



AUXAIR District 7

United States Coast Guard Auxiliary

Operations and Flight Safety Newsletter

January 2016

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BORINQUEN Puerto Rico Moved
from March 2015 to November due to the government
shutdown the **Annual Auxiliary Aviation Safety**
Workshop ends another year of pride for D7 aviators.



U.S. Coast Guard Auxiliary photo by Robert A. Fabich, Sr.

AST Swim Drills and Egress Training - Borinquen Air Station - November 8, 2015



U.S. Coast Guard Auxiliary photo by Robert A. Fabich, Sr.

CATHERINE MILLS



Catherine “Cat” Mills has served as team leader in developing and implementing a monthly calendar for AUXAIR personnel to sign up for flights, thereby streamlining the scheduling process and allowing more air crew flexibility in planning and relieving the aircraft commanders of the task of searching for air crew.

Cat also helped to develop and implement a text notification system [via Everbridge] for SAR alerts thereby reducing manpower and time involved in locating air crew for SAR and first light searches. She assisted in updating the First Light Search policy for AUXAIR at Air Station Clearwater to ensure clarification of AUXAIR flight parameters, notification of request, and coordination among Sector St. Petersburg, the Air Station, and AUXAIR personnel. She joined the Auxiliary in August, 2014 and is a member of Flotilla 11-10.

Retired as a Commander from the Navy in 1993. Cat received her Naval Aviator “Wings of Gold” in 1976 as one of the first women Naval Aviators. She flew H-2, H-46, H-1, and H-3 helicopters and C-1 and C-12 fixed wing aircraft while stationed in San Diego, CA; Rota, Spain; Washington, D.C., and Pensacola, FL. Her first tour of duty was with the Navy Parachute Team West, comprised of UDT/SEAL members. She earned her Navy Parachutist wings in 1973. After retiring from the Navy, Cat went to work for the State of Florida, Department of Veterans’ Affairs until she retired in 2009.

Her awards include: Auxiliary Sustained Service Award and the Auxiliary Service Performance Award Operations Service.

“New AAC” Clearwater What’s new and

a logistical approach for next year?

by: Catherine “Cat” Mills., AAC

For Clearwater, the biggest “change” for the upcoming year will be new member recruitment for AUXAIR. This past year the impact of numerous snowbird members as they flew north was felt in a significant way. At times, only two planes were flying. The snowbirds are great pilots, with excellent facilities, but when they leave for four—six months, the Air Station’s ability to fulfill missions is severely compromised.

As such, the plan for 2016 is to focus on recruiting full-time Florida residents into the program. Another approach to be taken is to attempt to recruit those who are already Auxiliary members in order to alleviate the pain and agony of people getting excited about joining AUXAIR and then being told they can’t participate—or their facility—for 18—24 months. Granted, with the future implementation of the waiver program for those in AP status, accessibility to potential candidates will be greatly expanded.

Where possible, recruitment will also focus in those areas where there are staffing concerns in both aircrew and facilities. Hopefully, this can be accomplished via the use of current members recruiting from within their flotillas. Providing ‘recruiting packages’ will not only help potential candidates have a better and more complete picture of what is expected of them, but they’ll also have a better idea of what they can expect from AUXAIR. The same will apply to individuals with potential AUXAIR facilities. Giving them as much information up front, before they invest a great deal of time and resources, is a courtesy that should be extended to each potential candidate.

Clearwater will continue to fully embrace the renewed emphasis on safety. With ‘refocused’ attention by National Auxiliary, and the Gold Side, to ensure all aircrew and facilities’ currencies and certifications are up to date, an increase of effort in this area will emphasize the importance of safety to all our personnel. Much of the success of this endeavor will be driven by the efforts of the personnel and facility managers.

It is always comforting for passengers flying with AUXAIR to know the names of the crew members. It’s even nicer when they know something of the crew’s background and flight experience. This year an effort will be made to ensure the Gold Side knows who the AUXAIR staff are.

There is no such thing as too much training. Each time a training is conducted, in addition to the annual workshop, the response from those in attendance is “great... let’s have more!” At the October Vest Fest, training was conducted as far as time allowed on that day; and once again, it was very well received. The goal is to find a way to conduct quarterly training for AUXAIR at Clearwater.

Communication is important and can’t be stressed enough, from top to bottom, and vice versa—especially in the cockpit. Aircraft Commanders need to continue to stress the importance of CRM on every flight.

Last year there was an increase in communications to all members by the AUXAIR Operations Officer to keep everyone as informed as possible. Most people noticed this and expressed appreciation.

The importance of open communications, the chain of command, and the free exchange of information are three items that will continue to be stressed.

There is now a need for a new Operations Officer.

An enhanced sense of pride and professionalism in AUXAIR Clearwater will also be a focus this year. There is little doubt about the professionalism while flying—it’s commented upon constantly. Crews regularly receive praise and gratitude for the great job they’re doing. So more emphasis will be placed on military appearance and bearing while in uniform. Some AUXAIR members assume there are ‘allowances’ for older people to be “out of uniform” while wearing our uniforms. As most know, this is definitely not the case. Too often it can be painful to see AUXAIR members in uniforms that may have fit several pounds ago. This projects an attitude of not caring and not taking seriously the importance of appearance or the job. Wearing the uniform should be considered an honor, and wearing it correctly is necessary to be perceived as proudly representing the US Coast Guard.

There is nothing we can do to assuage the image of the “gray-haired” older Auxiliarists doing AUXAIR business at the FBO, at the Air Station, or flying passengers on logistic runs; but we can ensure our uniforms fit properly and present the highest degree of physical fitness and grooming. A mentor program will be implemented to assist those who may be uncertain what is correct, and what is not. And every member will be held accountable for the proper wearing of his/her uniform, at all times.

Finally, it would be to the benefit of all if members embraced a greater sense of ‘ownership’ in the AUXAIR program and more proactively strive to find ways to make it better and safer. This will happen through revitalized recruiting, enhanced communications, continued training with emphasis on safety, and instilling a greater sense of pride in uniform, and camaraderie among members. Clearwater has an amazing cadre of people actively participating now. With renewed emphasis on active participation and not “inactive membership” in AUXAIR, there is room for healthy growth.

A Message From the DSO-AV Ken Plesser



District 7 AUXAIR Team,

Below, the reader will find an organization chart for District Seven AUXAIR for 2016. Each time I look at it, I marvel at our collective good fortune to have so many talented individuals, at so many levels, working together as a team to ensure our twin goals of operational effectiveness and flight safety.

Recently, I was reading about Colonel John Boyd, an Air Force fighter pilot and tactician whose fertile mind gave us, among other things, the OODA loop (Observe – Orient – Decide – Act). Getting “inside an adversary’s OODA loop” is a key to successful aerial combat as well as a host of other situations.

COL Boyd wrote a great deal about management as well, and he was fond of citing some concepts favored by the German military.* As I view the AUXAIR team in District Seven, I find that we have, purposefully or not, adopted much of those German concepts and that they are central to our success.

1. **Auftragstaktik** is the ability to give orders as a fairly high level of generality and have them faithfully carried out by subordinates focused on the objective, rather than direction by micromanagement.
2. **Einheit** is an animating unity of purpose that keeps the whole organization focused not only on a single goal, but on a common way of doing things. Flight standards are one specific manifestation of Einheit.
3. **Fingerspitzengefühl** is a leader’s ability to hold in his mind a map of a dynamic, changing environment. (Literally, “fingertip feel.”)
4. **Schwerpunkt**, in warfare, is the identification of the opponent’s point of maximum vulnerability but, in management, can be extrapolated to mean knowing the difference between what is important and what is not, and acting accordingly.

Throughout our aviation organization, at many different levels, it is very gratifying to see these concepts in place.

We in AUXAIR Seven are about 150 members, flying about 40 aircraft, and blessed with the ability to serve our country and its citizens as a component of the United States Coast Guard... one of the most highly respected organizations in this nation.

As we enter 2016 with its many challenges, I thank all of you, especially the 31 designated leaders on the nearby chart, for all that you have done, all that you are yet to do, and for the teamwork that you manifest every day. Fly well and fly safely.

