

JSMD Presents...

# R5 Uncrewed Surface Vessel

*Technical Specification & Concept of Employment*



The R5 is a diesel-powered Uncrewed Surface Vessel (USV) developed by JS Marine Defence Ltd as a high-performance dynamic training target and multi-role autonomous platform. The vessel combines a proven monohull design, redundant communications and modular payload provisions to deliver realistic, repeatable training scenarios and capable autonomous operation.

OVERVIEW	
Vessel type	Uncrewed Surface Vessel (USV)
Model	R5
Classification	Diesel USV — Dynamic Training Target
Length	5.7 m (≈19 ft) including outdrive
Beam	2.1 m
Draft	0.4 m hull only / 0.8 m drive down
Displacement	≈1,200 kg
Max remote speed	35 knots (under remote control)
Fuel capacity	≈160 L

HULL AND STRUCTURE	
Hull	5.7 m composite monohull with integrated buoyancy.

<b>Standards</b>	Hull layup manufactured to recognised ISO small-craft scantling standards (Cat. C).
<b>Sea state</b>	Designed for operation up to Sea State 4-5.
<b>Mast pack</b>	Composite mast assembly with multiple integrated camera and aerial mounting positions. Thermal / electro-optical (EO) camera-ready interface included.

### POWERTRAIN / PROPULSION

<b>Engine</b>	Inboard marine diesel. Output configurable from approximately 150–250 hp depending on performance requirement.
<b>Transmission</b>	Marine outdrive.

### FUEL SYSTEM

<b>Tank</b>	Tank capacity selectable to duty cycle (approx. 100–160 L).
<b>Monitoring</b>	Capacitive tank-level sensor reporting to telemetry, with low-fuel alarm.
<b>Filtration</b>	Primary water-separating filter with secondary engine-mounted filter.

### AUTONOMY, CONTROL AND NAVIGATION

<b>Autonomy controller</b>	CRAFTER EXPLORER TECHNOLOGY’S BlueHelm System. Industrial I/O system. (CanBus, ethernet, serial, digital I/O) providing full vessel control. Autonomy brain and primary system controller.
<b>GNSS</b>	Marine-grade dual-frequency GNSS receiver.
<b>AIS</b>	Class B AIS transponder.
<b>Compass</b>	Marine Compass
<b>Network protocol</b>	NMEA2000 backbone.
<b>Cameras</b>	4× external cameras (fixed, day/night). 1× camera monitoring engine bay.
<b>Kill switch</b>	Hardware kill switch over a secure dedicated channel providing direct engine cut-off, independent of primary control systems.
<b>Enclosure</b>	Hard-shell shock-mounted enclosure for autonomy electronics.

### COMMUNICATION AND NETWORKING

<b>Primary comms</b>	Satellite broadband terminal.
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<b>Secondary comms</b>	Redundant satellite broadband terminal.
<b>Emergency cutoff</b>	Out-of-band kill switch system.
<b>Network</b>	Industrial network switching with load-balancing and automatic fallback comms.

## ANCILLARIES

<b>Navigation lights</b>	Full nav light suite (masthead, stern, port, starboard).
<b>Bilge pumps</b>	2× automatic bilge pumps.
<b>Steering</b>	Hydraulic /electric steering system.
<b>Payload interface</b>	Interchangeable mounting fitting accepts radar reflector pole and serves as a secondary payload interface.

## FIRE CONTROL

<b>Suppression</b>	Remotely-activated automatic engine-bay fire suppression system.
<b>Detection</b>	Smoke-activated fire detector.
<b>Temperature</b>	Engine compartment heat sensor.

## BALLISTIC PROTECTION

<b>Ballistic package (optional)</b>	Optional bespoke ballistic protection package available, configured to recognised international ballistic standards. Specification details provided on request, subject to NDA.
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## DOCUMENTATION PACKAGE

<b>Vessel administration</b>	<ul style="list-style-type: none"> <li>• Operations Manual</li> <li>• Technical Manual</li> <li>• Maintenance Manual</li> <li>• Software Operation Manual</li> <li>• Emergency Stop Procedure</li> <li>• Pre-Departure Checks</li> <li>• Maintenance Interval Schedule</li> </ul>
<b>Drawings</b>	<ul style="list-style-type: none"> <li>• General Arrangement</li> <li>• Mast Arrangement</li> <li>• Electrical Layout</li> <li>• Plumbing Layout</li> <li>• IT Network</li> </ul>
<b>Test documentation</b>	<ul style="list-style-type: none"> <li>• Factory Acceptance Test (FAT)</li> </ul>

	<ul style="list-style-type: none"> <li>• Site Acceptance Test (SAT)</li> <li>• Commissioning Report</li> </ul>
<b>Risk assessments</b>	<ul style="list-style-type: none"> <li>• Launch &amp; Recovery</li> <li>• Towing Operations</li> <li>• Collision &amp; Navigation</li> <li>• Additional RAs and SOPs available on request</li> </ul>

**OPTIONAL — REMOTE OPERATING CENTRE (ROC)**

<b>Remote control station</b>	Rugged computer. 15.6" display, 16 GB RAM, LAN, HDMI and USB-C charging.
<b>Monitoring</b>	2x professional-grade 24" monitors with integrated KVM. Flicker-free, low-eye-strain display technology for long-duration operations.
<b>Control software</b>	CRAFTER EXPLORER TECHNOLOGY’S BlueHelm. An industry-leading USV command-and-control software with lifetime licence (core package).

**OPTIONAL — HANDHELD CONTROLLER**

<b>Tablet</b>	Rugged tablet with built-in joystick controls.
<b>Connectivity</b>	LTE SIM, or operates over local onshore network (WAN, WiFi or LAN).
<b>Control software</b>	Industry-leading USV command-and-control software with lifetime licence (core package).

*Specifications shown are representative and subject to change without notice. Full configuration, lead times and pricing available on request.*