

# A Survey of Human Factors in International Maintenance Organizations

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13<sup>th</sup> Annual Middle East Engineering and Maintenance Conference  
Abu Dhabi, UAE  
March 13-14, 2007

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## Agenda

- Who responded?
- Why have an Human Factors Program
- Regulator Support & MEDA
- Training Program
- Recommendations

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1 of 20

## Survey Goals and Methods

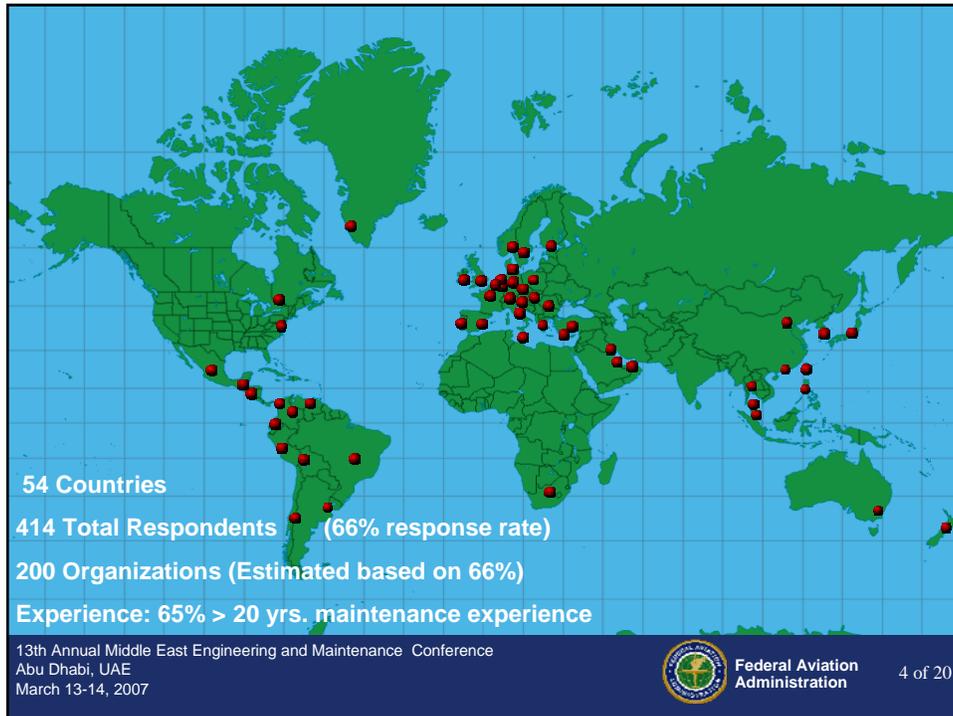
- **Purpose:** Assess international status of maintenance HF
- **Look at:** HF programs, fatigue management, error management, and training.
- **Comparison:** Compare by regulators, Does it make a difference if there is a rule?
- **Distribution:** Online survey (80 items) to 630 addresses.