Ken Plesser, DSO-AV, District 7

<http://jasonlefkowitz.net/2013/03/how-winners-win-john-boyd-and-the-four-qualities-of-victorious-organizations/>

District 7 Auxiliary Aviation Chain of Leadership and Management - January 1, 2016

	DCO - COMO Bob Weskerna		DFS - Doug Armstrong	
	DCOS - Judith Hudson		DAA-AV - John Tyson	
	DDC-R - Craig Elliot			
	DSO-AV - Ken Plesser			
	ADSO-AV-PM (Program Management) - Jon Nicholls			
	ADSO-AV-T (Training) – Lee Bertman		ADSO-AV-MP (Personnel Management) – Ben Ostrovsky	
	ADSO-AV-S (Standards) – Chuck Fischer		ADSO-AV-MF (Facility Management) – Mike Renuart	
	ADSO-AV-X (Technology) – Mark Cannon		ADSO-AV-MM (Material Management) – Bob Hastie	
	ADSO-AV-P (Publications) – Bob Fabich		ADSO-AV-MB (Budget Management) – Jim Nelson	
	ADSO-AV-U (Unmanned Systems) - Bill Tejeiro		ADSO-AV-A (Admin Support) – Peg Peterson	
	CGAS Savannah	CGAS Clearwater	CGAS Miami	CGAS Borinquen
ADSO-AV-AAC	Ed Chappell	Cat Mills	John Moore	Carlos Matos
AAAC-Operations	Randy Brennan	Vacant	Tom Powers	Chuck Fischer
AAAC-Admin	Rene Rice	Rosemary Bloomfield	Ibrahim abi-Rafeh	Doug Armstrong
AAAC-Training	Ron Sain	Bob Ward & Dan Smith	Jorge Sanchez	Duane Minton
AAAC-Property	Bob Hastie	Sam Walker	Tommy Cordero	Glauco Rivera
ADFSO	David Lincoln	Marc Miller	Marty Rosenberg	Adam Shapiro
IP/FEs	Bob Hastie	Shon Limor	Wilson Riggan	Doug Armstrong
	Mike Renuart	Dan Smith	Peter Hecht	Chuck Fischer
	Bill Schultz (IP)	Colin Halfwassen		Lee Bertman Charlie Santana (IP)
CO	CDR John Rivers	CAPT Richard Lorenzen	CAPT Todd Lutes	CAPT Patricia McFetridge
XO	CDR Louie Parks	CDR Scott Weaver	CDR Chad Bland	CDR Flip Capistrano
OPS	CDR John Williams	CDR Scott Phy	CDR Mo Posada	CDR Lawrence Gaillard
AUXLO	LTJG Alex Johns	LT Janelle Setta	LT Ryan Lloyd	LT Crystal Barnett
FSO	LT Ryan Ramos	LT Heather Majeska	LCDR Josh Harrington	LCDR Nick Leiter

“The beginning of the end for VORs and NDBs as we once knew them is upon us.”

by: Doug Armstrong

The following is the April 2015 announcement that the FAA would be decommissioning some ground referenced instrument approach procedures. In addition is a list of procedures being decommissioned in 2015 and 2016. These "under utilized" procedures will be decommissioned as their associated NAVAIDs are decommissioned. Because some aviators responded to the NPRM, the FAA has pulled over 100 approaches off the list which are now listed as "under consideration" for decommissioning.

Since most do not use these NAVAIDs on a regular basis, it is worth reviewing what resources remain available to aviators in the event of a loss of GPS. Here are the approaches listed by the FAA in District Seven.

It should be noted that in almost all cases, these approaches already had a GPS overlay; it is the FAA's intention to reduce the disruption to the system by this decommissioning. David Lincoln did some research and determined that in most cases, the runways served will remain accessible (in IMC) via the associated RNAV/GPS approach. A quick review of the updated approach plate shows the old Bulldog NDB (BJT) replaced by a new waypoint (BLLDG).

See approach chart on page 10.

A Message From the DFSO

Doug Armstrong



Happy New Year AUXAIR and thank you for a great, safe 2015 in District 7. As we look forward in 2016, many of you know, change is in the air as national wrestles with some of the lessons learned last year in other districts. COMO Schaffer has a nice presentation on the national site outlining some of the current thinking derived from over 30 suggestions gathered from across the USCG. I thought it would be interesting to discuss a few of the proposals and my take on where this may be headed.

It is always challenging developing new policies in aviation for a couple of reasons. First, with a relatively small number of incidents, drawing conclusions about the significance or even contributing factors is an issue. Second, often new policies have the opposite or unintended effect. For example, the number of weather related accidents went up in GA when we added real time cockpit weather. One reason for this seems to be that pilots with less experience believed the new systems created a greater safety margin and that allowed them to lower their standards... predictably many got into trouble.

We see some great examples of these challenges as national considers a two pilot rule or medicals every year and other initiatives. On the surface, it would seem to be a no-brainer, two pilots are better than one so why not have a rule, after all we had several pilot related issues last year. More medical reviews also sounds like a no-brainer. That said, one problem is the medical side doesn't think they can predict incapacitation. So while I am in favor of well-conceived initiatives, we should protect against "doing something" when we may not gain much from that effort. Just as adding a second pilot to all missions, while "doing something," may not be addressing the root safety issue.

We need to look at our culture and how that safety culture drives the use of good judgement in every decision we make. Comporting ourselves as active duty aviators is at the core of USCG aviation safety. Our missions are complex and challenging, seeing these as USCG missions and not as a GA flight, is critical to long term program safety. As one looks across the nation on the gold side, we see a single Tri-P driven aviation culture, yet on the AUXAIR side, each district is free to implement their own opera-

tional culture. There is no national standard, and some District cultures are better than others. In D7 we are working hard to mirror the USCG active duty Tri-P driven safety culture. More on this later.

Therefore, while I support a variation on the two pilot rule, I see the path forward as one set by a couple of D7 aviators who chose on their own to no longer fly single pilot. For many, this would be a difficult decision, but if you see yourself as a professional USCG aviator, you see this as your responsibility and duty. These aviators are clearly very professional and see a second pilot as restoring the margin of safety. The professionals did not need a rule to tell them to make the safe choice. My point is, heuristics drive good judgement and that beats rules most of the time. If the USCG aviation culture drives decision making in gray areas, further rules may not be required.

There are a few initiatives, which I think, will add to the safety and operational effectiveness nationally; a few of these proposals may come as a surprise to D7 crews. The first of these is better mission task coordination between Sector and the AUXAIR. As it turns out, some districts are operating with little or no coordination with the active duty. As Coast Guard aviators, our job is to provide support to our sectors. For most D7 aviators, this will come as a surprise since regular sector tasking is an integral part of most of our missions.

Another initiative along these lines is to have crews occasionally fly with active duty aviators. I think this is not only a great opportunity, but offers an chance to become immersed in the USCG aviation culture. Flying Auxiliary facilities with active duty aviators adds a new dimension to your mission and builds great bonds; we are after all, aviators. I fly a number of high profile logistics missions every year and I welcome the opportunity to fly with a gold side aviators. One of the highlights of my USCG aviation career was flying left seat in an MH-65 on a patrol. This experience reset the standard for my flying in the USCG (and changed some of my habits in my GA flying.) I am looking forward to doing the same in a CASA sometime. The safety team will pass along any new guidance as soon as it is received. I look forward to a great 2016.

Doug Armstrong, DFSO, D7

BQN AVIATION SAFETY WORKSHOP PRESENTERS



CARLOS MATOS, AAC



KEN PLESSER, DSO-AV



ADAM SHAPIRO, ADFS



CHUCK FISCHER, ADSO-AV-S

Borinquen Auxiliary Aviators Honored at Safety Workshop

“We have the premier AUXAIR program in the Coast Guard Auxiliary”

by: Robert A. Fabich, Sr., ADSO-AV-P

AGUADILLA, Puerto Rico - The Coast Guard recognized Auxiliary Aviators (AUXAIR) assigned to Air Station Borinquen (BQN) during the annual Auxiliary Aviation Safety Workshop held at BQN, November 7, 2015.

Coast Guard Lt. Crystal A. Barnett, BQN, Auxiliary liaison officer announced the awards as Capt. Patricia A. McFetridge, BQN, commanding officer presented the Auxiliary Medal of Operational Merit, Auxiliary Achievement Medal and the Special Operations Service Ribbon to Auxiliary pilots, crew and observers.

