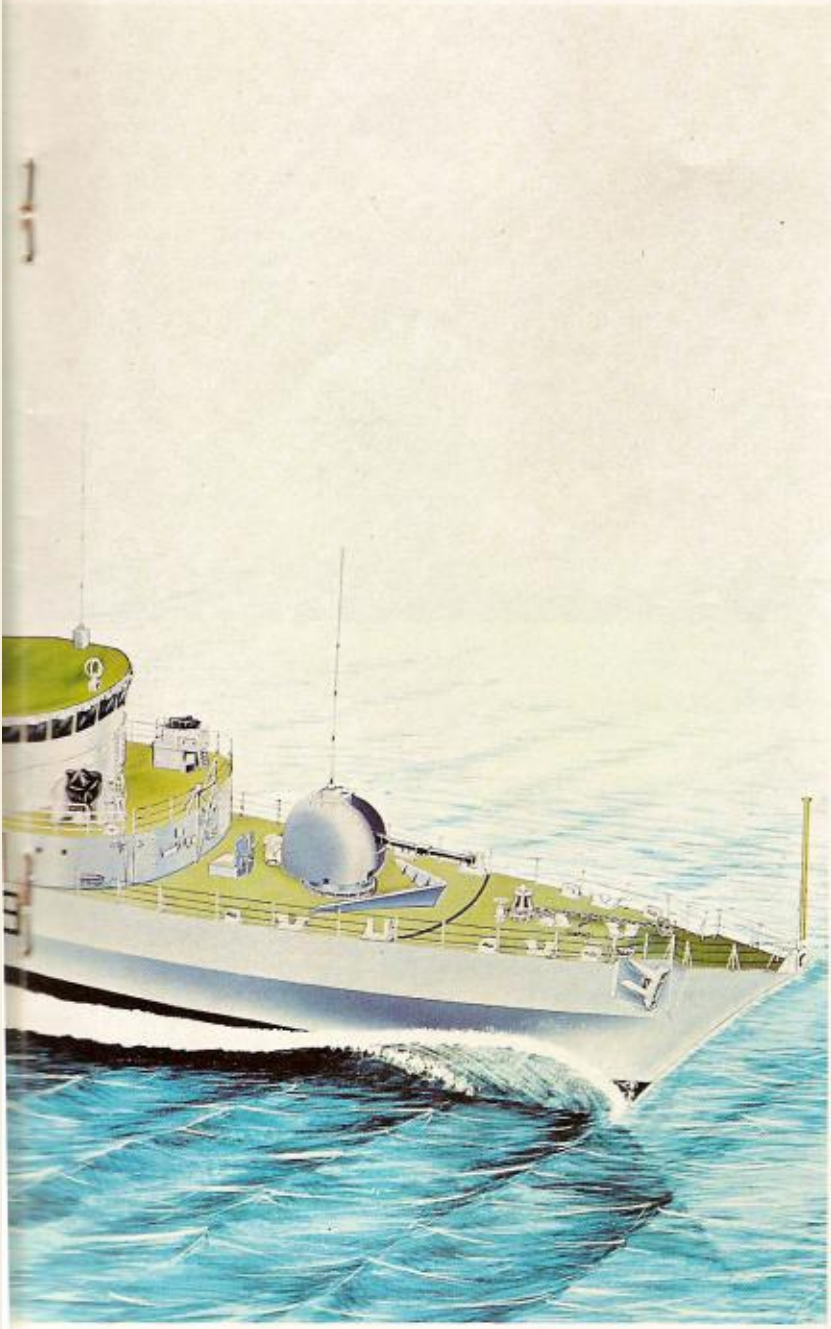
# THE AMAZON CLASS FRIGATE — A

# A NEW BREED EMERGES



HMS Antelope, with HMS Amazon and HMS Ambuscade, are the first of a new generation of warships. They were designed from the outset with all gas turbine machinery in a twin screw arrangement. The main engines are two Rolls-Royce Olympus TM3 gas turbines giving a top speed in excess of 30 knots. The two Rolls-Royce Tyne RB209 engines for cruising enable the ship to cruise for extended ranges.

These Amazon class frigates — known as the Type 21 — are capable of contributing effectively to the defence of a convoy or other surface force against attack by surface ships or submarines, and are fully able to defend themselves against aircraft, missiles or fast patrol craft. Type 21 Frigates can match any comparable contemporary foreign warship in fighting power and performance and can maintain an all weather patrol in any part of the world.

