

9th International Mirce Symposium

# System Operational Effectiveness

1-3 December 1999

The Greg Norman Suite  
Woodbury Park Golf and Country Club  
Woodbury, Exeter UK

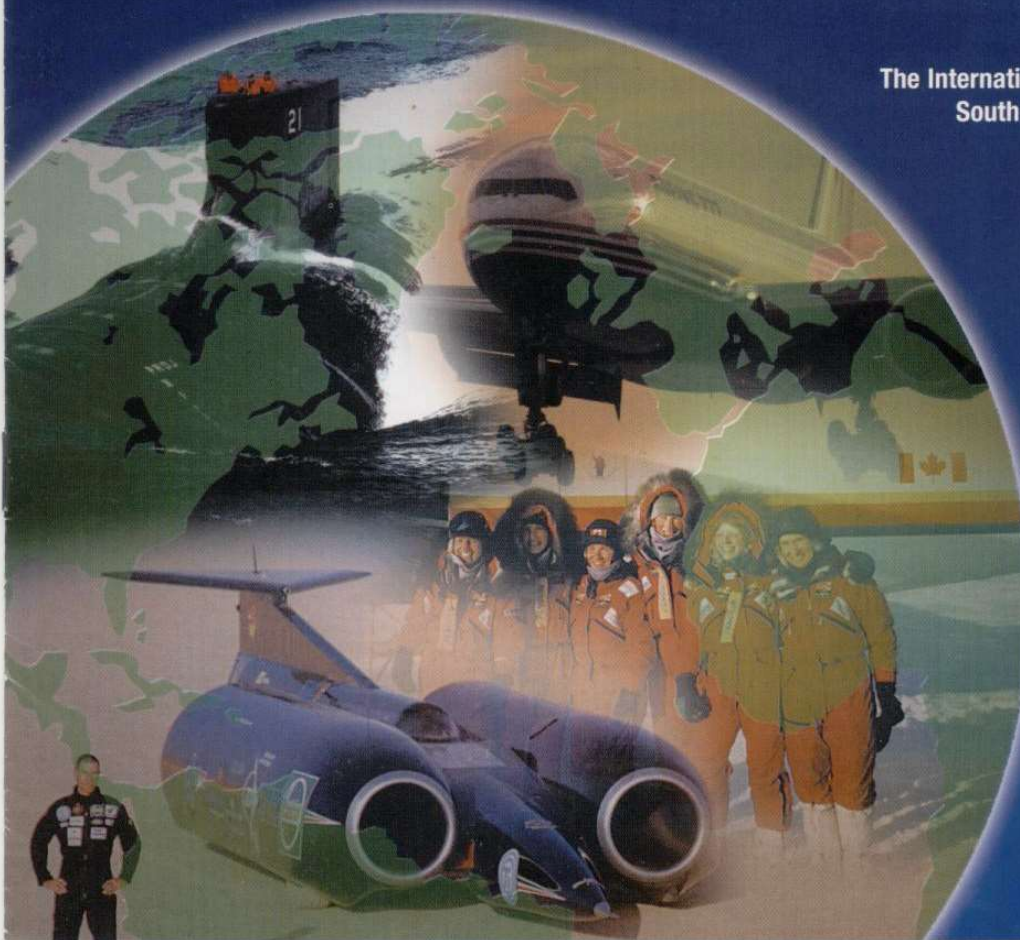


**Mirce Academy**  
of  
*System Operational Sciences*

IN CONJUNCTION WITH



The International Society of Logistics  
South West Chapter, UK





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### FOR FURTHER INFORMATION PLEASE CONTACT

**Symposium Administrator,**  
Mirce Akademy, PO Box 198, Exeter EX2 7YX, UK  
Tel: + 44 (0)1395 233856  
Fax: + 44 (0)1395 233899  
Email: mirce-akademy@england.com

## 9th International Mirce Akademy Symposium SYSTEM OPERATIONAL EFFECTIVENESS 1-3 December 1999

### Dear Participant,

On the threshold of the new millennium, it is my great pleasure to invite you to attend this well-established International Event on the important topic - SYSTEM OPERATIONAL EFFECTIVENESS.

