

# B-36 in action

by Meyers K. Jacobsen & Ray Wagner illustrated by Don Greer

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(Cover) A yellow-trimmed RB-36H of the 28th SRW leaves contrails across the sky.

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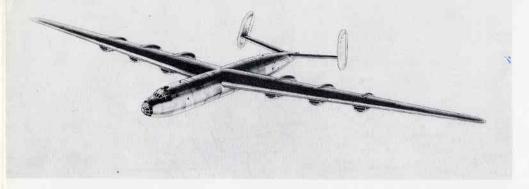
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Probably no higher compliment can be paid to a strategic bomber than that it never had to be used. These B-36Fs of the 6th BW(H) out of Walker AFB, MN, represent with their sheer size and power, an era when American weapons superiority was unchallengeable. The white underbelly became standard on USAF nuclear bombers in 1956. (USAF)

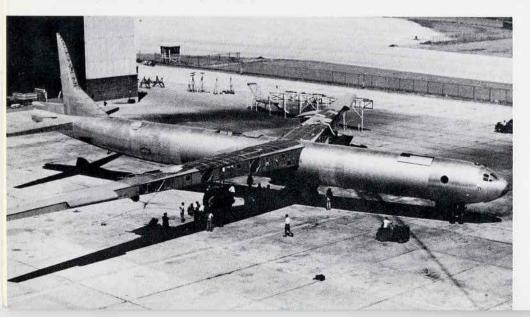




(Above) A February 1942 artist's conception of the Model 36 shows that the basic slender fuselage and six pusher engines had already been chosen. Only the twin tail would change significantly. (GD) (Below) The XB-36 mock-up in San Diego, July 29,1942, had two prominent dorsal turrets and the twin tail which were later altered. (GD)



(Below) The first prototype, XB-36, 42-13570, emerged from the Convair-Ft. Worth plant in late August 1945, 82% complete. (GD)



# Introduction

The world's largest bomber, the Convair B-36, has a unique place in aviation history. During the Cold War, the late '40s and '50s, the B-36 was the symbol of American ability to deliver nuclear weapons anywhere in the world. Beginning as an idea long before the atomic bomb was a weapon in anyone's arsenal, the B-36 served throughout a period of tremendous technological advance, finally being obsoleted by the jet engine, which was an experimental toy when the '36's specifications were drawn. Despite a service life of 10 years which covered the height of the Cold War and all of the Korean War, the B-36 never fired a shot in anger. It could be said to have fulfilled its task anyway, preserving the peace, richly earning its unofficial nickname: Peacemaker.

It was a desire to achieve intercontinental range that led to this aircraft's great size. In 1941, the United States confronted the possibility that Nazi Germany would control all of Europe and that in case of war with the Axis, only bases in America itself would be available to strike at enemy targets. With this in mind, on April 11, 1941, the Army Air Corps announced a design competition for a bomber that could carry a 10,000 lb. load half-way over a 10,000 mile range. Other parts of the specification called for a speed of between 300 and 400 mph and operation from a runway of less than 5000 ft. At that time, the largest bomber in U.S. service was the Boeing B-17C, which had a 4000 lb. useful load and 2000 mile range, while the Consolidated B-24A with a 2200 mile range and the same lift had not yet been delivered. A much larger bomber had been under development since 1936, the Douglas XB-19, designed to carry a 6000 lb. load over a 7300 mile range. First flown June 1941, the XB-19 was the culmination of a long-range bomber development program begun in 1934 with design of the Boeing XB-15. The larger Douglas, with a 212 ft. span and 140,000 lb. gross weight was the first design to use the tricycle landing gear, tail gunner and power turrets that became standard on all later U.S. heavy bombers.

Consolidated Aircraft Corporation, of San Diego, California had won a prototype contract in September 1940 for the XB-32 long-range bomber (2000 lb/4450 miles), a counterpart to the Boeing B-29, and had progressed to a Model 35 design with four engines and 164 ft. span. Enlarged to six pusher engines, this design was submitted to the Air Material Division on October 6, 1941, competing with proposals by Boeing, Douglas, and Northrop. On the recommendation of Brig. Gen. George S. Kenney, the Air Force approved a prototype contract for the Consolidated design, as well as one for the radical Northrop XB-35 four-engined flying wing. This contract, issued October 25, and approved November 15, 1941, called for two XB-36 aircraft, the first to be delivered in 30 months, or about May 1944. Total engineering and construction cost was to be \$15 million, with the company to get an \$800,000 fixed fee.

Work had hardly started when the Pearl Harbor attack shifted priority to B-24 production and B-32 development. Nevertheless, a 1/26 scale wind tunnel model was prepared and a full scale mockup of the fuselage and half of the wing and twin tail was built in San Diego, then moved by railroad in August 1942, to a new government plant in Fort Worth, TX. The basic design provided for six Pratt & Whitney R-4360 Wasp Majors mounted with 19 ft. three-bladed Curtiss propellers behind the wing's trailing edge. These 28 cylinder radials had two turbosuperchargers to maintain 3000 hp up to 35,000 ft. The pusher arrangement, rare in American aircraft, kept the propellers from interferring with airflow over the wing. Six internal fuel tanks in the wings provided a capacity of 21,116 US gallons, with a self-sealing rubber coating protecting the four tanks which would retain fuel the longest. The wing itself retained its shape throughout the B-36's history, with 230 ft. span and a 4772 sq. ft. area. The 163 ft. fuselage was of circular section to ease pressurization of the crew compartments. Between the forward section containing the flight crew and the rear gunner's compartment were four bomb bays. An 85 ft. pressurized 25 inch diameter tube through the bays connected the compartments, with rails for a cart to move the crewmen back and forth. The most noticeable change in the B-36's original design took place in the tail section. Originally a twin-rudder arrangement like that of the B-24 and B-32 was intended, but in the fall of 1943 a single fin and rudder was selected as a stronger structure. It would reach 46 ft. 10 in. off the ground, dwarfing all previous air-



craft. Defensive armament designed for the XB-36 included 15 guns in four retractable poweractuated turrets and a remotely-controlled tail turret. The top forward gunner was to sit in a turret with two 37 mm. guns, while another such turret could be lowered from a bay beneath him. Four .50 caliber guns were to be mounted in the upper rear turret, which was remotely-controlled by gunners sighting from blisters in the rear compartment. A similar turret retracted below it into the belly, while radar aiming was provided for the tail turret's one 37 mm. and two .50 cal. guns.

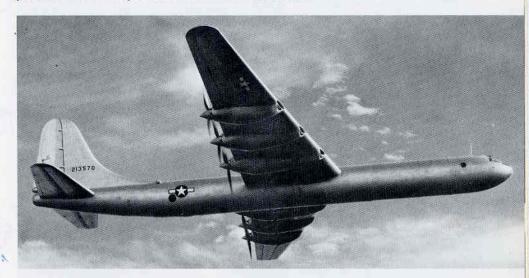
The specifications established by June 1943 called for the heaviest bomber ever built, with a 127,643 lb. empty weight and 265,512 lb. gross when carrying 11 men, twenty 500 lb. bombs, and the 18,881 galions of fuel needed for a 10,000 mile range. Bomb capacity for shorter flights was seventy-two 1000 lb, with 8876 gallons, to be carried 4620 miles. Estimated performance at this weight included a top speed of 288 mph at sea level and 369 mph at 30,000 ft., average operating speed of 245 mph and a service ceiling of 40,000 ft. This performance was downgraded as design weight increased and design difficulties forced Pratt & Whitney to change the two-speed propeller to a single ratio unit. With this engine (R-4360-25), August 1945 specifications projected top speeds of 282 mph at sea level and 347 mph at 30,000 ft. Continuing increases in design weight led to further projected decreases in performance.

