





Reconciling Safety Between Air and Ground
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AAMS Vision and Mission Statements:

Vision: To assure that every person has access to quality air medical and critical care transport.

Mission: AAMS represents a unified voice for the entire air medical and critical care medical transport community. Through common effort, we will improve the health outcomes of the populations we serve.

AAMS Regular Membership:

• AAMS Programs:

• Rotor Wing only	93
• Fixed Wing only	30
• CCG only	17
• FW/ CCG	5
• RW / FW	36
• RW/FW/CCG	38
• RW/CCG	30

• Estimated > 500,000 Patients Transported per Annum

Air Medical Vehicles – United States:

- AAMS Program Vehicles:
 - Rotor Wing 530
 - Fixed Wing 182
 - CCG 202

- Non-AAMS Vehicles (Estimate)
 - Rotor wing non-AAMS: 262 public & commercial
 - Fixed wing non-AAMS 200+ includes non-dedicated aircraft
 - CCG Unknown



Air Medical Mission Types and Staffing Models:

- Mission Type
 - Scene 30%
 - Inter-hospital 70%

- Predominant Clinical Staffing Model = RN / EMT-P
 - Others Include RN/RN, RN/RT, MD/RN, EMT-P / EMT-P, EMT-P only, Specialty Teams

Air Ambulance Crash Statistics:

- USA Today July 2005 – More Deaths (60) In Air Medical Crashes (84) Had Occurred Since 2000 Than In Decade Preceding It
- 49% of Helicopter Related Crashes Occurred at Night with the Majority Scene Flights Versus Inter-Facility Flights From 1978-1998 (Blumen 2002)
- Weather Being Most Significant Factor & Even More So At Night
- 75% of Weather Related Crashes Suffer a Single Fatality & 2/3 Result in Total Loss of Life (Blumen 2002)

Air Ambulance Crash Statistics Continued:

- Crash Rate of Air Medical Helicopters Increased From 1.7 per 100,000 Hours (1996-1997) to a Rate of 4.8 (2003-2004) (Wright 2005)
- Flight Operations Database for Air Medical Services (FODAMS) – Industry Sponsored Database to Get Accurate Number of Total Air Medical Transports (FAA Does Not Collect Part 135 Data)
- Largest Percentage of Crashes (32%) Occur In Route to The Point of Patient Pick Up with 48% Occurring at Night and 68% Resulting in a Fatality (Wright 2005)
- Human or Pilot Error Attributed to 65-76% of Crashes and With Those Involving Fatalities the Percentage Increases to 84% (Blumen 2002)

Ground Ambulance Crash Statistics:

- NHTSA Fatality Analysis Reporting System 1991 to 2002 – 300 Fatal Ground Ambulance Crashes Resulting in 82 Deaths of Ambulance Occupants and 275 Occupants of Other Vehicles
- May 2006 – 11 Ambulance Crashes That Resulted in 30 Injured and 4 Deaths (EMS Network Search)
- 60% of Ground Ambulance Accidents Occurred During Emergent Driving But 40% Did Not (NHTSA Fatality Analysis Reporting System)
- Common Factors Include Traveling Through Intersections, Striking Another Vehicle, Afternoon Time Frame, Dry & Straight Road, and Normal Weather Conditions (Kahn, Pirrallo, and Kahn – 2001)

Air & Ground Ambulance Oversight:

- Air Medical Discipline at Advantage For Crash Data Because of Regulation and Oversight of FAA
- All Air Medical Accidents and Incidents Must Be Investigated by The NTSB
- For Ground Ambulances NHTSA Does Not Have The Same Regulatory Oversight
- Ground Ambulance Crashes Often Investigated by Local or State Law Enforcement Thus There Is No Single Database
- Both Air & Ground are Missing The Denominator of Total Transports!

