

# 1<sup>st</sup> International Symposium

## Understanding Human Limitations & Errors

24 –25 September 2007, MIRCE Akademy, Woodbury Park, Exeter, United Kingdom

**Human errors account for a large proportion of system failures throughout a broad range of industries worldwide. For example, research studies for aviation, maritime, communication, pharmaceutical, chemical, defence and other process-based systems, have shown that the cumulative number of accidents resulting from human limitations and consequential errors are as high as 80 to 90 percent.**

The MIRCE Akademy invites you to participate in this International Event. The objective of the Symposium is the further expansion of the scientifically based knowledge for the understanding of human limitations and errors associated with a machine design, production and operational processes. The understanding of these phenomena could lead to the increase of machine in-service reliability and operational effectiveness, while reducing the risk of human generated failures and their consequences to natural and business world.

This two-day event will host presentation by international experts from professional institutions, academia and industry, who jointly are trying to answer the question **WHY:**

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| <ul style="list-style-type: none"><li>• Drivers go through red lights?</li><li>• Wrong parts get installed?</li><li>• Faults are not found by inspections?</li><li>• Installations are not always complete?</li><li>• Communication errors occur?</li><li>• Connections get crossed?</li><li>• Typing errors occur?</li><li>• Operator ignores warning signals?</li><li>• Fault does not get detected?</li><li>• Users ignore set up procedures?</li></ul> | <ul style="list-style-type: none"><li>• Parts get installed in wrong direction?</li><li>• Operators get stressed?</li><li>• Access panels do not get closed?</li><li>• Left-hand side gets confused for the right hand side?</li><li>• Wrong fluid gets used?</li><li>• Tasks do not get completed and book signed?</li><li>• Designer select wrong material?</li><li>• Systems do not get deactivated?</li><li>• Material gets left in vehicle</li><li>• And many more .....</li></ul> |
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Book your diary now: 4 - 5 November 2008, at Woodbury Park, Exeter, UK.

**2<sup>nd</sup> International Symposium on Human Limitations and Errors,**  
p.s. The deadline for a paper, workshop and exhibit proposal is 15<sup>th</sup> February 2008.

# Symposium Programme – Monday 24 September 2007

08.30 - 09.00 Registration

09.00 Opening Address

## "Human Error - Probable or Possible Event ?"

Dr Jezdimir Knezevic, Founder and President of the MIRCE Akademy

09.45 "Localising Brain Regions for Predictive Temporal Errors of Saccadic Eye  
10.30 Movements: a fMRI Study"

Dr Natalia Passynkova and Prof Chris Harris, Centre for Theoretical and Computational Neuroscience, University of Plymouth, UK

10.30 11.00 - Tea/Coffee

11.00 "Modelling Human Errors in Maintenance"

13.00 John Crocker BSc, MSc, PhD, FMA, FORS, CEng, MRAS (details in the box below)

13.00 - 14.00 Lunch

14.00 "Why we make mistakes and how we learn from them?"

15.30 Cognitive Psychology Group, Exeter University, UK. (see the box for the details)

15.30 - 16.00 Afternoon Tea

16.00 "Why we make mistakes and how we learn from them?" - continue

16.45 Cognitive Psychology Group, Exeter University, UK. (see the box for the details)

17.00 "Formula 1: Human Errors Vs, Machine Failures 1950 – 2006",  
18.30 Presentation in F1 Reliability & Effectiveness Centre of the MIRCE Akademy,  
followed by a guided tour of the Nigel Mansell World of Racing  
(Nigel Mansell OBE GFMA is 1992 Formula 1 and 1993 Indy PPG Champion)

19.00-19.30 Sherry Reception

19.30 -22.30 Symposium Dinner

## Modelling Human Errors in Maintenance

Human errors made during maintenance are not uncommon but predicting when they will happen and with what consequences is extremely difficult. There are, however, a number of factors that may help reduce the uncertainty.