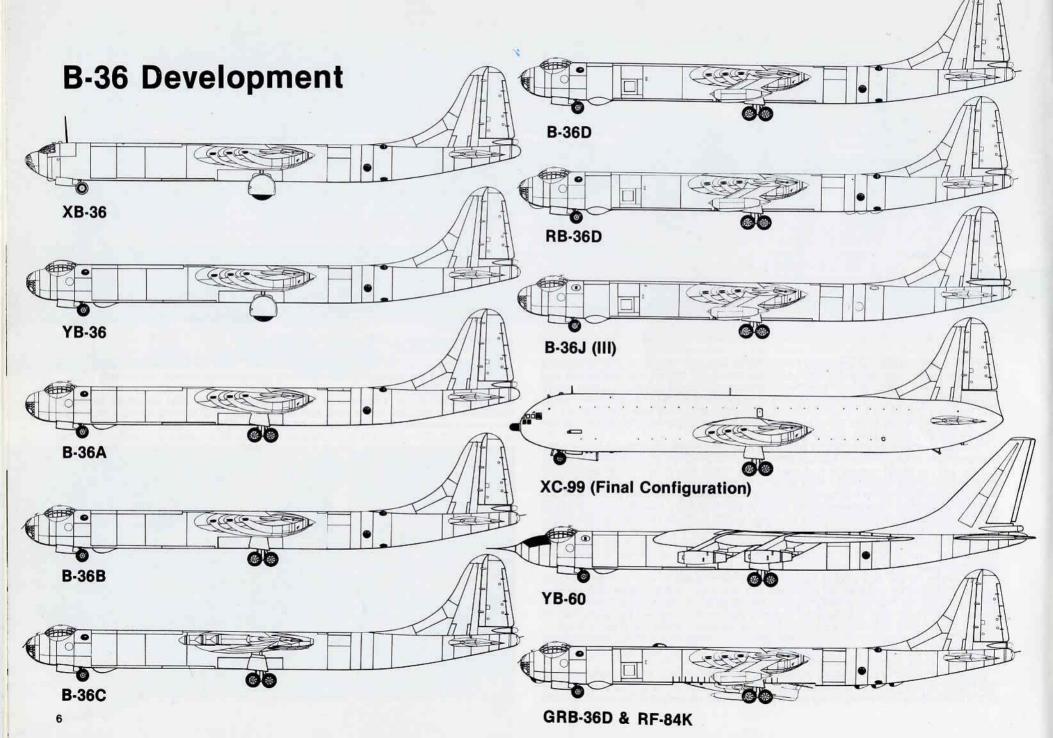
Enthusiasm for the B-36 project fluctuated with the fortunes of war. At first, B-24 production siphoned off experienced personnel and priorities. In September 1942, General Arnold ordered the "highest priority" to both the XB-35 and XB-36 because Japanese successes made more likely the need for bombers that could fly across the whole Pacific Ocean. Responding to Convair's complaints to the Secretary of War that it was difficult to get subcontractors for an order for only two aircraft, a "letter of intent" for 100 B-36s was issued on July 23, 1943. Still, it would be a year before a contract was signed and the war would end before the B-36 became a high priority project.

Japan's surrender in 1945 sharply curtailed aircraft production in the United States, but had the opposite effect on the B-36 program. The appearance of the atomic bomb, as well as the tremendous cost of capturing island bases for shorter ranged B-29s, convinced the

The XB-36 lifts off for the first time, August 8, 1946. Note the large, single main wheels which restricted the aircraft to three specially strengthened runways in the US. (GD)

The basic form of the "Peacemaker" was established in the first prototype, although changes would be made to the nose area before the bomber entered production and jet pods would eventually become a standard addition. (GD)





Air Force it needed a truly intercontinental bomber. Cancellation of B-32 production on August 15, 1945 finally gave the B-36 the personnel and attention it needed.

The country celebrated VJ Day on September 2, 1945, and six days later, the XB-36 was wheeled out of the Experimental Hanger on its own landing gear. Engines arrived one at a time, along with other final components and on June 12, 1946, the first engine run-up tests were begun. On one of these tests, the wing flaps disintegrated in the heavy propeller turbulence. The fabric-covered magnesium alloy flaps had to be replaced by stronger ones of aluminium, six times heavier, causing more delay. Taxi tests began on July 21, and on August 8, 1946, the XB-36 was ready for its first flight, nearly five years after it was ordered. The aircraft weighed 200,000 lbs. with 8000 gallons of fuel, and nine crewmen, including pilot Beryl A. Erickson. The XB-36 lifted off at 10:10 AM for a cautious 37 minute wheels-down flight.

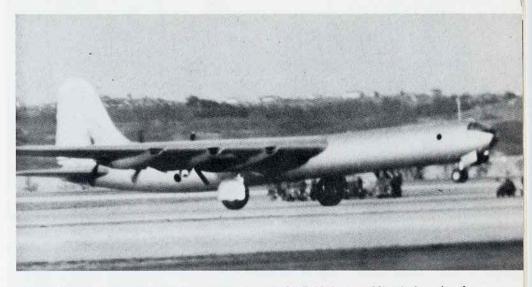
This and further test flights soon showed that many mechanical difficulties would have to be overcome before the aircraft would be ready for service. Unique in size and design, the XB-36 was at the very frontier of "the state of the art". For example, the engine cooling system way inadequate, and although the prototype reached 37,000 ft. it was unable to maintain high-altitude flight until a better cooling fan could be developed. Propeller vibration seriously punished the wing and engine structure and many points had to be strengthened. Once a propeller broke loose at 10,000 ft. and another time all three engines on one side quit because of a vibration induced failure of the electrical system in the wing.

The prototype was unarmed. For the production aircraft the Air Force had finally decided on an arrangement of sixteen 20 mm. guns, paired in eight remotely-controlled turrets, one of them in the nose. Making room for the nose turret caused a redesign of the flight deck. Simultaneously a bubbletype canopy was provided for the pilot, co-pilot, and flight engineer, giving them much better visibility. A full-scale cabin mockup had been built in June 1945 and the new canopy was specified for the second prototype and all production aircraft. The prototype's large single main wheels, 110 inches in diameter, were the largest aircraft wheels ever made, but they required a 22½ inch thick runway, thus limiting the prototype to only three specially strengthened runways; those at Fort Worth, Eglin Air Force Base and Fairfield-Suisun (later Travis AFB). While the safety disadvantages were apparent, a multi-wheel gear could not be obtained until adequate brakes could be designed. Finally, a four-wheel gear using 56 inch diameter tires was perfected for the B-36A. A 13½ inch thick runway was needed, 22 primary and a further 22 alternate air fields could handle the production bombers.

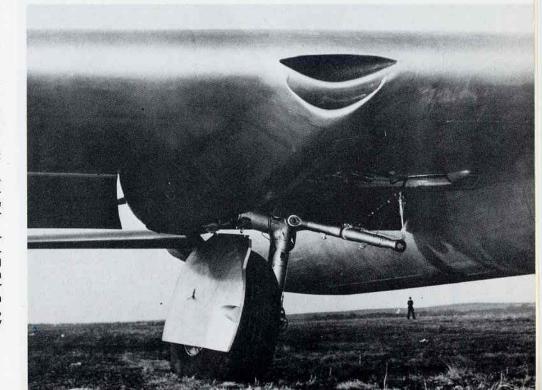
The first production B-36A-1-CF, 44-92004, was flown on August 28, 1947 with the new canopy and landing gear. (The CF suffix denoted Convair-Fort Worth; since all B-36s were built there, the suffix was often dropped). BM-004 was painted on its side as its Air Force "buzz number". This B-36A-1 was flown to Wright Field on August 30 by Major Stephen P. Dillon, the first Air Force officer to qualify as a B-36 pilot. Only equipment needed for this delivery flight had been installed, explaining why it flew before the second prototype, designated YB-36. BM-004, however, flew no more; it was gradually demolished at Wright in 45 static and dynamic tests of its structural strength.

