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INTERVIEW OF LIEUTENATNT COMMANDER E. P. RANKIN, USN

COMMANDING OFFICER, VP-81

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In the
OFFICE OF THE CHIEF OF NAVAL OPERATIONS
26 September 1944

Lieut. Commander Rankin discusses Black Cat Operations in the South Pacific. Among the topics covered are PT Cooperation, Armament, Communications, Equipment, and Organization.

BACKGROUND

VP-81 was a pre-war squadron, formerly VP-43 and a descendant of Old VP-19 in Seattle. It was transferred to Norfolk in June, 1941 and designated VP-81 in August, 1941. After two years of patrol, night anti-sub work and convoy coverage along the east coast and in the Caribbean, it was ordered from Guantanamo Bay, Cuba, back to the west coast August, 1943 to become a black cat squadron. I took command in September, after having been executive officer for a year and attached to the organization for 2 ½ years.

In San Diego the complement was streamlined to 18 PPC, 18 2nd pilots, 3 AVS officers and 115 men. Eighteen navigators were ordered to it to complete the complement. With the exception of the navigators, nearly all the officers and men had been in the squadron for nine months or more.

The three months the squadron spent in San Diego were devoted mainly to giving all hands some badly needed ground training. The men went through a very good six weeks gunnery course and the officers went through a specialized two weeks course in machine guns and small arms. All pilots went through a two weeks navigation refresher course and the navigators took the Celestial Link course. The navigators were all brand new Hollywood trained ensigns, with no previous experience. Their technical knowledge of celestial navigation was thorough but their practical knowledge was lacking and they knew very little about D.R. Navigation. For our work in the South Pacific, eighteen green pilots would actually have done more good.

Recognition classes every day, swimming check outs, life raft drills, etc., rounded out our training. We did practically no flying except checking out in the PBY-5A and ferrying some aircraft for ComFairWest Coast.

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We were assigned fifteen PBY-5As in November, painted black and already modified, i.e. wheels off, wheel well tanks installed, etc., for the trip to Kaneohe. Fourteen of the planes were new and one was an old crock that had flown through the Aleutians campaign and had been in innumerable accidents. It was supposed to have been overhauled but it gave us continual trouble. Only new planes should be sent out to the war zones because the Patsus and Hedrons have enough trouble supplying parts and keeping them in commission. Old planes are always headaches and actually impede operations.

We set up a commissioning schedule and each crew ran its plane through as the plane was received. In seven days the plane and crew would be ready for the hop to Kaneohe. A fly away schedule had been made out and the squadron moved out over the period of a month during November and December.

Each section stayed in Kaneohe for about ten days getting the planes put back together as 5-As, checking out in night landings, and completing an intensive gunnery and low altitude bombing program.

We went down to Guadalcanal in sections via Palmyra, Canton, Fiji and Espiritu Santo and relieved VP-54 November 25, 1943. PATSU 1-1 had maintained VP-12 and VP-54 during their tour and took us on as their third. It really was an excellent PATSU. Our daily plane availability for the entire period averaged nine planes. We also lived in the PATSU camp.

OPERATIONS

The weather in the Solomons from November through May generally is bad. Personally, I had only four clear nights. The rest of the time I flew in rain or bad weather at least half of each hop. The squadron had a total of three nights cancelled out and only eight planes turned back because of weather. Each PPC was his own judge as to the prudence of staying out in bad weather and no one was criticized for turning back or going into another base due to weather or mechanical trouble. The importance of the missions dictated whether the pilot should turn back. For convoy coverage, or search missions the pilot stayed out, but for PT cooperation or spotting, the pilot could turn back on account of weather if the area of operations was solidly closed and there was no doubt that it would remain closed. The pilot could accomplish nothing in the rain on those missions.

When flying through rain or bad weather, we would go down to 600-700 feet using the radio altimeter. Our usual night altitude was 1000 to 1500 feet depending on the bottom of the cloud level.

