



## **HELICOPTER SAFETY ADVISORY CONFERENCE**

**October 7, 2010**

**Sheraton North Houston Hotel  
Houston, Texas**

## **MINUTES**

### **INTRODUCTION**

- Chairman Mark Fontenot called the meeting to order at 08:30 and welcomed members and guests. The Chairman read the Anti-Trust Statement and reviewed emergency evacuation route.
- The Chairman thanked Bell Helicopter, Sikorsky, American Eurocopter and Agusta Westland for there support.
- Introduction by attendees.

### **Treasurer's Report – Joe Gross**

- Contributions, Bank Account Report, Summary (*attachment #1*)

### **Vice Chairman Report – Bob Hall**

- Business related absence

## **HSAC COMMITTEE REPORTS**

### **Flight Safety – Terry Kaufman**

- Business related absence

### **John Cameron – Shell Aviation Advisor**

- Suggested HSAC have a representative attend the Offshore Operators Committee (OOC) meetings.
- Suggested link to HSAC website on OOC website and link OOC on HSAC website.
- Review current RPs and proposed changes as required
- Louisiana House Bill No. 297, "Regulation of Transportation of Offshore Oil Platform Workers" requiring passengers to carry EPIRBS



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- Need to know if EPIRB required is GPS or VHF 121.5
- **UPDATE 12/21/2010:** Jacob's Law: "State officials have agreed to hold off enforcement of a new law that would require personal locator devices for offshore oil-and-gas workers being transported by helicopter in the Gulf of Mexico." (*attachment #3*)
- **UPDATE 12/21/2010:** <http://www.2theadvocate.com/news/112227804.html>

#### **Flight Following Committee – Terry Gambill**

- Frequency spacing will be changing from 0.25 MHz to 0.083 MHz and will become mandatory in the U.S. in the next few years. Increased cost associated with updating aircraft radios.
- The intercepts (scrambles) in the GoM are down for this year.
- The tethered Aerostat balloons will be leaving soon.
- New Orleans Approach plans new frequency in the Galliano area – To be announced.
- HSAC Frequency Card: Adding 9 more AWOS frequencies. Need to find real estate on the card. Please forward changes on HSAC Frequency Card to David Robinson at [drobinson@erahelicopters.com](mailto:drobinson@erahelicopters.com)

#### **Technical Committee – Pat Robert**

- New draft RPs, "Working at Heights" and "Human Factors" (*attachment #4 and #5*)
- FAA will be mandating Human Factor training which may include use of safety helmets or bump caps for flight and maintenance crews during preflight and aircraft maintenance (*attachment #6*).

#### **Government Liaison – Dana Raaz**

- Representatives from the Coast Guard are unable to attend HSAC meeting.
- Need to begin a dialogue with the Coast Guard and include HAI to determine the future plans to provide deepwater rescue coverage.

#### **Heliport and Airways – Ken Kersker**

- No update on API RP2L
- Many companies have been painting helidecks in accordance with HSAC RP 2008-1.
- Coast Guard aware of helideck RP and asking if (your) helideck meets standards of RP 2008-1.



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### **Industry Liaison – Larry Lippert**

- Vendors contacted not responsive or willing to attend HSAC meeting. Response is, “We’ll send you a PowerPoint.”
- If there is interest from any member of the group on a particular subject, please correspond by email to: [larry.lippert@vihcougar.com](mailto:larry.lippert@vihcougar.com).
- 

### **Dave Downing and Steve Milldenstien – Bell Helicopters**

- Cockpit Information Recorder
  - Testing at Ft. Rucker on TH-67 fleet
  - Targeting EMS fleet
- Polycarbonate Windows
  - Production to begin in March 2011
  - L-series helicopters first and eventually all models
  - Will be part of production line aircraft
  - Retrofit market
  - Weight increase is approximately 15-pounds
  - Bird “resistant” at VNE
  - Note: Monitor FAA on “SMS.” Exceeds ICAO recommendations.
- Dave Downing attend IHST meeting. Discussion with HSAC group.
  - “How many here are on Facebook? Let’s have a show of hands.”
  - “Here it comes, everyone! We have to change how we are communicating with the younger generation. Need to start thinking like my kids and the younger generation. Social media is a way to get the word out.”
  - **A free inside look at jobs and companies** – [www.glassdoor.com](http://www.glassdoor.com). A website for young people to interview with a company.
- WAAS Approaches



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### **Aerial Observation Committee – Mark Small**

- Discussion for RP on “Risk Assessment for Pipeline Patrol Providers” (*attachment #7 and #8*)
- Aerial Patrol Committee began in 2006. Mark Small has been reassigned to Angola and his the new Chairman will be Cort Andrews. Great work, Mark. You will be missed.

### **Fish Spotters**

- Helicopter operators urged to educate new pilots on seasonal fish spotter activity and thorough briefing on frequencies and altitudes.
- **Joe Fain, Safety Leader:**
  - **Office:** (337) 893-8772
  - **Cellular:** (337) 258-5552
  - **Email:** [j\\_c\\_fain@yahoo.com](mailto:j_c_fain@yahoo.com)

### **Allan Overby**

- If ADS-B would have not been completed in the Gulf of Mexico, ADS-B nationwide would not go forward.
- Important to remember with offshore AWOS weather reports: **Ceiling** is based on mean sea level. **Altimeter setting** is base on height of helideck. (*attachment #9*)
- **HELP US MAINTAIN THE OFFSHORE ADS-B and AWOS SYSTEMS.**
  - When the aircraft is shut down and there is time on the platform; find the ADS-B and AWOS systems. Look at the equipment and note any discrepancies, no matter how insignificant they may seem.
  - **Report discrepancies and inaccurate information to the ITT SBSS team via e-mail at: [ITT-SBSS-O&M@itt.com](mailto:ITT-SBSS-O&M@itt.com)**
  - Offshore workers should be educated as to the critical nature of this equipment.
  - When designing a structure for deepwater, contact us to assist with designing-in the ADS-B and AWOS systems. Service would just get better and better for the user.
  - There are 11 different operators providing transportation for the technicians.
  - ADS-B update (*attachment #10*)



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**Comments from the floor:**

- Develop standardized risk assessment form (RP)
- Enhance Operational Control: Benefits all for flight safety.
- “We all come to ‘church’ and get the message. Need to get the message down to people doing the work.”
- Suggest a new venue for the New Orleans meetings.

**Next Meeting – New Orleans**

Hilton New Orleans Airport  
901 Airline Drive,  
Kenner, LA 70062  
Telephone (504) 469-5000 or 1-800 872 5914

2011 MEETING DATES	
January 12 <sup>th</sup> and 13 <sup>th</sup> 2011	New Orleans, LA
May 4 <sup>th</sup> and 5 <sup>th</sup> 2011	Lafayette, LA
October 5 <sup>th</sup> and 6 <sup>th</sup> 2011	Houston, TX



## HSAC Contributors – 2010

Bristow US	\$1,000
BHP Billiton Petroleum	\$1,000
Cenergy International Services, LLC	\$1,000
Chevron USA	\$1,000
Cougar Helicopters (2009 & 2010)	\$2,000
ENI US Operating	\$1,000
Era Helicopters, LLC	\$1,000
Metro Aviation, Inc.	\$1,000
PHI, Inc.	\$1,000
Shell Aircraft (2009 & 2010)	\$2,000
Sky Connect, LLC	\$1,000
Statoil Gulf Services	\$1,000
VIH Cougar (2009 & 2010)	\$2,000