The YB-36, 42-13571, had been moved to the Experimental Hanger in April 1947, and incorporated safety and engineering changes indicated by XB-36 experiences. More efficient turbosuperchargers and the new flight deck canopy were provided, although the single-wheel landing gear was retained on BM-571. Beryl Erickson took it into the air for the first time on December 4, 1947.

With another flight test aircraft available, the XB-36 was returned to the shop for modernization. Having completed 31 flights and 89 hours flying time in its original configuration it was now reworked with a four-wheeled landing gear, new engines, rearranged instruments and some fuselage reskinning. With the Buzz Number BM-570, it flew again in June 1948, and on June 19 the prototype was ferried to Wright for acceptance by the Air Force. It was returned to Fort Worth for use in training, but there spent most of its time in idleness. Consideration was given to modifying the prototype to later service standards, but the expense was considered too great and the aircraft sadly ended its career in May 1957 as a derelict used to train firefighters.



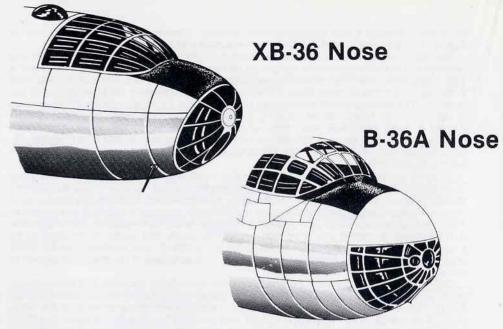
On the test flight which took place March 26, 1947, the B-36 damaged its starboard main landing gear on takeoff. The inner attachment point having broken loose, the entire crew except the two pilots bailed out. Erickson and Green landed the XB as gently as possible. The limitation of the single-wheel maingear, as well as the enormous ground pressure exerted by the massive tire, led to the search for a replacement system. (GD)

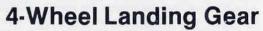




(Above) The first B-36A, BM-004, which flew before the YB-36, had the revised canopy area and the new four-wheel main landing gear. (GD) (Below) A good close-up of the new main gear. (RKO via Jeffries)











As an experiment, the XB-36 was fitted with a track-type landing gear. This did indeed reduce ground pressure significantly, but was never seriously considered for service use. March 26, 1950. (GD)

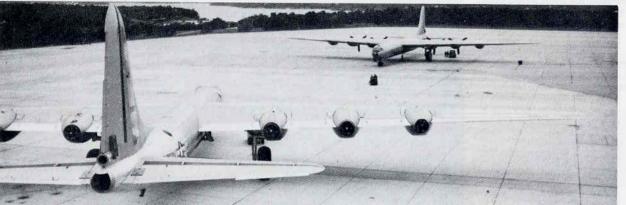
Six huge R-4360 Wasp Majors, rated at 3500hp, powered the initial batches of B-36s. Exhaust gases were vented from the bottom of the nacelle and through the ports at the base of the spinners. A ring-shaped airplug controlled the exit of cooling air around the spinner. On the nearest engine, the airplug is partially open, the number of diamonds visible to the flight engineer helping him to check their position.

Mechanics work on one of the portside engines of this Peacemaker. Everything was to such a large scale that groundcrew could work in comfort. The vent on the wing uppersurface between the mechanics is an intercooler air exhaust. (Acme)





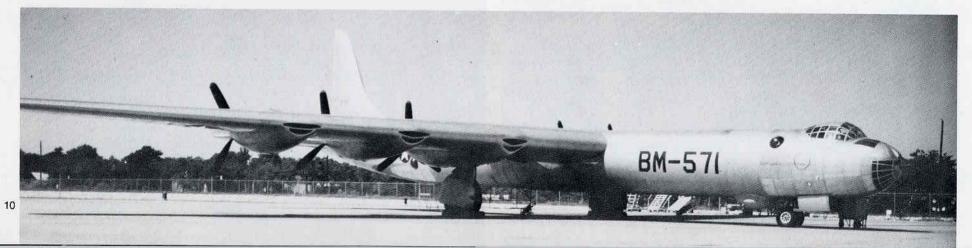




The YB-36, 42-13571, is rolled out of the Assembly Building, Fort Worth, 1947. Except for the retention of the single wheel main gear, the YB is a production-standard A. All Peacemakers had to be tilted, as here, for the tail to clear the low door. (GD)

YB-36, still awaiting propellers and other gear, sits on the apron facing the XB-36. Lake Worth is in the background. (GD)

The YB-36, BM-571, first flew on December 4, 1947. The YB had production-type GE BH-2 turbosuperchargers, allowing it easily to out-perform the XB. (GD)



# **B-36A & B**

Not until June 1948, were the first four B-36As delivered to the Air Force; BM-006 on June 2, and BM-007 on June 18 to Eglin AFB for tactical tests, while BM-015 on June 26 and BM-017 on June 30 were the first to join Strategic Air Command. Six more came to SAC in July, and five followed in August 1948. Already the new giant was showing its capabilities. On May 13-15, BM-013 was flown from Fort Worth to Hawaii and back.

SAC's first B-36 unit was the 7th Bomb Group (Heavy) at Carswell AFB. Location of this base at Fort Worth, across the runway from the factory was an advantage in working out many problems. The 22 B-36As completed by November 1948 each had a gross weight of 310,380 lb, when loaded with 24,121 gallons of fuel and 10,000 lb, bomb load. They required a takeoff run of 8000 ft., and had a tactical radius of 3880 miles. If a full bomb load of 72,000 lb. was carried, tactical radius was 2100 miles, and a full fuel load of 26,745 gallons allowed a 9136 mile ferry range, without bombs. Performance characteristics of the Air Force bombers were now stated by a new method in which speed and altitude were measured not at gross weight, but at "combat weight", the point at which the bomber is approaching the target with most of its fuel consumed. In the B-36A's case, this was especially advantageous, for combat weight was down to 212,800 lb. At that weight, B-36A top speed was now given as 345 mph at 31,600 ft. and service ceiling was 39,100 ft. By comparison, the Boeing B-50A, also delivered in 1948, had a 391 mph top speed at 30,000 ft. but its combat radius with 10,000 lb. was 1700 miles shorter. Although the B-36As had the AN/APQ-23 Bombing-Navigation Radar, no guns were installed and the type's function with the 7th BG was training. The first aircraft completed with all guns was the B-36B-1, BM-026, first flown July 8, 1948.

Powerplants on the B-36B were the R-4360-41 Wasp Majors rated at 3500 hp which made possible a 381 top speed and 42,500 ft. service ceiling at combat weight. An AN/APQ-24 Bomb-Navig. Radar and AN/APG-3 Gun-Laying Radar in the tail were carried, and the bomb bay could accomodate two 43,000 lb. "Grand Slam" bombs.

