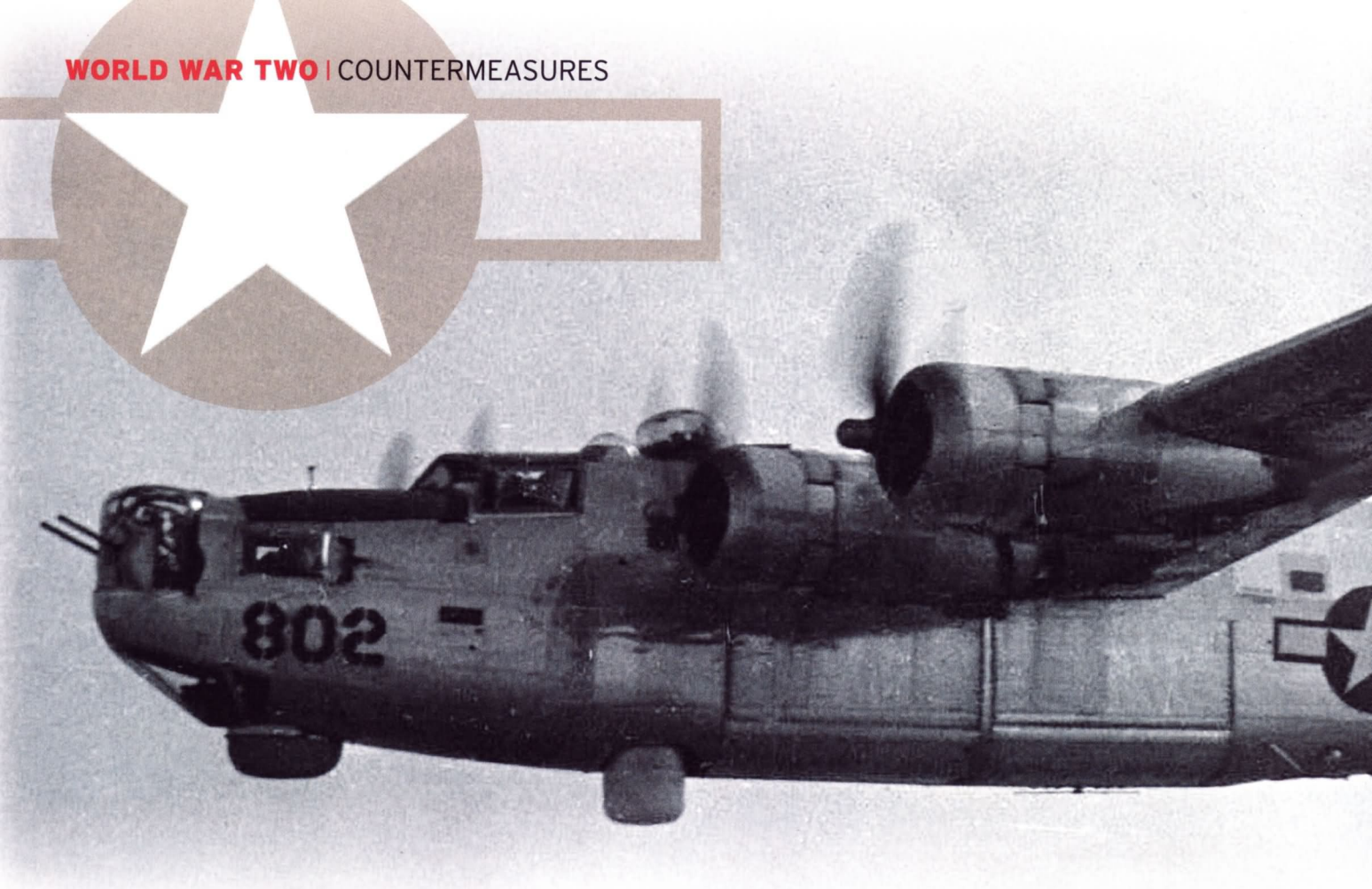


WAR IN THE

Bill Cahill introduces the work of the 'Ferrets', electronic warfare Liberators shadowing the USAAF's B-29 onslaught on Japan

Above
B-24M 44-51802 was one of at least three 'Ferrets' assigned to March Field, California for crew training. CHUCK VARNEY

Map, right
Plot for Flight 'R' Mission No.24 flown by 'Ferret 6' on the night of July 16-17, 1945. AIR FORCE HISTORICAL RESEARCH AGENCY

Right
Two RCM operators at work in their cramped quarters in the former bomb bay.