After eight years chairing this event for the M.I.R.C.E. Centre (Management of Industrial Reliability, Cost and Effectiveness) of Exeter University, I am delighted to be in a position to do so again but, this year, under the colours of a new and exciting organisation. The new organisation is the Mirce Akademy - established in 1999 under my leadership, as an independent institution for promoting System Sciences through research and industrial education. This new position provides me and members of my staff, even greater opportunities to promote System Operational Effectiveness and its comprising sciences, with the same level of passion and belief.

You'll see in the following pages we have a stimulating and inviting Programme and I hope you are in a position to support this event, and our new organisation, with the same level of professionalism and motivation as before. We are continuing the very enjoyable Traditional Christmas Dinner as the social high-spot of the Symposium and would remind speakers and presenters of the Best Paper prize awarded by Aspire Consulting Ltd (see opposite).

I look forward to seeing you and hosting you and your colleagues in the attractive new hotel at the Woodbury Conference Centre under our "new flag" but with the same passion for Systems Sciences for the next millennium (or two!).

Yours sincerely,

**Dr. J. Knezevic**

Mirce Akademy



Dr. Jezdimir Knezevic



Dr. Dinesh Kumar



Dr. Dinesh Verma



Mr. Clive Nicholas



# System Operational Effectiveness

In the private sector increasing customer expectations concerning price, quality and delivery in the face of intense competition require systems to operate effectively to meet business requirements. Similarly, in the public sector growing budgetary constraint and the need to deliver quality and value-for-money demand effective system operation.

Failure to operate effectively can have costly and far-reaching effects. In the operation of a commercial airline, for example, failure to dispatch a flight on time or cancellation of a flight will lead not only to the cost of correcting the failure but also to extra crew costs, additional passenger handling and loss of passenger revenue. All of this will impact upon profitability and other factors such as market share. In defence, failure in System Operational Effectiveness is not only costly in relation to diminishing budgets but also has extremely serious consequences for defence capability. In motor racing, failure to complete a pit-stop a second faster than a competitor could cost a championship.

## Objective

This symposium on System Operational Effectiveness is intended to provide participants with advanced methods, tools and techniques necessary to achieve planned levels of System Operational Effectiveness in their organisations.

## Target


System Operational Effectiveness is addressed from the perspective of both the producer and the user and is suitable for Engineers, Managers, Researchers, Academics and others whose interests lie in fields such as Reliability, Maintainability, Supportability, Availability, Maintenance, Logistics, Systems Engineering, Life Cycle Management, Life Cycle Cost, and related areas.

## Features

- Key Note Addresses
- Technical Paper Presentations
- World-Wide Networking
- Exhibitors
- Traditional Christmas Dinner
- Honorary Fellowship Award for 1999
- Best Paper Award (Aspire Consulting)

The symposium has been organised by the Mirce Academy which provides a unique approach to research, education and training activities related to the concept, analysis, management and engineering tasks concerning System Operational Effectiveness within the framework of life cycle principles.

## Best Paper Prize

Sponsored by **Aspire** Consulting Ltd. 

The Aspire Consulting prize of £500 will be awarded to the author of the Paper that, in the opinion of the prize committee, best meets the required quality standard and which is judged to advance supportability engineering.

*Effective and profitable implementation, by the logistics community, will be a criteria.*

Welcome  
Welkom  
Bienvenue  
Willkommen  
Benvenuto  
Bem-vindo  
Velkommen  
Bienvenido  
Tevetuloa  
Võlkommen  
Dobri Dosli  
Dobro Pozolovat

## CAN YOU HELP?

We'd still appreciate your help with sponsorship ... in number of options ... sponsorship of a lunch £500 sponsorship of Dinner £1000 - possibility of software exhibition £1000 (to include 15 minute presentation on Wednesday and Thursday, one free attendance to the Symposium, and one free advertising page in Proceedings).

