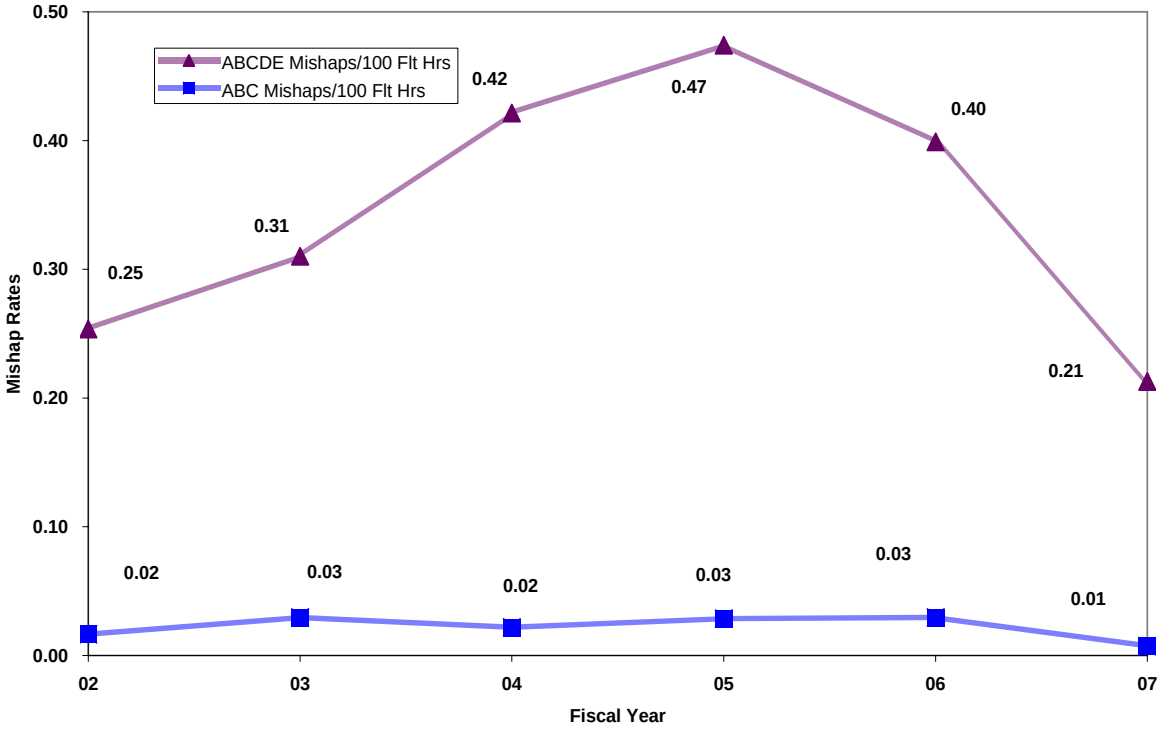
The HU25 flew 12% (13,624) of the total hours and reported only 29 (8%) of the total flight mishaps. The Falcon had the lowest mishap rate (0.21) of the major airframes and its lowest mishap rate ever in FY07. However the Falcon's total mishap cost ($1,208,688), cost per flight hour ($89) and cost per mishap ($41,679) were up again this year and the highest of all the major airframes. The high mishap cost this year was due to the four Class E mishaps over $100,000 ($1,050,172). Twenty-three (78%) of the Falcon mishaps were under $20,000 (the Class C threshold) and had mishap costs totaling only $73,986.

HU25 Flight Mishaps for FY07

Aircraft	Class	No. Mishaps	Cost
HU25	A	0	$ 0
	B	0	$ 0
	C	1	$ 25,586
	D	17	$ 68,771
	E	11	$ 1,114,331
Totals		**29**	**$ 1,208,688**

Table 9

HU25 Flight Mishap Data



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
FY03	42	$295,745	13,544	0.31	$7,042	$22	FY03	4	$110,987	13,544	0.03	$27,747	$8
FY04	58	$400,117	13,761	0.42	$6,899	$29	FY04	3	$177,274	13,761	0.02	$59,091	$13
FY05	66	$914,674	13,923	0.47	$13,859	$66	FY05	4	$467,784	13,923	0.03	$116,946	$34
FY06	54	$969,051	13,529	0.40	$17,945	$72	FY06	4	$164,196	13,529	0.03	$41,049	$12
FY07	29	$1,208,689	13,624	0.21	$41,679	$89	FY07	1	$25,586	13,624	0.01	$25,586	$2

Figure 21

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 now located at NAS Pensacola, FL. CG-1131 intends to conduct a review of the curriculum with specific emphasis on the applicability of the reporting portion of the class. Until a mechanism is developed for better alignment of training, new FSOs should also 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.