## 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.



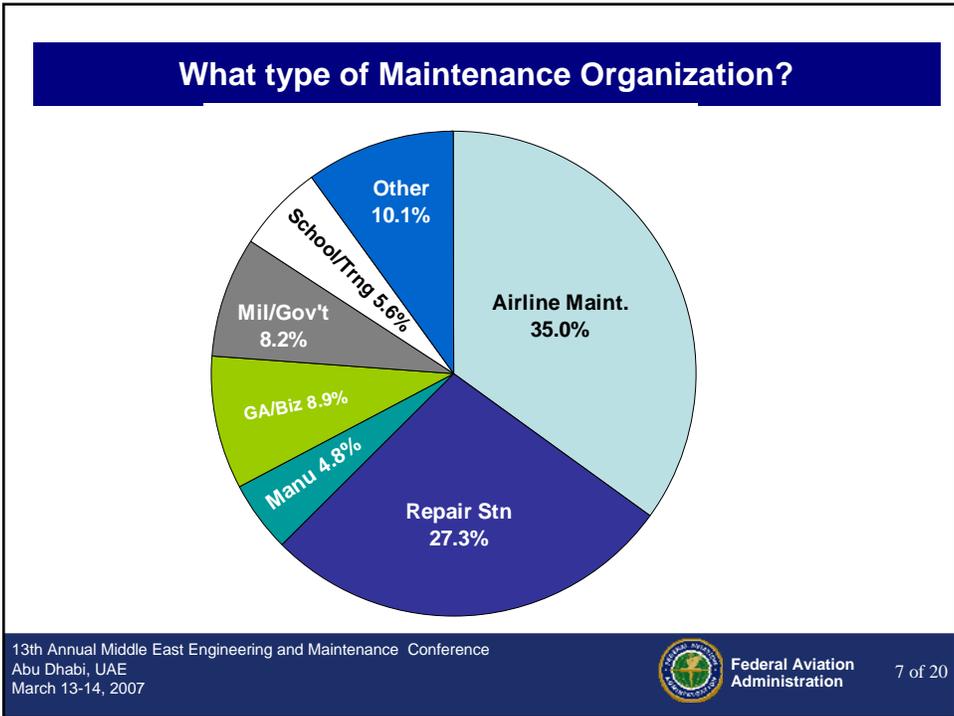
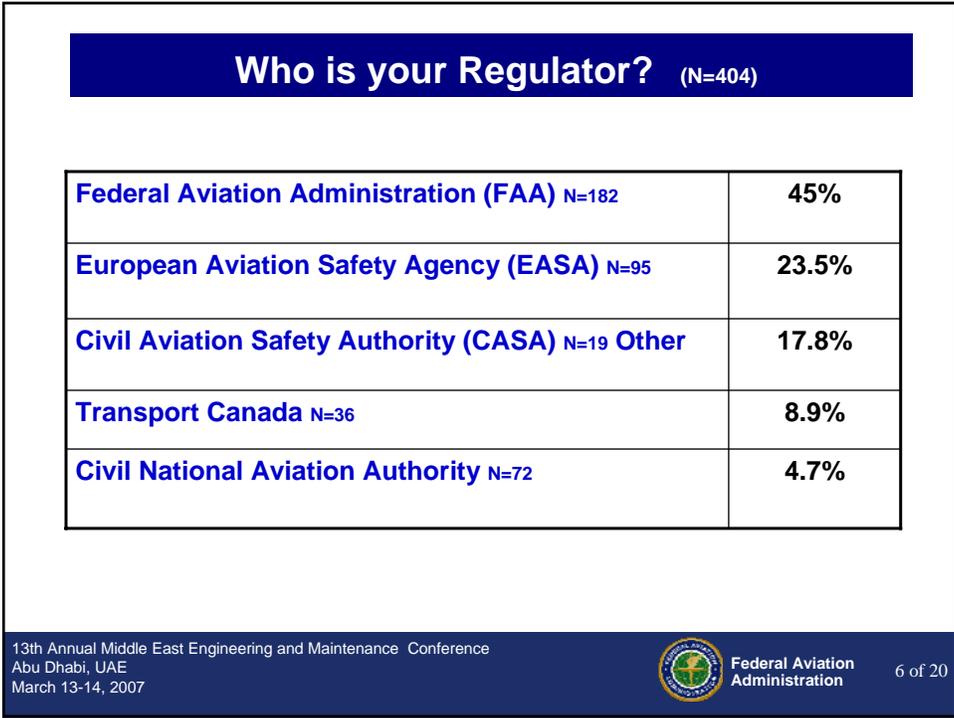