Air & Ground Ambulance Differences:

- Crew Fatigue – Absent Characteristic in Both Air & Ground Crash Data
- Operators of Ground Ambulances Likely More at Risk Than Air Ambulances
- FAA Regulations Require No More Than a 14 Hour Scheduled Work Day with 9 Hours Mandatory Rest For Pilots (FAR Part 135, Subpart F, Section 135.273)
- No Restrictions on Ground Ambulance Personnel – In Many Cases EMS Personnel Including Drivers Work 24 Hour Shifts Which May or May Not Offer Adequate Recovery Opportunities (Williams 2005 & 2006)

Air & Ground Ambulance Differences Continued:

- Commission On Accreditation of Medical Transport Services (CAMTS) Requires a Pilot to Have at Least 2,000 Hours Total Flight Hours to Include a Minimum of 1,500 Helicopter Flight Hours with 1,000 of Those Hours as Pilot In Command and at Least 100 Hours Unaided Night
- FAA Has Requirements on Pilot Training, Monthly & Annual Recurrent Training Minimums, and Annual Check Rides
- FAA Crew Resource Management (CRM) Required For Pilots That Evolved out of Identifying Key Communication Issues From Major Air Disasters

Air & Ground Ambulance Differences Continued:

- Air Medical Resource Management (AMRM) – Air Medical Community Has Extended CRM to Include Not Only Pilots but Medical Crew, Communications, Mechanics, and Program Management To Improve Teamwork Before, During, and After Each Mission
- There Is No National Ground Ambulance AMRM Equivalent or Established or Regulated Safety Management Program

Air & Ground Technology Improvements:

- EMS Driver Monitoring Devices – Provide Monitoring & Feedback on Mileage, Speed, Braking, and Cornering Including When Drivers Exceed Established Acceptable Limits
- Prospective Study of Implementation of EMS Driver Monitoring in an Urban EMS System Saw Dramatic Reduction in Penalty Counts, Increased Seat Belt Usage, and a 20% Savings in Vehicle Maintenance Without A Decrease in Response Time (Levick & Swonson – 2006)
- Aviation Improvements Include Night Vision Goggles (NVG), Radar Altimeters, Terrain Awareness & Warning Systems, and Enhanced Ground Proximity Warning Systems

Air Medical Issues: Growth & Corporate Models:

- Traditional: Hospital Owned and Operated – Founders of AAMS
- Public Safety — Multi-Mission Helicopters
- 1990's: Consortium Models - Independent but Aligned with Hospitals
- 1997: Omnibus BBA / National Medicare Fee Schedule–
 - Transfer to Part B status, Outsourcing / Risk Sharing
- 2000's: Most Growth in Independent / Community Investor Owned Models – 50% of AAMS Members in This Category Now

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FAA & DOT Actions in Air Medical Services:



- AAMS Has Been Working Cooperatively with The FAA and NTSB on Improving Safety for Air Medical Services Since 2004
 - Participated in the Part 135 Aviation Rule Making Committee (ARC)
 - Numerous Cooperative Efforts on NVG, Regulation Changes VFR Weather, Safety Management Systems, AMRM
- FAA Took Action Against A Major Air Operator in July 2006 After Several Air Medical Crashes in 2005 – Operational Control / Aviation Management Main Issue
- FAA Fines American Flight Group of Annapolis, MD For Allowing Medway and Other Air Carriers to Operate Under Their Part 135 Certificate Illegally – July 2006

FAA & DOT Actions in Air Medical Services Continued:


- FAA Investigated A Large Air Medical Program (Same Operator That Was Targeted) in August 2006 As Part of General Part 135 Investigation of Economic Authority
- DOT Takes Formal Action Against This Large Air Medical Program in September 2006 – States That They are Holding Themselves Out as Having Economic Authority as Part 135 Certificate Holder – The Main Issue is How They Present Themselves on Their Website
- Air Medical Services Have Had an Exemption Since 1983 Under FAA Part 135 as an Indirect Air Operator But It is Unclear On What This Covers Under Economic Authority

FAA & DOT Actions in Air Medical Services Continued:

- AAMS Board Approves in September 2006 In Working with the FAA to Come up With Guidelines for Operational Control and Economic Authority For AAMS Members
- FAA Has Draft Document (FAA Operations Specification -A008) on Operational Control Which Will Be Released For Public Comment in October 2006 – AAMS Comments Will Be That These Actions Are Diverting From The Real Safety Issues
- Actions Are Not Affecting Independent / Community Models Since They Are the Part 135 Certificate Holder





Goal: Zero Errors of Consequence With No Fatal Crashes or Serious Injury

visionzero.aams.org 


Vision Zero Initiatives:

