

## Malaysia readies for submarines

The first batch of Royal Malaysian Navy (RMN) submariners successfully passed out of their French training school in early December, just before the start of the Langkawi International Maritime and Aerospace (LIMA) exhibition.

The 23 submariners are spearheading an RMN drive to stand up a submarine arm, with an eventual 156 personnel manning the service's two new French-built Scorpene submarines. The final trial involved the first two-week dive in the Atlantic.

This success is a major milestone in a submarine acquisition plan that the navy has been contemplating for over 30 years. The challenge does not just lie with the submariners, but also with the Armaris joint venture between Thales and DCN, which secured the contract in 2002 to provide a turnkey submarine force.

In 2003, a further contract was signed for the training of three complete submarine crews to ensure maximum sea time for the boats. This tasked NAVFCO, the special training branch of France's Défense Conseil International, with imparting the French Navy's knowledge of underwater operations to the nascent force.

However, the Malaysian Chief of Navy, Admiral Datuk Ilyas Hj Din, said that since 1985 officers have been sent to Australia, France, Germany, Pakistan, Sweden and Turkey for submarine training.

"We call these officers the founding fathers – the core people who undertook engineering and seamanship training and didn't come back to do a specific submarine job but advised us on concepts and improved our master plan."

In total, the submariners will spend four years training at NAVFCO's Brest facility. While there, they will spend time out in the Atlantic using the ex-French Navy Agosta-class submarine *Ouessant*, which is on loan to the force.

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# UK's new raiding craft trialled in fire support role

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**T**he UK Royal Marines' trials and evaluation unit has completed the first range trials of its prototype Offshore Raiding Craft (ORC) configured as a Fire Support Platform (FSP).

Originally conceived as a direct replacement for the Royal Marines' current Rigid Raider Mk 3 assault craft, the additional requirement for the ORC to operate in the fire support role came as a result of operational experience gained from small boat operations in the waterways of southern Iraq in early 2003.

"Feedback from riverine patrols told us that we needed a platform with more firepower and some degree of ballistic protection," said Colour Sergeant Mark Andrews, ORC co-ordinator at the Amphibious Trials and Training Unit Royal Marines (ATTURM). "As a result, we amended the ORC specification so that the craft could be rapidly reconfigured, through the addition of ballistic protection, to serve as a fire support platform."

The aluminium-hulled ORC, based on a Tiger Marine T9000 hullform, has been developed by Holyhead Marine and Amgram to meet requirements for a fast, durable, seaworthy (to at least Sea State 5) and versatile platform capable of both troop delivery and fire support.

- First live firing trials of the Offshore Raiding Craft in FSP form were completed in November
- The fire support version is intended to fill a requirement identified following operations in Iraq

The design features a vee-hull, a closed-cell buoyant collar around its gunwale and twin Steyr M256 inboard marine diesel engines driving a pair of Rolls-Royce FF270 waterjets through ZF63 reduction gears and carbon-fibre shafts. Maximum speed is over 35 kt.

A prototype craft was delivered to ATTURM at Instow, North Devon, in March. Extensive trials have shown performance to meet or exceed all key user requirements and a contract has been placed with Holy-

head Marine for an initial six production-standard ORCs for delivery by September 2006.

A first live firing trial of the craft in its FSP configuration took place at the Castlemartin range off the South Wales coast in late November. When operating in this configuration, the OPC is fitted with 'bolt-on' ballistic protection forming a 'citadel' of protection for the marines within. The ballistic panels, made from Dyneema polyethylene fibre material, are designed to provide protection from small arms fire (7.62 mm x 39 at 20 m) and can be installed on board within two hours.

Three universal weapon mountings are fitted within the citadel, with a fourth pedestal mounting fitted forward. "Any three of the four gun mounts can be fitted with a weapon at any given time," said Cdr Sgt Andrews. "This could be a single or twin 7.62 mm general-purpose machine gun or a 12.7 mm heavy machine gun. Other options, although these are not currently part of the approved fit, include a 40 mm grenade launcher and the GAU-17 minigun. We can also fit smoke launchers to provide visual obscuration and cover."

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The Royal Marines' prototype Offshore Raiding Craft was trialled in a fire support configuration in November

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## Armaris ups troopload on LHD design

French shipbuilding group Armaris has taken steps to modify the design of its Mistral-class landing helicopter dock (LHD) to strengthen its bid for a AUD2 billion (USD1.5 billion) contract to build two such vessels for the Royal Australian Navy (RAN) under Phase 4A/B of Joint Project 2048.

As ordered for the French Navy, FS *Mistral* and *Tonnerre* will each carry 450 troops as standard, plus supporting vehicles, equipment and helicopters. The LHD design on offer to the RAN will now be capable of accommodating

approximately 1,000 troops without significantly compromising the available vehicle lane metres or hangar space.

The design changes overcome to a significant extent the principal capability weakness of the Mistral-class LHD design in the JP 2048 competition and effectively level the playing field between it and the Navantia LHD design, one of which is under construction for the Spanish Navy. The latter has a capacity to accommodate 1,200 embarked personnel in addition to the crew as standard.

Armaris made the decision to increase the onboard

accommodation based on its own commercial determination. It was not required by Australia's Defence Materiel Organisation or the RAN to do so.

In mid-2005 the JP 2048 project office advised the Australian Cabinet that the threshold number of embarked troops for the LHD capability was 700. However, the 1,000-troop figure remains the objective functional specification requirement and is linked to the Australian Army's Manoeuvre Operations in Littoral Environments and subsequent Entry by Air and Sea operational concepts.

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