

**Condition Monitoring '99 -
Conference Proceedings**

Hardback
Approx 650pp
Edited by Mervin H Jones (University of Swansea)
Number of papers: 55
Price £65 / \$108 plus £3 / \$5 post & packing
Publication date: April 1999
ISBN: 1 901892 11 5

55 papers from the April 1999 conference held in Swansea, UK.

CONTENTS:

**TOTAL PRODUCTIVE MAINTENANCE –
a Route to World Class Manufacturing**
Peter Willmott, WCS International Ltd.

Using Acoustic Emission to Ease the Task of
Condition Monitoring
Trevor J Holroyd, Holroyd Instruments Ltd

Microbiological Monitoring On-Site
E.C.Hill, D.J.Collins and G.C.Hill, ECHA Microbiol-
ogy Ltd.

An Object Oriented Approach to Process Supervi-
sion Systems
Adriana Alexandru, Research Institute for
Informatics

In-Line Conductivity Measurements
Costandy S. Saba, Douglas K. Toth and J. Douglas
Wolf, The University of Dayton Research Institute

Experiences with RULER Oil Analysis Instrument
for Quick Determination of Remaining Useful Life
on Jet and Diesel Engine Lubricants
Jo Ameye (FLUITEC International), Steve Lee
(DERA Pyestock)

Best Practices in Maximizing Fault Detection in
Rotating Equipment Using Wear Debris Analysis
James C. Fitch, Noria Corporation

Interstitial Processing: The Application of Noise
Processing to Gear Fault Detection
Kenneth P. Maynard, Pennsylvania State Univer-
sity.

The Application of System Identification Tech-
niques to Health Monitoring and Fault Diagnosis in
Internal Combustion Engines
M. F. White (University of Trondheim), G.
Molteberg (Kongsberg Norcontrol A/S)

An Approach on the Application of Clustering
Analysis to Equipment Evaluation
Xingcong Zhou, Han Liang Xiao (Wuhan Transpor-
tation University) & Xiong Jun (Shenzhen Port of
Authority)

Fusion Techniques for Vibration and Oil Debris/
Quality in Gearbox Failure Testing
Carl S. Byington, Terri A. Merdes, and James D.
Kozlowski Pennsylvania State University

Validation of Helicopter Nominal and Faulted
Conditions Using Fleet Data Sets
Kenneth Maynard, Carl S. Byington, G. William
Nickerson, and Michael Van Dyke, Pennsylvania
State University

Evaluation of Human-Machine Interfaces for
Aircrew Fault Diagnosis and Management
Carl S. Byington, Michael Yukish, Eric Scheie
(Pennsylvania State University), Floyd Glenn &
John Deaton (CHI Systems), Jan Dickieson (Office
of Naval Research)

Performance of an Electrostatic Oil Monitoring
System During An FZG Gear Scuffing Test
H.E.G. Powrie & C.E. Fisher (Stewart Hughes
Limited), O.D. Tasbaz & R.J.K. Wood (University of
Southampton)

Monitoring of Foreign Objects Ingested into the
Intake of a Gas Turbine Aero-Engine
H.E.G. Powrie and C.E. Fisher (Stewart Hughes
Limited)

Improving the Performance of StepperMotor Driven
Machinery
Adrian J. Stout, Peter D. Thomas & Paul A. Orton,
The Nottingham Trent University

Analysis and Calibration of an Incremental Motion
Encoder
Emmanouil Hatiris, Paul A. Orton, Janet F.
Poliakoff & Peter D. Thomas, The Nottingham
Trent University

Oil Contamination Analysis Inside a Bearing using
an Incremental Motion Encoder
Emmanouil Hatiris, Paul A. Orton, Janet F.
Poliakoff & Peter D. Thomas, The Nottingham
Trent University

The Design of Embedded Systems using Software
Patterns
Michael J. Pont, Chinmay R. Parikh, Yuhua Li and
Chen Pang Wong, University of Leicester

Neural Networks for Condition Monitoring and
Fault Diagnosis: the Effect of Training Data on
Classifier Performance
Chinmay R. Parikh, Michael J. Pont, Yuhua Li and
N. Barrie Jones, University of Leicester

Nonlinear vibroacoustical free oscillation method
for crack detection and evaluation
L. Gelman and S. Gorpnich,
National Technical University of Ukraine

Tool Wear Estimation in Turning Operations
A. Ghasempoor, T. N. Moore, J. Jeswiet, Queens University

Oil/water and water/oil monitoring
John Kupczak (Rosow Technical), Trevor M. Hunt

REVIEW OF A Smart Electronic Condition Monitoring System Destined for Harsh Environments
Greg Horler, University of Lincolnshire and Humberside

Artificial Neural Network Sensor Applications in the Water Industry
Dr. I. Fletcher, Prof. C. S. Cox, and T. Boehme, University of Sunderland

Theory and Practice of Use of POL Materials According to Their Conditions in Material
B. G. Bedrik, Center of Testing Oil products for Russian Aviation

Methods of In-Service Research of Lubricants Used in Aviation Material and Optimization of Time of Their Change
G. Bedrik &). Bedrik (Center of Testing Oil products for Russian Aviation) and Jan Shidivar (NYCO)

Optimal Maintenance Strategies for Deteriorating Systems
Susumu Okumura, University of Shiga Prefecture

Determination Of The State Of Balance Of A Flexible Rotor
A. W. Lees and M. I. Friswell, University of Wales Swansea

Application of Wavelet Analysis and Fuzzy Pattern Recognition to Flaw Classification in Ultrasonic Testing
Zhang Haiyan Wu Miao Sun Zhi Lu Dunyong, China University of Mining & Technology