Most of our operations were conducted directly under Commander Aircraft Solomons. He was at Munda when we arrived at Guadalcanal. As Munda was overcrowded we based on Henderson at Guadalcanal and flew two to four planes up to Munda (200 miles) every afternoon depending on the work load. The pilots would be briefed by our ACI officer (I sent him up on temporary duty to ComAirSols), have dinner and take off whenever necessary, usually about 2000 on their missions. The next morning the pilots would land at Munda around 0600, turn in a report of the night's action and then fly on down to Henderson. This procedure continued until we moved up to Munda in late February. ComAirSols had moved on up to Bougainville so we operated under Commander Aircraft Munda, indirectly under ComAirSols, and staged through Bougainville and later through Green Island to

accomplish the missions farther north up around Kavieng and Emirau. We finally moved up to Bougainville in early May and again operated directly under ComAirSols.

The squadron always moved and stayed together as one unit and avoided operating detached units for any period of time. During December and January, most of the missions were long range search around Bougainville and up St. Georges Channel, then along the southern end of New Ireland. A considerable number of missions was assigned to cover task forces and convoys operating up off Empress Augusta Bay. Our main job in covering the convoy at night was to provide anti-surface vessel protection, five to thirty miles from the convoy. The convoy and task force commanders told us to stay outside a five mile radius and let the escorting destroyers handle the enemy sub situation (which was always completely negative). After being shot at a couple of times by convoys we got the word and stayed outside that five mile radius. Usually, the fighter director teams on the convoys or task forces would vector us around for the coverage. The operations during February and March consisted largely of working with PT boats, spotting for cruiser task forces, and covering the landings at Green Island. During April and May we covered the landings on Emirau Island, and provided night coverage for five weeks while the air fields were being constructed. We also worked with the PT boats as often as we could during that time.

After leaving a convoy or task force and heading for the base it was standard practice to fly over some Jap air fields or base such as Buka-Bonis, or the Shortlands, and drop our bombs. Our standard load for nearly all missions was 4-325 lb. depth bombs equipped with nose fuzes and a hydrostatic tail fuze.

Inside the plane we carried about 25-20 lb. frags [fragmentation bombs] and 40 parachute flares. We could have used the Mk. 42 bomb rack very nicely and carried 12-100 lb. bombs on our PT cooperation missions, but we had left ours in San Diego and could find none in the area. We tried at every tender and base within 500 miles of Henderson.

We dropped 290 tons of bombs and shot up 2 million rounds of ammunition. In the total of bombs was included 4300-20 lb. frags. Results were excellent. Thirty four barges were destroyed by us alone and about 200 in joint operations with PTs.

Other operations consisted of Dumbo hops, freight and mail service and night pathfinding operations for P-38s. We rescued ten people in seven hops. Two planes were shot up rescuing a PV crew about a mile off Ballale.

Proceeding homeward, by daylight, after some 15 hours of flight, flown in enemy territory, one of our planes intercepted an urgent message which stated that survivors were in the water near the Jap-held Shortland Islands, following the crash of a damaged Ventura. The pilot immediately headed for the scene and established radio contact with the other planes in the area. The men were down about two miles off the coast of Ballale. One rescue plane Dumbo had already landed and picked up three survivors, but had been forced by the extreme fire of the enemy to take off and leave two of its own men behind. These men had been out trying to help the wounded men aboard the plane, and somebody passed the word up that everybody was in, and the PPC gave her the gun and left his second pilot and a mech sitting on a raft with a wounded man. Four P-38s covered the landing of the Dumbo with strafing runs on the island, but ran out of ammunition. Disregarding intense salvos of anti-aircraft

fire and heavy guns of the coast fighters, the Black Cat landed near the abandoned men. The enemy poured heavy salvos with deadly accuracy at both plane and liferafts. The plane taxied as the shells exploded, churning the water on all sides, and reached the first two men, hauling them aboard even as the flying shrapnel pierced the tail assembly of the plane in seven places. The next shell severed the elevator tab control and another punctured a port wing in many spots. The plane picked up those two men and left the injured man there after they had made about six passes at him. They got out of there while they still had the airplane in one piece. Another one of our planes landed right behind them and ascertained that the injured man had actually died.

