

94-8-13
5.1

Seminar I

NATIONAL DEFENSE UNIVERSITY

NATIONAL WAR COLLEGE

**MARITIME PATROL AIRCRAFT --
OPERATIONAL VERSATILITY FROM THE SEA**

CORE COURSE V ESSAY

**CDR PAUL E. HALLOWELL/CLASS OF 94
MILITARY STRATEGY AND OPERATIONS
SEMINAR I
SEMINAR LEADER: DR. WILLMOTT/
CAPT KILCLINE
FACULTY ADVISOR: CAPT COLE**

**NATIONAL DEFENSE UNIVERSITY
LIBRARY
SPECIAL COLLECTIONS**

Report Documentation Page

Form Approved
OMB No. 0704-0188

Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

1. REPORT DATE 1994		2. REPORT TYPE		3. DATES COVERED 00-00-1994 to 00-00-1994	
4. TITLE AND SUBTITLE Maritime Patrol Aircraft - Operational Versatility From the Sea				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) National War College, 300 5th Avenue, Fort Lesley J. McNair, Washington, DC, 20319-6000				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT see report					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES 17	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

Introduction

U.S. Force structure in the post-Cold War security environment continues to be a subject of constant debate. While the Bottom-Up Review (BUR) thoroughly examined future defense requirements, it actually raised more questions than it answered since the result of that process remains unaffordable. In the absence of a bonafide National Security Strategy, efforts to size and shape the military will undoubtedly continue to be a very difficult undertaking. And with budgetary constraints essentially driving force structure decisions, it becomes imperative that we incorporate and retain cost-effective platforms which have utility across a wide range of warfare areas. One such platform is the P-3 Maritime Patrol Aircraft (MPA).¹

Traditionally, with the aircraft carrier as the centerpiece of naval aviation, non-organic assets such as the P-3 have often been "left behind" when it comes to representation for programs and budget decisions in the Pentagon. Now that the Cold War is over, funding has become even more difficult for MPA, as pressure to reduce anti-submarine warfare assets in the absence of a Soviet submarine threat has translated into deep cuts for the P-3 community. In 1990, there were 24 active patrol squadrons; by 1996, there will be 12 -- the largest cut among all navy platforms (with submarines a close second at 47 percent).² Proposals in OPNAV to further reduce this alleged "dinosaur" of

the Cold War continue to surface in attempt to reconcile the bogey left by the BUR. But we've reached the point where "cutting another slice off the salami" would be disastrous in terms of P-3 force sustainment. The P-3 is more than just a "blue water" ASW weapons system; and patrol aircraft were not developed to counter the Soviet threat. They have a long history of proven performance and are among the most versatile platforms in the Navy inventory.

The purpose of this paper is to illustrate the value of MPA across a wide range of warfare disciplines and to underscore the importance of preserving current force structure. We begin by examining two mission areas for which MPA has no equal -- maritime surveillance and antisubmarine warfare (ASW). We then discuss MPA capability with respect to integrated task group support and its utility in fulfilling our forward presence objectives. Finally, we conclude with a look at platform capability in terms of OPNAV's Joint Mission Area Assessment criteria which now forms the basis for all future resource decisions.

Surveillance

While ASW eventually became the primary mission for MPA, maritime surveillance has been the underlying mission of patrol aviation for the past eighty years. In fact, the first naval aviation unit was a squadron of seaplanes, commissioned to

operate with the fleet and to bring naval air power to the sea.³

Beginning with its early role in aerial surveillance, patrol aircraft have routinely kept watch over coastal waters and open ocean areas throughout the world. In 1914, AB-3 flying boats conducted minehunting and reconnaissance missions off Veracruz, Mexico to provide intelligence for Atlantic Fleet forces in support of the Mexican crisis.⁴ In 1917, the flying boats were the first U.S. combatants to participate in World War I by conducting coastal surveillance in European waters.⁵ And in 1942, it was PBY patrol planes which located and conducted the first attack on approaching Japanese naval forces during the pivotal Battle of Midway.⁶ Throughout the World War II Pacific campaigns, the Korean war, the Vietnam war and Desert Storm, MPA forces have exercised this primary surveillance mission while providing timely, accurate intelligence on contacts at sea. In performing Maritime Interdiction Force (MIF) operations during the Gulf War, P-3 aircraft intercepted and evaluated over 7000 ships and provided the initial identification of every critical contact of interest (CCOI) entering the CENTCOM theater of operations.⁷

