LIGHT ATTACK SQUADRON FOUR
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From: Commanding Officer, Light Attack Squadron FOUR
To: Distribution List

Subj: Light Attack Squadron FOUR Historical Summary; 26 March 1969 to 31 August 1969

Encl: (1) Historical Summary

1. Light Attack Squadron FOUR (VAL-4), is the Navy's only squadron operating the OV-10A "BRONCO". Due to the general interest in the OV-10A, its employment in the Mekong Delta in South Vietnam, and the light-attack concept, this Historical Summary is provided. Addressees are invited to request further information if desired.

M. S. SCHUMAN

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HISTORICAL SUMMARY OF LIGHT ATTACK SQUADRON FOUR (VAL-4)

26 MAR 69 to 31 AUG 69

1. Background. The Mekong Delta covers the southern part of the III CTZ and all the IV CTZ of South Vietnam. Three years ago the Navy began its first river warfare operations since the civil war with the Patrol River Boats. The PBRs were assigned the mission of searching the waterways traffic of the Delta, looking for illigal cargo. The network of interdiction efforts continued until there were three separate task forces, CTF 115, 116, and 117, which operate in the coastal regions, rivers, and waterways, and other areas. As further interdiction efforts expanded, assets from these units were used to form a new concept of interdiction, called the FIRST SEALORDS. Additional air assets were needed to support these operations, and VAL-4 was commissioned for this task. VAL-4 provides air support not only for PBR operations, but also for PCFs, SEALS, combined Army/Navy/VNN operations and air support elsewhere when requested. The normal Light Attack Fire Team (LAFT) patrol will cover 300 nautical miles and the normal maximum radius of action on scrambles is eighty-five miles.

2. Short History. Light Attack Squadron FOUR began forming as part of VS-41 in October 1968 and commissioned as VAL-4 on 3 January 1969. Following a weapons deployment to Marine Corps Air Station, Yuma, Arizona the first two weeks in February, fourteen (14) OV-10As were surface-shipped to the Republic of Vietnam. Squadron personnel consisting of thirty-six officers which included two non-flying maintenance officers and one-hundred and ten enlisted men were special airlifted from NAS North Island to NSA Binh Thuy in the Mekong Delta, South Vietnam, on 23 March 1969. Of the thirty-four pilots, twenty-two were fleet experienced, some with several squadron tours and some with only one tour. Only two had prior combat experience. The remaining twelve pilots were assigned directly from the training command and had no prior fleet/combat experience.

The OV-10As arrived at Vung Tau, Republic of Vietnam on 4 April 1969, were depreserved, and the squadron began in-country training flights on 8 April 1969. On 19 April 1969, the squadron was declared fully operational and began around the clock combat operations in support of the Naval River Forces in the Mekong Delta.

3. Operating areas and Missions. VAL-4 is homeported at the Naval Support Activity Detachment Airfield (NSA) Binh Thuy. Fourteen aircraft are assigned with six aircraft assigned to each of two detachments and two aircraft are located at NSA Binh Thuy for periodic checks and corrosion control. Detachment ALPHA operates from the Vietnamese Air Force Base, Binh Thuy (6000' of runway) and Detachment BRAVO operates from Vung Tau, Army Airfield (4900' of runway). The maintenance facility at the NSA Field has 2000' of runway and is suitable only for maintenance flights.

The mission of VAL-4 is to support Riverine Warfare Forces. Normally the squadron operates within three kilometers of navigable waterways. There are times, however, that aircraft are called on to support Army or ARVN forces.

Detachment ALPHA supports basically the Southwestern half of the Mekong Delta and Detachment BRAVO supports the Northeastern portion of the Delta, including the Rung Sat Special Zone which encompasses the main shipping channel from Saigon to the South China Sea.

4. Missions. The squadron is currently flying four types of missions; (1) normal patrol, (2) overhead air cover, (3) scramble alert, and (4) gunfire/artillery spotting.

a. The armed reconnassiance patrol is flown by two aircraft on a preplanned route as assigned by the Squadron's operational commander, CTF 116. The patrols are flown in a section of two aircraft, called a Light Attack Fire Team (LAFT). These patrols account for eighty per cent of the squadrons flight time. While on patrol, the flight does visual reconnassiance and checks in with the various Naval Operational Centers (NOCs) along the route to determine if air assets are needed in the NOCs area of operation (AO). The NOC may request an air strike or may request merely a reconn of an area. Once airborne, the LAFT becomes in effect an airborne ready reaction team, and can be diverted to any area where contact is taking place. When the patrol nears the end of its assigned route, it has the option of checking with various sectors to determine if non-Navy units need air assets.

b. A second type of mission is the overhead air cover, or continuous on-station flight. The normal endurance of the OV-10A is three hours with internal fuel. With the addition of external fuel tank (which reduces the ordnance load) endurance is extended to four and one-half hours. This normally allows a fire team equipped with external fuel to provide three hours of on-station time. This type of operation is used when boats are transiting new areas, especially narrow canals or when a boat is aground and needs air cover until it can be repaired or refloated. On special operations, the squadron has provided fifteen hours of continuous overhead air coverage. During the suspected assault on Tay Ninh in June 1969, VAL-4 provided continuous dusk to dawn air coverage on the Vam Co Dong River.