The pathfinder operations for the P-38s consisted of a Black Cat diverting from its PT work along the west coast of Bougainville long enough to climb up to 7,000 feet on a line between Rabaul and the Piva airstrips near Empress Augusta Bay. P-38s would take off at Piva around sundown and go up to Rabaul 150 miles away to shoot out searchlights. At 2200 they were clear out of Rabaul and headed south looking for the flares the Black Cat would begin dropping about 50 miles south of Rabaul. The Black Cat on a course to Piva would bring the P-38s down until the Fighter Director Base could home them in.

During the eight months in the area VP-81 flew a total of 600 combat sorties and 1200 other sorties for 7600 hours, of which 4765 hours were at night. We didn't lose a man or a plane, although eight planes were shot up, two taking hits in the unprotected gas tank and three coming in on one engine. One mech sitting in the tower was creased when a bullet passed up between his legs. He got the only Purple Heart.

PT COOPERATION

As successful cooperation between aircraft and surface vessels is so dependent on good communications we found that VHF was indispensable. It was installed in our planes shortly after we reached Guadalcanal. In the South Pacific nearly all airfields, ships (including PTs), and planes, had VHF and it became standard for voice communications.

We liked it because it was unaffected by our radar. The pilot's ARB receiver picked up so much noise when radar was on that it was impossible to use for normal communications. Without the radar on at night, our operations were useless. VHF, although limited in range, was a big step forward in bringing about successful cooperation with the PTs.

In December, a joint air-surface conference was held on Guadalcanal at which representatives of several Third Fleet Task Forces, including ComAirSoPac, aired their views in regard to what should and could be expected in aircraft-surface vessel cooperation. In general, recognition was poor, communications hard and cooperation sketchy between aircraft and surface vessels.

After the conference we worked out some day and night exercises with the PT officers and tried them out around Savo Island, using a destroyer as a target. We carried several PT boat captains with us and sent several pilots on the PTs for experience. After perfecting our tactics, a mission was assigned in the Bougainville Straits along the southeast end of Bougainville the last of December. Fortunately, the mission was a huge success. Four PT boats and the Black Cat sank ten barges out of the twelve intercepted. The other two barges escaped from the PTs behind a mine field after the Black Cat had run

out of bombs, ammunition and flares. ComAirSols within a week made the PT-BlackCat cooperation a standard night mission, using as many Black Cats as could be spared depending on the demands from other commands having higher priority missions for Black Cats such as spotting, etc.

The cooperation had the earmarks of a natural because the Jap was forced to supply and evacuate his forces on Choiseul and Bougainville by barge. After our landings on Empress Augusta Bay, no Jap ships larger than 1000 tons ventured south of Rabaul. Also, the Jap was bringing down supplies and moving equipment around to Motupena Point just south of our perimeter on Bougainville to build up for a spring push. Later on, as the result of our landings on Green Island and Emirau, the PT cooperation expanded until we were working areas all the way up to Kavieng.

Briefly, a night's PT-Black Cat cooperation would run like this. The Bougainville, New Ireland and Eastern New Britain coastlines were divided up into areas covering about 30 to 50 miles of coast and extending 10 miles to sea, each area having a number or letter designation. The ComMTBrons each morning would assign boats of PT squadrons based at the various bases at Treasury, Bougainville, Green or Emirau to work in specified areas the coming night and would ask ComAirSols for up to three Black Cats to work with the PTs, naming definite areas of operations. ComAirSols would make the assignments and would include in the message the other assignments of Black Cats to convoy coverage, spotting, etc. The Cats going on other missions would give limited assistance to the boats that had no planes assigned to their area.

