

**FAA SMS Focus Group
Employee reporting and Feedback
Process 3.1.6
Sea-Tac
September 3, 2009**



Outline

- Air Methods Corp Info-mercial
- Reporting and Culture
- Challenges

Air Methods...At A Glance

- Employees
 - 3,010
 - Headquarters - Englewood, Colo.
- Bases
 - 105 Community
 - 144 Hospital
- Aircraft
 - 300+
- States
 - 43
- Financial
 - NASDAQ Ticker: AIRM



History and Growth

- Founded in 1980
 - Roy Morgan
- First hospital program
 - St. Mary's, Grand Junction, Colo.
- 1997 - Mercy Air Service
- 2000 - ARCH
- 2002 - Rocky Mountain Holdings
- 2007 - CJ Systems
- 2009 - Omniflight North Georgia and Atlanta



Who We Are

- Only air medical services provider with national presence under two service delivery models
 - HBS
 - CBS
- Offers all key core competencies in-house:
 - Aviation operations
 - Billing and collections
 - Dispatch and communications
 - Field maintenance
 - Medical staffing and training

Hospital-Based Services

- Hospital contracts for:
 - Aircraft
 - Pilots
 - Mechanics
- Hospital provides medical services
- Supports major healthcare institutions and university medical centers
 - 173 aircraft
 - 144 bases



Hospital-Based Flight Programs



Community-Based Services

- Cooperative relationships with hospitals
 - Reduces hospital cost, risk and overhead
- National standard; local scope
- 127 aircraft
- 105 bases



