

ASWLOG

ANTISUBMARINE WARFARE MAGAZINE

FALL 1992

ORION'S 30 YEARS ON STATION



DAVID POYER
AUTHOR OF
THE MED
THE GULF
THE CIRCLE
— INTERVIEW



CAPT. PHIL VOSS
**"The Role of
Sea Strike"**
— VIEWPOINT

ORION'S 30TH YEAR



F. Bruce Dean

THIRTY YEARS OF SERVICE FOR THE P-3

August of this year marked the thirtieth year for the P-3. We celebrate with a historical list of every Orion ever produced in order of Bureau Number. Those of you with log books that date back a few years can find your plane here and see what it is doing.

Some very old planes are still flying. Naval Aviation News magazine published a spread entitled "Miss Piggy Retires at 30" (July-August '92). It is phenomenal, the number of facelifts "Miss Piggy" has endured. She participated in the Cuban Missile Crisis, operated in Vietnam painted all black, (for the CIA, supposedly), was a tester, a trainer, a research aircraft and once set an around the world record flight of 26,550 KLM in 18 days. She was recently transferred to the desert storage facility at Davis-Monthan Air Force Base (AMARC) which may sound like the end of her. But her status is designated "war reserve" which means she's good enough to be recalled to active service. That's not all. At one point of her career she was given a cargo door. The existing door was doubled in width in a mirror image design. During the flight test the empennage twisted and the flight was aborted. Despite repairs, there is still a four degree twist in her, which has never held her back. The special government agency which directed the requirement also modified two additional aircraft which have since been scrapped. That leaves "Miss Piggy" as the only example of such a change.

These stories are not so unusual for the P-3. The trail of Number 149673, as well as this list, was researched by David Reade. His research can more aptly be described as an "investigation". He compared existing lists such as the Navy's and Lockheed's and cross-checked them. It was not so easy a task - all

lists are not compiled in the same order. He made thousands of phone calls. He became suspicious of some of the information he was given and, at times, he felt he was purposely being misled. On some occasions he resorted to the Freedom of Information Act to get the real "skinny". His calls included almost all of the international P-3 operators as well.

This list is up-to-date as of our press time. But it is always changing, especially now in these times of downsizing, restructure and redistribution of resources.

We did not have the space to do proper justice to this listing. Much of the full history is excluded, although if a fact of the aircraft's past is of special interest, a comment is included. But the list will tell you the disposition of the plane and how it is presently configured. For instance, if you flew a certain P-3A, the list may tell you it is now a UP-3A stationed with whom and where. It will not tell you how many squadrons it had flown with or where it had been since your paths crossed. But you could learn if it was updated, scrapped, struck or sold. Most of the P-3As have been modified. The only thing that remains constant with these planes, is the Bureau Number. After the BUNO, "Type" is shown. That is the current configuration. "Miss Piggy" No. 149673 is listed as a UP-3A located at AMARC (Davis Monthan AFB desert storage) in their war reserve section. It does not say she was once known as the "Dahlgren Bullet" while with the Naval Weapons Laboratory or anything about VQ-1, VX-1, VP-8, VP-30 or when she was an EP-3A at Pt. Mugu. Perhaps someday a complete historical rendition of this list will be available. Also included here, is a production summary and a list of squadrons, ★



Based at Pt. Mugu as an EP-3A with the Pacific Missile Test Center.



Dubbed the "Dahlgren Bullet" in 1971 with the Naval Weapons Laboratory.



While with VX-1 in 1975-6 she acquired her flattened nose and was christened "Miss Piggy".



Until her next assignment, "Miss Piggy" rests at the AMARC desert storage facility (1992).

After delivery to VP-8 and the 1962 Cuban Missile Crisis, No. 149673 was chosen for duty in Southeast Asia as a Black P-3 with modifications which included extended engine exhaust shrouds and removal of the MAD boom. She returned stateside in 1967 with a few bullet holes.

BUREAU LIST

BUNO TYPE LOCATION COMMENTS

P-3A Orions

148276 NP-3A NASA Original YP3V-1
148883 UP-3A NADC Testbed Aircraft
148884 Strike (Wing damage, NADEP, JAX, 1977)
148885 UP-3A NADEP JAX Parts Bird
148886 P-3A K-Tech Av. Parts Bird
148887 EP-3E VQ-1
148888 EP-3E VQ-2
148889 UP-3A NADC Was S-3A Viking Electronics Testbed
149667 RP-3A JAX Scrap/Burnt-Fire Trng
149668 EP-3E VQ-2 was Black P-3



EP-3B Orion No. 149669

149669 EP-3B Lockheed Aeromod Scrap was Black P-3
149670 RP-3A NRL PAX Riv.
149671 EP-3A China Lake Not flying
149672 Strike (Water collision, VP-8, PAX Riv 1963)
149673 UP-3A AMARC/War Reserve was Black P-3
149674 RP-3A NRL PAX Riv.
149675 VP-3A Barbers Pt. (ETD)
149676 VP-3A VP-30 (ASA)
149677 UP-3A AMARC/FMS Chile Selectee
149678 EP-3B Lockheed Aeromod Scrap/was Black P-3
150494 EP-3E Lockheed Aeromod
150495 UP-3A NAS Keflavik, Iceland
150496 VP-3A VP-30 (ASA)
150497 EP-3E Alameda
150498 EP-3E Alameda
150499 RP-3A PMTC "EATS"
150500 RP-3A NADEP JAX 1st "Billboard" was VXXN-8 - Birdseye
150501 EP-3E VQ-1
150502 EP-3E Lockheed Aeromod Parts Bird
150503 EP-3E China Lake Scrapped-Test Range
150504 UP-3A VQ-1 (Partial VIP)
150505 EP-3E VQ-2
150506 P-3A K-Tech Av. Parts Bird
150507 P-3A AMARC/FMS Chile Selectee
150508 Strike (Fire, VP-9, Cubi Pt., 1964)
150509 P-3A VP-31 Maint. Trainer
150510 P-3A Hawkins&Powers Fire Fighter-Pending
150511 VP-3A VP-30 (ASA)
150512 RP-3A NADEP/Alameda Parts Bird
150513 P-3A Black Hills Fire Fighter-Pending
150514 P-3A "Slick" US Customs Serv.
150515 VP-3A Sigonella Sched. NADEP-JAX
150516 P-3A Spanish Air Force Museum
150517 P-3A VP-30 Maint. Trainer
150518 UP-3A AMARC/FMS Chile Selectee
150519 UP-3A AMARC was Gen Offshore
150520 RP-3A PMTC EATS Mod.
150521 RP-3A PMTC "EATS" 2nd Bill Board
150522 RP-3A PMTC "EATS" 3rd Bill Board
150523 P-3A K-Tech Av. Parts Bird
150524 RP-3A PMTC "EATS"
150525 RP-3A PMTC Harpoon Tester
150526 UP-3A VP-31 (VR DET) Partial VIP
150527 UP-3A AMARC/FMS Was VXXN-8

BUNO TYPE LOCATION COMMENTS

150528 UP-3A AMARC Bounce Was VXXN-8 Bounce
150529 EP-3A Hawkins&Powers Parts Bird
150604 P-3A AMARC/Reclamation
150605 UP-3A NAS Barbers Pt. (ETD)
150606 P-3A K-Tech Av. Parts Bird
150607 UP-3A AMARC/FMS Chile Selectee
150608 P-3A AMARC/Reclamation
150609 P-3A K-Tech Av. Parts Bird
151349 P-3A K-Tech Av. Parts Bird
151350 Strike (Water collision, VP-6, So. China Sea, 1968)
151351 P-3A K-Tech Parts Bird
151352 TP-3A VP-31
151353 UP-3A AMARC/FMS Chile Selectee
151354 UP-3A AMARC/FMS Parts Bird
151355 P-3A Aero Union
151356 P-3A AMARC/FMS
151357 TP-3A VP-30
151358 UP-3A AMARC/Reclamation
151359 P-3A Aero Union #24 Fire Fighter (Crashed in Montana, 1991)
151360 P-3A AMARC/FMS
151361 P-3A Aero Union #25 Fire Fighter
151362 Strike (water collision, VP-45, Arg, NL 1964)
151363 Strike (ran off runway, VP-45, Adak, 1969)
151364 TP-3A VP-30
151365 Strike (water collision, VP-4, Japan, 1967)
151366 P-3A AMARC/FMS
151367 UP-3A NAS Bermuda
151368 P-3A AMARC/War Reserve
151369 P-3A Aero Union Fire Fighter
151370 TP-3A VP-30
151371 TP-3A VP-30
151372 P-3A Aero Union #23 Fire Fighter
151373 P-3A NADEP Alameda Parts Bird
151374 P-3A NAS JAX Gate Guard
151375 TP-3A VP-30
151376 TP-3A NAS Barbers Pt. (ETD)
151377 P-3A Aero Union Parts Bird
151378 P-3A AMARC/FMS
151379 TP-3A VP-30
151380 Strike (Ground collision, VP-16, Bermuda, 1965)
151381 Strike (Wheels up Indg, VP-62, JAX, 1978)
151382 TP-3A VP-30
151383 P-3A AMARC/FMS Chile selectee
151384 UP-3A AMARC/FMS Fire Fighter
151385 P-3A Aero Union #21
151386 P-3A AMARC/Reclamation
151387 P-3A Aero Union Fire Fighter
151388 P-3A AMARC/Reclamation
151389 P-3A AMARC/FMS
151390 P-3A "Slick" U.S. Customs Service
151391 P-3A Aero Union #00 Fire Fighter
Borrowed & used by Allison as GMA 2100 tuboprop test bed
151392 TP-3A VP-30
151393 P-3A AMARC (Reclamation)
151394 TP-3A VP-30
151395 P-3A "Slick" US Customs Service
151396 P-3A AMARC (Reclamation)
151400 P-3A AMARC/FMS TACNAVMOD
152141 UP-3A AMARC/FMS Chile Selectee
152142 P-3A AMARC/FMS TACNAVMOD
152143 P-3A AMARC/FMS Thailand Selectee
152144 Strike (Ground collision, VP-48, Japan)
152145 P-3A Spanish Air Force
152146 P-3A AMARC/FMS TACNAVMOD
152147 P-3A AMARC was Gen Offshore
152148 P-3A AMARC/FMS TACNAVMOD
152149 Strike (Spanish Air Force, Spain 1977)
152150 UP-3A NADC Test bed A/C
152151 Strike (Engine failure, VP-6, Cubi Pt., 1971)
152152 P-3A Nat'l Museum Aviation, Pensacola
152153 P-3A Spanish Air Force
152154 P-3A AMARC/FMS TACNAVMOD
152155 Strike (Disappeared, VP-31, Calif., 1972)
152156 P-3A NAS Brunswick Park Display
152157 P-3A AMARC/FMS TACNAVMOD
152158 Strike (VP-64, Waco, TX,) 1987 NAWC-23

