North American F-86A Sabre

The P-86A was the first production version of the Sabre. North American had received an order for 33 production P-86As on November 20, 1946, even before the first XF-86 prototype had flown.

The P-86A was outwardly quite similar to the XP-86, with external changes being very slight. About the only noticeable external difference was that the pitot tube was moved from the upper vertical fin to a position inside the air intact duct.

The P-86A incorporated as standard some of the changes first tested on the third XP-86 prototype. The front-opening speed brakes on the sides of the rear fuselage were replaced by rear-opening brakes, and the underside speed brake was deleted.

The P-86A was equipped with the armament first tested on the third XP-86--six 0.50-inch machine guns in the nose, three on each side of the pilot's cockpit. The guns had a rate of fire of 1100 rounds per minute. Each gun was fed by an ammunition canister in the lower fuselage holding up to 300 rounds of ammunition. The ammunition bay door could be opened up to double as the first step for pilot entry into the cockpit. The P-86A had two underwing hardpoints for weapons carriage. They could carry either a pair of 206.5 US-gallon drop tanks or a pair of 1000-lb bombs. Four zero-length stub rocket launchers could be installed underneath each wing to fire the 5-inch HVAR rocket, which could be carried in pairs on each launcher.

However, the most important difference between the P-68A and the three XP-86 prototypes was the introduction of the 4850 lb.s.t. General Electric J47-GE-1 (TG-190) in place of the 4000 lb.s.t. J35. The two engines had a similar size, the J47 differing from the J35 primarily in having a twelfth compressor stage.

The first production block consisted of 33 P-86A-1-NAs, ordered on October 16, 1947. These were known as NA-151 on North American company records. Serials were 47-605 through 47-637. Since there were officially no YP-86 service test aircraft, this initial production block effectively served as such.

The first production P-86A-1-NA (serial number 47-605) flew for the first time on May 20, 1948. The first and second production machines were accepted by the USAF on May 28, 1948, although they both remained at Inglewood on bailment to North American for production development work. Aircraft no. 47-605 was not actually sent

to an Air Force base until April 29, 1950. It remained at WPAFB until May of 1952, when it was retired to storage at the Griffiss Air Depot.

In June of 1948, the P-86 was redesignated F-86 when the P-for-pursuit category was replaced by F-for-fighter

The F-86A-1-NA fighters could be recognized by their curved windshields and the flush-fitting electrically-operated gun muzzle doors that maintained the smooth surface of the nose. These muzzle doors opened automatically when the trigger was pressed to fire the guns, and closed automatically after each burst.

The cockpit of the F-86A remained almost the same as that of the XP-86, although certain military equipment was provided, such as an AN/ARC-3 VHF radio, an AN/ARN-6 radio compass, and an AN/APX-6 IFF radar identification set. The IFF set was equipped with a destructor which was automatically activated by impact during a crash or which could be manually activated by the pilot in an emergency. This was intended to prevent the codes stored in the device from being compromised by capture by the enemy.

The F-86A was provided with a type T-4E-1 ejection seat, with a manually-jettisoned canopy.

The F-86A-1-NA's empty weight was up to 10,077 pounds as compared to the prototype's 9730 pounds, but the higher thrust of the J-47 engine increased the speed to 673 mph at sea level, which made the F-86A-1-NA almost 75 mph faster than the XP-86. Service ceiling rose from 41,200 feet to 46,000 feet. The initial climb rate was almost TWICE that of the XP-86. The F-86A was one hot ship!

In the summer of 1948, the world's air speed record was 650.796 mph, set by the Navy's Douglas D-558-1 Skystreak research aircraft on August 25, 1947. Like the record-setting Lockheed P-80R before it, the Skystreak was a "one-off" souped-up aircraft specialized for high speed flight. The USAF thought that now would be a good time to show off its new fighter by using a stock, fully-equipped production model of the F-86A to break the world's air speed record.

To get the maximum impact, the Air Force decided to make the attempt on the speed record in the full glare of publicity, before a crowd of 80,000 spectators at the 1948 National Air Races in Cleveland, Ohio. The fourth production F-86A-1-NA (serial number 47-608, the cold weather test aircraft) was selected to make the record attempt, and Major Robert L. Johnson was to be the pilot. According to Federation Aeronautique Internationale (FAI) rules, a 3km (1.86 mile) course had to be covered twice in each direction (to compensate for wind) in one continuous flight. At that

time, the record runs had to be made at extremely low altitudes (below 165 feet) to enable precise timing with cameras to be made.

On September 5, 1948, Major Johnson was ready to go and flew his F-86A-1-NA serial number 47-708 on six low-level passes over the course in front of the crowd at Cleveland. Unfortunately, timing difficulties prevented three of these runs from being clocked accurately. In addition, interference caused by other aircraft wandering into the F-86A's flight pattern at the wrong time prevented some of the other runs from being made at maximum speed. Even though the average of the three runs that were timed was 669.480 mph, the record was not recognized as being official by the FAI.

Further attempts to set an official record at Cleveland were frustrated by bad weather and by excessively turbulent air. Major Johnson then decided to move his record-setting effort out to Muroc Dry Lake (later renamed Edwards AFB), where the weather was more predictable and the air less turbulent. On September 15, 1948, Major Johnson finally succeeded in setting an official record of 670.981 mph by flying a different F-86A-1-NA (serial number 47-611, the armaments test aircraft) four times over a 1.86-mile course at altitudes between 75 and 125 feet.

In the autumn of 1948, problems with the J-47-GE-1 engine of the early F-86As forced a momentary halt to F-86 production. It was followed by a few J47-GE-3s, and in December the J47-GE-7 became available, which offered 5340 lb.s.t. and full production resumed.

By March of 1949 the last F-86A-1-NA (47-637) had been delivered. Most of the 33 F-86A-1-NAs built were used for various tests and evaluations, and none actually entered squadron service.

The first production block to enter squadron service was actually the second production batch, 188 of which were ordered on February 23, 1949. They were assigned the designation of F-86A-5-NA by the USAF, but continued to be carried as NA-151 on company records. Serials were 48-129 to 48-316. These were powered by the J47-GE-7 jet engine. Deliveries began in March of 1949 and were completed in September of 1949.

The F-86A-5-NA had a V-shaped armored windscreen which replaced the curved windscreen of the F-86A-1-NA. The A-5 dispensed with the gun doors of the A-1 in the interest of maintenance simplicity. A jettisonable cockpit canopy was introduced. The A-5 introduced underwing pylons capable of carrying a variety of bombs (500 and 1000-pounders) or underwing fuel tanks of up to 206 gallons in capacity. A heating system was provided for the gun compartments, and stainless steel oil tanks and lines were provided for better fire resistance.

