

As I brought the Tornado's four J47GE-15 jet engines up to full power for takeoff, my mind flashed back to discussions a few days ago. "Would it work?" I asked myself.

This mission, in a newly painted all black North American RB-45C (tail #027) jet reconnaissance aircraft would prove or disprove the test flight results and theoretical discussions. We were heading for a target area in the industrial heartland of North Korea, just short of the Yalu River. It was known to be heavily defended by searchlight batteries, and antiaircraft emplacements. We were to bring back sensitive radar and visual photographic reconnaissance data essential for a follow-on B-29 bomber interdiction strike scheduled to occur within 24 hours.

For some reason, I thought searchlights as a part of aerial warfare

had become passe after WW II. I was in for a real surprise. After reporting for duty with the 91st Strategic Reconnaissance Detachment in the Far East in 1952, there were a number of briefings on the subject. I was to discover, much to my surprise, that North Korean searchlights presented a very real danger and a high priority threat to our reconnaissance operations. Searchlights also presented an increasing threat to United Nations fighter and bomber forces operating at medium to low altitudes over North Korea in the winter of 1952. This was principally due to increasingly accurate antiaircraft fire from ground batteries situated around major targets.

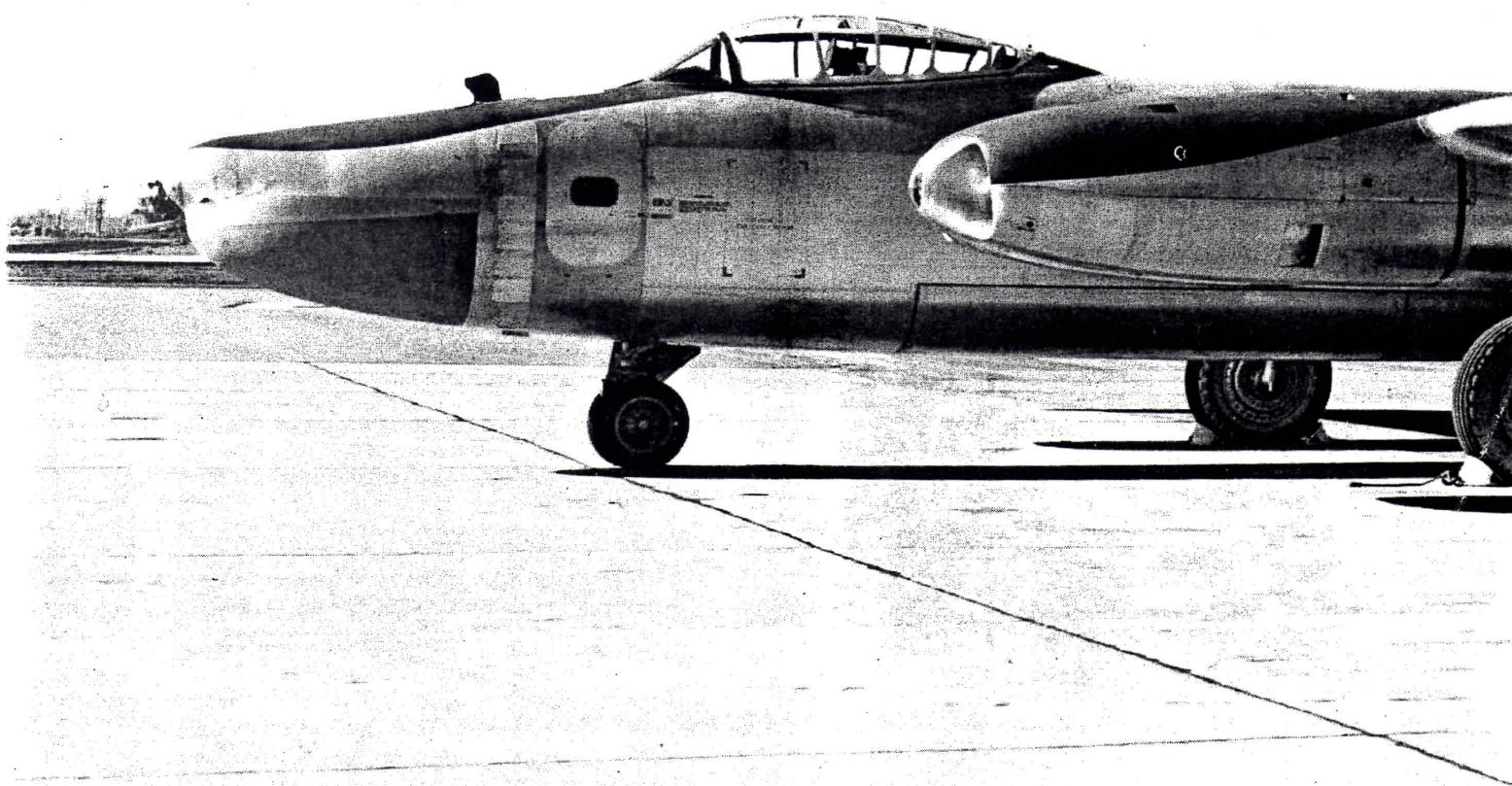
The 91st Strategic Reconnaissance Detachment was tasked to provide a highly specialized type of intelligence capability for not only Bomber Command, but major components of Far East Air

MIDNIGHT MISSION

**Secret Spy Flights Over Korea In The All Black
North American RB-45 Tornado!**

By Howard S. Myers, Jr.

Photos from the author's collection and Warren M. Bodie.



Forces (FEAF) and over the past few weeks, one theory of counter-measures to our dilemma of searchlight lock ons sounded feasible. The experts had concluded: "Try painting one of the RB-45s black."

The big unanswered question was: How would it play in the real world, and could we afford to pull an aircraft off the flight line for a couple of weeks while it went through the process of getting painted? We had seen theory and reality clash before. The decision was made to take the gamble.

The mission planned for this night would prove the case under actual hostile conditions. A number of test runs were flown in the late winter of 1952 from bases in Japan. If theory proved correct, the results would be applied to future operational tactics over North Korea.

The question to be answered was simply: "How effective are searchlights, *in fact*, against a high flying, non-painted and a completely black painted RB-45C penetrating at high altitudes and high speeds?"

Not only was the threat becoming a serious menace of searchlights tracking RB-45 reconnaissance aircraft during night surveillance missions, exposing them to antiaircraft fire, but it posed a serious problem of intercepts from a formidable MiG force patrolling the skies over the Korean peninsula.

The B-45 had proved easy for MiGs to detect and attack when lit up like a Christmas tree during hours of darkness. This is precisely how they appeared in the night sky with a searchlight lock on. The problem was too serious to ignore. Evasive action was part of the answer, but not the full solution. One RB-45C had already been lost as a result of suspected enemy ground fire during a night reconnaissance mission.

This highly classified aircraft, jammed with the most modern reconnaissance-gathering apparatus available, could not be further exposed to the possibility of loss. The RB-45C had a carefully orchestrated design platform to aid in penetrating the most sophisticated defense systems in that era. It was, at the time, the Air Force's only operational all-jet bomber. Even if the total force of RB-45s assigned to the Far East was limited, every aircraft was essential to our needs.

