Global Overview of

Manned Submersible Activity in

2014-2015

By: William Kohnen, President
HYDROSPACE GROUP Inc
Rancho Cucamonga, California USA
Chair, Manned Underwater Vehicles Committee
MARINE TECHNOLOGY SOCIETY
WELCOME to UI 2015

HOST TO

12th MTS MUV SYMPOSIUM

ROOM 244 - MUV PROGRAM
- ADVANCED UW ENGINEERING
WELCOME TO UI 2015

TOTAL of 23 Presentations

- Manned UW Vehicles - 20 Speakers
- Advanced Underwater Engineering – 3 Papers
- SHINKAI 6500 Anniversary 25 Years
- TUESDAY - MTS MUV Reception
- WEDNESDAY – MUV OPERATIONS CONSENSUS Standard
- THURSDAY - MTS MUV Annual Committee Meeting 10:30PM
SPECIAL EVENTS

MUV RECEPTION
AT MARRIOTT Hotel
TUES 5:30 – 7:00

MUV Operations Consensus Standard
OPEN FORUM
WED. 3:30 – 5:00

MTS MUV Yearly Cmtte Meeting
ALL INVITED
THUR 10:30- 12:00
SPECIAL GUESTS in 2015

Hannu Tiainen
Mobimar Ltd
Finland

Oliver Steeds
Digital Explorer
UK
In Memoriam (January 2015)

DEEP SUBMERSIBLE PILOT ASSOCIATION
DEEP RESEARCH SUBMERSIBLES
ALVIN - USA

DEPTH Rating: 4500 m
No. Occupants: 3
Year of Construction: 1964
CLASS: US NAVY
NAUTILE - FRANCE

DEPTH Rating: 6000 m
No. Occupants: 3
Year of Construction: 1985
CLASS: BV
SHINKAI 6500 - JAPAN

DEPTH Rating: 6500 m
No. Occupants: 3
Year of Construction: 1989
CLASS: NK

25 YEARS ANNIVERSARY
# MIR 1 & MIR 2 - Russia

<table>
<thead>
<tr>
<th><strong>DEPTH Rating:</strong></th>
<th>6000 m</th>
</tr>
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<tbody>
<tr>
<td><strong>No. Occupants:</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>Year of Construction:</strong></td>
<td>1989</td>
</tr>
<tr>
<td><strong>CLASS:</strong></td>
<td>DNVGL</td>
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25 YEARS ANNIVERSARY
JIAOLOG - China

- DEPTH Rating: 7000 m
- No. Occupants: 3
- Year of Construction: 2012
- CLASS: CCS

2014
- 10 Dives NW Pacific

20 Dives SW Indian Ocean

Zhang Yi, China's first female pilot trainee

Underwater Intervention 2015 - MTS Manned Submersibles Overview
NIOT 6000 m – DEEP OCEAN Submersible

INVITED
Dr. M.A. Atmanand
Director
National Institute of Ocean Technology

To attend UI2015

Working on:

- Deep-sea Technologies and Ocean Mining Group of NIOT
- Polymetallic nodules Mining
PISCES IV & V – Hawaii HURL

DEPTH Rating: 2,000 m
No. Occupants: 3
CLASS: ABS
THETIS - GREECE

DEPTH Rating: 610 m
No. Occupants: 2
CLASS: BV
<table>
<thead>
<tr>
<th>MTS - Manned Underwater Vehicles Committee</th>
<th>OCEANGATE – CYCLOPS</th>
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</thead>
<tbody>
<tr>
<td><strong>DEPTH Rating:</strong></td>
<td>500 m</td>
</tr>
<tr>
<td><strong>No. Occupants:</strong></td>
<td>5</td>
</tr>
<tr>
<td><strong>CLASS:</strong></td>
<td>ABS</td>
</tr>
<tr>
<td><strong>DEPTH Rating:</strong></td>
<td>300 m</td>
</tr>
<tr>
<td><strong>No. Occupants:</strong></td>
<td>5</td>
</tr>
<tr>
<td><strong>CLASS:</strong></td>
<td>ABS</td>
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**CYCLOPS 1**

**ANTIPODES**
ICTINEU 3 - Barcelona

DEPTH Rating: 1200 m
No. Occupants: 3
CLASS: DNVGL
AURORA 3C

DEPTH Rating: 470 m
No. Occupants: 3
CLASS: -
DeepWorker 1000m

DEPTH Rating: 1000 m
No. Occupants: 1
CLASS: LR

EXOSUIT

Depth: 330 m
No Occ.: 1
CLASS: LR
JAGO - Germany

DEPTH Rating: 400 m
No. Occupants: 2
CLASS: GL
IDABEL

DEPTH Rating: 810 m
No. Occupants: 3
CLASS: N/C
PC8B - Bulgaria

DEPTH Rating: 250 m
No. Occupants: 3
CLASS: N/C
Deepflight Dragon

DEPTH Rating: 120 m
No. Occupants: 2
CLASS: -
TRITON Submarines - USA

Triton 3300/3

DEPTH Rating: 1000 m
No. Occupants: 3
CLASS: ABS
NADIR & Deep Rover 2

DEPTH Rating: 1000 m
No. Occupants: 3
CLASS: ABS

DEPTH Rating: 1000 m
No. Occupants: 2
CLASS: ABS
SUPERYACHT SUB 3

DEPTH Rating: 150 m
No. Occupants: 3
CLASS: DNVGL
NAVY SUBMERSIBLES
RISK REDUCTION VEHICLE (S301i)

Estimated General Characteristics

- Cargo And Crew: 6 SOF Passengers, 2 SOF Pilots
- Max Speed: 7.6 kts
- Range With Low-Energy Battery: 46 NM @ 3 kts
- Max GL Classing Depth: 328 ft
- Max SOF Operating Depth: 98 ft (Per Contract)
- Max Lock-Out Depth: 100 ft
- Max SOF Lock-Out Depth: 30 ft

Approximate Description

- Length: 23.8 ft
- Beam: 7.7 ft
- Height: 5.8 ft
- Weight: 30,000 lbs

Transportability

- Ground And Surface Sea

Front View

Side View
**Estimated General Characteristics**

- Cargo & Crew: 8 SOF Pax, 2 SOF Pilots
- Range With Low-Energy Battery: 66 NM @ 5 Knots
- Range With High-Energy Battery: 120 NM @ 5 Knots
- Operating Depth: 198 ft (T), 410 ft (O)
- Lock-Out Depth: 100 ft (T), 164 ft (O)
FALCON Rescue Vehicle

DEPTH Rating: 610 m
No. Occupants: 18
CLASS: Navsea P9290
Built in: 2007
THANK YOU!

www.mtssmuv.org