

International Survey on Human Factors in Maintenance Organizations

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Little Rock Repair Station Human Factors Seminar
Little Rock, AK
April 12, 2007

Agenda

- Respondent Demographics
- Why have an Human Factors Program
- Regulator Support & MEDA
- Training Program
- Recommendations
- Status of 2007 ASI Survey

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Survey Goals and Methods

- **Purpose:** Assess international status of maintenance HF
- **Look at:** HF programs, fatigue management, error management, and training.
- **Comparison:** Compare by regulators, Does it make a difference if there is a rule?
- **Distribution:** Online survey (80 items) to 630 addresses.

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Summary Findings

- Transport Canada and EASA countries have the most robust programs.
- Strong regulations promote strong HF programs.
- Fatigue issues are perceived to be important but little action.
- When companies have programs they are similar.
- Companies record event data but do not use it enough.

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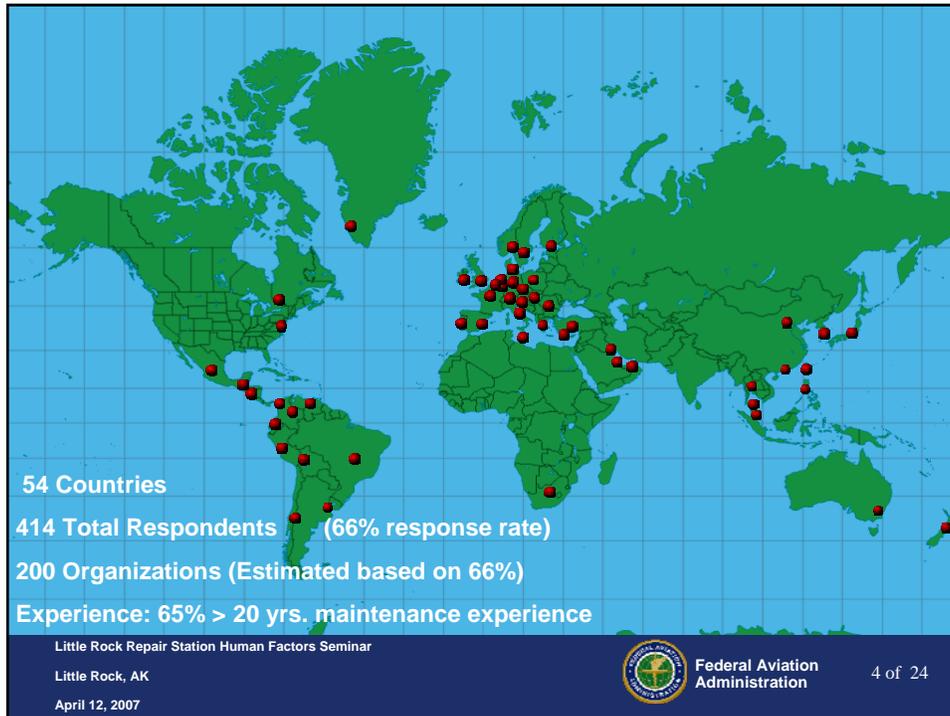
2007 HF Symposium



19th FAA/ATA International Symposium

Human Factors
in Maintenance and Airport Service Safety

September 5-6, 2007
Evening "Kick-off" Reception on September 4, 2007
Hyatt Regency Orlando International Airport Hotel
Orlando, Florida, USA



Responding Countries		
Argentina 4	Greece 10	Peru 1
Australia 19	Greenland 1	Philippines 4
Austria 1	Guatemala 2	Poland 1
Bahrain 1	Hong Kong 6	Portugal 2
Belgium 3	Hungary 1	Romania 1
Bolivia 3	Ireland 2	Singapore 12
Brazil 3	Italy 1	Slovenia 1
Canada 36	Japan 3	South Africa 5
Chile 3	Korea 2	Spain 8
China 3	Kuwait 1	Sweden 4
Columbia 3	Luxembourg 1	Switzerland 4
Cyprus 1	Malaysia 6	Taiwan 9
Denmark 1	Malta 1	Thailand 1
Ecuador 1	Mexico 4	Turkey 1
El Salvador 1	Netherlands 2	United Arab Emirates 3
Finland 1	New Zealand 3	United Kingdom 29
France 3	Norway 12	United States 160
Germany 6	Panama 4	Venezuela 3

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Who is your Regulator? (N=404)