Total: \$16,000



## **2010 HSAC Bank Account Activity 1 Jan – 4 Oct**

<b>Opening Year Balance</b>	<b>\$ 27,809.60</b>
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<b>Contributions</b>	<b>\$ 16,000.00</b>
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<b>Expenditures</b>	<b>\$ 7,960.32</b>
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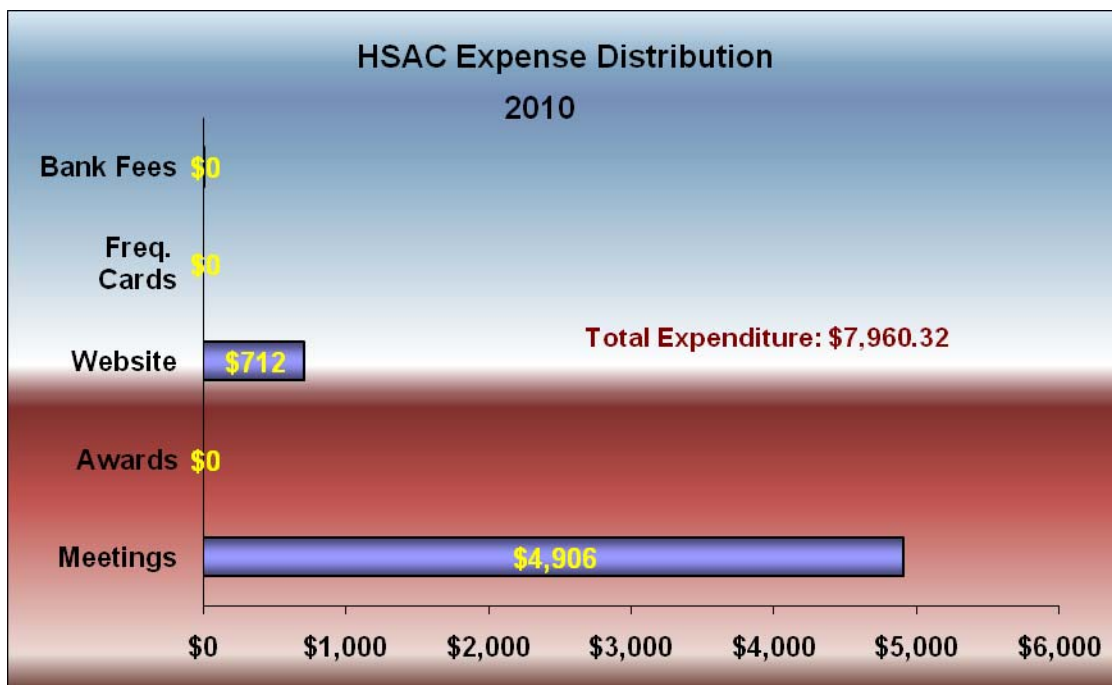
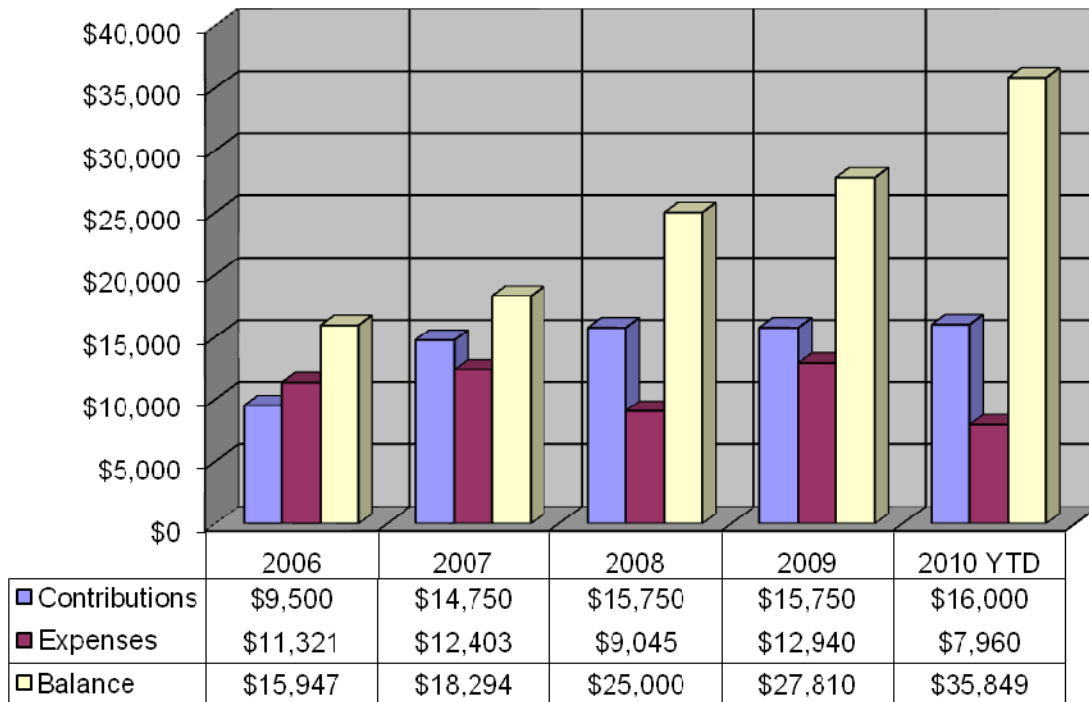
<b>To Date Balance</b>	<b>\$ 35,849.28</b>
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<b>Net Difference</b>	<b>+ \$ 8,039.68</b>
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# 2010 Summary

HSAC Contributions vs. Expenses





ENROLLED

Regular Session, 2010

## ACT No. 572

HOUSE BILL NO. 297

BY REPRESENTATIVES GUINN, ARNOLD, AUSTIN BADON, HENRY BURNS,  
BURRELL, CARMODY, CHANDLER, CHANEY, CONNICK, GISCLAIR,  
GUILLORY, HARDY, HENRY, HOFFMANN, HOWARD, HUTTER, LAFONTA,  
NORTON, STIAES, TALBOT, AND WOOTON

1 AN ACT

2 To enact Part VIII of Chapter 6 of Title 40 of the Louisiana Revised Statutes of 1950, to be  
3 comprised of R.S. 40:1486.1 and 1486.2, relative to safe transportation of offshore  
4 oil platform workers; to provide for purpose; to provide for flotation devices to be  
5 equipped with personal locator beacons; and to provide for related matters.

6 Be it enacted by the Legislature of Louisiana:

7 Section 1. Part VIII of Chapter 6 of Title 40 of the Louisiana Revised Statutes of  
8 1950, comprised of R.S. 40:1486.1 and 1486.2, is hereby enacted to read as follows:

9 PART VIII. REGULATION OF TRANSPORTATION OF OFFSHORE OIL

10 PLATFORM WORKERS

11 §1486.1. Purpose

12 The legislature finds that the production of oil for the energy needs of the  
13 state and the nation is of vital concern, and the safety of those who work in the  
14 offshore industry and those who transport those workers is also of vital concern;  
15 therefore, the legislature imposes certain requirements upon the transportation of  
16 offshore workers.

17 §1486.2. Life preserver, life jacket, or life belt; personal locator beacon; required

18 Notwithstanding any other provision of law to the contrary and prior to  
19 January 1, 2011, any aircraft utilized to transport offshore platform workers, to and  
20 from the platform, shall provide and carry, so placed as to be readily accessible, at  
21 least one life preserver, life jacket, or life belt and a personal locator beacon, for each

1            person on board. The device shall be capable of transmitting a digital coded distress  
2            signal and a permanent homing signal.