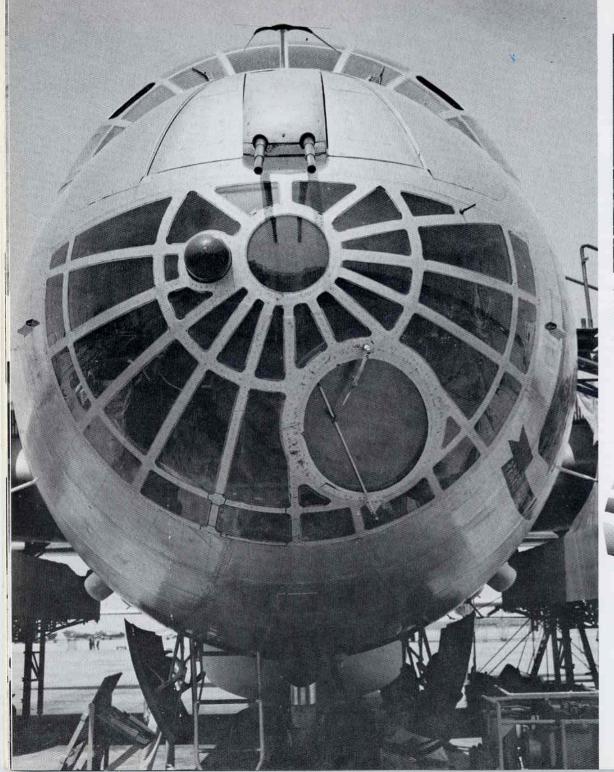
By the end of 1948, SAC had 35 B-36s at Carswell. Taking this opportunity to test its long-range reach on December 7, 1948, a B-36B commanded by Major John D. Bartlett flew from Carswell AFB to Hawaii, dropped a dummy 10,000 lb. bomb in the ocean, passed over Honolulu at night and returned to Carswell. The 8100 mile, 35½ hour mission aroused comment because the unannounced bomber's approach on the Pearl Harbor anniversary had been undetected by local defense headquarters. The feat overshadowed a similar B-50 mission on the same day that required three aerial refuelings to complete. Captain Roy Showalter and his crew set a long distance record with a 9600 mile mission that lasted 43 hours, 37 minutes, and ended on March 12, 1949. Meanwhile a second SAC unit, the 11 Bomb Group (H), became operational at Carswell.

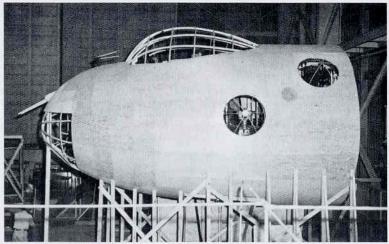


B-36A-5, BM-009, is seen on a test flight prior to delivery. The A series lacked armament, being used exclusively as trainers. (GD)

By the fall of 1949, B-36s were phasing out B-29s at Carswell AFB, across the runway from the Convair plant at Fort Worth, TX. The triangle, as well as the accompanying emblem, designated 8th AF. (GD)

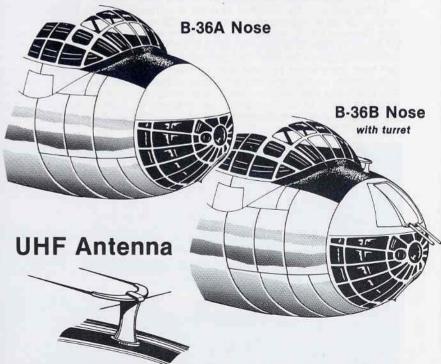


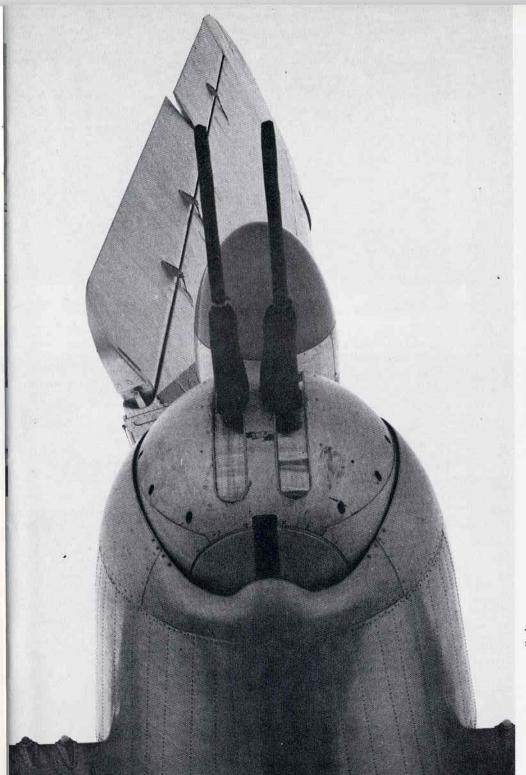


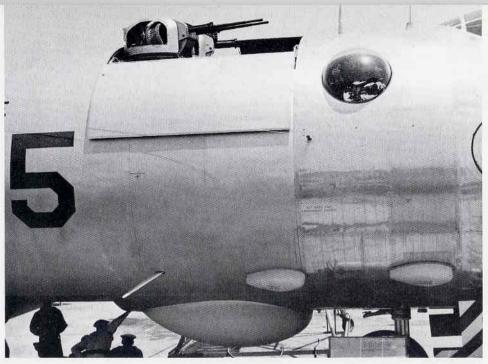


The B-36 nose mockup, June 1945, led to the development of the nose turret and revised flight deck arrangement. On the B, and all subsequent models, the UHF antenna was moved to a position in front of the cockpit. (GD)

The B-36B was fully armed, with nose turret, four dorsal turrets, two ventral turrets and a tail stinger. Each turret mounted a pair of 20mm guns. The nose turret carried 400 rounds for each gun. (RKO via Jeffries)

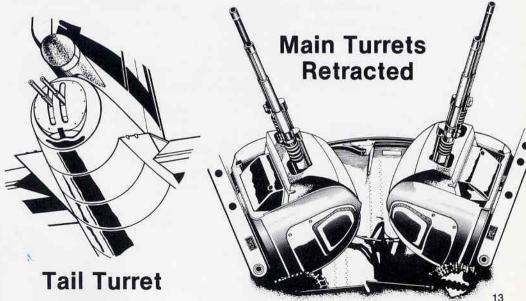






The forward dorsal turrets in erected position, the sliding panel retracted. The side panel of the near turret has been removed to allow service, exposing the ammo track. Each turret was aimed from a remote position, that for the near turret being the blister to the right. On the aircraft's belly is the radome for the AN/APQ-24 Bomb Navigation Radar.