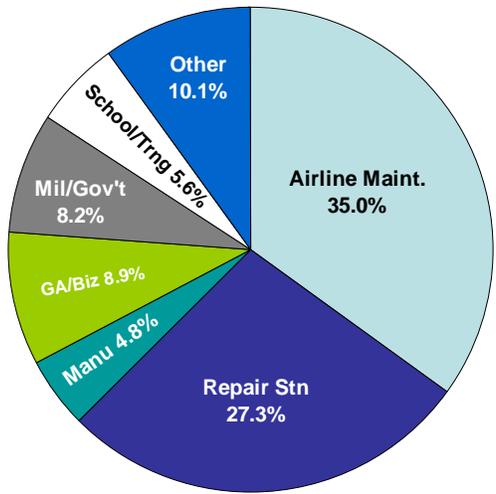
Federal Aviation Administration (FAA) N=182	45%
European Aviation Safety Agency (EASA) N=95	23.5%
Civil Aviation Safety Authority (CASA) N=19 Other	17.8%
Transport Canada N=36	8.9%
Civil National Aviation Authority N=72	4.7%

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What type of Maintenance Organization?



Airline Maint.	35.0%
Repair Stn	27.3%
Other	10.1%
School/Tng	5.6%
Mil/Gov't	8.2%
GA/Biz	8.9%
Manu	4.8%

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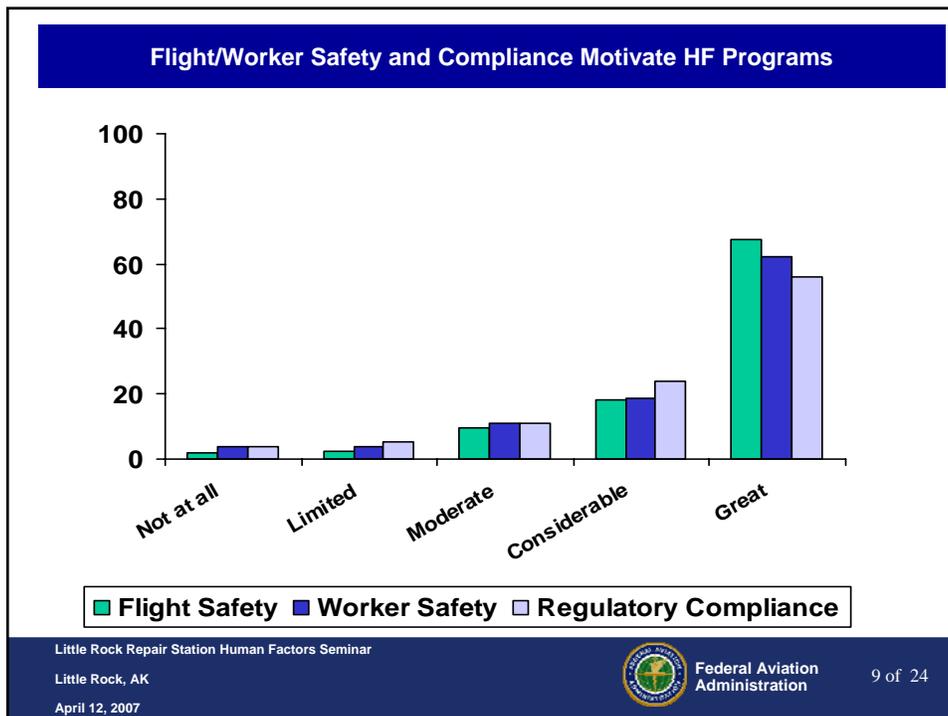


Respondent Job/ Role/Responsibility	
Job Role Title	%
Supervisor/Manager/ Coordinator	37.1
Quality Assurance/Quality Control/Airworthiness	28.4
Training	11.9
Engineering	6.2
Technician/Mechanic	4.4
Consultant/Professor	3.9
Inspector/Investigation	3.4
Labor Representative	3.1
Safety Analyst	1.8