“We have the premier AUXAIR program in the Coast Guard Auxiliary,” said Capt. McFetridge during opening remarks. The two-day annual Aviation Safety Workshop is a time for AUXAIR, active duty Coast Guard, partners and trainees to focus on member competencies, new and innovative technology, qualification skills, equipment testing, and planning and procedures. Auxiliary aviators assigned to BQN are part of the Coast Guard Seventh District Auxiliary aviation program which includes air stations Clearwater, Miami and Savannah. Each year the air stations hold a separate required workshop within their area of responsibility.

“I am incredibly impressed,” stated Lt. Barnett as she called upon the recipients of the awards. Recipients of the Auxiliary Medal of Operational Merit were.

Mr. José G. Berrios. He was cited for outstanding operational skill and achievement while serving as Co-pilot. Upon completion of his crew’s assigned first light search pattern for 2 missing paddle boarders and with minimal fuel available to remain on scene, the resourceful and experienced crew determined that they had just enough fuel to fly one pass over a small island and prominent landmark that survivors might paddle towards if they were blown off shore. During their pass, Mr. Berrios spotted a person on a steep ridge, nearly invisible in the scrub brush and cacti, waving excitedly at the aircraft. The crew immediately confirmed that he was one of the two missing paddle boarders. After alerting the Coast Guard Sector to their discovery, they made several more passes around the island to plot an exact position for an inbound MH-65D helicopter and assured the survivor that help was on the way. Had it not been for Mr. Berrios’



U.S. Coast Guard Auxiliary photo by Robert A. Fabich, Sr.

keen eye, and the reasoning of the crew, the survivor surely would have succumbed to the elements while rescue crews searched for him ten miles to the east of where he was located. He had drifted for nearly three days without food, water and adequate shelter, before reaching the island and would most certainly have died of exposure. The second paddle boarder was never found.

A second Auxiliary Medal of Operational Merit to Mr. Berrios. He was cited for

[continued on page 6](#)

BQN AVIATION SAFETY WORKSHOP PRESENTERS



LEE BERTMAN, ADSO-AV-T



HACHE VAZQUEZ, AAAC
CHARLIE SANTANA, IP



CDR LAWRENCE GAILLARD, OPS



LCDR NICK LEITER, FSO

[continued from page 5](#) outstanding operational skill and achievement while serving as a Co-pilot while conducting a search pattern for an overdue sailing vessel. Demonstrating exceptional resourcefulness and dedication to mission, Mr. Berrios personally contacted the missing vessel's homeport and learned the vessel was under the command of a very experienced sailor. Using his own extensive knowledge of sailing and of recent weather conditions, Mr. Berrios created an updated track-line and requested the search area be modified. An expedited search of this new track line rationed the minimal daylight remaining. Mr. Berrios' unit was able to locate the vessel. Mr. Berrios' outstanding maritime skills, dedication, and initiative were instrumental in the rapid location of the vessel, and saved the Coast Guard over \$100,000 by standing down an HC-130 aircraft preparing to depart from Air Station Clearwater. Mr. Berrios' proficiency in interpreting on scene conditions combined with his own extensive nautical knowledge enabled him to make bold and concise recommendations, which drove a major tactical adjustment in the search effort.

Mr. Pedro Cortes-Gonzalez. He was cited for outstanding operational skill and achievement while serving as aerial observer. During a routine patrol, Mr. Cortes-Gonzalez observed a small rectangular object floating in the water. After Coast Guard sector requested photographs of the object, he maintained visual contact and directed the Aircraft Commander into position, ensuring the best possible imagery, which



U.S. Coast Guard Auxiliary photo by Robert A. Fabich, Sr.

positively identified it as bales of contraband. Sector diverted a Coast Guard cutter to the coordinates given by the Auxiliary crew, who assisted in vectoring the cutter to the position. Despite high seas and deteriorating daylight, Mr. Cortes-Gonzalez was able to maintain a visual sighting of the contraband until the Coast Guard cutter successfully recovered the bales of contraband weighing five hundred pounds.

Mr. Glauco A. Rivera. He was cited for outstanding operational skill and achievement while serving as Aircraft Commander. While conducting a routine patrol, his observer spotted a vessel in prohibited. De-



U.S. Coast Guard Auxiliary photo by Robert A. Fabich, Sr.

termining that the vessel was likely engaged in illegal fishing, Mr. Rivera immediately [continued on page 7](#)

BQN AVIATION SAFETY WORKSHOP PRESENTERS



LT CRYSTAL BARNETT, AUXLO



LCDR RYAN LAMPE, AOPS



CAPT DOC LAGO

BQN VEST FEST



GLAUCO RIVERA, AAAC-P
GREGORY WORRELL, AIRCREW

continued from page 6 descended to obtain a better visual of the vessel. He communicated with a Coast Guard cutter providing critical information on the vessel's course and speed. Based on the information he provided, a local law enforcement vessel was able to intercept and apprehend the crew. A search of the vessel yielded an astounding 15 illegally harvested lobsters and 180 de-shelled conchs hidden onboard. Due to Mr. Rivera's sound professional judgment and flawless mission execution, the case remains one of Coast Guard AUXAIR's largest fishery seizures.

The Auxiliary Achievement Medal was awarded to Mr. Rivera. He was cited for superior performance of duty while serving as Assistant Auxiliary Aviation Coordinator for Personal Protective Equipment (PPE) at BQN. During his tenure, Mr. Rivera's inspirational leadership style and meticulous administrative skill guided analysis of equipment needs, timely procurement, and critical inspection of PPE for more than fifty Auxiliary members. Mr. Rivera created a comprehensive inventory of equipment and implemented a system of accountability based on inspection and expiration dates, which drove procurement, budgeting, and inspection schedules. He planned and coordinated the Air Station's first "Vest Fest"; a joint Active Duty and Auxiliary inspection-training event in which all AUXAIR members' survival equipment were inspected and returned to service. This resulted in one hundred percent readiness for the unit throughout the year. Anticipating future requirements, Mr. Rivera drafted a two year forward-looking budget and procured over \$30,000 of equipment in support of AUXAIR. He expertly managed safety equipment after delivery and ensured efficient distribution to facilities throughout the Air Station's area of operation, encompassing over 125,000 square miles with major airports located on three widely separated islands.

The Special Operations Service Ribbon was awarded to members for participation with Operation UNIFIED RESOLVE. Operation UNIFIED RESOLVE commenced a targeted campaign to deter, detect and disrupt illegal maritime activities in the region and is now the standing regional framework for interagency



U.S. Coast Guard Auxiliary photo by Robert A. Fabich, Sr.

maritime operations supporting Puerto Rico and the U.S. Virgin Islands. This innovative joint operations overcame numerous barriers, greatly improved cooperation at all levels, and resulted in significant operational efficiency and a dramatic increase in effectiveness.

Additional awards recognized members for achieving levels of over 30, 100 and 250 flight hours.

A special thank you to CAPT McFetridge, CDR Gaillard, LCDR Lampe, LT Barnett, CAPT Lago, LCDR Leiter and the Rescue Swimmers for their commitment, partnership and fellowship with making the 2015 *Annual Auxiliary Aviation Safety Workshop* a success.

Facility Inspection and Tracking End of year report.

by: Mike Renuart, ADSO-AVMF



At the end of September, a note was sent to D7 facility owners reporting on the then current status of facility inspection and tracking. We've completed the first 9 months of facility inspections under the new rules set out by the January 22, 2015 message from Assistant Commandant for Prevention, RDML P.F. Thomas. The new rules went into effect on that date but also stated that "All AUXAIR facility owners shall comply with this new standard by the time that their facility's annual offer-for-use form expires." That means that if a facility owner had an inspection prior to the date, including the first three weeks of January 2015, he or she is exempt until the next inspection.

All but about 3 or 4 facilities have been inspected under the new rules. Also a few 100 hour inspections have been reported by those who are flying more than that number of hours in a year. A few facility owners have decided that rather than be subject to the 100 hour inspection, they would stop using their facility for Auxiliary flying until their FAA annual inspection comes around.

Auxiliary Aviation, at the National level, is putting a tracking system together which is scheduled to go into operation by the end of the year. It will use information taken from the drop box files plus any 100 hour inspections reported and place these in an automated system which the Air Stations will use to ensure that each facility is in compliance with both Auxiliary Facility inspections and the 100 hour inspection mandated by the January 22nd ruling. Facility owners will be queried for their current airframe total time (TTAF) and that number will be compared with that reported in the automated system provided by National. If a facility owner is too close to or beyond the time for the next annual or 100 hour inspection, he or she will not receive orders for the requested flight.

The system put in place last year included some

standardization of content and file formats which is now almost complete. This has come as a result of a lot of hard work by both the facility owners and the facility inspectors. Many have reported that the files have been hard to construct and reduce in size to the level which can be accommodated by the Help Desk reporting system (4MB). Going forward, these files should be much easier to construct, name, and get through the system. Drop Box files have been created and all of our facility inspectors have access to them (along with a number of other people). These can be viewed, downloaded and used as a guide for future inspections. There are also additional files in Drop Box which contain the 100 hour inspections which are reported.

The Facility Inspection process is important to the operation of the Auxiliary Aviation operation. It's one that requires the participation of not just the facility inspector but the owner and several others. Two key documents that are new this year are the ANSC7005, offer of use document, and the facility inspection worksheet. These are both pdf "fill in the blank" forms and should be used that way. All forms required by D7DIRAUXINST 3007.1 must be provided in the form, format and name indicated in D7DIRAUXINST 3007.1. When complete, the files must include TTAF on all logs and SOAP reports and be compressed into a zip file with a total size under 4MB.

100 Hour Inspections, while important to comply with the new commandant rules, require much less documentation. When a facility owner's 100 hour inspection comes up, it should be done and entered into the owner's logs (airframe, engine, and propeller) as a 100 hour inspection. Remember to add total time airframe (TTAF) to each log entry and the SOAP report. Fill out an inspection worksheet with the 100 hour entries then scan the logbook entries and the new SOAP report. Compress these into a zip file and send them to the ADSO-AVMF where they will be stored for National reporting.

Other Maintenance Reporting is being requested. Consider this breaking news. It is likely that facility owner's will be required to report other maintenance events in semi-real time. Things such as static system, altimeter, transponder checks, new registrations, etc. may soon be required. When they are, we will alert all facility owners and ask that these be scanned, noted on an facility inspection form and sent via each owner's Facility Inspector to the ADSO-AVMF.

Responsibilities are shared between the facility owner, the facility inspector and a number of others.

Facility Owner must:

- Consult the Facility Inspection and Offer for Use (ANSC7005) document and gather all required current files.
- Scan all documents (individually) to pdf (portrait), name them, and check that the total file size is less than 4MB.
- Place files in a single folder and name the folder per D7DIRAUXINST 3770.1.
- Keep a copy of the file in one's records in preparation for the next reporting event.
- Send a copy of the folder to the Facility Inspector, who will review and send on to ADSO-AVMF.
- Between inspections, all changes must be sent promptly to the Inspector who last inspected the facility.
- When AUX annual or 100 hr inspections are due, promptly notify Facility Inspector.

Facility Inspector is:

- Responsible to keep a record of all facilities inspected in the last year and a local file of each facility in the approved format.
- Responsible to track dates and flight times for each maintenance event and schedule an inspection with Facility Owner in a timely manner.
- Responsible to inspect facility and record facility data on the 7005 and worksheet in the required format.
- Responsible to review facility records and send

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InterAmerican University Aeronautics

Division 1 Aviators Mentor Future Student Pilots - a four year commitment for AUXAIR

FACILITY INSPECTIONS AND TRACKING

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zipped folder (less than 4MB) to ADSO-AVMF.

ADSO-AVMF is:

- Responsible to review facility documents (zipped) in a timely manner and submit to the D7 Help Desk (annual and 100hr) or return them to the Facility Inspector for corrections.
- Responsible to make appropriate, approved updates to the D7 Facility Tracking Report and notify National when complete.

DIRAUX Office must:

- Receive complete, accurate, compressed facility inspection reports via the Help Desk.
- Responsible to review, approve and make appropriate updates to AUXDATA.

National is:

- Responsible to develop and maintain a tracking system that ensures compliance with the COMDT instruction (15JAN15).
- Responsible for accepting and disseminating in a timely manner, the appropriate tracking data to the Air Stations and others.

Keeping AUXAIR facilities current and in compliance with the January 22, 2015 rules requires the efforts of many people. The participation of all is a key factor in the success of our aviation program.

Personnel and Facilities as of December 31, 2015

Aircraft Commanders - 43

First Pilots - 11

Co-Pilots - 8

Air Crew - 45

Observers - 29

Operational Facilities - 37



Annual Auxiliary Aviation Safety Workshop - Borinquen Air Station - November 7-8, 2015

(Left to right) Captain Patricia A. McFetridge, Ryan, Alan, Edwin and Ricardo Maldonado, Copilot Hache Vazquez. (Absent from photo: Camilla and Jan A. Cartagena) The students attended the BQN Annual Auxiliary Aviation Safety Workshop held November 7-8, 2015.

On October 31st and November 3rd, 2014, aircraft commanders Carlos Matos, Charlie Santana and Copilot Hache Vazquez, gave two presentations to the freshman class of InterAmerican University Aeronautics program regarding the AUXAIR program. At that time, the freshman class was made up of two groups of 30 students. Out of the 60 students of that freshman class, 40 showed some kind of interest in the AUXAIR Program, 40 made it to the first follow up enrollment meeting and finally 11 completed the enrollment process. These students are studying to obtain their Bachelor's degree on Aircraft Systems Management (PROFESSIONAL Pilot). By the time they finish their four year university education they will have completed their Private Pilot License, Instrument Pilot, Commercial Pilot, Flight Instructor, Flight Instrument Instructor and Multi-engine Instructor and will log approximately 360 flight hours. Most of them have the career goal of becoming an Airline Transportation Pilot, but to enter the airlines they need a minimum of 1,500 flight hours.

The AUXAIR suggests to the students that while they are going to school and even after they get their degree, hours that they fly with the AUXAIR program, can be hours logged towards landing a job with the airlines, free of cost to them and while serving the nation. Their resume will stand out compared to the rest of their graduating classmates because they will have learned to fly the Coast Guard way. Not only that, but those hours will involve completing tasks more complex than regular General aviation flying from point A to point B. In the AUXAIR program they will engage in Search and Rescue and become proficient at different search patterns such as Victor Sierra, Parallel, Creeping line and sometimes flying at 500 feet above the ground. All this while engaging in photography, marine radio communications with sector and cutters or other Coast Guard aircraft in the area.

During this first year, the group of students has narrowed to six. They have been completing the ICS 100, 200, 210, 700, and 800 mandated trainings and AUXAIR Aviation Part A & B test. The students are eager to get in the cockpits of the AUXAIR Facilities and start flying as many missions as possible upon their final security clearance.

The InterAmerican University of Puerto Rico —or Universidad Interamericana de Puerto Rico (UIPR) in Spanish, and often referred as “Inter”— is an Ecumenic Christian university dedicated to uniting academic excellence with leadership and service to society. source: Wikipedia

RWAI

AUXAIR Savannah's Contribution to National Defense

by: Ed Chappell

The orange Coast Guard MH-65 Dolphin helicopter sits quietly on the ramp at St. Simons Island, GA, KSSI. It is fueled, preflight complete, and the cockpit is configured for immediate takeoff. In full flight gear, relaxing, perhaps flipping through magazines or watching the Weather Channel, the crew relaxes and waits. Fifty miles Southwest at 3500 feet, an AUXAIR facility, call sign "BOGEY," changes its transponder from 1200 "En Route" to 4423 "Fights On." NORAD sees the change and orders the Coast Guard helicopter, call sign "SNAKE EYES," to Scramble! Coast Guard pilots sprint to the waiting helicopter, launch immediately and vector to the bearing, distance and altitude information passed on by NORAD.

