

Prowlers and Growlers **Electronic Warfare Superstars**

compiled by The Hook Staff



USN

The EA-6B *Prowler* and the EA-18G *Growler* airborne electronic attack (AEA) aircraft have been part of every aircraft carrier deployment since the early 1970s, the *Growler* making its first deployment relatively recently in 2009. Their primary mission is to protect other aircraft and fleet surface units by jamming hostile radars and communications. The EA-6B has served this mission well and was an integral part of the fleet's first line of offense throughout its storied career until returning from its final U.S. Navy deployment with VAQ-134 *Garudas* in November 2014.

The Marine Corps will continue to fly the EA-6B through Fiscal Year 2019 (FY '19), where it will provide AEA support to Fleet Marine Forces — to include electronic attack (EA), tactical electronic support (ES), electronic protection and High-speed Anti-Radiation Missile (HARM).

The *Prowler's* on board system of receivers is used to collect tactical electronic order of battle (EOB) data that can be disseminated airborne for real-time command and control decisions, or recorded and processed after missions to provide updates to future operations. The ALQ-99 Tactical Jamming System (TJS) is used to provide active radar jamming support to support assault and attack aircraft, as well as ground units. Additionally, suppression of enemy air defenses (SEAD) capability is available with the employment of HARM.

Marine *Prowlers* may be land-based from prepared airfields, or they can operate from expeditionary airfields. They may also be sea-based, operating from aircraft carriers providing support in past operations. Marine *Prowlers* are unique in their integration with the Tactical Electronic Processing and Evaluation System, which provides post-mission analysis of EA-6B ES data for reporting and updating orders of battle. It also provides post-mission analysis of jamming and HARM employment for reporting, assessing and storing mission data.

The *Prowler* will continue to serve the Marine Corps, as it did very capably for VMAQ-3 and -4 against Islamic State militants in Iraq in summer 2014 in *Operation Inherent Resolve*. They were joined in the fight later by VAQ-134 deployed in USS *George H.W. Bush* (CVN-77).

The EA-6B played a key role in SEAD during *Operation Desert Storm*, enhancing the strike capabilities not only of

carrier air wings but of U.S. Air Force and Allied forces as well. When the Air Force EF-111A *Raven* was retired in 1998, all radar-jamming missions were assigned to the *Prowler*, adding to the significance of the EA-6B in Joint warfare. With its jamming capability and HARM employment, the *Prowler* provided a unique national asset that was deployed from aircraft carriers and land bases in support of "expeditionary" deployments by USN and USAF units. Its ability to monitor the electromagnetic spectrum and actively deny an adversary's use of radar and communications is rivaled only by its replacement, the EA-18G *Growler*.

The *Prowler* was not configured with sophisticated navigation computers or air-to-air missiles. Therefore, *Prowler* aircrew used extensive pre-flight planning, manual range, bearing and time calculations to develop situational awareness in standoff support to ingressing attack missions. Its high subsonic speed and long range assisted in maintaining a decisive tactical advantage in electronic warfare even to the end of its proud legacy. It was a multimission capable platform that coupled human interface with a sophisticated electronic warfare package.

The heart of the EA-6B is the AN/ALQ-99 TJS. It can carry up to five pods (one belly mounted and two on each wing). Each pod is integrally powered and houses two jamming transmitters. The EA-6B can carry a mix of pods, fuel tanks and HARM, though a traditional SEAD loadout is three pods, one fuel tank and one HARM.

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Above: A VAQ-142 Gray Wolves EA-6B *Prowler* drops away from a U.S. Air Force KC-135R Stratotanker after refueling over the desert of Saudi Arabia, 3 Apr '98.

Right: VAQ-135 Black Ravens prior to flight operations on board USS *Nimitz* (CVN-68), 6 Aug '07.

The EA-6B tail fin pod, commonly referred to as “the football,” houses sensitive surveillance receivers, capable of detecting hostile radar emissions at long range. Emitter information is then processed by the central mission computer. Detection, identification, direction finding and jamming may be performed automatically or by the crew.