**ALL OTHER SUPPORT IS EXTREMELY WELCOME and very much appreciated.** Contact Mirce Academy.



# Programme

**Final  
Programme  
details to be  
confirmed**

## Wednesday 1st December 1999

08.00-09.15	Registration
09.15-09.30	Welcome Address
09.30-10.30	Keynote address <i>Clifford Geiger, President, Unified Industries, Inc, USA</i>
10.30-11.00	Tea/Coffee
11.00-12.30	Invited Speakers  Armoured Vehicle System Operational Effectiveness, <i>Les Tyler, Vickers Defence Systems, Leeds</i>  Higher Level Reliability Analysis, <i>Peter Hinds, British Army, U.K.</i>
12.30-13.30	Lunch
13.30-15.00	Paper Session 1 -  Accelerated Assessment and Selection of System Design Alternatives in the Presence of Qualitative Uncertainty and Imprecision, <i>Dinesh Verma, Lockheed Martin Undersea Systems, Caroline Smith, James Madison University USA, Wolter Fabrycky, Virginia Tech, USA</i>  The Business Impact of RMS on Ports' Operational Effectiveness, <i>Rob Knotts</i>  A Maintenance Solution to O&S Cost Reduction, <i>Jimmie Pittman and Randy Gibbs, U.S. Army Aviation and Missile Command</i>
15.00-15.30	Tea/Coffee
15.30-17.30	Paper Session 2 -Pilot Training  A new approach towards the 'ab initio' ATPL training, <i>Friedrich Sainz, Dipl.-Ing., Institute of Aviation</i>  Interaction in complex human-machine-systems. An investigation of pilots in handling critical incidents during flight, <i>Fritzi Wiessman, Institute of Aviation</i>  Today's Pilot Training Concept and its Safety Related Consequences, <i>Reinhardt Schuster, Institute of Aviation</i>
15.30 -17.30	Workshop  Statistics for Logisticians, <i>Caroline Smith, James Madison University.</i>





## Thursday, 2nd December 1999

- |             |  |
|-------------|--|
| 09.30-10.30 | Keynote Address<br><i>WWW Masters, Jezdimir Knezevic, Mirce Akademy</i>  |
| 10.30-12.00 | Invited Speakers<br>Future Offensive Air Systems Supportability Vision, <i>John Richards, British Aerospace, UK</i><br>System Engineering - Can Reality predictions be made as accurately as Physics? <i>Arie Dubi, The Clockwork Group</i>  |
| 12.00-13.00 | Lunch  |
| 13.00-14.30 | Paper Session 3<br>Methodology for Shelf/Service Life Extension of Rocket Motors, <i>Luciano Pizzolo, Nato Maintenance and Supply Agency, Luxembourg</i><br>Condition-based-Maintenance of a Clean-in Place Station Using Plant Simulation, <i>J Cooney, M Gaiser and J O'Connor, University College Cork, Ireland</i><br>What price availability?, <i>John Crocker</i><br>Redesign of Industrial Trent Gas Turbine to support a World-wide Market, <i>Martin Hueitt</i> |
| 14.30-15.00 | Tea/Coffee   |
| 15.00-16.30 | Paper Session 4: Water Systems Operational Effectiveness<br>Modelling and Controlling the Time-Varying Pollutant Load in Urban Drainage Systems, <i>P Skipworth, A Saul and S Tait, University of Sheffield, UK</i><br>Effectiveness of Storm Drainage Systems, <i>C Maksimovic, Imperial College, London, UK</i><br>Optimising the Rehabilitation of Water Distribution Systems, <i>Mark Engelhardt, Dragan Savic, Godfrey Walters, University of Exeter</i>            |
| 19.00-22.00 | <b>Mirce Akademy's Traditional Christmas Dinner</b><br>The honorary fellowship for 1999 will be awarded to <b>Richard Noble, OBE</b> Supersonic Trust for his effective leadership of his successful ThrustSSC operation - the world's first supersonic car.<br><i>After Dinner Speakers:</i><br><b>Sue and Victoria Riches</b> Members of the British North Pole Expedition   |