In May of 1949, beginning with the 100th F-86A aircraft, an improved canopy defrosting system was installed and a special coating was applied to the nose intake duct to prevent rain erosion. Earlier airframes were retrofitted to include these changes.

The 116th F-86A was provided with a new wing slat mechanism which eliminated the lock and provided a fully automatic operation.

A contract for 333 additional F-86As was received on May 29, 1948, and the final contract was approved on February 23, 1949. These aircraft were assigned a new designation of NA-161 on North American company records, but continued to be designated F-86A-5-NA in USAF records. Their serials were 49-1007 to 49-1229. These were powered by the General Electric J47-GE-13 engine which offered 5200 pounds of static thrust. The cockpit wiring was simplified. New 120-gallon drop tanks, developed specifically for the F-86, were introduced during this production run. Deliveries commenced in October of 1949 and were completed by December of 1950. The 282nd F-86A aircraft had a redesigned wing trailing edge with shorter chord aileron and greater elevator boost. Deliveries commenced October 1949 and ended in December 1950.

Another innovation introduced with the NA-161 production batch was a new type of gun aiming system. All earlier F-86As had been equipped at the factory with Sperry Mark 18 optical lead computing gunsight, which was quite similar to the type of gunsight used on American fighter aircraft in the latter parts of World War 2. When the pilot identified his target, he set the span scale selector lever to correspond to the wingspan of the enemy aircraft he was chasing. He then aimed his fighter so that the target appeared within a circle of six diamond images on the reflector. Next, he rotated the range control unit until the diameter of the circle was the same as the size of the target. When the target was properly framed, the sight automatically computed the required lead and the guns could be fired.

Beginning with the first NA-161 aircraft (49-1007), the A-1B GBR sight and AN/APG-5C ranging radar were provided as factory-installed equipment. This new equipment was designed to automatically measure the range and automatically calculate the appropriate lead before the guns were fired, relieving the pilot of the cumbersome task of having to manually adjust an optical sight in order to determine the range to the target. When activated, the system automatically locked onto and tracked the target. The sight image determined by the A-1B was projected onto the armored glass of the windscreen, and the illumination of a radar target indicator light on the sight indicated time to track target continuously for one second before firing. This system could be used for rocket or bomb aiming as well as for guns.

In the last 24 F-86A-5-NAs that were built, the A-1B GPR sight and AN/APG-5C ranging radar were replaced by the A-1CM sight that was coupled with an AN/APG-30 radar scanner installed in the upper lip of the nose intake underneath a dark-colored dielectric covering. The APG-30 radar was a better unit than the AN/APG-5C, with a sweep range from 150 to 3000 yards. The A-1CM sight and the APG-30 ranging radar were both retrofitted to earlier A-5s during in-field modifications. These planes were redesignated F-86A-7-NA. However, some F-86A-5-NAs had the new A-1CM GBR sight combined with the older AN/APG-5C radar. These were redesignated F-86A-6-NA.

Some consideration given to replacing the J47 engine with the improved J35-A-17 that was used in the F-84E. This engine was tested in the first XP-86. Flight tests between November 28, 1949 and March 1951 indicated that the performance remained much the same as that of the F-86A-1-NA but with a slightly better range. However, the improvement was not considered significant enough to warrant changing production models.

Some F-86As were re-engined with the J47-GE-13 engine, rated at 5450 lb.s.t., but their designation did not change.

All F-86As were initially delivered with the pitot head located inside the air intake duct. It was found in practice that false airspeed readings could be obtained due to the increased airflow within the intake duct, so North American decided to move the pitot head to the tip of a short boom that extended from the leading edge of the starboard wingtip. All F-86As were later retrofitted with the wingtip boom when went through IRAN (Inspect and Repair as Necessary). However, the pitot tube in the intake was never designed to provide airspeed input to the pilot, and the pitot tube in the intake was still there and was used to provide input for the engine.

Internal fuel capacity of the F-86A was 435 gallons, carried in four self-sealing tanks. Two of the tanks were in the lower part of the fuselage, one of them being wrapped around the intake duct just ahead of the engine and the other being wrapped around the engine itself. The other two fuel tanks were in the wing roots. Usually the F-86A carried two 120-gallon drop tanks, although 206.5 gallon tanks could be fitted for ferry purposes.

Ground attack weapons could be installed in place of the jettisonable underwing fuel tanks. Choices include a pair of 100, 500 or 1000-pound bombs, 750-pound napalm tanks, or 500 pound fragmentation clusters. Alternatively, eight removable zero-rail rocket launchers could be installed. These mounted sixteen 5-inch rockets. **When external armament was fitted in place of the drop tanks, combat radius was reduced from 330 to 50 miles, which was not a very useful distance.**

The first USAF combat organization to receive the F-86A was the First Fighter Group based at March AFB in California, with the famous "Hat in the Ring" 94th Squadron being the first to take delivery when they traded in their F-80s for the F-86A-5-NA during February of 1949. The 27th and 71st Squadrons were equipped with F-86A-5-NAs next, and by the end of May of 1949 the group had 83 F-86As on strength. This group was charged with the aerial defense of the Los Angeles area, which, coincidentally, is where the North American Aviation factory was located. Next to get the F-86 the the 4th Fighter Group based at Langley AFB, charged with the defense of Washington, D.C, and then the 81st Fighter Group, based at Kirtland AFT and charged with the defense of the nuclear bomb facilities at Alamogordo, New Mexico. Next came the 33rd Fighter Group based at Otis AFB in Massachusetts, charged with defending the northeastern approaches into the USA. In January of 1950, all air defense units were redesignated as Fighter Interceptor Groups (FIGs) or Fighter Interceptor Wings (FIWs) as a part of the Air Defense Command.

In February of 1949, there was a contest held by the First Fighter Group to choose a name for their new fighter. The name *Sabre* was selected, and was made official on March 4, 1949.

The first Sabres that went to Reserve units were assigned to the 116th Fighter Interceptor Squadron of the Air National Guard, which received its first F-86As on December 22, 1950.

The following Wings were issued with the F-86A:

- 1st Fighter Interceptor Wing (27th, 75st and 94th Squadrons)
- 4th Fighter Interceptor Wing (334th, 335th, 336th Squadrons)
- 33rd Fighter Interceptor Wing (58th, 59th and 60th Squadrons)
- 56th Fighter Interceptor Wing (61st, 62nd, 63rd Squadrons)
- 81st Fighter Interceptor Wing (78th, 89st, 92nd Squadron)

The F-86A was replaced in active USAF service by the F-86E beginning in the autumn of 1951. As F-86As left active USAF service, they were refurbished, reconditioned and transferred to Air National Guard units in the United States. The first ANG units to get the F-86A were the 198th Squadron in Puerto Rico, the 115th and 195th Squadrons at Van Nuys, California, the 196th at Ontario, and the 197th at Phoenix, Arizona.