c. The third type of mission is the scramble alert. Each detachment keeps two aircraft and four pilots on twenty-four hour a day ready alert status. Day or night, the average time from the alert to airborne is ten minutes. An airspeed of 180 knots (three miles a minute) is maintained allowing users to estimate the arrival of the LAFT on-station. While accounting for only five per cent of the squadron's flight time, the scramble alert is probably the most important mission.

d. The fourth type of mission flown by the Navy OV-10As is the Artillery/Naval gunfire support missions. Where as patrols, overhead air cover, and scambles are flown with two pilots in each aircraft, the gunfire spotting mission is flown by one pilot from VAL-4 and one Marine Air Observer, assigned to VAL-4 by COMNAVFORV. This single plane mission is flown to control artillery/naval gunfire on targets in the Navy controlled Rung Sat Special Zone.

5. Mission Profile. The normal patrol is scheduled for two hours. During the brief, the flight leader covers necessary items such as weather, restricted areas, free fire zones, patrol routes, authentication signals, emergencies, and operations that the LAFT could expect to support. Once airborne, the LAFT contacts an Air Force GCI site for flight following and artillery clearance. The co-pilot begins checking-in with the various NOCs for target information. Navigation is conducted normally using a 1:500,000 chart of the Delta. This chart is subdivided into areas covered by 1:50,000 charts, which is the military tactical chart. Each pilot and co-pilot has an average of sixty-five 1:50,000 charts, all necessary due to the wide area of OV-10A coverage. The charts are given a local reference number for ease in handling in the cockpit. All targets are identified by the military grid system (i.e., XS654921 or WR 549862). When the LAFT receives a target, it is plotted on the 1:500,000 chart for orientation and navigation to the target area. Once in the target area, the 1:50,000 is used for pin-point accuracy. The LAFT obtains its own clearnces, checks for friendly positions in the area, and identifies its own target. Although the LAFT is capable of working with Air Force Forward Air Controllers (FACs) and Army VR spotter, only five per cent of VAL-4's strikes are controlled by agencies other than the LAFT itself. The normal patrol is flown at 1500 to 2000'. The wingman is stepped up 500' and flies 1000 to 2000' abeam and slightly aft of the lead. This tactical formation allows maximum flexibility in maneuvering. In the target area the lead determines the roll in heading, amount of ordnance to be expended and the off-target heading. The wingman off-sets his roll in heading by thirty degrees and also covers the lead as he pulls off target. Enemy fire in the Delta is mostly small arms and light automatic weapons fire, with an occasional .50 caliber or higher. This type of fire allows the LAFT to make from eight to ten runs on a target, thus working the ordnance over a wider area. On completion, the two aircraft join and check each other over for possible battle damage. Scramble missions follow the same general profile, except that the target area is known prior to take-off.

6. Ordnance Used. Ordnance of the following types is available to VAL-4 for use by the OV-10A:

a. Five inch "zuni" FFAR with the MK-24 HE warhead, MK-32 ATAP warhead, with point or VT fuzing.

b. 2.75 inch FFAR, either HE or WP.

c. MK-4 20mm gun pod

d. 7.62mm for four internal mounted M-60 machine gun and the SUU-11 mini-gun.

e. MK-45 flares for night illumination.

The above range of weapons are quite suitable for the squadron's mission and types of targets encountered. The most common targets are bunkers, light structures, sampans, and personnel in tree-lines and in open fields. A typical OV-10A fire team is configured as follows:

a. Lead Aircraft.

(1) Four M-60 machine guns with 500 rounds of 7.62mm per gun, 2000 rounds total.

(2) MK-4 gun pod on center line (station three) with 750 rounds of 20mm combination AP, tracer, and HE.

(3) LAU-10 (four-shot zuni pod) on stations one and five.

(4) LAU-33 (two-shot zuni pod) on each wing station.

b. Wing Aircraft.

(1) Four M-60 machine guns with 500 rounds of 7.62mm per gun, 2000 rounds total.

(2) LAU-68 (seven shot 2.75" rocket pods) on stations two and four.

(3) LAU-10 (Four shot zuni pods) on station one.

(4) SUU-11 (7.62mm mini-gun) with 1500 rounds on station five.

(5) LAU-33 (two shot zuni pod) on each wing station.

For night operations, one zuni pod is dropped from the lead aircraft and is replaced by a SUU-44 flare pod with four sets (eight flares) of MK-45 flares. A SUU-44 is added to station three on the wing aircraft. The MK-45 flare burns for approximately three minutes when dropped from 3000' and one LAFT can provide twenty-four minutes of illumination, which is adequate for reconning and for attack.