3            Section 2. This Act shall be known and cited as "Jacob's Law".

4            Section 3. This Act shall become effective upon signature by the governor or, if not  
5            signed by the governor, upon expiration of the time for bills to become law without signature  
6            by the governor, as provided by Article III, Section 18 of the Constitution of Louisiana. If  
7            vetoed by the governor and subsequently approved by the legislature, this Act shall become  
8            effective on the day following such approval.

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SPEAKER OF THE HOUSE OF REPRESENTATIVES

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PRESIDENT OF THE SENATE

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GOVERNOR OF THE STATE OF LOUISIANA

APPROVED: \_\_\_\_\_

- By [RICHARD BURGESS](#)
- Advocate Acadiana bureau
- Published: Dec 21, 2010 - Page: 1BA

[Comments \(0\)](#)

LAFAYETTE — State officials have agreed to hold off enforcement of a new law that would require personal locator devices for offshore oil-and-gas workers being transported by helicopter in the Gulf of Mexico.

The law was scheduled to go into effect in January, but helicopter companies PHI and Bristow filed a lawsuit in November challenging the state's authority over aviation safety, which is generally regulated by the federal government.

The two companies, among the largest in the offshore transportation business, also asked a federal judge to block implementation of the new law while the lawsuit is pending.

A hearing on that request was set for Tuesday, but state officials voluntarily agreed not to enforce the new safety law until the lawsuit is resolved.

That decision was based in part on new regulations for offshore transportation that are being considered by the Federal Aviation Administration, according to a statement from the state Attorney General's Office issued through spokeswoman Sharon Kleinpeter.

"In light of pending FAA regulations and based on discussions with the Legislature and State Police, the AG's office determined that a short, temporary postponement in the enforcement of the law was appropriate," the statement read.

The Legislature approved the new safety requirement this year, requiring personal location devices that might aid in the search of offshore workers after helicopter crashes in the Gulf.

The regulation was named "Jacob's Law" in memory of 26-year-old Jacob Matt, an offshore worker from Jennings whose body was not found until four days after a 2008 helicopter crash in the Gulf off the Texas-Louisiana border.

The man's family had pushed for the legislation.

Representatives from the helicopter companies have argued that any new safety regulations should be developed in collaboration with federal officials and with input from companies involved in offshore transportation.



## **HSAC – RP – 2010-5** **Working at Height**

### **Background**

Falls from aircraft, working surfaces, maintenance stands, while accessing aircraft or undertaking any activity which requires working at or moving through height, are potential sources of injuries and fatalities.

Some operations, which expose personnel to falls from heights, include:

- aircraft pre-flight inspection
- cleaning and painting
- maintenance, inspections, aircraft servicing
- aircraft washing operations

### **Recommended Practices**

The following guidelines cover areas which may be considered when developing a working a height program

#### **Recommendations**

Companies should have polices and practices that reference the following:

- Has a plan of the work accomplished been conducted
- Select the proper equipment for the task
- Consider the work area for access and hazards.
- Do the weather conditions contribute to additional risk?
- Proper training for individuals should be conducted prior to accomplishing tasks that require working at heights
- Can the task be carried out on the ground?
- Can steps be taken to reduce the hazard of a fall i.e. can a work platform be used instead of having to work on the aircraft itself?
- Only remain at height long enough to perform the task required.

- Minimize the height above ground level that you are working at.
- Is it possible to reduce the hazards should a fall occur i.e. removable objects, debris on the ground, suitable supervision or assistance

Proper Job Safety Analysis reviews should be conducted for activities that require individuals to conduct tasks above ground level

The JSA should help determine the appropriate PPE or stands that mitigate the risk of working at height.

More information on working at height e.g. training and international practices can be reviewed in the following areas

LJB Incorporated

<http://www.ljbinc.com/interior.cfm?pagelD=82>

National Safety Compliance

[http://www.osha-safety-training.net/index.php?option=com\\_content&view=article&catid=11:osha-training-videos&id=152:fall-protection-safety-training-video](http://www.osha-safety-training.net/index.php?option=com_content&view=article&catid=11:osha-training-videos&id=152:fall-protection-safety-training-video)

UK Health and Safety Executive

[http://www.hse.gov.uk/foi/internalops/sectors/cactus/5\\_03\\_58.pdf](http://www.hse.gov.uk/foi/internalops/sectors/cactus/5_03_58.pdf)



## **HSAC – RP – 2010-6**

### **Human Factors in Aviation Maintenance**

#### **Background**

About 80 percent of maintenance mistakes involve human factors (HF), according to the Federal Aviation Administration. The maintenance world has unique HF issues that are more severe and longer lasting than elsewhere in aviation. Operators are looking at various techniques to combat HF challenges.

Human factors (HF) are constant watchwords in maintenance operations. Although HF maintenance training is not strictly required in the U.S., many U.S. maintenance organizations have adopted it because they see regulation on the horizon, want to comply with regulations elsewhere or simply accept the business case.

#### **Recommended Practices**

#### **Recommendations**

Companies should have in place a functional Human Factor training program for maintenance technicians that cover and deal with the pressures associated with aviation maintenance. Consideration should be focused on the following areas;

- Complacency , Distraction, Fatigue, Norms, Pressure, Stress, Lack of Assertiveness, Lack of Awareness, Lack of Communication, Lack of Knowledge, Lack of Resources, Lack of Teamwork

These “Dirty Dozen” have been identified as contributing factors in many aviation accidents. Operators should recognize the importance these elements and provide this training and its integration and inclusion into all aspects of aviation maintenance.

Future FAA Regulations will require aviation companies to have in place Human Factors programs. These same programs are currently mandated in operations around the world.

The following are useful links to Human Factors information;

- <http://www.gwbaa.com/standdown-byrd.pdf>
- <http://www.deepsloweasy.com/HFE%20resources/CAA%20HFE%20Maintenance.pdf>
- FAA Aviation Maintenance Human Factors Web Portal  
<https://hfskyway.faa.gov/hfskyway/index.aspx>

# COULD THIS HAPPEN TO YOU?

(A message from a Bristow Engineer)

What follows is an unedited account of an incident that occurred on an Australian operated aircraft, in the words of the certifying engineer.

*Aircraft which was out on the line had just been refuelled in both sponson tanks and fuel had over spilled on the deck tread of the right hand sponson (which was unknown to me at the time).*

*I had to climb up and open the dogbox to carry out quick inspection, after completing this inspection I went on to close the dogbox in the usual manner.*

*As I stepped off from the top step with my right foot and onto the sponson (still maintaining a 3 point contact with the airframe) my hands were sweaty as I had just been winching and wearing leather gloves and managed to step onto the patch of spilled fuel on the sponson which threw my balance off and lost the hand grip of the left hand followed by the right and left foot sending me tumbling uncontrolled to the ground.*

*I hit the ground facing down and managed to extend my arms so my hands took most of the impact but gave way due to the force, my head soon followed but work helmet took the impact.*

*First aid was applied onsite.*

*Injuries evident on both hands with bruising and tenderness of wrists, palms and graze of left Shin. Luckily no head injury was sustained as helmet took the impact of the fall. Helmet sustained a small dent and was replaced with a new one from stores.*

Please ask yourself, could this happen to me? Can I learn from this account?