The tail turret and its AN/APG-3 radar, with a lethal range of ¾ mile. Provision was for 600 rounds per gun. (RKO via Jeffries)





Three B-36 fly in formation over Carswell, where the early Peacemakers were based. The two red-tailed aircraft are Bs, the triangle-tailed is an A. The red-tails were Arctic test markings. (USAF)

The apron at Carswell AFB, 1948. BM-013 and BM-025, both As, appear to have switched rudders. All the Bs sport Arctic red-tails. (USAF)

The same ramp, a year later. The large buzz numbers are gradually disappearing. The two Bs in the middle ground retain their red-tails but also sport 8th AF emblems as well, while the B in the background carries new 11th BG (H) yellow and black striped fintip and nose gear door. (Acme)





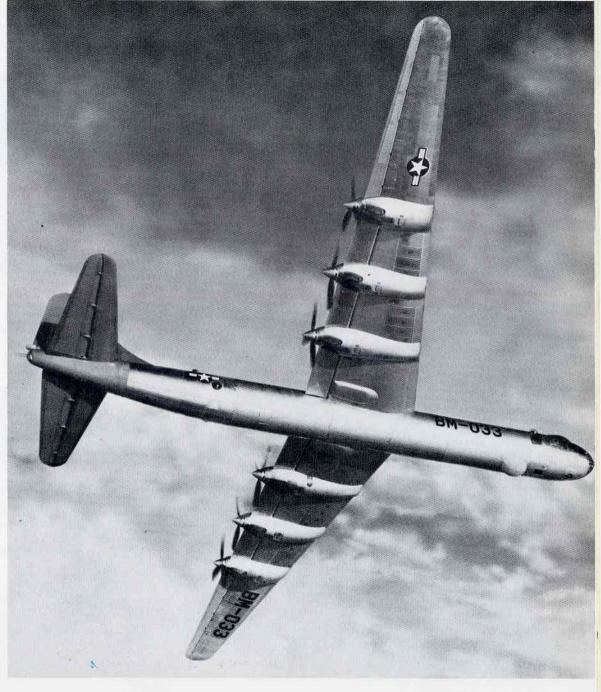


Four 7th BG(H) B-36Bs over Central Texas. Such a formation was rare in the later days, most Peacemakers flew alone. All have red-tails, only half have buzz numbers. (GD)

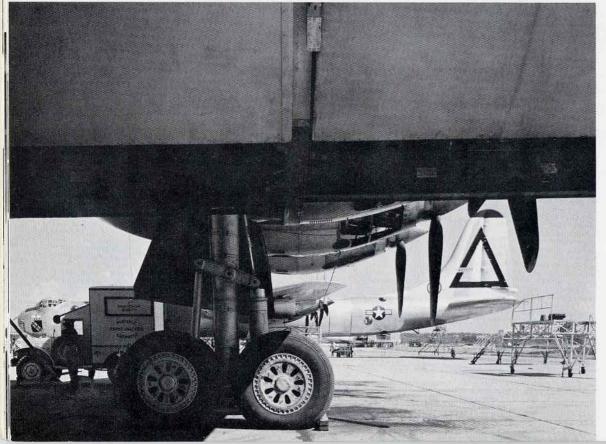
"Big Stick" was one of the B-36s nicknames. The reason is obvious in this view, seemingly nothing more than wings and tubular fuselage. BM-033 is a red-tailed B. (GD)

Coming in low over the Gulf coast, this red-tailed B-36B-5, 44-92042, shows off the Peacemaker's immense size. (GD)









(Above & Left) With two Heavy Bomb Groups now operating at Carswell, distinctions began to develop between the units. 7th BG(H) Peacemakers began to display the Group emblem on the nose and Squadron color fintip and nose gear door. Large buzz numbers began to re-appear without BM prefix. (RKO via Jeffries)

By 1950, the process of distinguishing between the two Groups at Carswell included identification letters inside the AF triangle. 7th BG(H) used a J and retained its solid color flashes. 11th BG(H) used a U and black and yellow striped flashes. Note also the new mobile maintainance shelters. This is one of the last views of operational Bs, which soon left for San Diego for conversion to D standard.



# **B-36C**

As early as December 1946, SAC Commander George C. Kenney suggested that the 100 plane B-36 order be cancelled, and only service test aircraft be completed. He favored the faster Boeing B-50 as the standard SAC bomber until jet-propelled B-47s became available. Attempting to achieve built-in range, he felt then, made the B-36 too big and too slow. Strategic bombing operations would require advanced bases or aerial refueling.

Increase over-the-target speed seemed to Convair to be the greatest improvement needed, and an answer was offered by Pratt & Whitney's development of a Variable Discharge Turbine (VDT) version of their R-4360 engine. In March 1947, Convair proposed a VDT-powered B-36 expected to reach 410 mph and a 45,000 ft. service ceiling. The new engine's configuration, however, would require changing the pusher-type arrangement to tractor. The engines would be reversed, turning propeller shafts extending forward ten feet ahead of the leading edge. Development of this idea led to the B-36C design, which was tenatively approved for prototype conversion on July 10, 1947.

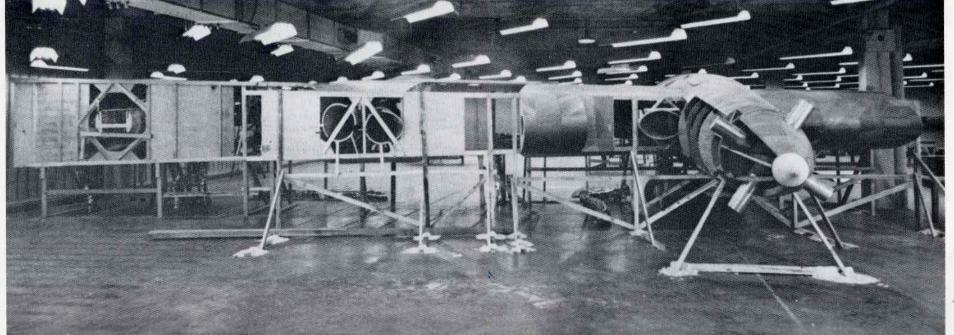
Convair proposed on September 4, 1947 that 34 aircraft be finished with VDT engines as the B-36C-1, with the additional expense being met by reducing the total B-36 contract to 95. This plan received the approval of most Air Force officials, except General Kenney, and the Air Material Command (AMC) was directed to go ahead on December 4.

By April 1948, however, VDT design development had run into many difficulties. Gradually it became clear that the B-36C would be slower than the B-36B. AMC now recommended cancelation of the VDT project and the B-36C. The whole B-36 program hung in the balance while SAC had yet to receive its first B-36As.

Convair officials quickly put together the improved performance data learned from the B-36A tests, and anticipated from the B-36B, and presented this information to Air Force Secretary Stuart Symington in May 1948. In that period the Cold War reached new heights of tension. On the morning of June 24,1948, all traffic into Berlin was stopped by the Soviet blockade that was to last over ten months. That same day, Secretary Symington metwith Air Force generals, including Kenney, who voted unanimously to go ahead with all 95 B-36s on the contract. The planned B-36Cs were then to be finished as B-36Bs.



(Above) Convair's model of the tractor-propeller YB-36C. (GD) (Below) The full-scale mockup of the YB-36C wing built by Convair at Fort Worth, 1947. The project was dropped when the P & W R-4360-51 VDT engines was cancelled. (GD)



# Adding Jet Power: B-36D, RB-36D & RB-36E

Adding more speed and altitude still seemed the best way to improve the big bomber's chances of survival over enemy territory. On October 5, 1948, Convair proposed adding a pair of turbojet engines under each wing. To reduce development time, the engines and nacelles already being developed for the Boeing B-47 would be used. Other improvements to be added were quick-action, split bomb-bay doors, metal-covered control surfaces, and new outer-panel fuel cells. A prototype conversion was authorized by AMC on January 4, 1949, and Convair and Boeing officials met to decide to use General Electric J-47 engines in production models, but first to fly the prototype with the J-35-A-19 already flown on the XB-47.

The 54th production B-36 (44-92057) made the first flight with jet pods on March 26, 1949. Vibration problems were controlled by later adding bracing struts to the pods, and the B-36D prototype demonstrated a speed of 400 mph at 35,280 ft. and reached an altitude of 40,000 ft. The prototype was returned to the shop for installation of the J-47 engines, and flew with this engine on July 11, 1949. Anticipation of the improved performance led the Air Force, in January 1949, to decide to buy 39 more B-36s as bombers and convert the unarmed B-36As to RB-36E strategic reconnaissance models. In April, 36 new RB-36Ds were added to new production plans, and modification of all B-36Bs to jet pod configuration was authorized. This decision also involved cancellation of the Northrop RB-49 whose production line was to have replaced the B-36 at Fort Worth. The Flying Wing was seen as too short-ranged and unstable to be satisfactory for the strategic reconnaissance role.