BUNO TYPE LOCATION COMMENTS

152159 Strike (Explosion, VP-17, Nevada, 1970)
152160 P-3A NAS Bermuda Gate Guard
152161 Strike (Hard Landing, VP-69, Whidbey I., 1981)
152162 P-3A AMARC/FMS TACNAVMOD
152163 P-3A AMARC/FMS Thailand parts
152164 P-3A NADEP Alameda Parts Bird
152165 P-3A AMARC/FMS Chile Selectee
152166 Strike (wheels up Indg, VP-69, Whidbey I., 1989)
152167 P-3A AMARC/FMS TACNAVMOD
152168 P-3A AMARC/FMS TACNAVMOD
152169 UP-3A VPU-2 NAS Barbers Pt.
152170 P-3A "Slick" U.S. Customs Service
152171 Strike (Water collision, VP-19, 1966)
152172 Strike (Ground collision, VP-19, Michigan, 1966)



Aero Union Firefighter Chico, CA No. 151369

152173 P-3A AMARC/FMS TACNAVMOD
152174 P-3A AMARC/FMS TACNAVMOD
152175 P-3A AMARC/FMS TACNAVMOD
152176 P-3A AMARC/FMS TACNAVMOD
152177 P-3A AMARC/FMS Thailand parts
152178 P-3A K-Tech Parts Bird
152179 UP-3A AMARC/FMS
152180 P-3A AMARC/FMS TACNAVMOD
152181 P-3A AMARC/FMS TACNAVMOD
152182 Strike (Ground collision, VP-44, Morocco, 1972)
152183 P-3A AMARC/FMS TACNAVMOD
152184 P-3A AMARC/FMS Thailand Selectee
152185 P-3A AMARC/FMS Thailand Selectee
152186 P-3A AMARC/FMS
152187 P-3A AMARC/FMS

P-3B Orions

152718 P-3B VP-60
152719 EP-3J VAQ-33 Key West
152720 Strike (Ground collision, VP-1, Hawaii, 1983)
152721 P-3B AMARC/Hold From VP-93
152722 P-3 AEW&C U.S. Customs N147CS (#3)
152723 P-3B AMARC/Hold From VP-93
152724 Strike (Water collision, VP-23, Azores, 1978)
152725 P-3B VP-94 Sched. AMARC
152726 P-3B VP-69
152727 UP-3B VQ-1
152728 P-3B VPU-1 NAS Brunswick
152729 P-3B VP-60 Sched. AMARC
152730 P-3B AMARC
152731 P-3B VP-90
152732 P-3B VP-67
152733 Strike (Wheels up Landing, VP-1, Hawaii 1983)
152734 P-3B AMARC/Hold From VP-93
152735 P-3B (Heavy) NASA EFIS Mod
152736 P-3B AMARC/Hold From VP-94
152737 P-3B AMARC
152738 RP-3D VXXN-8 Birdseye/Seascan
152739 NP-3B NAWC-23 Special Project
152740 P-3B VP-69 Sched. AMARC
152741 P-3B VP-94
152742 P-3B VP-60
152743 P-3B AMARC/Hold From VP-67
152744 P-3B VP-69
152745 EP-3J VAQ-33 Key West
152746 P-3B VP-69
152747 P-3B VP-64 Sched. AMARC
152748 P-3B VP-93
152749 Strike (Water Collision, VP-10, Brunswick, 1973)
152750 P-3B VXXN-8 Sched. AMARC
152751 P-3B VP-60
152752 P-3B NATC FWATD Pax River

BUNO	TYPE	LOCATION	COMMENTS
152753	P-3B	VAQ-33	Sched. AMARC
152754	P-3B	VP-66	
152755	P-3B	VAQ-33	Sched. Bounce Bird
152756	P-3B	AMARC/Hold	From VP-66
152757	Strike (Wing Separation, VP-8, Maine, 1978)		
152758	P-3B	AMARC	War reserve
			Once Tested Feasibility of Orion Inflight Refueling
152759	P-3B	VP-90	Sched. AMARC



Burmuda Gate Guard No. 152160

152760	P-3B	AMARC/Hold	
152761	P-3B	VP-67	Sched. AMARC
152762	P-3B	AMARC/Hold	From VP-68
152763	P-3B	VP-67	
152764	P-3B	VP-94	
152765	Strike (Hard Landing, VP-31, Lemoore, 1969)		
152886	New Zealand "P-3K" Orion (NZ4201)		
152887	New Zealand "P-3K" Orion (NZ4202)		
152888	New Zealand "P-3K" Orion (NZ4203)		
152889	New Zealand "P-3K" Orion (NZ4204)		
			(First Orion modified as a P-3K)
152890	New Zealand "P-3K" Orion (NZ4205)		
153414	P-3B	NAWC-23	Special Projects
153415	P-3B	VP-64	IPADS Mod Prototype
153416	P-3B	VP-94	
153417	P-3B	AMARC/Hold	From VP-94
153418	P-3B	AMARC/Hold	
153419	P-3B	VP-93	IPADS Mod
153420	P-3B	VP-90	
153421	P-3B	VP-67	
153422	P-3B	VP-93	
153423	P-3B	AMARC/Hold	From VP-90
153424	P-3B	VP-90	Sched. AMARC
153425	P-3B	VQ-2	
153426	P-3B	VP-93	Sched. AMARC
			Once Had Mid-Air Collision with a C-130 (Wing Damage) Over Midway Island 12-12-71
153427	P-3B	VP-66	
153428	Strike (Ground Collision, VP-11, Canary I., 1977)		
153429	P-3B	NASA	
153430	P-3B	VP-66	Sched. AMARC
153431	P-3B	VP-93	
153432	P-3B	AMARC/Hold	From VP-93
153433	UP-3B	VQ-1	
153434	P-3B	AMARC/Hold	
153435	P-3B	VP-66	
153436	P-3B	VP-93	Sched. AMARC
153437	P-3B	VP-93	
153438	P-3B	VP-90	
153439	P-3B	VP-64	
153440	Strike (Water Collision, VP-26, So. China Sea, 1968)		
153441	P-3B	VP-60	

HEAVY WEIGHT BRAVOS

153442	P-3B	NRL-Pax Ri.	1st Prod. H/W
153443	RP-3D	VXN-8	Once NADC YP-3C Prototype
153444	P-3B	VP-60	
			Once involved in the Myaguez Incident, the aircraft was in direct communications with the White House while taking hits from enemy fire
153445	Strike (Water Collision via direct enemy fire VP-26, So. China Sea, 1968)		
153446	P-3B	VP-93	
153447	P-3B	VP-90	
153448	P-3B	VP-67	
153449	P-3B	VP-90	
153450	P-3B	DIFR VPU-1	Brunswick

BUNO	TYPE	LOCATION	COMMENTS
153451	P-3B	VP-94	
153452	P-3B	VP-93	
153453	P-3B	VP-67	
153454	P-3B	NADEP Alameda	Parts Bird
153455	P-3B	VP-90	
153456	P-3B	VP-94	
153457	P-3B	VP-60	
153458	P-3B	VP-90	
154574	P-3B	VP-66	
154575	P-3AEW	U.S. Customs (#4 under Mod)	
154576	P-3N	Norway	1st a/c
154577	P-3B	DIFR VPU-1	Brunswick
154578	P-3B	VP-60	
154579	P-3B	VP-64	
154580	P-3B	VP-67	
154581	P-3B	VP-94	
154582	P-3B	VP-64	
154583	P-3B	(Mod) Spain	was Norway
154584	P-3B	DIFR VPU-2	HI Special Mod
154585	P-3B	DIFR VPU-2	HI Special Mod
154586	P-3B	VP-64	
154587	RP-3D	VXN-8	Pax Riv.
154588	P-3B	VP-66	
154589	EP-3B	NRL	Replaces 153442
154590	P-3B	VP-64	
154591	Strike (Wheels up Landing, VP-6 Hawaii, 1980)		
154592	P-3B	VP-66	
154593	P-3B	VP-64	
154594	P-3B	VP-66	
154595	P-3B	VP-64	
154596	Strike (Engine failure/fire, Cubi Pt., VP-22, 1979)		
154597	P-3B	VP-60	
154598	P-3B	VP-64	
154599	P-3B	VP-66	
154600	RP-3D	VXN-8	
154601	P-3B	VP-94	
154602	P-3B	VP-69	
154603	P-3B	VP-67	
154604	P-3B	VP-67	
154605	P-3AEW	U.S. Customs NJ46CS (#2)	
155291	P-3K	New Zealand (NZ4206) (Ex RAAF)	
155292	P-3P	Portugal (4801) (prototype)	
155293	P-3P	Portugal (4802)	
155294	P-3P	Portugal (4803)	
155295	P-3P	Portugal (4804)	
155296	Strike (Hard Landing/Fire, Moffett, RAAF, 1968)		
155297	P-3P	Portugal (4805)	
155298	P-3P	Portugal (4806)	
155299	P-3 AEW	U. S. Customs N145CS (#1 proto)	
155300	P-3B	RAAF (Scrapped in Aust., Oxygen fire)	
			(Supplied wings to P-3C II 157330; fuselage in use as mock-up demonstrator/simulator with DSTO)