Specification of F-86A-5-NA:

Engine: One General Electric J47-GE-13 turbojet with a maximum sea level static thrust of 5200 pounds. Dimensions: Wingspan 37.12 feet, length 37.54 feet, height

14.74 feet, and wing area 287.9 square feet. Weights: 10,093 pounds empty, 14,108 pounds takeoff, 13,791 pounds combat. Performance: Maximum speed 679 mph at sea level, 601 mph at 35,000 feet. Initial climb rate was 7470 feet per minute at sea level. An altitude of 40,000 feet could be reached in 10.4 minutes. Service ceiling was 48,000 feet. The ground run at sea level was 2430 feet, and a 50-foot obstacle could be cleared in 3660 feet. Armament: Six 0.50-in machine guns with 300 rpg. There were two underwing hardpoints for weapons carriage. They could carry either a pair of 206.5 US-gallon drop tanks or a pair of 1000-lb bombs. Four zero-length stub rocket launchers could be installed underneath each wing to fire the 5-inch HVAR rocket, which could be carried in pairs on each launcher.

Serial Numbers of North American F-86A Sabre

47-605/637 North American P-86A-1-NA Sabre
c/n 151-38432/38464

48-129/316 North American F-86A-5-NA Sabre
c/n 151-43498/43685

49-1007/1339 North American F-86A-5-NA Sabre
c/n 161-1/333

Sources:

1. F-86 Sabre in Action, Larry Davis, Squadron/Signal Publications, 1992.
2. The North American Sabre, Ray Wagner, MacDonald, 1963.
3. The American Fighter, Enzo Angelucci and Peter Bowers, Orion, 1987.
4. The World Guide to Combat Planes, William Green, MacDonald, 1966.
5. Flash of the Sabre, Jack Dean, Wings Vol 22, No 5, 1992.

North American F-86 Sabre, Larry Davis, Wings of Fame, Volume 10, 1998

North American RF-86A Sabre

Photographic reconnaissance had proven to be a special problem during the Korean War. Both the Lockheed RF-80A and the North American RB-45C Tornado reconnaissance aircraft had proven that they could not operate unescorted in airspaces where MiGs were active. A faster reconnaissance aircraft was needed, and it was decided that a reconnaissance version of the F-86A might fit the bill.

However, at the time no reconnaissance version of the F-86 was being planned by either North American Aviation or the USAF. Out in the field, several pilots of the 67th Tactical Reconnaissance Wing at Kimpo AB, Korea requested permission to convert some F-86s to the reconnaissance role. Approval was readily given, and the project came to be known as *Project Honeybucket*.

A pair of tired F-86As (48-187 and 48-217) were ferried to Tachikawa AB, Japan for the first conversion. One problem was that there was very little room inside an F-86 fuselage for the long-range cameras needed for the reconnaissance mission. However, it was found that if the lower pair of 0.50-inch guns on the right-hand side of the fuselage were removed, there was enough room for a small focal length K-25 camera scrounged from an RB-26C. The camera was mounted horizontally, but a series of mirrors allowed the camera to shoot vertically out of a small opening cut under the right side of the nose. All three guns in the left side of the fuselage plus the remaining top gun in the right side of the fuselage were retained.

The first *Honeybucket* F-86As were returned to Kimpo in October of 1951 and the first operational missions were flown. These missions were usually flown with the Honeybucket aircraft as the lead ship of a four-ship flight of F-86s.

In late 1951, the conversion of six more F-86As to reconnaissance configuration was authorized under the name *Project Ashtray*. In these, the compartment below the cockpit was enlarged and fitted with constant temperature air conditioning for a forward oblique 24-inch K-11 camera and two 20-inch K-24 cameras mounted lengthwise with a mirror arrangement to provide vertical coverage. The Ashtray aircraft were all officially designated RF-86A. The RF-86A could be distinguished from the fighter version by the presence of a pair of camera bay fairing bulges underneath the forward fuselage just ahead of the wings. Some had a K-14 "dicing" camera installed in the upper forward part of the nose in place of the APG-30 radar. Some had open apertures for the cameras, but others had sliding doors that opened only when the cameras were in use.

Most RF-86As were unarmed, although some retained the upper pair of 0.50-in machine guns with limited ammunition capacity. Aircraft converted to RF-86A included 48-183/187, 48-196, 48-217, 48-246, and 48-257. In addition, both *Honeybucket*F-86As were brought up to Ashtray configuration

Five RF-86A aircraft went to the 67th Wing's 15th Tactical Reconnaissance Squadron. On combat missions, the RF-86A was usually able to evade interception and was able to perform missions that were more hazardous than the typical reconnaissance flights. However, the photos taken were often fuzzy or blurred due to vibrations or the high speeds at which the aircraft operated. A modified mirror installation helped to solve the vibration problem, but the slow speed cameras continued to cause problems until they were replaced by the higher-speed K-14.

Surviving RF-86As were replaced by RF-86Fs in Korea and passed on to the 115th Fighter Interceptor Squadron of the California Air National Guard. They were still flying as late as June of 1959.

Sources:

1. F-86 Sabre in Action, Larry Davis, Squadron/Signal Publications, 1992.
2. The North American Sabre, Ray Wagner, MacDonald, 1963.
3. The American Fighter, Enzo Angelucci and Peter Bowers, Orion, 1987.
4. Flash of the Sabre, Jack Dean, Wings Vol 22, No 5, 1992.
5. North American F-86 Sabre, Larry Davis, Wings of Fame, Volume 10, 1998

North American F-86E Sabre

The next production version of the day-fighter Sabre was the F-86E. Initial work on this model began at North American Aviation on November 15, 1949 under the company designation NA-170. A contract for 111 examples under the designation F-86E was finalized on January 17, 1950.

The F-86E was externally identical to the F-86A except for the presence of an "all-flying" tailplane, which was intended to correct many of the undesireable transonic characteristics that had been experienced by the F-86A. The stabilizer fitted to the F-86A was moveable by an electric motor which could change the angle of incidence in flight to trim out excessive air loads. Unfortunately, the elevator of the F-86A had been found to be largely ineffective in the supersonic regime, and recovery from a supersonic dive required very large angles of elevator movement which exerted so much stress that it could on occasion cause rivets to pop out from the trailing edge. Sabre pilots had complained that the flight controls appeared to be "strange" in the transonic speed range. They seemed to "reverse"--if the pilot wanted to pull up and his speed was near Mach 1, the aircraft continued to go down. Several accidents had been caused by this effect, which had come to be known as "control reversal". In reality, the controls did not actually reverse, they simply did not respond very effectively.