As defense planning now focuses on capabilities of "third world" nations, as well as a variety of transnational threats such as proliferation of weapons of mass destruction and counternarcotics, both open ocean and coastal surveillance will assume an increasingly important role. With the proliferation of defense-related technology, frequent monitoring of foreign naval

capabilities and tactics may be one of our greatest challenges and will require more routine surveillance and reconnaissance to stay abreast of potential threats. Similarly, any requirement for detection, surveillance and/or tracking of high interest contacts at sea, whether it be merchant ships carrying missile parts to Pakistan or "drug runners" transporting heroin from the Golden triangle to Hong Kong or illegal arms carriers transporting weapons into Somalia, will continue to depend on long range surveillance platforms -- maritime patrol aircraft.

Antisubmarine Warfare

Although the Soviet submarine threat was the primary focus for maritime patrol throughout the Cold War, it was the "war against the U-boats" which provided the foundation for ASW tactical development and experience.

During World War I, patrol aircraft searched almost one million square miles of submarine-infested waters, as ASW was the primary role of naval aviation.⁸ Although without the weaponry necessary to achieve direct kills, navy seaplanes disrupted U-boat operations, assisted escort destroyers in recording 24 submarine kills, and significantly advanced the role of aircraft in conducting ASW operations.⁹ With improved weapons and detection capability in World War II, MPA forces protected vulnerable shipping routes and were instrumental in deciding the Battle of the Atlantic, where U.S. Navy and Royal Air Force

Coastal Command shore-based assets combined to sink 245 U-boats, or 31 percent of the entire German U-Waffe.¹⁰ And during the heart of the Cold War, P-3's were the mainstay of the Navy's effort to counter global deployment of Soviet nuclear ballistic missile and attack submarines. For over 25 years, MPA forces collected invaluable intelligence on Soviet capabilities, vulnerabilities and tactics, providing baselines for developing follow-on technology for all air, surface and subsurface ASW platforms.

Despite the absence of a nuclear submarine threat, the plethora of third world diesel submarines demands continued development of littoral ASW capabilities. The diesel submarine represents a substantial increase in degree of difficulty, as operations in shallow water and generally noisy environments significantly complicates the tactical problem and reduces sensor effectiveness/operating profile for surface and subsurface ASW forces. Even with incorporation of emerging airborne ASW technologies, such as bistatics processing, improved magnetic detection and laser applications, anti-diesel operations are much more asset intensive in comparison to that required for a nuclear submarine prosecution.

How important is a diesel submarine? Consider the lessons of the Falkland Islands War, where one Argentine diesel submarine (German-built Type 209) essentially wreaked havoc on British operations. Although no damage was inflicted on Royal Navy (RN) combatants, the Argentine diesel launched several torpedo attacks

(including at least one against the carrier *Invincible*), effectively "tied up" a number of RN ships and helicopters, and caused a considerable expenditure of ordnance -- all while avoiding three RN nuclear submarines.¹¹ Dozens of countries have the capability to damage or sink a naval surface combatant with a diesel submarine, including North Korea and Iran. Consider the destructive potential posed by one unlocated Iranian Kilo and the problems it would create for a aircraft carrier transiting through the straits of Hormuz to support a conflict in the Persian Gulf. Clearly, the diesel ASW threat in the littoral environment is one of our most significant challenges and directly threatens our ability to project power and operate "from the sea."