P-3C ORION (NUDS)

156507	EP-3E	VQ-1	Aries II Prototype
156508	P-3C	VP-65	
156509	P-3C	VP-65	
156510	P-3C	VP-30	U III Mod
156511	EP-3E	VQ-1	Aries II
156512	P-3C	VP-65	
			Dist. record holder Atsugi to Pax . Ri.
156513	P-3C	VP-65	
156514	EP-3E	NADEP ALAMEDA	For VQ-2
156515	P-3C	VP-62	
156516	P-3C	VP-31	U III Mod
156517	EP-3E	VQ-1	Aries II
156518	P-3C	VP-31	U III Mod
156519	EP-3E	NADEP ALAMEDA	For VQ-1
156520	P-3C	VP-65	
156521	P-3C	VP-91	
156522	P-3C	VP-22	U III Mod
156523	P-3C	VP-22	U III Mod
156524	P-3C	VP-65	
156525	P-3C	VP-65	
156526	P-3C	VP-65	
156527	P-3C	VP-62	U III Mod
156528	EP-3E	NADEP ALAMEDA	For VQ-1
156529	EP-3E	NADEP ALAMEDA	For VQ-1
156530	P-3C	VP-30	U III Mod
156599	P-3B	TACNAVMOD Spain	was Norway
156600	P-3B	TACNAVMOD Spain	was Norway
156601	P-3B	TACNAVMOD Spain	was Norway

BUNO	TYPE	LOCATION	COMMENTS
156602	P-3B	TACNAVMOD Spain	was Norway
			Involved in mid air with Soviet Fighter
156603	P-3N	Norway	2nd a/c
157310	P-3C	VP-49	U III Mod
157311	P-3C	VP-24	U III Mod
157312	P-3C	VP-16	U III Mod
157313	P-3C	VP-49	U III Mod
157314	P-3C	VP-49	U III Mod
157315	P-3C	VP-49	U III Mod
157316	EP-3E	NADEP/Alameda	For VQ-2
157317	P-3C	VP-22	U III Mod
157318	EP-3E	VQ-2	Aries II
157319	P-3C	VP-45	U III Mod
157320	EP-3E	VQ-2	Aries II
157321	P-3C	VP-16	U III Mod
157322	P-3C	VP-9	U III Mod
157323	P-3C	VP-91	U III Mod
157324	P-3C	VP-4	U III Mod
157325	EP-3E	VQ-2	Aries II
157326	EP-3E	NADEP ALAMEDA	For VQ-2
157327	P-3C	VP-22	U III Mod
157328	P-3C	VP-30	
157329	P-3C	VP-46	U III - Oasis I Mod
157330	P-3C	VP-31	U III Mod Phoenix
157331	P-3C	VP-31	
157332	Strike (Mid-Air, VP-47, Moffett, 1973)		
158204	P-3C	NADC	Test bed A/C
158205	P-3C	VP-46	U III Mod
158206	P-3C	VX-1	Smils Mod
158207	P-3C	VP-31	U III Mod
158208	P-3C	VP-46	U III Mod
158209	P-3C	VP-1	U III Mod
158210	P-3C	VP-30	U III Mod
158211	P-3C	VP-22	U III Mod
158212	P-3C	VP-1	U III Mod
158213	Strike (Tram Wire Coll., VP-50, Pago Pago, 1980)		
158214	P-3C	VP-31	
158215	P-3C	VP-46	U III Mod
158216	P-3C	VP-1	U III Mod
158217	P-3C	VP-46	U III Mod
158218	P-3C	VP-4	U III Mod
158219	P-3C	VP-31	
158220	P-3C	VP-31	U III Mod
158221	P-3C	VP-46	U III Mod
158222	P-3C	VP-9	U III Mod
158223	P-3C	VP-1	U III Mod
158224	P-3C	VP-16	U III Mod
158225	P-3C	VP-9	U III Mod
158226	P-3C	VP-1	U III Mod
158227	RP-3D	VXN-8	Project Magnet
158563	P-3C	VP-1	U III Mod
158564	P-3C	VP-24	U III Mod
158565	P-3C	VP-5	U III Mod
158566	P-3C	VP-5	U III Mod



EP-3E Aries 11 No. 156507

158567	P-3C	VP-5	U III Mod
158568	P-3C	VP-49	U III Mod
158569	P-3C	VP-45	U III Mod
158570	P-3C	VP-45	U III Mod
158571	P-3C	VP-5	U III Mod
158572	P-3C	VP-45	U III Mod
158573	P-3C	VP-24	U III Mod
158574	P-3C	VP-30	U III Mod
158912	P-3C	NADC/NATC	Testbed A/C
158913	P-3C	VP-46	U III Mod
158914	P-3C	VP-1	U III Mod
158915	P-3C	VP-1	U III Mod
158916	P-3C	VP-30	

BUREAU LIST

BUNO	TYPE	LOCATION	COMMENTS
158917	P-3C	VP-4	U III Mod
158918	P-3C	VP-4	U III Mod
158919	P-3C	VP-15	U III Mod
158920	P-3C	VP-16	U III Mod
158921	P-3C	VP-22	U III Mod
158922	P-3C	VP-5	U III Mod
158923	P-3C	VP-5	U III Mod
158924	P-3C	VP-5	U III Mod
158925	P-3C	VP-31	
158926	P-3C	VP-45	U III Mod
158927	P-3C	VP-49	U III Mod
258928	P-3C	VP-68	U I Mod
158929	P-3C	VP-49	U III Mod
158930		(Mid-air, VP-50, off San Diego, 1991)	
158931	P-3C	VP-5	U III Mod
158932	P-3C	VP-16	U III Mod
158933	P-3C	VP-45	U III Mod
158934	P-3C	VP-24	U III Mod
158935	P-3C	VP-24	U III Mod
159318	P-3C	VP-16	U III Mod
159319	P-3C	VP-45	U III Mod
159320	P-3C	VP-24	U III Mod
159321	P-3C	VP-4	U III Mod
159322	P-3C	VP-16	U III Mod
159323	P-3C	VP-9	U III Mod
159324	P-3C	VP-9	U III Mod
159325	Strike	(Mid-air, VP-50, San Diego, 1991)	
159326	P-3C	VP-9	U III Mod
159327	P-3C	VP-9	U III Mod
159328	P-3C	VP-4	



Ditched RAAF P-3C in Cocos I's.

159329	P-3C	VP-9	U III Mod
Iranian P-3F Orions ordered by Iran before the Islamic Revolution - The aircraft possesses equipment and characteristics of both Bravos and Charlies, several have been reported to have crashed while other lack spare parts and are presumed grounded. One P-3F was seen flying during the recent Gulf War.			
159342	P-3F	(S-8701)	
159343	P-3F	(S-8702) "Harpoon System Installed:	Presumed crashed
159344	P-3F	(S-8703)	
159345	P-3F	(S-8704)	
159346	P-3F	(S-8705)	
159347	P-3F	(S-8706)	

P-3C UPDATE I

159503	P-3C I	VP-22	
159504	P-3C I	VP-2	
159505	P-3C I	VP-69	
159506	P-3C I	VP-68	
159507	P-3C I	VP-68	Outlaw Hunter Mod
159508	P-3C I	VP-17	
159509	P-3C I	VP-69	
159510	P-3C I	VP-31	
159511	P-3C I	VP-68	
159512	P-3C I	VP-68	
159513	P-3C I	VP-68	
159514	P-3C I	VP-68	
159773	WP-3D	NOAA	1st Production A/C
159875	WP-3D	NOAA	2nd Production A/C
159883	P-3C I	VP-17	
159884	P-3C I	VP-68	
159885	P-3C I	VP-17	
159886	P-3C I	VP-17	
159887	P-3C I	VX-1	U III Mod
159888	P-3C I	VP-17	

159889	P-3C	VP-30	U III Mod
(Was NADC's Update II and 1st Update III test bed)			
159890	P-3C I	VP-69	
159891	P-3C I	VP-4	U III Mod
159892	Strike	(Ditch, VP-9, Adak, 1978)	
159893	P-3C I	VP-2	
159894	P-3C I	VP-31	
160283	P-3C I	VP-1	
160284	P-3C I	VP-68	
160285	P-3C I	VP-17	
160286	P-3C I	VP-9	
160287	P-3C I	VP-24	
160288	P-3C I	VP-17	
160289	P-3C I	VP-17	