The new elevator of the F-86E was called an "all-flying tail". Instead of using the mechanically adjustable stabilizer just for trim control, the F-86E's elevators and horizontal stabilizer operated as one unit. The horizontal stabilizer was pivoted at its rear spar so that the leading edge was **moved eight degrees up or down by the normal action of the controls**. The elevator was mechanically linked to the stabilizer and moved in a specific relation to the stabilizer movement, with elevator travel being slightly greater than stabilizer travel. This effectively created a larger elevator surface--as the pilot called for more elevator, the stabilizer could move in conjunction with the elevator, creating a greater angle of attack, thus giving better control at all speeds.

In the F-86A, the elevator controls were actuated by cables, with a hydraulic boost. On the F-86E, the cable system was eliminated and replaced with a fully hydraulic system having greatly increased boost for the controls. Only the rudder remained cable-controlled. The fully hydraulic controls had their drawbacks. One of these was that the pilot lost his "feel" for the aircraft handling--the loads were no longer transmitted back to the control stick. An artificial "feel" had to be created for pilot feedback, which consisted of a bobweight and bungee system.

Externally, the only difference between the F-86A and E was the presence of a bulge in the fuselage of the E immediately in front of the stabilizer to cover the gearing

mechanism. Internally, there were several significant changes. The A-1CM gunsight-AN/APG-30 radar combination that had first been installed in the last 24 F-86A-5-Nas was made standard on the F-86E. The J47-GE-13 engine rated at 5450 lb.s.t. was the powerplant.

The first F-86E (50-0579) made its maiden flight on September 23, 1950, with George Welch at the controls. The all-flying tail of the F-86E eliminated many of the undesirable compressibility effects that had been experienced with the F-86A. In particular, it made the recovery from a supersonic dive much easier to accomplish. The all-flying tail of the F-86E made sonic dive recovery much more straightforward, with much less danger of structural damage or catastrophic failure. In other respects, the performance of the F-86E was similar to that of the F-86A.

The first of 60 F-86E-1-NAs were delivered in February of 1951, followed by 51 F-86E-5-NAs which differed only in the placement of cockpit control panel switches. Both the E-1 and the E-5 had the same wing, the same V-shaped windscreen, and the same weapons capabilities as the F-86A.

First to get the new Sabre was the 33rd Fighter-Interceptor Wing at Otis AFB in Massachusetts. Both the 33rd and the 1st FIGs began receiving F-86Es in the early spring of 1951 to replace some of the older aircraft that had been acquired when the 4th FIG had been sent to Korea. In June of 1951, the first shipment of F-86Es was sent to Korea, where they gradually replaced F-86As in service. The F-86E entered action in Korea with the 4th Wing in September of 1951, replacing that unit's F-86As on a one-by-one basis.

The conversion to the F-86E was rather slow, and the last F-86A was not replaced until July of 1952. Following their replacement by F-86Es, the war-weary F-86As were returned to the USA and issued to Air National Guard squadrons.

In 1949, Canadair Ltd. of Montreal acquired a license to manufacture the Sabre in Canada. The first Canadian production version was powered by the 5200 lb.s.t. J47-GE-13 engine. The first aircraft assembled at Cartierville (near Montreal) was designated CL-13 Sabre Mk 1. This first Canadian Sabre was assembled from components largely supplied by NAA, and was essentially an F-86A-5-NA. Only one Sabre Mk 1 was built, the first production version being the Sabre Mk 2. **The Mk 2 was the Canadian equivalent of the F-86E, and also used the J47-GE-13. Faced with a shortage of Sabres available for service in Korea, in February 1952, the USAF arranged to purchase sixty Sabre Mk.2s from Canada. These were designated F-86E-6-CAN, and were delivered to the USAF between February and July of 1952.** These Canadian-built Sabres were fitted with US equipment in California before being delivered to operational units. With few exceptions, the entire

production of Canadair E-6s went to squadrons in Korea, serving with both the 4th and the 51st FIGs.

Plans were for the F-86E-5-NA to be immediately followed on the NAA production lines by the F-86F. The F-86F, known as the NA-172 by the company, was to be equipped with the more powerful J47-GE-27 engine, rated at 5910 lb.s.t. A contract for 109 NA-172s was approved on April 11, 1951 and was increased to 360 aircraft on June 30. However, production by General Electric of the J47-GE-27 engine was delayed, and the first 132 NA-172s on the contract were fitted with the 5200 lb.s.t. J47-GE-13. Since this effectively made them F-86Es rather than F-86Fs, they were delivered to the USAF as F-86E-10-NAs from September 1951 to May 1952. These aircraft had provisions for the installation of the -27 engine once it became available, and they could be distinguished from the earlier F-86Es by the introduction of a new optically-flat windscreen which replaced the V-shaped windscreen of earlier F-86As and Es. In addition, the instrument panel layout was modified. **Most of the E-10s went directly from the assembly lines to combat squadrons operating in Korea. Some of these aircraft were later retrofitted with the -27 engine when it became available.**

Further delays in deliveries of -27 engines caused the last 93 aircraft on the NA-172 F-86F contract being completed as F-86E-15-NAs with J47-GE-13 engines from August to December of 1952. **These aircraft were used by the Air Training Command and by Air National Guard squadrons, and none went to Korea.** Many of the E-15s were later retrofitted with both the -27 engine and the 6-3 solid leading edge wing introduced on the F-86F.

A total of 369 F-86Es were built.

The following wings received F-86Es:

- 1st Fighter Interceptor Wing
- 4th Fighter Interceptor Wing (334th, 335th, 336th Squadrons)
- 33rd Fighter Interceptor Wing (58th, 59th, 60th Squadrons)
- 51st Fighter Interceptor Wing (16th, 25th, 39th Squadrons)
- 56th Fighter Interceptor Wing

As the F-86E was phased out of active USAF service, many were passed on to the Air National Guard. The F-86E served with the following Air National Guard squadrons: 107, 121, 170, 171, 172, 198, and 199.

Serials of F-86E Sabre

50-0579/0638 North American F-86E-1-NA Sabre
c/n 170-1/60.
50-0639/0689 North American F-86E-5-NA Sabre
c/n 170-61/111.
51-2718/2849 North American F-86E-10-NA Sabre
c/n 172-1/132.
51-12977/13069 North American F-86E-15-NA Sabre
c/n 172-268/360. Originally intended as F-86F-15-NA
52-2833/2892 Canadair F-86E-6-CAN Sabre
Ex-RCAF Sabre Mk 2.