Task Force Support

MPA forces arm the battle group commander with impressive operational versatility, and can assume a myriad of warfare responsibilities in an integrated task force environment. In addition to surveillance and ASW, a P-3 can provide Indications and Warning, deliver mines, and coordinate Anti-Surface Warfare (ASUW) operations. The P-3's strength in support of task force ASUW operations is the ability to generate precise over-the-horizon targeting (OTH-T) data on all critical contacts of interest. Equipped with netted C3I and electronic warfare systems, an Inverse Synthetic Aperture Radar (ISAR), a standoff

optical system and air-to-surface missiles, the P-3 can locate, identify and provide accurate standoff targeting either for onboard engagement or for engagement by attack aircraft and anti-ship missile-capable units at sea. P-3 experience in targeting for USAF F-16's and Marine FA-18's, and in coordinating with E-2C's and E-3 AWACS, has been instrumental in developing a viable joint littoral strike capability.

MPA forces are an essential adjunct to power projection forces enroute to and within a crisis region. Operating as pathfinders in advance of carrier battle groups (CVBG's), they can provide protection for logistics ships as well as targeting information for strike forces. Whether along CVBG track or in the Amphibious Objective Area (AOA), MPA forces provide a critical capability in establishing maritime superiority. Surface ships and submarine escorts, by themselves, cannot provide sufficient protection, as was demonstrated during World War II. Carrier ASW assets can provide surface/subsurface surveillance (SSSC), but limited endurance and increasing requirements to provide tanker support requires non-organic assets to adequately protect naval forces and shipping. With its superior range and integrated acoustic/nonacoustic sensors, the P-3 can detect, localize and attack surface or subsurface threats in remote ocean or littoral areas prior to the arrival of carrier and amphibious forces. In support of joint operations during Desert Storm, MPA forces executed round-the-clock surveillance and ASUW in the Red Sea, North Arabian Sea and Persian Gulf.

Among the many missions assigned included surveillance of Iraqi/Kuwaiti ports, mine detection, targeting of Iraqi surface forces and battle damage assessment. Allied MPA forces, including British Nimrod and French Atlantique squadrons, detected, identified and monitored over 23,000 surface contacts while providing targeting for 45 percent of all surface kills conducted by coalition forces in destroying the Iraqi Navy.¹²

MPA forces also constitute a critical support element in situations where a subset of full task group deployment may be desired or required. With decreasing asset availability and budgetary constraints, the concept of "adaptive force packaging" has enabled us to offset reduced carrier availability by filling coverage gaps with smaller but capable units of combat capability.¹³ One such force package, the Maritime Action Group (MAG) has been used extensively in the Mediterranean and has combined, for example, P-3 aircraft with a Tomahawk-equipped Aegis cruiser, a guided missile destroyer, an attack submarine and an AWACS to yield a full spectrum of sea-air-land surveillance, targeting, strike and anti-air warfare (AAW) defense.¹⁴ With the capability to conduct ASW, ASUW and surveillance, MPA forces are integral components of adaptive force packages regardless of asset mix.

Forward Presence

A major objective of our military strategy is to promote

regional stability by remaining forward-deployed and engaged overseas. In addition to its warfighting prowess, the P-3 provides a significant contribution to forward presence requirements through routine access to littoral nations and regular participation in bilateral and multilateral exercises. By virtue of its mobility, flexibility, low "overhead" and unobtrusive profile, P-3's are well-suited to initiate and sustain access, exercise host nation support, and facilitate coordination should access be required in response to crisis or conflict. It was through regular access to Masirah, Oman which enabled the P-3 to commence operations in support of Desert Shield the day following the Iraqi invasion.

P-3 participation in bilateral/multilateral exercises has provided a significant contribution toward strengthening allied defense capabilities and improving overall interoperability. In support of the U.S. Pacific Command's strategy of *Cooperative Engagement*, P-3's are increasingly utilized to preserve exercise continuity and demonstrate U.S. resolve on behalf of other naval forces which must fulfill operational commitments with fewer deployed units.¹⁵ With a platform which can execute a variety of missions ranging from basic coastal surveillance to complex coordinated ASW, the P-3 can readily interact with all potential coalition partners regardless of their level of military sophistication.