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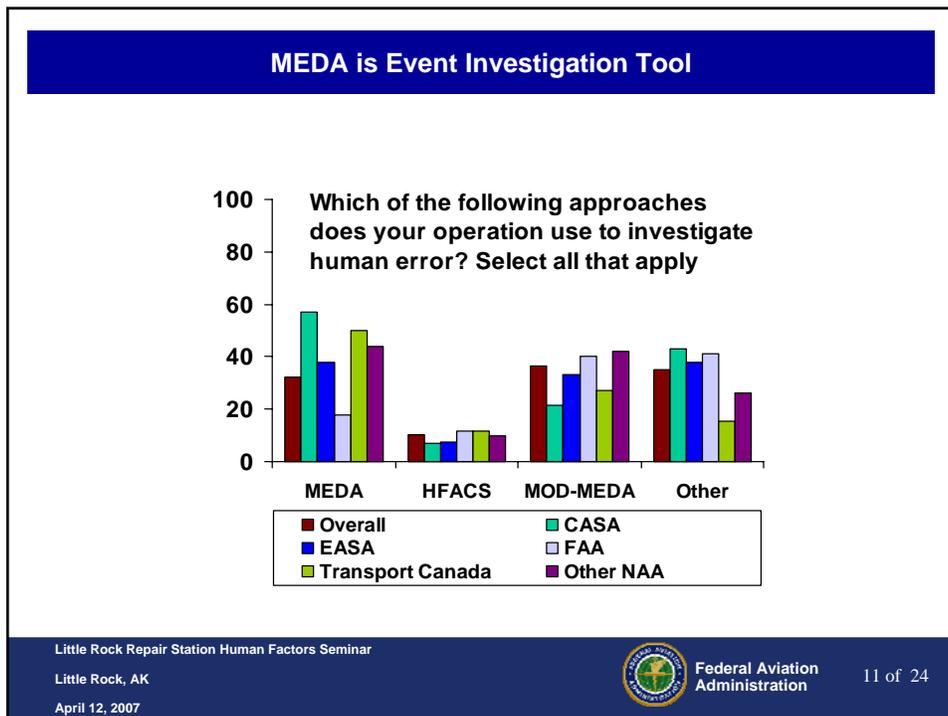
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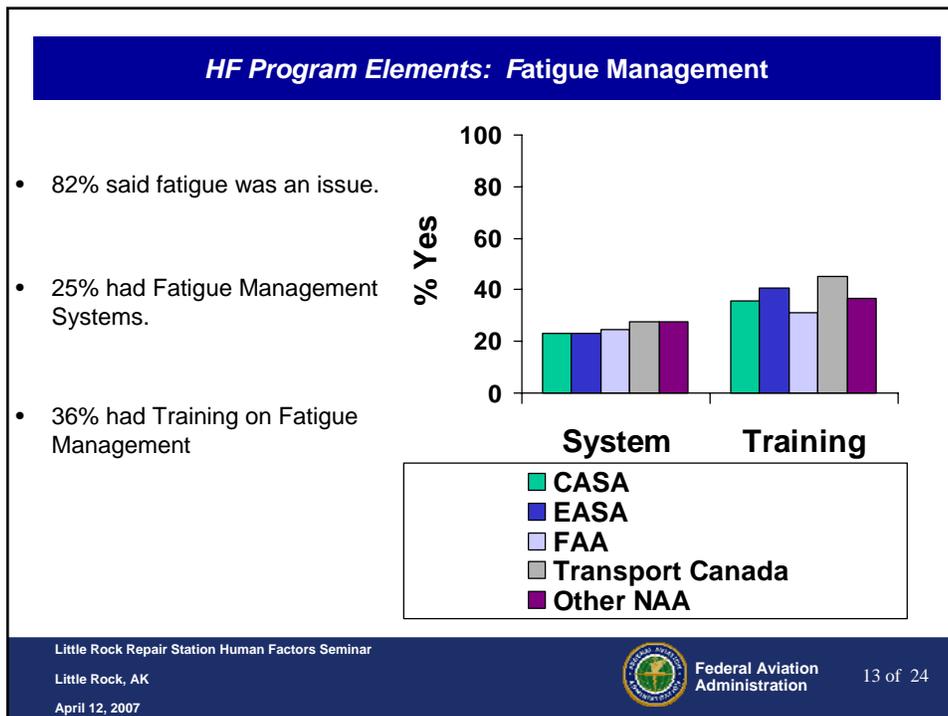
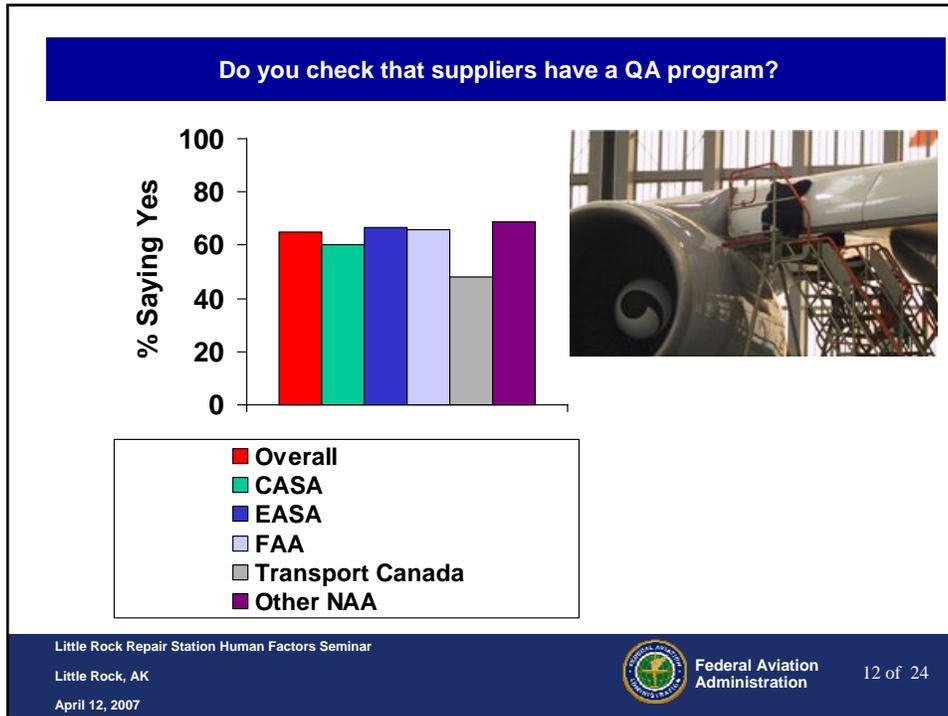
Support from your Regulator?		
Regulatory Model	% Support	% Work Closely
TC	57.1	35.7
CASA	46.2	28.6
O-NAA	39.3	44.4
EASA	39.1	28.6
FAA	38.3	31.9