As the USAAF prepared to unleash waves of 20th Air Force Boeing B-29 Superfortresses to bomb the Japanese mainland, some questions remained unanswered. In October 1944, little was known about the air defences awaiting them. Based on Saipan and Guam, the US Twenty-First Bomber Command (XXI BC) decided that the Empire's radars needed mapping before the bombers found out the hard way. This project became the domain of the 'Ferrets'.

Imperial Japanese Army (IJA) air defences of the Home Islands centred on a protective ring of radars providing early warning of an impending raid. They were deployed in limited numbers in chains stretching across western China and along the Chinese coast to monitor bombers flying in from India. The majority were concentrated on the Home Islands of Honshu and Kyushu, with outlying posts on the Nanpo Shoto island chain.

In 1942, an initial lacklustre series of searches was conducted using a Boeing B-17E Flying Fortress. The following year the USAAF modified a Consolidated B-24 Liberator with radar receivers as part of Project FERRET. It was tasked with investigating radars on Kiska. Though this was successful, it was eight months before the USAAF returned to this task.

Even with the deployment of new 'Ferrets' and the incorporation of radar receivers into B-29s of the 20th, by late 1944 the intelligence gathered on what the Home Island had in store was still paltry.

With Washington's agreement, the 20th Air Force authorised the augmentation of the XXI BC's long range photo-reconnaissance squadron, the F-13-equipped 3rd PRS, with four primary and two reserve Ferrets to form a Radio Countermeasures (RCM) flight. (The F-13 was a strategic reconnaissance version of the B-29.)

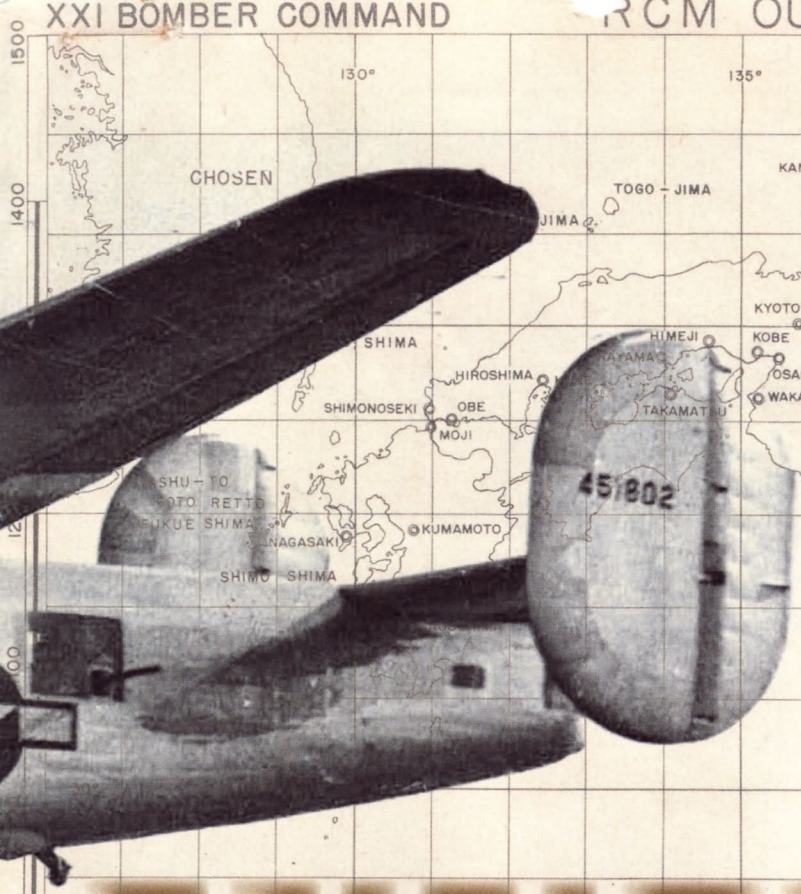
SPECIAL LIBERATORS

Scheduled to leave the USA on December 24, specially modified B-24J *Ferret 6* was to be followed up with five additional examples on or about February 17, 1945. After conversion at Fairfield Air Depot, Ohio, the Liberator was assigned to Eglin Field, Florida, for crew training before departing California on January 5, 1945. Upon arrival at Hickam Field, Hawaii, *Ferret 6* was delayed for minor modification and additional training flights, arriving at Guam on February 23.