The zuni is the most favored weapon by pilots and supported water-borne/ground units. The inherent weapon accuracy of the zuni combined with its high explosive power and stability of the OV-10A provides VAL-4 and the river forces with a powerful air-to-ground weapon system.

The 20mm projectile is one of the better airborne weapons available to attack aircraft. The MK-4 gun pod, a deadly and versatile weapon creates some maintenance problems. The MK-4 imposes a high weight/drag penalty for the OV-10A. This command favors a single 20mm gun in each sponson vice the M-60 machine gun.

7. Aircraft Performance. The performance of the OV-10A as a STOL aircraft is satisfactory at normal weights and without external stores. With the addition of each external store and the attendant weight/drag increase, the performance is reduced rapidly. With the average 35-40° C day in RVN, and the normal gross weight on take-off of 13,500 pounds 5000' of hard surface runway is adequate. Speed of the aircraft (150 KIAS cruise, 180 KIAS scramble) is adequate for the OV-10A in the Mekong Delta. VAL-4's OV-10As rarely exceed 5000' altitude, therefore a high altitude capability is not significant in the Mekong Delta. The twin T-76 engines, 715 SHP, are adequate for the squadrons type missions thus far. Pilots would prefer more horsepower, not for greater speed, but for shorter take-off rolls, better single engine capability, and most of all, better climb performance coming off target. During visual reconnaissance, very little value is gained at altitudes above 1000', even with binoculars. Desired roll-in altitude for rocket runs is 4000'. At heavy gross weights, there is a noticable time lapse from target identification to roll in altitude. Of course, more horsepower would get the aircraft off target faster. Night operations present pilots with several problems. Almost one-third of the squadrons flight time is flown at night. The bubble canopy, which is excellent for day observation, acts as a light trap during night operations. Reflections from aircraft lights are extremely distracting, and night ordnance deliveries using flares are vertigo inducing. Cockpit instrument lighting is adequate, but there is a need for additional fixed map lights in both the front and back cockpits for night navigation.

8. Maintenance Areas. The squadron arrived in RVN with 110 enlisted personnel, with 141 authorized. The enlisted allowance has been slowly added to, and is now near full strength. On arrival, the squadron had total responsibility for its own Intermediate Maintenance. As FASU Binh Thuy was built up, IMA functions were transfered to that organization. Presently, VAL-4 conducts it own IMA in Avionics and Weapons at Binh Thuy and in addition performs all calendar inspections and service change installations. NAF Cam Rhan Bay conducts parachute inspections and 3-M data processing, and HAMRON-16, Da Nang performs complete repair for the T-76 engine. The distances involved between the activities naturally cause delays in the maintenance effort, especially in the 3-M data accounting system. The OV-10A has proven to be a reliable aircraft and easy to maintain. Three maintenance areas of minor concern, all subject of separate correspondence, are the bog-down of the T-76 engine, erosion of the aircraft propellors due to the operating environments, and the lack of rotable spares of avionics equipment. Most of these units are AMO controlled and are simply not available for issue as spares or rotable pool items at this time.

9. Statistics. The following page is a stastical breakdown of operations and results. On 19 July 1969, the squadron lost one OV-10A due to enemy action, and has been operating with thirteen aircraft since that date. A replacement aircraft has been assigned, but not yet received.

STATISTICS
LIGHT ATTACK SQUADRON FOUR
26 MAR 69 to 31 AUG 69

	APR	MAY	JUN	JUL	AUG
TOTAL FLIGHT HOURS	660	810	1010	935	1105
SORTIES	395	430	529	485	656
OP. READY	81%	82%	80%	76%	84%
UTILIZATION	58%	58%	72%	69%	85%
MAN HOURS/FLIGHT HOURS	13.2	13.8	10.3	10.0	10.0

Maintenance man hours/flight hours includes Intermediate Maintenance Activity functions and gun pod maintenance in April and May. Operational ready and utilization percentages for the month of August are computed in accordance with OPNAVINST 5442.2J.

ORDNANCE EXPENDITURES

	ROUNDS
7.62mm	1,650,036
20mm	73,470
5" FFAR	8,650
2.75" FFAR	11,515
MK-45 Flares	2,094

ENEMY CASUALTIES

KILLED BY AIR (Body Count)	245	SAMPANS DESTROYED	119
KILLED BY AIR (Probably)	203	SAMPANS DAMAGED	144
KILLED BY AIR (Possibly)	73	BUNKERS DESTROYED	76
STRUCTURES DESTROYED	410	BUNKERS DAMAGED	54
STRUCTURES DAMAGED	280	BRIDGES DESTROYED	5
JUNKS DESTROYED	5	SECONDARY EXPLOSION	36
JUNKS DAMAGED	3	WATERBORNE LOGISTIC CRAFT	2

FRIENDLY CASUALTIES

Aircraft Lost (Direct Enemy Action)	1
Killed in Action (Pilots)	3
Wounded in Action	0
Number of aircraft hit by enemy fire	11