Specification of the F-86E-5-NA:

Engine: One General Electric J47-GE-13, 5200 lb.st. Dimensions: wingspan 37.12 feet, length 37.54 feet, height 14.79 feet, wing area 287.9 square feet. Weights: 10,555 pounds empty, 14,578 pounds takeoff (clean) 16,346 pounds takeoff (drop tanks). Performance: maximum speed 679 mph at sea level, 601 mph at 35,000 feet. Initial climb rate 7250 feet per minute. Altitude of 30,000 feet could be reached in 6.3 minutes. Service ceiling 47,200 feet. **Combat radius 321 miles, ferry range 1022 miles.**

Sources:

1. F-86 Sabre in Action, Larry Davis, Squadron/Signal Publications, 1992.
2. The North American Sabre, Ray Wagner, MacDonald, 1963.
3. The American Fighter, Enzo Angelucci and Peter Bowers, Orion, 1987.
4. Flash of the Sabre, Jack Dean, Wings Vol 22, No 5, 1992.
5. Wings of the Weird and Wonderful, Captain Eric Brown, Airlife, 1985.
6.

North American F-86F Sabre

The major production version of the day-fighter Sabre was the F-86F. The F-86F Sabre was basically a more powerful version of the F-86E, being powered by the 5910 lb.st. J47-GE-27 engine in place of the 5200 lb.st. J47-GE-13. Work on the new aircraft began on July 31, 1950 as the NA-172, and was scheduled to begin production as the F-86F in October of 1950. A contract for 109 F-86Fs was approved on April 11, 1951, which was increased to 360 by June 30.

Plans were also made to manufacture the F-86F in the Columbus, Ohio factory that had been used by the Aeroplane Division of Curtiss-Wright during World War 2 to manufacture the SB2C Helldiver dive bomber. This plant had been built for Curtiss by the Navy during the war. After the war, Curtiss fell onto hard times, and was forced to undergo a major downsizing, eventually consolidating all of its aircraft operations at the Columbus factory. Curtiss-Wright was ultimately unsuccessful in securing any defense contracts, and was forced to close down its Aeronautical Division. All of the assets of the Aeroplane Division were sold to North American, but control of the Columbus factory reverted to the Navy. The Columbus factory had sat idle for several years. With the expansion in military orders caused by the Korean War, North American arranged to lease this factory for manufacture of the F-86F. This Columbus-built F-86F was designated NA-176 by NAA, and the project was formally initiated on September 29, 1950. The Columbus factory reopened in December 1950, and the initial Columbus contract, dated September 6, 1951 and approved March 17, 1952, was for 441 aircraft.

While Columbus was coming up to speed, the California plant began to produce some F-86Fs. Unfortunately, there were serious delays in the deliveries of the J47-GE-27 engines from General Electric, and the first 132 aircraft on the NA-172 contract had to be delivered with the less powerful -13 engine of the F-86E. Since this made them essentially F-86Es rather than F-86Fs, they were given the designation F-86E-10-NA. They were delivered between September 1951 and April 1952. They could be distinguished from earlier Es by the introduction of a new optically-flat armored windscreen which replaced the v-type windscreen of earlier F-86As and Es.

The J47-GE-27 engine finally became available in the early spring of 1952, and the first of 78 F-86F-1-NA aircraft (51-2850) took to the air on March 19, 1952. Other than the engine change, the F-1 was identical to the E-10. with the same weapons capabilities, wings and flight control systems. **By June of 1952, they were in service with the 84th Squadron at Hamilton Field and with the 51st Wing in Korea. The F-86F was added to the 4th Wing in September.**

With the same weight as the E-10 but with more engine thrust, the F offered significantly better performance over the E. The F's top speed rose to 688 mph at sea level and well over 600 mph at 35,000 feet. Service ceiling was up to 52,000 feet, and initial climb rate was now 9850 feet. The introduction of the F into combat in Korea went a long way to closing the high-altitude performance gap between the Sabre and the MiG-15. No longer could the MiGs zoom and climb through Sabre formations with impunity, and the Sabre pilots could now close on the MiGs at any altitude, even during a climb. The -27 engine also offered slightly better fuel economy, **giving a combat radius of 430 miles with a pair of 120-US gallon drop tanks.**

The F-86F-5-NA appeared in June of 1952. It differed in having underwing shackles capable of handling 200-gallon drop tanks instead of the earlier 120-gallon tanks. These increased the combat radius from 430 to 463 miles. 16 of these were built.

The F-86F-10-NA introduced a new gunsight. Most of the F-86As in Korea had used the Mark 18 optical gyrosight. The ranging control of this sight had to be operated manually, which was an awkward task for a pilot to perform under the stress of high-speed combat. Late F-86As and all Es had been fitted with an A-1CM radar ranger which relieved the pilot of the task of having to do the ranging task manually, but this equipment was rather complicated, was subject to frequent breakdowns, and was difficult to service and maintain. The F-86F-10-NA and later aircraft introduced the A-4 ranging system, which operated in a similar manner as the A-1CM, but was simpler to operate and easier to maintain. All other equipment on the F-86F-10 remained the same as on previous models.

The last 100 aircraft on the NA-172 contract were to have been F-86F-15-NAs with re-positioned control systems. Combat in Korea had shown that there were several vital areas in the F-86 where just one hit could result in severe damage and perhaps loss of the entire aircraft. All of these vital areas were identified and either repositioned, encased in armor plating, or given a backup system in case of failure. **However, in April of 1952, additional delays in deliveries of General Electric J47-GE-27 engines forced another substitution of the earlier -13 engine in all but the first seven aircraft in this block. These 93 re-engined aircraft were then re-designated F-86E-15-NA and were issued to training units rather than to combat Wings. Six of the seven F-15s built are known to have been operational in Korea with the 4th FIG.**

Columbus was rather slow in getting production going on their NA-176 contract, and the first Columbus-built F-86F aircraft (51-13070) did not fly until May of 1952. These aircraft were known as F-86F-20-NH (the Columbus-built Sabres having the suffix "NH", the California-built Sabres having the suffix "NA"). These aircraft were

essentially duplicates of the Inglewood-built F-86F-15-NA, and could carry a pair of 200-gallon drop tanks and had armor protection fitted around the horizontal stabilizer control system. They had a different radio and cockpit arrangement than previous Sabres. Delivery of the 100 F-86F-20-NH aircraft was not completed until January of 1953. **However,none of the F-86F-20s ever served in Korea.**

The next version of the Sabre was known by the company as NA-191. The project began on October 26, 1951. This called for a fighter-bomber adaptation of the Sabre, capable of carrying two stores under each wing rather than just one. **Earlier Sabres had been found to be deficient when called upon to assume the fighter-bomber role, primarily because of insufficient range and endurance when the drop tanks were replaced by bombs or rockets. The F-86A had a combat radius of only 50 miles when carrying underwing bombs, which was not a very useful distance!** A contract was approved on August 5, 1952 for 907 NA-191 aircraft, all to be built in California. The same configuration was to be used on 341 NA-176 aircraft already on order from Columbus, plus 259 NA-193 aircraft added to the contract on October 17, 1952.