Five B-24Ms were delivered to Fairfield in early January 1945 and within three weeks were ferried to Eglin for training prior to moving to the Pacific. Four departed for Guam in mid-February 1945 with one staying behind at March Field, California, for a new training course.

The four B-24Ms met up with *Ferret 6* at Guam in late February 1945, though this number quickly dropped after one of the M-models was wrecked in a training sortie. The quartet was assigned to Guam's Air Depot for modification work to bring them up to theatre standards. As *Ferret 6* was intended to fly mainly at night, its defensive armament was reduced to just flexible tail guns. The B-24Ms left on April 27 with the J-Model following almost a month later.

XXI BOMBER COMMAND — RCM OUTLINE MAP



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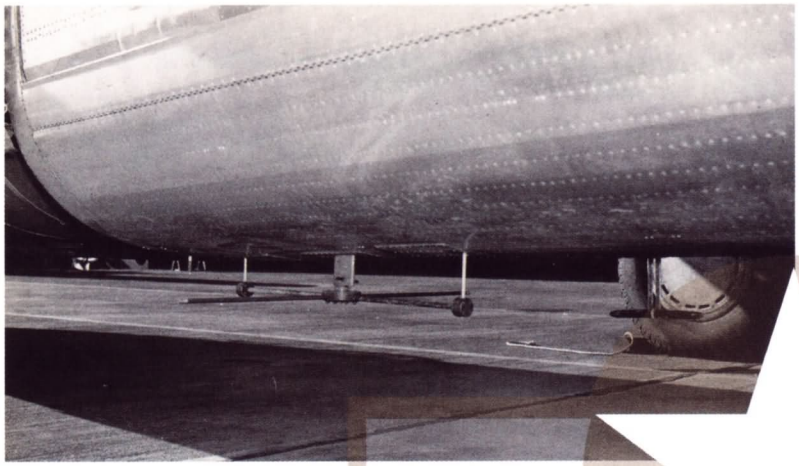


"Radars plotted had their positions confirmed by photography and details were passed on to Iwo Jima-based P-51 Mustangs for destruction"

Top, left to right
Detail of an unknown B-24 'Ferret' at Hickam Field, Hawaii. Some of the modifications visible include additional windows and antennas for the APR-4 and APR-5 receivers. AIR FORCE HISTORICAL RESEARCH AGENCY

The APA-17 direction finding antenna under a 'Ferret' at Hickam Field, Hawaii. AIR FORCE HISTORICAL RESEARCH AGENCY

B-24M 44-41985 after its crash shortly after delivery to Guam. VIA AUTHOR

Map of Japanese radar sites on Chichi Jima based on data derived from Flight 'R' missions. AIR FORCE HISTORICAL RESEARCH AGENCY

FLIGHT 'R'

The 3rd PRS and its attached RCM Flight (referred to as Flight 'R') fell under the control of 20th Air Force but day-to-day charge was initially handled by the Countermeasures Air Analysis Center, a unit designed to monitor Japanese radars for the XXI BC, the 7th Air Force and the US Navy. Even with the fine facilities of the CAAC available, XXI BC needed to know more than what pure radar reconnaissance could provide.

The plan drafted in December 1944 emphasised the need to intercept enemy air-ground communications to better understand Japanese fighter direction tactics. Early efforts centred on receivers operated by an RCM observer on one to two B-29s in each squadron. This immediately ran into problems with equipment installation and non-Japanese speakers sifting through radio chatter to determine what was worth recording.

While some minor successes occurred in February 1945 with post-mission translation by Japanese-American (Nisei) linguists, a better solution was required. Guam Air Depot added voice recorders and seats in the former navigator's position in the nose of the Ferrets to allow two radio intercept operators to work receivers.

After emerging from the Air Depot at the end of April, the B-24Ms flew a series of check flights and RCM calibration sorties against friendly radars. After aircraft and crews were declared fit, the combat debut of Flight 'R' was to map the Nampo Shoto chain between Iwo Jima and Japan.