There are also a number of measures that may reduce the frequency. If these can be quantified then it should be possible to estimate the expected numbers of maintenance induced failures and the potential benefits of taking alleviating measures however, it should be recognised that humans have an apparently infinite capacity for inventing new ways to do things incorrectly. **To err is human, but computers can do it much faster.**

**Dr John Crocker** is currently an Operational Research and Logistics Engineering Consultant with Data Systems & Solutions having joined them in 2001 as a transfer from Rolls-Royce where he had worked since 1975. John is responsible for the forecasting and life-cycle costing tool used by the various aero-engine businesses within Rolls-Royce. He is the co-author of 3 books on Reliability, Maintainability and Logistics and is the author of *Simulation: System Engineering & Management Tool* recently published by the MIRCE Akademy. He has also presented well over a dozen papers at international conferences in the past 4 years and is awaiting publication of a paper in the new Journal of Simulation, published by the OR Society.

Cognitive Psychology Group,  
School of Psychology  
University of Exeter, Exeter, UK

## " Why we make mistakes and how we learn from them ? "

Presenters and Topics:

- Dr Aureliu Lavric,  
Task Switching, Human Neurophysiology
- Professor Stephen Monsell,  
Attention, Multitasking, Task Switching
- Professor Ian McLaren,  
Human Associative Learning
- Professor Andy Willis,  
Human Associative Learning
- Dr Jacob Jolij,  
Vision, Consciousness

[www.psychology.ex.ac.uk/resgrp](http://www.psychology.ex.ac.uk/resgrp)

# Symposium Programme – Tuesday 25 September 2007

08.30 09.00 - Registration

Chair Person: Clive Nicholas, MIRCE Engineering

09.00 "Human Task Analysis in Job Design, Using Real Human Motion Database",  
09.45 Salla. Lind, University of Tampere, Finland

09.45 "Maintainers Behaviour - Research Study",  
10.30 Clive S. Nicholas, Mirce Engineering, UK

10.30 - 11.00 - Tea/Coffee

11.00 "Human Performance Influencing Factors,  
11.45 Simon.Gill, University of Nottingham, UK

11.45 "Method for Eliminating Human Error on Missile-Eject Launcher Role  
12.30 Change" Stuary Peake, Flight Refuelling, UK

12.45 13.45 - Lunch

13.45 "Relex Human Factors Risk Analysis"  
14.45 Chris Swallow, Relex Software Europe Limited, UK.

14.45 - 15.15 Afternoon Tea

15.15 Human Error Assessment and Reduction Technique - HEART Software,  
16.15 Estelle Walker, Safety and Reliability Group, Poyry Energy, Finland.

16.15 -16.45 Closing Remarks

The MIRCE Akademy is an independent research and education institution, established in 1999 by Dr J. Knezevic, to generate, disseminate and recognise the knowledge of the **MIRCE Mechanics**, the science of the Motion of In-service Reliability, Cost and Effectiveness phenomena through the life of a machine-system, resulting from natural causes and human actions.

To scientifically understand the mechanisms of the motion of functionability phenomena through time, the research undertaken at the Akademy is placed within a physical scale ranging:

- from  $10^{-10}$  metre (Atomic System – to deal with vacancies, fatigue, corrosion, creep, wear, etc.) to
- to  $10^{10}$  metre (Solar System – to deal with temperature, ice, wind, humidity, sand, solar-radiation, snow and so forth.).

To deal with non-deterministic nature of the motion, the MIRCE Mechanics based predictions, are based on the methods that provide accuracy with a probabilistic regularity, for a given design and operational rules.

**Contact Address: MIRCE Akademy, Woodbury Park, Exeter, EX5 1JJ, United Kingdom.**

**Phone: + 44 (0) 1395 232 653 Fax: + 44 (0) 1395 233 899**

**Email: [quest@mirceakademy.com](mailto:quest@mirceakademy.com)**

**Web: [www.mirceakademy.com](http://www.mirceakademy.com)**

The Symposium will be held at **Woodbury Park Hotel, Golf and Country Club**, 8 miles from Exeter.

Communication between Exeter and other parts of the United Kingdom are excellent.

**By road**, the M5 motorway links Exeter to London, the Midlands, Scotland and Wales. Regular rapid coaches run services to and from London and Heathrow Airport.

**By rail**, a regular fast service is available to and from Exeter (St David's Station) and London (Paddington or Waterloo Station - connection to Euro Star).