P-3C UPDATE II

160290	P-3C II	NATC FWATD	Pax River
160291	P-3C II	NADC	Versatile Testbed
160292	P-3C II	NADEP JAX	Boeing's U IV Development A/C
160293	P-3C II	VX-1	
160294	P-3C II	Australia	Renumbered 160751
160610	P-3C II	VP-23	
160611	P-3C II	VP-92	
160612	P-3C II	VP-92	
160751	P-3C II	Australia	See 160294
160752	P-3C II	Australia	#10 Squad (A9-752)
160753	P-3C II	Australia	#10 Squad (A9-753)
160754	Strike	(Ditched, RAAF, Cocos Isl., 1991)	160755
P-3C II	Australia	#10 Squad (A9-755)	
160756	P-3C II	Australia	#10 Squad (A9-756)
160757	P-3C II	Australia	#10 Squad (A9-757)
160758	P-3C II	Australia	#10 Squad (A9-758)
160759	P-3C II	Australia	#10 Squad (A9-759)
160760	P-3C II	Australia	#10 Squad (A9-760)
160761	P-3C II	VP-30	
160762	P-3C II	VP-92	
160763	P-3C II	VP-23	
160764	P-3C II	VP-10	
160765	P-3C II	VP-23	
160766	P-3C II	VP-92	
160767	P-3C II	VP-92	
160768	P-3C II	VP-30	
160769	P-3C II	VP-92	
160770	P-3C II	VP-30	
160999	P-3C II	VP-92	
161000	P-3C II	VP-16	
161001	P-3C II	VP-92	
161002	P-3C II	VP-23	
161003	P-3C II	VP-23	
161004	P-3C II	VP-23	
161005	P-3C II	VP-26	
161006	P-3C II	VP-30	
161007	P-3C II	VP-26	
161008	P-3C II	VP-26	
161009	P-3C II	VP-30	
161010	P-3C II	VP-10	
161011	P-3C II	VP-26	Oasis II Mod
161012	P-3C II	VP-26	
161013	P-3C II	VP-26	
161014	P-3C II	VX-1	
161121	P-3C II	VP-30	
161122	P-3C II	VP-26	
161123	P-3C II	VP-23	
161124	P-3C II	VP-10	
161125	P-3C II	VP-30	
161126	P-3C II	VP-10	
161127	P-3C II	VP-26	
161128	P-3C II	VP-10	
161129	P-3C II	VP-10	
161130	P-3C II	VP-10	
161131	P-3C II	VP-10	
161132	P-3C II	VP-11	U II.5 Mod
161267	P-3C II.5	Japan JMSDF	(5001)
161268	P-3C II.5	Japan JMSDF	(5002)
161269	P-3C II.5	Japan JMSDF	(5003)
161329	P-3C II.5	VP-31	

P-3C UPDATE II.5

161330	P-3C II.5	VP-11	
161331	P-3C II.5	VP-30	
161332	P-3C II.5	VP-11	
161333	P-3C II.5	VP-11	
161334	P-3C II.5	VP-11	
161335	P-3C II.4	VP-11	
161336	P-3C II.5	VP-23	
161337	P-3C II.5	VP-11	
161338	P-3C II.5	VP-8	
161339	P-3C II.5	VP-8	
161340	P-3C II.5	VP-8	
161368	P-3C II.5	Netherlands	(300)
161369	P-3C II.5	Netherlands	(301)
161370	P-3C II.5	Netherlands	(302)
161371	P-3C II.5	Netherlands	(303)
161372	P-3C II.5	Netherlands	(304)
161373	P-3C II.5	Netherlands	(305)
161374	P-3C II.5	Netherlands	(306)
161375	P-3C II.5	Netherlands	(307)
161376	P-3C II.5	Netherlands	(308)
161377	P-3C II.5	Netherlands	(309)
161378	P-3C II.5	Netherlands	(310)
161379	P-3C II.5	Netherlands	(311)
161380	P-3C II.5	Netherlands	(312)
161404	P-3C II.5	VP-8	
161405	P-3C II.5	VP-11	
161406	P-3C II.5	VP-8	
161407	P-3C II.5	VP-8	
161408	P-3C II.5	VP-10	
161409	P-3C II.5	VP-8	
161410	P-3C II.5	NAWC-23	Special Project



Dutch P-3C II.5 No. 161375

161411	P-3C II.5	VP-10	
161442	P-3C II.5	VP-6	
161443	P-3C II.5	VP-6	
161444	P-3C II.5	VP-6	
161445	P-3C II.5	VP-6	
161585	P-3C II.5	VP-6	
161586	P-3C II.5	VP-6	
161587	P-3C II.5	VP-23	
161588	P-3C II.5	VP-23	
161589	P-3C II.5	VP-31	
161590	P-3C II.5	VP-31	
161591	P-3C II.5	VP-6	
161592	P-3C II.5	VP-10	
161593	P-3C II.5	VP-10	
161594	P-3C II.5	VP-8	
161595	P-3C II.5	VP-8	
161596	P-3C II.5	VP-6	

P-3C UPDATE III

161762	Strike	(Hard Landing, VP-31, Crows Landing, 1990). Was the 1st update III production Orion	
161763	P-3C III	VP-40	
161764	P-3C III	VP-40	
161765	P-3C III	VP-40	
161766	P-3C III	VP-91	
161767	P-3C III	VP-40	
162314	P-3C III	VP-40	
162315	P-3C III	VP-40	
162316	P-3C III	VP-40	
162317	P-3C III	VP-40	
162318	P-3C III	VP-91	

BUNO	TYPE	LOCATION	COMMENTS
------	------	----------	----------

2nd BATCH OF P-3C UPDATE II.5

162656	P-3C II.5	Australia	#11 Squad (A9-656)
162657	P-3C II.5	Australia	ESM Testbed A/C
			#11 Squad (A9-657)
162658	P-3C II.5	Australia	#11 Squad (A9-658)
162659	P-3C II.5	Australia	#11 Squad (A9-659)
162660	P-3C II.5	Australia	#11 Squad (A9-660)
162661	P-3C II.5	Australia	#11 Squad (A9-661)
162662	P-3C II.5	Australia	#11 Squad (A9-662)
162663	P-3C II.5	Australia	#11 Squad (A9-663)
162664	P-3C II.5	Australia	#11 Squad (A9-664)
162665	P-3C II.5	Australia	#11 Squad (A9-665)
162770	P-3C III	NADC	Versatile Testbed A/C
162771	P-3C III	VP-22	
162772	P-3C III	VP-46	
162773	P-3C III	VP-47	
162774	P-3C III	VP-47	
162775	P-3C III	VP-47	
162776	P-3C III	VP-24	
162777	P-3C III	VP-47	
162778	P-3C III	VP-47	
162998	P-3C III	VP-47	



Experimental Paint on No. 162665

162999	P-3C III	VP-47	
163000	P-3C III	VP-22	
163001	P-3C III	VP-62	
163002	P-3C III	VP-62	
163003	P-3C III	VP-62	
163004	P-3C III	VP-62	
163005	P-3C III	VP-62	
163006	P-3C III	VX-1	
163289	P-3C III	VP-62	
163290	P-3C III	VP-91	
163291	P-3C III	VP-91	
163292	P-3C III	VP-16	
163293	P-3C III	VP-49	
163294	P-3C III	VP-91	
163295	P-3C III	VP-91	Last Navy P-3

NEW P-3C UPDATE III FOR NORWEGIAN AIR FORCE

163296	P-3C III	Norway	(3296)
163297	P-3C III	Norway	(3297)
163298	P-3C III	Norway	(3298)
163299	P-3C III	Norway	(3299)

Pakistani P-3C Update II.75 Orions purchased by Pakistan due to a military sales freeze per the presser sanctions, these aircraft have been held back and sent to the desert AMARC for "long time storage"

164467	P-3C II.5	Pakistan	
164468	P-3C II.5	Pakistan	
164469	P-3C II.5	Pakistan	

CANADIAN CP-140 AURORAS

140101	CP-140	CFB Greenwood	Testbed A/C (CP-101)
140102	CP-140	Canada	Greenwood (CP-102)
140103	CP-140	Canada	Greenwood (CP-103)
140104	CP-140	Canada	Greenwood (CP-104)
140105	CP-140	Canada	Greenwood (CP-105)
140106	CP-140	Canada	Greenwood (CP-106)
140107	CP-140	Canada	Greenwood (CP-107)
140108	CP-140	Canada	Greenwood (CP-108)
140109	CP-140	Canada	Greenwood (CP-109)
140110	CP-140	Canada	Comox (CP-110)
140111	CP-140	Canada	Comox (CP-111)
140112	CP-140	Canada	Greenwood (CP-112)

BUNO	TYPE	LOCATION	COMMENTS
------	------	----------	----------

140113	CP-140	Canada	Greenwood (CP-113)
140114	CP-140	Canada	Greenwood (CP-114)
140115	CP-140	Canada	Greenwood (CP-115)
140116	CP-140	Canada	Greenwood (CP-116)
140117	CP-140	Canada	Comox (CP-117)
140118	CP-140	Canada	Comox (CP-118)

CANADIAN CP-140A ARCTURUS

Currently being completed at IMP Halifax.
Delivery to CFB Greenwood starting 11-92).