The first jet-assisted B-36, 44-92057, was a modified B with twin-jet pods, identical to those carried on Boeing's XB-47, even down to the installation of J-35s until J-47s became available. The prototypes first flight was in March 1949. Note the absence of bracing for the pod. (USAF)



A great political controversy arose about the wisdom of further investment in the B-36. Admiral Arthur W. Radford and other Navy officers warned that the B-36 program might be a "billion dollar blunder". The issues raised during the ensuing Congressional investigations were complex. They included the ability of fighters to stop such bombers, and the role of strategic bombing in the future. Eventually the B-36 emerged as the choice of American policy-makers for an interim strategic weapon until the Boeing B-52 became available.

The last aircraft to come out of the factory in B-36B configuration was number 84. The next, number 85 (44-92088) was completed as a RB-36 strategic reconnaissance model. Instead of bombs, the forward bomb-bay contained 14 cameras, including one with a 48 inch focal length lens. The first RB-36 was flown on December 18, 1949 without jet pods. After initial tests, jet pods were added in time for a demonstration flight before President

Truman at Eglin on April 22, 1950.

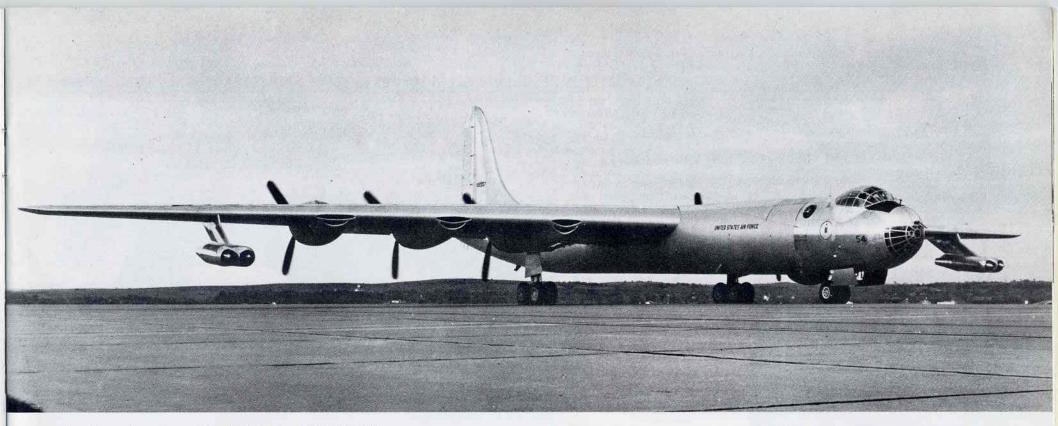
The first RB-36D was thus accepted on June 3, 1950, months before the bomber version. SAC put it into service with the 28th Strategic Reconnaissance Group at Rapid City AFB, SD (later named Ellsworth AFB). After seven RB-36Ds had been delivered, the last four air craft on the original 100 aircraft contract (44-92095/98) were completed as B-36D bombers. The first B-36D was delivered to Eglin on August 19, 1950. Deliveries on the second (1949) production contract, beginning with 49-2647, included 22 B-36Ds and 24 more RB-36Ds interspersed on the production line. The last, a B-36D-35, was finished in June 1951.

At the same time conversion of aircraft already in service to jet pod configuration was underway. Twenty-one B-36A aircraft, sequence numbers 2 through 22, and the YB-36 were returned to Convair for conversion to RB-36E recon aircraft similar to the RB-36D model. The first aircraft was received for conversion on February 28, 1949 and, was first flown as an RB-36E on July 7, 1950. The last of 22 RB-36Es was delivered July 20, 1951. Fifty-nine of the 62 B-36Bs were later converted to B-37Ds by installation of jet engines and snap action bomb-bay doors. The only exceptions were 44-92057, which had been the first D prototype, and 44-92075 and 44-92079, which had been destroyed in crashes. Each aircraft was completely overhauled, with wings and control surfaces removed, and remodeled for jet pods, and new bomb doors and equipment were added. The first B-36B, number 043, arrived in San Diego for rebuilding on April 6, 1950 and was completed in November. The last, 081, was delivered February 14, 1952.

The B-36D's ten engines (six 3500 hp R-4360-41 and four 5200 lb. static thrust J47-GE-19) were estimated, on 1950 characteristics charts, to increase top speed to 439 mph at 32,120 ft., and service ceiling to 45,020 ft. These figures were based on calculated weights of 158,843 lb. for combat, and were widely circulated during the period of the B-36 controversy. Performance data in 1954 characteristics charts, however, gave B-36D top speed as 406 mph at 36,200 ft. and service ceiling as 43,800 ft., based on flight tests at an actual weight of 161,371 lb. empty, 370,000 lb. takeoff, and 250,300 lb. for combat. This data in cludes a 29,995 gallon fuel load and 3530 mile combat radius and is consistent with data for other B-36 models. When fuel load was reduced to 19,500 gal., cutting combat radius in half, a 72,000 lb. bomb load could be carried, combat weight was reduced to 219,265 lb., permitting a 417 mph top speed at 38,000 ft. and service ceiling of 45,600 ft. This data suggests how performance varied with the load carried.

The B-36D had a crew of 15; commander, two pilots, two engineers, navigator, bombardier, two radio operators, and an observer forward, (the first radio man handling ECM while the second radio man, co-pilot and observer aimed the three forward turrets). The rear compartment accommodated five gunners, including one for the AN/APG-3 (later AN/APG-32) radar controlling the tail turret. A K-1 Bombing Navigation system weighing 1700 lbs., including radar and optical equipment for blind or visual bombing by a single crew member, was carried. It was claimed that this system permitted bombing at night with greater accuracy than former daylight methods at lower altitudes. During later modernization programs, the K-1 was replaced by a K-3A system, along with other improvements in electronics.

The RB-36Ds strategic reconnaissance aircraft had fourteen cameras weighing 3309 lb. in the forward bomb bay, while the second bay contained up to 80 T86 flash bombs. The third bay could accommodate an extra 3000 gal. fuel tank and the fourth bay ECM equip-



Another angle on the prototype B-36D, March 1949. (USAF)

The first B to complete conversion to full D standard was 44-92043, seen here on its first flight in November 1950. The J-47 pod was braced on the inboard side and had a long ventral fairing between the engines. The other noticeable change was the replacement of the B's four-piece sliding bomb-bay doors with two-piece "snap-action" doors. (USAF)

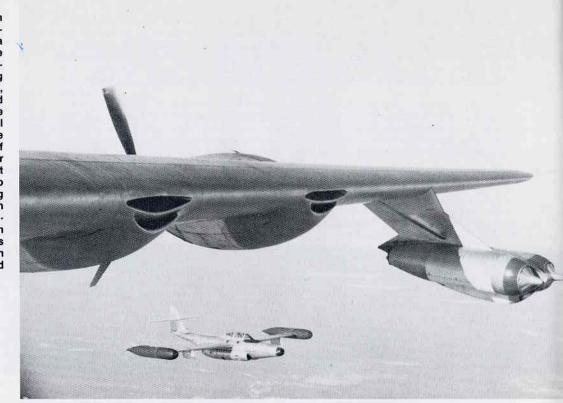
ment. Standard gun armament was carried along with an AN/APQ-24 radar-navigational system to locate targets. The crew originally consisted of 18; two pilots, engineer, photonavigator, radar navigator, weather observer, radio-ECM operator, photographer technician, three ECM operators, tail gunner, and six relief crew gunners. Performance of the RB-36D and similar RB-36E conversions would nearly match that of the bomber versions, and were credited with a top speed of 408 mph. A Convair test crew led by B. A. Erickson flew an RB-36 for 51 hours, 20 minutes on a non-stop, non-refueled endurance trial that began January 14, 1951.