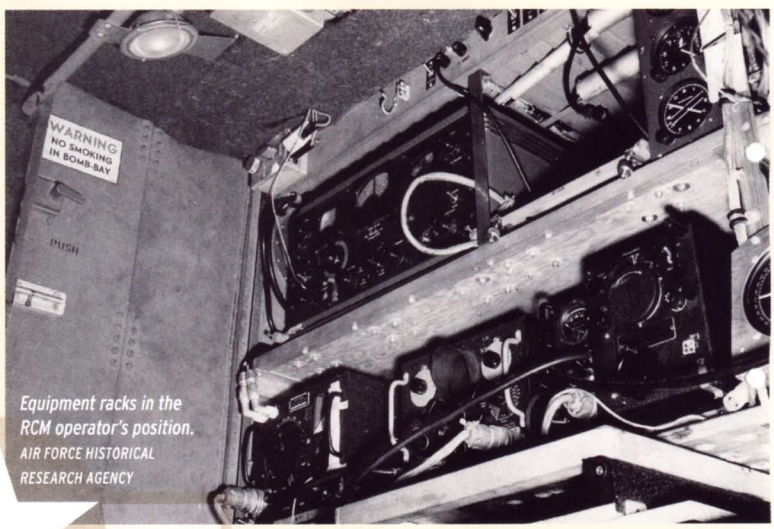
INSIDE A 'FERRET'

Each B-24 was handcrafted into a 'Ferret' as it moved through the modification line at Patterson Field, Ohio. A compartment was built in the former aft bomb bay to house the new equipment and its operators, with additional fuel tanks located in the forward bomb bay to extend mission duration.

The Ferret compartment had racks mounted along the port side of the fuselage for the extensive array of search receivers, direction-finding equipment and signals analysis gear. Above and behind the RCM operator positions was the crewman who controlled the SCR-717 navigation radar.

The navigator was moved from the nose up to the flight deck behind the pilots, working with the radar operator to precisely plot the aircraft's location. An interphone system connected the RCM boys with the navigator and radar operator to allow crew co-ordination in defining Japanese radar sites.

While most of 3rd PRS Liberators retained the majority of their armament, at least one had all turrets stripped and twin guns installed in the former tail turret position.



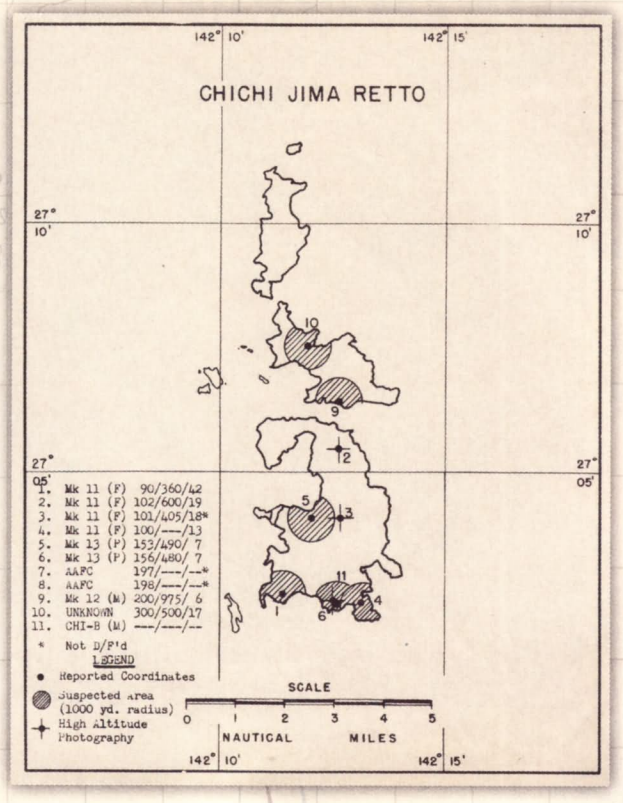
Equipment racks in the RCM operator's position. AIR FORCE HISTORICAL RESEARCH AGENCY

LISTENING OUT

The first operational mission was on May 18 with B-24M 44-41981 flying for 14½ hours against installations at Haha Jima. The long transit north from Guam and over Iwo Jima limited the Liberator to three hours of circling the target area, prescribing a rectangle approximately 15 miles (24km) off the coast. The second 3rd PRS patrol was flown six days later to the same locale.

