

WORLDWIDE P-3 STATUS REPORT - 1995 UPDATE

By
David Reade

This past year, although seemingly normal enough, marked the passage of a number of significant milestones in the continuing history of the P-3 Orion.

One of the most significant aspects of the P-3 is its growing list of capabilities. The multi-mission platform again demonstrated its versatility by providing real-time overland sensor surveillance to squadrons in Bosnia-Herzegovina, Rwanda and Haiti. USN P-3s utilized their radars, improved sensors and an electro-optical system to collect intelligence data for the UN/NATO missions in these war torn-republics.

United States

US Navy VP squadrons were reduced during the past twelve months from sixteen active and nine reserve, to thirteen active and nine reserve. In fiscal 96, one more active, and one reserve, unit are scheduled to be disestablished, leaving a total of twelve active and eight reserve squadrons for the foreseeable future.

With the drawdowns, the current US Navy P-3 Force is comprised of:

35 Production Update III

100 Retrofit Update III

25 Reserve Aircraft to be Retrofitted by FY01

86 Misc. NUD,I,II and III to be retrofitted in the future

246 Total USN P-3s

ASUW Improvement Program

UNISYS Corporation has been selected as the prime contractor for the USN, ASUW Improvement Program. The AIP program enhances the surface warfare capability of the P-3, incorporating a stand-

off targeting and surveillance capability. Currently 47 aircraft are planned for AIP modifications through FY01.

Sustained Readiness Program The USN has awarded a contract for the Sustained Readiness Program (SRP) to E Systems Inc. The SRP program addresses high corrosion areas of the P-3 fleet. The program goal is to restore and improve the Orion's material condition to extend the aircraft's service life up to 38 years. Upwards of 99 aircraft could be refurbished with the program through to year 2002. The ultimate plan is eventually to induct all 246 P-3C aircraft into SRP.

The USN's update III configuration program continues to replace out of date, and obsolete, avionics and systems. This includes the on-going installation of the AN ASQ-212 processor and the CP-2044 tactical computer.

Structured Data Recording System.

The Structured Data Recording System (SDRS) program is gaining momentum. The SDRS is a series of strain gauges and sensors used to profile mission-flight dynamics as part of a much larger Service Life Extension Program Study. Some 236 P-3s, and an additional 25 derivative Orions, are to be equipped with SDRS by the end of the year.

Progress is also underway to enhance the weapons capability of the P-3C update III. Selected P-3s have been equipped with the AGM-65F Infrared version of the Maverick missile. With new funding made available, thirty P-3C Update III aircraft will be equipped with

Mavericks, starting this year and running through 1997.

CILOP Program. The Navy's EP-3E ARIES II Conversion in lieu of procurement (CILOP) program, the on-going modification project to convert twelve low-hour, non-updated P3C airframes into ELINT Orions, is back on track with the recent delivery of four aircraft out of the NADEP Alameda MOD shop.

As the CILOP program continues, a follow-on systems upgrade to the ARIES II is already being developed and about to be implemented. The program known as SSIP, for Sensor Systems Improvement Program, comprises a series of sensor modifications to significantly enhance the joint inter-operability, and communications-connectivity capabilities of the ARIES II EP-3E. The addition of SSIP into the ARIES II will enhance the mission capabilities of the advanced EP-3E against future emerging threats.

In an effort to standardize the configuration of the Naval Air Warfare Centre's P-3 aircraft, NAWC headquarters has initiated an upgrade project to address communications, navigation and safety of flight concerns of its variant Orion aircraft.

TP-3P Program. With older P-3C non-update aircraft entering desert storage, coupled with Update III aircraft being inducted into long-term enhancement programs such as AIP and SRP, a shortage of mission aircraft will exist for at-home (non-deployed) squadrons. One way the USN is resolving the problem is

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(NAWC Patuxent River MD)



through the use of a number of aircraft designated for use as pilot-training aircraft to be developed, and assigned to a squadron during its at-home cycle.

The TP-3C pilot trainer "bounce" aircraft will be selected from a group of P-3C NUDS, update I, II, II.5s. These aircraft will have their ASW equipment and other sensors removed and will serve with VP-30 and with other squadrons short of aircraft. Later, when Update III kits become available in FY98, these TP-3C will be reconfigured as mission capable update III Orions and returned to the fleet. **MPA-X.** OPNAV and the P-3 Program office (PMA-290) are currently establishing requirements for a next-generation MPA aircraft, to be called MPA-X. The program would be a commercial competition to occur approximately 2007, and could involve a variety of aircraft including a new P-3 variant or ACP alternative, a commercial-aircraft derivative, or a new-development effort much like the P-7 was several years ago. The first delivery would commence in 2015.

