Neutral Buoyancy Laboratory Capabilities
Neutral Buoyancy Laboratory (NBL)

Available to Meet Your Unique Needs
Neutral Buoyancy Laboratory (NBL)

The Pool

- **Length:** 202 ft (61.5 m)
- **Width:** 102 ft (31.1 m)
- **Depth:** 40 ft (12.2 m)
- **Volume:** 6.2 million gallons
- **Chlorinated fresh water**
- **Water temperature:** 84°-86° F (28.9°-30° C)
- **2 Overhead Bridge Cranes** (20.6 tons each)
Neutral Buoyancy Laboratory (NBL)

- Astronaut training
- Mission Planning
- Procedure Development
- Hardware verification
- Time-critical operations
- Mission success
Neutral Buoyancy Laboratory (NBL)

- Over 150 EVAs Trained
  - 146 ISS
  - 13 Hubble
- Over 326,000 Dive Hours
- Over 20,600 Space Suit Training Hours
- Over 3,400 Space Suit Training Events
Neutral Buoyancy Laboratory (NBL)

• After Shuttle Retirement and Station Assembly-Complete:
  • NBL Evolves to ISS Operations and Maintenance Role
  • Excess Capacity Created

• NBL Capabilities available to External Customers
  • Access via NASA or NBL Contractors
Neutral Buoyancy Laboratory (NBL)

- Multiple Integrated Control Rooms
- Clean Climate Controlled Environment
- Extensive Video, Audio & Instrumentation Capabilities
- SCUBA and surface-supplied dive systems
- ISO Level 8 Clean Room
- Classroom, Meeting, & High-bay Work Areas
- On-site Engineering and Technical Services
- Co-located Logistics & Manufacturing Facility
- Ellington Runway Access
- Medical Staff, Hypobaric Altitude & Hyperbaric Chambers
- World Class Safety Culture
Logistics and Mockup Facility (LMF)

Vertically Integrated Design and Manufacturing

- Mockup Fabrication and Repair
- Machine shop
- Sheet Metal Shop
- Welding
- Sewing
NBL Capability Application

- Increase Simulation & Testing Fidelity
- Evaluate Technology & Procedures
- Perform Efficiency Trade Studies
- Improve Preparation
- Enhance Confidence
- Maximize Ability to React to Unexpected Events
- Reduce Operational Risk
Hardware Testing and Demonstrating

- Crew Transfer Systems Test & Demonstrations
- Subsea Technology & Research
- Development of Non-intrusive Inspection Hardware
- Prototyping and Hardware Production
- Timeline & Solution Trade Studies
- Autonomous Underwater Vehicle Testing & Development
Remotely Operated Vehicle (ROV) Operations

- Resident Working Class ROV
- Complex Structures in Controlled environment
- Proof of Concept Testing
- Design & Development Operations Testing
- Hardware Development Testing
- Hardware Acceptance Testing
- Systems Integration Test (SIT)
Vehicle and Crew Recovery

- Orion Search and Rescue Force Training
- Orion Mockup Development
- Hardware Development & Design
- Buoyancy & Up-righting Systems Verification
- Sea State Model Correlation
- Recovery Procedure Development
- Crew Egress Training
Diving Center of Excellence

- Over 326,000 Safe Dive Hours
- Dive both Nitrox (46% O2) and Air
- SCUBA & Surface-Supplied Diving
- On-site Hyperbaric Chamber
- Basic to Advanced Operating Environment
- Manufacture and Development of Unique Mockups
  - Ship Hull, Bridge Structure
- External Customer & Agency Personnel can Dive in the Facility
Safety and Survival Training

OPITO Certified Training
Basic Offshore Induction Escape Training (BOSIET)
Tropical Helicopter Underwater Egress Training (THUET)
Further Offshore Emergency Training (FOET)
Questions?

• External Customer Points of Contact
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