The crew consists of the pilot and three electronic countermeasures officers (ECMOs). The ALQ-99 jammers are operated by the two ECMOs in the aft cockpit. The ECMO in the right front seat is responsible for navigation, communications and defensive electronic countermeasures. Whether the crew of four was assigned to a Navy VAQ squadron deployed at sea, Marine Corps VMAQ squadron or a Jointly manned Navy land-based squadron, they came to the battlefield as a highly standardized crew that completed centralized training at NAS Whidbey Island.

From the Beginning

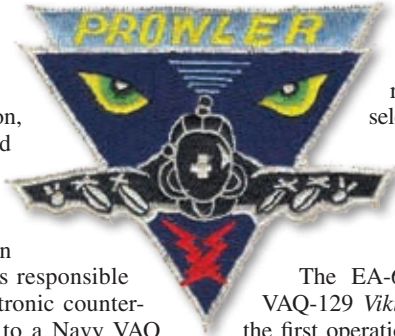
The *Prowler* is derived from the two-seat A-6 *Intruder* attack aircraft. The basic airframe was stretched and strengthened to accommodate a four-seat cockpit. In addition to the “football” at the top of the vertical fin, the gold embedded in the canopy has a distinguishing tint that is quite visible. The gold-plated look actually provides protection from electro-magnetic emissions.

The EA-6B *Prowler* has been continually upgraded over the years — the first was named “expanded capability” (EXCAP) beginning in 1973. Then came “improved capability” (ICAP) in 1976 and ICAP II in 1980. An ICAP II block upgrade provided the EA-6B with the capability of firing *Shrike* missiles and AGM-88 HARM.

Advanced and Improved Capability EA-6B

The Advanced Capability (ADVCAP) EA-6B *Prowler* was a development program initiated to improve the flying qualities of the EA-6B and to upgrade the avionics and electronic warfare systems. Only three prototypes were built.

Improved Capability (ICAP) was the cornerstone of the *Prowler* improvements throughout the majority of its life cycle. There were improvement phases including ICAP I, II and III, and block upgrades within the phases. Upgrades included improved jammer pod systems, tactical computer, introduction of the Carrier Aircraft Inertial Navigation System, new radios, improved receiver processing system, some digital cockpit instruments, an electronic flight instrumentation system and an



integrated Global Positioning System for navigation. ICAP III was the stepping stone aircraft into today’s EA-18G *Growler*. It added the advanced ALQ-218 receiver and software system that provided more precise selective-reactive radar jamming, deception and threat location. Additionally, cockpit displays, the Multifunction Information Distribution System (MIDS), and Link 16 data-link system were incorporated.

Early Operational History

The EA-6B entered service with Fleet Readiness Squadron VAQ-129 *Vikings* in September 1970. VAQ-132 *Scorpions* became the first operational squadron in July 1971 and began its first combat deployment to the Vietnam War on *America* (CV-66) 11 months later, soon followed by VAQ-131 *Lancers* on board *Enterprise* (CVN-65) and VAQ-134 *Garudas* on board *Constellation* (CV-64). EA-6B *Prowlers* flew 720 sorties during the Vietnam War in support of deployed U.S. Navy attack aircraft and USAF B-52 *Stratofortress* bombers.

Post-Vietnam War Prowler Action

During the 1983 invasion of Grenada, four VAQ-131 *Lancers* EA-6Bs supported the operation from *Independence* (CV-62) with CVW-6.

Following the Achille Lauro hijacking 10 October 1985, VAQ-137 *Rooks* from *Saratoga* (CV-60) provided electronic support measures during the interception of the Boeing EgyptAir 737 carrying four of the hijackers.

In April 1986 VAQ-137 *Rooks* from *Saratoga*, VMAQ-2 Det Y *Playboys* from *America* and VAQ-135 *Black Ravens* on board *Coral Sea* (CV-43) in the Gulf of Sidra jammed Libyan radar during *Operation El Dorado Canyon*.