Joint Mission Area Assessment

The 1992 OPNAV reorganization to improve the Programming, Planning and Budgeting System (PPBS) identified six mission areas as the basis for assessing resource allocation: Joint Strike, Joint Littoral Warfare, Joint Surveillance, Joint Space and Electronic Warfare/Intelligence, Strategic Deterrence; and Strategic Sealift/Protection.¹⁶ Having examined the P-3 across a wide range of missions, let's briefly review the value of this platform in the context of this new assessment criteria.

With its quick response from forward employed sites, effective high search rate surveillance, standoff identification and targeting outside the littoral air defense threat, and both long and short range anti-ship missiles, the P-3 is integral to establishing battlespace dominance in support of joint strike operations. With a full array of acoustic/nonacoustic sensors and air-to-subsurface weapons, the P-3 is clearly the platform of choice for detection, localization and attack of modern diesel submarines in support of joint littoral warfare. With the endurance for broad area search and an ASUW package which include long range electro-optics and high resolution ISAR, the P-3 brings a significant capability to the joint surveillance area, as evidenced by its performance in Desert Storm. With real time surveillance and targeting connectivity with a joint force commander, plus netted sensors integrated with national and combined sources, the P-3 is able to exploit the environment in

support of joint electronic warfare/intelligence. Although we're no longer preoccupied with a Soviet submarine threat, SSBN's continue to patrol; and if regional tensions, proliferation or other factors alter the current political dynamic, the P-3 blue water capability against the SSBN contributes to the overall strategic deterrence effort. And, finally, by controlling critical points in sea lines to a crisis region, P-3 surveillance and ASW sanitization can protect strategic sealift assets as they conduct joint force sustainment operations.

As for the cost of this multimission platform? Only \$19 million provides annual operating and support costs (OMN + MPN) for a squadron of eight P-3's -- as compared to \$54 million to operate one CGN; \$64 million for one LHD; and \$250 million for one CVN.¹⁷

Conclusion

Clearly, maritime patrol aircraft provide U.S. forces with a low-cost, multimission capability. With its inherent mobility, flexibility and vast array of sensors, the P-3 "brings a lot to the table" in peacetime, response to crisis, and in conflict. Patrol aviation has absorbed its fair share of cuts in this downsizing environment -- and it's time to "stop the bleeding." By any measure, this platform meets the criteria as an integral component of post-Cold War force structure. For the reader who still questions the need to preserve a viable MPA capability and

prefers to rationalize alternatives, it is true that other assets can provide task group ASUW support; other assets can execute offensive mining; satellites can help offset open ocean surveillance requirements (to a limited degree); and any number of assets could be used to meet forward presence requirements. But MPA forces provide our *only legitimate ASW capability*, especially in shallow water environments; and once the art is lost, skills cannot be readily reconstituted.

In 1939, the Royal Air Force Coastal Command had no aircraft designed and no aircrews trained for ASW operations.¹⁸ British overconfidence between the wars derived from the success of "convoy" operations to neutralize the German U-boats in 1917. When the convoys were overcome by the U-Waffe's "wolf pack" tactics in World War II, the ASW mission, once again, became a critical priority.¹⁹ If it were not for improvements to aircraft radar and depth charges, and a significant increase in long range maritime patrol assets dedicated to ASW operations, Donitz' U-boats might have won the Battle of the Atlantic.

As we continue to ascertain the proper quantity, mix and capability to be included in future U.S. force structure, let's not forget the lessons of history. And maritime patrol aircraft are part of that history.