The armament consists of a Vickers 4.5 inch Mark 8 automatic gun, a quadruple launcher for Seacat anti-aircraft missiles, a Westland Lynx helicopter armed with air to surface guided missiles and anti-submarine torpedoes and two 20 mm Oerlikon guns. Later ships of this class will carry an Exocet surface to surface missile system.

By installing fully computerised, highly automated weapon systems, specially designed action information equipment, centralised storeroom complex supplied by a vertical hoist, and the gas turbine machinery, it has been possible to man the ship with only two thirds of the complement for an equivalent vessel. This large reduction, about 80 men in all, has resulted in the ship's 11 officers and 160 ratings enjoying better accommodation than in any other warship in the Royal Navy.

The Amazon class will consist of eight frigates. They are being built as a collaborative commercial venture by Yarrow and Vosper Thornycroft.

**Antelope and Amazon — first of a new class**

# A New Shape on the High Seas

HMS Antelope was launched in 1972 and completed by Vosper Thornycroft Ltd. at Woolston, Southampton, on 30 June 1975.

She is capable of contributing effectively to the defence of a convoy or other force against attack by submarines or surface ships, and is fully able to defend herself against aircraft, missiles and fast patrol craft. She can match any comparable, contemporary foreign warship in fighting power and performance and can maintain an all weather patrol in any part of the world.

Antelope represents one of a new generation of warships for the Royal

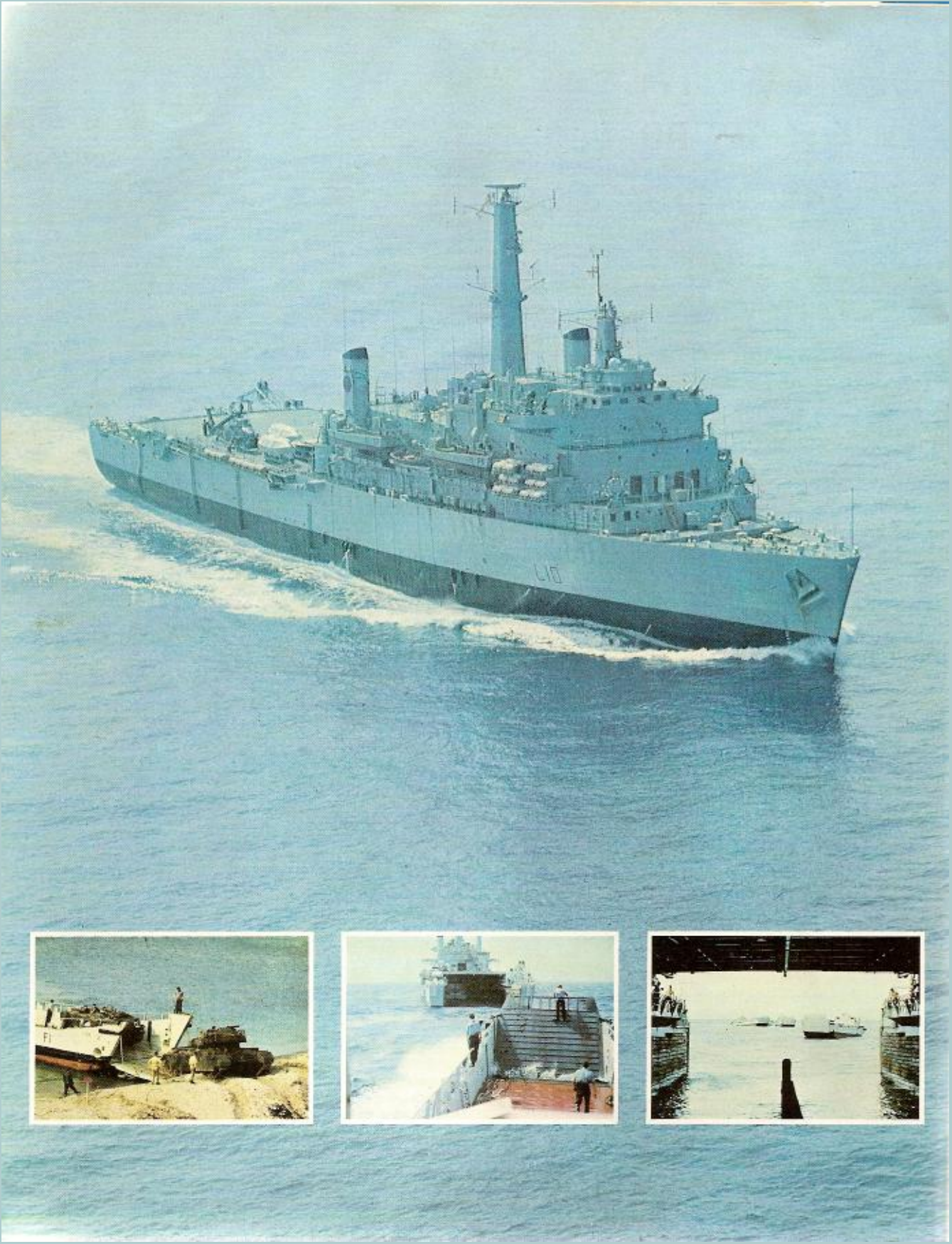
Navy and incorporates many features destined for future surface vessels.

