Annual Conference of the Dynamic Positioning Committee 2007

Houston, Texas, USA
9-10 October 2007

ISBN: 978-1-61738-901-6

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571

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

Copyright© (2007) by the Marine Technology Society
All rights reserved.

Printed by Curran Associates, Inc. (2010)

For permission requests, please contact the Marine Technology Society
at the address below.

Marine Technology Society
5565 Sterrett Place, Suite 108
Columbia, MD 21044

Phone: (410) 884-5330
Fax: (410) 884-9060

membership@mtsociety.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

KEYNOTE SPEAKER

Dynamic Positioning in Offshore Drilling: Increasing Importance – Enhancing Performance 1
Steven L. Newman

DESIGN & CONTROL

Exponentially Stable Underactuated Dynamic Positioning of Marine Vehicle 23
Matthew Greytak, Franz Hover

Design and Commissioning of a New Thruster Assisted Mooring System (TAMS) for Global Producer III 62
Richard I. Stephens, Allan Meahan

Power Management Control of Electrical Propulsion Systems 106
Ingve Sørfonn, Egil Hystad

Design and Operation of the ICON™ Dynamic Positioning System 155
Einar Ole S. Hansen, Jann Peter Stand, Ivar Ihle, Tommy Skeide

RISK

Failure is an Option 226
Doug Phillips

Growth Stimulates Innovation in DP Technology 353
Lew Weingarth, Terry Loftis

Developing Guidance and Incident Reporting for Operations Using Dynamic Positioning 383
Ian C. Giddings

The Road to Eliminating Operator-Related Dynamic Positioning Incidents 422
Arjen Tjallema, Clemens van der Nat, Hugo Grimmelius, Douwe Stapersma

Integrated Control Systems - FMEA for Networks 463
Amund R. Tinderholt

SENSORS

Combining GNSS and Inertial Navigation Systems in Improved DP Position Reference Systems 492
Arne Rinnan

DGNSS Position Quality Information for DP Applications 529
David Russell

Hydroacoustic Aided Inertial Navigation – HAIN A New Reference for DP 562
Morten Berntsen, Arnt Olsen

SIMOPS/OPERATIONS

Planning and Communicating for Conducting Safe SIMOPS (Simultaneous Operations) 601
Don Ross

Practical Achievement with FM-CW Based Short Range Relative Positioning in Multi-Vessel Operations 639
Jan Petter Høiass, Arne Rinnan

Good DP Practice – (A Positive Approach) 674
Chris Jenman

THRUSTERS

Dynamics of Propeller Blade and Duct Loading on Ventilated Thrusters in Dynamic Mode 704
Kourosh Koushan

Thrust Degradation in DP Operations: DP Model Test of Aframaz Shuttle Tanker – Methods, Results, Operations 739
Reinert Nordtveit, Egil Jullumstrø, Bjørn Nygård
The Reliability of a Mechanical Thruster for Offshore Operations 790
Jeroen van Keep, Teus van Beek
Condition Monitoring in Azimuth Thrusters 833
Kurt Lindborg
How to Utilize Thruster Current Measurements to Improve Safety and Optimize DP Control Systems 850
Øylind Løkling, Arne Rinnan
Use of Main Drive Waterjets as Azimuth Thrusters 879
Dick Borrett, Andy Birkinshaw

REMOTELY OPERATED VEHICLES (ROVs)

A New ROV DP 918
Ioseba Tena
Author Index