We began the preliminary tests using several batteries of



Above: North American RB-45C Tornado of the type flown by the author in Korea. In addition to internal fuselage and wing fuel tanks, recon bomber also carried two 1,125 gallon tip tanks, giving the aircraft a total capacity of 8,133 gallons. In place of regular bombs, twenty five photo-flash bombs were carried in the bomb bay. RB-45C held ten camera in four positions, four in the rear fuselage, four in the central fuselage, a K-17C Trimetrogen camera mounted on a pallet just aft of the wing's trailing edge and a forward oblique camera set up in the nose, the installation of which gave a duck's snout to what had been the bombardier's glassed-in compartment. (Warren Bodie)

Right: Bomber version of B-45 Tornado with glassed-in nose. This one from the 84th Bomb Sqdn., 47th Bomb Wing. A total of 96 B-45A versions were completed.



800,000,000 candlepower searchlights operated by the 507th AA Searchlight Battalion (Mobile) from a central Japan base. On a cold moonlit night in mid-winter of 1952, the test began.

RB-45C #042 was used for the first mission. It was a standard combat configured, non-painted aircraft. The plan was to take off, climb to 35,000 feet where contrails could be expected, then climb or descend to an altitude where no contrails existed. We were to make several passes from a variety of headings. The object was to determine if ground operators of the searchlight battery could pick up the aircraft in a strictly manual mode. (They were operating the searchlights by hand; no radar on the first few test runs.)

Six runs were made that night.

Much to our chagrin, it was determined that relatively inexperienced ground crew searchlight operators were able to track our high flying RB-45C clipping along at 600 knots plus ground speed from about ten miles out. They would simply sweep the sky, lock on a contrail, follow it to where it began, and there was the B-45, shining and glistening against the blackened sky.

It should be recalled that this was well before the era of effective ground-to-air missile defenses, such as the Russian-built Surface-To-Air Missiles (SAMs), which were so effective against our aircraft in Vietnam. In fact, twenty years later, almost to the month, we lost fifteen B-52s during an eleven day period when over 1000 SAMs were fired during raids against Haiphong and Hanoi. Had ground-to-air missile defense been advanced to the stage it was in the 1970s period, our situation in the 1950s would have been entirely different. There would have been no need for searchlights.

In conjunction with the test, an F-94B Lockheed Starfire night all-weather fighter was launched to attempt intercept of the RB-45 when, and if, searchlight lock on was achieved.

Flying on the non-reflective side (nearest the searchlight), the F-94 pilot reported that he could visually see the RB-45 at about 12 miles from the high, low and level positions. Flying on the non-reflective side (away from the searchlight), he could not see the aircraft until closing within 200 yards from the high and level positions, but at 12 miles from the low position. The brighter the moon, the less difficult to intercept.

The point to remember is that the test RB-45 was clear silver in appearance, with no unusual paint except conventional USAF markings. I must add, there is nothing quite as startling when, flying along at 35,000 feet in complete darkness with running lights off and cockpit and instrument lights dimmed, suddenly your whole world is lit up by batteries of several 800,000,000 candlepower searchlights. To say the least, it's a bit unnerving and requires some quick reaction to keep one's mental gyros from tumbling.

Reminds me of later years on airborne alert missions at extreme high altitudes in B-52s when the *aurora borealis* northern lights would dance around directly in front of the KC-135 tanker during night refueling. Throw in rough turbulence in the middle of a high altitude jet stream and it became a real test of pilot skills.

Every pilot knows the value of a steady natural horizon, without a kaleidoscope of dancing lights to distract him. It took a high degree of skill on the part of the B-52 pilot to keep his equilibrium senses from creating havoc trying to maintain a steady platform for the boom operator, while flying a very tight trail formation a few feet astern of the tanker.

1. Snug under the heavy framed canopy of their RB-45C, the author, Howard Myers, then a captain and the commander of the 91st Strategic Reconnaissance Sqdn., Far East Air Force, and his copilot, Captain Yancy, prepare to launch from K-14 in Korea, 1952.

2. Blacked out hulk of specially painted RB-45C (48-027), the only one to sport this paint job, used by the author on recon mission over Korea described in this article. Author flew same aircraft back to the States in 1953, to the 91st Strategic Reconnaissance Wing's home base at Lockbourne, Ohio.



The similarity in this situation, with searchlight beams dancing around in all directions, bouncing off the RB-45 canopy, hitting the nacelles, ricocheting off the windshield and generally causing disorientation, is closely akin to the sensation experienced with northern lights in the high polar regions.

The best rule to follow in such a situation is to apply the long established pilots axiom: "Go on instruments and forget about your human senses, no matter what they tell you." This was impossible to do when flying formations, but was the answer when flying single-ship recon missions.

The ultimate conclusions of these tests, and several to follow with an all black painted RB-45C, showed that it was very simple to track an unpainted B-45 flying at high altitude with a manual searchlight. With radar-operated searchlight, the problem for the ground operators was much simpler.

On the other hand, an all black painted B-45 was determined to be much more difficult to track, but not impossible. In fact, after several passes at the same altitudes as the non-painted B-45, ground searchlight operators were unsuccessful in manual and radar operations in establishing a reliable track on the aircraft for accurate antiaircraft lock on.

Painting the aircraft had been the conclusion of the theoretical discussions. However, a B-45 had never been fully painted before. We were not certain of the detrimental effect of the paint on airspeed loss and flying characteristics. We reasonably concluded it would be minimal, which later proved to be the case. The loss in airspeed was about 8 to 10 knots.

We decided that painting at least one of our B-45s was the way to go. The questionable factor of North Korea proficiency and equipment difference between our searchlight crews and theirs was unknown up to the mission we were now about to launch.

Tower - Raven One-1 (our call sign)-ready for takeoff.

Roger Raven One-1, winds 320, 15 knots, cleared as filed, contact Oak Hill Able coasting out, squawk IFF 2-2.

Roger tower, Raven 1, releasing brakes, on the roll.

Nose gear steering engaged—on centerline-50kts., looks good.

Coming up on 110 kts., committed—steady, little crosswind.