Neil Seabrook

Engineering Manager





**The picture above illustrates the area of impact on the actual helmet.**

# October Aerial Observation Committee

**Location:** Sheraton North Houston Hotel  
**Date:** Wednesday, October 06, 2010  
**Time:** 8:00 AM  
  
**Facilitator:** Mark Small  
**Recorder:** Cort Andrews  
  
**Attendees:** AOC Contact List - Tab 2  
**Agenda:** Below for Fall Meeting  
**Action Plan:** Tab 3

Topic of Discussion	Expected Outcome/ Action Required	Presenter	Topic Sequence	Topic Time (h:mm)	Start Time	End Time
Introduction		Small	1	0:10	8:00	8:10
Safety Topic	Presentation	Marchand	2	0:15	8:10	8:25
Flight Safety Updates	Presentation	Buchner	3	0:15	8:25	8:40
Aerial Observation Risk Assessment	Presentation	Lowery/Andrews	4	1:20	8:40	10:00
Break			5	0:10	10:00	10:10
Flight Data Management	Presentation	Riley	6	1:00	10:10	11:10
Bird strikes During Aerial Observation	Presentation	Reeves	7	0:30	11:10	11:40
Additional Information	Alibis	All	8	0:15	11:40	11:55
Action Item Review	<b>Review</b> meeting's action items and define due dates	All	9	0:05	11:55	12:00
Lunch		All	10	1:00	12:00	13:00

Aerial Observation Committee meeting minutes – October 6, 2010

8:20 Meeting opened by Mark Small

Introductions were made by those attending - 14 in attendance

Mark Small let the group know that this was his last meeting as chair and that Cort Andrews would be taking over as the group's new facilitator.

8:25 Mickey Marchand presented the safety minute and spoke on summer flying. He gave safety tips for dealing with the heat as it relates to flight crews and aircraft.

8:45 Tom Buchner briefed the group on 2009 hour/accident information. There have been no 2010 accidents within the group's membership. Tom discussed six accidents from this year which could be considered in the same flight realm as the groups.

One of the accidents discussed involved contact with power lines and it was suggested that information on flying in the wire environment be emailed to those in the group.

9:15 Cort Andrews and Casey Lowery presented a draft RP for Risk Assessment. It was recommended that several examples of risk assessments be collected and discussed prior to the next meeting. Casey said he could set up a conference call in early December to discuss, with those from the group that are interested, the developmen

Cort and Casey agreed that a complete risk assessment RP should be ready to present to the committee by the Jan

10:15 Break

10:35 Mark Small spoke on the Aerial Observation Committee's involvement in API. The group discussed the possi

The question was raised on weather it would benefit our group to try and become a part of API. Casey Lowery agre

Mark Small reminded the group about donations to HSAC and that the information could be found on [www.hsac.org](http://www.hsac.org)

## Aerial Observation Action Plan

**As of 10/2010**

Target Date Column Status: Green = complete or up-to-date w/plan   Yellow = Actions due at next mtg   Red = Overdue Actions

[illegible]

# Aviation Safety Advisory



Aviation Safety Advisory No. 2010-002  
October 26, 2010

Contact: Allan Overbey/202-270-9175  
FAA Surveillance and Broadcast Services  
Program Office

## Automated Weather Observation Station (AWOS) Sky Conditions and Altimeter Reporting

AWOS equipment installed under the FAA's Automatic Dependent Surveillance—Broadcast (ADS-B) program to enhance aviation safety in the Gulf of Mexico consists of the following major outdoor system components: cloud height, temperature, relative humidity, and barometric pressure sensors; rain gauge; ultrasonic anemometer (wind speed and direction); and visibility sensor. All equipment is generally co-located on a sensor skid or platform deck with some exceptions--the wind sensor may be installed at a different location on the platform (e.g. flare tower). Unlike airports, the equipment is not installed at the same elevation or height as the landing surface (helideck). In addition, all are 50' to 178' above mean sea level (MSL). Thus, it is important to know how FAA AWOS sky conditions (cloud ceiling) and altimeter are calibrated and being reported in the Gulf of Mexico. The table below contains a list of the FAA offshore AWOS locations.



### Therefore, the FAA recommends:

- Widest dissemination to all helicopter operators and platform personnel the following advisory with respect to ceiling and altimeter calibrations and reporting by FAA offshore AWOS' in the Gulf
  - **Ceiling: Sky conditions reported based on Mean Sea Level (MSL)**
  - **Barometric Pressure: Altimeter reported based on helideck height**



Ceilometer



Barometric  
Pressure Sensor

Alaminos Canyon 25 (HHV)	Eugene Island 215B (EIR)	High Island 179A (XIH)	Miss Canyon 920 (IPN)	South Timbalier 301B (STZ)
Brazos 133B (BBF)	Galveston 424C (GVX)	High Island A376B (HQI)	Mustang Island A31B (MIU)	Vermilion 26C (VNP)
Brazos 451A (BQX)	Garden Banks 172 (GHB)	Main Pass 140B (MIS)	Mustang Island A85A (MZG)	Vermilion 331 (VQT)
East Breaks 165 (EMK)	Garden Banks 668 (GUL)	Main Pass 289C (VKY)	North Padre Island 975 (OPM)	Viosca Knoll 786 (VOA)
East Breaks 643 (VAF)	Garden Banks 783 (GBK)	Miss Canyon 311A (MDJ)	Sabine Pass 13B (VBS)	West Cameron 368A (CRH)
East Cameron 47JP (CMB)	Green Canyon 338 (GRY)	Miss Canyon 474 (IKT)	Ship Shoal 178 (SPR)	West Delta 27A (DLP)
East Cameron 278B (EHC)	Green Canyon 787 (ATP)	Miss Canyon 711 (MYT)	South Marsh 268A (SCF)	

**Table of Gulf of Mexico FAA Offshore AWOS Facilities with FAA 3-Letter Location Identifier**

# Surveillance and Broadcast Services

## ADS-B and Gulf of Mexico Update

To: Helicopter Safety Advisory Conference  
By: Allan Overbey, CSA Program Management  
Date: October, 2010



