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RA-5 Vigilante: Going to war with a camera

BY **R. R. "BOOM" POWELL**

The Vigilante was doing 650 knots near the North Vietnamese port of Hon Gai when there was a huge explosion behind the tail from either heavy caliber antiaircraft fire or a SA-2 missile.

On fire and with the flight controls failed, the crew, Lt. Cdr. James Bell, pilot, and Lt. Cdr. "Duffy" Hutton, RAN, ejected and landed in the small islands off the coast. They both climbed into their survival rafts, but were picked up by fishermen in sampans and became POWs. (After repatriation in 1973, Bell told of being tied to the sampan's mast which struck him as ironic as the night before he had watched the 1946 movie *Two Years Before the Mast*.)

By October of 1965, the air war was hot. The first SAMs had been launched that summer and their locations were a high priority. The Vigilante from squadron RVAH-1 "Smoking Tigers" off USS *Independence* (CVA-60) had been searching for the distinctive six-sided launching sites when it was hit.

Bell and Hutton were in the first Vigilante to be shot down over Vietnam. The last would be in December 1972. In those seven years, 26 more RA-5Cs would fall to enemy action for the highest loss rate of any U.S. Navy aircraft.

VAH-7 over the Philippines taken from a USMC C-130. The squadron knew they were the last one and painted the noses black as a sign of mourning. (Photo by Bob Lawson/Check Six)

Volcano snooping

The crater lake in the dormant volcano, Mt. Soufriere, on Saint Vincent Island had turned from a benign blue to an ugly, boiling pea-green. Responding to a request from scientists of the Interior Department, twice a day a Vigilante would launch and fly down to the volcano. The old crater was irregularly shaped with one edge much higher than the other. A tropical cloud usually sat over the high ridge. The tactic the crews worked out was to fly low over the Caribbean and accelerate in afterburner to just under Mach-1, fly up the 3,000 foot mountain slope 100 feet over the lush greenery, push forward on the stick and go zero-G to level flight. While the RAN monitored cameras and infrared, the pilot stared at a wall of solid rock coming at his nose at 300 knots. When the RAN called, "On top!", the pilot pulled up at 4Gs and went on instruments into the cloud. Once clear, they came around for another run, until after four to six such runs low fuel forced them to go back to NAS Roosevelt Roads in Puerto Rico. The crews said that if Soufriere had blown they'd be famous. The volcano, however, went quiet and the project was cancelled.

Fourth day of Christmas

On December 28, 1972, the RVAH-13 tactical crew of Lt. Cdr. Al Agnew, pilot, and Lt. Mike Haifley, RAN, had flown on the Enterprise's first launch of the day and hours later went on a second mission. The electronic warning gear had been eerily silent as they accelerated over land. Together with their F-4J Phantom escort from the VF-143 *Pukin' Dogs* they were headed for a pre-strike reconnaissance target near Hanoi. As they flew over the roads and railroads leading into the city, the MiG calls from the "Big Look" radar-surveillance aircraft came fast and furious, "Bandits, bandits. Red, blue, Bullseye and all quadrants. Bandits."

The RA-5C, call sign Flint River 603, finished the photo run and headed for the Tonkin Gulf in full afterburner. The fighter pilot escort radioed

EVASION, RESCUE AND AN ESCAPE

Huey Pickup

While searching for "Wiblicks" (The fancy, official designation for boats, barges, sampans, etc; Water Borne Logistics Craft, WBLC.) amid the coastal swamps of the far west coast of South Vietnam, (an area Navy airplanes rarely flew over), a junior crew comprised of Lt J.K.Sutor, and his RAN, Lt. JG G.B.Dresser, felt a thump and their cockpits filled with smoke. Sutor fought the controls until 10 miles over the Gulf of Siam the RA-5C became uncontrollable and they ejected. The nearest rescuer was an Army UH-1B Huey helicopter which was vectored to the crash site. A sampan was approaching the survivors and because its identity and intentions were unclear the Huey pilot had the Navy aircraft holding overhead fire a burst of 20mm cannon in front of the sampan to warn it off. As there was no hoist on the UH-1B, the pilot skillfully hovered with his landing-skid on the water. The pilot and RAN climbed into the helicopter and were flown to safety.