**By air**, Exeter Airport offers regular flights to many British and Continental destinations and is situated near to Woodbury Park. Travel between Exeter and Woodbury normally requires a car or taxi.

Delegates are responsible for the arrangement and payment of their own travel and accommodation. Delegates wishing to take advantage of preferential room rates should contact Woodbury Park Hotel Reservations quoting 'MIRCE'.

Woodbury Park Hotel, Golf and Country Club, Woodbury, Exeter, EX5 1JJ, United Kingdom

Tel +44 (0) 1395 233 382

Fax +44 (0) 1395 233 384

Email [enquiries@woodburypark.co.uk](mailto:enquiries@woodburypark.co.uk)

Web [www.woodburypark.co.uk](http://www.woodburypark.co.uk)

A list of alternative accommodation in other hotels and guesthouses in the vicinity is available on request.

*" People, even more than things, have to be restored, renewed, revived, reclaimed, and redeemed."*

Academy Award-winning actress, humanitarian *Audrey Hepburn*

# 1<sup>st</sup> International Symposium on Human Limitations & Errors

## Registration Form

THIS FORM MAY BE PHOTOCOPIED

Fax +44 (0) 1395 233 899

Phone +44 (0) 1395 232 653

Mail MIRCE Akademy, Woodbury Park, Woodbury, Exeter, EX5 1JJ, United Kingdom

Online [www.mirceakademy.com](http://www.mirceakademy.com)

email: [quest@mirceakademy.com](mailto:quest@mirceakademy.com)

### Symposium Prices (in GB Pounds £)

Full Programme	Fee	VAT	Payable
• Participants	495.00	86.63	<b>581.63</b>
• MIRCE-Fellows	595.00	104.13	<b>699.13</b>
• MIRCE-Students	295.00	51.63	<b>346.63</b>
One Day Programme			
• Monday	295.00	51.63	<b>346.63</b>
• Tuesday	295.00	51.63	<b>346.63</b>
Other Rates			
Symposium Proceedings	150.00	26.25	<b>176.25</b>
Symposium Dinner	42.55	7.45	<b>50.00</b>

## COST

**The full Programme Package includes:** Attendance to all Sessions, Supporting Materials, Lunches and Light Refreshments and Symposium Dinner

### VALUE ADDED TAX (VAT)

Unless special exemption exists, under UK Customs and Excise regulations delegates from all countries are required to pay UK VAT @ 17.5% on all courses taking place in the UK. Non-UK delegates may be able to recover VAT incurred via the relevant tax authority in the country of origin of the delegate.

### PAYMENT DETAILS

Please invoice my organisation

**(Note: UK MOD personnel can pay by BACS through the DBA – Contractor No. will be supplied with invoice)**

For the attention of \_\_\_\_\_

Purchase Order No. \_\_\_\_\_

Please find enclosed a cheque for £ \_\_\_\_\_  
**(made payable to MIRCE Science)**

Please charge credit card

Visa       MasterCard       Amex

Cardholder \_\_\_\_\_

Card No. \_\_\_\_\_

Expiry Date \_\_\_\_\_

### PERSONAL DETAILS (Please print clearly)

Surname \_\_\_\_\_

First name \_\_\_\_\_

Organisation \_\_\_\_\_

Department \_\_\_\_\_

Position \_\_\_\_\_

Address \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Postcode \_\_\_\_\_ Country \_\_\_\_\_

Tel \_\_\_\_\_ Fax \_\_\_\_\_

E-mail \_\_\_\_\_

Special requirements      Yes       No

Please specify  
\_\_\_\_\_  
\_\_\_\_\_

I understand and accept the registration terms and conditions as shown

Signature \_\_\_\_\_ Date \_\_\_\_\_

### Terms and Conditions

Substitution of participants may be made at any time. If you intend to do this, please advise the MIRCE Science ('the organiser') as soon as possible. Cancellation of a booking must be received in writing by the organiser at least 14 days before the commencement of the Symposium. MIRCE Science regrets that no refunds or credits will be made after the deadline unless the organiser cancels the Symposium.

The organiser reserves the right to alter the programme or cancel the Symposium at its discretion. All places offered are subject to availability.