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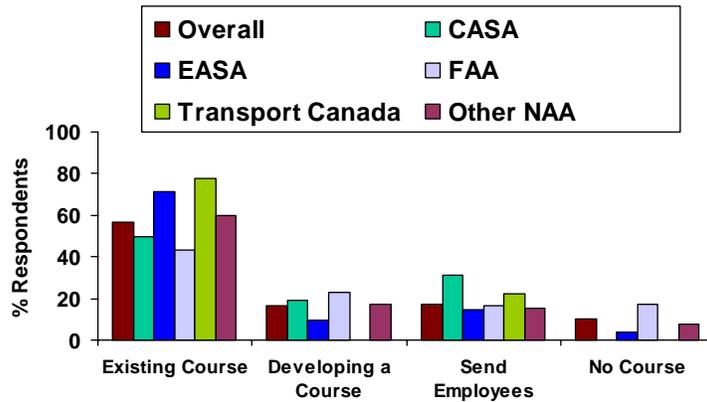


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Canada and EASA have the most HF Training



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HF Training for Instructors?

Academic Degree in HF or Related Field	16.3%
University Diploma	39%
Attended short course in HF	61%
Attended short course on HF Instructor Training	46.8%
Maintenance Work Experience	68.5%
Licensed Mechanic/Engineer	48.5%
No formal training	12.9%