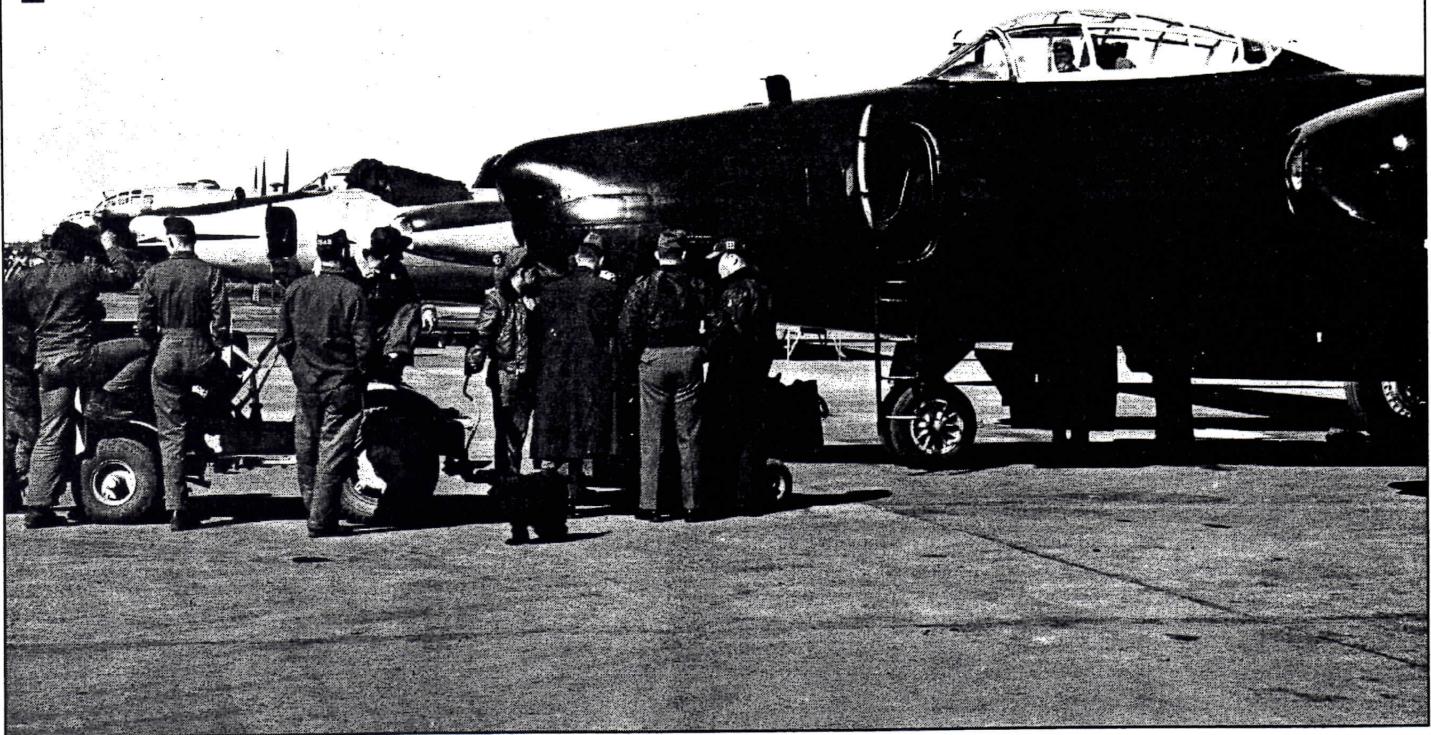
160 kts.-ease it off-gear up-trim for climb.

Climb to 500 feet, continue acceleration to 180 kts., ease flaps up.

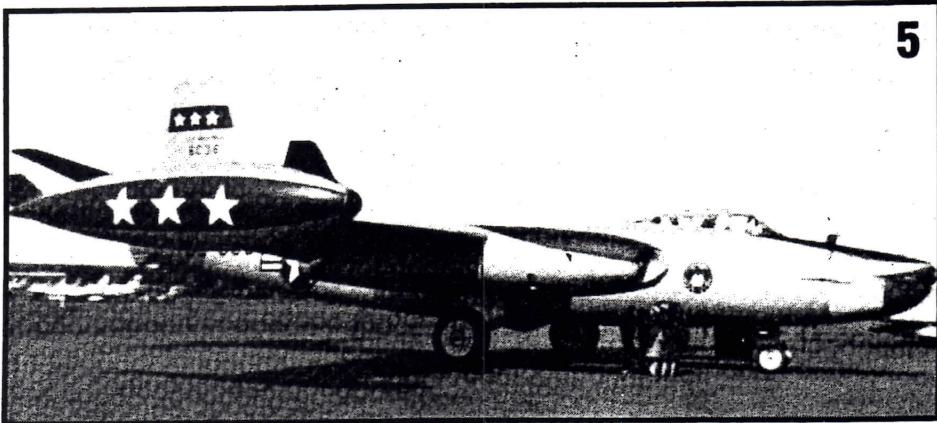
Looks clean-back off on the power to 98% rpm, EGT, fuel pressure, oil pressure good, start transfer from 1200 gallon tip tanks-copilot making radio contact-starting acceleration to 400 knots-commencing cruise climb to 35,000 feet assigned altitude.

Radar Nav reports radar equipment functioning-OK, all cameras-checked-OK.

All systems-checked-after takeoff and climb check list completed-

2**4**

5. Compared to all black RB-45C flown by author, this recon version from the 47th Bomb Wing based in England in 1954 is shown with star decoration on its wing tip tanks and fin.

**5**

3. Captain Myers in forward hatch of RB-45C, just ahead of camera bay in photo taken at Yokota, Japan.

4. A total of 33 RB-45Cs were completed and were delivered for operational service between June, 1950 and October, 1951. The 91st Wing was the first to operate them and the RB-45C also made the first successful air-to-air refueling utilizing the flying boom system. This recon Tornado is caught on takeoff with its massive external tip tanks. Tornado's four 6,000 lb. thrust G.E. J47 turbojets could be boosted by water injection from 214 gallon jettisonable tanks positioned one under each double nacelle.

3

entering cloud deck 1500 feet, going on instruments, can expect some icing.

Coasting out in 8 minutes over the Sea of Japan on NW heading, check Mae West. Water is 31 degrees down there, it's not the drowning that gets you, it's the freezing in 5 minutes after you hit the drink!

Last radio check coming up-now radio silence-arm tail turret guns, running lights-off, dim cockpit lights, double check—IFF.

Leveling off 35,000 feet, in the clouds, some turbulence. Check cabin oxygen to combat position, tip tanks feeding OK, some roughness in #4 engine.

Entering 7th Fleet waters, squawk IFF Mode 4-1 as briefed. RN reports he can see Navy Task Force 77 up ahead: Don't want to tangle with them!

Coasting in at Wonsan Harbor, 2 minutes, in and out of clouds, heavy fires in the harbor from last night's B-29 raid. Can clearly see the main battle line and artillery fire below and to the south, stretching across the entire peninsula from east to west. Continuing on heading, target time 20 minutes to go. All visual and radar camera set, following Radar Navigator's instructions on headings and evasive action.

There it is - just beyond the nose, breaking out of the clouds now, primary target open for visual photography, but that allows searchlights to spot us-maybe. Copilot reports we are picking up light contrails, no sign of fighters - yet.

Now for the test - there they are up ahead - searchlights sweeping the sky. Have they detected us? Must know we are coming. Passing the IP (initial point prior to target) - 15 miles to target - can't turn now, following PDI (Pilot's Direction Indicator) as per RN's (Radar Navigator's) directions.

Two searchlights just picked us up, but they can't seem to keep us in their beam, whipping through rapidly, now back on us. Reflection not as bad as with our 800,000,000 units back at home base.

They know we're here! And here it comes, ack ack! It's below us but heavy, 30 seconds to target, steady. Searchlights can't seem to lock on - black paint must be working - good ol' zinc chromide and black lacquer.