Hiding in the Reeds

Lt. Cdr. Jim Thompson and his RAN, Lt. JG Parten, were on a road reconnaissance northwest of Vinh when triple-A opened up and the Vigilante suddenly rolled. With only partial control Thompson headed for the coast. When the nose pitched over, they both ejected at extremely high speed.

Thompson later said that time compression kicked in and when his eyes peered over the top of the windshield into the slipstream, he wanted to reverse-vector back into the cockpit. His ride was particularly violent and he was badly bruised with his flight suit in tatters. He landed in a marshy area close to the shore and despite a dislocated shoulder, avoided capture by staying underwater in the reeds and breathing through a plastic tube he had kept in his sock. A searching Vietnamese stepped on his leg, but must have thought it was a log because he moved off. At

Cdr. Jim Thompson (evasion by breathing through a straw) and Lt. Emy Conrad (the RAN nearly hit by a SAM and on Project Volcano) when they flew together from USS *America* in 1972 at the end of the Vietnam Air War. (Photo courtesy of Emy Conrad)

nightfall, Thompson swam and drifted with the tide until far enough to sea for later pickup by a helicopter. Lt. JG Parten was rescued earlier by a Navy ship.

Thompson and Parten were among the few successful survivors of a supersonic ejection. Although the North American HS-1 seat was designed for ejecting above Mach-1, the design assumed a full pressure-suit for protection and arm restraints installed. The ejection seat had bars that came down on top of the crewman's feet, pads that rose up under and panels alongside the knees to restrain his legs and a cord fastened near both wrists that would pull tight and keep the arms from flailing. The arm restraint was awkward to wear and soon not used.

Old-Fashioned Shoot 'Em Up

On March 9, 1967, Lt. JG Frank Prendergast became the only American aviator to escape from capture in North Vietnam and in a way almost too incredible to be true.

The squadron CO, Cdr. Charles Putnam, needed a RAN to replace the one with which he normally flew. That afternoon he chose Lt. JG Prendergast.

Near Long Chau, 30 miles northwest of Thanh Hoa, Cdr. Putnam violated hard-learned rules about altitudes and cloud layers in a desire to get the tasked coverage. He flew the Vigilante to 350 feet less than a quarter-mile off the beach to start the photo run up the coastline. Hit by small-arms fire from the ground, the Vigilante burst into flames and became uncontrollable. Putnam initiated ejection for both crew members and did not survive.

Lt. JG Frank Prendergast of the shootout. (Photo courtesy of Frank Prendergast)

in a conversational tone, "Flint Zero Three, you better turn right."

As Agnew tells it, "I was already keyed up. MiG calls were blaring and aggressive fighter guys heading our way. I broke hard into a 90-degree turn at 700 knots. There was a loud explosion and the Vigi tumbled. I didn't know there were that many negative Gs in the whole world. I was pressed against the straps and my helmet was against the canopy. I somehow managed to reach one of the alternate ejection handles on the side of my seat. Time warped. First, the canopy seemed to take forever to come off. Next thing I knew, I was hanging in the parachute. I was surprised that it was white and bright orange."

Another *Pukin' Dogs* crew had seen two smoke trails from Atoll missiles fired by a MiG-21 and watched what was left of the RA-5C crash. There was only one ejection. Mike Haifley was killed in either the airplane's explosion or the crash.

"It was windless day, so I didn't drift in the chute. A group of peasants working in a rice paddy had to move aside to let me land. They stripped me down to my Hang Ten T-shirt and red undershorts I'd gotten for Christmas a few days previous. They swiped my brand-new Seiko watch and then this Vietnamese pulls out a big machete. That scared me worse than anything. But all he did with it was cut my flight boots off."

