

American Helicopter Society International

**AHS International  
Condition Based Maintenance  
Specialists Meeting  
2008**

February 12-13, 2008  
Huntsville, Alabama, USA

**Printed from e-media with permission by:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571  
[www.proceedings.com](http://www.proceedings.com)

**ISBN: 978-1-60560-103-8**

**Some format issues inherent in the e-media version may also appear in this print version.**

ISBN: 978-1-60560-103-8

Copyright (2008) by the American Helicopter Society International  
All rights reserved.

For permission requests, please contact the American Helicopter Society International  
at the address below.

American Helicopter Society International  
217 N. Washington Street  
Alexandria, Va. 22314 - 2538

American Helicopter Society International

AHS International Condition Based  
Maintenance Specialists Meeting  
2008

**TABLE OF CONTENTS**

<b>Integration of Maintenance Management Systems and Health Monitoring Systems through Historical Data Investigation</b> .....	1
<i>A. Bayoumi, N. Goodman, R. Shah, L. Eisner, L. Grant, J. Keller</i>	
<b>Implementation of CBM through the Application of Data Source Integration</b> .....	10
<i>A. Bayoumi, N. Goodman, R. Shah, L. Eisner, L. Grant, J. Keller</i>	
<b>Aircraft Components Mapping and Testing for Conditioned-Based Maintenance</b> .....	19
<i>A. Bayoumi, N. Goodman, R. Shah, T. Roebuck, A. Jarvie, L. Eisner, L. Grant, J. Keller</i>	
<b>Examination and Cost-Benefit Analysis of the CBM Process</b> .....	32
<i>A. Bayoumi, N. Goodman, R. Shah, L. Eisner, L. Grant, J. Keller</i>	
<b>On-Wing Health Monitoring and Alarming</b> .....	42
<i>K. Todd, F. Eason, K. Law, C. Wogoman</i>	
<b>Condition Based Maintenance-Data Warehouse (CBM-DW): Realizing the Potential of CBM Through Data Warehouse Technology</b> .....	47
<i>M. C. O'Reilly, L. J. Cochran</i>	
<b>Component Mapping for Condition Based Maintenance</b> .....	58
<i>R. Robinson, K. Patterson</i>	
<b>Using Condition Based Maintenance Data for Improved Inventory Management and Increased Readiness</b> .....	71
<i>M. Liddon, G. Parlier</i>	
<b>Engineering the Gateway for Implementing Prognostics in CBM</b> .....	82
<i>K. Pipe</i>	
<b>A Condition Based Maintenance Approach to Fleet Management</b> .....	95
<i>R. E. Vaughan, D. O. Tipps</i>	
<b>The Best Regime Recognition Algorithm for HUMS</b> .....	110
<i>E. Bechhoefer</i>	
<b>A Systems Approach to Condition Based Maintenance</b> .....	117
<i>F. C. Sautter</i>	
<b>AH-64 Apache Tail Gearbox Vibration Monitoring Condition Indicators and Threshold Settings</b> .....	126
<i>P. Shanthakumaran, L. J. Silverthorn</i>	
<b>Development of an Advanced Vibration Analysis Capability for Australian Defence Force Helicopters</b> .....	143
<i>B. Rebbechi, D. Forrester, P. Napier</i>	
<b>Oil Debris Monitoring for Helicopter Drivetrain Condition Based Maintenance</b> .....	163
<i>D. Kitaljevich, R. Dupuis, K. Cassidy</i>	
<b>Improved Rotor Smoothing for the U.S. Army CH-47D</b> .....	181
<i>J. C. Hasty, J. A. Keller, S. M. Krick</i>	

**On-Line Oil Monitoring System for Condition Based Maintenance Practices**..... 190  
*J. Moffatt, J. Gannon Jr., P. Henning, A. Weling, M. Fratkin, K. Durdag, G. Morehead*

**Aviation Turbine Engine Diagnostic System (ATEDS) for the CH-47 Helicopter** ..... 200  
*A. Stramiello, J. Moffatt, G. Kacprzyński, J. Hoffman*

**On-Wing Engine Performance Monitoring and Alarming** ..... 212  
*K. Todd, C. Wogoman, K. Law*

**Author Index**