Bogey continues the profile for the first "Run," a simulated student pilot unknowingly flying into a TFR. Bogey monitors the Common Traffic Advisory Frequency at KSSI and knows that Snake Eyes is airborne, and looks to TIS-A/B to keep an eye on the "adversary." Bogey is a crew of three, with one in the back seat whose sole responsibility is to keep eyes on Snake Eyes. "There he is! One o'clock low and climbing," the copilot says. The helicopter passes three quarters of a mile off the right wing, climbing above Bogey's altitude and disappears from sight behind it. Squirming and twisting in their seats, both the copilot and observer try to regain visual contact with Snake Eyes who is now at 6:30 and higher where he will inspect and identify the aircraft. Once satisfied, Snake Eyes descends and moves into the signaling position alongside about 200 feet away. They can utilize a variety of visual signaling techniques to gain Bogey's attention and communicate without the use [continued on page 11](#)

Approaches Chart continued from page 4 AHN GPS Approach Plate page 16

In D7 at the end of 2015, the following approaches will no longer be authorized:

GAAthens/Ben EppsAHN NDB RWY 27 (80 FR 61978; October 15, 2015).

As of 12/10

FLST PETERSBURG—CLEARWATER INTLPIE VOR/DME RWY 18L.

FL SARASOTA/BRADENTON INTLSRQ VOR RWY 32.

SC GREENWOOD COUNTY GRD VOR RWY 27.

Beginning in 2016 the FAA will begin decommissioning the following approaches:

Feb 4/2016

FL APALACHICOLA RGNL—CLEVE RANDOLPH FIELDAAF NDB RWY 32.

FL JACKSONVILLE EXECUTIVE AT CRAIGCRG VOR/DME RWY 32.

FL SAINT LUCIE COUNTY INTLFPR NDB—A.

FL NORTHEAST FLORIDA RGNLSGJ VOR RWY 31

GA AUGUSTA RGNL AT BUSH FIELDAGS VOR/DME RWY 17.

GA CRISP COUNTY—CORDELECKF NDB RWY 10.

GA DANIEL FIELDDNL NDB/DME—C.

GA THOMSON—MCDUFFIE COUNTYHQU NDB RWY 10.

GA MACON DOWNTOWNMAC VOR/DME—B.

GA HARRIS COUNTYPIM NDB RWY 09.

GA HENRY TIFT MYERSTMA VOR RWY 33.

SC AIKEN MUNIAIK VOR/DME—A.

Mar 31/2016

FL FORT LAUDERDALE/HOLLYWOOD INTLFLL VOR RWY 28R.

FL ORLANDO INTLMCO VOR/DME RWY 36L.

FL ORLANDO INTLMCO VOR/DME RWY 36R.

GA SOUTHWEST GA. RGNLABY NDB RWY 4.

SC DILLON COUNTYDLC NDB RWY 07.

SC HARTSVILLE RGNLHVS NDB RWY 3.

The following approaches remain "Under consideration" for decommissioning.

FL NORTH PALM BEACH COUNTY GENERAL AVIATION F45 VOR RWY 08R.

GA WAYCROSS-WARE COUNTYAYS VOR—A.

GA BRUNSWICK GOLDEN ISLESBQK VOR/DME—B.

GA ATLANTA RGNL FALCON FIELDFFC NDB RWY 31.

GA LEE GILMER MEMORIALGVL NDB RWY 05.

GA PERRY-HOUSTON COUNTYPXE VOR—A.

GA EAST GEORGIA RGNLSBO NDB RWY 14.

GA HENRY TIFT MYERSTMA VOR RWY 28

SC GREENVILLE DOWNTOWNGMU NDB RWY 1.

SC AIKEN MUNIAIK NDB RWY 25.

SC ANDERSON RGNLAND VOR RWY 05.

SC MARION COUNTYMAO VOR/DME—A.

SC SUMTER MUNISMS NDB RWY 23.

VI CYRIL E KINGSTT VOR—A

IN THE NEXT ISSUE OF THE OPERATIONS AND FLIGHT SAFETY NEWSLETTER

DRONES: A continued series of "The ABC's of Unmanned Aircraft Systems" by David Lincoln.

Program Management: An inside look at the new ADSO-AV-PM position.

Job Descriptions: "Not Just a Title" A review of duties and responsibilities for your appointed position.

Annual Auxiliary Aviation Safety Workshops: Highlights from Savannah, Miami and Clearwater.

Centennial of Coast Guard Aviation: A series of Centennial activities that mark 100 years since LT Elmer Stone, the first Coast Guard aviator, was ordered to Naval flight training. *Photo from Wikipedia, the free encyclopedia*



RWAI

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of a radio. Ultimately, the goal is to maneuver the errant aircraft away from protected airspace.

The Coast Guard assumed the responsibility for the Rotary Wing Air Intercept (RWAI) mission from Customs and Border Protection on 25 September 2006. "The Coast Guard's unique authorities and competencies as both a military service and a federal law enforcement agency enable us to assume permanent responsibility for executing the vital mission of protecting the National Capital Region airspace for the Department of Homeland Security in support of NORAD's multi-layered air defense mission," said ADM Thad W. Allen, former commandant, U.S. Coast Guard. Air Station Savannah is an important part of this mission.

Aviation Training Center Mobile conducts training in intercept procedures, terminology, and the techniques that allow Coast Guard crews to bring their helicopters extraordinarily close to other aircraft. So unique is the mission that it operates under a waiver from the Federal Aviation Administration. AUXAIR Savannah assists in the program by providing targets or a "BOGEY" for the Gold Side crews to practice intercepting.

An AUXAIR mission begins with the receipt of Special Instructions (SPINS) from an Air Station evaluator or a standardization pilot from ATC Mobile. The SPINS lay out the principal players, contact numbers, frequencies and channels to be used, the number of sorties to be flown, and the profiles of the runs. A sortie usually consists of five runs, with the first being a scramble launch and then intercepts from an airborne patrol position thereafter. Each run simulates a scenario likely to be encountered by the interceptor crew, such as a lost student pilot, *continued on page 12*

"DRONES" or (UAS)

The ABC's of Unmanned Aircraft Systems

by: David Lincoln, ADFSO



UAS AT AN AIRPORT NEAR YOU?

- Dallas, TX – A local news broadcast aired footage from a UAS that showed images of a flooded community located fewer than five miles from the Dallas/Fort Worth International Airport. The operator had requested, and been denied, permission for the flight.
- Denver, CO – Pilots advised Denver International Airport of three UAS flying eastbound at 2,000-4,000 feet above the ground about nine miles northwest of the airport.
- Grand Forks, ND – Pilots reported observing a UAS at 1,400 feet in the traffic pattern of the airport.
- Minneapolis, MN – A pilot flying a regional jet reported a UAS passing 50 feet off the side of the aircraft while on final approach.
- San Francisco, CA – Aircraft departures were halted briefly because of a report of a UAS flying at 500 feet south of runway 1L/R.
- San Jose, CA – Pilots operating an all-cargo 757 flight reported a "close encounter" with a UAS flying 60-70 feet to the left of the aircraft, subsequently described as "four-bladed and X-shaped".
- New York, NY – Pilots flying a Delta 767 reported, on the arrival into JFK at 10,500 feet, a UAS VERY close to their aircraft.
- Denver, CO – Pilots flying a Delta 757 reported a UAS on a 3 mile final to Runway 8L at 800 feet above the ground. The UAS was off the co-pilot side about 100 feet below the aircraft.
- SkyPan, a Chicago company, was recently fined \$1.9M for "reckless" operations of UAS for 65 flights over New York and Chicago, most within the Class B New York airspace.

This year in the U.S. alone, we will be sharing the airspace with an overwhelmingly number of drones. Furthermore, the FAA has approved over 1,400 applications for commercial use of drones. How has this industry's explosive growth impacted our own? There have been nearly 700 reported sightings so far in 2015 in the airline industry alone – triple the number in all of 2014. This year, we are on pace to surpass 1,000. It is only a matter of sheer luck that one of these drones hasn't hit a windshield of an airliner traveling more than 500 miles per hour, or been sucked into an engine. Jet

engines have been known to fail when ingesting 8-pound birds. What would a 55-pound metal drone do? Helicopters and AUXAIR aircraft tend to fly at lower altitudes, facing greater danger. Recently, a helicopter on an emergency medical flight in Fresno, Calif., had to maneuver to avoid a drone just 20 feet away. There are more than a million consumer drones in the USA, with more coming on line every day. Yet the FAA has almost no control over where and when they fly. Last year, the FAA teamed up with industry and hobbyist groups to issue some recommendations, such as not flying drones higher than 400 feet or within 5 miles of an airport with operating control towers, but as we've seen, these have had little effect.