International

Allison T56 Engine Kits. For those operators of P-3 Orions with older T56-A-IOWA turboprop engines, Allison has introduced the Allison T56 Series III Engine Conversion Kit. The kit converts the -IOWA engine to complete T56-A-14 configuration. The kit contains a propeller reduction gearbox, a compressor/accessory drive assembly, combustor assembly, and turbine assembly, as well as a fuel-control and temperature-datum amplifier.

South America

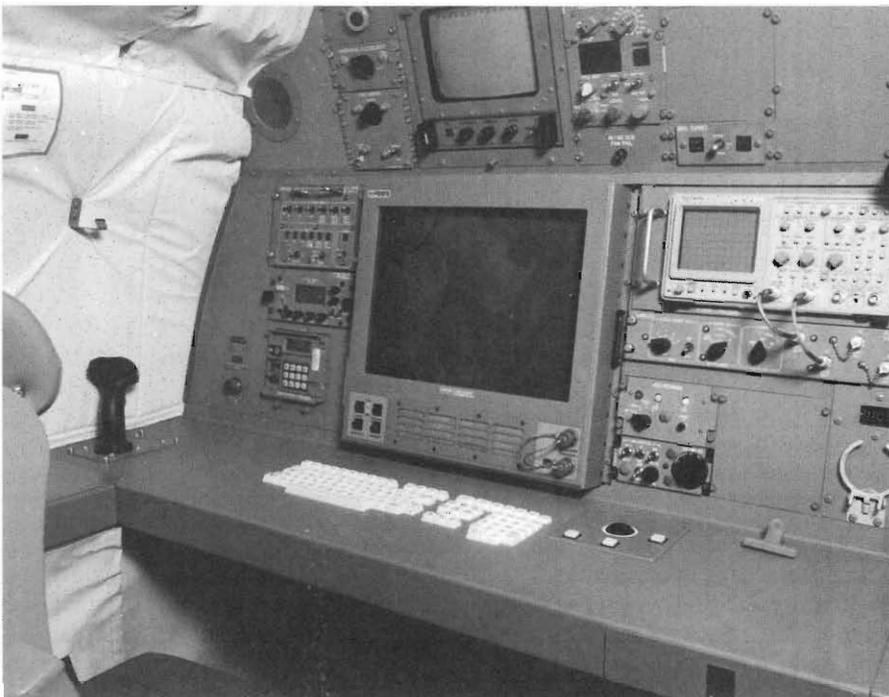
Since delivery of eight UP-3A Orions to Chile, a number of other South American countries have expressed interest in surplus US Navy Orions. They include Columbia, considering upwards of eight P-3A, and Venezuela and Uruguay, both requiring six P-3s.

Argentina

Argentina has made an official request for six TACNAVMOD P-3 Bravos to replace aging Lockheed L-188 Electra aircraft.

One important criteria of any navy FMS case is the concern about organized logistical support. For potential South American Orion operators, this area of concern could be alleviated by the recent acquisition of an Argentinean Aircraft Depot facility by Lockheed.

On 1 March 95, Lockheed Aircraft Argentina South America (LAASA)



A major RAAF Orion program is the installation of the ALR-2001 ODYSSEY ESM system. The most unique feature of the program is the incorporation of a new sensor operator position in the aircraft. (RAAF via ELIAKIMPTV Ltd)

officially took over operation of Area De Material Cordoba, the Argentine aircraft factory and maintenance depot at Cordoba, 100 miles north east of Buenos Aires. Lockheed Argentina hopes to attract potential customers in the region, and offer them an international aeronautical maintenance centre providing depot-level inspections, engine refurbishment, avionics upgrades, pilot and maintenance training, spares provisioning and technical documentation. This new facility could greatly benefit any potential South American P-3 customers.

Australia

The RAAF's P-3C Refurbishment Program awarded to E-Systems Inc Dallas, Texas, consists of replacing older, heavier, and less capable, unsupportable sensor, avionics and other equipment, to increase operational mission effectiveness and extend the aircraft's fatigue life.