140119	CP-140A	Canada	Greenwood (CP-119)
140120	CP-140A	Canada	Greenwood (CP-120)
140121	CP-140A	Canada	Greenwood (CP-121)

JAPANESE JMSDF P-3C U11.5 ORIONS

5004-5008 Assembled by Kawasaki Heavy Industries from Lockheed "knockdowns".
5009 First KHI production under license.
5010-5069 Update II.5 production
5070-5088 Update III production
9171-9172 EP-3C Orions

P-3 ORION PRODUCTION SUMMARY

United States			
U. S. Navy	P-3A	158	
	P-3B	125	
	P-3C	266	
	RP-3D	1	
Total Navy Aircraft		550	
Other Nations			
RNZAF	P-3B/K	5	
RAAF	P-3B	10	
	P-3C	20	
RNOAF	P-3B	5	
	P-3C	4	
KON. Marine	P-3C	13	
Canadian Forces	CP-140	18	
	CP-140A	3	
JMSDF	P-3C	3	
Iran	P-3F	6	
Pakistan	P-3C	3	
NOAA	WP-3D	2	
Total Lockheed Orion Production		642	
License Production - Japan			
JMSDF	P-3C	85	
JMSDF	EP-3C	2	
Future Production			
Korea	P-3C	8	
Acquired From Other Nations			
SAF (USN) and	P-3A	7	
(RNOAF)	P-3B	5	
PoAF (RAAF)	P-3P	6	
RTNAF (USN)	P-3T	3	
Chile (USN)	UP-3A	8	

PATROL SQUADRONS

Squadrons Wing	NAS	
VP-1 Screaming Eagles	2	Barbers Pt.
VP-4 Skinny Dragons	2	Barbers Pt.
VP-5 Mad Foxes	11	Jacksonville
VP-6 Blue Sharks	2	Barbers Pt.
VP-8 Tigers	5	Brunswick
VP-9 Golden Eagles	10	Moffett Field
VP-10 Red Lancers	5	Brunswick
VP-11 Pegasus	5	Brunswick
VP-16 War Eagles	11	Jacksonville
VP-17 White Lightings	2	Barbers Pt.
VP-19* Big Red	10	Moffett Field
VP-22 Blue Geese	2	Barbers Pt.
VP-23 Sea Hawks	5	Brunswick
VP-24 Batmen	11	Jacksonville
VP-26 Tridents	5	Brunswick
VP-30 Pros Nest	11	Jacksonville
VP-31 Black Lightings	10	Moffett Field
VP-40 Fighting Marlins	10	Moffett Field
VP-44 Golden Pelicans	5	Brunswick
VP-45 Pelicans	11	Jacksonville
VP-46 Gray Knights	10	Moffett Field
VP-47 Golden Swordsmen	10	Moffett Field
VP-49 Woodpeckers	11	Jacksonville
VP-48* The Boomers	10	Moffett Field

VP-50*	Blue Dragons	10	Moffett Field
VP-56*	Dragons	11	Jacksonville
VP-60	Cobras		Res. Chicago
VP-62	Broadarrows		Res. Jacksonville
VP-64	Condors		Res. Willow Grove
VP-65	Tridents		Res. Pt. Mugu
VP-66	Liberty Bells		Res. Willow Grove
VP-67	Golden Hawks		Res. Memphis
VP-68	Black Hawks		Res. Washington, DC
VP-69	Totems		Res. Whidbey Is.
VP-90	Lions		Res. Chicago
VP-91	Stingers		Res. Moffett Field
VP-92	Minutemen		Res. S. Weymouth
VP-93	Executioners		Res. Detroit
VP-94	Crawfish		Res. New Orleans
VQ-1	World Watchers		Agana, Gm.
VQ-2	(unconfirmed)		Rota, Sp.
VP-MAU*	Northern Sabers		Brunswick
VP-MAU*	Rolling Thunders		Moffett Field
VP-1	Special Operations		Brunswick, ME

*Disestablished

Other Units

VAQ-33	Firebirds		Key West
VX-1	Pioneers		Pax. River
VXN-8	World Travelers		Pax. River
NRL	Flight Support Detachment		Pax. River
NATC	Naval Air Test Center		Pax. River
PMTC	Pacific Missile Test Center		Pt. Mugu



Japan's New EP-3

BUNO LIST KEY

STRIKE -	Aircraft stricken off books due to accidents
AMARC -	Aircraft Main. and Rejuvenation Ctr Davis-Monthan
WAR RESERVE -	Kept in ready condition
SDLM -	Standard depot level maintenance
IPADS -	Improved processor and display system
NRL -	Naval Research Laboratory (Flight Support Det)
VP-MAU -	Master Augmentation Unit
FWATD -	Force Warfare Air Test Directorate, part of NATC
NATC -	Naval Air Test Center
NASC -	Naval Air Systems Command (NAVAIR)
NOAA -	National Oceanic and Atmospheric Administration
AIRES I -	P-3A modified to EP-3E
ARIES II -	P-3C modified to EP-3E
SMILS -	Sonobuoy Missile Impact Location System
EATS -	Extended Area Test System
OASIS -	OTH Airborne Sensor Information System
OTH -	Over-the-Horizon-Targeting System
ESM -	Electronic support measures
DIFAR -	Directional Frequency Analysis & Recording
TACNAVMOD -	P-3B AB Mod with P-3C Processing
FMS -	Foreign Military Sales





Terry Taylor

SMUGGLER'S BLUES

By Doug Oliver

CORPUS CHRISTI, Tx. Normally, these 14-hour missions can be monotonous. This time would be different.

Having sifted through hundreds of contacts on his tactical display, the U.S. Customs Service radar operator in the P-3 airborne early warning (AEW) aircraft, picked out a single contact of interest. He immediately began relaying information on the target to the pilot and to the ground control center hundreds of miles away.

The contact is flying north above a turbulent Caribbean Sea. His speed and altitude are suspicious to the experienced radar operator. No flight plan is filed for that route and the aircraft is not "squawking". That is most telling, since an inactive IFF transponder under these conditions, is not a normal move.

Surrounding the radar operator inside the Blue Eagle, other sensor operators have turned their attention to the contact. Each revolution of the hunter's dome-mounted radar antenna brings updated information that is processed by the central computer. With course and speed of the bogie firmly established, the data is passed to a second USCS P-3, a domeless slick, some 80 miles away from the target.

As large as the P-3 is, it has a certain stealth quality in this operation because the bad guys may never see it. If they do, it is too late to do anything about it.

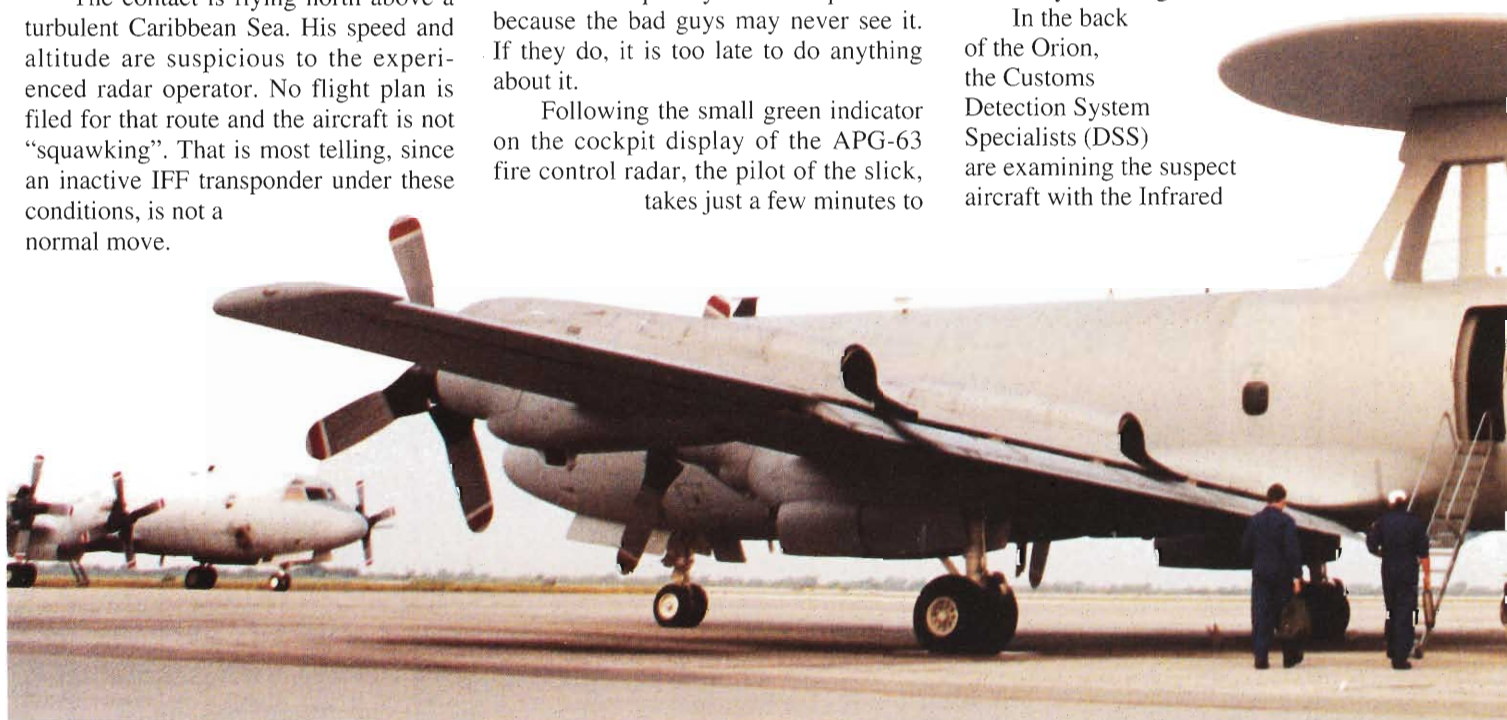
Following the small green indicator on the cockpit display of the APG-63 fire control radar, the pilot of the slick, takes just a few minutes to

close the gap with the suspect aircraft.

