



**NOAA UNDERSEA RESEARCH CENTER
UNIVERSITY OF NORTH CAROLINA - WILMINGTON**



SOUTHEAST & GULF OF MEXICO REGIONAL (SEGM) CENTER FOR NOAA'S UNDERSEA RESEARCH PROGRAM

NURC/SEGM CAPABILITIES: REMOTELY OPERATED VEHICLE

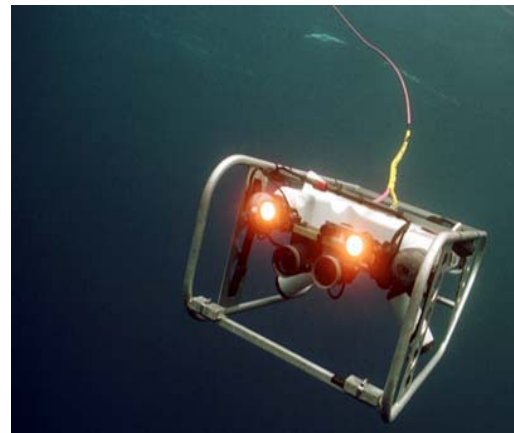
The center's *Phantom S2* remotely operated vehicle (ROV), used independently and in support of wet-diving and submersible operations, is capable of diving to depths of 300 meters. The ROV is a versatile, portable system used to support undersea research operations from a variety of platforms.

<p><i>Vehicle specifications:</i></p> <ul style="list-style-type: none"> o Weight: 70 kg o Size: 1.5 m long, 1 m wide, 1 m high o Maximum Depth: 300 m o Typical Speed: 1.5 m/s o Navigation: Navigation system integrates DGPS and slant-range position to track ship and ROV 	<p><i>Science Payload:</i></p> <ul style="list-style-type: none"> o Cameras: 12X zoom color video camera, digital still camera and strobe, low-light SIT video camera, 500 watts of lighting, dual scaling lasers o Instrument package with real-time surface readout (measuring conductivity, temperature, depth, light transmission, and oxygen) o Sector scanning sonar o Three-function manipulator arm with sampling attachments (claw and water and sediment samplers)
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The integrated navigation system displays the geographic and relative position of the support vessel and ROV on geo-referenced charts during operations using Hypack software. All video and digital stills are time-referenced to the navigation files so that the exact locations of images are known. Spare wires and payload capability are available for integration of other payloads provided by the science community.



Pilot and scientist monitor ROV control consoles



Phantom S2 remotely operated vehicle

From 1987 to 2004, the *Phantom S2* performed 1,582 dives and 1,710 hours of bottom time. NURC pilots maintain the ROV, conduct repairs at sea when necessary, and ensure that the scientific objectives are performed safely and efficiently. Recently, the *Phantom S2* has been instrumental in ground-truthing multi-beam sonar surveys to create habitat maps in the Florida Keys, Flower Garden Banks, and Gray's Reef Sanctuaries, and the Madison/Swanson, Dry Tortugas, Florida Middle Grounds, Oculina Bank, and proposed South Atlantic shelf-edge Marine Protected Areas. Other projects have included: fish behavior, search and recovery, mapping hypoxic water masses, environmental monitoring, and education/outreach.

<p>FOR MORE INFORMATION: SEGM SCUBA and Technical Diving - Lance Horn, SEGM Operations Director (hornl@uncw.edu, 910-962-2443); SEGM Science programs - Tom Potts, Associate Director (pottst@uncw.edu, 910-962-2442)</p>
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