Over target, RN collecting radar and infrared data, as required, plus good visual pictures for intelligence briefing for the bomber stream to follow later.

"Clear to turn?", I ask the RN. "Right, going to 110 degrees" - 90 degrees banking turn to the left. As I turn, I can spot over my left shoulder, looking almost directly below us, an airfield with traces of jet flames on the runway. Those are MiGs heading up to greet us.

Now to make a run for the coast. With these 90 kt. westerly tail winds, we should make it quickly.

Both the 5th Air Force Tactical Air Control Center (TACC) and the Navy have been alerted to our presence. Let's hope we hear from some F-86s, or at least from F9F Cougars on our way back to the coast.

Now #4 is vibrating badly, oil pressure fluctuating, down to 5 psi. EGT exceeding red line even at idle RPM. Better cut it back - trim - still vibrating - throttle back, completely shut it down - why take a chance?

"Roger Oscar Sierra 6, understand off from K-14 with a flight of four heading our way; keep it coming. We saw MiGs take off below us three minutes ago. I think they have us under surveillance. We may need your help." (Flight of four F-86s coming up from Kimpo to escort us.) Radio silence now broken.

Author's note: An essential aspect of aerial reconnaissance is to avoid detection at all cost. As a result, recon aircraft are seldom, if ever, escorted over their target by fighter cover. To do so would simply make a larger return on the opponent's radar. Therefore, if escort is provided at all, it occurs in the pre- and post-target phase: One, to ensure that the recon aircraft get to the target area, and two, to ensure safe return with vital cargo of film and other intelligence data.

In a typical case during the Korean Conflict, the Navy's 6th Fleet Grumman F9F-6 Cougar, or F9F-2 Panther jets provide protection

up to a point over water surrounding the Korean peninsula, then 5th Air Force F-86s or F-84s would provide escort over the land area. In this instance, we opted no escort to the general target area to fully test the effectiveness of the paint job. Nevertheless, it was always good to see a familiar silhouette on the horizon and hear a friendly voice on the radio after making a deep or even limited reconnaissance penetration into hostile areas.

The object now was to exit hostile territory, under escort, if possible, and return our unexposed radar and visual film to the reconnaissance technical personnel for processing, photo interpretation and briefing of bomber crews.

With one engine shut down, our airspeed had to be reduced by almost 50 kts. and altitude sacrificed by several thousand feet. The RB-45 was not noted for maintaining high jet altitudes on three engines.

"Roger Oscar Sierra 6, have you in sight three o'clock, can only maintain 26,000 feet, one engine shut down, request escort until we hear from the Navy. We're about 20 minutes from coast, out."

Four F-86s now take up their position, two on each wing, as we proceed on a southeasterly heading toward our coast outpoint just below the 38th parallel.

"Raven One, Oscar Sierra Six here. We'll continue escort to about 15 miles from the coast. Have been advised by the Navy they will pick you up at that point."

"Roger Oscar Sierra Six, understand your message."

"Hello Oscar Sierra Six and Raven One, this is Beaver Control (TAC Air Control at Kimpo), be advised we have two bogies heading your way, vector 32 zero (320) degrees, presently at 2 zero thousand (20,000 ft.), climbing, range 4 zero (40 miles). Acknowledge Oscar Sierra for both of you, over."

"Roger Beaver, understand. Oscar Sierra standing by for instructions, over."

"Roger Oscar Sierra, Beaver here, be advised, immediately break two of your flight to the right. Take up a heading of 32 zero degrees, maintain altitude 25 zero feet (25,000) until advised further, over."

"Roger Beaver, Oscar Sierra leader here, understood."

"Leader to flight, be advised number 3 and 4 will break right to heading 32 zero, number 2 shift to right wing of the Raven One. Number 1, tuck it in close on the left wing, on my count, ready, ready, now." (Oscar Sierra leader was sitting in the number 3 position on the closest right wing slot, number 4 was on his right wing.)

We were now down to two escorts, which was OK, provided the two breakaways routed out the two incoming bogies. They had now shifted frequencies to close with the two suspected MiGs in our tail position. Coast out time had now been reduced to about 10 minutes. Meanwhile, the Navy was getting into the act, and I had no problem with this.

"Hello Raven One, Mellow Control here, do you read, over?"

"Roger Mellow, Raven here, go."

"Raven One, be advised we have a flight of four climbing and heading your way, should get there in zero 3 minutes, over."

"Rog Mellow, we have one on each wing now, but they'll hold till you get here, over." (Mellow Control was the call sign for Navy Task Force 77, 7th Fleet, located off the east coast of Korea.)

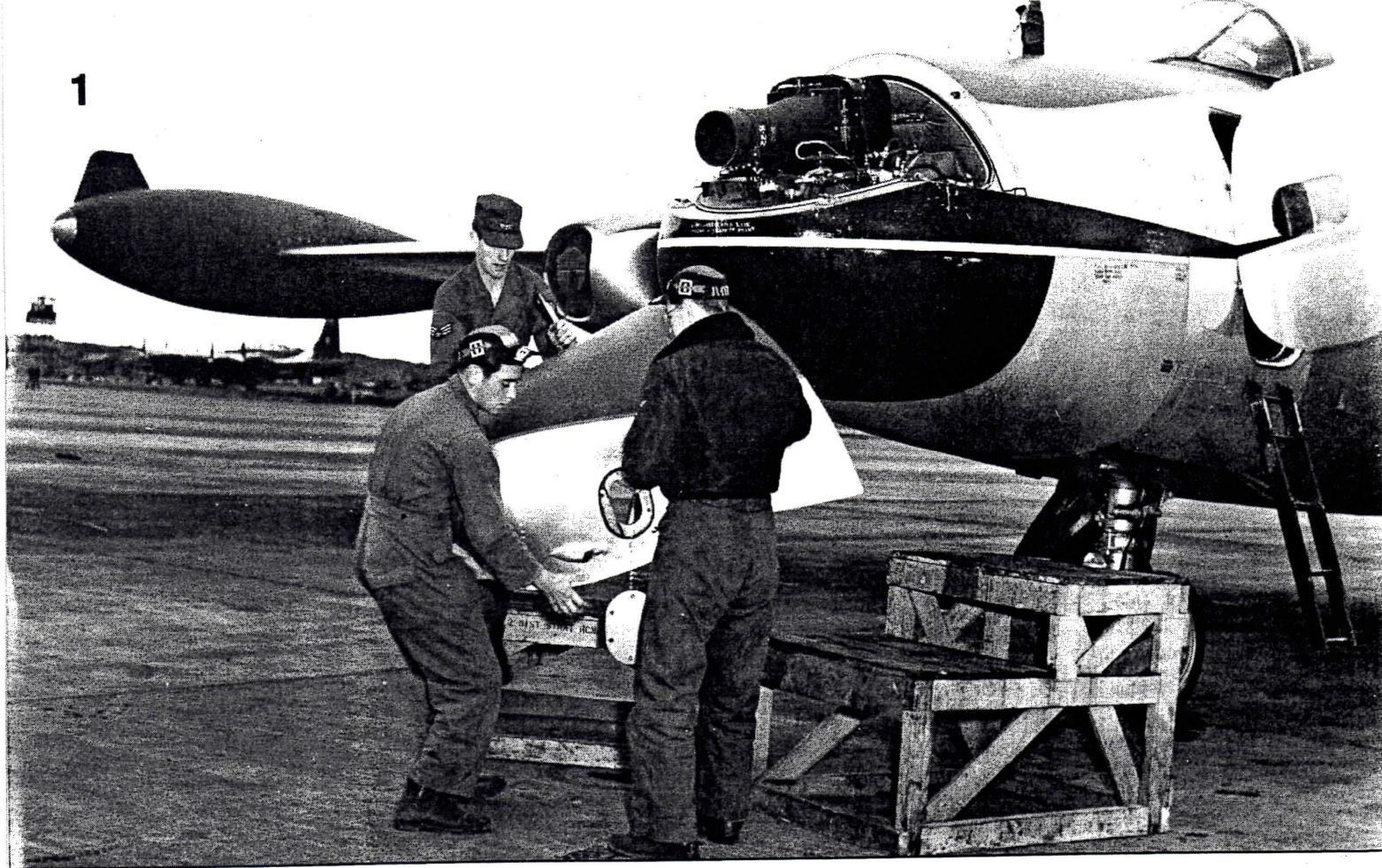
The time was now 0115 hours in the early morning as we approached the turnover point where the Navy would assume escort responsibility for our safe conduct to a point 100 miles over the Sea of Japan en route back to Yokota. Thus far, our mission had succeeded. We got over the target, we successfully evaded the searchlight threat, we had the unexposed film aboard, our aircraft was holding its own despite an engine out, and we hadn't been shot at!