Two years later, 18 April 1988, VAQ-135 *Black Ravens* with CVW-11 from *Enterprise* (CVN-65) jammed Iranian ground control intercept radars, surface-to-air missile guidance radars and communication systems during *Operation Praying Mantis*.

There were 39 EA-6B *Prowlers* involved in *Operation Desert Storm*, 27 from six aircraft carriers and 12 from USMC bases. During 4,600 flight hours, *Prowlers* fired more than 150 HARMs. Navy *Prowlers* flew 1,132 sorties and USMC *Prowlers* flew 516 with no losses.

With the retirement of the EF-111 *Raven* in 1998, the EA-6B was the only dedicated aerial radar jammer aircraft of the U.S. Armed Forces until the fielding of the Navy’s EA-18G *Growler* in 2009. The EA-6B *Prowler* has been flown in almost all American combat operations since 1972, and was frequently flown in support of U.S. Air Force combat missions.



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A VAQ-140 Patriots EA-6B Prowler assigned to CVW-7 on approach to USS Dwight D. Eisenhower (CVN-69), 24 Mar '12.



Electronic Attack in the Twenty First Century

In 2001 there were 124 *Prowlers*, divided between 13 Navy, four Marine, and four Joint Navy-Air Force “Expeditionary” squadrons. In 2009 the Navy EA-6B community began transitioning to the EA-18G *Growler*, an electronic warfare derivative of the F/A-18F *Super Hornet*.

All but one of the active-duty Navy EA-6B squadrons were based at NAS Whidbey Island, with the VAQ-136 *Gauntlets* stationed at NAF Atsugi, Japan, as part of CVW-5, the Forward-Deployed Naval Forces (FDFN) air wing that embarks in Japan-based *George Washington* (CVN-73). The *Gauntlets* returned to NAS Whidbey Island and began transition to the *Growler* in Spring 2013 and were relieved by the VAQ-141 *Shadowhawks* as part of CVW-5.

VAQ-209 *Starwarriors*, the Navy Reserve’s sole EA-6B squadron, was stationed at NAF Washington, Md. All Marine Corps EA-6B squadrons are located at MCAS Cherry Point, N.C. The USN has retired all EA-6B *Prowlers*, while the USMC expects to phase out the *Prowler* in 2019. The last Navy deployment was on *George H.W. Bush* in 2014 with VAQ-134.

USMC EA-6B Prowler Operations

Following the transition from the EA-6A aircraft to the EA-6B, Marine *Tactical Electronic Warfare Squadron Two* (VMAQ-2) continued to provide detachments (dets) to CVW-5 on board *Midway* (CV-41). In 1980 VMAQ-2 completed its assignment aboard *Midway* and began shore-based rotations with the *1st Marine Aircraft Wing* in Iwakuni, Japan. Dets were subsequently sent back to sea duty aboard *Saratoga* and *America*. Marine Corps *Prowlers* supported Joint operations against Libya in 1986 from the aircraft carrier.

During *Operations Desert Storm* and *Desert Shield* VMAQ-2 had one det (six aircraft) deployed in Japan and the remainder of the squadron (12 aircraft) deployed to the Persian Gulf. The Reserve squadron, VMAQ-4 (six aircraft), transitioned from the EA-6A to the EA-6B and subsequently relieved the det in Japan. During *Desert Shield* the squadron flew 936 sorties for more than 2,100 hours. Marine Corps *Prowlers* flew 495 combat missions totaling 1,622 hours, supporting the full spectrum of Joint and combined missions.

Above: A VAQ-131 Lancers EA-6B Prowler on final to USS Abraham Lincoln (CVN-72), 11 Jun '12. **Below:** A VAQ-128 Fighting Phoenix EA-6B Prowler near the Northern Cascade Mountains, 4 Feb '03.