As of the end of November, 2015, drones do not have to be registered, and of course, do not need identifying transponders. In June, two drones flying over a forest fire in California forced large aircraft carrying fire retardants to abort their missions for over five hours, costing thousands of dollars and delaying firefighting efforts. At last report, the operators of the drones hadn't been identified, even after officials offered a bounty.

And what is the FAA's response? Officials still say they prefer public education campaigns; however, on November 23, 2015, the FAA came out with "recommendations" for operators of drones weighing between 8.8 ounces to 55 pounds to be registered. The FAA will want the name and address only of the operator. The electronic registration will include an "option" to add an email or phone number. Operators won't be able to register at the retail store at point of sale. Also, registration numbers will be arbitrarily assigned by the registration system, or drone owners can choose to use the serial number on their drone. The serial number must be on the drone, and it will be permissible to be put the registration number in the battery compartment. Again, these are recommendations and not law as of this writing.

While most users are conscientious of the rules prohibiting their use above 400 feet AGL or within 5 miles of a tower controlled airport, Delta alone continues to tally record numbers of sightings and even near mid-air collisions. These near collisions are occurring anywhere from 10,500 feet above ground level down to a few hundred feet off the ground. *continued on page 13*

RWAI

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NORDO after an electrical fire, or someone trying to sneak through the TFR. AUXAIR crews simulate the required conditions for that run and respond to simulated guard, sign board on the helicopter or ICAO intercept procedures as appropriate.

The mission begins by meeting the Coast Guard crew at the designated airport, which is usually St. Simons, GA (KSSI). The brief conducted by the evaluator or standardization pilot, as the case may be, consists of:

SAFETY OF FLIGHT: A review of intercept terminology. "TERMINATE" ends local engagement, "KNOCK IT OFF" ends the entire exercise and all aircraft immediately increase separation.

MISHAP PLAN: In the event of a mishap, all participating aircraft "KNOCK IT OFF" and Eastern Air Defense Sector (EADS) notifies the Air Station.

CONOPS: There is a review of the mission, number of sorties and the profiles to be flown. A discussion of the weather and any limitations it imposes on the mission plan takes place. Any airspace limitations and "real world" issues are covered as well.

The Auxiliary crew then launches, flies to the Initial Point (IP) changes the SQUAWK and the "FIGHTS ON".



It is customary to conduct the post mission brief at Southern Soul Barbeque near KSSI, and it is imperative not to forget to bring some brisket home or you'll never hear the end of it.

"Effects of Sleep Disorders and Fatigue on Aviation CRM"

Fatigue is a major contributor to errors and accidents. The primary by-product of sleep disorders is fatigue. Aviation Crew Resource Management (CRM) is a key component in modern aircrew safety and error reduction. All factors of CRM are adversely affected by fatigue. Discussion of the most common types of sleep disorders and the major classification of CRM subtypes will be explored. A direct correlation between sleep disorders and the adverse impact on CRM will be drawn.

by: Adam M. Shapiro, M.D., F.A.C.S. and ADFSO Borinquen



INTRODUCTION

Fatigue is a natural feeling that affects everyone; most commonly occurring immediately prior to sleep. Fatigue can arise from sleep deprivation and sleep disorders. Anomalies of sleep are quite common and are often undetected. Their insidious nature can cause an unwitting sufferer to experience severe fatigue. These disorders include Obstructive Sleep Apnea, Upper Airway Resistance Syndrome, Insomnia, Restless Leg Syndrome, Circadian Rhythm Disorders, Parasomnias, Narcolepsy, and Insufficient Sleep Syndrome. The architecture and pathophysiology of sleep and sleep disorders will be briefly discussed.

Crew Resource Management (CRM) is a mechanism to help mitigate errors and improve safety. It features prominently in the aerospace world, but is also employed in other realms such as medicine, shipping, nuclear power plants and military operations. CRM encompasses critical domains such as communications, teamwork and relationships, situational awareness, behavior, aeronautical decision-making, along with threat and error management. A fatigued crewmember or crew adversely affects all of the aforementioned aspects of CRM.

A direct correlation is shown between sleep disorders, fatigue and a degradation of CRM. This connection demonstrates that sleep disorders contribute to increased error

rates and accidents. An understanding of these issues will aid the crewmember in identifying possible contributing factors for fatigue and help reduce their potential impact on the crew, flight and mission. Proper diagnosis and treatment of sleep disorders will help prevent fatigue and will reduce the risks associated with suboptimal CRM performance.

DISCUSSION

Fatigue has long been known to increase the risks of many endeavors. Notably, aviation has been identified as particularly susceptible to fatigue induced issues. Sleep disorders are very prevalent and often under diagnosed. A salient feature of sleep disorders is their often insidiously associ-

ated fatigue. A corollary between sleep disorders and aviation risks can be drawn. Crew Resource Management (CRM) is a relatively new discipline designed to mitigate risks and enhance crew and flight safety. It has been shown that fatigue can also degrade many components of CRM (Helmreich, Merritt, & Wilhelm, 1999). An intuitive deduction would thereby demonstrate that sleep disorders contribute to a degradation of CRM and compromise flight safety.

Sleep is an essential process of all mammalian animals. The average adult human has a characteristic physiological sleep pattern each night. Wakefulness transitions to light sleep, then to dream sleep and eventually to deep sleep. Sleep stages are characterized by their associated electroencephalographic (EEG) patterns (Nir, Le Van Quyen, Tononi, & Staba, 2014). Light sleep (N1) and deep sleep (N2) are heavily weighted with alpha or slow waves. Dream sleep is characterized with fast moving electrical activity. The brain is much more active in dream sleep as confirmed by EEG. The amount of time spent in REM and non-REM sleep is specific to the individual although it will vary based on external factors (Agnew, Webb, & Williams, 1966).

A number of issues are involved in determining restful sleep. Sleep duration is the total amount of time spent asleep. It can be fragmented or occur consecutively. Consolidated sleep is important for adequate rest (Lim, Haack, Simpson, & Mullington, 2012). Sleep latency, or the amount of time it takes to fall asleep, is also an important factor. The amount of time in bed spent awake will decrease the total sleep time. Implications for REM sleep latency also effect sleep productivity. Sleep quality is of paramount importance in determining one's restfulness. Sleep disruptions from external causes, such as noise, bed partner, and light stimulation can also interfere with sleep quality. Disruptions from internal sources such as sleep disturbances will inevitably result in a reduction in sleep quality.

Sleep disruption decreases the quantity and quality of sleep and ultimately [continued on page 13](#)

DRONES

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So what do we as pilots need to do to confront this modern day hazard? Until technologies are developed to limit their reckless operation, we must be prepared for this new threat to our operation as Auxiliary Aviators. Pilot awareness and planning are key. AUXAIR is most likely to encounter a drone at lower altitudes – during the most critical phases of flight. The highest priority, of course, is constant vigilance. Secondly, we cannot allow an encounter and the ensuing ATC dialogue to distract us from the climb out or approach. Distractions create opportunities for error, so remember to aviate first and foremost. That said, if workload allows, providing ATC with some basic information will help law enforcement not only locate the perpetrator, but gather trend data to assist in combating future intrusions into our airspace. Tim Canoll, president of the Air Line Pilots Association, urged the public to help stem the growing threat. “If you are near an airport and you see someone lifting one of these things off, you should call 911.” FAA enforcement cases against drone operators haven’t kept pace with incidents. The agency has settled five civil cases involving unmanned flights that violated regulations, according to FAA data. One involved a Swiss citizen who flew over the University of Virginia campus filming a promotional video.

The following reporting items highlight what the authorities find helpful:

- What was the position and altitude of the drone?
- Did you take evasive action?
- Did the drone take evasive action?
- Was the drone level, or was it tilted in forward flight?
- Description of the drone (color, number of rotors vs. fixed-wing, presence of a cone on top, skids or camera mounted below).

to be continued

Stay informed - DRONES or (UAS).