## Friday, 3rd December 1999

- |             |  |
|-------------|--|
| 09.00-10.30 | Paper Session 5<br>Software Support Requirements: An approach to Assessing the Resources required for Software Support, <i>Kay Spackman, Racal Defence Electronics Limited, UK</i><br>Relevant Condition Predictor-based Maintenance, <i>Haritha Saranga, University of Exeter</i><br>Internet/Intranet Technology: Insight in Access and Integration of Information in Industrial Enterprises, <i>S Pantelic and Lj Lukic, LOLA Institute, Yugoslavia</i><br>Applied Genetic Programming in a Chemical Plant for Reducing Production Cost, <i>Ariel Katz</i>  |
| 10.30-11.00 | Tea/Coffee   |
| 11.00-12.30 | Paper Session 6:<br>FMECA Applied to Bus Design, <i>G. Ivanovic, S. Sofijanic and G. Glumac, University of Belgrade, Yugoslavia</i><br>Logistic Management Development at PT Telekomunikasi Indonesia its Performance and Challenges, <i>Husni Amani</i><br>Two Level Cost Optimisation Production Model for Several Stochastic Network Projects, <i>Golenko-Ginzburg, G Aharon, F Lea and S Shimon, Ben-Gurion University, Israel</i><br>Resource Supportability Model for Several Stochastic Network Projects, <i>Golenko-Ginzburg, A Gonik and S Sitniakovski, Ben-Gurion University of Negev, Israel</i> |





# Registration Information

## REGISTRATION ★

The Symposium Fee is £450 for participants and the special student rate is £300. Authors will be expected to pay their specially discounted fee - £330 - on submission of their manuscripts. The fee includes one copy of the Symposium proceedings, attendance of paper sessions, workshops, daily lunches, refreshments and the Mirce Traditional Christmas Dinner on 2 December 1999. (Places are available for the Christmas Dinner only, at £45).

*More information can be obtained from:*

Symposium Co-ordinator  
Mirce Akademy  
PO Box 198  
Exeter EX2 7YX - UK  
Telephone: +44 (0)1395 233856  
Fax: +44 (0)1395 233899  
Email: [Mirce-Akademy@england.com](mailto:Mirce-Akademy@england.com)

★ **NOTE** All fees and costs are subject to VAT @ 17.5%

## VENUE

The 9th International Mirce Akademy Symposium will be held at the Woodbury Park Conference Centre, Woodbury Castle, Exeter, EX5 1JJ, U.K. Woodbury Park is a magnificent leisure and sporting complex, tucked into the rolling hills above the East Devon coast line. (6 miles from Exeter on A3052 to Sidmouth).

## ACCOMMODATION

Participants must make their own accommodation arrangements. Since the Symposium is held at the Woodbury Conference Centre, limited accommodation at the Woodbury Hotel is available. Bookings can be made directly by the participants on +44(0)1395 233 382. Please refer to the Mirce Akademy when booking accommodation. Rooms at Woodbury Hotel are retained for participants until two weeks before the Symposium. After that, rooms cannot be guaranteed. A list of accommodation in the area is available on request.

## TRAVEL

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

**BY ROAD:** The M5 motorway links Exeter to the Midlands, the North, Scotland, Wales and London. Regular rapid coaches from Heathrow (12 departures a day) are available. For

information and booking see the National Express web-site: [www.nationalexpress.com](http://www.nationalexpress.com).

**BY RAIL:** There is a regular fast rail service to and from Exeter (St David's Station). London is approximately two and-a-half hours from Exeter. For information and booking see the Great Western Web-site: <http://great-western-trains.co.uk>.

**BY AIR:** Exeter Airport offers regular flights to many British and Continental Cities and is within twenty minutes drive of Woodbury Park.

For information and booking see [www.eclipse.co.uk/exeterair](http://www.eclipse.co.uk/exeterair)

Communication between Exeter and Woodbury is limited to transportation by car or taxi (taxi fare is about £15) and will take about 30 minutes.

## MESSAGE CENTRE

During the Symposium participants may be contacted by telephone on ++44 (0)1395 232653 or by fax on ++44 (0)1395 233899. Please mention the name of the organisers. Messages will be posted on the message board in the entrance hall of the Woodbury Golf and Country Club.