As we proceeded toward the coast with our rear gun turret fully armed and ready for firing in the event of hostilities from that quarter, we began to gain a slight amount of altitude as fuel was burned off.

The RB-45C had a usable fuel load of 8133 gallons (53,251 lbs.) of JP-1 at takeoff, with full tip tanks (1200 gals. each). We had been airborne about four and one half hours at this point, with a consumption in pounds sufficient to cause us now to regain some of the altitude we had lost with only three engines.

To make Yokota, it was necessary to regain altitude for better fuel

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1. Loading the forward oblique camera into the nose of 48-027 prior to its all black paint job. Covering left distinctive glassed-over port in nose for camera's lens. The 91st Strategic Recon Wing's 84th Bomb Sqdn. had already sent a three-ship detachment to Korea in the fall of 1950, only six months after the RB-45C's first flight. One crashed en route at Midway and another (48-015) was shot down on December 4, 1950 by MiG 15s during an unescorted, high speed run.

consumption or divert to Kimpo (K-14) in Korea. This was always tricky because of the time lost in getting our valuable cargo of intelligence back to the recon tech people in Japan and the exposure to potential intercept or ground fire while diverting across enemy lines.

The answer came from the copilot, when he delved into the fuel consumption charts and concluded that if we continued to gain altitude as fuel burned off, we would have just under 30 minutes reserve when hitting the high cone over Yokota. Decision time had arrived.

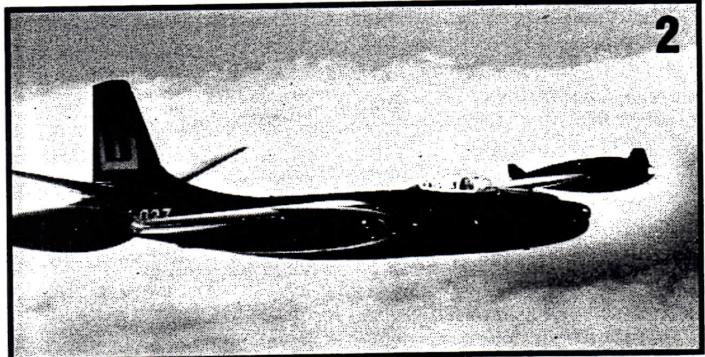
Because we had been briefed for a ceiling at Yokota of 400 feet with 1/2 mile visibility upon our return, we had no spare fuel for a missed approach. Kimpo had fog, but required flying over enemy lines to get there. Weighing all the factors, the decision was made to continue on to our primary at Yokota.

"Raven One, Mellow here, do you read?"... "Rog Mellow, Raven here, go."..."Raven One, be advised four escort friendlies approaching you astern 1 mile closing."

"Oscar Sierra, clear to depart your escort, turn right heading 27 zero start climb to 35 zero angels, the Navy will now take over. Transfer 243.6 contact Beaver Control immediately for further instructions...over." (At this point, our two escorting F-86s break formation, make a sweeping turn to the West as four jet F9F Navy Cougars, probably from the carriers *Philippine Sea* or *Valley Forge* cruising off the East coast of Korea, press in, taking up positions, two on each wing.)

We are now approaching the east coast of Korea below the port city of Wonson. Altitude has been increased to 29,000 feet as more

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2. RB-45C (48-027) in its all black finish, is shown during return from a mission over Korea in January, 1952.

3. "No Sweat," another of the 91st's RB-45Cs, its nose camera port emphasized by a bulging eye and grinning teeth, won the 1952 MacKay trophy for first non-stop transpacific flight from Elmendorf AFB, Alaska, to Yokota, Japan, a distance of 4,000 miles.



fuel is burned off. Tip tanks are now dry. Fuel is being consumed from internal wing tanks. Aerial refueling with a KB-29 would now come in handy to increase our reserve, however, no such luxury exists in the Far East Theatre during our period of operation. (The RB-45C had an aerial refueling capability receiving from a flying boom, which the early KB-29s and KC-97 had provided on many occasions in the ZI.)

"Raven One, Amber Leader here, flight of four F9Fs now in position, doubling up on each wing. Cite your intentions and how far you desire escort, over."

"Roger Amber Leader," I replied. "Be advised we intend to proceed to primary recovery base. How about carrying us to one zero zero miles on our present course, over." (Our heading was now on a direct course over the Sea of Japan to Yokota.)

"Roger, can do," replied Amber One.

As we proceeded on a southeasterly heading, my attention was drawn to a conversion on our backup frequency. I could clearly overhear Beaver Control directing our two F-86s toward an intercept of what turned out to be two MiG 15s.

The MiGs had closed to within 15 miles of our tail position when they suddenly broke off the attack as a result of the F-86s being vectored toward them.

Had the MiGs attempted a tail-firing chase on our RB-45, we would have had little defense. Even though the RB-45 had twin .50 caliber machine guns in the rear turret, they were fixed-mounted as a decoy. One was pointed up at a 45 degree angle, the other down at a 10 degree angle. They could be fired by a toggle switch at the pilot's position, but not swiveled or aimed.

In the earlier model RB-45s, we carried tail gunners with a fully operational tail turret. This capability was later dropped in lieu of weight considerations and lack of confidence in the ability of the system to properly function, but at least we had the appearance of some defense in the rear.