Federal Aviation  
Administration

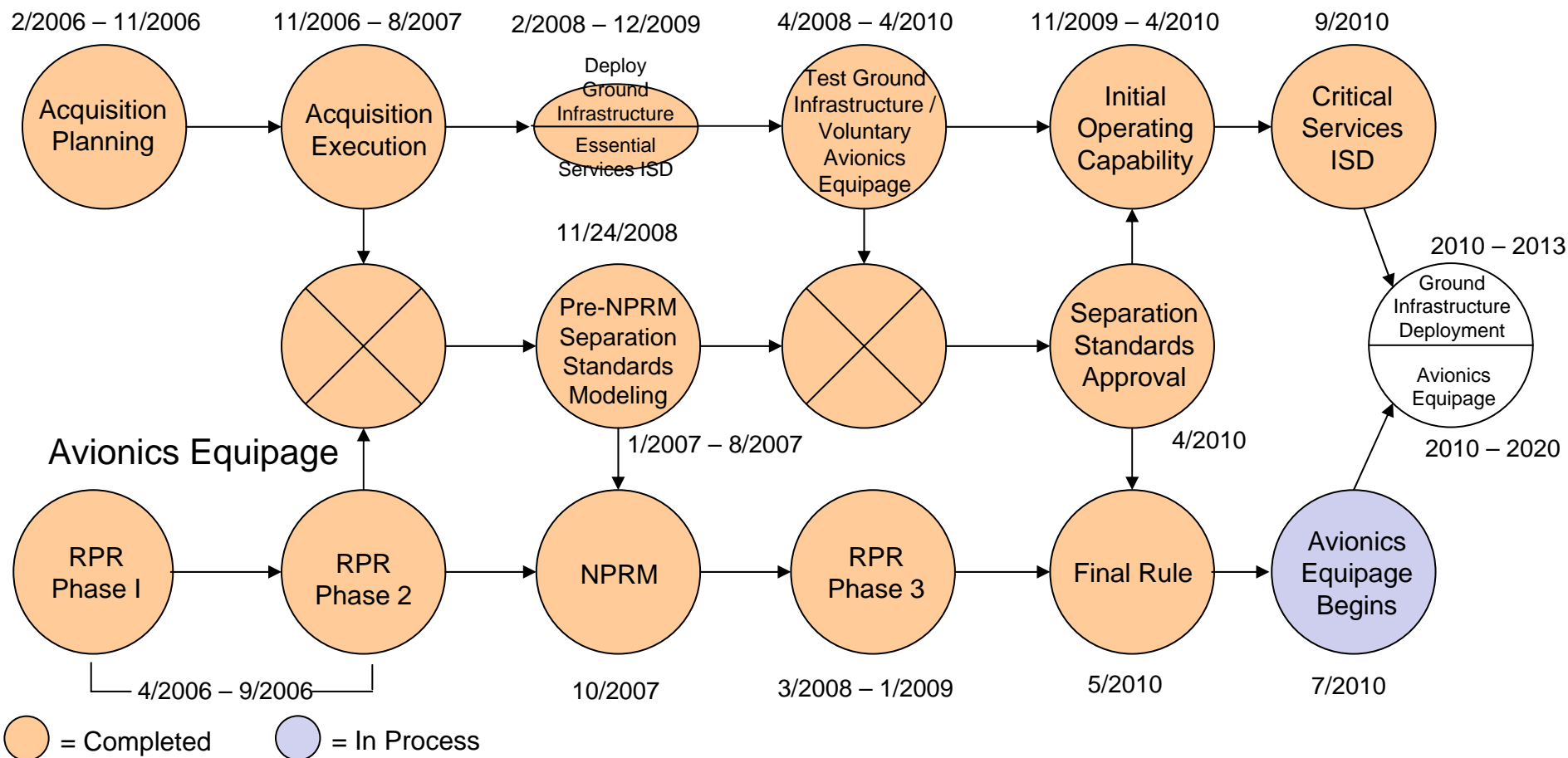
ATTACHMENT #10





# Strategy

## Ground Infrastructure



RPR = Rulemaking Project Record; NPRM = Notice of Proposed Rulemaking; ISD = In-Service Decision

# ADS-B In Aviation Rulemaking Committee

## Member Affiliation



## Recommendations:

ADS-B In Research

ADS-B In Business Benefits

ADS-B In Applications  
Investments

## Tasks:

Provide Committee position for continued work on 3 ADS-B-In Application standards development projects  
-> by Oct 2010

Provide Final ARC ADS-B-In Strategy Recommendations  
-> by Sep 2011

Delivery of products from follow-up activities  
-> by Jun 2012



# Airborne Applications

## Situational Awareness



## Spacing



## Indications and Alerts

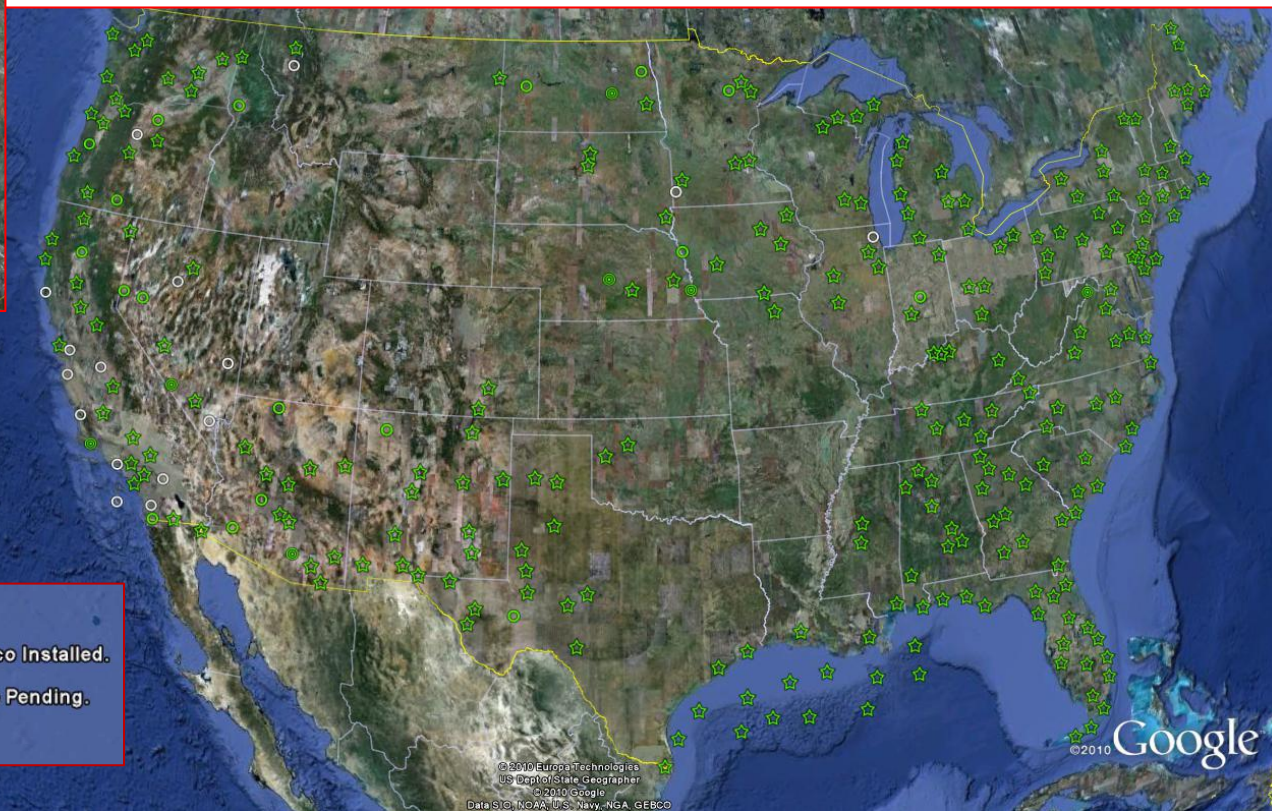
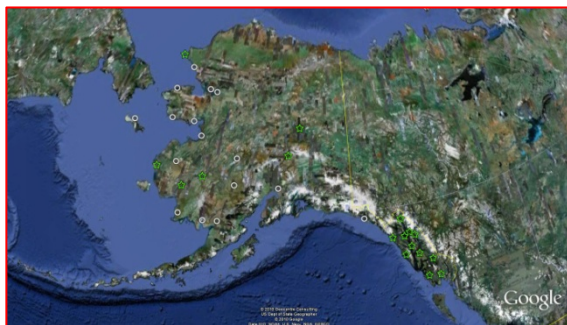


## Indications and Alerts



# Implementation Status: Sept 24, 2010

- 321 radio sites planned this year (4 western Alaska sites may miss the build season and need to wait until Spring)
- 289 radio sites constructed (272 in CONUS; 17 in AK)
- 264 radio sites tested locally and reporting on the network (247 in CONUS; 17 in AK)
- 68 IOC radio sites
- 40 radio sites currently operating for Key sites (ZMA, Gulf, SDF, PHL, JNU)