### Responding Countries

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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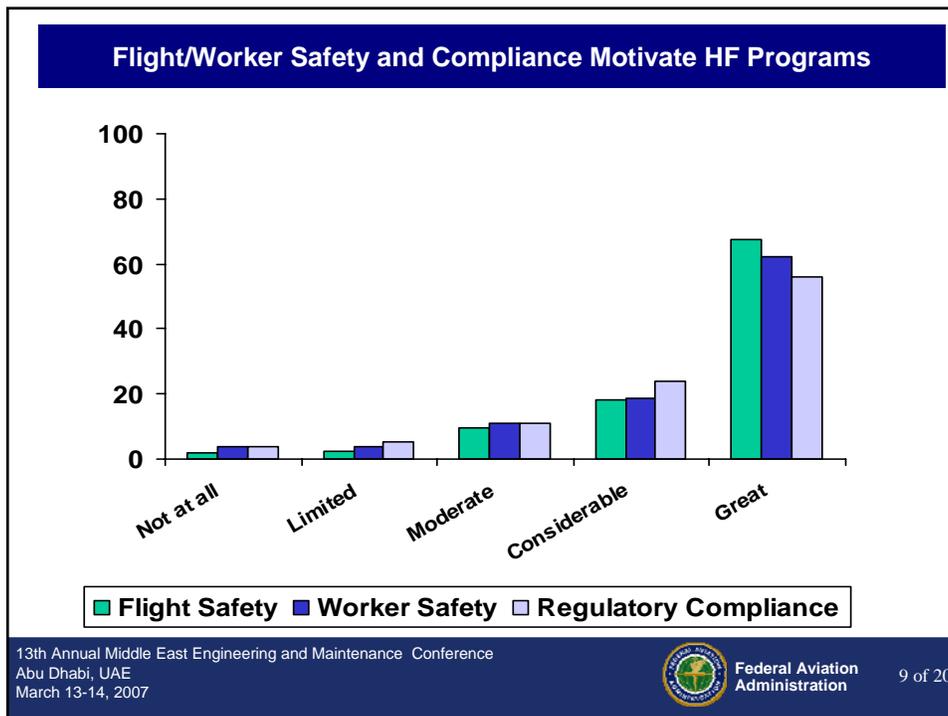


Respondent Job/ Role/Responsibility	
Job Role Title	%
Supervisor/Manager/ Coordinator	37.1
Quality Assurance/Quality Control/Airworthiness	28.4
Training	11.9
Engineering	6.2
Technician/Mechanic	4.4
Consultant/Professor	3.9
Inspector/Investigation	3.4
Labor Representative	3.1
Safety Analyst	1.8

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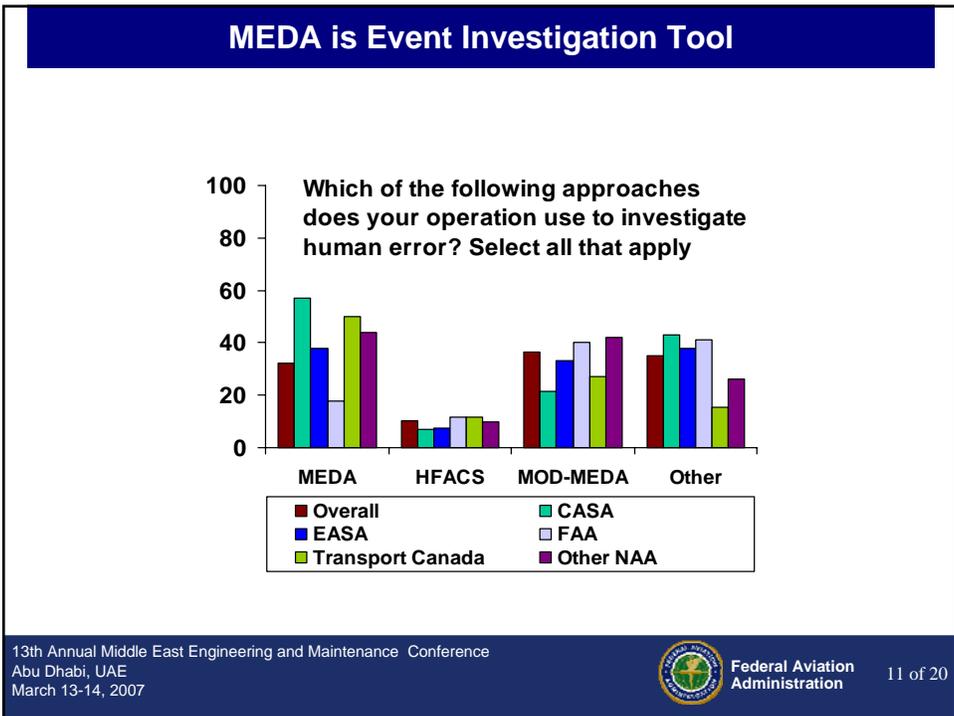
### Support from your Regulator?