Agnew spent time in both the Hanoi Hilton and the POW camp called the "Zoo." While in the Zoo he met Gerry Coffee who in February 1966, became the first RVAH-13 pilot to be captured. Al Agnew was released on March 29, 1973. Ironically, he was home before his squadron returned from deployment. He said, "All things considered, it wasn't worth it."

Flint 603 was the only Vigilante shot down by a MiG and the last lost during the Vietnam War. The Vigilante was the 90th and last U.S. aircraft shot down by a MiG. It was also the last of 26 RA-5C Vigilantes to be lost in Southeast Asia. ✠

Prendergast landed in waist-deep water a couple of yards from the beach. He released his parachute, inflated the bright yellow life-preserver around his waist and fired all the tracer bullets from his .38 pistol into the air. A dozen soldiers waded out to him. Since their guns were pointed at him, Prendergast raised his hands in surrender. One soldier saw his Navy issue .38 revolver and took it. They began a slow, sloshy march toward the shore with Prendergast making the walk even slower by limping and acting dazed as to direction. The escorting Phantom made low passes and even fired Sparrow air-to-air missiles at the beach. When a pair of prowling A-1 Skyraiders arrived and began strafing with their 20mm cannon, most of the soldiers fled to the beach leaving only their leader and one other with Prendergast.

Each time the airplanes came over, the North Vietnamese soldier with the sub-machine gun would duck under water out of fear of being hit. Prendergast saw the SH-3 rescue helicopter approaching and decided it was then or never.

The next time the soldier ducked, Prendergast pulled out a small .25 automatic pistol he kept in his flight suit and aimed at his guard. The guard pointed Prendergast's own revolver at him and pulled the trigger. Prendergast had counted correctly—the revolver had been emptied shooting tracers. There was a click as the hammer fell on an empty chamber. Prendergast shot him between the eyes with the small automatic.

When the second soldier surfaced, Prendergast knocked him on the head, threw his AK-47 sub-machine gun in the water and headed for a nearby sandbar. The Vietnamese picked up his gun and began to shoot. On the sandbar, Prendergast bought more time by stopping and raising his hands. As the helo came closer, he wheeled, fired the pistol and ran. The helicopter swooped broadside and the door gunner blasted the enemy soldier with a heavy M-61 machine gun. Prendergast jumped in and was flown back to the Kittyhawk.

The Navy did not let him fly any more missions.

Skewered by a SAM

Flying with the Smoking Tigers of RVAH-1 from USS *Saratoga* (CVA-60), the tactical crew of Lt. Cdr. Chuck Smith and Lt. JG Larry Kunz became the next to last Vigilante lost in Southeast Asia. On an earlier mission over North Vietnam, Smith had looked down at his INS readouts and saw the steering bar pegged to the side and distance at over 200 miles instead of the next target, "Kooner," he asked on the intercom, "where am I?"

Kunz' reply became a classic; "Well, you're eight feet in front of me. Going faster than hell ... and I'm working on the rest."

Their next adventure was not a happy one. On June 7, 1972, during a reconnaissance of the anchorages in the islands where foreign merchant ships moored to offload their cargo into lighters for transfer into Haiphong, their RA-5C was skewered by a SAM. Coming in at 200 feet and high speed over the Tonkin Gulf, Smith had popped up to 3,000 feet for the photo run when the ALQ gear warned of a missile launch. Evasive maneuvers left and right were to no avail and the SA-2 went into and through the fuselage. The missile did not explode or, as Smith says, "I would not be here telling the story."

The starboard engine lost power immediately. Smith turned for deep water and as he lit the afterburner on the other engine it also flamed out. Electrical power went and the flight controls froze. The crew ejected a half-mile southeast of the city and landed a couple of hundred yards apart in the water between the islands. Their F-4 escort reported them down and the A-7E Corsair ResCAP began bombing and strafing the gunners on shore. Two SH-3 Sea King helicopters (call signs Big Mother 66 and 67) arrived and snatched Smith from the water. The helo's mini-gun was firing inches from Smith's face as he hung in the hoist. A para-rescue swimmer leaped to assist Kunz, but jumped from too high and collapsed a lung on impact with the water. Kunz swam over and helped his "rescuer" into the sling before being hoisted aboard himself. The gunfire from both sides did not stop until the helos left the area 50 minutes after the ejections.