It was never disclosed during the Korean operation that we, in fact, did not have tail gunners manning those twin .50s. They offered some appearance of protection, even though, realistically, a fixed gun in the rear of any aircraft is a far cry from a "real" defensive threat.

We had now coasted out, cruising along at 29,000 feet with our Naval escort in place. The threat of further intercepts was remote. Very seldom did the North Koreans or Chinese extend their air threat out over the Sea of Japan. Apparently they simply did not have the radar capability to control their operations. No point in keeping the Navy escort any longer. Might as well let them return to their carrier.

"Amber Leader, Raven One. Be advised you are now clear to discontinue escort. Much obliged for the help."

Amber One came back on. "Rog, Raven One, be advised we will break left in a descending turn. You are cleared to Komatsu Control, frequency 242.5, over."

"Roger Amber, leaving frequency. Again, thanks, and good luck."

We were now on our own, heading for a coast in point in the vicinity of Komatsu on the main island of Honshu, Japan. Tail winds were very favorable, allowing us to clip along at 610 kts. ground speed. ETA at Yokota was now 1:05 away.

As we continued a cruise climb configuration, attempting to gain every foot of precious altitude to conserve fuel, I had one more never-to-be-forgotten experience.

In the RB-45, the pilot and copilot's life raft consisted of a seat pack attached to the base of a back parachute. In other words, you sat on it. If ejection became necessary (both pilot and copilot seats were ejectable), the raft hung below the chute harness and was inflated by a CO₂ cylinder, which the pilot would activate just before hitting the drink.

As we were about midway to landfall, my life raft suddenly and unexplainably started to inflate. The normal head clearance between the pilot's hard helmet and the canopy is about four inches. As the raft continued inflating, I began to rise in my seat to where my head not only struck the canopy, but I was rapidly being squeezed into a position where I could no longer control the aircraft. Pressed up against the glass, I called the copilot to take control while I tried to figure out what to do.

I could not control the flow of CO₂, as the cylinder had apparently activated on its own. I was being squeezed more and more against the canopy by an out-of-control life raft that had a mind of its own. The cockpit in the RB-45 was about equal to a good sized fighter cockpit, with no room to spare. I had to do something or be shoved right through the top. An inflated life raft in an already cramped cockpit was impossible to comprehend. What to do? It suddenly occurred to me that the only solution was to deflate the raft, but the deflating valve was nowhere to be felt and I had to feel my way, as it was pitch black outside and we were in the clouds.

As I was groping for the release valve, my hand suddenly struck my survival knife in the right slot of my flying suit leg. Without hesitation, I drew the knife out of its holder and began stabbing the life raft. After several swipes with the blade, I finally managed to deflate the raft. As the rubber slowly expelled its air, I settled back down on my seat with a mighty cramped neck and an otherwise unusable lift raft. I had never expected to stab a life raft to death!

Then I had a momentary thought. What if we had to bail out or ditch in that 32 degree water, and me with no life raft? By the time all this transpired, we were within 20 minutes of the Japanese coast. It would be the longest 20 minutes I ever spent.

"Hello Oak Hill Able, Raven One here. Do you read?"

"Roger Raven One, Oak Hill Able here. Be advised QSY (transfer frequency) to Komatsu Control for penetration instructions squawk 3-2, over."

"Roger Oak Hill Able, Raven here. Switching to channel 4, squawking as advised, over and out."

We were now inbound to the northwest coast of the island of Honshu with a coast in point of Wajima, a town about 180 miles from Yokota.

"Komatsu Control, Raven One here. Be advised we are estimating Wajima in 20 minutes. Please relay the Yokota weather, over."

"Roger Raven One. Komatsu Control here. Be advised we have you on radar, squawk 1-1 for positive ID. Roger Raven, just saw your change in squawk, continue heading 150 degrees, proceed to Komatsu RBN frequency 255 kc, identification Mike Kilo. Be advised further that the weather at Yokota is ceiling 300 feet, visibility 1/4 mile, light snow, winds northwest 10 kts., over."

The RB-45 was not equipped with TACAN or DME in those days. The most reliable piece of equipment for jet penetration was the old reliable low frequency radio compass (AN/ARN-6). This apparatus operated at a frequency range from 100 to 1750 kilocycles and was the mainstay for instrument letdowns. The greatest problem was that the frequency range of the equipment happened to coincide with the frequency band of thunderstorms, so that the directional needle was constantly drifting during penetrations where storm activity was present.

We could, of course, always use our Radar Navigator as a backup, with his APN-24 radar scope and ILS (Instrument Landing System), where available, and GCA (Ground Control Approach) was always a primary instrument source. When approaching Tokyo, a few miles from Yokota, the absolute best homing device was the commercial Tokoyo Radio operating on what I can best remember as 1250 kilocycles. This we could pick up from almost 150 miles out.

"Raven One, Komatsu Control here. Have you over our station, be advised, contact Yokota Approach frequency 236.8. Commence descent to flight level 2 five thousand, over."

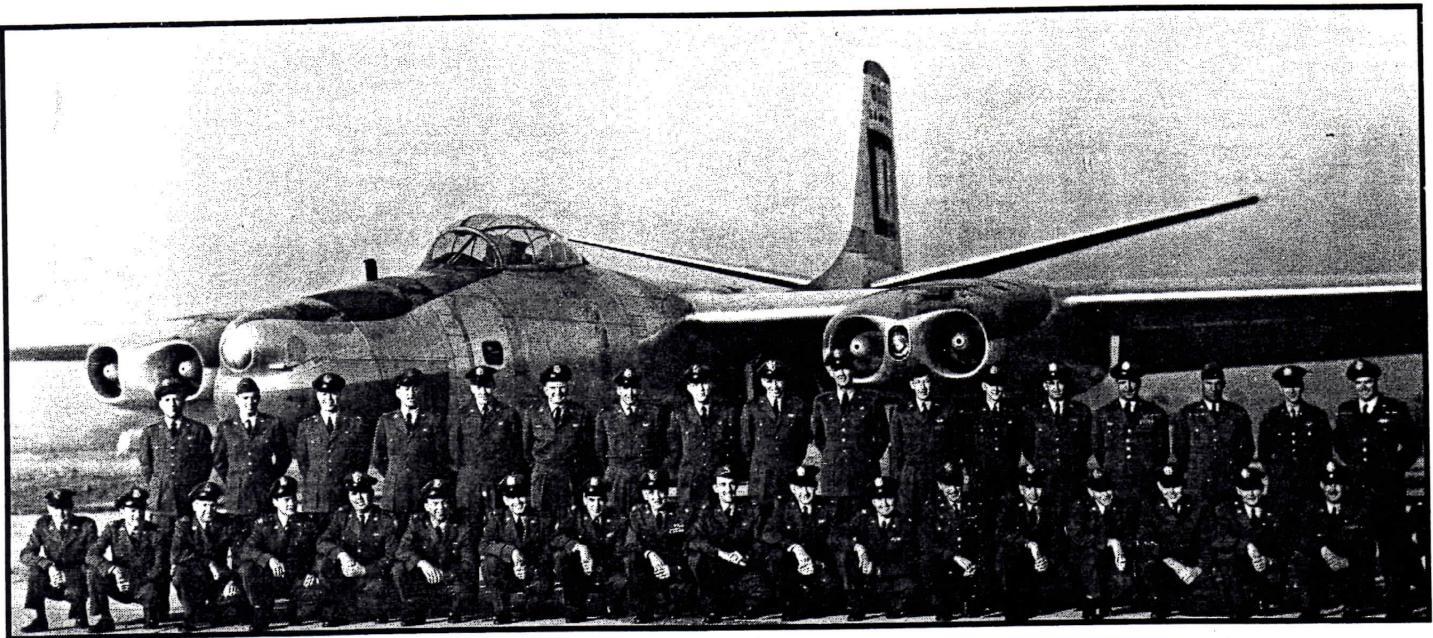
"Roger Komatsu, Raven here. Leaving your frequency for 236.8, starting descent to flight level 2 five thousand, over and out."