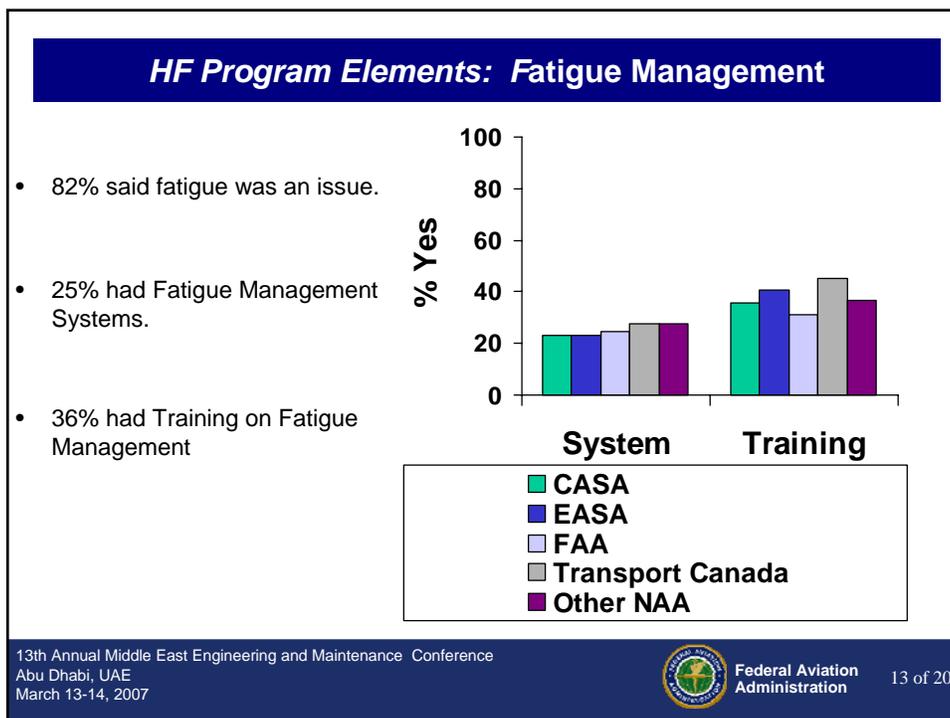
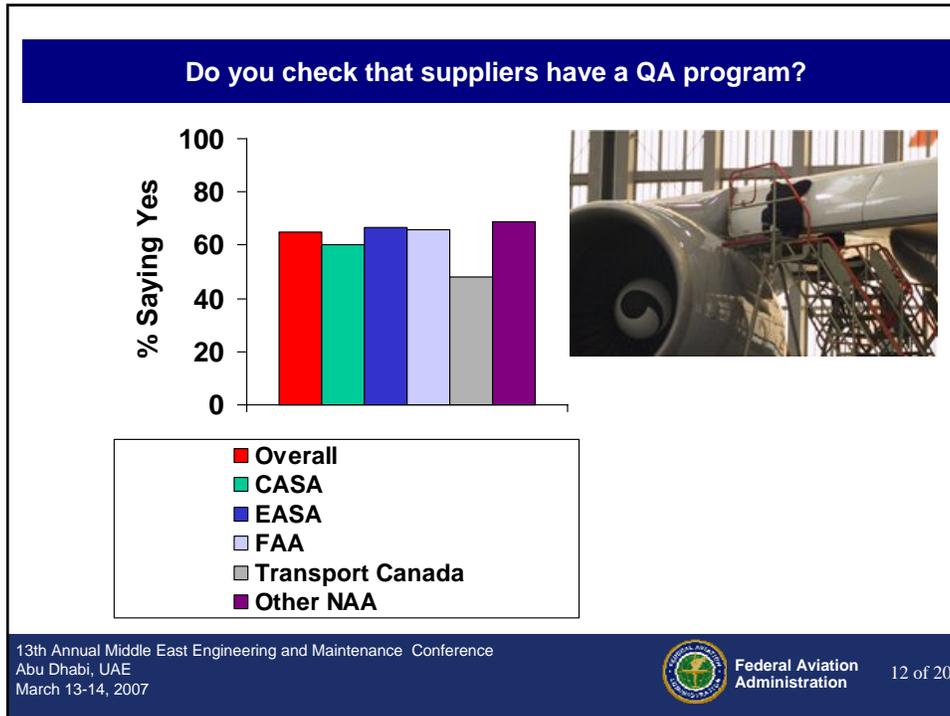
Regulatory Model	% Support	% Work Closely
<b>TC</b>	<b>57.1</b>	<b>35.7</b>
<b>CASA</b>	<b>46.2</b>	<b>28.6</b>
<b>O-NAA</b>	<b>39.3</b>	<b>44.4</b>
<b>EASA</b>	<b>39.1</b>	<b>28.6</b>
<b>FAA</b>	<b>38.3</b>	<b>31.9</b>