Lt. JG Larry "Kooner" Kunz (left) RAN and Lt. Chuck Smith, pilot, while in RVAH-1, The Smoking Tigers, in 1970. (Photo courtesy of Cdr. Charles Smith)

The day after, when Kunz learned another RAN in the squadron had turned in his wings, he was angry and said to Smith, "Hey, wasn't it you and me that got shot down?"

Emy Conrad doing preflight check of intake duct. Yes, both beard and skunk hat were against regulations, but there was a war on. (Photo courtesy of Emy Conrad)

speeds, Lt. Cdr. Barry Gastrock and Lt. Emerson Conrad were back over the river juncture at Hung Nghia heading south less than four minutes after crossing the same village westbound. AAA had only been sporadic and there had been no missile warnings when Conrad saw a flash in his viewfinder and yelled, "Pull up!" Gastrock yanked hard, they heard a whumpf and were thrown against the seat-straps. Speeding toward the coast, they watched and listened for possible damage to their Vigilante. There was none. At 600 knots,it did not take long to reach the waters of the Tonkin Gulf and they soon went feet wet and headed back to the Kittyhawk for a routine recovery.

In the intelligence center, a photo-interpreter cranked the six-inch-wide film from one massive spool to another across the lighted area of the viewing table and stopped. He called others to look. Soon that segment was cut out and positive image prints made. Perfectly framed in the vertical camera was an SA-2 missile still under boost. The crew was called to see the near miss. As best they could figure out, since there was no terrain visible in the frame, the SAM passed under the RA-5C at the last target as Gastrock had banked hard to head for home. Knowing the focal length of the camera and the size of a SA-2 warhead, the photogrammeters computed the missile had passed 104 feet from the Vigilante's belly. No one knows why it did not detonate.

Smile for the camera

Noteworthy Vigi flights did not always involve combat.The airplane was much in demand at airshows. Besides being sleek (described as looking like it was doing Mach-2 sitting on the ramp) and beautiful while on static display, the RA-5C could dump fuel, light the left afterburner and have a 100-foot long, trailing flame so it got to play the bad guy to simulated missile firings from F-4 Phantoms and F-14 Tomcats.

Aircraft carriers would make a cruise book for their deployment with pictures of the crew and shipboard activities. During pre-cruise training, the RA-5C would have color film loaded in oblique cameras set at a shallow angle and the word would go out to all the squadrons if a Vigi joined on you that day, tighten your formation and smile. The $14 million dollar "Kodak" took great air-to-air photographs.

With two or three carriers operating in the Tonkin Gulf at one time, mistakes were made. One clear day, a nugget A-7 pilot from the super-carrier Kittyhawk landed by mistake on the much smaller 27C conversion Hancock. An alert Vigilante crew heard the radio conversation and headed for the Hancock with cameras firing. By the time the embarrassed Lt. JG returned to Kittyhawk, 12x16 inch, glossy prints of a lone A-7 parked amid the airplanes of the Hancock's air wing were in all the ready rooms and on the captain's and admiral's bridges.

RVAH-6 was based at NAS Barbers Point on Oahu while Enterprise was being repaired after a fire. Besides mapping the entire Hawaiian Island chain, the RA-5Cs used their unique infrared sensors to locate a steam leak in downtown Honolulu. Announcements were made on radio and television to inform the public about what the low flying Vigilantes were up to.

Sharing the airfield at the time were the replica Mitsubishi Zeroes and Aichi Vals (made-up from AT-6 Texans and Vultee BT-13 trainers in the best Hollywood tradition) used in filming the movie *Tora, Tora, Tora* about the 1941 attack on Pearl Harbor. The Vigis took many pictures of the mock Japanese airplanes, but, surprisingly, none are available today.

Which way is up?