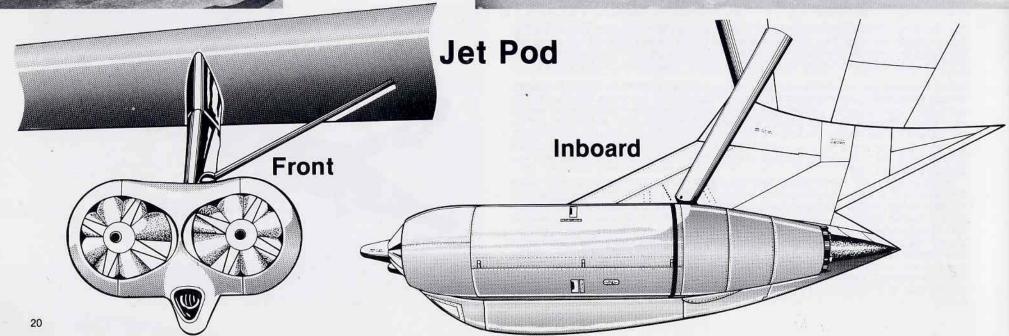
In December 1950, as the Korean War reached a climax, SAC had two Heavy Bomb Groups with 38 B-36s and one Heavy Reconnaissance Group with 20 RB-36s, along with 12 Medium Bomb Groups and three Medium Strategic Groups with 542 B-29 and B-50 aircraft. Only five B-29 groups were used for the Korean conflict, the others being reserved for strategic deterrence. During 1951, SAC units were reorganized from groups to combat wings. The 7th and 11th Heavy Bomb Wings at Carswell were 8th Air Force units marked with triangle tail codes, while the 92nd Bomb Wing at Fairchild AFB, which received its first B-36 on July 29, 1951, was marked with the circle tail code denoting 15th Air Force. The 28th Strategic Reconnaissance Wing at Rapid City AFB received B-36B-10 BM-062-July 13, 1949, and had 15 Bs by April 1950, training with these until the RB-36D arrived in June.



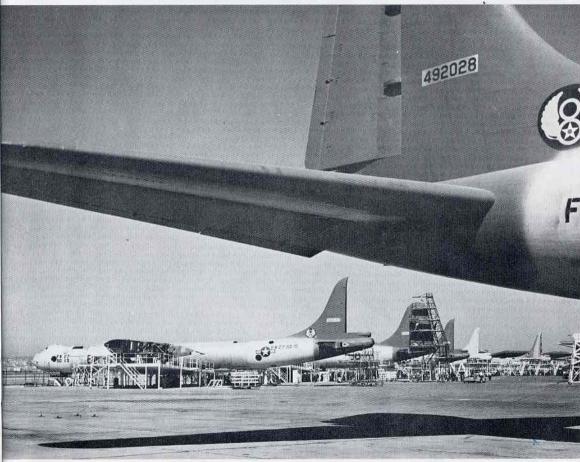


(Left) A ground crewman checks to make sure the jet intake is free of foreign objects, a standard pre-flight duty. The iris blades are open for the inspection. (USAF) (Right) Being escorted by an F-89 Scorpion, this early B-36D has its jet pod irises closed and No. 1 engine For reasons of fuel economy, the jets were generally used only on take off and for a burst of speed over the target. They were shut down and the irises closed to prevent windmilling during cruise. As the B-36 flew well on four, or even three, engines, idling one or two of the piston engines on a long flight was common. What is unusual on this bird are the square-tipped propeller blades. (USAF)





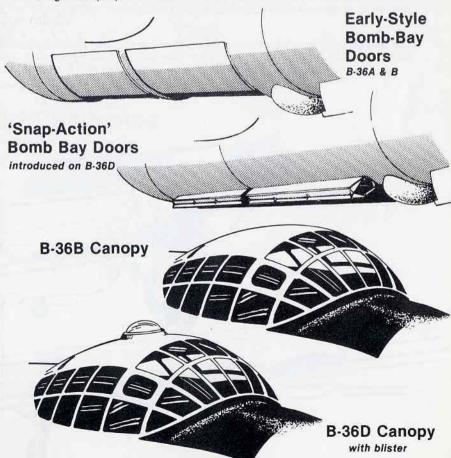


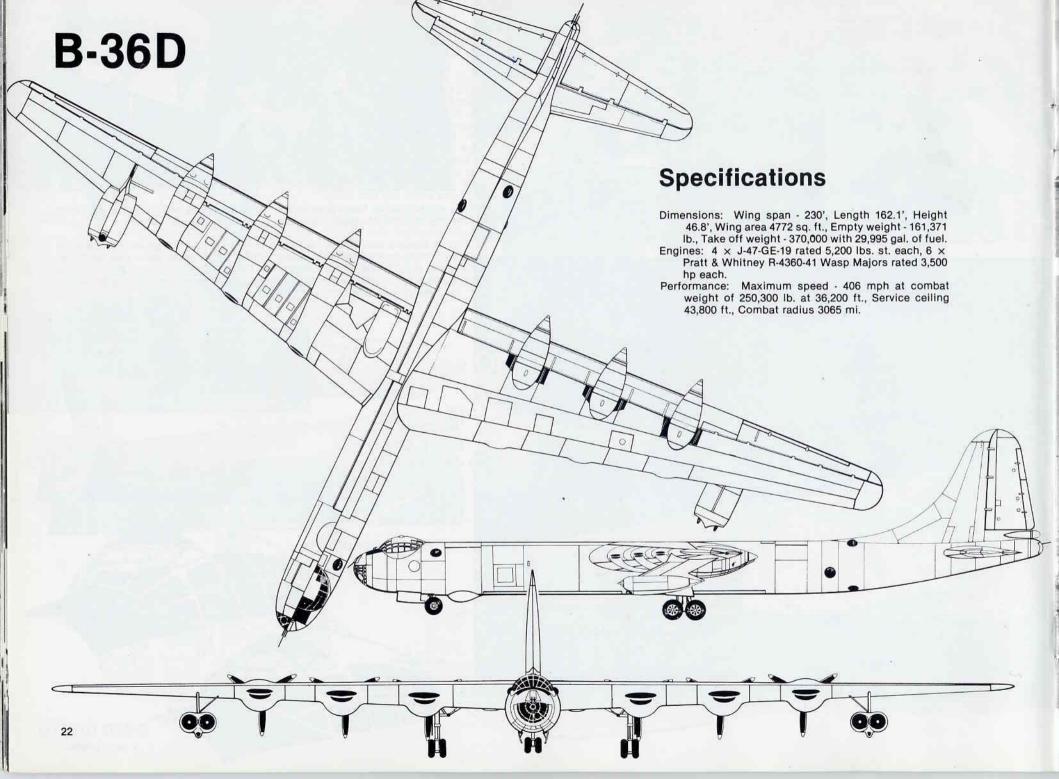




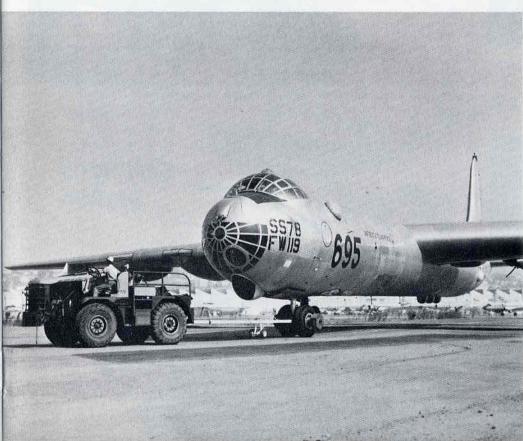
A close-up of the new "snap-action" bomb-bay doors which created more drag when open, but opened and closed much more quickly. (USAF)