Opposite page, top: A VMAQ-3 Moon Dogs EA-6B Prowler on approach to Crete, Souda Bay, Greece. **Opposite page, bottom:** A VAQ-132 Scorpions EA-18G Growler fires a HARM during a training mission, Mar '13.





The Legacy, the Prowler

For more than 40 years the *Prowler* proved more than capable of successfully accomplishing a broad set of missions. Ranging from traditional SEAD to the denial of enemy communication networks and weapons employment, *Prowler* aircrew and maintainers performed with professionalism, determination and success that embodied the finest traditions of Naval Aviation.

The Future, the Growler

The EA-18G *Growler* is a variant of the combat-proven F/A-18F *Super Hornet* Block II and flies the AEA mission. The EA-18G combines the capability of the *Super Hornet* with the latest AEA avionics suite evolved from the ICAP III system resident in later lot EA-6B *Prowlers*. The EA-18G's vast array of sensors and weapons provides the warfighter with a lethal and survivable weapon system to counter current and emerging threats.

Growler Capabilities

Suppression of Enemy Air Defenses: The EA-18G will counter enemy air defenses using both reactive and pre-emptive jamming.

Standoff and Escort Jamming: The EA-18G will be highly effective in the traditional standoff jamming mission, but with the speed and agility of a *Super Hornet*, it will also be effective in the escort role.

Nontraditional Electronic Attack: Dramatically enhanced situational awareness and uninterrupted communications will enable the EA-18G to achieve a higher degree of integration with ground operations than has been previously achievable.

Self-protect and Time-Critical Strike Support: With its active, electronically scanned array radar, digital datalinks and air-to-air missiles, the EA-18G will have self-protection capability and will also be effective for target identification and prosecution.

Growth: High commonality with the F/A-18E/F, nine available weapon stations and modern avionics enable cost-effective synergistic growth for both aircraft, setting the stage for continuous capability enhancement.



USN

Growler Specifications

Crew: Two
Length: 60 ft., 1.25 in. (18.31 m.)
Wingspan: 44 ft., 8.5 in. (13.62 m.) (including wingtip-mounted pods)
Height: 16 ft. (4.88 m)
Wing area: 500 ft.² (46.5 m²)
Empty weight: 33,094 lb. (15,011 kg.)
Loaded weight: 48,000 lb. (21,772 kg.) (recovery weight)
Max takeoff weight: 66,000 lb. (29,964 kg.)
Powerplant: 2 × General Electric F414-GE-400 turbofans
Dry thrust: 14,000 lbf. (62.3 kN) each



Navy Retires Proud Prowler

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Clockwise from opposite page, top:

- VAQ-128 Fighting Phoenix EA-6B Prowler near Mount Baker, 4 Feb '03.
- VAQ-132 on ramp in August 1971, shortly after fleet introduction of the EA-6B.
- VAQ-129 Viking EA-6B Prowlers at Picacho Peak, near Yuma, Ariz., 4 Nov '04.
- VAQ-133 Wizards EA-6B Prowler during Exercise Sentry Eagle, a biannual, two-day exercise hosted by the 173rd Fighter Wing from Klamath Falls ANG, Ore., 20 Jul '05.
- VAQ-132 Scorpions EA-6B Prowler over USS John F. Kennedy (CV-67) in the Atlantic Ocean, 5 Dec '04.
- VAQ-129 Vikings EA-6B Prowler over the Cascades.
- VAQ-135 Black Ravens EA-6B Prowler overhead USS Nimitz (CVN-68) during Operation Iraqi Freedom, 17 Apr '03.
- VAQ-131 Lancers EA-6B Prowler, NAS Fallon, 2 Nov '78.

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A Tribute to 44 Years of Operational Excellence

compiled by LCDR Jack "Farva" Curtis, USN



This article highlighting squadrons' histories is a follow-on to the *Prowler • Growler Superstar* article (Page 26).