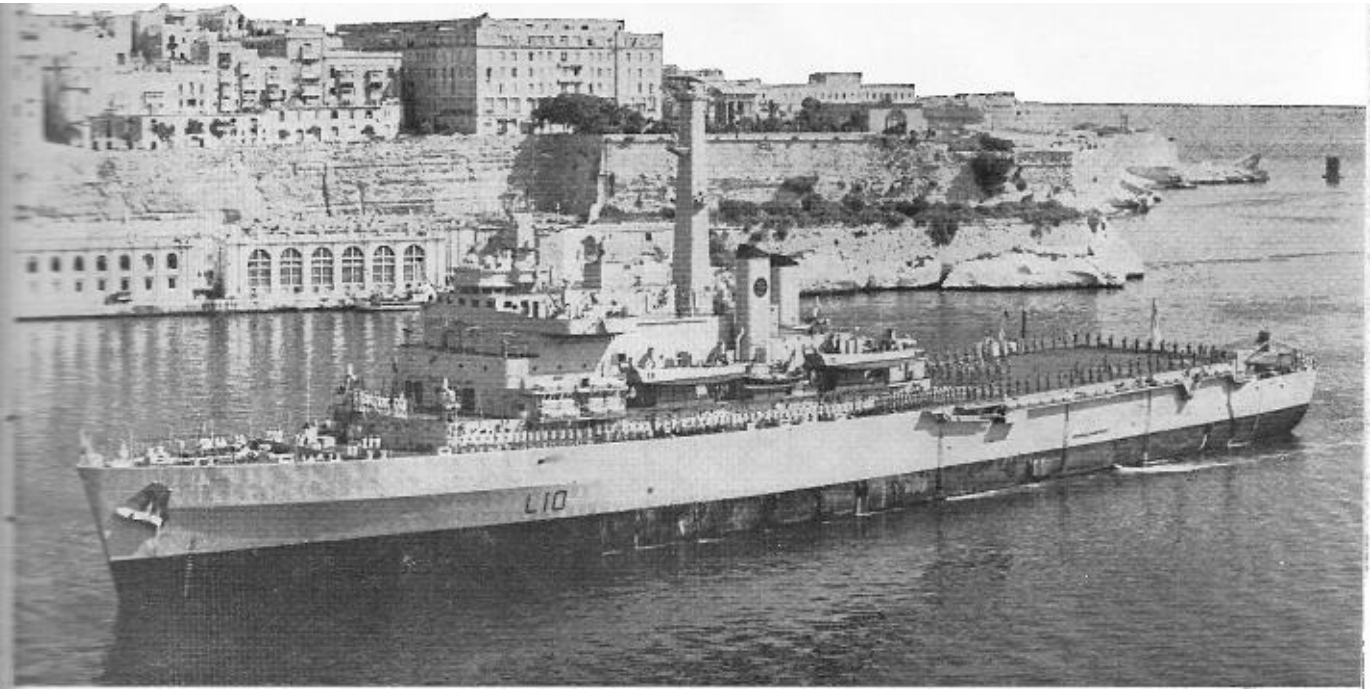
The ship was commissioned at Southampton in July 1975 and the day after commissioning she sailed for Devonport, arriving to settle into her base port on 21 July 1975. After a leave period, Navy Days and pre-Portland checks, she sailed for a safety operational sea training period at Portland.

After the period at Portland the ship went to Greenwich for the Royal Naval equipment exhibition to act as a show piece for the Royal Navy and for the companies involved in building her. Shortly after Greenwich the ship visited Rotterdam and then sailed to start on a very comprehensive trials programme. During this time, the ship has paid courtesy visits to Newport, South Wales, and to St Peter Port in Guernsey.