Lt. Cdr. Art Skelley during his tour with RVAH-7.

Lt. Cdr. Art Skelly and his RAN, Lt. JG Joe Shevlin, survived one of the strangest events of the Vigilante's career. In 1980, then Capt. Skelly wrote: "Of the 260 combat flights I flew in the Vigilante, the most unusual had to be with RVAH-6 in July of 1966 aboard *Constellation*. One dark, overcast Sunday morning, we photographed an oil storage area that had been hit the previous night by A-6s. On our way out of the target area over downtown Haiphong, we took some severe AAA, automatic weapons fire and SAMs. Tracers were crisscrossing over the canopy and the F-4 escort was going crazy calling out flak. I decided we had had enough so I pulled up into a nearby thunderstorm to get away from the heaviest flak I had ever seen.

"It didn't work. Not only did we immediately encounter rain, hail and lightning, but the tracers were streaking around us and there were bright flashes from lightning and exploding shells. I couldn't tell whether the turbulence was violent because of near misses or the storm. The attitude gyro didn't look quite right, but that was the least of my worries then. We soon popped out of the storm cell and I realized the gyro was correct— not only were we upside down, but the F-4 was right there in position, also inverted!

"Joe recognized that the nose had fallen through and was telling me to pull out. I had rolled level and pulled hard because the water was awfully close. Joe said that the radar altimeter had gone to zero before we started to climb.

"There was a large merchant ship in front of us—turned out to be Chinese—and as we flew past, our escort Phantom called that a machine gun on the stern was firing down at us.

"Back on the ship I had maintenance check the Vigi for overstress and battle damage. Despite some of the heaviest flak I had ever seen, there wasn't a single hole in the airplane!

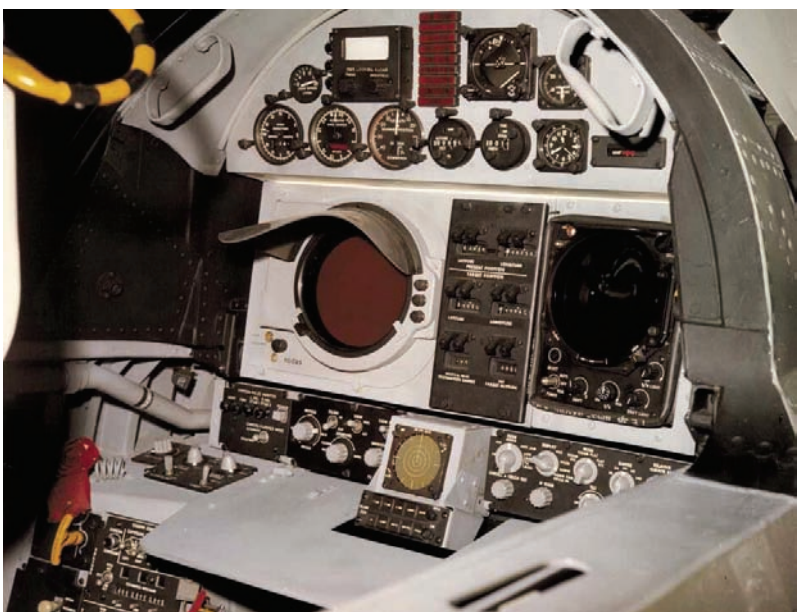
"The guys in the ready room threatened to mount a Brownie camera on top of my hardhat for future maneuvers."

A fortnight later this same crew was again over Haiphong when three large flashes of AAA exploded in front of their nose. Shevlin lost his radar and navigation system, but got the photographs. Back on board *Constellation*, a series of shrapnel holes was discovered from one side of the fuselage to the other inches in front of Skelly's feet. Another day, Shevlin got a ride in an open top Vigi. As they came off *Constellation*'s bow catapult, Skelly heard a loud bang and looked in his mirror in time to see the rear canopy sail past his tail. The Air Boss thought that the RAN had ejected and rushed the plane-guard helicopter over. Despite wind noise and an almost comical exchange on the intercom, the pilot and RAN figured out each was OK. Fuel was dumped to reduce weight and a normal landing followed.