More on this topic in the spring edition of the *Operations and Flight Safety Newsletter*.

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leads to fatigue and Excessive Daytime Sleepiness (EDS) (Howard, Gaba, Rosekind, & Zarcone, 2002). There are a number of contributing factors involved with sleep disruption. Underlying medical problems, such as diabetes, hypertension, and heart disease can interfere with proper sleep. Certain medications may have a diuretic effect and cause one to get out of bed to urinate, others will be stimulating and affect sleep duration and sleep architecture. Use of caffeine and alcohol, even if it is not around bedtime, can adversely affect sleep quality. Chronic pain syndromes and even a recent minor or muscle ache can awaken one from sleep precluding the attainment of deep sleep. Circadian rhythm clock issues with travel and jet lag can sometimes play havoc with sleep schedules. The body’s cortisol levels are adversely affected with a rapid time zone change. These changes in cortisol levels will adversely affect the sleep wake cycle

(Van Cauter, Leproult, & Kupfer, 1996). Stress, whether it is from external stressors from work or home, or internal stress from an underlying anxiety or neurotic syndrome, will interfere with obtaining a good night’s sleep without disruption. Sleep disorders are a very common cause for sleep disruption. Since they are often unnoticed and under diagnosed, the average time from origination of a sleep disorder to diagnosis is 15 years (Carskadon, & Dement, 2000). During this period, a considerable sleep debt may accumulate and the person is at increased risk of developing other medical and psychiatric problems.

Sleep disorders feature prominently as the origin of sleep disruption and ensuing fatigue. There are over ninety documented sleep disorders; the most salient of these will be discussed. Obstructive Sleep Apnea and Upper Airway Resistance Syndrome are very common in both men and women. This disorder occurs when the airway in the throat and nose is compromised; usually by a redundancy of soft tissue in the soft palate and tongue base (Dempsey, Xie, Patz, & Wang, 2014). Sufferers of these problems are usually overweight and over 50 years old; however, young and otherwise physically fit people can also be stricken. The pathophysiology includes a collapse of the airway, necessitating arousals and awakenings. These often go unnoticed by the afflicted person and his or her bed partner. These sleep interruptions prevent adequate consolidation of the sleep cycle and will often preclude entering into deep (N2) sleep and decrease REM time (Jones et. al., 2014). Diagnosis and treatment for this is often quite simple and non-invasive.

Insomnia is a term to denote trouble falling asleep or difficulty staying asleep. This plagues everyone from time to time; however, some people suffer

from chronic insomnia that will either require sedating medication or will reduce total sleep time. Restless leg syndrome and its nocturnal corollary of Periodic Leg Movement Disorder of Sleep (PLMDS) results in involuntary lower extremity motion most often due to an iron storage deficiency in the basal ganglia of the brain (Connor, Ponnuru, Wang, Patton, Allen, & Earley, 2011).

Narcolepsy is a disturbance of the sleep/wake center in the brain. The proverbial switch is turned on or off inappropriately. This disorder is considered, for good reason, to be an automatic disqualification for flight crew duties by the Federal Aviation Administration (FAA) (Serber, et. al., 2010). Narcolepsy and its associated cataplexy; losing muscle tone and falling down usually when stimulated or excited, are readily diagnosed by polysomnography. They are also usually easily treated with medications.

Parasomnias include panoply of disorders that include sleep-walking (somnambulism), sleep-talking (somniloquy), bed-wetting (enuresis), sexsomnia (sleep sex) and night terrors (Schenck, Bundlie, Ettinger, & Mohowald, 2002). These often will have a predilection to affect children and adolescents; however, they can also be seen in adults. Parasomnias most often occur in deep non-REM sleep and will often be associated with seizure activity. They are seen in about 10 percent of the adult population and can be associated with an organic brain issue. REM behavior disorder (RBD) is a parasomnia that is associated with a decrease of inhibitory paralytic motor function during REM sleep. This allows sufferers to act out their dreams, often running, jumping and punching in their sleep. This problem can be injurious to the sufferer and to their bed partner. There have been reports of people who have actually driven long distances while under the influence of parasomnias (Schenck, & Mahowald, 1995). This would not be compatible with piloting an aircraft.

Circadian Rhythm Disorders are related to problems with the biological clock (Reid, & Zee, 2009). These include both intrinsic and extrinsic types. Intrinsic includes Advanced Sleep Phase Disorder (ASPD), Delayed Sleep Phase Disorder (DSPD), Irregular Sleep-Wake Rhythm, and NON-24-Hour Sleep-Wake Disorder. Extrinsic includes Shift Work Sleep Disorder and Jet-Lag Disorder. These disorders all disrupt the sleep wake cycle. They are often controlled with medication and/or light therapy. These can cause issues with sleep loss, fatigue, excessive sleepiness, depression, impaired work performance and disruption in lifestyle.

The most prevalent sleep disorder in modern society is actually Insufficient Sleep Syndrome (ISS) (Aldrich, 2003). Although other sleep disorders may exacerbate

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and contribute to the effects of ISS, it is also an entity known unto its own. Modern society has a plethora of activities to preoccupy and steal precious time away from much needed sleep. The average adult requires between 7 and 9 hours of sleep each night. A sleep debt will accrue if there is a deficit. Sleeping more than 9 hours could indicate an underlying sleep disorder such as hypersomnia.

Crew Resource Management (CRM) is a term that was originally coined in the late 1970s as Cockpit Resource Management. It was used to describe a process to improve communications, situational awareness, behavior, leadership, threat and error management, and aeronautical decision-making (Kanki, Helmreich, & Anca, (Eds.) 2010). Each of these aspects of CRM is part of a training program that is encouraged for all members of the aerospace community, but required participation for all FAA Part 121 and FAA Part 135 operations (Salas, Wilson, Burke, Wightman, & Howse, 2006). CRM has demonstrated a positive effect on error reduction and in turn accident generation (Salas, Wilson, Burke, & Wightman, 2006). All of the components of CRM are subject to the negative effects of fatigue.

Communications between crewmembers as well as with air traffic control and other ground-based units is a key facet of CRM. Multiple reports have demonstrated that fatigue adversely affects communication abilities (Wiegmann, & Shappell, 2001). Both reception and transmission components of communications are equally affected. Helmreich, (2000) shows that CRM communications issues are degraded by fatigue in both the aviation and health care industry. Armentrout, Holland, O'Toole, and Ercoline, (2006) discuss a situation of a near accident of a military aircraft that was believed to be due to complications of communications as a result of fatigue. Thomas and Ferguson, (2010) describe a planned study of fatigue and CRM with special emphasis on crew communications. A degradation of communication ability was seen amongst the more fatigued crewmembers.

Situational awareness is a facet of CRM that is especially sensitive to the effects of fatigue. Shappell and Wiegman, (2003) posit that 'mental fatigue' was the contributing factor to disrupt situational awareness in a study of controlled flight into terrain accidents. Drury, Ferguson, and Thomas, (2012) discuss the negative implications of sleep deprivation and fatigue on situational awareness in

commercial short-haul operations. Some have even warned of potential fatigue and associated diminution of situational awareness with increased cockpit technology (Evans-Davis, 1999). This author, along with others, suggests that increased aircraft automation will remove the crew from engagement and increase the risk of fatigue. This lack of integration will help promote a disassociation with crew activities, discourage monitoring, and reduce situational awareness.

Teamwork and relationships are a hallmark of CRM that can be shown to degrade with a fatigued crew. Chambers and Main (2015) delve into the issues of fatigue and teamwork disruption in a study of maritime pilots. They found that fatigue was a key influence in the etiology of CRM breakdown in crew teamwork and relationships. An analysis by the National Transportation Safety Board (NTSB) and Aviation Safety Reporting System (ASRS) showed a direct correlation with fatigue and a negative impact on teamwork and relationships ultimately adversely affecting CRM (Mosier, et. al, 2012). Maran (2006) has used CRM concepts of teamwork to reveal a lapse and decrease in teamwork in the surgical operating room due to the effects of fatigue.