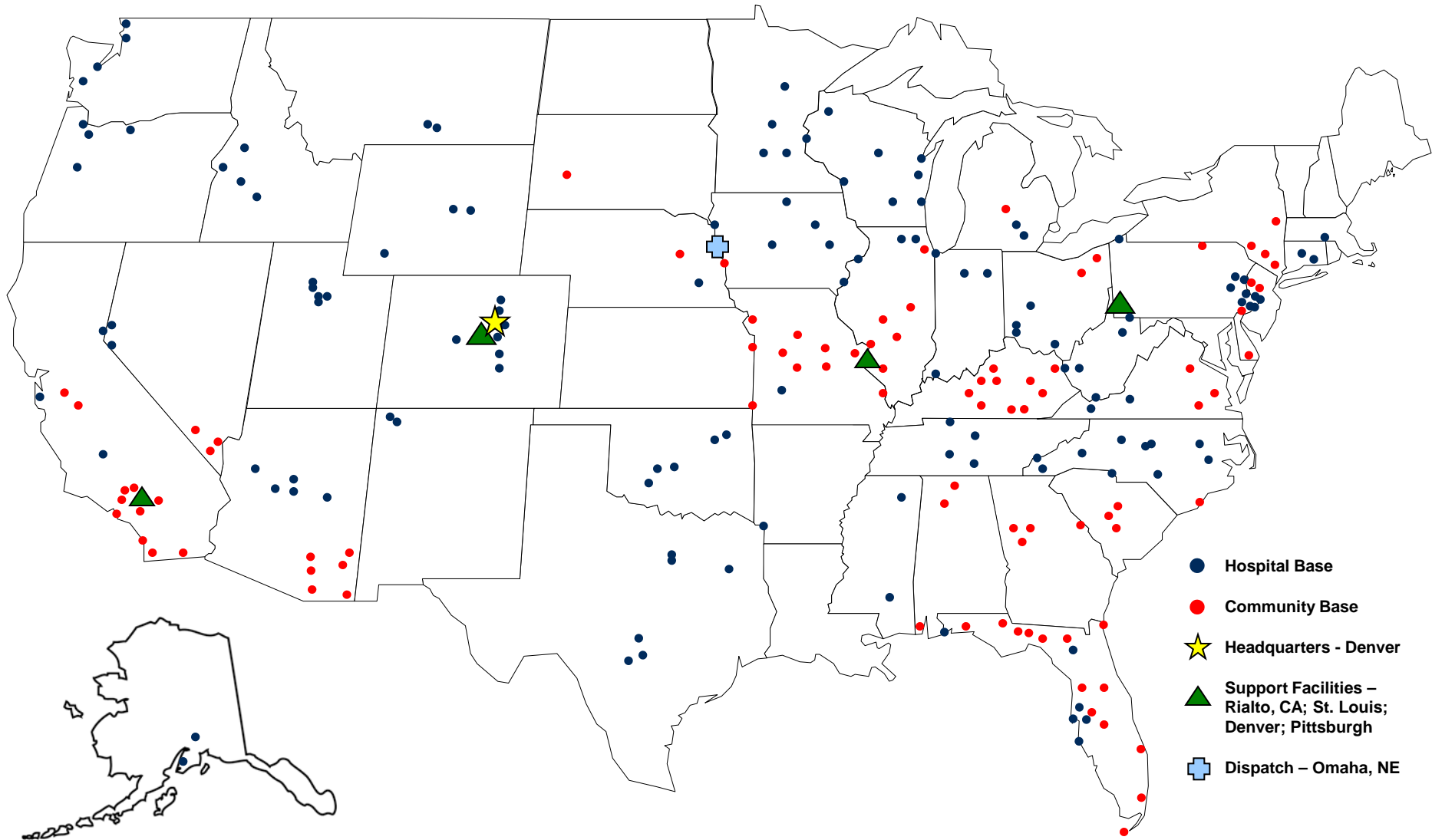
Community-Based Flight Programs



AEROMED



Combined Flight Services



Products Division-ODA Organization Designation Authorization

- Avionics completions
- Engineering/certification
- Government
- Manufacturing



Executive Leadership

Aaron Todd
CEO

Christine Clarke
Executive Assistant

David Dolstein
SVP – CBS Division

Mike Allen
SVP – HBS Division

Paul Tate
COO

Craig Yale
VP Corp. Development

Trent Carman
Chief Financial Officer

Beth Womersley
Director Internal Audit

Brian Foster
VP of Flight Ops
Director of Operations

Ed Stockhausen
Director of Safety

Sharon Keck
Chief Accounting Officer

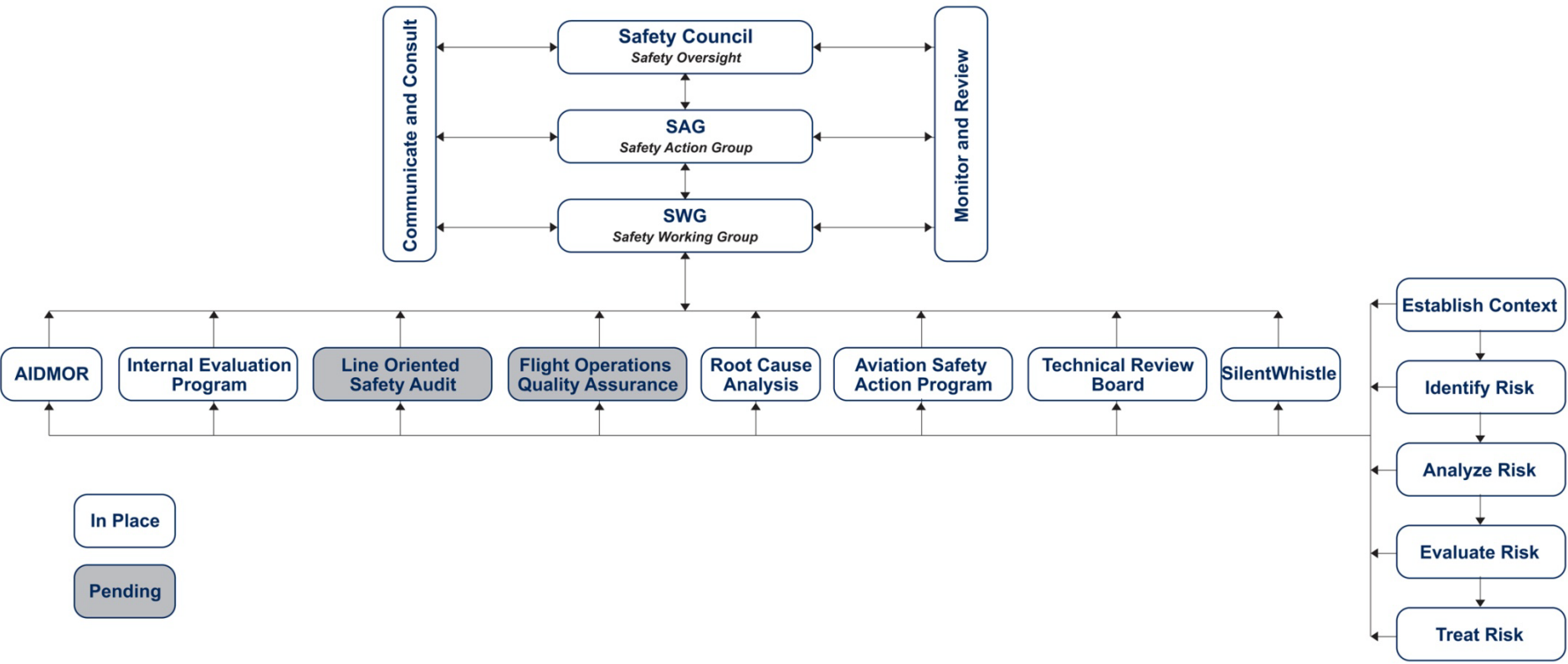
Archie Gray
VP Aviation Support
Services

Scott McCool
Director Information
Services

Jackie Forker
VP Human Resources

Art Torwirt
VP Products Division

Safety Initiatives



Employee Reporting and Feedback Systems

- AIDMOR-Accident Incident Damage Maintenance Operations Report
- ASAP-Aviation Safety Action Program
- MSAP-Maintenance Safety Action Program
- LOSA-Line Oriented Safety Audit
- Silent Whistle-Anonymous reporting
- TAMMA-The Air Methods Medical Application

AIDMOR

- Company wide safety occurrence reporting system
- Intra-disciplinary
- Some mandatory reporting
- Anonymous reporting option
- Atta-boys and commentary included in monthly safety newsletter
- Summary of all reports by aircraft type and category posted monthly on Company intranet portal



Separating fact from fiction: Are twin-engine helicopters safer than single-engine?

