ROV CURRICULUM WORKSHOP
CHINESE PROVERB:

- MORE SWEAT IN TRAINING
- LESS BLEEDING IN BATTLE
PREMISE

- ROV INDUSTRY NEEDS WELL-TRAINE
  - DISCUSSIONS WITH ROV OPERATORS
  - IMCA REPORTS
  - BRAZIL, WEST AFRICA, NORTH SEA...
  - HIGH DEMAND

- INADEQUATE SUPPLY OF ROV TECHNICIANS
  - JOB ADS
  - LOW SUPPLY
HIGH DEMAND + LOW SUPPLY
INADEQUATE LABOUR SUPPLY COSTS

• INABILITY TO RESPOND TO OPPORTUNITIES IN TIMELY FASHION
• OVERTIME COSTS
• OVERWORK FOR A FEW
• HIGHER WAGES
• COMPANIES RAID EACH OTHER FOR SKILLED PERSONNEL
• LOWER PROFITABILITY
• LACK OF YOUNG BLOOD TO FILL GROWTH NEEDS
• POOR ADVANCEMENT PROSPECTS (NEED REPLACEMENTS)
SOLUTION... TRAINING

- Train new ROV technicians, increase supply
- Issues
  - Attract young people to industry (MATE)
  - Knowledgeable trainers
  - Facilities
  - Equipment
  - Money
- “It takes a village“
  - Academia, government, industry
STANDARD CAREER DEVELOPMENT PROCESS

School

Specialized Education/Training

First Job in Field

Career
STANDARD CAREER DEVELOPMENT PROCESS

School

Specialized Education/Training

------- GAP -------

Career
• CATCH 22...
  • NO JOB WITHOUT EXPERIENCE BUT CAN'T GET EXPERIENCE WITHOUT JOB

• BARRIERS
  • GOVERNMENT PROTECTIONISM AFFECTS A GLOBAL INDUSTRY
  • LIMITED BERTH SPACE
  • PENNY-WISE, POUND-FOOLISH (COSTS TOO MUCH TO TRAIN PROPERLY)
HOW DOES A YOUNG PERSON GET STARTED IN ROV INDUSTRY?

• AGAIN, IT TAKES A VILLAGE
  • ACADEMIA
  • GOVERNMENT
  • INDUSTRY

• WHO GAVE YOU A BREAK FOR YOUR FIRST JOB?
ROV TECHNICIAN SKILLS

- ROVS INCORPORATE A BROAD RANGE OF SYSTEMS
  - ELECTRICAL/ELECTRONICS MAINTENANCE/REPAIR
  - MECHANICAL/HYDRAULIC MAINTENANCE/REPAIR
- ROV OPERATIONS
- TEAMWORK
- COMMUNICATION SKILLS
- ATTITUDE
  - SAFETY
  - CAN-DO!, ENTHUSIASTIC
  - GET ALONG WITH OTHERS – PERSONALITY
- MUCH MORE THAN JUST PILOTING!
EDUCATION, TRAINING, OR BOTH

- ENGINEERING TECHNICIAN TRAINING IN CANADA
  - TYPICALLY TWO YEARS
  - INTERNATIONALLY RECOGNIZED ENGINEERING TECHNICIAN CERTIFICATION
    - DUBLIN ACCORD - AUSTRALIA, CANADA, IRELAND, KOREA, NEW ZEALAND, SOUTH AFRICA, UNITED KINGDOM, UNITED STATES.
- PRACTICAL SKILLS COUPLED WITH THEORY
<table>
<thead>
<tr>
<th>Duration</th>
<th>Modules</th>
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<tbody>
<tr>
<td>35 wks</td>
<td><strong>Fundamentals</strong></td>
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<tr>
<td></td>
<td>- Intro to ROV, Comm. Skills, Math, Physics, Electronics/Electrical, Drawing, Oceanography</td>
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<tr>
<td>30 wks</td>
<td><strong>ROV Operations, Maintenance</strong></td>
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<tr>
<td></td>
<td>- Controls, Hydraulics, HV Safety, Data Comms., Acoustics, LARS, Ship/ROV Interaction</td>
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<tr>
<td>4 wks</td>
<td><strong>Pilot Training</strong></td>
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<tr>
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<td>- Simulation, Flume Tank, Dockside/Open ocean</td>
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<tr>
<td>2 wks</td>
<td><strong>Safety Training</strong></td>
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<tr>
<td></td>
<td>- BST, H2S, WHMIS, First Aid</td>
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<tr>
<td>8 wks</td>
<td><strong>Work Term</strong></td>
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<td>- 320 hours</td>
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MI ROV TRAINING PROGRAM
STATUS

✔ OPERATIONAL SINCE 2006
✔ FACULTY, FACILITIES, EQUIPMENT, GOVT. SUPPORT
✔ 30-40 NEW STUDENTS EACH YEAR
✔ INTERNATIONAL STUDENT BODY
✔ LADDERING TO BACHELOR/MASTERS DEGREES
✔ SEEKING ACCREDITATION/CERTIFICATION
✔ POSITIVE RESPONSE ON PLACED GRADUATES

• CHALLENGE: WORK TERM PLACEMENT
  • NEED COOPERATION... ACADEMIA, INDUSTRY, GOVERNMENT
ROV TRAINING VISION...

- Establish a global standard for ROV technician training
- Establish a network of academic institutions delivering ROV training
  - Share curriculum
  - Share best practices
- Working with institutions in Brazil, USA
- In discussion with UK, Norway
BRAZIL EXAMPLE

• LARGE OFFSHORE DEVELOPMENT (PRE-SALT)
  • DEEP WATER (ROV INSTALLATION & MAINTENANCE)
• BRAZIL WANTS TO MAXIMIZE LOCAL CONTENT BUT...
  • INSUFFICIENT TRAINED ROV TECHNICIANS
• APPROACH
  • PARTNER WITH USP FOR JOINT PROGRAM DELIVERY
  • TECHNOLOGY TRANSFER TO ENABLE USP TO DELIVER WHEN READY
• STATUS
  • AWAITING FUNDING CONFIRMATION