A MODERN stern-trawler can devastate a country’s offshore fish stocks overnight. An oil spill can ruin a nation’s beaches and its tourist trade in hours. The political balance can be upset by the landing of illegal trade in hours. The political balance, time patrol mission has come to the fore.

The larger types of anti-submarine warfare (ASW) aircraft in the Nimrod/Orion class are too costly for the smaller nations. There is a vast choice of aircraft available for EEZ patrol work, but to be truly multirole (as opposed to fitting role equipment as mission need dictates) a maritime-patrol aircraft must be in the middle size range. The larger aircraft also provides a more stable, and therefore more efficient, working platform for its crew—important on long sorties. In 1975, following a two-year market study, Fokker decided to offer a maritime version of its civil best seller, the F.27 Friendship.

The prototype F.27 Maritime was a conversion from a standard F.27-100 airframe with the larger port cargo door of the F.27-400. Production Maritimes can be based on either the -200 or -400, dependent on the customer’s needs. Corrosion, always a problem with maritime aircraft, is tackled during construction with special treatment of vulnerable areas. Based partly on data from the Icelandic Coast Guard’s F.27 (not a true Maritime but a locally modified Friendship), Fokker uses the interfaying sealant method, applying corrosion inhibitor to parts of the airframe most affected—under-fuselage, wing and tailplane carry-through points, wing rear spar and trailing edge spar and fore and aft fuselage bulkheads. All door and hatch surrounds receive a dose of inhibitor. Metal bonding techniques also help in the battle against the salt and damp of overseas flying. The airframe has a minimum service life of 75,000 flight cycles.

Power is provided by two 2,370 s.h.p. Rolls-Royce Dart 536-7Rs driving Rotol four-blade, constant-speed, 3.5m diameter propellers with a pitch range from 0° to 87° (fully feathered). Water-methanol injection is on hand for hot-and-high take-offs. The water-methanol is injected into the Dart’s first-stage compressor and the flow rate is metered automatically. The Dart is extremely reliable, showing a failure rate of 0.008 per 1,000hr in F.27s over the 1974-76 period. The current inflight close-down rate is less than one per 100,000hr, with a time between overhauls as high as 10,000hr.

Fuel is contained in the outer-wing torsion box, inner-wing and pylon tanks, with a collector tank in each nacelle giving a total capacity of 16,000lb of which 1200lb is unusable. Each engine receives fuel via its own separate system, including nacelle collector tanks, ensuring a positive supply under all conditions. Crossfeed can be selected, permitting either engine to feed from each mainwing tank. Refuelling is via a single-point connection in the starboard nacelle.

The Fokker F.27 Maritime

MIKE GAINES reports from WOENSDRECHT

All F.27 control surfaces are manually operated with the exception of the electrically controlled flaps and aileron trim tabs. The mechanically interconnected flaps have emergency manual reversion. Landing gear operation, nosewheel steering and wheel brakes are pneumatic, powered by two independent engine-driven compressors at a pressure of 232kg/cm² (3,300 p.s.i.). The main reservoir has enough capacity for an overshoot with gear retraction, followed by a normal landing and taxiing without use of the emergency system. A separate brake bottle will provide normal anti-skid operation of mainwheel disc brakes if the main reservoir should be exhausted for any reason. The single-lever suspension nosegear retracts forward; the main gear rearward.

Cabin pressurisation can be maintained at a differential of 0.38kg/cm² (5.5 p.s.i.), equal to 8,000ft cabin altitude for a true altitude of 25,000ft, with heating capacity sufficient to maintain a cabin temperature of 16°C at -43°C outside air temperature. Oxygen for the flight crew is supplied from a 1-06m³ (30ft³) high-pressure pack via a diluter demand system to the crew’s masks, with enough for six manhours at 20,000ft. A separate system supplies the tactical crew of four.

Ice and rain protection is comprehensive, with pneumatic de-icing of wing and tail leading edges, and electric de-icing of the engine and oil-cooler intakes, propellers, pitot tube, stall-warning transducer and windscreen. The windsheild has an anti-salt washer and wipers.

Both DC and AC power is needed for the electrics. The primary system is a single 24 to 28 Volt DC tie bus with a continuous rating of 375A at