



Human Factors in Maintenance and Repair

June 6-7 2011 | ParkRoyal Hotel, Kuala Lumpur

WHY YOU CANNOT MISS THE EVENT

According to the US Air Force Safety Directorate analysis, Human Factors are the cause of 60% - 80% of accidents in any complex system. In addition to the severe possibility of death or injuries to people, each accident attributed to Human Factors often results in a moderate to high economic costs to organizations. An example of financial implications is one loose 6-inch pin in a landing gear of an F-22 Fighter Jet caused nearly USD 7 million in damage.

'To err is Human' – an undisputed fact. We cannot change that situation. Humans will continue to get distracted, have a finite attention span, become tired, be confused with instructions, manuals, etc. and have fluctuations in motivation.

But we can change the conditions in which Humans work by better understanding how mishaps in complex systems occur. We can better change these conditions to prevent future mishaps.

- It is good to learn from your own mistakes. It is much better (and cheaper) to learn from other people's mistakes. That will be one of the key learning experiences of this course.
- Valuable methodologies and tools will be shared to improve safety and profitability in your company.

PRE-COURSE QUESTIONNAIRE

In order to clarify your learning objectives and ensure you get the most out of this training, you will need to complete a Pre-Course Questionnaire stating your knowledge of the subject, level of experience and other relevant issues. The course leader will analyse your form to ensure that the course covers your needs accordingly.

* This course is HRDF claimable

TESTIMONIALS

"This is a very useful course and quite timely! Sam has a way of making even complex subjects appear easy."
Airworthiness Official, Scandinavia

"The instruction is of Harvard Business School caliber! We learned many vital concepts that we can apply to our maintenance functions. Thank you"
Manager, NASA

"An informative and enjoyable presentation. Sam has provided a lot of useful information. My favorite would be the data on anomalous parts"
Manager, Singapore Airlines

"Every mechanic and his/her supervisor must take a course in Human Factors. This course is one of the best available"
Mechanical Engineer, American Express Aviation Division

"I learned so much from this course. There were concepts explained to us by Sam that are either totally new to me or I am now able to look at them in a different light. Attending this course has made me a better inspector."
Aviation Safety Inspector, FAA

"Sam has encapsulated much valuable information involving a multidisciplinary mix of subjects and presents them in an engaging way so the concepts will stick in the minds of all participants. I heartily recommend this course"
Engineer, US Navy

TRUEOFFER!

* **Book and pay**
By 30 April USD1495 per delegate, save USD 500
From 1st May USD 1995 per delegate

Strictly limited to 25 delegates per session!

Follow on us



Human Factors in Maintenance and Repair

WHO SHOULD ATTEND?

- Professional involved in the actual maintenance or repair of aircraft, machinery, or plant equipment
- MRO Personnel
- Airworthiness Officers
- Technical Managers and Managers overseeing large departments or teams
- Plant Supervisors, Aircraft Mechanics and Liaison Engineers
- HSE Professionals
- Accident Investigators
- University and Technical School Instructors
- Operations, Project and Maintenance
 - Directors
 - Managers
 - Technicians
 - Supervisors

WHAT YOU WILL ACCOMPLISH AND GAIN

- Delegates will gain experience in a truly multidisciplinary effort to generate and compile information about human capabilities and limitations.
- Information learned will be implemented and applied to equipment, systems, facilities, procedures, jobs, environments, training, and personnel management for safe, comfortable and effective human performance.
- An understanding of how companies which have embraced the Human Factors culture routinely find increases in productivity, enhanced performance, and greater customer satisfaction.
- Hands-on training for personal development and to teach others that Human Factors Training is fundamental to creating and sustaining a positive and healthy safety culture.
- Human Factors Training for the workforce including the management is a critical and cost-effective initial step in learning methods to identify, understand, and manage human performance issues.
- Structured Human Factors Training improves job performance; in addition, it also promotes workforce physical and psychological well-being.
- ICAO and many NAAs mandate or highly recommend Maintenance Human Factors Training, recognizing its impact on safety and quality.