Behaviors towards and between other crewmembers will also be adversely affected when in a fatigue-saturated situation. A study of highly fatigued airline crews revealed heightened emotional lability and an alteration in usual behaviors in a sleep-deprived crew (Drury, Dorrian, Ferguson, & Thomas, 2013). Becker and Kohler (2014) discuss the 'multifarious behavioral' changes seen in Swiss aviators when subjected to extreme fatigue. They go on to elucidate the increased risks and compromise of CRM while crewmembers are fatigued.

Aeronautical Decision Making (ADM) is another aspect of CRM that is subject to the negative influence of fatigue. Boy (2012) describes the importance of aviation stress management and fatigue mitigation on the effects of ADM. His handbook stresses the importance of a fatigue-free flight to enhance and improve ADM. Orasanu (2010) delves into a complex paradigm of group fatigue where many or all of the crewmembers are fatigued. In this case, the overall fatigue has a detrimental effect on group decision-making.

A fatigued crew or crewmember adversely impacts threat and error management. Helmreich and Davies (2004) describe a corollary of aviation CRM to the surgical operating room. They note that fatigue

negatively impacts threat and error management from an anesthesiologist viewpoint. In fact, long haul pilots have employed in-flight naps to decrease fatigue in an effort to reduce threats and errors. Dismukes, Loukopoulos, and Berman (2012) corroborate the association between fatigue and decreased ability to perform adequate threat and error management.

CONCLUSION

The negative effects of fatigue and sleep disorders on CRM have been demonstrated through numerous studies. It is relatively easy to understand that the majority of sleep disorders are associated with fatigue and excessive daytime sleepiness. Many of these disorders will cause a loss of concentration, memory and attention. In addition, the medical problems associated with sleep disturbances will often generate a plethora of adverse conditions that include fatigue as their by-product. Fatigue can be seen to adversely affect all aspects of CRM including communications, situational awareness, teamwork and relationships, behavior, aeronautical decision-making, as well as threat and error management. We have attempted to show that the prevalence of sleep disorders in the general population warrants close attention and monitoring of aircrews. A lower threshold for investigation of the aviation community should be employed to positively identify those with sleep disorders. These individuals should be evaluated and diagnosed and then appropriately treated. With proper treatment, not only will the crewmember be healthier, but will have a significant reduction in creating adverse CRM issues and consequently will enhance the safety of the flight or mission.

[References for this article are on page 15.](#)

2016 Training

April 1-2 Savannah Workshop

April 8-10 Miami Workshop

April 15-16 Clearwater Workshop

Borinquen Workshop - TBA

**September 22-25 D-TRAIN
Florida Hotel and Convention
Center Orlando, FL**

“Effects of Sleep Disorders and Fatigue on Aviation CRM” References continued from page 14

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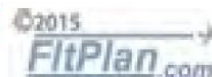
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AHN GPS Approach Plate continued from page 10

07 JAN 2016 to 04 FEB 2016



ATHENS, GEORGIA

AL-983 (FAA)

15344

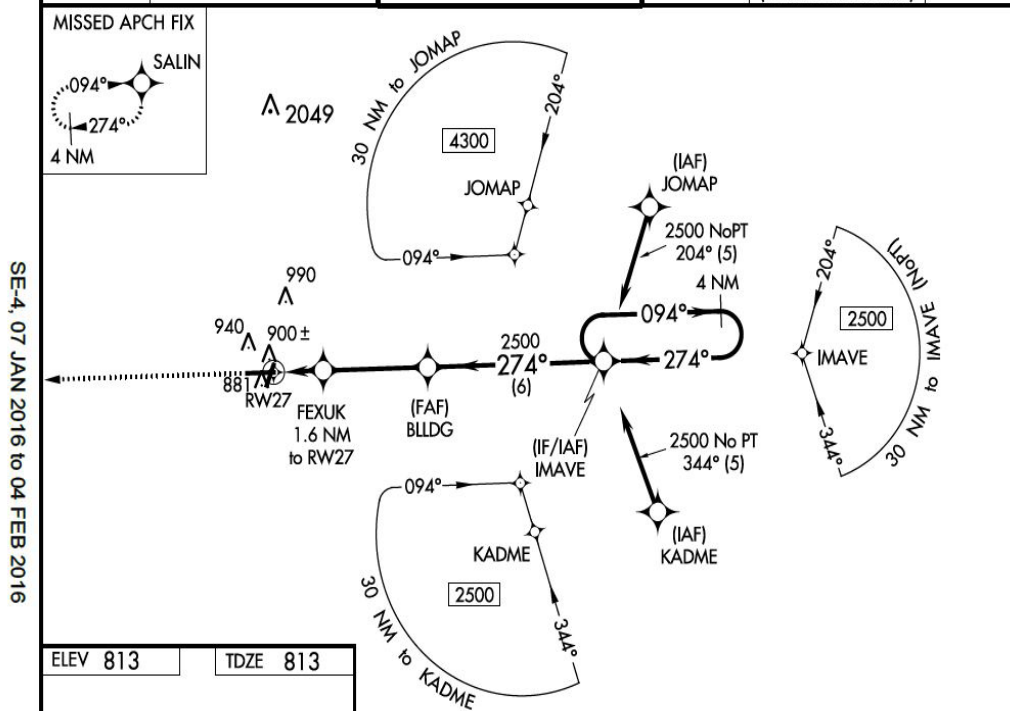
WAAS CH **69503** APP CRS **274°** Rwy Idg **6122** TDZE **813** Apt Elev **813**
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RNAV (GPS) RWY 27
 ATHENS/BEN EPPS (AHN)

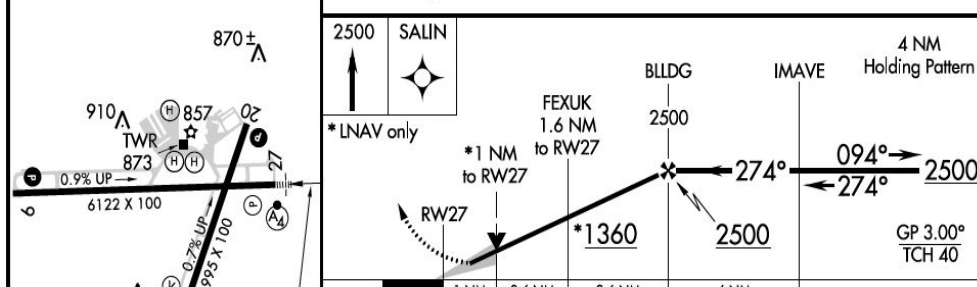
For uncompensated Baro-VNAV systems, LNAV/VNAV NA below -9°C (16°F) or above 54°C (130°F). For inop ODALS, increase LNAV/VNAV all Cats visibility to 7/8 mile, increase LNAV Cat C/D visibility to 1 mile. DME/DME RNP-0.3 NA. When local altimeter setting not received, use Winder altimeter setting: increase LPV DA to 1071 feet; increase LNAV/VNAV DA to 1121 feet; increase all MDAs 60 feet and increase LNAV Cats C, D visibility to 1 mile, and Circling Cat D visibility to 2 1/4 mile. For inop ODALS when using Winder altimeter setting, increase LNAV/VNAV all Cats visibility to 1 mile, increase LNAV Cat C, D visibility to 1 1/8 mile. Baro-VNAV and VDP NA when using Winder altimeter setting. Night landing: Rwy 2, 20 NA.

ODALS MISSED APPROACH: Climb to 2500 direct SALIN and hold.

ASOS **132.875** ATLANTA APP CON ★ **132.475 291.1** ATHENS TOWER ★ **126.3 (CTAF) 338.275** GND CON **121.8** CLNC DEL **132.475 291.1** (when tower closed) UNICOM **122.95**



ELEV 813 TDZE 813



CATEGORY	A	B	C	D
LPV DA	1013-3/4	200 (200-3/4)		
LNAV/VNAV DA	1063-3/4	250 (300-3/4)		
LNAV MDA	1160-3/4	347 (400-3/4)	1160-7/8	347 (400-7/8)
CIRCLING	1260-1	1280-1	1320-1 1/2	1460-2
	447 (500-1)	467 (500-1)	507 (600-1 1/2)	647 (700-2)

ATHENS, GEORGIA

Amdt 1 15OCT15

33°57'N-83°20'W

ATHENS/BEN EPPS (AHN)

RNAV (GPS) RWY 27

SE-4, 07 JAN 2016 to 04 FEB 2016