## LANGUAGE

The Symposium language will be English.





### RECOMMENDED ATTIRE

Business dress during the Symposium, smart casual on Woodbury grounds.

### SMOKING POLICY

Out of courtesy to others, smoking is not permitted in the buildings of Woodbury.

### MOBILE PHONE POLICY

Out of consideration for the speakers and interested audience, mobile phones have to be switched off during the sessions.

### OTHER TERMS AND CONDITIONS

Fees will be refunded only if the specific Symposium in question is cancelled, or if cancellation of enrolment is received in writing at least fourteen days before the Symposium date.

The Organisers reserve the right to alter the schedule or cancel the Symposium at its discretion. All places are offered subject to availability.

The Organisers are unable to accept liability for personal accident or for the loss of, or damage to, the belongings of those attending this Symposium.

Substitution of Participants may be made at any time, provided the registration fee is still applicable.



## 9th International Mirce Symposium SYSTEM OPERATIONAL EFFECTIVENESS

1-3 December 1999

# Booking Form

**PLEASE FILL IN ONE FORM PER PERSON** FORMS CAN BE PHOTOCOPIED

Name ☐ Mr. ☐ Ms

Surname

First Name(s)

Title

Preferred name for badge:

Organisation/Company:

Job Title/Position:

Work Address:

Postcode:

Telephone:

Fax:

E-mail:

Home Address:

Postcode:

Telephone:

Fax:

E-mail:

To which address do you want your correspondence sent?

☐ Home ☐ Work

Do you have any special dietary or disability requirements?

☐ No ☐ Yes

Please specify:

I am attending as: ☐ PARTICIPANT ☐ STUDENT ☐ AUTHOR

Traditional Christmas Dinner only: ☐

☐ Please send me an accommodation list.

Payment Details:

☐ I enclose a cheque for £ made payable to MIRCE AKADEMY

Credit Card: ☐ Visa ☐ MasterCard

Card Number:

Expiration date:

Card Holder's Name (print):

Signature:

☐ Please send me an invoice to the following address: (additional £30 invoice charge)

Postcode:

I wish to attend the Symposium and have read the Terms and Conditions.

Signature:

Date:

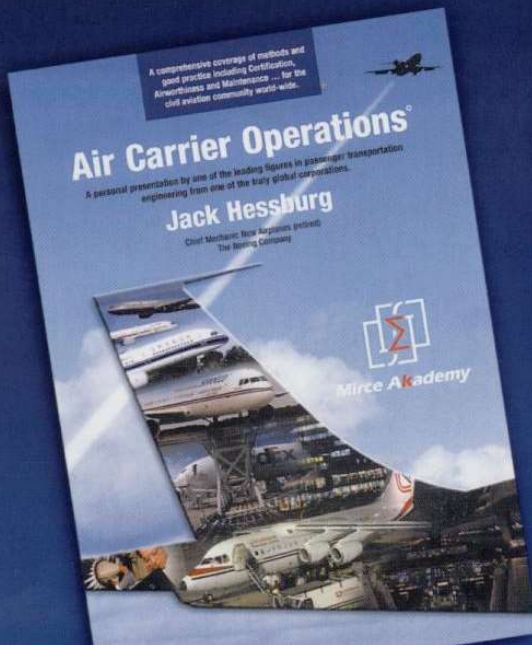
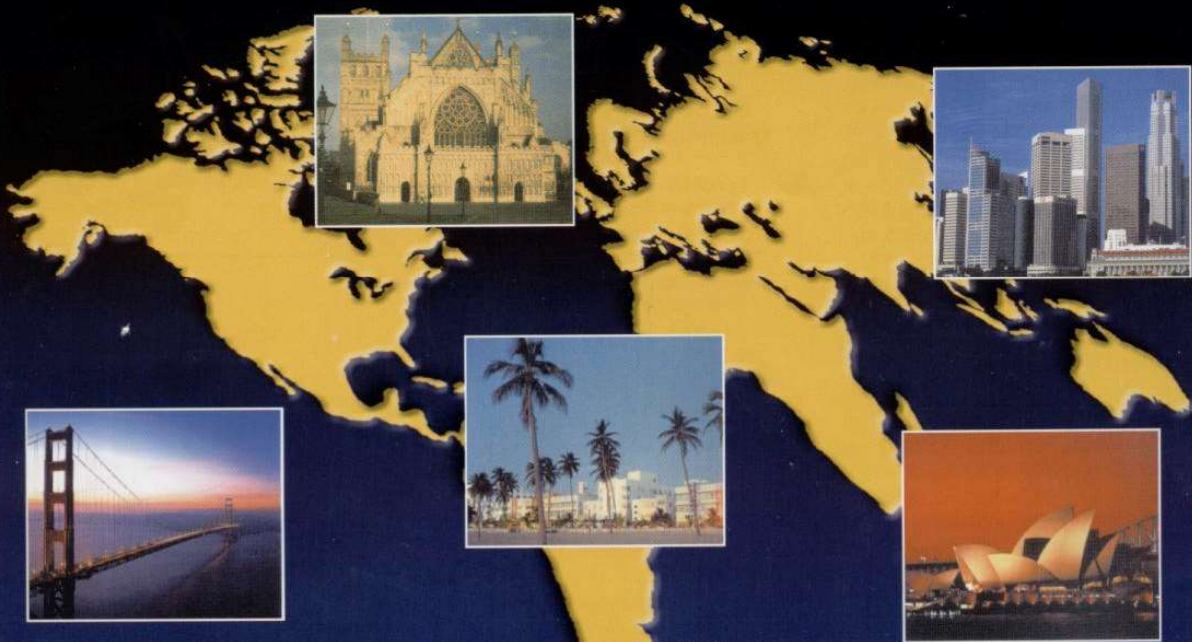
Full Joining Instructions will be forwarded to participants one week before the start of the Symposium.