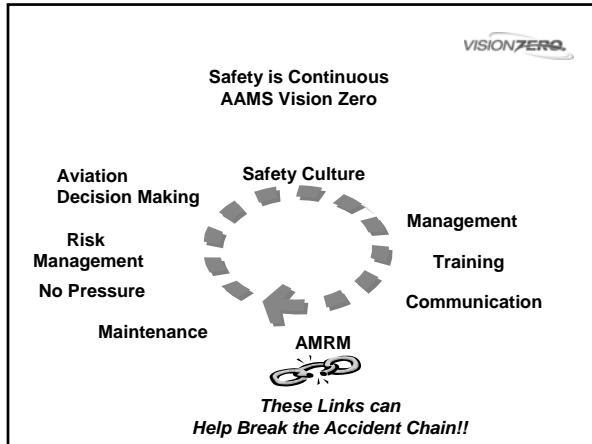
- Technology Conferences in 2005 & 2006
- “On the Fly” Newsletter
- AMTC Vision Zero Track
- FARE Research Funding
- Weather–Minimums, Part 135 Aviation Rulemaking Committee
- Air Medical Safety Advisory Committee (2000 AAMS Safety Summit) - Recommended Practices
 - Regional Roundtables
 - Launch Times
 - EMS Pilot Certification




Vision Zero Initiatives Continued:

- Safety Day at AMTC
- Vision Zero Wrist Bands For Heightened Awareness
- General Session at AMTC Dedicated to Safety
- Vision Zero White Paper – Available on Vision Zero Website
- Use of Logo on Member Educational Programs
- Safety Report Card at AAMS Spring Conference
- Standards - Positions on CAMTS & Risk Assessment
- FODAMS Database







HEMS

- Tens of thousands of lives saved. . . .
- HEMS accidents continue to occur
-67 fatalities and 32 serious injuries since 2000
- Are we unsafe?
- Are *we* at a high risk?
- Are we worthy of the public's trust?

Six Sigma Being Adopted in Healthcare

• 1 sigma	• 690,00 defects per million
• 2 sigma	• 308,000
• 90% reliability	• 100K defects per million
• 3 sigma	• 66,800
• 99% reliability	• 10K defects per million
• 4 sigma	• 6210
• 5 sigma	• 230
• 6 sigma	• 3-4

Humble Recommendations For Ground Transport Safety From Your Air Medical Colleagues:

- Database of All EMS Transports – National Data Set
- Transport Following – Manual or GPS
- On Board Black Box Tracking
- Duty Time Limitations With Sleep Requirements Especially For Drivers
- Standardized Driver Training and Recurrent Training
- Go - No Go Transport Equipment / Vehicle Check List
- Vision Zero Type Safety Program
- Air Medical Transport Has Just Has Much To Learn From Ground Ambulance Transport!

Thank You!

My Background & Experience:

- VISTA Volunteer – Western Iowa & Inner City Detroit
- Healthcare Administration – University of Michigan School of Public Health - 1980
- Positions at AMSA Foundation, Inova Fairfax Hospital, West Michigan Air Care, Duke University Hospital and MedServ Air Medical Transport
- Specialty in Emergency, Trauma, & Transport Services
- Air Medical / Critical Care Transport for 19 Years
- AAMS Board 7 Years – President Since October 2005



About MedServ Air Medical Transport:

- Affiliate of Fitch & Associates – Platte City, Missouri
- Started in 1999 to Provide Air Medical Operational Services to Hospitals & Hospital Consortiums
- Services Range From Management Contracts to Unique Ownership Partnerships With Hospitals For Air Medical Services Both Short and Long Term
- Current & Past Operations in Arkansas, Georgia, Michigan, Missouri, South Carolina, and Washington



www.medservamt.com

About The Association of Air Medical Services:

- Trade Association 300+ Member Organizations
- 85% of HEMS Providers in USA / Canada
- Additional Worldwide Members in Europe, Africa, Australia, and Asia
- Members Primarily Providers - Additional Membership Categories for Operators, Manufacturers, Support Vendors
- Offices in Alexandria, VA (Washington, DC Area)
- 16 Member Voluntary Board (Regions, At-Large, Operator)
- CAMTS, MTLI, AMSAC, Operators CEO Forum
- Close Working Relationship with Professional Organizations – AMPA, ASTNA, IAFFP, NEMSPA, NAACS
- Coordinate with FAA, NTSB, NASEMSO, NAEMSP

www.aams.org