It's simple right. If a community is served by a twin engine air medical helicopter, by the simple fact that it has two engines, it must be two times safer. That's simply not true. In the last 18 months, the air medical industry has come under increasing scrutiny from regulators, the media and the public because of the rash of fatal accidents it experienced. The number of engines is not necessarily the panacea to improving the industry's margin of safety.

As technologies advanced and evolved over the decades, engines became more mature and more complex. Today, helicopter engines are technologically advanced, and feature a design with a reduced number of parts and modules for easy maintenance. Additionally, they are designed to operate under extreme conditions such as high altitude and hot temperature conditions. There is no industry data or evidence to support

the argument that twin-engine aircraft are safer. In fact, data refutes it. According to a recent study, for a 10.5-year period (January 1, 1998 through June 30, 2008) for all U.S. civil registered HEMS aircraft, there were 120 accidents. Twin engines accounted for 56.7% and single engines accounted for 43.3%.¹ The research further breaks down twin engine versus single engine and possible cause (Figure 1). Of the 120 air medical accidents included in the study, 37.5% were attributable to 'outside' factor such as controlled flight into terrain and inadvertent instrument meteorological conditions (IIMC). Next at 25% are 'strikes' such as wire strikes. At the 17.5% mark is the machine category, which encompasses engines, airframe and power loss, which was at 17.5%. Of