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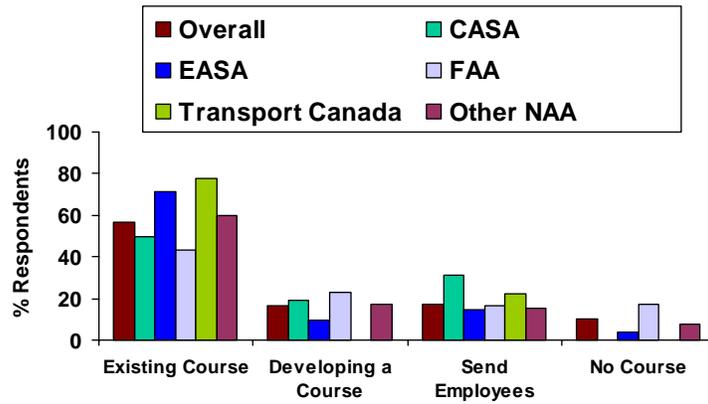
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10 of 20





## Canada and EASA have the most HF Training



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14 of 20

## HF Training for Instructors?

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

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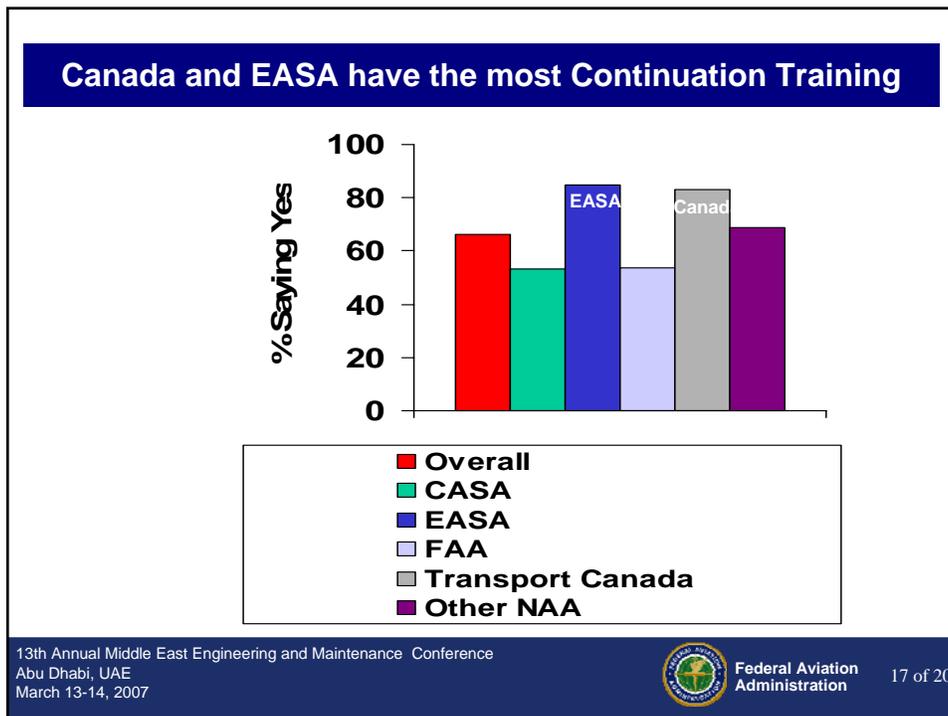
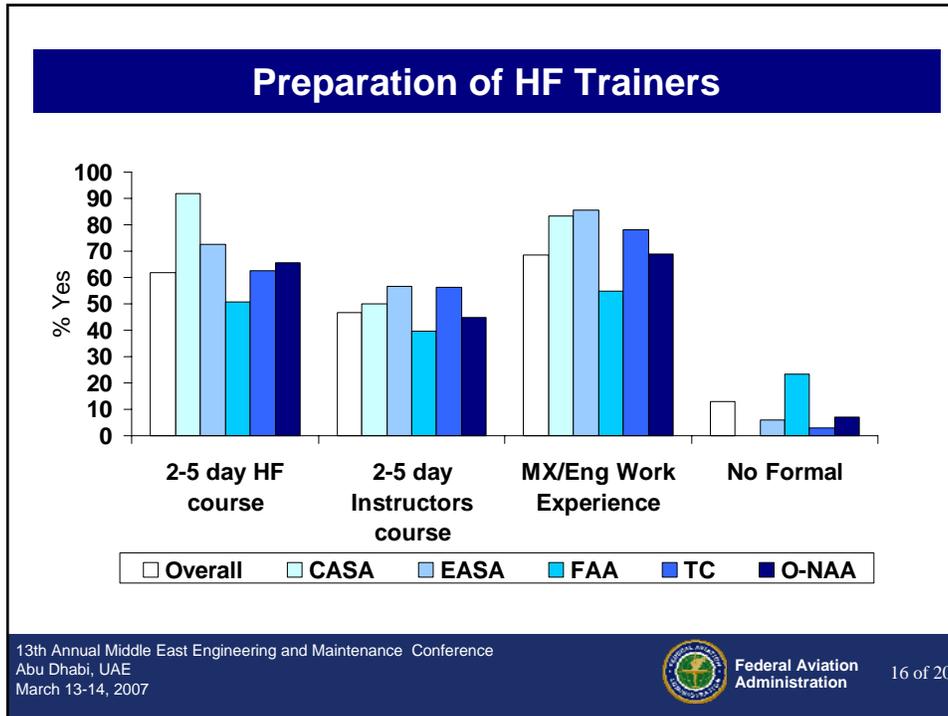
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15 of 20



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**Human Factors**  
Maintenance and Ramp Safety



## 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.**



## Recommendations (2)

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



## 2007 HF Conference - Your Invitation

### 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

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20 of 20



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# Human Factors

Maintenance and Ramp Safety