"CG-1131.COM"

http://www.uscg.mil/hq/g-w/g-wk/wks/AviationHome.htm

⇒ 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.

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 FY07.

⇒ 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/g-w/g-wk/wks/AviationHome.htm.

⇒ 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.

CRM

⇒ The CRM program is in the process of a major upgrade. In addition to modernizing Initial and Refresher CRM curricula, we are reviewing annual training requirements, promulgated guidance and the roles of ATC Mobile, ATTC and the Program Manager.

⇒ To provide top quality curricula, a $164,000 contract was awarded to Convergent Knowledge Systems, LLC. They will infuse current CG CRM principles with their proven methodology.

⇒ The update will include CRM Automation Airmanship Training (to raise the awareness of complacency issues associated with "glass cockpit" aircraft and existing legacy CG platforms) as well as their "Global War on Error" and Personal Error Control tools.

⇒ The initial Train-the-Trainer session is in February and will qualify the Initial CRM training cadre at ATC Mobile and ATTC. Follow-on qualification for unit FSOs will be delivered via site visits or at the FSO Stan Course.

⇒ 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).

AVIation Accident TRacking System (e-AVIATRS)

http://webapps.mlca.uscg.mil/kdiv/Aviatrs/

⇒ We're into year five of **E-AVIATRS**. The first mishap report was submitted to the new database on 21 November 2003.

⇒ Version 2.3 came online just in December 2007 holidays and included the HFACS and RATS modules.

⇒ 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 the data and enter the old records.

⇒ 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.**

⇒ **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.

⇒ All information reported in the mishap message is captured in **e-AVIATRS** and can be searched and retrieved. CG-1131 will still maintain and review aviation mishap information.

⇒ There are over 13,019 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: Summer 07 we welcomed LCDR Jeremy Smith, the third Safety Grad student (previously from Air Station Kodiak) and said farewell to CDR Gene Rush, now Ops at Air Station Borinquen.

CLASS A MISHAP SUMMARY

DATE	ACFT	SUMMARY	CAUSE FACTORS
AUG 1990	E2C	Returning from night LE patrol, aircraft developed wing fire and crashed short of runway while on final approach.	Fire
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 flight, deployed helo experienced rapid left yaw while conducting left pedal turn in a hover. Aircraft accelerated through wind line, spin could not be countered. Aircraft 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 lt illuminated during touch and go. Crew continued T/O, called out boldface procedures. Fire lt remained illuminated, emergency declared. Rear compartment fire lt extinguished approx 10 sec after fire extinguisher activated. Hyd sys lt 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 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.	In mishap review process
Jun 2006	C130H	During landing to deliver 5000 gallon acft refueling truck, acft swerved left and departed paved runway surface. After departing runway surface, acft continued parallel to the runway on a gravel surface, swerved left again, struck departure end VASI, and continued into soft ground. During final left swerve, the right wing dipped, striking the ground, no. 4 propeller struck ground and departed acft. Acft came to rest 248 feet left of runway edge. Crew egressed successfully.	In mishap review process

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 FY90-FY07

DATE	ACFT	SUMMARY	CAUSE FACTORS
Mar 1990	HH65	Power increase on #1 engine mis-analyzed and flight terminated w/autorotation and hard landing in sugar cane field. #1 fuel control failed, driving engine into overspeed and #2 engine decelerated to compensate for # 1 engine overspeed.	CRM, Supervisory & Aircrew, Material, Training, Procedures, Fixation
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, Judgment
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 and helo came to rest on left MLG structure. MRB and TRB did not impact ground. Crew safety egressed acft with no significant 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.	In mishap review process
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	In mishap review process

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 11