Accident Mode Issues: Single vs. Twin

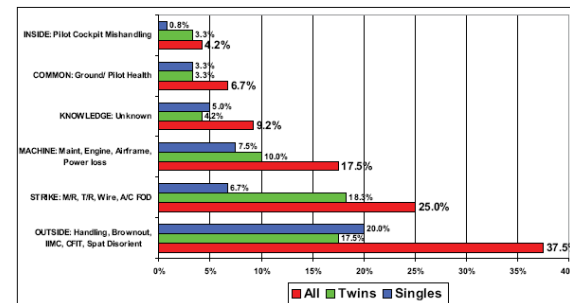
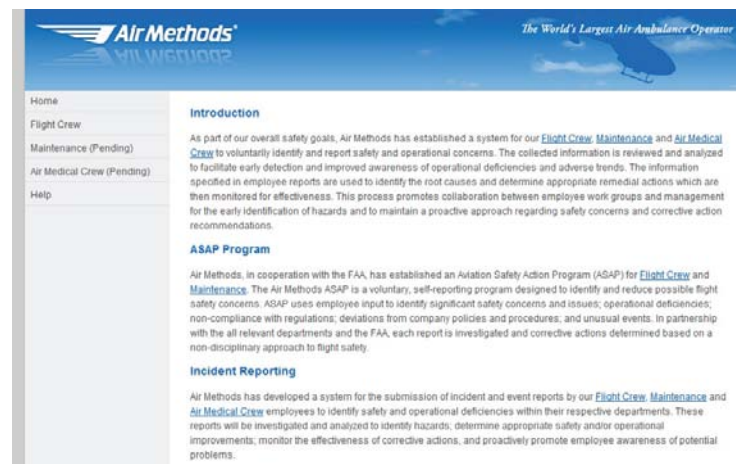


Figure 1

ASAP

- Initiated July 15, 2009
- Second HEMS operator to establish an ASAP
- WBAT-Web based application tool
- ERC meets Monthly
- LOA-Letter of Agreement
- Union established a professional standards committee
- Monthly summary is currently included in the Safety Connect
- Executive Summary discussed at the Monthly Safety Council meeting



Introduction

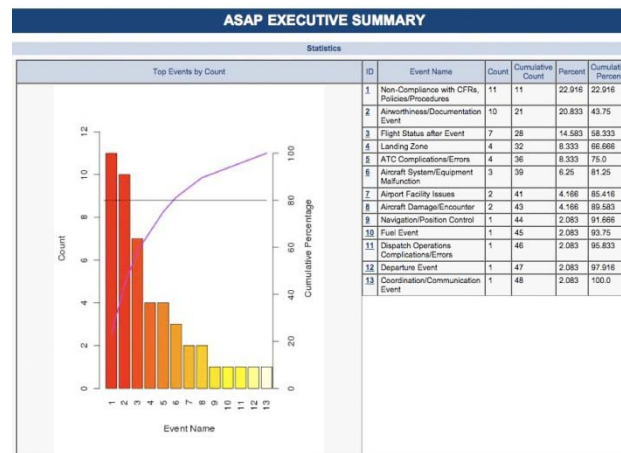
As part of our overall safety goals, Air Methods has established a system for our [Flight Crew](#), [Maintenance](#) and [Air Medical Crew](#) to voluntarily identify and report safety and operational concerns. The collected information is reviewed and analyzed to facilitate early detection and improved awareness of operational deficiencies and adverse trends. The information specified in employee reports are used to identify the root causes and determine appropriate remedial actions which are then monitored for effectiveness. This process promotes collaboration between employee work groups and management for the early identification of hazards and to maintain a proactive approach regarding safety concerns and corrective action recommendations.