"Yokota, Raven One here, over."

"Roger Raven One. Yokota Approach. Be advised continue descent to flight level 2 zero zero. Give estimate time over Yokota Beacon, over."

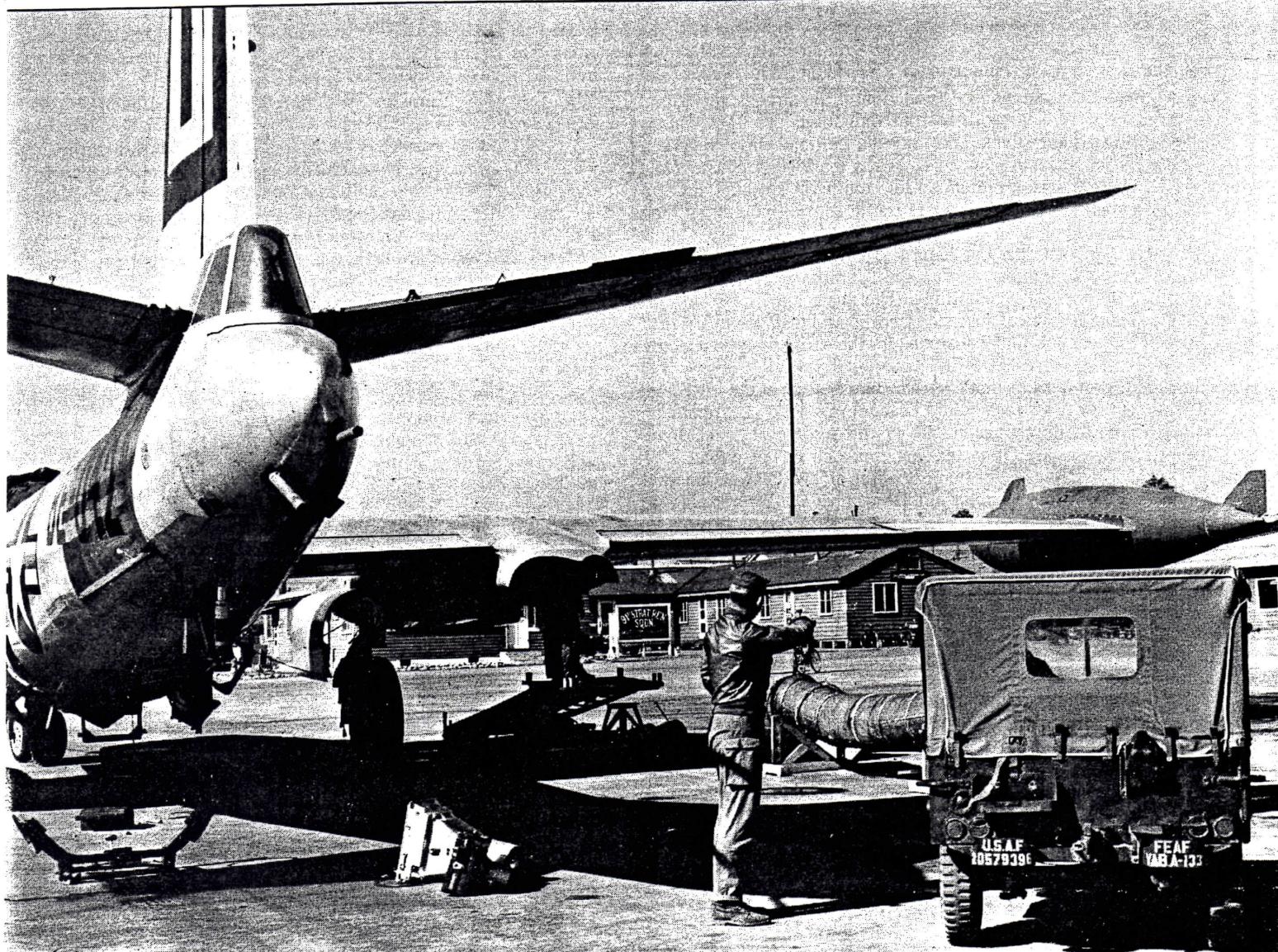
"Yokota, Raven here. Estimate from present position, 15 minutes to Yokota Beacon. Please give update on latest weather and runway conditions. Be advised we have one engine out and estimate only enough fuel for one pass, over."

"Roger Raven One. Yokota here. Be advised weather at Yokota, ceiling 200 feet, visibility 1/4 mile with light snow, runway condi-



Top: Men of the 322nd Strategic Recon Sqdn., Lockbourne, Ohio in 1952. Note landing light taxi lamps inset between the intake ducts of the G.E. J47 engines and pronounced dihedral of horizontal tail. Glassed-in nose camera port shows up well.

Bottom: Early model RB-45s carried tail gunners with fully operational twin .50 caliber machine guns, but in Korea the gunner was deleted and the guns were fixed to fire upward at a 45 degree angle or downward at a 45 degree angle, operated by the pilot through a toggle switch. Once adjusted on the ground, they could not be moved. In this photo, single barrel at right is in neutral position. Immediately below, facing downward and looking like a gun barrel, is the fuel jettison pipe and, further forward and behind it, the retractable tail bumper.



tion patchy ice, temperature 25 degrees, winds NW 15, altimeter 30.20 holding steady. GCA is standing by. ILS (Instrument Landing System) is inoperative. Continue to high cone, commence standard jet penetration upon arrival. Report on this frequency. Leaving 2 zero zero thousand feet, over."

We proceeded inbound with our cargo of unexposed radar and visual film. The name of the game now was to deliver it to "Recce Tech" all in one neat package for evaluation and targeting information for the B-29s. Those crews of the 98th and 307th Bomb Wings at Yokota and Kadena Air Base on Okinawa were bedded down and fast asleep.

General Paul T. Cullen, the father of aerial reconnaissance for the RB-45 and other recon aircraft, would have been proud of the results of the reconnaissance effort in the Far East Theater of Operation during the Korean War. Unfortunately, he was killed in a C-124 crash in March of 1951, and never saw the fruits of his outstanding efforts on our behalf come to full realization.