On 27 June 2015, the U.S. Navy launched its final EA-6B *Prowler* sortie from NAS Whidbey Island, Washington. This seemingly routine hop closed the book on what has been 44 years of operational success and pride. Dating back to the Vietnam War, and as recently as late 2014, Navy *Prowlers* proved themselves, taking the fight to the enemy. Whether target sets included surface-to-air missile (SAM) sites or terrorist early warning networks, *Prowler* aircrew and maintainers met their challenges with a "can do" spirit that embodied the best of American resolve and innovation. When BuNo 163890 reported "safe on deck" for the final time, it closed a chapter of Naval Aviation history.

From the Beginning

While carrier-based electronic warfare dates to World War II, it wasn't until the Vietnam War that electronic attack (EA) as a singular and dedicated mission came into its own. Faced with an ever-improving North Vietnamese air defense network, American military authorities recognized the need for dedicated platforms capable of disrupting and denying radars responsible for guiding lethal anti-air missiles and targeting artillery rounds. Having just transitioned to the EKA-3B, an electronic warfare-modified version of the A-3B *Skywarrior* (more affectionately known as the *Whale*), the NAS Alameda-based VAW-13 *Zappers* made their first deployment to Southeast Asia in 1967. Later, VAW-13 would be split into six separate squadrons, designated VAQ-130 through -135. Simultaneously, the U.S. Marine Corps began testing and flying a modified version of the A-6 *Intruder* named the EA-6A. The A-6 and EA-6A lineage would eventually lead to the development of the four-seat EA-6B *Prowler*.

On 25 May 1968, Grumman Aircraft Company flew the first EA-6B. This test platform, known as M-1, was a modified and elongated A-6 airframe. The first "from scratch" *Prowler* was delivered to VAQ-129 *Vikings* at NAS Whidbey Island 29 January 1971. The union between EA and the Pacific Northwest was forged. By the end of the year, VAQ-132 *Scorpions* arrived NAS Whidbey Island from NAS Alameda to begin accepting aircraft and training for the EA-6B's maiden combat deployment. By the end of 1974, VAQ-130, -131, -133, -134 and -135 joined the *Scorpions* at Whidbey and successfully transitioned from *Whales* to *Prowlers*.

On 5 June 1972, VAQ-132 departed the East Coast as part of CVW-8 on board USS *America* (CVA-66). A short time later, VAQ-131 *Lancers* deployed with CVW-14 on board *Enterprise* (CVAN-65). With both carrier groups in place, *Operation Linebacker II* in the Vietnam War began in December. Less than two years after initial acceptance, *Prowlers* flew more than 700 combat sorties in the skies over Vietnam and recorded their first flight logbook pages of "green ink."

Post-Vietnam Development and Deployment

Despite the draw-down of combat operations following the Vietnam War, the EA community remained extremely active. The VAQ-136

Gauntlets and VAQ-137 *Rooks* stood up as the first new *Prowler* squadrons (i.e., not previous EKA-3B squadrons) in 1974. Notable aircraft upgrades came in the form of the Expanded Capability (EXCAP) and subsequent Improved Capability (ICAP) suites. VAQ-135 *Black Ravens* were the first to deploy with ICAP aircraft in 1977. That same year, the Marine Corps transitioned from the EA-6A *Intruder* to the EA-6B *Prowler*, with the VMAQ-2 *Playboys* leading the way at MCAS Cherry Point. In February 1980, the VAQ-136 *Gauntlets* made a permanent homeport change to Naval Air Facility Atsugi, Japan. The *Gauntlets* served with CVW-5 as the only permanently forward-deployed *Prowler* squadron until their return to Whidbey in early 2012.

Of note, the Navy initially purchased only 50 *Prowlers*. However, with the successes and operational impacts achieved in the community's first decade, a different course was set that eventually led to 170 *Prowlers*. The increased plan led to the establishment of VAQ-138 (1976) through VAQ-142 (1988).