At about five miles out, a cockpit observer shouts, "There he is," pointing straight out over the glare shield. The pilot, a former Navy P-3 driver, inches his craft closer and closer, right in behind the suspect aircraft.

With the P-3 now positioned slightly below and behind the smaller aircraft - it seems close enough to touch - a large green X flashes on the radar display. "Smile," said the co-pilot, another veteran P-3 flyer. "We gotcha."

In the back of the Orion, the Customs Detection System Specialists (DSS) are examining the suspect aircraft with the Infrared



Detection System (IRDS); it is now easily identified as a twin-engine King Air.

"He doesn't even know we're here," states one DSS as he moves the joystick controller from side to side to view as much of the airplane as possible. "He would need a rearview mirror."

To the layman, it sounds too simple. But sure enough, when the suspect, who turns out to be carrying a load of cocaine, is arrested by police some time later after being followed by the P-3 to a covert landing site, he is incredulous when told he was trailed for so long by another aircraft.

With three domes and four slicks operating from the Surveillance Support Center at NAS Corpus Christi, Texas, the Customs Service has had a major impact on airborne drug traffic.

"We have all but shut down air smuggling into the U.S. from the south," said Peter Kendig, deputy director of the USCS air operations at Corpus Christi. "Sure, there is still dope coming in, but in much more difficult ways.

"We have made tremendous progress and we are light years ahead of where we started," he added.

One has only to look at "pounds on the table" to see what Kendig means. From July 1991 to this July, the Customs Service, along with assets from the Department of Defense, Drug Enforcement Agency and the U.S. Coast Guard, has seized more than 31,000 pounds of cocaine. Kendig said a majority of the haul came from intercepts by the USCS AEW aircraft.



John Rossino

Systems Specialists review test plan for acceptance of the third P3AEW aircraft

The primary distinguishing feature of the P-3 AEW aircraft is the 24-foot diameter rotating dome antenna for the APS-138 radar. With one sweep of the antenna, the radar operator can surveil some 196,000 square miles of airspace from sea level to 100,000 feet. In that area, he can track about 2,000 potential targets on the Lockheed Sanders display, thanks to the enhanced AYK-14 central computer, a variation of the standard Navy processor.

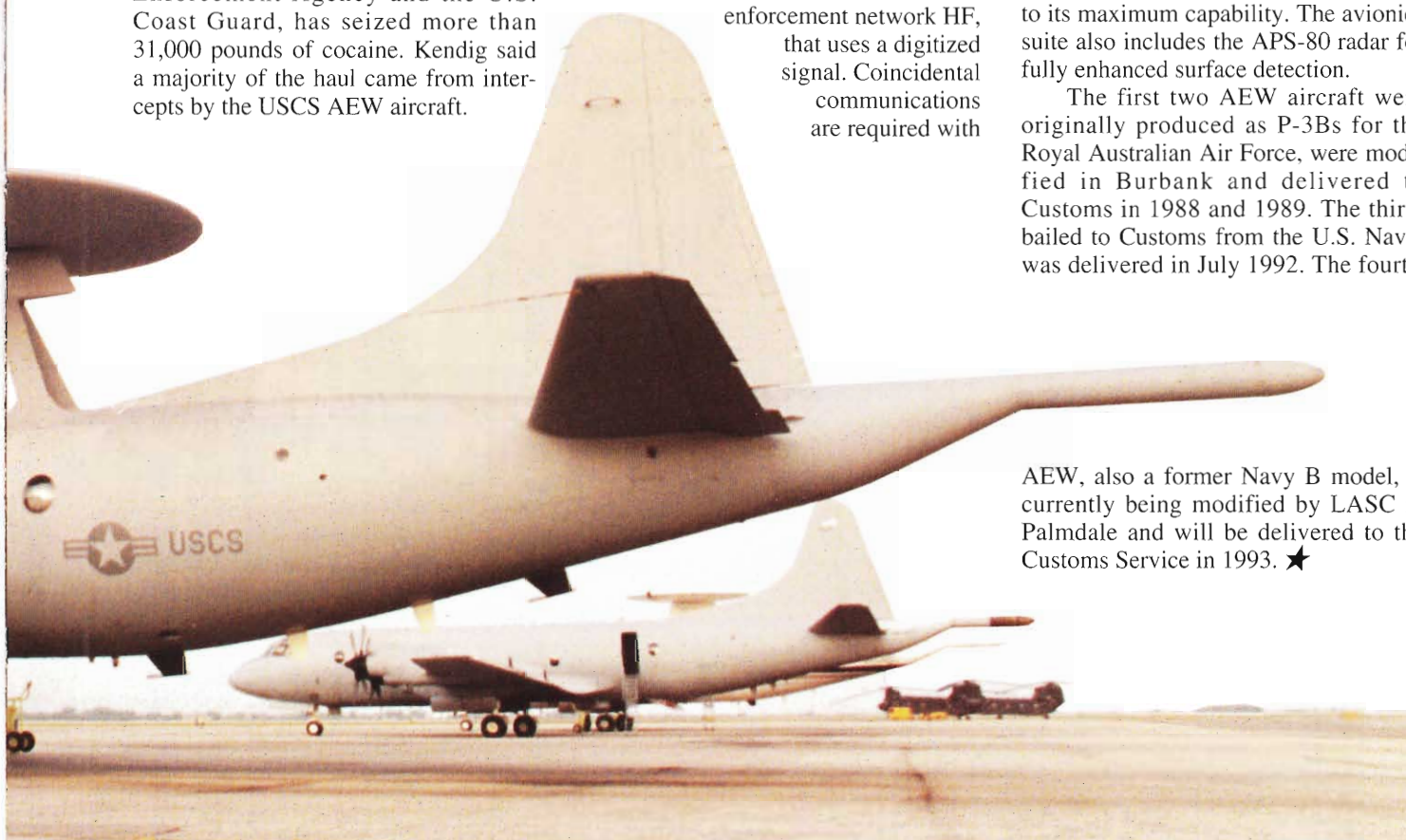
The No. 3 and newest aircraft, also boasts an enhanced communications suite with the ability to broadcast simultaneously on any four radios; there are four VHF/UHF units, two FMs, two HF's, one SATCOM and one "COTHEN," an over-the-horizon enforcement network HF, that uses a digitized signal. Coincidental communications are required with

air traffic control, Customs Service aircraft, surface craft from other agencies, local law enforcement officials, the Coast Guard, Navy and Air Force and sometimes the services of other American nations.

All upgrades to the third aircraft will be retrofitted into the first two, and will be standard features on a fourth dome, currently being modified by Lockheed.

The AEW P-3 incorporates the glass cockpit - EFIS, the Electronic Flight Instrument System. Another major improvement was the addition of a scan converter to the APS-138 radar. The scan converter optimizes the use of the two Lockheed Sanders miligraphic display screens by digitizing analog images which increases radar resolution to its maximum capability. The avionics suite also includes the APS-80 radar for fully enhanced surface detection.

The first two AEW aircraft were originally produced as P-3Bs for the Royal Australian Air Force, were modified in Burbank and delivered to Customs in 1988 and 1989. The third, bailed to Customs from the U.S. Navy, was delivered in July 1992. The fourth



AEW, also a former Navy B model, is currently being modified by LASC in Palmdale and will be delivered to the Customs Service in 1993. ★



Terry Taylor

SLICK ORIONS AND THE GROWTH OF CUSTOMS AIRBORNE INTERDICTION

By David Reade

U.S. Customs operates four ex-Navy P-3A Orions, referred to as SLICKS to differentiate them from the domed early warning aircraft. The P-3s are used for aircraft intercept missions and are equipped with nose-mounted Hughes APG-63 (F-15) fire control radar, Texas Instruments AAS-36 IRDS (Infrared detection set) and advanced communications and navigations systems. Slicks conduct long range interceptor and communications intercept flights. They often work in tandem with the AEW&C's in hunter-killer (track and intercept) teams for long range interdiction missions. Vectored in by AEW&C domes, the customs P-3s intercept suspect aircraft, getting in behind them for positive identification and then follow the targets to landing points or drop zones. They record off-loading of contraband and assisting drug authorities in apprehending smugglers.

Not all the slicks are modified the same. Two are long range interceptors and a third is a sophisticated communications aircraft. It provides long range communications relay with radio intercept capabilities. The fourth slick is a highly classified aircraft and equipped to fly special missions.

The first U.S. Customs utilization

of Navy Orions occurred in the early 1980s with borrowed P-3As. Later in 1983, Customs received their own P-3As from the Navy and modified them for the drug interdiction role.

Recently the Alphas have undergone an upgrade through the Standard Depot Level Maintenance program. The SDLM encompassed corrosion control, structural rework and upgraded avionics. The Orions have also added new Allison T56-A-14 Turo Prop engines (replacing the older -10 powerplants) and the newer tactical gray paint scheme.

U.S. Customs airborne activities extends back to the 1930s when confiscated bootlegger's aircraft were utilized for visual surveillance along U.S. borders with Mexico and Canada. After prohibition, Customs was ordered to give up these planes and turn them over to the Coast Guard. All through the next three decades (1940s -1960s) Customs would borrow aircraft from local sheriff and police departments, the Coast Guard and the Navy. On occasion Customs agents would rent airplanes to follow suspect aircraft in the hope of catching them when they landed.