ASAP Program

Air Methods, in cooperation with the FAA, has established an Aviation Safety Action Program (ASAP) for [Flight Crew](#) and [Maintenance](#). The Air Methods ASAP is a voluntary, self-reporting program designed to identify and reduce possible flight safety concerns. ASAP uses employee input to identify significant safety concerns and issues; operational deficiencies; non-compliance with regulations; deviations from company policies and procedures; and unusual events. In partnership with the all relevant departments and the FAA, each report is investigated and corrective actions determined based on a non-disciplinary approach to flight safety.

Incident Reporting

Air Methods has developed a system for the submission of incident and event reports by our [Flight Crew](#), [Maintenance](#) and [Air Medical Crew](#) employees to identify safety and operational deficiencies within their respective departments. These reports will be investigated and analyzed to identify hazards, determine appropriate safety and/or operational improvements, monitor the effectiveness of corrective actions, and proactively promote employee awareness of potential problems.



MSAP

- ASAP was potentially exposing mechanics
- MOU submitted to FAA
- Two party agreement
- WBAT

LOSA-Line Oriented Safety Audit

- LOSA Collaborative
- Developed TEM code book for single pilot HEMS operations
- Developed data collection format
- Developed observer training
- Non-jeopardy
- Voluntary
- Holistic
- October 19th
 - Initial 120 observations
 - 10-12 Observers
 - 6 programs
 - 3 fleet types
- Summary report



Draft - HEMS LOSA Data Collection Form - Draft

Sample 4.29.09

Demographics

Observer ID	Obs21	
Observation Type (Base, Hospital, Scene, Other)	Leg 1	Base to Hospital
	Leg 2	Hospital to Base
	Leg 3	
	Leg 4	
	Leg 5	
Operation Type (HBS or CBS)	HBS	
Base Location	San Antonio – University Hospital	
Helicopter Type	Bell 430	
Did you observe this crew from a previous observation?	No	
Pilot Shift Type (Day or Night)	Night	
Pilot Shift Day of Shift Length	3 rd day of a 5 day shift	



Threat and Error Code Book (EC-HEMS -1, Single Pilot Ops only)

ERRORS

A. Manual Handling

Attempting or lining up for incorrect runway

Unintentional bank deviation

Unintentional incorrect rollout technique

Unintentional incorrect landing technique

Unintentional approach too shallow (Risk of collision with unknown obstacles)

Unintentional approach too steep (Risk of entry into vortex ring state)

Unintentional landing deviation

Unintentional lateral deviation

Unintentional pitch deviation

Unintentional speed deviation

Unintentional vertical speed deviation

Unintentional weather penetration

Unintentional yaw deviation

Unintentional unbalanced flight (tip back out)