The most beautiful airplane

The North American Aviation Vigilante had started life as a nuclear bomber, but as mission priorities changed, it became a versatile reconnaissance platform with an interchangeable array of cameras, some with focal lengths up to 36", Side-Looking Radar (SLR), Infrared mapping and a sophisticated electronic emission detection and location system (PECM). First known as B/Ns, (Bombardier Navigators), when the mission changed the men who rode in the back of the Vigilante (there was not a set of flight controls and virtually no view as the windows were made tiny with the flash of nuclear explosions in mind) had their title changed to RAN (Reconnaissance Attack Navigator). A special attitude and fortitude was required to ride in the back cockpit of a Vigilante during a recce run. In front of the RAN's face were two large, round viewers. In one, the ground below, distorted by lenses, was moving past with yellow lines superimposed—the lines had be monitored to ensure the image-motion-compensation was working. The other had a TV image in surreal hues of blue of the target route moving past or orange radar images. Through the windows on either side, the horizon was glimpsed as the Vigilante maneuvered. The rolling dials of the inertial navigation were spinning out location and the ECM gear was twinkling orange strobes of threat radars and making beeping noises. All this while the pilot was yanking and banking.

The RA-5C was the largest and fastest aircraft to operate from aircraft carriers. Capable of Mach-2, the Vigi, as the A-5 was usually called, carried no missiles, guns or external fuel tanks, so regularly out ran the McDonnell F-4 Phantom that was its mission escort. Although, as was learned the hard way, speed alone does not provide safety.



Above left: **RAN's cockpit; the CRT for television and radar on the left, readouts for ASB-12 Inertial Navigation system in the center and the optical viewfinder on the right. The small scope is the missile/AAA warning system. (Photo courtesy of the USN)**

Above right: **Lt. JG Dave Sharp (left) after he ejected from A3J during *Enterprise* round-the-world cruise 1965. (Photo courtesy of the author)**

Dive, Dive, Dive, Pull up, Pull up!

Lt. Dave Sharp (Later CO of RVAH-7, the last fleet squadron) was in the back of a Vigilante heading north from Dixie Station and about to turn into Vietnam when the RA-5C did not turn the direction Sharp called for and the pilot, Lt. Cdr. Jerry Chapdelaine, would not answer his increasingly frantic calls over the intercom. Sharp correctly guessed that his pilot was hypoxic from an oxygen system malfunction.

"That's when I started calling him every name I could think of along with 'Dive, dive, dive.' Then, when he did push over, I thought we wouldn't pull out. My call became 'Pull out, pull out, pull out, you SOB.' When he finally did, we kept going slower and slower, so I started yelling, 'Power, power, power!' By this time, we were at 8,000 feet or so and Jerry was beginning to sound normal. Apparently, when he attached his mask on climb-out, it was not tight enough. When he started losing consciousness, he slumped forward and forced his mask on enough to keep him at a semi-conscious state. He later told me that all he could remember was hearing me call him various foul names and he just wanted to catch me and kill me. I told him that I'd had a few similar thoughts about him myself."

Learning ... the hard way

There was as a steep learning curve for Vigilante squadrons in Vietnam as there was for all U.S. forces in the modern world of radar-guided AAA, surface-to-air missiles, and electronic warfare. One of the first lessons was no matter how fast you were flying, low was bad as every peasant soldier with a rifle could shoot up to 3,000 feet. And if you were fast, a well-thrown rock would do as much damage as a bullet. For the RA-5C, another lesson was that night photography with flasher pods was

Vigilante from Replacement Squadron RVAH-3 "Dragons" seconds before catapult launch. Flaps and leading edge droops are full down, bridle connected to fuselage hooks and Jet Blast Deflectors raised. (Photo courtesy of the USN)

NO MATTER HOW FAST YOU WERE FLYING, LOW WAS BAD AS EVERY PEASANT SOLDIER WITH A RIFLE COULD SHOOT UP TO 3,000 FEET

unsuitable. Not because the imagery was bad, but because the pulses of bright light from the three million candle-power strobes made the Vigilante an easy target for the anti-aircraft gunners. As the number of guns in the country increased, night flasher missions became highly hazardous. All types of aircraft eventually learned to not fly the same patterns, same altitudes, same times on mission after mission.