"Yokota, Raven One here. Be advised, high cone this time commencing descent, minimum fuel, again one engine out. We don't want to miss this pass; will have 200 pounds max fuel at touchdown, not enough for a go-around, over."

"Roger Raven One, maintain this frequency until turning final on your descent, then switch to Yokota GCA, frequency 245.6 for GCA approach to runway 35. Again, ceiling holding at 200 feet, visibility 1/4 mile with blowing snow. Tachikawa and Johnson are reporting same conditions (two bases within 15 miles of Yokota and often used as an emergency alternate for B-45 operations, but with much shorter runways.)

Because the B-45 was such a clean aircraft, with no drag device, such as spoilers or air brakes to reduce speed during penetration, a conventional jet letdown ate up a great deal of mileage. To decrease altitude prior to penetration was too fuel inefficient.

When the throttles were retarded and the nose lowered during a jet penetration from a nominal high cone altitude of 20,000 or 25,000 feet, the first thing to happen was a speed buildup. To prevent exceeding the maximum speed limitation of the aircraft, the rate of descent had to be kept within strict limitations. This, of course, increased the distance the aircraft traveled from the letdown beacon or radio range. Often this distance carried the B-45 a considerable distance from the airfield intended for landing. A spiraling descent could have been the answer, except traffic control more often than not made this impracticable.

In later years with the B-47 and B-52, it was simply a matter of lowering the landing gear and/or speed brakes to control rate of descent and reduce speed buildup. The answer in the B-45 was simply to optimize rate of descent vs. speed and distance to arrive at an acceptable pattern. Fuel consumed for the entire jet-type penetration and landing at Yokota was about 3000 pounds (roughly 500 gallons of JP-1 at 6 lbs. per gallon). Our fuel reading at the high cone (20,000 feet over the Yokota Radio Beacon) was about 3200 pounds, leaving us with the estimated 200 pound reserve at touchdown. Needless to say, making it on the first approach was essential.

"Yokota GCA, Raven One here. Leveling off at 2000 feet, inbound 285 degrees, estimated 15 miles out. Do you have us for a straight-in for runway? Over."

"Roger Raven One. Steer right 340, start descent to 1200 feet. Altimeter remains 30.20, winds gusting 310 degrees, 15 kts., visibility 1/4 mile. We have you 12 miles on final. Squawk Emergency IFF for 5 seconds, then return to Squawk 2-2 for remainder of run, hold this frequency...now have you 10 miles, start descent to 1000 feet...steer right, heading 360...start descent 500 feet per minute."

(Our fuel count was not down to 500 pounds.) "Raven One, increase rate of descent to 800 per minute, you are drifting above the glide path...distance 8 miles...correct heading to 340, drifting right of centerline...ceiling 1/4 miles, runway lights intensity 6...back on glide slope, resume normal rate of descent."

(A three-engine approach in the B-45, especially with an outboard engine out, required the pilots' utmost attention because of asymmetrical thrust.) "Raven One, have you on glide slope, on

centerline, 6 miles from touchdown...on glide slope, on centerline...now drifting below glide slope, decrease rate of descent...on centerline...5 miles from touchdown...coming back to glide slope...on centerline...ILS still inoperative...back on glide slope...resume normal rate of descent...maintain heading 340 degrees. Slight crosswind from your left...4 miles...on glide slope, coming back to centerline...correct heading to 342...on centerline, on glide path...3 miles from touchdown."

(Radar Navigator confirms by viewing his radar scope that we are 3 miles from runway.) "Raven One, you are on glide slope, on centerline...should start to see runway lights any second reports GCA...now drifting slightly above glide slope, increase descent...on centerline... 1-1/2 miles from end of runway."

(At this point I still cannot see the runway lights. No strobes in those days!) "Raven One, confirm all checklist complete, gear fully down...on glide slope, on center line 1 mile!"

(At this point I can start to see the runway lights illuminating through the snow and darkened mass ahead of me...there they are...just ahead...two rows of lights...steady...air speed 155 kts...start the round out...100 feet...50 feet...on center...15 feet...touchdown...ease the nose down...engage nose gear steering.)

In the B-45, steering was accomplished by engaging a toggle switch under the pilot's left control column. Steering on the ground was then through the aileron controls; turn right, right aileron, turn left, left aileron. Ease on the brakes...starting to skid...lots of ice on the runway...cut down #1 for better balanced thrust...visibility very poor...can't be over 100 feet. There's the 'follow-me' jeep up ahead.

"Yokota GCA, Raven here...great run...thanks for your help...couldn't have made it without you!"

"Roger Raven...our pleasure...all in a day's work...QSY to Yokota Tower...and good day, sir, over and out!"

"Yokota Tower, Raven here, on the deck...guns are clear (we fired the tail guns while over the Sea of Japan to expend all live ammunition before landing, as a safety precaution while on the ramp)...be advised we will taxi to parking spot Zulu."

We had made it around the circuit with 200 pounds of fuel to spare. Barely enough to taxi in.

The film was immediately unloaded, processed within an hour, sent to photo interpretation about the same time B-29 crews were being awakened at Yokota and Kadena for their strike for the day. By the time bomber crews had breakfast, the intelligence types had the most current and up-to-date information available, and the strike mission by the B-29s against the target we had just been over a few hours before was a complete success.

We had validated the correctness of the decision to paint the RB-45 black.

Throughout the remainder of the Korean Conflict, no RB-45 was ever again lost to enemy action as a result of the searchlight threat.

NORTH AMERICAN RB-45C "TORNADO" SPECIFICATIONS & PERFORMANCE

WING SPAN	89 FEET, 2 INCHES
HEIGHT	25 FEET, 2 INCHES
ENGINES	4 GENERAL ELECTRIC J47-15S
ARMAMENT	2 FIFTY CAL. MACHINE GUNS IN THE TAIL
CREW	CREW OF 3: PILOT, COPILOT, RADAR NAVIGATOR
MAXIMUM SPEED	600 MPH.
CRUISE SPEED	.500 MPH.
SERVICE CEILING	40,000 FT.

OTHER FACTS:

FIRST AMERICAN FOUR-ENGINE OPERATIONAL JET BOMBER

WORK BEGAN ON DESIGN DURING 1943

MADE INITIAL FLIGHT MARCH 17, 1947

ONLY 33 RBs PRODUCED

FLEW COMBAT MISSIONS DURING KOREAN CONFLICT IN 1952, USING IN-FLIGHT REFUELING, TWO RB-45Cs MADE FIRST NON-STOP TRANS-PACIFIC FLIGHT BY MULTI-ENGINE JET BOMBERS. RB HAD TWO 1200 GAL. TIP TANKS, EXTENDING THEIR RANGE CONSIDERABLY.

B-45s WERE PHASED OUT IN THE MID-FIFTIES AS THE B-47 BEGAN TO COME ON-LINE AND REPLACE THIS GALLANT LADY. SHE SERVED HER COUNTRY WELL IN EUROPE AND THE FAR EAST IN THE VITAL ROLE OF RECONNAISSANCE GATHERING.