Antelope is 384 feet long and has a 42 feet beam. Her displacement is 3, 000 tons.

**Above: On the bridge of Antelope. Below: Amazon from the air.**






# FEARLESS-TRAINING SHIP WITH A BITE

HMS Fearless fulfils two important roles in the Royal Navy. She combines the training of midshipmen and sub-lieutenants from the Britannia Royal Naval College, Dartmouth, with her operational role as the Navy's remaining assault ship.

Launched in December 1963 and commissioned on 25 November 1965, Fearless has provided the amphibious capability to land troops of an infantry battalion or Royal Marines Commando with their equipment, or a squadron of tanks or armoured scout cars, or a complete unit of Royal Engineers with their heavy equipment from the ships landing craft.

Four tank landing craft (LCM's) can be loaded from the ship's vehicle peck and floated astern through the stern-gate when the ship has taken ballast to flood the floating dock which forms the after end of the ship. Smaller landing craft (LCVP's) can carry up to 30 fully equipped troops and are stowed on davits.

The flight deck, measuring 165ft by 75ft, can operate many types of helicopters to augment the landing of personnel and equipment and can be used in bad weather or at night with a radar controlled approach system. The flight deck has also been used by the Harrier vertical take-off and landing aircraft.

Fearless has taken part in many exercises within **NATO** in the waters off Northern Norway, Scandinavia, the Mediterranean, the West Indies, the Middle and Far East and in home waters, carrying units of the Royal Marines, Army, Royal Netherlands Marines with helicopter support from the Royal Navy, Royal Marines, Royal Air Force and the Army.

Fearless saw action in the Aden conflict in 1966 and was involved in the withdrawal from Aden in the following year. As a conference venue she was host to Prime Minister Harold Wilson for the second talks with Premier Ian Smith of Rhodesia, off Gibraltar in 1968 and for the Lagos conference of the Nigerian Civil War in 1969.

Fearless has completed a long refit at Devonport this year and was recommissioned on July 2nd. Her displacement is 12,000 tons, length 520 feet and her beam 80 feet. She carries four Sea-cat missile systems and two Bofors guns for defence against air or sea attack. Depending on her operational role the ship's complement averages 40 officers and 500 men, including the amphibious detachment of 3 officers and 86 men of the Royal Marines.

On training cruises up to 140 midshipmen or sub-lieutenants from Dartmouth are embarked for their initial Naval sea experience. During their time on board they take part in the activities of all departments working side by side with the ship's company, receiving instruction in navigation, seamanship, weapons, communications, aviation, management, electrical and marine engineering. Many of the midshipmen come from foreign and Commonwealth navies, such as Iran, Pakistan, Brunei, Malaysia, Singapore, Tonga, Jamaica and Trinidad.

FEARLESS IN ACTION

Overpage, far left: Armoured vehicles drive on board a Fearless landing craft. Centre: Landing craft approaches Fearless. Near left: The flooded dock awaits the landing craft.

# HMS Fox aids the Nort

HMS Fox and HMS Fawn are coastal survey craft of the Bulldog class Their displacement is 1148 tons, their length 189 feet and they have a complement of 5 officers and 37 ratings.

Commissioned in 1970, Fox is the 13th in the Royal Navy to bear this name but the present Fox is the first to be designed and built solely for hydrographic surveying. She is equipped with the latest surveying aids and can operate for long periods in isolated areas away from base support.

This year she started working in the Dover Strait but after completing that survey moved onto new ground to the North East of the Shetlands, surveying the tow-out-route for the monster platforms destined for the North Sea oil and gas fields. That task completed she returned to the Channel where, in company with HMS Fawn she is bringing up to date the Channel charts and locating the many wrecks that litter the sea bed.

The tow-out-route survey to the North East of the Shetlands was of top priority as the concrete gas treatment platform being built in Loch Fyne on the Scottish West Coast was due to be towed into position on the Frigg Gas Field only three weeks after Fox commenced the survey. The requirement was to ensure a safe depth of 85 metres in a corridor 5 miles wide and 146 miles long.

To achieve this, the latest side scan sonar was used to give a pictorial display of the sea bed; highlighting wrecks, rocky ridges and all the sea bed equipment associated with oil exploration. Seven previously unknown wrecks were found and the U29 located; a German U-Boat, rammed and sunk during the First World War. All these wrecks were closely investigated but were eventually proved to be no danger to the platform.