"C'mon home, baby"

On Yankee Station RVAH-6 was tasked with a series of runs at twilight and a 1,500 foot altitude south to north along the coast of North Vietnam from the DMZ to Haiphong using SLR to look for Styx anti-ship missiles and boats before the battleship USS *Missouri* came in to shell the Thanh Hoa Bridge.

Commanding officer C.C.Smith made the first try and XO Ivan Lewis the next. They were both shot at by heavy, 85mm, anti-aircraft guns. Lt. Cdr. Herm Mueller with his RAN, Lt. Guthrie flew the third mission in an repeat of the first two. Abeam Vinh, Mueller avoided a pair of SAMs. A third came at him while he was steeply banked and low. Knowing SA-2s came in twos, he pushed forward on the stick and the fourth SAM barely went over the Vigilante. Flak was heavy all through his maneuvering. Shaken, he aborted the remainder of the run and headed back to the Ranger.

The Bob Hope USO troupe with songstress Barbara McNair was on board for a show that night. McNair was on the LSO platform and Larry DeBoxtel handed her the radio. When a tensed-up Mueller called, "Field Goal 603, Vigilante, Ball," she replied, "C'mon home, baby, we're waiting for you."

Lt. Cdr. DeBoxtel was assigned the fourth try. "Box" had chosen "Tiny" Mulholland as his RAN when they were in training, "Because he was a

RVAH-6 flight crews on *Enterprise*. Far right, Box standing, Tiny kneeling. (Photo courtesy of the author)

After the Sun Goes Down

Since using flashers resulted in shot-up airplanes, the RA-5C Vigilante had three sensors which could be used at night: Infrared Mapping (IR), Passive Electronic Counter Measures (PECM) and Side-Looking Radar (SLR). Although these systems could be run while jinking, the best results came from steady, wings-level flying.

Side-Looking Radar was installed in all RA-5Cs, (The rear two-thirds of the belly canoe was antennas, power supplies and recorders for the SLR). In addition to providing intelligence—boats, ships and trains showed up especially well—SLR gave the A-6 Intruder and, later, the A-7 Corsair, crews a current radar picture to use in their planning for attacks in bad weather or at night.

The installation of the Infrared (IR) Mapping sensor (designated AAS-21) was a major improvement in the Vigilante's night capability. No longer would the flashers be the only way to obtain night imagery. The "Double-A, Ess 21" used liquid nitrogen to cool sensing crystals which detected temperature differences. The system would show dead vegetation used as camouflage, find the hot engines of vehicles in the night and even show patterns of warmth where vehicles or airplanes had been parked. The IR was run on all missions, supplemental in the day and a primary sensor at night.

Early runs with the AAS-21 over the Ho Chi Minh Trail showed hot spots that intelligence officers and photo-interpreters could not figure out. The hot spots turned out to be fresh elephant droppings.

Back in Albany, Georgia, while the system was still classified as secret, an unmarked, old Beech 18 airplane arrived at the Navy air station, had the system installed and flew a series of night flights. Speculation ran wild.

The Twin-Beech turned out to be operated by the U.S. Alcohol and Firearms Bureau which was locating illicit whiskey stills in the hills of northern Georgia. Later the Vigis themselves would fly these "revenoo-er" searches.

PECM stood for Passive Electronic Counter Measures although "counter measures" was misleading. PECM (AN/ALQ-161) was a special installation that in the RA-5C replaced one of the internal fuel cans. A close look at a Vigilante shows square antenna panels scattered along the fuselage sides. However, since the panels are painted the same as the rest of the aircraft, they are usually not noticeable. The inertial navigation system, INS, backed up by the RANs log, provided an accurate position of the RA-5C to the PECM. On return to the ship, the magnetic tapes were read and the location of radar and electronic emitters like tracking and fire control radars were automatically printed on a map. The PECM also recorded the PRF, band width and other parameters that enabled the intell officers to determine exactly what type and model radar it was. The two primary PECM tracks were north and south along the borders of North Vietnam. The Black Track was over Laos and the Blue Track over the Gulf of Tonkin.

