

## MARITIME PATROL

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### Maritime patrol seeks effort in multitasking

Maritime patrol is a substantial and impossible to imagine as ignoring part In military surveillance.

The reduced threat of submarines after the Cold War almost caused a huge reduction of significant maritime patrol aircraft. It did not come as far as this, why? Simultaneously the need was recognized to look increasingly close on the sea surface. Multiple threats are to be found on the seaways. Not only naval ships of other nationalities but also marine activities of commercial ships, legal or illegal in order to have maximum prevention for safety. Smuggling, illegal immigration, piracy, cargo ships with unidentified profiles are acts which have to be controlled. Accents are shifted nowadays and patrol aircraft have more or less become platforms crammed with electronics.

### Classic

The dangers that lurk for safe ship-navigation are legion. The submarines are still there and sometimes they come back in (political) action to underline factors as they did in ancient times (heavy Russian nuclear submarines nowadays sail along Iceland into the Atlantic Ocean in a regular pattern). You will always have the need of expertise of 'sub-hunting' because one can never predict the developments in power balances, and perhaps the focus of sub-hunting will shift more and more on local conflicts because submarines certainly do this.

### Sea-surface

Control of the sea surface is much more a hot item today. The "war on terror" requires it. Missions comprises a combined goal and together with safety matters for the commercial shipping like long distance Search & Rescue planes also practically you see yourself becoming more or less a spy in the sky. Movements which are not pure and cannot afford 'daylight' such as evasion of criminal activities and embargo in favour of 'wrong' regimes, are carefully monitored and can lead to political call. Basically you can split the maritime patrol in two groups, those who concerns about coastal activities and the group tasked with long distance maritime patrol combined with Anti-Submarine Warfare and strategic tasks.

The coastal maritime patrols are often in cooperation with semi-public services. It is expected that their role will increase in future, and perhaps some tasks of the military will be shifted to them. The missions that are close to the shore requires a smaller category planes, emphasis is on control of shipping itself. But these airplanes are equally good equipped as the big ones, with fully day- and night searching and tracking equipment. Sometimes operations are much more cost-effective and better to continue in a bigger context. For instance in Europe there is the FRONTEX organisation which guards the borders of the whole of Europe. FRONTEX concerns about immigration and airplanes for operations under this authority are supplied by several countries. Good examples of the smaller type of patrol aircraft are the Casa 212 and Dornier 225.

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## **In the dark**

For scanning of large sea areas, the Inverse Synthetic Aperture Radar (ISAR) is a welcome invention and a proven application. This technique – taking into account the curvature of the earth – can observe even over the horizon. It is used in combination with state-of-the-art satellite communication systems where information (SATCOM) data link transmission is used and images can be transferred to other units. This way it becomes a strategic patrol aircraft system, such as we see in modern variants of the P-3 Orion. Also the sharpness is an important factor. At large distances periscopes can be observed just above the surface, but also small rubber boats. Missions of patrols require alertness around the clock. This means often working during night hours, which is also a favourite time of criminals and finding your target is increasingly depending on your thermal imaging and infrared search systems. The smaller patrol planes typically use a "forward looking infra-red system (FLIR) to operate at night.

## **Far from home**

The major long-distance maritime patrol systems like the already mentioned P-3 Orion, the Breguet Atlantic II and BAe MR.2A Nimrod II also search and guard strategic situated areas. This means airspace, sea-surface and below the sea-surface. The latter is watched with the well known MAD (Magnetic Anomaly Detector) that detects shifts in the nature magnetic field (moving submarines). The developments have led to multi-tasking. A strategic patrol system is expensive (HVA = highly valuable asset) and once deployed in areas where tension occurs, this system really needs to provide the widest range of information as it can give. You don't want to have the need for another system in an area full of risks.

This is why a task as ELINT (Electronic Intelligence) is also added complete with possibility to disturb signals over enemy territory. In case of the Nimrod, the type saw use over Iraq since the thermal finding equipment also works very well over the desert. It is pretty convenient that the Nimrod can also act a bit as battlefield management platform. Another trend is armaments, including Harpoon missiles against ships. The torpedoes or depth charges against submarines had been a more common phenomenon, but you will also meet now systems with sidewinder missiles which can stand attacks from the sky, and equipped with of course countermeasures such as flares. This way the strategic patrol system – as stand alone operating strategic patrol system – is much better off with these threats.

## **New developments**

The British have developed a successor to their Nimrod MR.2, called the MRA.4, expensive, but very capable ! The cost factor necessitates that less systems can do the same job at least, and preferably more. A matter of a fact during the development of the type the order was reduced by the British government becoming keen on the possibilities of the type and a reduced number could fulfil the scoop of activities required in the doctrine. Within the multi-role combat submarine concept remains a major task, what the British summarize under ISTAR ( this stands for Intelligence,

Surveillance, Target Acquisition & Reconnaissance), which you could translate in reconnaissance, gathering information and locating targets. In addition, the MRA.4 will be more and more become a long distance attack platform. Therefore the fuselage was adjusted, the wings enlarges, more powerful engines were mounted, and a glass cockpit for better flight management. The latest technology was implemented complete with inventions of EADS and used in Airbus technology. The operating range will increase significant, as the aspect of self supporting. BAE once again set a course. Soon others will follow.

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