The project provides for the installation of Elta's EL/M-2022(v)3 high resolution, digital 360 degree multi-mode (SAR, ISAR, Range Profiling) Radar with integrated IFF and track-scan features. UNISYS's DDC-060 data-management system and the UYS-503 acoustic processor produced by Computing Devices of Canada. Other improvements encompass new navigation systems including the MAGR

300 GPS, a new integrated HF, VHF and UHF communications suite, as well as a partial EFIS Glass Cockpit and the ASQ-504 self-compensating digital MAD.

The refurbishment program is scheduled to modify eighteen aircraft and is expected to run though to the end of the century. Once completed, the aircraft will be identified as AP-3C Orions.

A second major RAAF Orion program is the incorporation of the ALR-2001 ODYSSEY ESM system. The ODYSSEY 2001 ESM system, a joint Australian/Israeli venture, includes new avionics and significant air frame modifications, to greatly improve ESM capability to detect and analyze electronic emissions.

The system creates and manages an electromagnetic surveillance plot tasked with supporting the ASW, ASUW, passive intelligence, and threat warning capabilities of the aircraft. The system can detect and analyze communications transmissions and radar pulses of submarines and surface ships, while scanning for hostile weapon systems in targeting modes. The system also supports the aircraft's passive Over-The-Horizon reporting and targeting capability for the Harpoon anti-ship missile. A unique feature of the program is the incorporation of a new sensor-operator position on the aircraft.



This JMSDF UP-3C is an airborne systems flying testbed. The aircraft will be operated by VX-51 Air Development Squadron. (JMSDF)

The prototype system has undergone operational testing in a major Australian air defense exercise. The next phase of the program has now proceeded, with the first nine production MOD aircraft completed and undergoing operational testing.

To further extend the service life of the RAAF P-3C fleet, it was decided to acquire several ex-USN P-3B aircraft and modify them as training aircraft, to be designated as TAP-3s. The TAP-3's primary mission will be pilot and flight engineer conversion training. Its secondary tasking will include cargo and transport support to deployed aircraft and flight crews.

These aircraft are to be flown to NADEP at Jacksonville, Florida, and stripped of all acoustic and non-acoustic, ESM sensors and processors as well as armament systems and sonobuoy launching/storage components. They will then receive a conversion MOD. This MOD calls for upgrading the TAP-3 cockpit to the RAAF P3C update 11.5 flight station configuration.

Greece

The Greek P-3 FMS procurement program now totals six P-3B and four P-3A Orions.

The Alfa models are to be used as ground trainers and parts aircraft. Two of these aircraft were ferried to Greece in May 95.

The six P-3 Bravos are to be prepared for delivery by Chrysler Technologies Airborne Systems Inc. of Waco Texas. Chrysler will conduct airframe restorations, inspections, and repair and painting; additionally, they will receive new interior wall covering and trim as part of an overall habitability enhancement.

Japan

In February 95, the JMSDF received

the second in a series of variant P-3s from the Gifu aircraft works of Kawasaki Heavy Industries. The UP-3C is an airborne system developed for testing and evaluating ASW equipment, flight performance, avionics, electronic systems and armament. The aircraft will be operated by VX-51 Air Development Squadron.

JMSDF Orion improvement projects continue, adding GPS and SATCOM avionics as well as the on-going Update III upgrades to older P3C UD 11.5 aircraft. Other upgrades planned include retro-fitting the fleet Orions with the CP-2044 tactical computer.

Pending JMSDF budget cuts could result in a reduction of the number of operational P-3C Orions from the current level of 100 aircraft to 65 or 70. The non-operational aircraft would be placed in storage or become the baseline for any potential future derivative models.

The Netherlands

The RNLN is continuing to plan for a Capabilities Upgrade Program (CUP) to enhance their P-3's anti-surface warfare capability. Areas under consideration are a new central processor, data management system, the addition of imaging radar, an upgraded ESM and a new acoustic processor. The CUP also includes the installation of multi-purpose colour high-resolution displays. The proposed schedule includes the completion of a prototype aircraft by the year 2000 with production beginning in 2002.

The RNLN is now proceeding with a number of interim avionics upgrades. These encompass a new UHF/VHF communications suite, GPS and a new Forward-Looking, Infrared-thermal imaging system by FLIR Systems Inc.

Norway

The RNOAF is currently involved in developing a P-3 Mod Program to enhance both the ASUW and the ASW capability of its four P-3C Update III Orion aircraft. The project includes the installation of the CP-2044 tactical computers, adding an imaging radar, GPS, SATCOM and integrated displays, as well as incorporating a new ESM system. This system includes the establishment of a dedicated operator position for the management of the ESM. Other components of the upgrade include additional self-defense provisions, comprising a radar/laser missile warning system and chaff/flare dispensers.