END NOTES

1. The term "MPA" in this paper refers to either the P-3 platform or to patrol aviation in general (past or present), depending on context. The term "P-3" refers only to the current maritime patrol aircraft in the U.S. Navy inventory.
2. Falzetta, Tony, CDR, USN. Navy Programming and Budget Division, N801K2. Personal Interview. 28 March 1993.
3. Commander, Naval Air Systems Command. United States Naval Aviation 1910-1970. Washington: GPO, 1970, p. 35.
4. Commander, Naval Air Systems Command, p.10.
5. Commander, Naval Air Systems Command, p.30.
6. Potter, E.B., and Chester Nimitz, eds. Sea Power - A Naval History. Englewood Cliffs: Prentice-Hall, 1960, p. 675.
7. Systems Planning and Analysis, Inc. MPA Operations During Desert Shield and Desert Storm. PMA-290, Contract: APL No. 605485S, 28 May 1993.
8. Van Wyen, Adrian O., Historian, DCNO (Air). "The War Against the U-Boat." Naval Aviation in World War I. Washington: GPO, 1969, p. 76.
9. Naval Staff History, Second World War. Defeat of the Enemy Attack on Enemy Shipping 1939-1945. Historical Section: Admiralty, 1957, vol 1, chap 1, p. 4.
10. Willmott, H. P. Seminar. "The Battle of the Atlantic." National War College, Washington D.C., 16 February 1994.
11. Watson, Bruce W., and Peter Dunn, eds. Military Lessons of

the Falkland Islands War. Boulder: Westview, 1984, pp. 7-11.

12. Systems Planning and Analysis, Inc. PMA-290, Contract: APL No. 605485S, 28 May 1993.

13. Aspin, Les. Secretary of Defense. Annual Report to the President and the Congress. Washington: GPO, 1994, p. 22.

14. Oliver, Daniel T., RADM, USN. "Force Molecule." U.S. Naval Institute Proceedings June 1993, p. 72.

15. Larson, Charles R., ADM, USN, Commander-in-Chief, United States Pacific Command. United States Pacific Command Posture Statement 1993. May 1993, p. 16.

16. Department of the Navy. Force 2001 - A Program Guide to the U.S. Navy. Chief of Naval Operations, July 1993, pp. 22-26.

17. Falzetta. Personal Interview.

18. Naval Staff History, Second World War, vol 1, chap 4, p. 2.

19. Potter, E. B., p. 564.

WORKS CITED

- Aspin, Les. Secretary of Defense. Annual Report to the President and the Congress. Washington: GPO, 1994.
- Commander, Naval Air Systems Command. United States Naval Aviation 1910-1970. Washington: GPO, 1970.
- Department of the Navy. Force 2001: A Program Guide to the U.S. Navy. Chief of Naval Operations, July 1993.
- Department of the Navy. ...From The Sea -- Preparing the Naval Service for the 21st Century. White paper. 1993.
- Falzetta, Tony, CDR, USN. Navy Programming and Budget Division, N801K2. Personal Interview. 28 Mar 1994.
- Larson, Charles R., ADM, USN, Commander-in-Chief, United States Pacific Command. United States Pacific Command Posture Statement 1993. May 1993.
- Maness, Tony, RADM, USN. "Maritime Patrol Forces in Tomorrow's Navy." ASW Log Spring 1992: 11-15.
- Naval Staff History, Second World War. Defeat of the Enemy Attack on Shipping 1939-1945. vols 1, 1B. Historical Section: Admiralty, 1957.
- Oliver, Daniel T., RADM, USN. "A Force Molecule." U.S. Naval Institute Proceedings June 1993: 71-73.
- Potter, E.B., and Chester Nimitz, eds. Sea Power - A Naval History. Englewood Cliffs: Prentice-Hall, 1960.
- Systems Planning and Analysis, Inc. MPA Operations During Desert Shield and Desert Storm. PMA-290, Contract APL No. 605485S, 28 May 1993.

Van Wyen, Adrian O., Historian, DCNO (Air). "The War Against the U-Boats." Naval Aviation in World War I. Washington: GPO, 1969.

Watson, Bruce W., and Peter Dunn, eds. Military Lessons of the Falkland Islands War. Boulder: Westview, 1984.

Willmott, Hedley P. Seminar. "The Battle of the Atlantic."
National War College, Washington D.C., 16 February 1994.