The tempo was low as crews were also performing calibration and training sessions. This changed during the last week of May when Flight 'R' managed a trio of missions in three days, two revisiting Haha Jima. On May 29 B-24M 44-41991 reached out to Aogashima at the north end of the Nanpo Shoto chain. While not confirmed, the Ferret very likely staged through Iwo Jima to give adequate range and endurance.

Flight 'R's first month of combat ended with *Ferret 6* returning from depot. While only five missions were flown, the results were trickling in. Radars plotted had their positions confirmed by photography and



Below
'Ramp Champ' was one of three B-24M 'Ferrets' assigned to the 3rd PRS.
BARRY GILKES VIA STEVE BIRDSALL

details were passed on to Iwo Jima-based North American P-51 Mustangs for destruction.

On June 2, the now familiar track up the Nanpo Shoto to Tori Shima was staged, taking 17 hours. A lack of activity confirmed the idea that radar-recces should be co-ordinated with B-29 strikes, thereby tempting the defences to turn their scanners on.

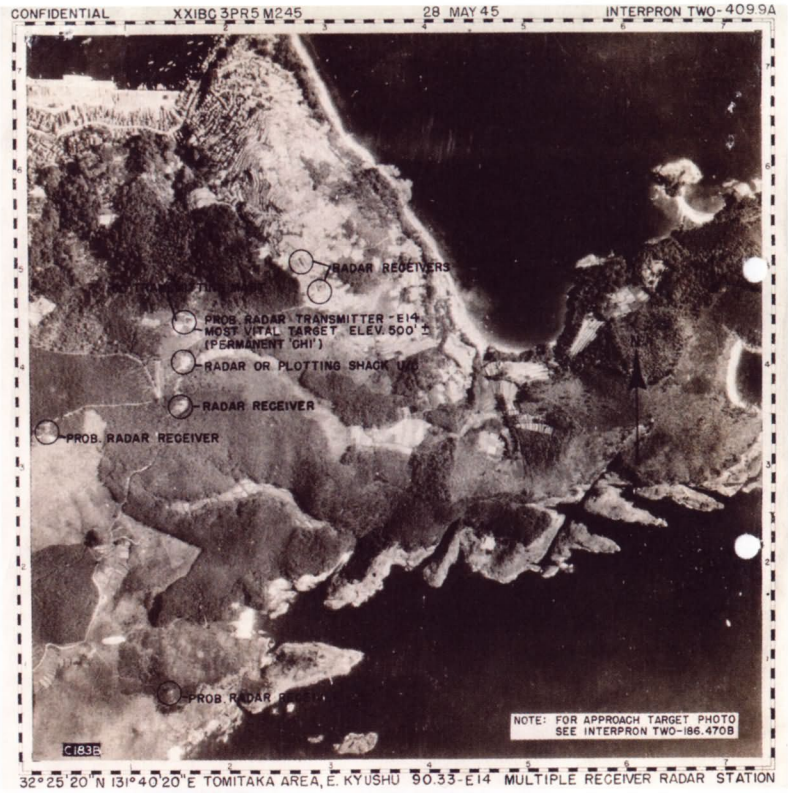
Missions to Hachijyo Jima, Tori Jima, and Aogashima, some lasting up to 19½ hours, included the debut of B-24J *Ferret 6*. Results varied with weather impacting on collection efforts and flights were still not synched with B-29 strikes.