When a Black Cat arrived at the area assigned, the pilot would look around with his radar for the PTs' IFF. The PTs ASG radar equipment was limited to about five miles surface range and ten miles air range. Having no IFF interrogator, a plane would not be discovered by the PTs until close at hand and even then could not be identified as friendly or enemy. Accordingly, the first essential for air-surface cooperation was establishment of identification. The plane would pick up the PTs IFF at twenty miles or more and home on it, picking up the pip of the boat at five miles. At about ten miles, the plane would call the PTs on VHF and identify itself, give its position in bearing and distance from the boats and advise the boat commanders that it was to work with them for the night. The senior PT commander would answer up that the plane could be seen on the "crystal ball" and to come on in. If the plane went beyond the VHF range at any time it would reestablish its identity upon return. Also if two planes showed up in the PT's radar, the PTs would ask us if the other plane was a friendly or enemy. If the other plane showed no IFF, we would notify the PTs that the other plane was probably enemy and that we would leave the area for thirty minutes stating our departure course. We found that the Japs could home on IFF so we would turn ours off when we found ourselves being trailed. The PTs best ruse was to lie to until discovered by the Jap plane and then to throw everything they had at him. In about thirty minutes the Jap would drift off and we would come back. We had several brushes with Jap planes but never did much damage. We were too big and slow to close them.

The ASG radar of the PTs was a good complement to the Black Cat's ASE. We had much greater range but could not pick up small targets traveling close to shore, whereas the PTs could. The kcs series for voice which the PTs normally used was unsatisfactory for us. Consequently, VHF was used entirely for communications between us.

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At first the planes were restricted from bombing any target in the PT area without the express permission of the boats in that area. After we had demonstrated that we could differentiate between a PT and a barge the restriction was lifted and we could bomb any target outside the range of the PTs as long as we kept the PTs informed of our intention.

After the Black Cat's identification had been established, the pilot would cruise up and down the coast searching the area visually and with radar. If nothing was found a systematic search of all inlets, river mouths and suspected beaches would be made, using flares. The PTs would lie to off the most likely places, about two miles out. We would drop the flares from 1200 feet or higher (cloud level permitting) set to open at 800 or 900 feet and about 500 yards inland. The idea was to silhouette for the PTs any barges cruising along, and also illuminate the beach area. After a flare opened the pilot would circle it and search the area with binoculars.

When barges or good beach targets were found, the pilot would call the PTs and then strafe the target. The PTs would dash in, closing to 100 to 200 yards, and wham away with everything they carried. The plane would coordinate its attacks with the PTs and keep a lookout for barges escaping or beaching.

Occasionally, the barges would put up a good scrap, but usually they headed for the nearest beach or protection of shore batteries. The Japs had several 3" guns along the main staging areas and these would open up on PTs that came within range. Part of the Black Cats' job was to silence these guns with bombs when they opened up. All in all we must have knocked out a dozen guns at various points.

The Black Cats also supported each other at night. If one plane happened to run into a large scale barge movement and as a result expended his bombs, ammunition and flares, the pilot would contact the Black Cat closest to his area and ask him to swap missions if he was available. The other Black Cat would show up, get the story of the preceding action, and take over the first plane's job. The scheme worked out very well.

After four months of PT-Black Cat operations, the coast of Bougainville had a wrecked barge on the beach for every mile of coastline, mainly due to our combined efforts. During April and thereafter, it was necessary to keep a plot of the positions of all these dead barges to avoid shooting them up again.

ARMAMENT

To better our fire power for barge hunting we rigged two fixed 20 mm M2 guns in the bow of our old plane. The line of thought followed in installing the 20 mm was that the plane was a land plane and would be operated as such, landing in water only in case of emergency. The guns did not impair the watertight integrity of the bow or affect the water performance of the plane, although the maintenance problem on the guns would have been terrific if the plane had been operated from water as no jackets or muzzle plugs had been installed.

The guns worked very well and several barges were shot up on the few missions we were able to fly the plane on. Unfortunately, we had a hard time keeping this one plane in commission, as the electrical

system was bad and the generators would seldom last out a hop. We had plans to install single guns, on the starboard side only, in four other planes but the PATSU had to move on up to Bougainville before the project was far along. We did mount twin .50 cal. guns in the waist positions of six planes and supplied continuous feed to each. Also four planes had installed a single .50 cal. gun with continuous feed in the tunnel position.

There was very little trouble with any of the planes' armament. Only two bomb racks failed and several Mk 2 intervalometers failed. To avoid the usual arming solenoid failures which occur when the arming system is left energized, we would set up the bombing system ready to drop but would keep the radioman's panel bomb arm and bomb release switches turned off until needed. Consequently we had no circuit or solenoid failures.