KEY BENEFITS OF ATTENDING

- Interactive sessions, classroom activities and exercises which will reinforce key concepts that cannot be obtained by merely reading a book
- Multimedia presentations including videos will help reinforce important concepts
- Case Studies will be shared to teach important lessons in Human Factors, understanding of which will go a long way in minimizing injuries, fatalities and financial implications
- Role Playing Activities and other Exercises will reinforce important lessons learned in the classroom. This is a unique opportunity extended to the participants of this course
- Attending delegates will have a practical guide from the course materials to implement in the working environment. These materials will be an invaluable aid in developing or bettering the maintenance and process standards

About Your Course Facilitator

Sam is based in California. His speciality is in metal fatigue, fracture mechanics, damage tolerance analysis. Prior to founding his company, Sam held senior engineering positions at AeroStructures, Inc and Beech Aircraft Corporation, where he completed fatigue and fracture mechanics substantiation of Beechjet400, Commuter Model 900 and the King Air.

At AeroStructures his responsibilities included fatigue and fracture mechanic evaluations of helicopter and fixed wing aircraft structures.

He developed and installed a fatigue crack initiation tracking program for the F-4S fleet in the US Navy. It was the first sequence accountable scheme employed by the Naval Air Development Center for its quarterly "Structural Appraisal of Fatigue Effects" (SAFE) reports.

Recently he has conducted courses for Princeton University and numerous organizations including Boeing Company, Northwest Airlines, FAA, Singapore Airlines and US Navy, and dozens of companies in five continents. For 4 recent years, he was the sole instructor in his workshop at George Washington University entitled

"Minimizing the Danger of Fatigue in Metals and Composites." He also prepares and executes a phenomenally successful course for

the American Institute of Aeronautics and Astronautics (AIAA) called "Fracture Mechanics - Aerospace Applications" and also one on Advanced Fracture Mechanics.

AIAA added his course entitled "Aerospace Structural Accidents" to its course offerings in 1995. He has taught graduate and undergraduate courses in design methods, fatigue, wear, fracture and materials.

He is an Associate Fellow of AIAA and serves on committee E08 on fatigue and fracture of American Society for Testing and Materials, (ASTM). He belongs to ASM International. He is also affiliated with American Society for Training and Development, American Defense Preparedness Association, and American Helicopter Society. Sam earned a BS Degree in Mechanical Engineering from the Indian Institute of Technology and a MS Degree in Mechanical Engineering from Wichita State University. Lockheed Martin, MOOG and LORD Corporation are among the companies that have utilized Sam's expertise.

DAY 1

6 June 2011, Monday

Session One - Introduction

- What are Human Factors?
 - An overview
- Sources of Human Error
- HFAM History & FAA Regulations/Guidance

Case Study #1 : The other 9/11 aircraft tragedy: How a shift turnaround miscommunication resulted in killing a few people. How you can avoid such a tragedy in your workplace.

Session Two - The Twelve Human Factors related causes for Maintenance Mistakes and Blunders

The Dirty Dozen

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

Case Studies #2 and #3: How both overassertive behavior as well as lack of assertiveness can cause accidents and the solutions that can be implemented.

Session Three - Understanding the Theory & Models and applying them in practice to enhance Safety

- How to combat the Dirty Dozen
- Accident model
- The Domino Theory
- The Swiss Cheese Model
- Accident Causation/Event Investigation
- Just Culture: Safety and Accountability - A Balancing Act
- Supervisory & Organizational Error and Norms
- How do you get from Awareness to Implementation?
- Useful Practical Forms to Improve the Accuracy and Quality of Maintenance Tasks

Session Four - Power Plant and Manufacturing Sector Case Study

- Maintenance Human Factors in power plant and manufacturing environments
- Human Factors Engineering Maintenance
 - Related deficiencies in power plant systems
- Desirable Maintenance
 - Related Human Factors and practical knowledge for enhancement
- Power Generation Plant Performance goals that drive decisions about Human Factors
- Study of Human Factors in manufacturing facilities
- Human Factors approaches for assessing and improving maintainability
- "A bolt is a bolt" - Wrong!

Case Study #4 : Wrong installation of parts: A picture is worth a thousand words . Solve the problem by starting with the Illustrated Parts Catalog.

PROGRAMME SCHEDULE

0830	Registration and coffee
0900	Morning session begins
1030	Morning networking break
1300	Networking luncheon
1400	Afternoon session begins
1530	Afternoon networking break
1730	Course concludes

DAY 2

7 June 2011, Tuesday

Session One - Aircraft Maintenance and Repair - Applications of Human Factors Case Study

Human Error Occurrence Causes in Aviation Maintenance

- o Major categories of human errors in Aviation Maintenance and Inspection tasks
- o Types of Human Error in Aircraft Maintenance and frequency of occurrence
- o Common Human Errors in Aircraft Repair tasks
- o Aircraft Maintenance Error Analysis Methodologies
- o Foreign object damage
- o Non-punitive reporting (to circumvent fear of repercussions)
- o Boeing's Maintenance Error Decision Aid (MEDA)
- o Useful guidelines for reducing Human Error in Aircraft Maintenance activities