The 1980s saw *Prowlers* deployed across the globe supporting routine presence and deterrence missions, as well as crisis response strike missions. *Prowler* squadrons provided increasingly sought-after services to improve aircraft survivability and strike lethality across the Mediterranean Sea, in Lebanon and Libya, as well as the Persian Gulf. In April 1986, VAQ-135, -137, -138, and a detachment from USMC VMAQ-2 proved invaluable in cooperatively suppressing Libya's robust air-defense network, comprising surface-to-air (SA)-2, SA-3, SA-6, SA-8 and long-range SA-5 missile systems. This conflict also marked the first employment of the AGM-88 High-speed Anti-Radiation Missile (HARM) that would soon become another arrow in the *Prowler's* quiver. It was a testament to the *Prowler* crews' professionalism, bravery and skill.

Operations Desert Shield, Desert Storm and Desert Fox

Following the Iraqi invasion of Kuwait in 1990, American forces massed in the Persian Gulf region as part of *Operation Desert Shield*, and later *Operation Desert Storm*. This deployment included VAQ-130, -131, -132, -136, -137, -141, as well as shore-based Marine *Prowlers* from VMAQ-2. The lengthy build-up and march toward war allowed squadrons to fine-tune and adapt existing tactics to best counter the Iraqi air defense network.

Before sunrise 17 January 1991, dozens of *Prowlers* unleashed a torrent of jamming and HARM to support U.S. Air Force F-117 strikes aimed at crippling the Iraqi command and control structure. Official Navy reports claim that 80 percent of HARM fired in the initial attack came from USN aircraft. The central nodes of the Iraqi air defense network were dismantled within the first hours of war. For the remainder of the campaign, *Prowler* crews focused their efforts against point-defense SAMs that resorted to "firing blind" due to *Prowler* jamming effectiveness. *Desert Storm* marked the first time (but certainly not the last) that *Prowlers* became mission "go/no go" factors. Strike

pilots who watched SAMs wander off into non-threatening trajectories quickly realized who and what to thank for their safety!

The 1991 version of the Iraqi air-defense network was the most sophisticated array the *Prowler* had faced to date, and yet in a matter of hours the network was neutralized. Years of research and investment in EA capability had paid off not only for the Navy, but for the entire Joint air warfare enterprise —and the work wasn't done. Following the March 1991 cease-fire, coalition partners began to enforce a southern no-fly zone to protect certain elements of the Iraqi civilian population. This effort was eventually branded *Operation Southern Watch* (OSW).

In 1995 the USAF chose to retire the EF-111 *Raven*, based on Department of Defense's (DoD) analysis of the effectiveness of the EA-6B during *Desert Storm*, leaving the *Prowler* as the only tactical electronic attack platform in the DoD inventory.

With the U.S. Air Force out of the jamming business, the Navy agreed to increase its number of shore-based deployments in direct support of USAF operations. In exchange, the Air Force agreed to provide crews to fly EA-6Bs. This agreement led to what came to be known as "expeditionary squadrons."

Now officially deemed a "low density/high demand" asset, the *Prowler's* workload increased again with the initiation of *Operation Northern Watch* (ONW) in 1997. Whidbey-based VAQ squadrons racked up an incredibly high operations tempo (OpTempo) flying OSW and ONW missions, supporting strike aircraft during United Nations efforts. By the time direct support strike missions resumed in 1998 with *Operation Desert Fox*, Commander, Electronic Attack Wing, Pacific (COMVAQWINGPAC) provided four expeditionary squadrons: VAQ-128, -133, -134, and -142, all of which deployed to air bases in Saudi Arabia and Turkey.

Allied Force and Converting Final Doubters

Beginning with *Operation Deliberate Force*, which led to *Operation Allied Force* in 1999, the *Prowler* and its crews were once again called upon to underwrite the lives of fellow American and coalition airmen. Due to the requirement for jamming, COMVAQWINGPAC developed a plan that kept a minimum of four *Prowlers* airborne, 24 hours a day, for nearly three months. In order to accomplish this task, *Prowlers* (operating from Aviano Air Base, Italy) including VAQ-134 *Garudas* VAQ-140 *Patriots*, VAQ-138 *Yellow Jackets*, VAQ-142 *Gray Wolves*, VAQ-141 *Shadowhawks* and Reserves from the VAQ-209 *Star Warriors*, adopted a circular pattern of eat, plan, brief, fly, sleep, repeat. Demonstrating "all hands on deck" community involvement, augmented by crews from VAQ-129 (the Fleet Readiness Squadron) and the Electronic Attack Weapons School deployed to provide additional support. By the end of the campaign, no other aircraft had flown as many sorties as the *Prowler*.