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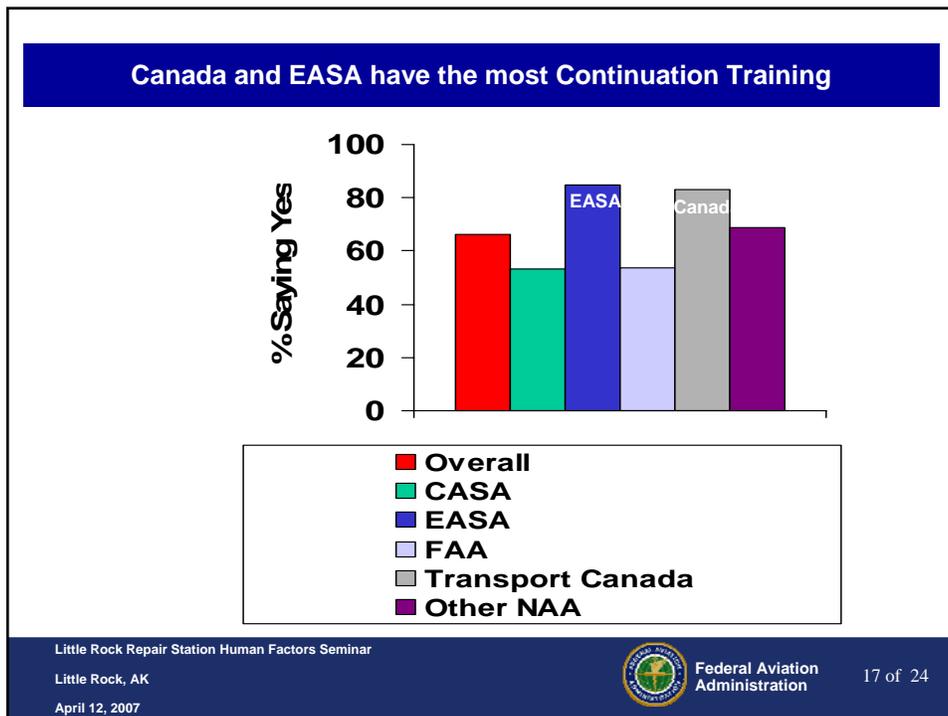
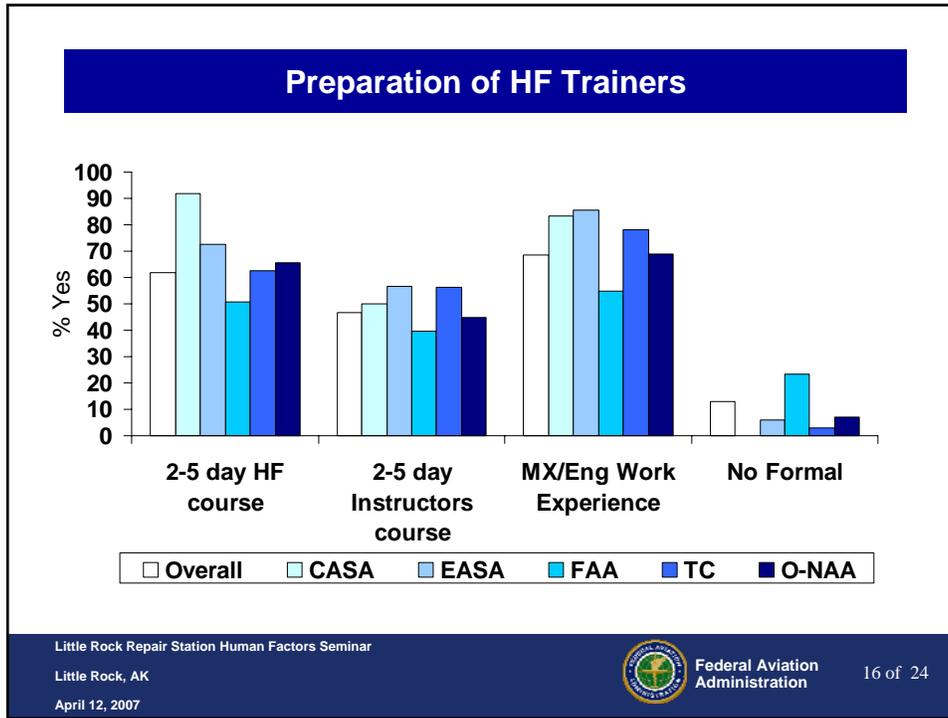
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Recommendations (1)

- Worker safety, flight safety, regulatory compliance are important motivators when implementing an HF program.
- Strong Regs. make strong programs.
- Continue with existing HF content.
- Address Fatigue as an international issue.

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Recommendations (2)

- Improve Instructor HF training
- Must capitalize on MEDA-like Data
- Conduct ROI
- Apply HF to technical documentation issues

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2007 Survey to FAA Airworthiness ASIs

- Survey FAA Airworthiness Inspectors (ASIs) about maintenance human factors, to guide current and planned activities.
- Assess ASI
 - HF knowledge
 - HF attitude
 - Level of satisfaction with FAA HF support
 - Perception of industry programs
 - Perception of FAA ASI HF environment
- Survey is also an education/marketing tool
 - Promote FAA Mx HF activity
 - Promote Classes
 - Promote “Operator’s Manual”
 - Review Dirty Dozen from industry and from FAA work perspective



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2007 HF Symposium



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Schedule

- FY07 Second Quarter
 - Negotiate union approval
 - Distribute survey to FAA ASIs
- FY07 Third Quarter
 - Archive returned survey responses
 - Report preliminary results of FAA ASI responses to ATO-P HF R&D, and AFS-330, and CSTA for Aviation Maintenance Human Factors
- FY07 Fourth Quarter
 - Complete survey analyses of FAA ASI results
 - Present findings to ATO-P HF R&D, and AFS-330, and CSTA for Aviation Maintenance Human Factors



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We expect to find:

- 40-50% response rate
- Positive attitude about FAA human factors in general
- ASIs want more information
- ASIs did not know about the *Operator's Manual*
- ASIs will identify "Stress" as one of the Dirty Dozen in their own job
- ASIs will be delighted that we are asking such questions

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2007 HF Conference - Your Invitation

2007 HF Symposium



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