It wasn't until 1969 that Customs would get their first airplane since the '30s. Under a congressionally approved

appropriations request, Customs was authorized to acquire, maintain and operate one aircraft. This was in response to the increase in smuggling activities supporting the late 1960s drug culture.

In 1971, a turning point was reached for the Customs service. It was then that a true air interdiction strategy was developed. "To detect, sort, intercept and track until apprehension", became the criterion by which Customs planes would not operate. This concept was implemented during a 60 day operation along the southern borders, utilizing 8 military aircraft equipped with radar and infrared sensors. They received four Grumman S-2 Trackers and four OV-1C Mohawks, the first sensor equipped aircraft to be utilized in the Customs service. It was at this point, Customs resurrected its 1930s practice of confiscating smuggler's aircraft and then utilizing them for anti-drug operations.

In 1983, Customs received a P-3A Orion, borrowed from the U.S. Navy. Customs agents had been flying on P-3s based in California and Florida for several years. They saw the potential of the aircraft's capabilities first hand and requested one of their own. Later, three more Alphas joined the fast growing fleet.

Under an advance technology budget plan, Customs received funding in 1984-85, to acquire more sophisticated aircraft with Advanced Electronic Surveillance Systems. Beside modifying existing aircraft with modern military radar units and sensors, the Customs service ordered two Lockheed P-3 Early Warning & Control Orion radar planes based on a prototype aircraft.

With the first aircraft not available for eighteen months, two Navy E-2 Hawkeyes were assigned in an interim capacity, providing medium range radar detection capability and an opportunity to work on the new radar system similar to that which would be used on the P-3 AEW&C.

With years of measured success for the Customs service's interdiction operations in southern Florida and the Caribbean, narco-traffickers switched tactics by the late 1980s. Smugglers began to look elsewhere for new routes into the United States. They found them along the southern border with Mexico and through the Gulf states. This prompted a new policy to step up air interdiction activities in the southern border regions. Over one hundred Customs aircraft have been committed to the effort, relying on the P-3 Orion fleet's sophisticated detection and communication equipment to take the lead.

Orions primarily operate along the U.S. southern borders from the coastal waters of California and Baja through the Gulf of Mexico into the Caribbean.

But in more recent months, both television and newspaper reports have spoken openly of U.S. Customs P-3s actively participating in the current ongoing U.S. anti-drug operations in Latin America. Although unconfirmed by the Customs department, the planes appear to be assigned to the control of the U.S. Military Southern Command Center in Panama (which includes the Defense Intelligence Agency, Central Intelligence Agency, National Security Agency, U.S. Customs and departments of the Defense, and the State.

The Customs Orions can provide technical tactical support previously unavailable to countries as far away as Bolivia. Perhaps it is a natural outgrowth of events that the drug hunters would eventually migrate closer to the origins of the "bad guys" and their cache. ★

Terry Taylor



The Slick intercepts a suspicious target which appears to be a DC-6. Original bearing information may reach the Slick, usually far out at sea, from either the P-3 AEW, Air Force AWACS, Aerostat control center, Navy and Coast Guards ships or ground radar stations. Long-range acquisition continues at 40-60 miles from the target via the APG-63 shown in top photo. It is a fire control radar unit, the same used in F-15s, which gives accurate bearing and azimuth. Close-in, the IRDS acquires the target even in the darkest of nights. A tight tuck, behind and under, captures the numbers, as Bill Peavey does, using powered gyroscopic binoculars in lower photo. Crew members are Ed Price (rt.), radar; pilot, Bryan Hawn and copilot, Jim Cornet.

Terry Taylor



Terry Taylor

P-3 AEW&C

A photograph of a P-3 Orion aircraft in flight, viewed from below. The aircraft is white with a large circular radar dome mounted on its back. The tail fin has a small 'U' marking. The aircraft is flying against a blue sky with scattered white clouds. The propellers are visible and appear to be in motion.

P-3N THE "N" IS FOR NORWEGIAN

By David Reade

In 1976, Norway extended its Economic Exclusion Zone of natural resources out 200 nautical miles from shore. It was a bold move which subsequently created a need for policing the area. The EEZ protection responsibility fell to the newly created Royal Norwegian Coast Guard. But the Coast Guard was already heavily burdened with tasks which included Maritime Patrol to identify illegal fishing vessels, ocean surveillance to locate pollution and oil spills and emergency search & rescue. Because the area was several times larger than Norway itself, the Coast Guard needed help. The Royal Norwegian Air Force #333 Squadron's five P-3B Orions were directed to assist the Coast Guard and provide regular patrol flights over the EEZ. Eventually, two additional Bravos were acquired to facilitate the EEZ protection missions when an increase in Soviet naval activities in the Norwegian Sea began to draw all of the squadron's resources.

After ten years of constant demands on their aircraft, the Royal Norwegian Air Force was looking to modernize its fleet. Several proposals were considered, but it was decided to replace the outdated P-3 Bravos with the new, more sophisticated P-3C Update III. Under the plan, two of the squadron's Bravos would be retained



Terry Taylor



and refurbished for the Coast Guard duties. Between June 1990 and May 1992, the two Orions were flown to the Naval Aviation Depot Facility, Jacksonville, and completely modified for re-designation as P-3N Orions. The aircraft were stripped of all operational equipment; Sensor Stations 1 and 2, unneeded ASW equipment and avionics racks were removed. The sonobuoy launching system, sono racks, associated plumbing and components were also stripped out of the airframes. After Standard Depot Level Maintenance (SDLM) work as performed, modifications began with cockpit upgrading to the TP-3A (or P-3C Update III compatible) flight station configuration. Also added, were a Radar Monitoring System (RMS), a new communications station was removed and combined with the new NAV station. Multi-purpose track and rails were installed on the floor and ceiling, extending from the old TACCO station, aft. The track will accommodate up to 30 business class-type seats for passenger transport. Ceiling rails will accommodate new lighting and suspension of survival equipment. The head has been modified to an airline type lavatory.

Sonobuoy drop capability has been retained by the installation of a new P-3C pressurized sonobuoy chute and free fall chute located near the aft bulkhead.

Core avionics for the P-3N will be as follows:

ARN-40	Duel VOR/ILS
ARA-50	UHF/DF (P-3C)
AJN-15	FDS (P-3C)
HSI	(P-3C)
APN-194	RAD ALT
ULQ-16	ECM/ESM
KTR-908	Duel VHF
ARC-190	Duel HF
VHF/FM	New Control Box
LTN-72	Inertial NAV
KY-75	Secure HF (P-3C)
APX-76	IFF Interrogator

Both aircraft received new interior floor panels and wall coverings in a uniform all-grey color.

The P-3Ns will continue with the Coast Guard surveillance flights using rotating crews from the #333 Squadron. Utility and logistics missions and crew flight training will also be performed.

Civil tasking may include polar station resupply and animal migratory and census observations.



RNAF





U.S. Navy

Bob Mackness, former editor of the "Airborne" ASW Log reported in the May 1977 issue, the future work performed at NAF Warminster, Pennsylvania, by the Naval Air Development Center's small fleet of six P-3s. Not much has changed but today NADC is eons away from where they were 15 years ago. In his article, Bob mentioned "Project" Beartrap. Beartrap aircraft are currently being flown in the fleet. Update III was in its beginnings. The APS-116 radar and new sonobuoy designs were taking shape. And the S-3A Viking mission system was still installed in "one of the most highly specialized P-3s around". Shown here is a research project utilizing lasers as a means to communicate with submarines.

TEST BED ORIONS OF THE NAVAL AIR DEVELOPMENT CENTER

By David Reade

"NAVAIRDEVCCEN" must sound like just another one of the thousands of alphabet soup acronyms for a naval group with little or no importance. In reality, this acronym is much more!

Unknown to many naval personnel, the Naval Air Development Center effects flight crews in their every day operations, from the fire resistant flight suit they wear and the boots on their feet, to their aircraft's performance and safety. In some cases the missions and the operating systems are borne of the center's development and design.

The center is "the Navy's principle research, development, test and evaluation center for naval aircraft". It has pioneered or improved upon every aircraft and airborne technology in the fleet today. Their objective is to advance existing aircraft and systems performance by exploring future designs and

technologies.

The center's personnel, numbering over 2500 civilian scientist and engineers, carry out projects from the exploratory research stage of a concept through development and testing of a prototype system. The center is comprised of 825 acres of RDT&E facilities, state-of-the-art laboratories, a super-computer complex, machine fabrication and engineering shops and maintenance hangers.

NADC develops systems through a series of milestones or planned procedures throughout the life cycle of the system. The center's test bed aircraft validate a system via proof-of-concept flight tests in simulated operational environments. Engineers can gather vital information on the system, which yields great insight towards changes needed to best optimize the system's capabilities

for its intended mission.

NADC's seven P-3 Orions have provided proof-of-concept test flights for numerous systems in the fleet now and many still under development, some specifically designed for P-3s. It was NADC that developed the concept specifications for the P-3 Orion and later, planned the advanced "A-New Program" of the Charlie model well before the first Alpha was put into service.

The center has subsequently designed all the follow on Orion updates and systems - advanced acoustic processing, computer software, radar, infrared surveillance systems (IRDS & FLIRS) ESM, improved MAD and next generation sonobuoys, culminating into one of the most advanced, electronically sophisticated aircraft flying today.

"Beartrap" is an early 1970s project



Lockheed

developed for P-3s by NADC. Beartrap is a unique airborne intelligence data collection and processing system which enhances submarine detection capabilities. Though Beartrap is classified, it is believed that approximately six Orions are equipped with the system, and are operated by regular Navy patrol squadrons on both coasts. The system is centered around an additional processor and unique display station located in the aircraft's aft observer position, which is secured behind a close curtain during missions. Beartrap has been continuously upgraded over the last 20 years.