Maintaining Performance-Efficiency and Quality Rate for High Effectiveness of Manufacturing Machines
Basim Al-Najjar (Växjö University) and Imad Alsyouf (Lund University & Växjö University)

Proportional Hazards Modeling: A New Weapon in the CBM Arsenal
Murray Wiseman (Predictive Maintenance Corporation) and Andrew Jardine (PricewaterhouseCoopers)

Infrared Condition Monitoring of Lubricants: Establishing Alarm Limits Through Statistical Analysis
Richard Durand (Bio-Rad Laboratories Ltd) and Jay R. Powell (Bio-Rad Laboratories Spectroscopy

Division)

Vibration monitoring of slowly rotating bearings using higher derivatives and a fuzzy classifier
Jens Strackeljan & Dietrich Behr (TU Clausthal), Sulo Lahdelma & Väinö Vuoto University of Oulu

Oil Analysis-Cost Effective Machine Condition Monitoring Technique
G. E. Newell, Oilab Lubrication Ltd

Recent Improvements in Oil Analysis Spectrometers
Daniel P. Anderson, Malte Lukas and Robert J. Yurko, Spectro Incorporated

Pump Efficiency and Pumping Costs
Maurice A Yates, Advanced Energy Monitoring Systems Ltd

Effective Integration of Vibration Analysis and Oil Analysis
Author: Drew D Troyer
Presenter: Martin Williamson, Entek IRD

“Asset Management Solutions – Condition Monitoring Of Intelligent Field Devices”
P Stokes and C Reeder, Fisher Rosemount Ltd

Methods of Determination of the Next Term of Supervised Machinery Diagnostics
Prof. Bogdan Zóltowski, University of Technology and Agriculture (Bydgoszcz)

LASERNET FINES Optical Wear Debris Monitor
J. E. Tucker, T. McClelland, A. Schultz & J. Reintjes (US Naval Research Laboratory), C. Lu, (Towson University) T. Sebok & C. Holloway (Lockheed-Martin Tactical Defense Systems) L. L. Tankersley, (US Naval Academy) and P. L. Howard (P. L. Howard Enterprises Inc.)

“JetSCAN Oil Debris Diagnostic System – An Introductory Overview”
Nicholas W Farrant, Data Systems & Solutions

Condition Monitoring for Military Helicopters: An Australian Contribution
Graham F Forsyth and David Forrester, DSTO Aeronautical and Maritime Research Laboratory

The Application of On – Line Wear Debris Monitoring Technology to Rotating Equipment
John Crow and Steve Greenfield, Vickers Tedeco Division Aeroquip-Vickers Ltd

“Condition Monitoring of Fluid Systems -The Need For A Systematic Approach”
M. J. Day, Pall Europe Ltd

Applying the Concepts of Reliability Based Maintenance

nance to Tribology
Grahame Fogel, CSI Services USA/UK

RBM™ – Reliability-Based Maintenance as a
Breakthrough Strategy in Maintenance Improve-
ment
Grahame Fogel, CSI Services USA/UK

Generic -based Wear debris Identification -
the first step towards morphological classification
T. G. Barraclough, T. P. Sperring, B. J. Roylance
(University of Wales Swansea) T. Nowell and D.
Hodges (DERA, Pyestock)

Wear Particle Imaging and Analysis – a contribu-
tion towards monitoring the health of military ships
and aircraft
T P Sperring, J Tucker & B J Roylance (University
of Wales Swansea), J Reintjes & A. Schultz (U.S.
Naval Research Laboratory) and C. Lu (Towson
University)

Predicting the Time to Failure of Critical Compo-
nents - A Software Package Strategy
K.B. Goode (British Steel Strip Products) & B J
Roylance (University of Wales Swansea)

Ruby – An effective way to assess the cost ben-
efits from employing condition monitoring equip-
ment in the maintenance of batch process
plant machinery
B.S.Rajan (GlaxoWellcome Operations) & B J
Roylance (University of Wales Swansea)

Fractal Dimension of Particle Outlines: Meaning,
Utility, Limitations, Standard Images and Examples
David S. Bright (National Institute of Standards and
Technology)

A Comparison of the Performance of Radial Basis
Function and Multi-Layer Perceptron Networks in
Condition Monitoring and Fault Diagnosis Applica-
tions
Yuhua Li, Michael J. Pont and N. Barrie Jones
(University of Leicester)

Hybrid Diagnostic System Based Upon Simulation
and Artificial Intelligence
Kenneth McGarry and John MacIntyre (University
of Sunderland)

The Development and Application of CADIAS
– an Analysis Software System Based on Rotary
Ferrographic Instrument
Maofeng Xu, Tonggang Liu & Zhiyi Yang
(China University of Mining & Technology)

A Method to Identify Wear Mechanisms by Fourier
and Fractal Shape Descriptions of Wear Particles
in Image Processing
A Yang, and A J Chambers
(University of Newcastle - Australia)

An In-House Accreditation Program for Condition
Monitoring Technologies
Kenneth J. Culverson, (Johnson Controls, Inc)

ORDER FORM

Fax to: (Int'l) +44-1451-870661
(UK) 01451-870661

I would like to order copies of the
proceedings for the Condition Monitoring '99
conference.

**Total price @ £35 / US\$60 per copy plus
£3 / US\$7 per order:**

Payment by Credit Card
Card Type (please circle) :

American Express VISA Mastercard

Card Number:

Expiry Date:

Cardholder's Name:

Address where card is registered:

Address
.....

Post/Zip Code:

Country

E-mail:

Tel:

Fax:

Delivery Details (if different from above)

Name:

Company:

Address:
.....

Post/Zip Code:

Country: