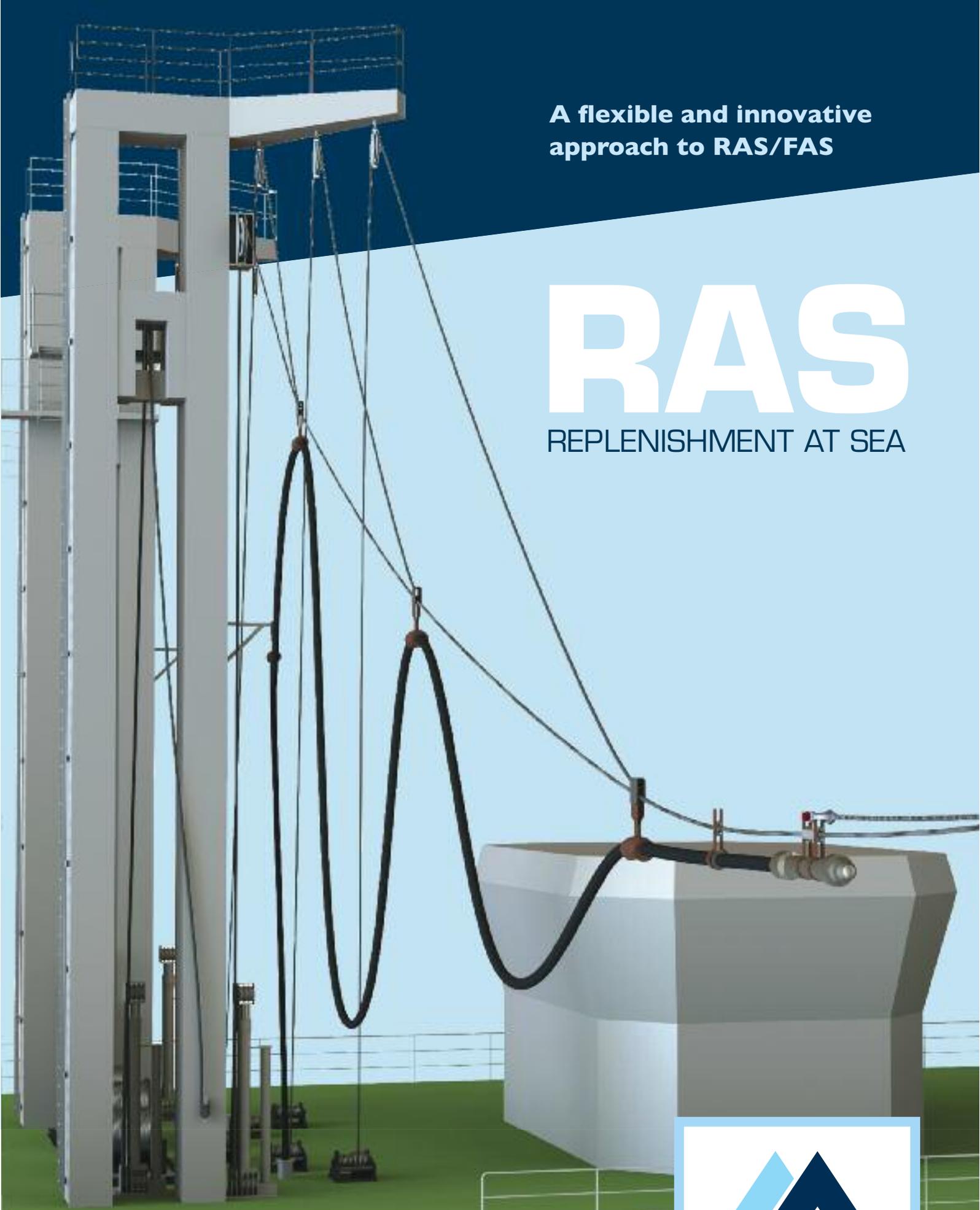


**A flexible and innovative  
approach to RAS/FAS**

# RAS

REPLENISHMENT AT SEA



**AM DEFENCE & MARINE**

# AM Defence & Marine project manage a fully flexible and innovative approach to RAS/FAS design and supply.

Working closely with our clients, we pride ourselves on offering highest quality equipment, design adaptability and indigenous content options, resulting in fully bespoke solutions.



## FUELLING CONNECTIONS

We offer a full range of liquid transfer connections including NATO 1 single and double probe, NATO 2, NATO 3 (AVCAT), NATO 4 and NATO 5 (water), as well as astern modified connections for 6", 4" and 2.5" astern hoses.

Dedicated receiving stations are available for diesel,AVCAT, water and lubrications oils.

## HYDRAULIC POWER UNITS

We supply a range of fully integrated power units to drive and control the winch systems, offering variable flow and pressure resulting in the operator's complete control over line tension and speed. With built-in redundancies, these units maintain control even in emergency situations.

Coupled with the hydraulic ram tensioners and a sophisticated PLC control system, including manual overrides, the package meets the most demanding standards required for naval operations.

## HOSES

A full range of RAS hoses are offered to meet DEFSTAN 22-94 or MIL-H-22240 specifications.

Screw or clamp together end fittings can be supplied with hose troughs or flow through saddles.

Hose diameters include 2.5"(64mm), 4"(100mm)6"(153mm) and 7"(178mm) for services including F76 (Diesel), JP-5 (AVCAT), potable water and lubrication oil.

## MASTS

Masts can be supplied as part of the project or manufactured indigenously if the client so wishes.

Each mast can provide highpoints for fuel transfer, cargo transfer or both transfers combined.

Masts can be designed with or without moving highpoints.

## STANDARDS

All systems are in compliance with ATP 16(d) and the UK DEFSTAN 07-279.

Hoses are to MIL-H-22240 or DEFSTAN 22-94.

Fuelling equipment and hoses can be supplied to meet the requirements of a wide range of naval standards.

Systems can be approved by all major class societies.

AM Defence & Marine liaise with an independent design consultant throughout the process to ensure design standards and customer requirements are met.

## OPERATING PARAMETERS

**Heavy Jackstay Cargo Stream** 24m to 61m (max 91m)

**Fuel Stream** 24m to 55m (max 61m)

**Light Jackstay** 24m to 30m (max 55m)

Replenishment can be conducted at speeds up to 15 knots and station keeping at 30 degrees fwd to 30 degrees aft.

## RIGGING

A comprehensive range of rigging equipment can be provided including wire and fibre rope work, sheave blocks, travellers, including surf rig and cargo drop reel. All equipment is compliant to ATP16 (d) and DEFSTAN 07-279.

## WINCHES

A full range of winches can be supplied for the main jackstay and span wires, hose trough wires, inhaul & outhaul ropes and capstans for receiving stations.

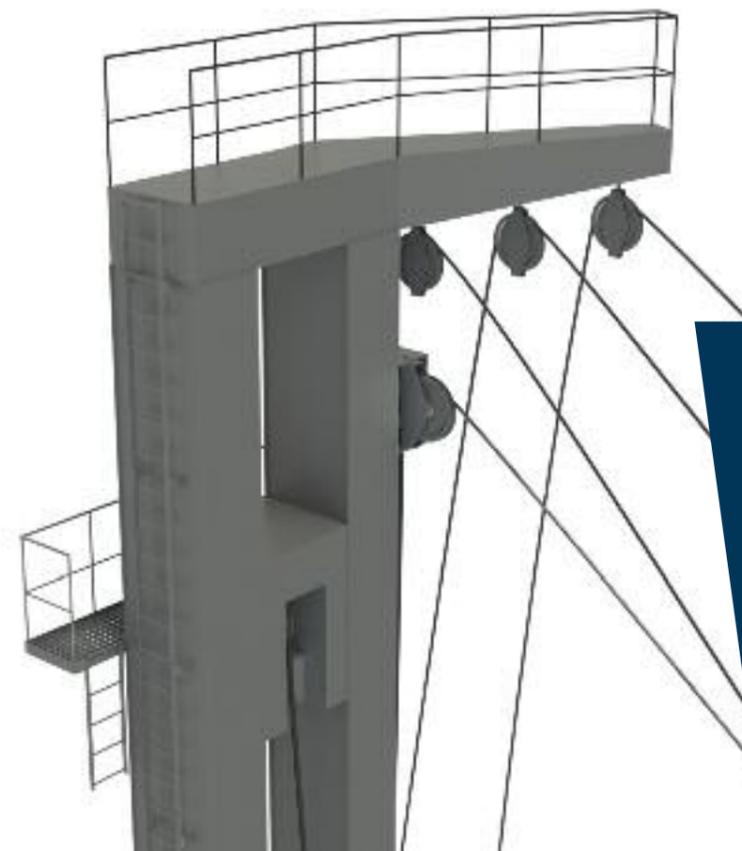
All winches include high performance hydraulic motors, independent braking and monitoring equipment such as load monitors and shaft encoders.

With line load capacities up to 8 tonnes and speeds up to 180m/min these robust winches offer performance and quality throughout the life of the system.

## ASTERN FUELLING EQUIPMENT

A complete range of astern reel fuelling systems are available with 2.5", 4" and 6" hoses up to 255m in length.

Each system is fitted with a hose pigging system to clear the fuel before hose recovery. These units can be supplied with or without independent hydraulic power units.



**From conception to completion AM Defence & Marine design, supply, install and test, provide training and on-going support services for equipment and systems on both sending and receiving ships.**

**AM Defence & Marine's technical specialists are able to provide a fully integrated logistical support package for each system in addition to on-going technical and spare parts support throughout the life of the equipment.**

**RAS**



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