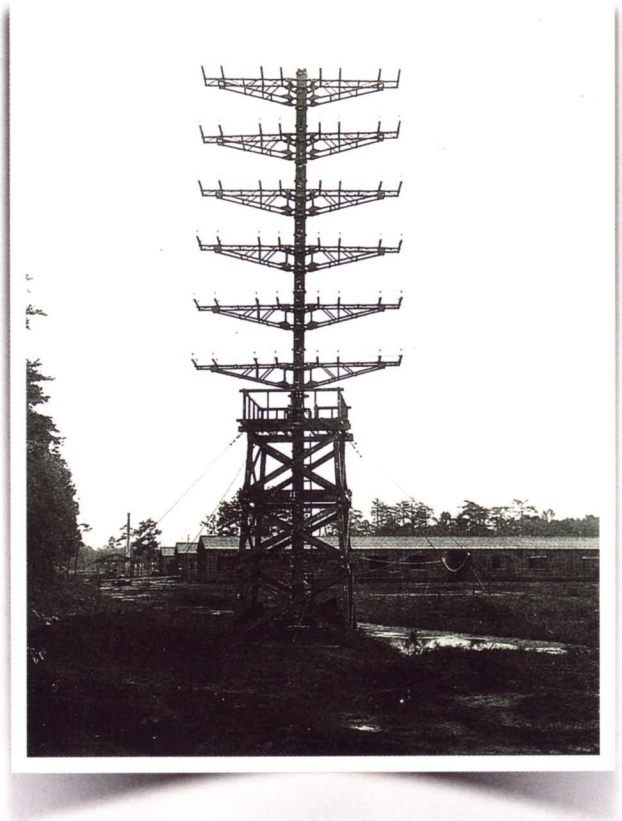
IN THE WAKE OF B-29S

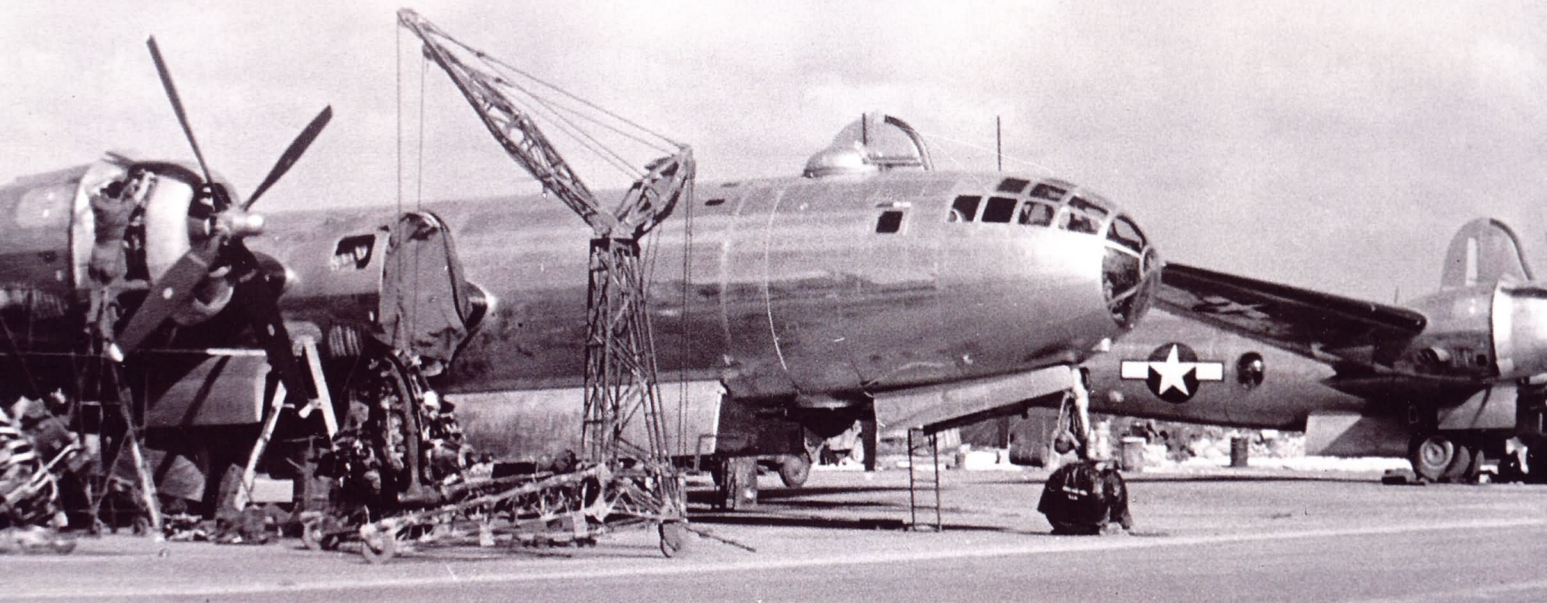
Combined flights came on June 9 as B-29s struck against Nagoya, Akashi and Narao, and the Ferret flew up to Aogashima to confirm radar locations and activity in northern Nanpo Shoto. Two Ferrets were launched to support a B-29 raid on Osaka on the 15th. Although there were only ten missions in June, the Flight was preparing for a higher tempo by confirming tactics for integration with B-29 raids and staging through Iwo Jima to enable the overloaded B-24s to reach the Home Islands.