The bomb sight was never used or carried as all bombing was done from low altitude, dropping by eye. We had dropped a great number of depth charges and practice bombs in the Caribbean and were fairly proficient at dropping from low altitudes. We had no low altitude sight except one which one of the second pilots had built out of the tunnel drift. The bombing angle was preset for altitude and speed and the sight aimed through the bombing window. For a jury rig, it worked fairly well. We did a lot of bombing of land targets, targets of opportunity, which included every Jap base in the whole area. Our technique for attacking a well defended land target was to approach at 4,000 feet and dive or glide across the target at 160-180 kts., dropping at 1200-1500 ft. and retiring at 500-600 ft. About five seconds after dropping, the tunnel gunner would throw out a couple of flares set to open at 500 ft. The tactics were evidently sound because only three planes picked up bullet holes. The waist gunners would throw out 20 lb. frags., instead of strafing, on the run across the target.

We dropped over 5,000 flares and had about 100 duds. Some of the duds were due to long exposure to weather in the area and some to technique of throwing the flare over the side. At first, we used the Mk 4 and 5 which fit the flare tubes, then shifted to the Mk. 6 which had to be thrown over the side by hand. The Mk. 6 had a little longer burning period and a million c. p., a third more than the Mk. 5, and was a more recently manufactured flare, consequently fewer duds. We liked the Mk. 6 and used it exclusively the last four months.

The use of flares I have already mentioned. One pilot dropped 138 one night on a rescue mission searching for survivors of a B-24 that had crashed about five miles from Munda. Flares were also used as incendiaries. Set to open about 100 ft. over the target, the flare would drift down and burn fiercely after landing. Several nice fires were started that way.

EQUIPMENT

The ASE radar equipment, though obsolete, worked well and was fairly easily maintained in the field. We navigated by it almost entirely. With the IFF interrogator, the radar was the most important piece of equipment in the plane. The VHF was a close second. We relocated the radar scope back to the radioman's desk and the radioman on duty was also the radar man. Also, we took the second pilots scope out, as we never used it. With our installations, we habitually flew at 800-1000 feet in and out through the channels between the many islands of the New Georgia group through rain at night. We

trusted the radar and the operators implicitly, as those islands go up to 3000-4000 ft. The operators had to be good. Most of the radiomen had about two years experience with the equipment and were excellent interpreters.

We replaced all of the fluorescent lights with the ultraviolet lights in Kaneohe as we had experienced so much trouble with the vibrators.

As we had little use for cockpit lighting except for takeoffs, landings and when flying through rain, we depended on the luminescence of the instrument markings for indications.

In regard to night vision, although we had red goggles on hand, no one ever wore them prior to a night hop or while on a night hop. There was little use dilating our eyes during the afternoon prior to going on a mission and then have some jeep temporarily blind us while we were taxing out for takeoff. Our eyes acclimated themselves to the darkness readily by keeping the cockpit lighting to a bare minimum. After a short while the radium dials gave off enough light to fly by. As the plane was entirely blacked-out except for the navigators chart light, which was turned down, and the radioman's desk light, we were rarely subject to any source of light. The bunk compartment and the tunnel hatch had very dim blue lights to be used when more flares or frags were being broken out and set.

The flame dampeners worked well and had a good life.

Before we left San Diego, I had the Mk. 8 compass installed forward of the throttle bracket to be used as a check compass. With the master compass of the remote units located on the port side of the bunk compartment, it was too easy for someone inadvertently to lay a tommy gun or some other heavy metal object within two feet of it and thus influence it. The dependability which the Mk. 8 gave far exceeded any additional weight component.

The R1830 engine had done more to enhance the value of the PBY than the design of the plane or manufacturing technique. We ran those engines hard for 650 hours before changing, most of the time operating at 2200 and 32 inches. That power setting would give us 95 kts. for the first four hours after take-off. The plane was so tail heavy we could never get her nose down until we had burned up most of the fuel and dropped our bombs. When parked, it was common practice to keep a 55 gallon fuel drum under the tail of each plane unless the engines were running. Several planes dropped back on their tails while a mechanic was climbing up the ladder.