Portugal

Portugal is currently considering a number of low cost avionics improvements to upgrade the operational capability of the P-3P Orion. These proposals include upgrading the APS 134 radar to an imaging APS-137 ISAR, improving targeting capability of ESM, GPS, and upgrading MAD.

The new P-3P mission requirements mandate new self-protection systems including a chaff/flare dispensing unit, an infrared, missile-warning system, and lower cost weapon alternatives. A study is also underway to evaluate the installation of an electronic warfare system to give the P-3P an ELINT capability.

Republic of Korea

The first P-3C Orion built for the Republic of Korea, and the first off the Lockheed assembly line in Marietta Georgia, made a successful maiden flight on 12 Dec 94. Eight production aircraft are now being delivered to 613 Squadron. The ROKN is still considering a follow-on production of another eight aircraft. Depending on budget constraints, an order could be placed by early 1998.

Thailand

On 6 Feb 95, the Royal Thai Navy received its first P-3T Orion from the MOD shop at NAD Jacksonville, Florida. The P-3T is basically a TACNAVMOD, ASW-configured P-3A, with a number of equipment and systems upgrades. The second P-3T was completed on Feb 16th. The Thai P-3 will be assigned to 101 Squadron and operate out of RTN Air Base at Utapao. The third P-3 is a specially-configured UP-3T utility aircraft, with a limited surveillance mission capability represented by a SENTAC station. The SENTAC station, developed by NADEP Jax, incorporates elements of both the Sensor #3 and

TACCO positions. The aircraft will be delivered in the fall of 95.

Each aircraft will also be equipped with the commercial APN-234 colour weather radar. The structural conversion incorporates reinforced floors, to facilitate the addition of floor tracks. The tracks can handle upwards of 3450 lbs of cargo, or 26 airline passenger seats. Another 1500 lbs of logistical cargo can be carried in a weapons bay mounted High Capacity Cargo Pannier.

The fourth aircraft has been acquired as a spares aircraft to support the TAP-3 PROGRAM. Some components are scheduled to become training aids, with one wing used for a corrosion-teardown project and the other used for fuel-cell sealant instruction. The forward section of the main fuselage is to be used as an operational mission simulator mock-up for the AP-3C refurbishment program and the aft section is to be used as a battle-damage-repair (BDR) test article.

United Kingdom

One of the most interesting programs to be developed in recent years is the RAF's Replacement Maritime Patrol Aircraft program (RMPA), as a follow-on MPA replacement for the MR MK2 Nimrod.

A detailed description of this program is published in the FORUM section of this edition. Currently a number of competitors are vying for the RMPA contract, proposing various options. Several other nations in the MPA community are greatly interested in the final outcome of the RMPA program before deciding what course of action they should pursue in replacing their patrol aircraft.

Commentary

It's been many years now since the end of the Cold War, and the diminished threat from the WARSAW Pact. The P-3 has successfully made the transition from the premier sub hunter without a mission, to an even more capable multi-mission Maritime Patrol Aircraft. From this point onward, a new chapter is being written in the P-3 Orion saga. With the eventual outcome of RMPA and its impact on other potential new aircraft operators, the increase in FMS requests for US Navy surplus aircraft, and added new sensors and capabilities, the P-3's future is assured as the preeminent MPA Platform of the 21st century.



About the Author

David Reade (P-3 publications) is a freelance journalist and consultant. He has written many informative articles on the P-3 Orion, its systems, missions and capabilities in many MPA community publications. Mr Reade is considered to be a leading authority on the P-3, and regularly consults with the US Navy, contractors

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On 6 Feb 95, the Royal Thai Navy received its first P-3T Orion from the MOD shop at NADC Jacksonville, Florida.



and industry on the aircraft. He has also authored an authoritative P-3 Bureau Number (BoNo) List that is recognized as "An Outstanding P-3 Reference Guide".

For several years he has been a regular contributor to Lockheed's Patrol Log, and Maritime Patrol Aviation.

CORRECTION

Credit for the photograph of the Netherlands and USN P-3s seen in formation over the coast of Iceland which appeared in David Reade's article "NAS Keflavik, Iceland - The ASW Training Capital of the World" which was published in the March 95 edition of MPA should go to PHI Douglas Houser of USN Patrol Squadron TWENTY-FOUR.