The first Sabre built to this fighter-bomber configuration was the F-86F-30-NA, which starting rolling off the production lines in California in October of 1952. All four hardpoints could handle either 120- or 200-US gallon drop tanks, but only the inner pair could carry ordnance, up to 1000 pounds for each pylon. This meant that an F-86F with the dual-store wing could carry a pair of 1000-pound bombs plus two 200-US gallon drop tanks on a typical mission. If the maximum fuel load of two 200-gallon and two 120-gallon drop tanks was carried, ferry range was 1600 miles and combat radius was 568 miles.

In January 1953, the Columbus-built version of the fighter-bomber Sabre, the F-86F-25-NH, had appeared.

In an attempt to improve the high-speed performance of the Sabre, a fixed wing leading edge was tested on three aircraft in August of 1952. These aircraft had the wing leading edge slats eliminated and their wing leading edges extended by six inches at the root and three inches at the tip. The wing area went from 287.9 to 302.3 square feet, and the angle of leading edge sweep increased slightly to 35.7 degrees. Airflow pattern changes over the wing required the addition of five-inch-high wing fences at 70 percent span. Since the leading edge extension occurred in front of the

main wing spar, the extended leading edge could be used to accommodate some additional fuel, raising total internal fuel capacity from 435 to 505 US gallons.

This wing, soon to be known as the "6-3 wing", immediately demonstrated improved combat qualities. The "6-3" wing increased maximum speed from 688 to 695 mph at sea level and from 604 to 608 mph at 35,000 feet. In addition, there was a slight improvement in range. The most significant improvement was, however, in the maneuverability at high altitudes and at high Mach numbers. By delaying the onset of buffeting, the new wing gave the Sabre pilot the ability to fly closer to the maximum G-limit, enabling tighter turns at high altitudes. About 1.5 Gs were added to the maneuverability at 35,000 feet. Unfortunately, the improved high-speed performance came at the expense of losing the low-speed advantages of the slatted wing. Stalling speed went up from 128 to 144 mph, and the stall was now preceded by a yaw-and-roll effect. This resulted in a faster final landing approach speed and necessitated a longer landing roll.

Fifty "6-3" wing conversion kits were shipped to Korea in high secrecy in September of 1952 to convert F-86F aircraft already there to the new configuration. Enough kits were eventually supplied to convert all Korean-based F-86Fs and some F-86Es to this new configuration. **The "6-3" wing was introduced as standard production line equipment starting with the 171st F-86F-25-NH (51-13341) and the 200th F-86F-30-NA (52-4505). No F-86F-25s were actually sent to Korea, with most of the combat aircraft used in Korean combat being early Fs from F-1 through F-15, plus large numbers of F-30s.**

The "6-3" wing was an immediate success, quickly boosting Sabre victories in Korea. With the "6-3-wing" F-86F, the USAF now had a fighter which could match the maximum speed of the MiG at altitudes all the way up to the Sabre's service ceiling of 47,000 feet, could turn inside the MiG, and which had almost as great a rate of climb.

The third F-86F production batch was the NA-191, built in California under a contract approved on August 5, 1952. These were delivered as F-86F-30-NA (52-4305 through -5163) and as F-86F-35-NA (52-5164 through -5271). Deliveries began in October of 1952 and were completed by May of 1954. 967 were built.

157 NA-202 aircraft were built in California under the next contract. These included F-86F-35-NAs covering serials 53-1072 through 53-1228. The F-86F-35-NA had the capability of carrying a nuclear weapon. The 1200-pound Mk 12 "special store" (as the atomic bomb was euphemistically called) with a yield of up to 12 kT was carried under the port wing, while droptanks were attached under the starboard wing. The

nuclear bomb was delivered by use of the Low Altitude Bombing System (LABS), in which the pilot approached the target at low altitude, pulled up to begin a loop, released the bomb near the top of the loop to throw the bomb away from the flight path, and then escaped the blast by climbing away with an Immelmann turn. The F-86F-35-NA was equipped with a computer for determining the exact instant of bomb release, along with a set of controls for arming and disarming the "special store" in flight. Conventional weapons that could be carried included a pair of 1000-pound or smaller bombs, two 750-pound napalm tanks, or eight 5-inch HVAR rockets. The F-35 was otherwise similar to other F-86Fs.

The F-86F served with the following USAF wings:

- 4th Fighter Interceptor Wing (334th, 335th, 336th Squadrons)
- 8th Fighter Bomber Wing (35th, 36th, 80th Squadrons)
- 18th Fighter Interceptor Wing (12th, 44th, 55th Squadrons)
- 21st Fighter Interceptor Wing (92nd, 416th, 531st Squadrons)
- 36th Fighter Interceptor Wing (23rd, 32nd, 53rd Squadrons)
- 48th Fighter Interceptor Wing (492nd, 493rd, 494th Squadrons)
- 50th Fighter Bomber Wing (10th, 81st, 417th Squadrons)
- 51st Fighter Interceptor Wing (16th, 25th, 39th Squadrons)
- 58th Fighter Interceptor Wing (69th, 310th, 311th Squadrons)
- 81st Fighter Interceptor Wing (78th, 91st, 92nd Squadrons)
- 322nd Fighter Interceptor Wing (450th, 451st, 452nd Squadrons)
- 366th Fighter Interceptor Wing (384th, 390th, 391st Squadrons)
- 388th Fighter Interceptor Wing (561st, 562nd, 563rd Squadrons)
- 406th Fighter Interceptor Wing (512th, 513th, 514st Squadrons)
- 450th Fighter Interceptor Wing (721st, 722nd, 723rd Squadrons)
- 474th Fighter Interceptor Wing (428th, 429th, 430th Squadrons)
- 479th Fighter Interceptor Wing (431st, 434th, 435th Squadrons)