By the end of June, Flight 'R' crews had developed a routine. CAAC assigned a Ferret against a location to identify, or confirm suspected sites, and every effort was made to synchronize with planned XXI BC attacks to ensure the Japanese radars were active.

If flying north over the Nanpo Shoto, RCM observers verified any received signals matching the known order of battle. Once the Ferret arrived at its mission location, the real work started.







FLIGHT 'R', 3RD PRS

Serial	Model	Notes
44-41124	B-24J-195-CO	*Ferret 6*. First example assigned to 3rd PRS; normally flown by Lt Jordan's crew
44-41981	B-24M-10-CO	Normally flown by Lt Marshall's crew
44-41996	B-24M-10-CO	*Ramp Champ*. Normally flown by Lt Quevedo's or Lt Snyder's crew
44-41994	B-24M-10-CO	Normally flown by Lt Harnly's crew
44-41985	B-24M-10-CO	Crashed shortly after delivery, flew no operational missions
44-51776	B-24M-30-FO	No operational missions recorded
44-51277	B-24M-25-FO	No operational missions recorded
44-51786	B-24M-30-FO	No operational missions recorded

Observers listened for radar wave transmissions and once one was found used a direction finder to get a 'fix' on its point of origin. After landing and maintenance debrief, the crews crawled into their racks for a well-deserved sleep. The next day the operators spent four to five hours plotting the fixes and writing up a report.

Two sorties during the night of July 2-3 marked the debut of Flight 'R' off the Home Islands with B-24s off the coasts of Honshu and Shikoku to support B-29 strikes. This was followed with a three-sortie effort alongside a raid by 500 B-29s against central and southern Honshu on July 6-7. The Ferrets orbited along the southern coast of Honshu, reporting good radar and radio intercepts.

After a nine-day rest, three more sorties were staged over the night of July 16-17 as B-29s hit Honshu and Kyushu. One Ferret was positioned off Hamamatsu while the others were off the east coasts of Kyushu and Shikoku. Three-ship sorties were staged three more times in July.

TOWARDS THE END

Flight 'R' wrapped up a busy week with a 25-hour flight by *Ferret 6* off Hamamatsu on August 2, shadowing B-29s bound for Honshu. There were two missions on August 6, with the Ferrets pulling out about the same time as three B-29s took off from Tinian on a world-changing sortie to Hiroshima.

Despite the atomic bomb, the war continued and two single missions were flown, one on August 8 off Kyushu and one the next day off Shikoku. On the 10th two B-24Ms and *Ferret 6* flew to Guam in preparation for a sortie on the 11th but this was scrubbed.

A trio of Ferrets was in the air again, this time to support daytime B-29 strikes to Hikari, Osaka and Marifu on the 14th. The crews recovered at Iwo Jima for a quick rest, flying back to Guam on the following day to complete their last combat sorties – the war was over.

In its six-month existence, Flight 'R' flew four of the most advanced electronic reconnaissance aircraft on 42 combat sorties. The Ferrets introduced both the USAAF and the US industry to the technology required to a wage war in the ether. This experience helped to prepare America for the emerging 'Cold War' with the USSR; a conflict in which data like frequencies and band-width coupled with nuances such as controller 'signatures' would prove vital. ●

Clockwise from top left

US Navy reconnaissance photo taken on May 28, 1945 depicting the Japanese Army radar site at Tomitaka on Kyushu. AIR FORCE HISTORICAL RESEARCH AGENCY

Japanese Army Tachi 18 early warning radar. SC-290150-US NATIONAL ARCHIVES

F-13s of the 3rd PRS on the maintenance line at Isley Field, Saipan, October 1944. 3A-39763-US NATIONAL ARCHIVES

There were two missions on August 6, with the Ferrets pulling out about the same time as three B-29s took off from Tinian on a world-changing sortie to Hiroshima