The application of lasers in undersea technology has been of great interest at NADC. Under the "Tactical Airborne Laser Communication Program", lasers were utilized in various projects as a means to communicate with a submerged platform such as a submarine. Project "Y" Green/Blue utilized lasers of different wave lengths to demonstrate one-way (down-link) of communications from a P-3 to a submerged subma-

rine. Project AOR, Advanced Optical Receiver, tested the reverse, demonstrating a P-3 Orion aircraft receiving a laser (up-link) from a submerged submarine. The projects also gathered various information on cloud thickness, different sea conditions, aircraft altitude and water depth parameters that might effect the lasers.

The "ASW Laser Research Program", developed by NADC for DARPA utilizes a laser to detect undersea objects. LIDAR, "Light Detection And Ranging" is one such system to combine fiber-optics and lasers for detecting submerged targets. Here are listed some of the other advanced ASW projects which the test bed Orions hosted:

ERAPS Program. The Expendable Reliable Acoustic Path Sonobuoys Program is an expendable active sonobuoy that exploits the reliable acoustic path, undersea layer of water. This layer is unaffected by near surface or bottom bounce propagation that effects most active ASW buoys. A

sonobuoy that operates within this layer has a greater range capability than current active sonobuoy systems.

ADARS-DICASS Program. The Air Deployed Active Receiver System is designed to improve the Directional Command Activated Sonobuoy System. SAR, Synthetic Aperture Radar, first tested on a Center test bed Orion, is a radar of different wave lengths (X, L & C) that uses the motion of the aircraft to create a doppler phase history. This forms a picture-like image of the entire surface structure, much like terrain following systems.

ISAR, Inverse Synthetic Aperture Radar uses the doppler effect created by the motion of the object in the ocean. Information is gained in the form of a dimensional outline of the target bobbing in the surrounding water.

NADC Orion test beds are unique and as varied as the systems they test. They have in common only the quick installation rails and equipment racks that accommodate prototype systems.

Aircraft number 148883 was the first production P-3A Orion delivered to the Navy. It is now a UP-3A flying acoustic sensor laboratory with a next generation acoustic sensor system comprised of special recording/analysis equipment installed. The Orion was once used to test and develop the SAR system, the BEARTRAP system and a new joint civilian/military "Collision-Avoidance" system. It is currently engaged in "HARPASS" (High Altitude Reconnaissance Platform Surveillance System.)

Aircraft number 148889 is a UP-3A which was once modified as the S-3 Viking avionics system test bed and reconfigured with the S-3 flight and tactical stations installed inside the Orion fuselage. This aircraft is currently involved in testing the over-the-horizon targeting system.

Aircraft number 152150 is a UP-3A known as "The Glass Bottom Orion". It was a P-3A retired to the desert bone yard when it was reactivated by NADC in 1987. Stripped and gutted, the aircraft was heavily modified with new avionics, new interior arrangement and four optical windows installed into reinforced floors. Housed in these window bays are lasers as part of the ASW Laser Research Protect. The Orion is currently participating in the ERAPS project while conducting wear-testing of the NADC



U.S. Navy

All versatile test bed Orions are equipped with a universal rail system to accommodate avionics systems for testing.

ORION THE VERSATILE

developed UNICOAT primer. The whole port side of the aircraft is painted with the sandy brown undercoat while the starboard side is painted with a standard primer coating.

Aircraft number 158204 is a P-3C non-acoustic sensor aircraft known as the "Laser Orion". This aircraft is modified with two optical windows housing a laser generator and laser receiver sensor

for the Tactical Airborne Laser Communication Program. Other projects flown on this Orion include the Towed MAD and currently the Improved (Digital) MAD projects.

Aircraft number 158912 is a P-3C Update III (Mod) jointly operated with NATC's force warfare test directorate. As a versatile test bed aircraft, it is currently involved in ERAPS, TSS and

Post Chex projects.

Aircraft number 160291 is a P-3C Update II modified as a versatile test bed aircraft and is currently flying the ADAR-DICASS project.

Aircraft number 162770 is a P-3C production Update III versatile test bed Orion currently participating in the ERAPS and ADAR projects as well as Post Chex and GPS - Phase III. ★

ACKNOWLEDGEMENT

The author would like to acknowledge and thank the test resources managers Chuck Ballaro and Mike McLain for their help in researching this NADC article. Thanks is also extended to Mr. L. Leffer of the Public Affairs Office for this valued assistance.



Terry Taylor

VP-3A ORIONS: "EXECUTIVE TRANSPORT AIRCRAFT"

by David Reade

In the late 1970s, five P-3 Orions were extensively modified for VIP transport of military dignitaries. Designed and performed by NARF, now NADEP, Jacksonville, the VP-3A conversion mod entails complete stripping of all aircraft sensor stations and maritime patrol equipment. The interior is then refurbished with executive suite facilities, staff seating areas, a conference wardroom, and a private stateroom with lavatory. Storage bins and cabinets are incorporated along the Orion fuselage. Amenities include sidewall wood paneling, carpeting and first class airline seating. An upgraded fully functional galley has replaced the old galley. No galley seating is available and there are no bunks adjacent to it, leaving plenty of

room for more suitable appliances. Two VP-3As have repositioned the galley altogether, occupying the space forward of the old sonobuoy rack. Avionics include color weather radar and state-of-the-art navigation systems. The communications center provides for sophisticated secure radios, SATCOM and link-up capabilities for military command and control missions.

The Administration Support Aircraft division of VP-30 at NAS Jacksonville operates three of the VIP Orions; one VP-3A is located at the Executive Transport Department of NAS Barbers Point, Hawaii. The fifth aircraft flies with the VR Detachment in Sigonella.

Not all the VP-3As are configured

the same. Each aircraft has slight differences in executive cabin and staff area sizes and in the quality of interior appointment.

It is noteworthy that other Orions exist with modifications similar to the VP-3As. Some UP-3A "utility" Orions are outfitted with partial VIP layout configurations, lacking some of the finer executive appointments. Other aircraft have been made adaptable for quick conversion to simpler VIP accommodation kits.

Thailand, soon to be the newest country to operate the P-3, plans to convert one of their aircraft to what is expected to be the ultimate in Orion VIP transportation. ★

RP-3D Orions Gather Oceanographic and Magnetic Research Information

by David Reade



Probably the best known of all derivative P-3s are the world traveling research aircraft of Oceanographic Development Squadron Eight or VXN-8 whose three distinctive orange and white RP-3Ds are based at Patuxent River Naval Air Station. Their mission is a very old one but the use of the P-3 as their scientific platform began in 1973 with the first plane built on the Lockheed production line among a block of Charlie models.

In support of the Defense Department and the U.S. Fleet, the squadron gathers scientific data worldwide via three projects: Birdseye, Outpost Seascan and Magnet. The aircraft are all mission specific so there are no two alike.

Project Birdseye concerns airborne ice reconnaissance, studying ice formations in the harsh environments of the arctic basin and marginal ice zones. Formation type, distribution and boundaries are surveyed in support of ASW, undersea mine warfare and logistical operations of the fleet.

Project Seascan studies the ocean environment, gathering data on currents, wave heights, sea floor topography, algae masses and thermal layers. As part of the acoustic propagation formula, this scientific data is essential to the fleet.

Project Magnet collects worldwide geomagnetic information of the earth's constantly changing magnetic field. The data is applied to both nautical and aeronautical navigation and even to MAD calibration.

After the production of the first RP-3D, which was the Magnet Bird, two P-3As were modified and redesignated RP-3As for Projects Seascan and Birdseye. Through the years several UP-3As were added temporarily, for back-up Project missions, logistical support and crew training.

In 1990, the RP-3As were retired and replaced by two RP-3Ds which had been modified from P-3B and C airframes. The Mod included a cockpit upgrade to the TP-3A (or P-3C II.5) configuration. This Mod also provided for each

aircraft, the capability to conduct both the Birdseye and Outpost Seascan Project missions.

The Navy drawdown will undoubtedly affect VXN-8 and their essential missions. It is not known exactly what changes will take place but so far it appears the squadron will not have funding in the FY 94 budget.

Confirmed by Naval Oceanographic Office (NAVOCEANO) located at Bay St. Louis, Mississippi, who tasks the squadron with its missions, VXN-8 will stand-down by October 1993.

Since the announcement, NAVOCEANO has investigated several possible options of placing the RP-3D Orions and their vital missions with other flying units.

After serious consideration of the budget constraints, NAVOCEANO has recommended that the Naval Research Laboratory's Flight Support Detachment be assigned the RP-3D Orions and the mission projects of VXN-8.

Under the recommendation, NRL would get the Project Magnet aircraft (Road Runner) and either the Project Birdseye (Arctic Fox) or Seascan (El Coyote) aircraft to conduct both of those mission requirements. NRL is currently operating numerous P-3 Orions for special purpose projects.

The flight detachment would need additional personnel to augment operation of the new aircraft and since the detachment is located at NAS Patuxent River where VXN-8 is stationed, it could utilize personnel who are already in place.

There is a possibility that the one aircraft not utilized would be sent to the AMARC's desert boneyard to be preserved as the replacement for the Birdseye/Outpost Seascan mission aircraft when it exceeds its service life.

Though this recommendation is currently awaiting approval by Washington, it indicates the need for these specialized and versatile Orions to continue their missions in support of the Navy's fleet operations. ★