Case Study #5

The Aloha Accident: The Influence of Human Factors

Session Two - Tools of Conflict Resolution leading to a Drastic Reduction in Human Factors Related Maintenance Anomalies

- Conflict Mechanisms
- Conflict Management
- Interdepartmental Conflicts
- The Three Types of Intra-Group Conflicts
 - Task
 - Relationship
 - Procedural
- The Five types of Conflict Management or Solution Strategies
 - Competing
 - Accommodating
 - Collaborating
 - Avoiding
 - Compromising

Case History #6: Lessons learned from the Space Shuttle disasters

Session Three - Teamwork , Interactive Activities to Better Understand Human Factors

Ten characteristics of effective teamwork

This non-traditional approach features an entertaining, yet informative approach to further engrain in the minds of delegates, several key concepts in Human Factors.

During the session, Delegates will learn how people process information differently. These games will help optimize design of maintenance and repair systems and procedures taking into account, human strengths and compensating for weaknesses. Participants will learn about:

- Memory,
- Sensation
- Perception
- Measuring
- Interference
- Thinking
- Responding
- Interpretation
- Assumptions
- Reinforcement
- Feedback
- Maintenance Error
- Product Usability

This session promises to be informative and fun!

Participants will remember as much from this session as from a traditional lecture and they will have more fun than at a typical party. Role Playing Activities to accentuate the Human Factors issues at the maintenance and repair workplace environment

Session Four - Summary and Closing Session

A concise review of all the major concepts learned in the Course follow by a video presentation

Case Study #7 : The Japan Air Lines Boeing 747 Crash that killed 521 people and the pivotal role Maintenance Human Factors played in that tragedy.

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COMPANY DETAILS

Name	Industry
Address	
Postcode	Country
Tel	Fax

ATTENDEE DETAILS

1	Name	Job Title
	Tel	Email
2	Name	Job Title
	Tel	Email
3	Name	Job Title
	Tel	Email
4	Name	Job Title
	Tel	Email
5	Name	Job Title
	Tel	Email

APPROVAL

NB: Signatory must be authorised on behalf of contracting organisation.

Name	Job Title
Email	
Tel	Fax
Authorising Signature	

COURSE FEES

☐ Bangkok

Book and pay by 30 April USD 1495 per delegate, save USD 500
From 1st May USD 1995

All options inclusive of delegate pack, luncheon and refreshments.

PAYMENT DETAILS

Payment is due in 5 working days. By Signing and returning this form, you are accepting our terms and conditions.

Please debit my: ☐ VISA ☐ MasterCard

Card Number

CVC/CVV2 *This three-digit CVC/CVV2 number is printed on the signature panel on the back of the card immediately after the card's account number.*

Card Issuing Bank: Card Issuing Country:

Cardholders Name Expiry Date / /

Cardholders Signature

REGISTER NOW

John Karras

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EXHIBITION OPPORTUNITIES

Limited packages are available. For further details, contact **Aravind Menon**
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TERMS & CONDITIONS

- The course fee is inclusive of the event proceedings, materials, refreshments and lunch
- Upon receipt of the completed registration form, invoice will be issue. Trueventus request that all payments be made within 5 working days of the invoice being issued. Full payment must be received prior to the event. Only delegates that have made full payment will be admitted to the event.
- Substitution & cancellations policy. Should the registered delegate unable to attend, a substitute delegate is welcome at no extra charge. Written notifications of all substitutions is required 5 working days prior to the event. Trueventus contracts carry 100% full liability upon receipt of registration. Non payment does not constitute cancellation. A 50% of cancellation fee will be charged under the terms outlined below: Due to limited event seats, Trueventus agrees to reserve the seat for the client upon issuance of invoice. Upon signing of this contract, client agrees that in any case of dispute or cancellation of this contract Trueventus will not be able to mitigate its losses for any less than 50% of the total contract value. If a client does not attend the event without written notification at least 5 working days prior to the event date, he/she will be deemed as no show. Trueventus does not provide refunds for cancellations. When any cancellations are notified in writing to Trueventus 5 working days prior to the event, a credit voucher will be issued for use in future Trueventus events.
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- Upon receiving this signed booking form, you the client hereby consent to Trueventus to keep your details for the use of future marketing activities carried out by Trueventus and third party organisations & partners.
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