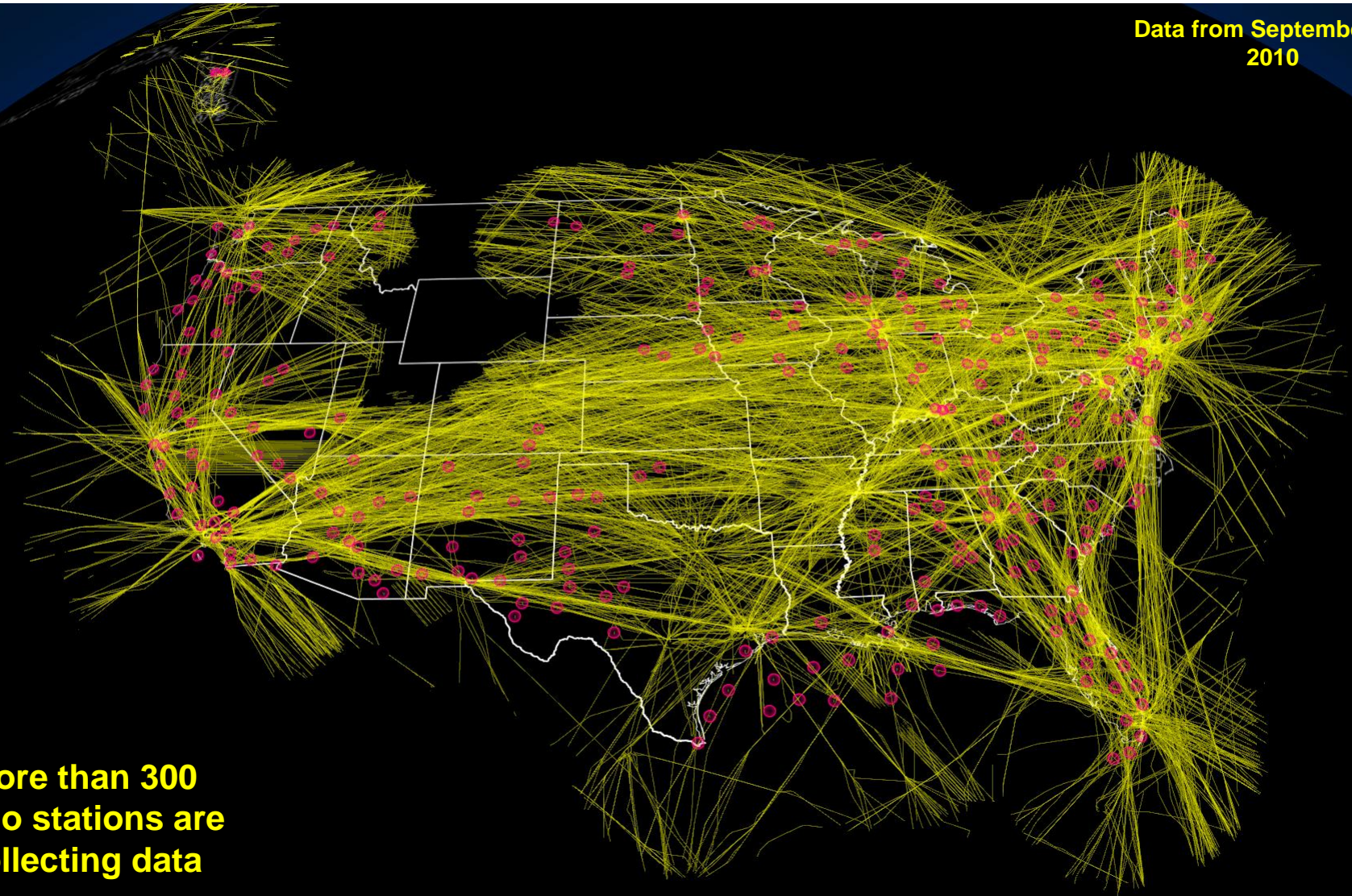


- ☆ Tested Locally and Reporting on Network
- ⊙ Construction and Installation Complete. Utilities and Telco Installed.
- Construction and Installation Complete. Utilities or Telco Pending.
- Construction in Process or Pending



# Coverage from Radio Stations

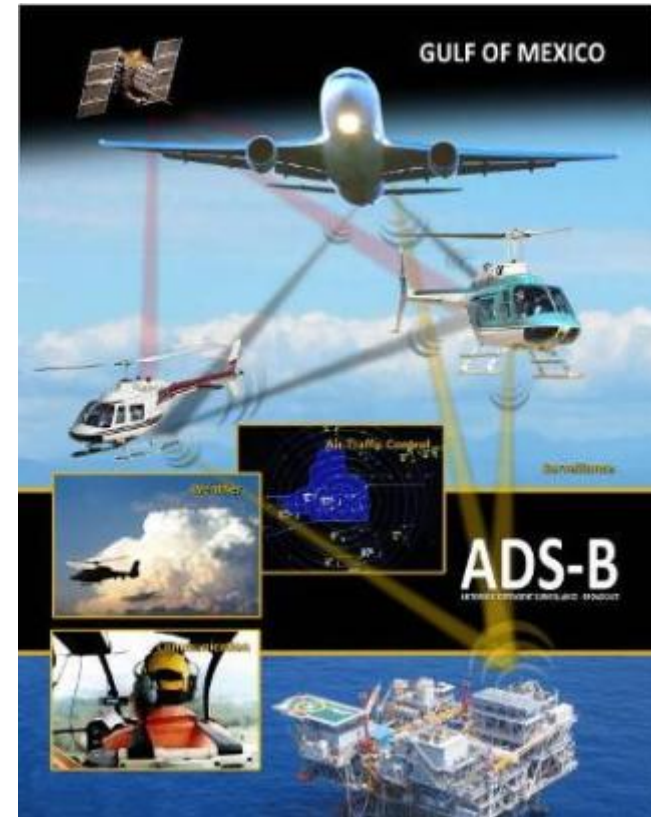
Data from September 23,  
2010



**More than 300  
radio stations are  
collecting data**

# Critical Services: Central Service Area Key Site

- **Gulf of Mexico Service Volumes Service Delivery Point: Houston ARTCC; Automation: HOST**
- **Installations completed:**
  - VHF Communications: 7
  - ADS-B: 21
  - AWOS: 31
- **December = 95% coverage of low altitude airspace with Communications & ADS-B**
- **Installations remaining (provides further coverage south & redundancy):**
  - VHF – Communications – 2
  - AWOS - Weather Installations – 4