Serbian air defense system operators were a savvy and courageous foe, and because of their chosen tactics, they took high quality SAM shots against allied aircraft — but in the end, the results were familiar. As was the case eight years prior in the skies over Iraq, strike pilots frequently observed SAMs fail to track (or lose track). The reason rested in the Grumman EA-6B aircraft from Bethpage, New York. One threat in particular, the SA-6 *Gainful* missile system, was protected by the EA-6B's aircraft mission systems.

Post 9/11 Operations

On 11 September 2001, the VAQ-141 *Shadowhawks* were on their way home from participating in the *Southern Watch* no-fly zone when the strike group was immediately rerouted to the North Arabian Sea for a mission whose details were still being fleshed out. One of the biggest questions for air wing planners centered on what, if any, former Soviet air defense systems had been left in Afghanistan. If so, were any operational? As it turned out, the threat from SAMs was minimal, so the primary focus shifted to communications jamming. The VAQ-137 *Rooks* arrived in theater a few weeks later and brought with them a new technology, night vision goggles (NVGs) that changed the way the community deployed and fought. These situational awareness building tools would prove critical when the *Rooks* sent *Prowlers* ashore where aircrew would begin to operate from austere airfields in Afghanistan.

With the majority of U.S. war-making efforts focused on Iraq by March 2003, *Prowlers* were once again in high demand. The much

vaunted Iraqi "super missile engagement zone" surrounding Baghdad proved to be no match for EA-6B crews flying from the Gulf, Eastern Mediterranean and various regional expeditionary airfields. Coordinating with national strategic assets, *Prowler* crews participated in strikes against some of the most heavily defended targets of the war. Jamming early warning and acquisition radars had been the bread and butter of carrier-based tactical electronic attack for nearly 30 years, but everything changed as conditions within Iraq continued to deteriorate.

By 2005 there were very few aviators, Naval or otherwise, who didn't recognize and appreciate the value of flying with a Prowler nearby.

Through insightful and innovative work by professionals at the Johns Hopkins University Applied Physics Laboratory, the Electronic Warfare Database Support command at NAS Point Mugu and the Whidbey-based Electronic Attack Weapons School, *Prowler* crews adapted their Tactics, Techniques and Procedures to a new threat target set and were able to provide direct support for coalition ground troops in the form of radio-controlled improvised electronic devices (IED) suppression. New transmitters were designed and fielded specifically to counter this emergent and surprisingly low-tech, yet extremely lethal enemy threat. Within months of introducing this capability, *Prowler* aircrew provided ground commanders real-time data in Afghanistan to coordinate movement of convoys along ground routes. A variation of this capability was employed against enemy targets in Iraq with similar success.

The protection offered to friendly ground forces was in high demand, and the resultant community OpTempo was high. Therefore, Navy Reserve *Prowler* Squadron, VAQ-209 *Star Warriors*, were called to complete four deployments to Afghanistan and one to Al Asad Air Base, Iraq. Expeditionary squadrons were on a six-month on/six-month off deployment cycle with gaps in EA-6B coverage being filled by split site operations from deployed carriers and gap fills from nondeployed carrier air wing *Prowler* squadrons during turnaround.

Counter-IED missions made up a large portion of *Prowler* tasking in the years following 9/11, but other equally important tasks included support of high visibility special operations missions and the denial of enemy communication networks.