The landing gear trouble was negligible. We made 1800 landings and had one nose wheel collapse. That accident was due to pilot error. He had not had the strut locks checked visually. Fortunately the damage to the plane was slight as the nose wheel snapped down into position when the bow was lifted up. I made a resolution that any PPC who was as little concerned about the safety of his plane and crew as to not check his landing gear down and subsequently had his gear fold up would automatically become a second pilot. Our landing technique was based on the nose wheel being the weakest part of the landing gear. Therefore we made our landings on the side mounts, nose high, letting the bow wheel touch after we slowed down to 55 knots. On take-off we pulled the nose wheel off at 60 and flew off the side mounts.

ORGANIZATION

The three A-V(S) officers I had were excellent. One was Personnel Officer and Administrative Assistant, one handled communications and the other was the ACI officer. I believe that the Flight department is better handled by a pilot than by a nonflying officer.

The Personnel Officer received orders back to the United States after we had been out for two months and a relief from the states sent out. I thought it was a dirty trick to pick off a key officer before the squadron returned for reorganization. Fortunately the relief officer was almost as good as the one I lost – which is rare. The communications officer was ordered back to the states but no relief was provided for him.

The ACI officer was very fine. He completely filled the bill of what an ACI officer should be like. In addition to his normal duties of briefing, writing up action reports and routine intelligence, he made it a point to attend the ComAirSols or ComAirMunda morning conference and keep himself informed of the complete situation in the South Pacific and the general world situation. At his briefing session for the flight crews in the afternoons, he would bring out the highlights of the conference.

In regard to flight crews, I think all the patrol and search squadrons should have more crews than the 1 1/3 now allowed. I broke the 18 crews I had into 15 crews, one for each plane, in order to put three pilots to six of the crews. Some crews flew with two navigators, one navigator acting as 3rd pilot. A large percentage of our night hops were 14 hours long or longer, some going as high as 19 hours staging through other bases. Two pilots per plane just could not maintain that pace flying every 3rd or 4th night and we averaged 3 ½ planes a night. During one period of six weeks, during which three crews were on leave to New Zealand, each crew flew every third night. One pilot lost 25 lbs. and several others lost up to ten. To stay awake at night some were forced to take benezadrine sulphate – a sleep repellant tablet – and some had to take sleeping tablets plus brandy to go to sleep the next morning due to utter fatigue. We got plenty tired! I thought the squadron was going to fold up if the load didn't drop off. Two nights of stinking weather saved us.

I mentioned we had an average availability of nine planes per day. But due to the number of crews I had, I could fly only a maximum of four for a sustained period of operations, with sometimes five for special missions. With 25 crews in the squadron we could have flown at least six planes every night. There were plenty of demands for Black Cats. The planes were available but I didn't have enough crews.

In regard to flying, I took my regular turn with the rest of the PPCs. I believe a squadron commander and executive should fly as much as any other pilot. It helps the morale of the squadron to know that the captain is going to be out there with the rest of them. Also I accepted no volunteers for particular missions. Every crew followed in rotation, with the exception that the spotting missions were passed around so that each pilot would get the experience.

A squadron should remain intact until it is relieved as a squadron to come back to the states. The proposed system of rotating crews, leaving the squadron in the area, won't give much satisfaction to those who have to stay out two years.

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In regard to identification in the area, we used IFF entirely. When the IFF failed we went home. Flashing lights, pyrotechnics and such as that are only an invitation for someone to shoot at you: we never used them. IFF is the only positive means of identifying ourselves, and the interrogator is the only way of telling friendly from enemy at night. We had one case when a Jap barge had a phoney IFF showing. We asked the PT's if they knew anything about one of their boats being in close to the beach, and they said "No". We told them that there was a phoney IFF in there, went in and lit up the area, and it turned out to be a large Jap barge in company with three smaller ones. We called the PTs and sunk them. We presumed that the IFF had been taken out of one of the SBDs or TBFs that had been shot down at Rabaul.