This unique and valuable five-day presentation will be staged at five venues over four continents in the next 12 months.

# Air Carrier Operations®

A personal presentation by Jack Hessburg - Chief Mechanic New Airplanes (Retired), one of the leading figures in passenger transportation engineering from one of the truly global corporations, the Boeing Company.



## Dear Participant,

I am extremely pleased to invite you, and your colleagues, to share with the extraordinary talent and experience of **Jack Hessburg**.

Jack is the man that Boeing appointed in 1990 as Chief Mechanic to support and help deliver the massive and successful new 777 program.

The entire material that Jack presents on his course (see the full Programme details) is based on the culmination of forty years' experience in passenger air-transportation.

Yours sincerely,

**Dr. J Knezevic**, Director and Founder Mirce Akademy

**UNITED KINGDOM** - Exeter, Devon . . . November 22 - 26, 1999

**AUSTRALIA** - Sydney . . . . . February 7 - 11, 2000

**SINGAPORE** . . . . . April 17 - 21, 2000

**USA** - San Francisco (CA) . . . . . June 19 - 23, 2000

**USA** - Orlando (FL) . . . . . September 25 - 29, 2000

**Contact Mirce Akademy for more details and Course Content**

> > Maintenance Free Operation Period-MFOP > **LIFE CYCLE COST ANALYST** > Training Analysis > > MMH/FH > > M  
discardables, Repairables and Rotables > > Quality Function Deployment-QFD > **SUPPORTABILITY STRATEGIST** > Proje  
> Mission Success > > System Integration > **LOGISTICS ENGINEER** > Dollar/Seat/Mile > > Total Productive Maintenance  
AS > **CHIEF LOGISTICIAN** > Maintainability Function-M(t) > > Interoperability > > Level of Repair Analysis-LORA > **SU**  
ublications > > Mean Time In Maintenance-MTIM > > Cross Crew Qualification-CCQ > > Facilities > > Flight Simulators  
e To Support-MTTS > > Ground Support Equipment > > Life Cycle Cost-LCC > **MAINTENANCE ENGINEER** > Modelling >  
**T ANALYST** > Learning Curve > **TESTABILITY ENGINEER** > Poisson Distribution > > Fatigue Life > > Commercial Off-T