Night PECM missions during the "Highway Patrol" period of the war were usually quiet flights; boring enough that the Vigi pilots would let the autopilot fly the airplane and help the RAN by writing down navigational fixes. All the way north along the border, the ALQ would be quiet with only an occasional beep from search radars. Then at the end of the route near the Mu Gia Pass, as the RA-5C started to turn around, the warning gear would come alive with pulsing strobes on the threat display and ululating warbles in the headphones—every indication of tracking anti-aircraft guns and imminent SAM launch. The crew's pulse would shoot up; adrenaline flowed as they prepared to evade missiles or flak. Then it would all suddenly stop. Stop just as the wings leveled after 180 degrees of turn. The Vietnamese knew that the information gathered by the PECM was not especially accurate when the aircraft was turning.

Another night on the Black Track over Laos, a crew from RVAH-6 had excitement of another kind. Air Force B-52s were effectively, if inefficiently, carpet-bombing North Vietnamese Army and Viet Cong storage and troop areas in South Vietnam, Cambodia and Laos. Each bomber dropped 84 500-pound and 24 750-pound bombs and the B-52s flew in cells of three. There were 324 bombs with a combined weight of 90 tons from one cell that created utter devastation in mile-wide swaths. The massive bombdrops were called "Arc Light." As a precaution before bombs away, announcements were made over the radio on guard channel which all friendly aircraft monitored.

Your author was flying blissfully along on a Black Track when guard channel blared, "Arc Light, Arc Light, coordinates north seventeen twenty-two, east one-oh-six zero-five, Arc Light, Arc Light." I did not pay much attention; Arc Light warnings came frequently.

Moments later, my backseater, Lt. Cdr. "Bull" Davis announced on the intercom, "We're there." I looked up over my shoulder and there were the black silhouettes of six B-52s. I lit the afterburners, rolled, pulled and dived fast to get out of the way. Safely away, we looked back to see explosion after explosion rippling through the jungle—so close together they formed a solid carpet of flame and fire.

great big guy and would be useful if we ever jumped out." Mulholland said there was no way he was going if they repeated the previous flight path, so they pretended to be a Shrike carrying A-4 looking for missile radars. They stayed high and flew in figure-eights just off Haiphong Harbor. The fire-control radars would lock-on when they headed away and shut down when they headed in. After several patterns, Mulholland turned off the IFF transponder, and DeBoxtel put the RA-5C into a supersonic dive to 1,500 feet and headed south. They got the coverage and the Vigilante was not fired at.

Close enough

Although the RA-5C had a sophisticated navigation system, pilots always had a map with course lines for the reconnaissance route drawn on it as a visual backup in case of ASB-12 failures. A junior RAN in RVAH-7 who flew with the CO made up his skipper's maps for him. As trips over North Vietnam became routine, the ensign RAN would simply add another set of lines and headings rather than re-drawing the entire chart with AA and SAM envelopes. During a port visit in Japan, he bought a set of 24 colored pencils. Back on the line, he used a different color for each mission, until after the tenth, he told his CO to, "Follow the mauve line today." The commander crumpled the well-worn map, threw it over the side and demanded a fresh one.

One of the most remarkable photographs ever taken by a Vigilante happened accidentally on March 1, 1971. Field Goal 602 was assigned a reconnaissance route that crossed over itself in order to get the tasked coverage of the Song Ca and a smaller river. The entire route was easily inside the SAM envelopes around Vinh. At Vigilante

A typical chart carried by Vigi crew. The lines show several mission routes. The blue circle was added showing where Prendergast was shot down. (Photo courtesy of Cdr. Wattay)