QUESTIONS

Q. Did you knock out all those guns in the Shortland area?

A. Yes, we beat most of those down pretty well. Strike Command (ComAirSols) hit them about twice a week and cruiser task forces went in every three or four weeks to shoot up the place.

Q. How about the nest of guns at Kavieng?

A. Those were knocked out when the battleships went up and bombarded. There was some resistance still there, but it wasn't very much.

Q. Did the Japs on Bougainville use their search lights in getting you over the water?

A. They only used them up in the Buka-Bonis area. The rest of the places they kept their search lights off. Up there they would open up if we had altitude, but they wouldn't open them up when we were low. We never did have any search lights turned on us when we were flying at 1,000 ft. or lower along the coast.

Q . When you went on missions up the slot did you continue to navigate back to the base with your own navigation or did you have fighter direction or radar help?

A. Every one of those bases out there – the main bases – at Bougainville, Munda, Treasury – have fighter director bases, working on VHF communications. They can give you a bearing in about thirty seconds wherever you are, (if you are within range, which depends upon altitude) and tell you the course right to the base.

Q. In other words, you were always in contact with some land-based Station?

A. That's right … They have radar beacons also at each base, and they have a radio range for the Army at each base. The place was lousy with navigational aids, including ZB equipment. We used the radar beacons mainly for homing and our radar to navigate along the coast. We had a standard doctrine. If our radar went out at night, and we were flying in the rain or bad weather, we turned to the safest heading and flew to sea. We flew out until we either cleared the weather and then headed for home or flew out and back so that we would arrive at the coast at daylight. It is a healthy idea to navigate

around through those islands in daylight if the radar is out. One of the Black Cat squadrons lost a plane on Choiseul. It just ran in to the side of a hill and killed the whole crew. The only reason we could find was that his radar went out while he was flying in the rain, and he didn't know exactly where he was. He turned to fly out to sea at about 1300 feet and ran into Choiseul.

Q. Didn't you have your emergency IFF so that you could get a fix on a radio station to get a bearing?

A. Well, you have to climb up. If it is clear, you're fine, but if it's raining, we had a standard doctrine to stay down – stay at 1,000 feet or less. One of the early Black Cat squadrons lost a plane because he had climbed up after radar failure. He climbed up to 8,000 or 9,000 feet, finally getting over the stuff, flew around for a while and came back down through a hole and ran out of gas about 6 or 7 o'clock in the morning. He didn't know where he was.

Q. What IFF system of interrogation or interrogator responder did you have, - APX-2 or ABK?

A. ABK

Q. How did you interrogate PT boats?

A. The interrogator was right in with the ASE radar – read it on the same scope. The ASB radar doesn't have any interrogator and the later Black Cat squadrons, the two that followed us out, had to have separate interrogators installed in their planes after they arrived in the area. The equipment you're speaking of was sent out from the coast for them. Without the IFF interrogator we were not of much use at night, because we couldn't tell friendly from enemy planes, and the shipboard gun crews are really trigger happy. Even with IFF we were fired at a dozen times.

Q. How did you find the ASE?

A. That worked very well. Easy to maintain. The radio operators were very good in interpreting. They had had about two years of experience with the equipment. I think the ASD installed in the PBY-6A will be excellent. Something you can see a map in. It gives one a lot better feeling. The pilot can look at it, and see how to go between two islands without having a radar operator telling him.

Q. How do you fly the airplane when you are looking at that map?

A. Use the automatic pilot or let the other pilot fly when you are looking at the scope. We had the Sperry pilots and they worked pretty well.

Q. Do you know if the Black Cat – PT operation is being applied in the current operations in the South Pacific?

A. No, I don't, but it looks like the Philippines would be a juicy place for Black Cat – PT operations. Any place where you've got a coast line to work on, it's fine. You've got to set up a doctrine between the PTs and the Cats, to familiarize each other with the limitations and possibilities. We carried a PT officer, usually a boat captain, in nearly every flight we made cooperating with the PT boats. A lot of my pilots also went out with the PT boats on combat missions. They learned a hell of a lot from each other.

These PT boat boys were amazed when they looked at the old ASE radar and heard the things that radiomen could interpret out of it.