In fall 2014, the VAQ-134 *Garudas* completed the final *Prowler* deployment from the deck of *George H.W. Bush* (CVN-77). Despite flying some of the oldest aircraft in the air wing, *Garudas* EA-6B *Prowlers* remained one of the most sought after airborne assets in theater.

The Legacy

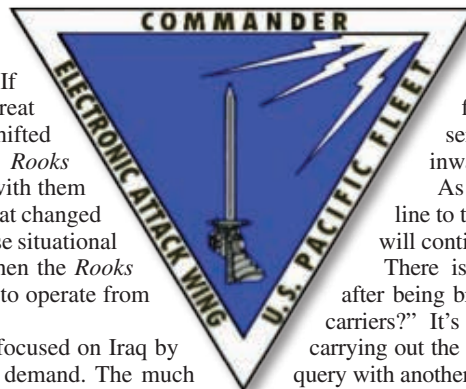
For 44 years the *Prowler* community answered the call, as a member of the Naval Aviation enterprise. Operating with some of the oldest aircraft in the Naval inventory was never a crutch, rather, the quirks and nuances of maintaining these aircraft only served to demonstrate the Sailors' outstanding dedication and true professionalism. Refusing to allow the shadowy nature of their mission to obscure their relevance within a larger Joint warfighting mission, *Prowler* aircrew, maintainers and support personnel routinely thought beyond the possible and worked tirelessly to provide innovative and successful answers to enemy threats. Attack, strike fighter and convoy commanders invariably included an EA-6B *Prowler* on high threat missions, validating mission success.

To fully appreciate and understand the *Prowler's* legacy to Naval Aviation, one must look beyond operational histories and sortie counts.

Statistics read well, but the real account of a community's success is measured by its people, relationships and the kind of enduring bonds that transcend individual accolades. From triumphant fly-ins and homecomings to somber memorial services and eulogies, the *Prowler* community looked inward for strength and resilience.

As the venerable *Prowler* yields its place on the flight line to the EA-18G *Growler*, this strong community identity will continue to benefit not only the Navy, but also the nation.

There is a story of a former Commander in Chief who, after being briefed on an emergent crisis, asked, "Where are the carriers?" It's likely that those actually tasked with carrying out the nation's bidding followed the President's query with another question, "Where are the *Prowlers*?"





Garudas Last Traps



“Prowler Departing”





On 14 November 2014 the VAQ-134 *Garudas* catapulted from USS *George H.W. Bush* (CVN-77) (GHWB) for the last time in the EA-6B *Prowler*, a legendary electronic warfare platform that has served the U.S. for more than 44 years.

Happy to be home at NAS Whidbey Island and proud to have flown the *Prowler* in its last deployment, the squadron had been deployed aboard the GHWB with *Carrier Air Wing Eight* for nine and a half months. The *Garudas*, in conjunction with U.S. Marine Corps *Prowlers* from VMAQ-3 *Moon Dogs*, flew electronic warfare mission in the opening months of *Operation Inherent Resolve* and conducted missions on the first day of strikes into Syria against IS militants. The *Garudas* return marked the end of the last U.S. Navy EA-6B aircraft carrier deployment, but the *Prowler* will continue to serve the USMC until 2019.

Clockwise from opposite page, top: A VAQ-134 *Garudas* EA-6B *Prowler* traps on USS *George H.W. Bush* (CVN-77), 17 Oct '14. • Mrs. Cheryl Jason, wife of VAQ-134 Commanding Officer CDR Chris "TJ" Jason, USN, with sons Desmond, left, and Holden, on the ramp at NAS Whidbey Island, 14 Nov '14. • CDR Jason walks with son Desmond, who assists in carrying Dad's helmet after joining him on the flight line during the fly-in. • The VAQ-134 *Garudas* EA-6B *Prowler* CAG bird on its final deployment. • LTs Robert Arndt, left, from Town Creek, Ala., and Christopher Cannon, from Columbia, S.C., give the launch signal to a VAQ-134 *Garuda* EA-6B *Prowler* from GHWB, 19 Jun '14.