Unintentional insufficient obstacle clearance

Unintentional turn onto course too low

2 - INTENT - TD, App with tailwind above AFM limitations

2 - INTENT - Accepting visual approach in nonvisual conditions

2 - INTENT - Altitude deviation without ATC clearance

2 - INTENT - Course or heading deviation without ATC clearance

2 - INTENT - Decision to fly a profile that increased risk

2 - INTENT - Departure without ATC clearance

2 - INTENT - Flying a nonstandard visual approach

2 - INTENT - Flying manueverability that increases risk

2 - INTENT - Flying or "slushing below" the glideslope

2 - INTENT - Landing deviation by choice

2 - INTENT - Lateral deviation by choice

2 - INTENT - Navigation through known bad weather that increases risk

2 - INTENT - NOT following published APPROVED PROCEDURES

2 - INTENT - Speed deviation without ATC clearance

2 - INTENT - Speed deviation by choice

2 - INTENT - TD above published weights

2 - INTENT - TD without proper weight & balance figures

2 - INTENT - Unnecessary low maneuver on approach

2 - INTENT - Vertical deviation by choice

2 - INTENT - Flying too low

2 - INTENT - Insufficient obstacle clearance

2 - INTENT - Turn onto course too low

2 - INTENT - Approach too shallow

2 - INTENT - Approach too steep

22 - INTENT - Other manual flying error

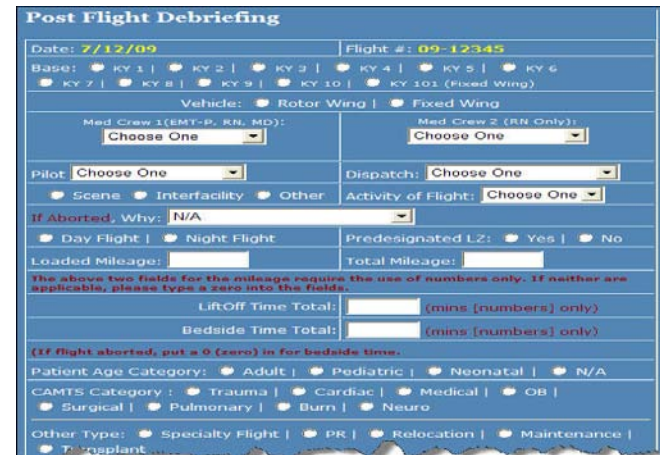
22 - Other manual flying error

Silent Whistle

- Third Party Anonymous reporting
- Phone and computer access
- for employees, customer, vendors, investors etc.
- Quarterly brief during Safety Council

TAMMA

- Local program
- Includes operations, maintenance, medical, communications and customer
- Debriefing
- Report escalation
- Loop closure and followup



Post Flight Debriefing

Date: 7/12/09 Flight #: 09-12345

Base: KY 1 | KY 2 | KY 3 | KY 4 | KY 5 | KY 6
 KY 7 | KY 8 | KY 9 | KY 10 | KY 101 (Fixed Wing)

Vehicle: Rotor Wing | Fixed Wing

Med Crew 1 (EMT-P, RN, MD): Med Crew 2 (RN Only):

Pilot: Dispatch:

Scene | Interfacility | Other Activity of Flight:

If Aborted, Why:

Day Flight | Night Flight Predesignated LZ: Yes | No

Loaded Mileage: Total Mileage:

The above two fields for the mileage require the use of numbers only. If neither are applicable, please type a zero into the fields.

LiftOff Time Total: (mins [numbers] only)

Bedside Time Total: (mins [numbers] only)

(If flight aborted, put a 0 (zero) in for bedside time.)

Patient Age Category: Adult | Pediatric | Neonatal | N/A

CAMTS Category: Trauma | Cardiac | Medical | OB |
 Surgical | Pulmonary | Burn | Neuro

Other Type: Specialty Flight | PR | Relocation | Maintenance |
 Transplant



Post Flight Debriefing

Date: 5/29/09 Flight:

Base: Orangeburg



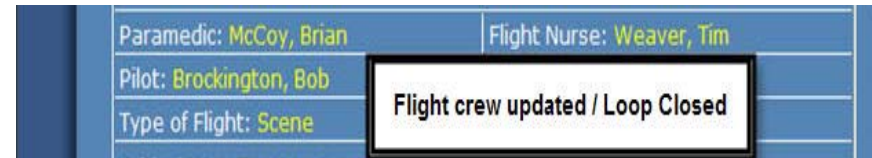
ADMINISTRATIVE FOLLOW UP SECTION

Last Administrative Update Made By: Shelton, Jeff

Last Update Made On: 5/29/09

Status: Issue Resolved

Comments: Mechanic replaced AC compressor returned to service.



Paramedic: McCoy, Brian Flight Nurse: Weaver, Tim

Pilot: Brockington, Bob

Type of Flight: Scene

Feedback

- RCA
- Corrective Action Process
 - Loop closure and documentation
 - Employee feedback
 - Safety Connect
 - Intranet Portal
 - Safety Bulletin, Alert, Notice

Challenges

- Defining Positive Culture
 - What is it?
 - How do you measure it?
- Reporting vs. Analysis
- Intentional disregard vs. non-punitive
- Just culture vs. discretionary authority
- Local Reporting vs. Corporate knowledge
- Redundancy
- Consolidation

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