Serials of F-86F

51-2850/2927	**North American F-86F-1-NA Sabre c/n 172-133/200**
51-2928/2943	**North American F-86F-5-NA Sabre c/n 172-201/226.**
51-12936/12969	**North American F-86F-10-NA Sabre c/n 172-227/260.**
51-12970/12976	**North American F-86F-15-NA Sabre c/n 172-261/267.**
51-13070/13169	**North American F-86F-20-NH Sabre c/n 176-1/100.**
51-13170/13510	**North American F-86F-25-NH Sabre c/n 176-101/441.**
52-4305/5163	**North American F-86F-30-NA Sabre c/n 191-1/859.**
52-5164/5271	**North American F-86F-35-NA Sabre c/n 191-860/967.**
52-5272/5530	**North American F-86F-25-NH Sabre c/n 193-1/259.**
53-1072/1228	**North American F-86F-35-NA Sabre c/n 202-1/157**

Sources:

1. F-86 Sabre in Action, Larry Davis, Squadron/Signal Publications, 1992.
2. The North American Sabre, Ray Wagner, MacDonald, 1963.
3. The American Fighter, Enzo Angelucci and Peter Bowers, Orion, 1987.
4. The World Guide to Combat Planes, William Green, MacDonald, 1966.
5. The World's Fighting Planes, William Green, Doubleday, 1964.
6. Flash of the Sabre, Jack Dean, Wings Vol 22, No 5, 1992.
7. E-mail from W. V. Hanks with correction on 50th FBW and the squadrons serving with it.
8. E-mail from Jim Escalle on 8th FIS-> 8th FBW.

Cannon-Armed F-86Fs

Even though the six 0.50-inch machine guns of the Sabre had a high rate of fire, one of the primary complaints by Sabre pilots was that these guns really didn't pack enough punch to ensure a kill of every MiG that got into their gunsights. The MiG-15 was actually a fairly robust aircraft, one which could sustain a considerable amount of damage and still keep flying. Colonel Glenn Eagleston submitted a report in which he estimated that as much as two-thirds of the MiGs hit by Sabre gunfire had actually escaped to return home and fight another day. A heavier cannon armament was clearly needed, but one which still preserved the high rate of fire of the machine guns which would give a higher probability of a kill during air combat.

It is a little known fact that some operational trials were actually carried out in Korea with cannon-armed Sabres. Four F-86E-10s (serial numbers 51-2803, 2819, 2826 and 2836) and six F-86F-1s (serial numbers 51-2855, 2861, 2867, 2868, 2884 and 2900) were pulled off the North American assembly line and fitted with a quartet of T-160 20-mm cannon and redesignated F-86F-2-NA. The T-160 guns were belt-fed and were capable of firing 1500 rounds per minute. The gun bays had to be completely redesigned and the guns had to be spaced further apart vertically with a totally new blast panel. The ammunition canisters could carry only 100 rounds each, for about 6 seconds of firing. The gun mounts had to be strengthened and the nose structure around the guns had to be beefed up in order to handle the extra amount of recoil. In order to prevent the buildup of gun gas in the cannon bays, where it could be an explosion and fire hazard, small doors were cut into the interior of the intake duct to extract the gun gas and suck it into the engine.

First tests were carried out with 51-2803 by test pilot George Welch over the Pacific firing range near Catalina Island. All test flights and gun firings were carried out at altitudes between 10,000 and 25,000 feet, with no problems being encountered. The remaining F-86F-2-NAs were delivered to the Air Force Armament Test Center at Eglin AFB.

The cannon-armed Sabre project came to be known as Project Gunval. Eight F-86F-2s were transferred to the 4th Wing in Korea in January 1953 for actual combat tests. The Gunval project was assigned to the 335th FIS, commanded by LtCol Vermont Garrison. Almost immediately, problems were encountered. In the very first aerial combats, the engines of the Gunval Sabres flamed out immediately when the cannon were fired, and no hits on MiGs were scored.

All of the *Gunval* Sabres had to be grounded to figure out what the problem was. It turned that during the firing of the cannon, excessive amounts of gun gas were being sucked into the engine, much larger amounts than the engineers had expected. The early stateside firing tests had been carried out at lower altitudes and no problems had been encountered, but at higher altitudes there was lesser oxygen to run the engine and the gun gas was causing a compressor stall, resulting in a flameout.

The idea of extracting the gun gas by sucking it into the engine had to be abandoned. The doors that bled gun gas into the engine intake duct were welded shut, and a selector switch was installed in the cockpit that permitted the pilot to be able to choose either two or four cannon firing. Small holes were drilled into the aft portion of the gun bay doors to alleviate gun gas buildup. These changes seemed to cure most of the gun gas buildup problems.

However, gun gas problems soon returned once combat trials were resumed. Test photos indicated that large amounts of gun gas were building up ahead of the nose during firing and were being ingested directly into the intake. This problem was ultimately solved by North American engineer Paul Peterson, who added a small horseshoe-shaped clip inside the recessed nozzle trough of each weapon. This clip broke up the gun gas, deflecting it away from the nose of the aircraft and trailing it harmlessly away in the wake of the aircraft.

This seemed to cure the gun gas ingestion problem, and combat tests resumed. A total of 282 combat missions were flown. Out of the 41 MiGs fired at, six were destroyed, three were probably destroyed, and 13 were damaged. Two *Gunval* Sabres were hit by MiG cannon fire, but both aircraft were able to return safely to base. The *Gunval* tests were completed on May 1, 1953, and the surviving aircraft were sent back to the USA, ultimately to be assigned to the Colorado Air National Guard *Minutemen* aerobatic team.

The combat tests were sufficiently encouraging that the T-160 cannon was placed into production by a division of the Ford Motor Company as the M-39, and the cannon ended up arming the F-86H and some of the Century Series of supersonic fighters.

Following the end of the Korean War, two F-86F-1-NAs (51-2916 and 51-2926) were fitted with Oerlikon 206RK 20-mm cannon and were redesignated F-86F-3-NA. Tests were carried out at Eglin AFB in April of 1954. The Oerlikon installation was not very successful--the guns were much heavier than the T-160s, resulting in a shift of the aircraft's center of gravity. In addition, the barrel life was too short and the stoppage rate was unsatisfactory. The F-

86F-3s were assigned to Air Proving Ground Command for further tests in 1954-55, being redesignated JF-86F in 1957 and eventually scrapped.

Source:

1. North American F-86 Sabre, Larry Davis, Wings of Fame, Volume 10, 1998

North American RF-86F Sabre

In 1953, several F-86F-30s were fitted a suite of photo-reconnaissance cameras at the Tsuiki REMCO facility in Japan, in a project code-named *Haymaker*. All armament, radars, and gunsights were removed, and a camera suite identical to that of the earlier *Ashtray* RF-86As was fitted, but using K-14 cameras in place of the lower-speed K-9s. Again, the K-14s were mounted horizontally, shooting through a mirror complex with an aperture in the bottom of the fuselage. The K-14 "dicing" camera was mounted between the two vertical cameras. As with the RF-86A, the fuselage was bulged to cover the camera suite installation. The modified aircraft were redesignated RF-86F-30.