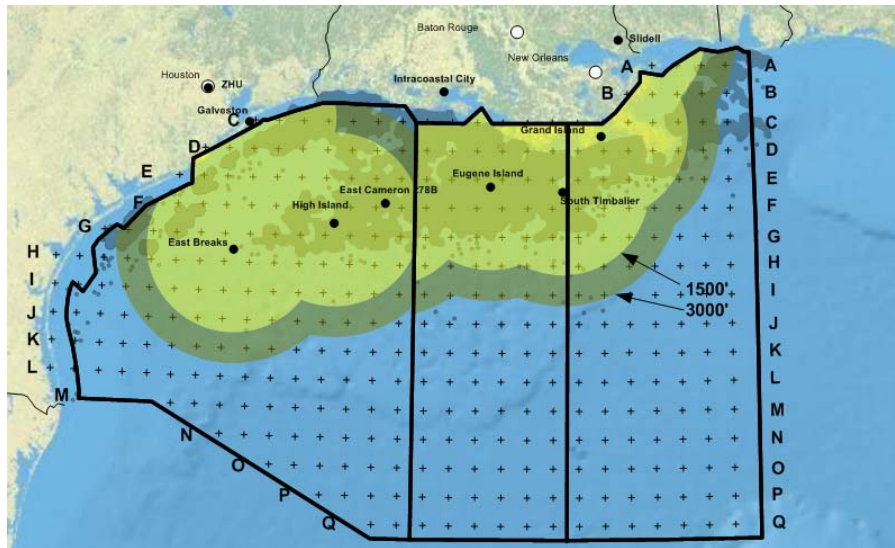




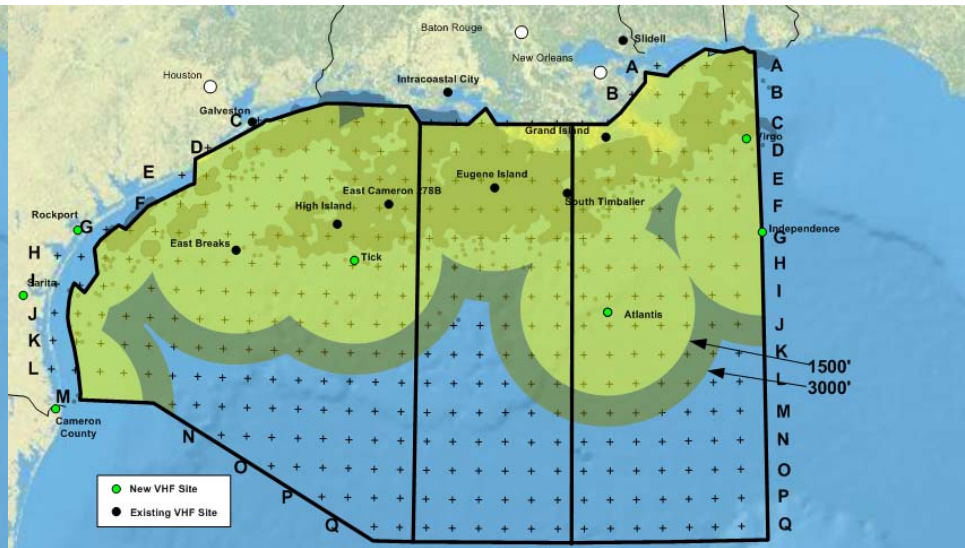
# Communication Enhancement

## Coverage at 1,500/3,000 Ft MSL

**BEFORE**



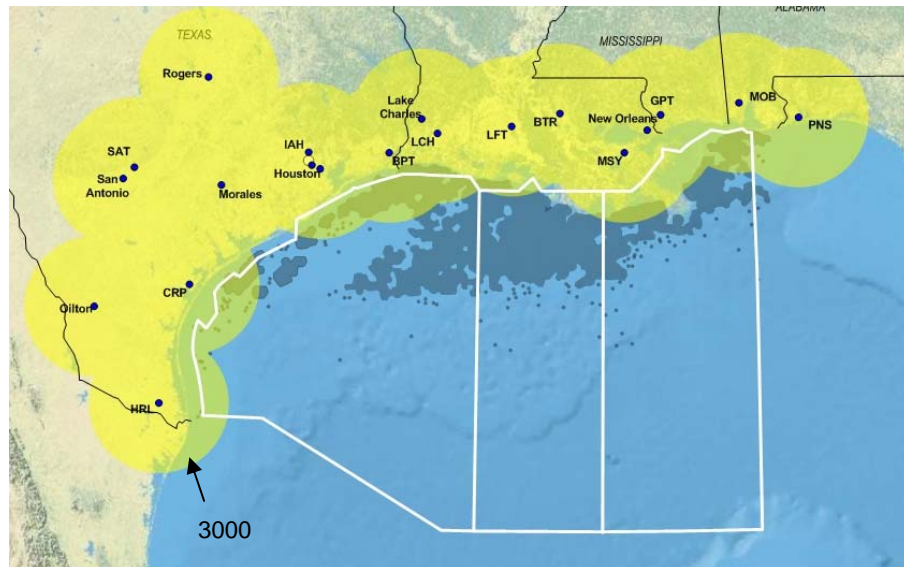
**AFTER**



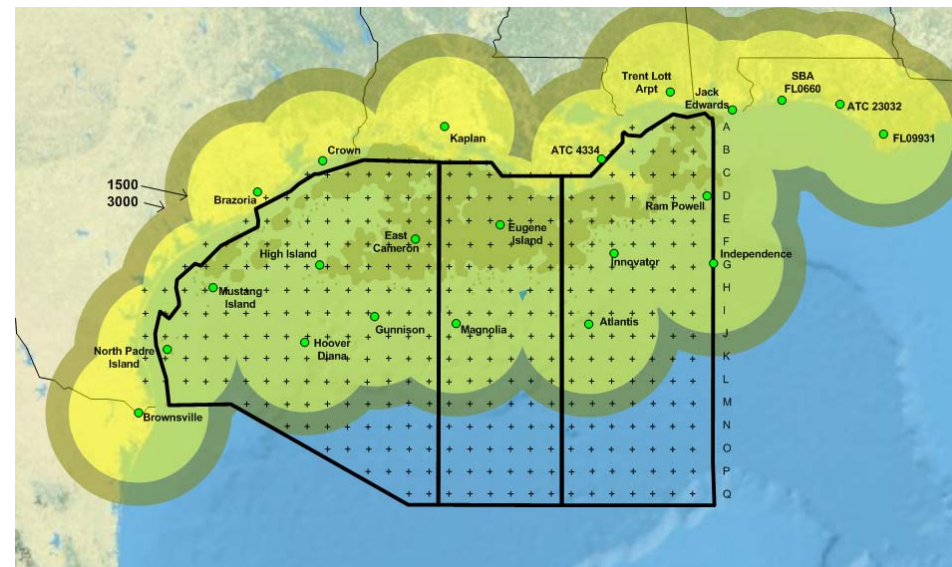
# Surveillance/ADS-B Enhancement

## Coverage at 1,500/3,000 Ft MSL

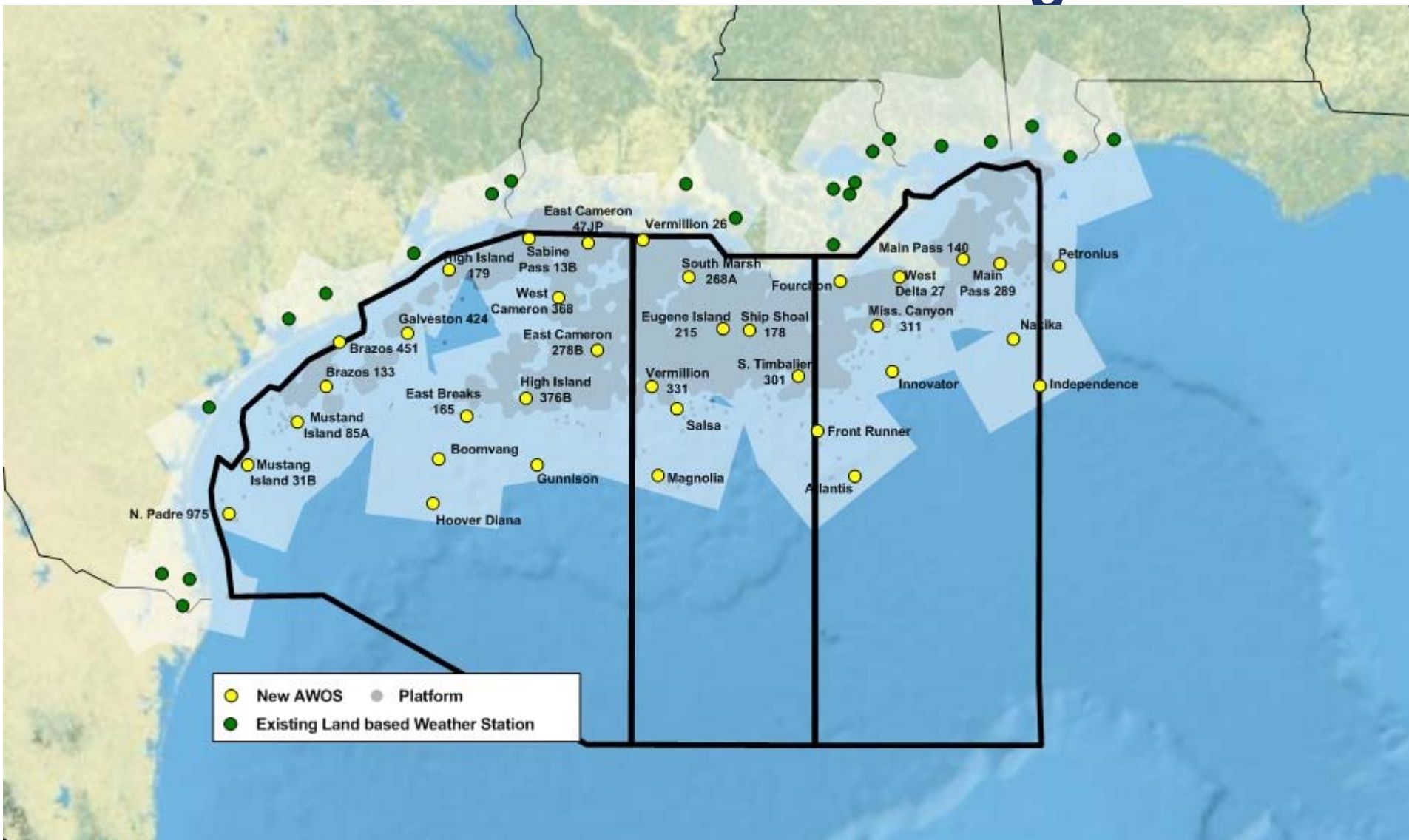
**BEFORE**



**AFTER**



# Weather Station Coverage





# FY2011: Critical Services Sites

## Houston Center (ZHU)

Automation: ERAM

Planned Critical Services  
Initial Operating Capability  
(IOC): Spring 2011

Supports:

- Houston Center
- Gulf of Mexico: Low Altitude
- Gulf of Mexico: High Altitude

## New York TRACON (N90)

Automation: CARTS

Planned Critical Services  
Initial Operating Capability  
(IOC): Spring 2011

Supports:

- Kennedy
- Newark
- LaGuardia
- Islip
- Newburgh (Stewart)

## Houston TRACON (I90)

Automation: STARS

Planned Critical Services  
Initial Operating Capability  
(IOC): Summer 2011

Supports:

- Houston Intercontinental
- Houston Hobby
- Beaumont



# Next Steps

- **Focus on avionics equipage to meet DO 260B and/or DO 282B standards**
- **Renew Gulf of Mexico Memorandum of Agreement—expires next May**
- **Complete formal agreement with HAI for Operational Flight Management Services for ADS-B equipped partners**
- **Encourage oil and gas producers to support possible expansion of infrastructure and services into new airspace**



GULF OF MEXICO

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# Airborne Applications

## Situational Awareness



## Spacing



## Indications and Alerts



## Indications and Alerts



# ADS-B Services and Applications

<b>Services:</b>