Because of the urgency of the survey it was necessary to continue working day and night regardless of the weather, and this lived up to the North Sea's reputation. Frequent gales tossed the Fox around, testing her sea keeping qualities to the utmost. The only break in the survey was a brief visit to Lerwick in the Shetlands for fuel, food and mail.

As a result of this continuous effort Fox was able to report that the tow-out-route was safe only four days before the platform left Loch Fyne.

On returning from the North Fox rejoined Fawn and together they are continuing to update the surveys of the English Channel from Worthing to St Catherine's Point on the Isle of Wight and from the coast to the

# h Sea Rigs

centre of the Channel. In all these are as many unknown wrecks have been found, some of which are a real hazard to shipping, being shallower than the draught of the largest ships. So far this year Fox has found many more new ones but none fortunately, : hat are a hazard to shipping.

Just before returning to Devonport for maintenance Fox and Fawn paid a three day visit to the French fishing port of Fecamp. There everyone improved :heir French, sampled French cooking and played a lot of sport.

After Navy Days Fox is moving north to the Irish Sea to continue last year's surveys. This will keep her occupied until she returns to Devonport at the end of the year for a short refit.

Fox and Fawn, with the bigger ocean-going survey ships, have one of the most important peacetime tasks of the Royal Navy in hydrographic and oceanographic surveying. Information from surveys is needed for Admiralty charts which have a world-wide sale and are used by ships of many nations.

The surveys are the responsibility of the Navy's Surveying Service which has been operating throughout the world since the formation of the Hydrographic Department in 1795. It has ocean-going ships, coastal vessels and inshore craft, each carrying motor boats. Helicopters are used.

**Above: This big tow-out for the massive concrete gas platform into the North Sea was only possible because of the survey work done by Fox. Below: Fox in the Frigg Field.**


# Blue Ensign Ship—RFA Lyness

The Royal Fleet Auxiliary Service provides the ships that carry and supply to the Fleet at sea its requirements of fuel, food, ammunition and stores of all kinds. The ships fly their own distinctive blue ensign with a vertical anchor in gold. They are manned by Merchant Navy personnel, the majority of whom make a career with the RFA.

RFAs normally form part of naval task groups and accompany the warships on operational deployment assisting the Navy with its tasks and at the same time keeping the warships topped up with fuel, victuals and stores.

**REPLENISHMENT AT SEA Demonstrations that show how the ships of the Royal Navy take on fuel, stores, ammunition and food while travelling at speed will take place between RFA Lyness and HMS Berwick at 1.30 p.m. and 3.45 p.m. at No. 5 wharf. See it from the deck of Lyness.**

The present day RFA comprises 34 ships, about half of which are tankers and the remainder are stores support ships, store carriers, logistic landing ships and a helicopter training ship.

A fleet tanker can carry four or five different grades of oil required by warships and naval aircraft, and can issue them simultaneously. There are six large fleet tankers (Olwen and Tide classes) and five smaller ships of the new Rover class.

Five freighting tankers, the Leaf class and a larger ship Dewdale collect oil from refineries and transport it to naval fuel depots, and they can also replenish while underway.

The seven Stores Support Ships are seagoing warehouses which supply ammunition, food, stores and other commodities required by the Navy and carry stocks of up to 40,000 items for this purpose. Other ships are used to carry troops, and their vehicles and equipment for the Army in support of assault operations.

Refuelling and re-supply of **HM** Ships at sea has now become standard practice and the art has been brought to a high standard. It is interesting that the first experiments in underway refuelling date from 1906 and it has been developed by the RFA with improved gear and methods through two world wars.

Although underway replenishment is now "just routine" it is a job demanding precision and skill. Apart from their accepted expertise in basic ship handling, operation and maintenance, the MN personnel of the RFA must also become skilled in working with warships and helicopters, in underway replenishment and tactical manoeuvring in all weathers and, in the logistic landing ships in support of the .Army too.

The RFA is a service with high standards. It provides a job of wide variety and it is full of interest. Its proud boast is that the initials stand for Ready For Anything.

**RFA LYNESS**

**Since commissioning in 1967 Lyness has served throughout the world in support of the Fleet primarily in the role of Air Stores Support Ship, although she carries food, canteen and general naval stores. In all over 80,000 items. In addition to fleet support Lyness has served as a mobile exhibition hall for British made defence goods on sales tours to South America and Scandinavia. At present Lyness is a unit of Ark Royal's Underway Replenishment Group and Flagship of the Royal Fleet Auxiliary Service.**