*Haymaker RF-86F-30s were issued to the 15th TRS at Kimpo in 1953, flying alongside the *Ashtray* aircraft that remained in service. **In an attempt to fool enemy MiGs, they had fake gun ports painted on the sides of their noses.**

Factory-built RF-86Fs began to be delivered in June of 1953. They were equipped at the factory with two K-22 and one K-17 cameras in an under-fuselage installation. The cameras were mounted vertically, which took the main body of the camera and the film magazines outside the fuselage contours in a bulge on the gun bay doors. 750 pounds of ballast had to be added to the forward fuselage to realign the center of gravity. The cockpit had an elongated canopy to counter a buffet that had appeared caused by the bulged fuselage. **The factory aircraft had the new "6-3" wing as standard equipment. A total of 8 were built (serial numbers 52-4337, 4379,4492, 4800, 4808, 4822, 4823, and 4864), *but they were too late for combat duty in Korea*.**

In spite of the success of the RF-86A and F in combat, the USAF opted for the Republic RF-84F Thunderflash as its next-generation tactical reconnaissance aircraft. However, the RF-86F continued to be involved in clandestine and standard reconnaissance missions after the Korean War ended.

Sources:

1. F-86 Sabre in Action, Larry Davis, Squadron/Signal Publications, 1992.

2. The North American Sabre, Ray Wagner, MacDonald, 1963.

3. The American Fighter, Enzo Angelucci and Peter Bowers, Orion, 1987.
4. The World Guide to Combat Planes, William Green, MacDonald, 1966.
5. The World's Fighting Planes, William Green, Doubleday, 1964.
6. Flash of the Sabre, Jack Dean, Wings Vol 22, No 5, 1992.

RF-86F HAYMAKER

by Larry Davis

Towards the end of 1952, the 15th Tactical Reconnaissance Squadron sought authorization to reequip with newer aircraft. The F-86F was already in service with both the 4th and 51st Fighter interceptor Groups, and new aircraft were arriving each day. **North American Aviation was working on a factory-built RF-86, but it was still many months away.** Far East Air Material Command authorized a conversion of several F-86F aircraft to RF-86F under Project HAYMAKER. Several brand new F-86F-30 aircraft went to the Tsuiki Rear Echelon Maintenance Combined Operation (REMCO) facility in Japan after a short combat stint with one of the groups in Korea.

At Tsuiki, the aircraft had all armament, radars, and the gun sight removed. A camera suite identical to that of the ASHTRAY RF-86A was then installed, but using K-14 cameras in place of the slower speed K-9s Again, the K-14s had to be mounted horizontally shooting through a mirror complex with an aperture in the bottom of the fuselage. The K-14 dicing camera was now mounted between the two vertical cameras. As with the RF-86A, the underside of the forward fuselage was bulged to cover the camera suite installation. ***The Tsuiki REMCO facility built 3 HAYMAKER RF-86F-30s, serial 52-4330, -4257, and -4529.***

The HAYMAKER, RF-86F-30s began equipping the 15th TRS at Kimpo in 1953, flying side by side with the ASHTRAY aircraft that remained in service. Once again, the RF-86Fs were marked identical to aircraft of the 4th FTG, including painting fake gun ports on the blank gun panels. **The mission profiles were identical to the RF-86A. Takeoff as lead in a flight of four 4th FIG F-86s. Near the target area, often north of the Yalu River, the RF-86F broke down and away from the rest of the flight. The RF-86F pilot would then make a high Mach run over the target while the rest of the flight orbited nearby.**

The results of both the ASHTRAY and HAYMAKER programs were successful in spite of the shortcomings of a 'field-modified' installation. No HAYMAKER aircraft were lost. In June 1953, the first North American RF-86F production aircraft began arriving in Korea. The factory-built aircraft were a vast improvement over the HAYMAKER aircraft. Using all the available information that was coming in daily from the pilots of the 67th TRW in Korea, North American engineers fixed all the problems that

The camera suite was the latest high speed unit, using a pair of K-22s and a K-l7 dicing camera. However, it was not mounted horizontally, and used no mirrors in the installation. The K-22s were mounted vertically. However, the vertically mounted K-22s, with their longer focal length, took the main camera body and film magazines, outside the fuselage contours of the F-86. North American solved this by simply designing a large bulge on the gun bay door, which covered the film magazine.

Ballast totaling almost 750 lbs, needed to re-align the aircraft center of gravity, was added to the forward fuselage. The canopy of the factory-built RF-86F was elongated to counter a buffet caused by the bulged fuselage. All camera windows had sliding doors. And the factory aircraft had the new '6-3' hard wing with leading edge fences.

North American built 8 RF-86Fs for the US Air Force (serials 52A377, -4379, -4492, -4800, -4808, -4822, A823, and 4864). None of the factory-built RF-86Fs were completed in time to join in the combat during the war in Korea. However, all the RF-86Fs were involved in

clandestine and standard reconnaissance missions after the war ended, including many missions into China and Soviet Union air space which remain classified to this day.

In spite of the success in combat of the RF-86A and F programs, Air Force chose a reconnaissance version of the Republic F-84F as their next generation tactical recon aircraft - the RF-84F Thunderflash. However, interest in the RF-86F by Japan, South Korea, and Nationalist China, kept the type in front line service into the 1980s. North American Aviation provided conversion 'kits' to Mitsubishi Heavy Industries, who were in the process of assembling F-86FA-40 aircraft.

Mitsubishi converted at least 18 aircraft to RF-86F-40 standard. The 501st Hikotai (squadron) finally turned in their RF-86Fs in favor of RF-4E Phantoms on I October 1979 South Korea had one squadron of 10 RF-86Fs still flying missions in the late 1980s. These aircraft were made up of F-86F-25 and -30 air frames, which were brought up to F-40 standard, then converted to RF-86F. The Taiwanese Air Force on Formosa had 7 RF-86Fs, all modified similar to the South Korean RF-86Fs.

Several RF-86F aircraft survived the many years of front line service, only to be used up in the US Navy target drone program at China Lake NAS. One of the original North American Aviation built RF-86F-30s assigned to the 15th TRS, #524492, had been a 'gate guard' at Bergstrom AFB, Texas until the base was closed. It is now at the US Air Force Museum awaiting a complete restoration back to its Cold War markings of the immediate post-Korean War era.

Also see:http://www.spyflight.co.uk/tf86a.htm