<b>ATC Separation Services (En Route, Terminal, Surface): ADS-B and ADS-R</b>
<b>Cockpit Services: Traffic / Flight Information Broadcast Services (TIS-B / FIS-B)</b>
<b>Situational Awareness Applications:</b>
<b>Enhanced Visual Acquisition</b>
<b>Enhanced Visual Approaches (1)</b>
<b>Final Approach and Runway Occupancy Awareness</b>
<b>Airport Surface Situational Awareness</b>
<b>Traffic Situational Awareness with Alerts (2)</b>
<b>Advanced Applications:</b>
<b>In Trail Procedures (ITP)</b>
<b>Interval Management (IM)</b>
<b>Surface Indications and Alerts (SURF-IA)</b>

(1) Merging and Spacing and Cockpit Display of Traffic Information (CDTI) Assisted Visual Separation (CAVS) are a part of the Enhanced Visual Approaches Application

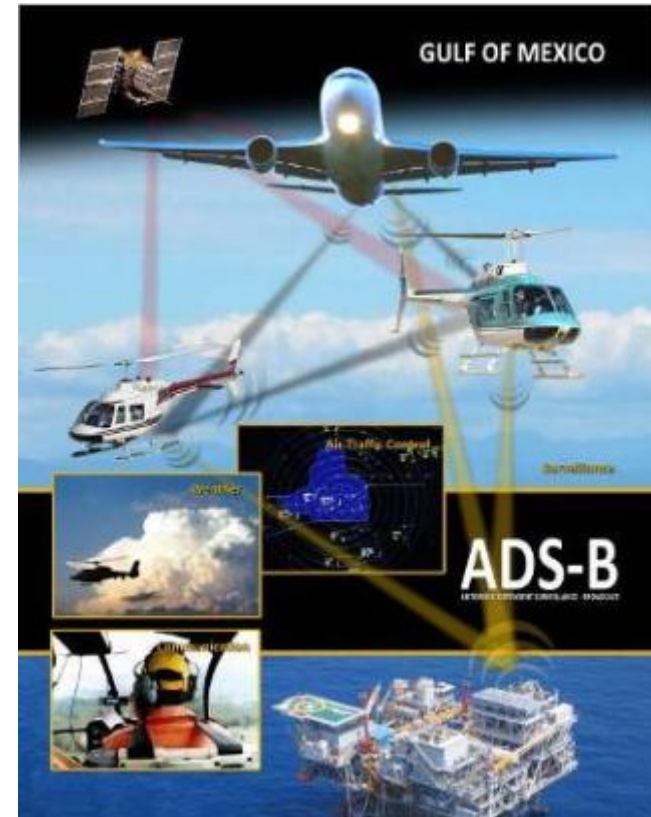
(2) Also known as Airborne Situational Awareness and Alerting (ATSA AIRB) or Conflict Detection (CD)





# Critical Services: Central Service Area Key Site

- **Gulf of Mexico Service Volumes Service Delivery Point: Houston ARTCC; Automation: HOST**
- **Installations completed:**
  - VHF Communications: 7
  - ADS-B: 21
  - AWOS: 31
- **December = 95% coverage of low altitude airspace with Communications & ADS-B**
- **Installations remaining (provides further coverage south & redundancy):**
  - VHF – Communications – 2
  - AWOS - Weather Installations – 4



# Critical Services Service Volume Roll-Out

## Key Sites



**Louisville**

**10/2009** ✓

- CARTS

**Gulf of Mexico**

**12/2009** ✓

- HOST/ERAM

**Philadelphia**

**03/2010** ✓

- STARS

**Juneau**

**04/2010** ✓

- MEARTS

**ISD**

**09/2010** ✓