(Left Above & Left Below) Two views of Convair's San Diego facility where the work of converting Bs to Ds was performed. All gained jet pods, new bomb-bay doors and a blister on the canopy. The FW-SD coding indicates the airframe's position in the original Fort Worth production sequence and its position on the San Diego line. (GD)





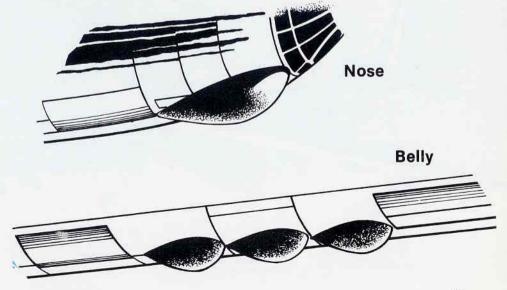


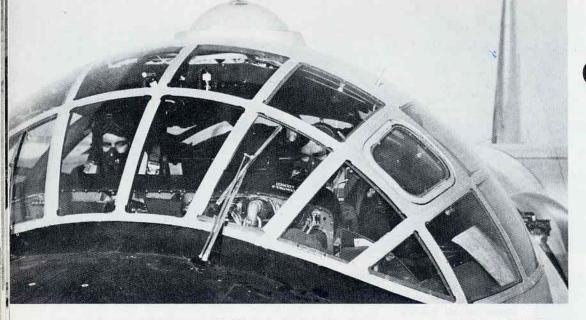


A rebuilt B-36A, 44-92012, is now a 72nd SRW RB-36E. Seen here at Ramey AFB, PR, September 30, 1953, 012 prepares for takeoff. It was standard on RBs to leave the hatch open over the forward dorsal turrets as an emergency escape route for crew members stationed just aft. (USAF)

In 1956, B-36s began to be returned to San Diego for a rebuild and electronics update, called SAM-SAC (Specialized Aircraft Maintenance-Strategic Air Command). 695 is one of the original RB-36Ds, the 119th Peacemaker produced, the 78th to be updated. (GD)

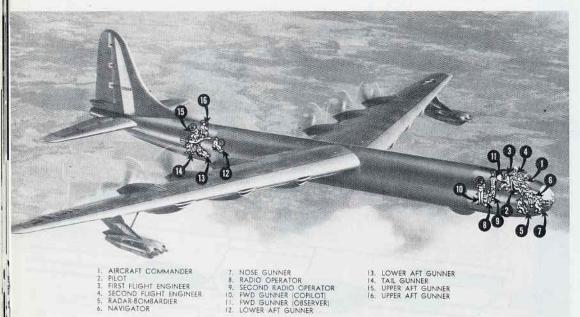
## **RB-36 Radomes**

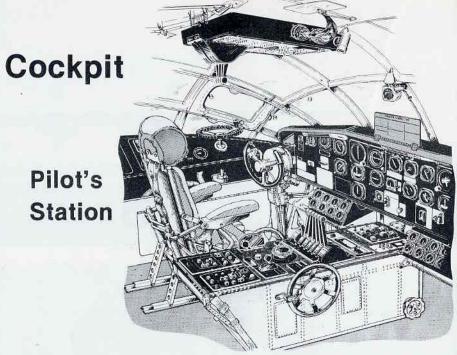


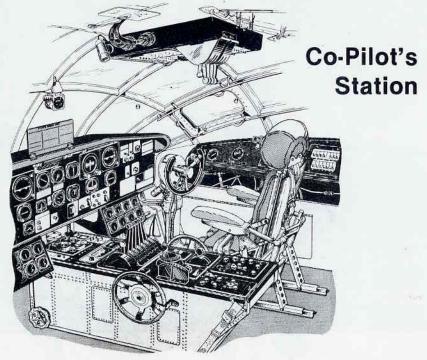


The canopy of a B-36D covered the flight deck where the aircraft commander (right) and pilot (left) sat along with the two flight engineers. (USAF)

A B-36 D had a crew of 16. Early versions had one fewer crew member. RBs had five or six more, mainly cameramen and ECM operators. (GD)









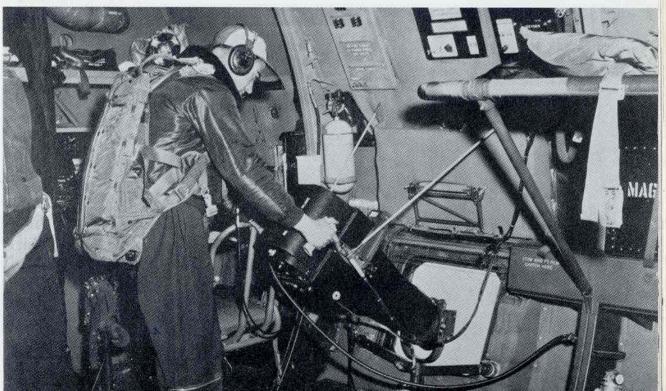




(Above) Four men were packed into the nose on an RB-36D, the navigator in front, behind him the nose gunner, to his right the photo-navigator and then the radar-bombadier. (Above Right) A recon technician adjusts the settings on his camera. (Below Right) a cameraman at work. (Below) All the comforts of home! Even a galley with a two-burner stove. (USAF)











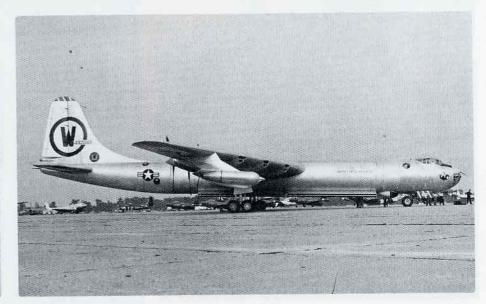


This B-36D-5 bears spurious markings. For instance, the three digit buzz number which doesn't match the last three digits of the serial number, or the triangle L which signified no existing Wing, or the 18th AF emblem, an Air Force which never existed. All this elaborate deception had nothing to do with fooling the Russians. Rather, 49-2652 was to have starred in a movie, "High Frontier", which in the event never materialized. (RKO via Jeffries)

49-2097, a B-36B-1, carries the triangle J markings of the 7th BW(H), based at Carswell. Red tail tip and nose gear door, September 1950. (USAF)

This 99th SRW RB-36D-10, normally based at Fairchild AFB, WA, is seen at the portable repair dock at Kelly AFB, TX, May 18, 1953. (USAF)

The circle W on this B-36D indicates the 15th AF's 92nd BW(H). The nose insignia is that of the 326th BS. The flashes appear to be red and yellow. (Deigan via Gann)

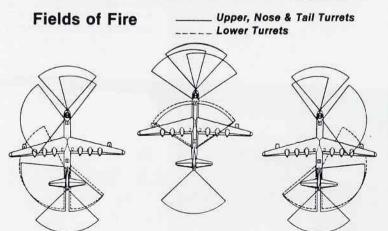




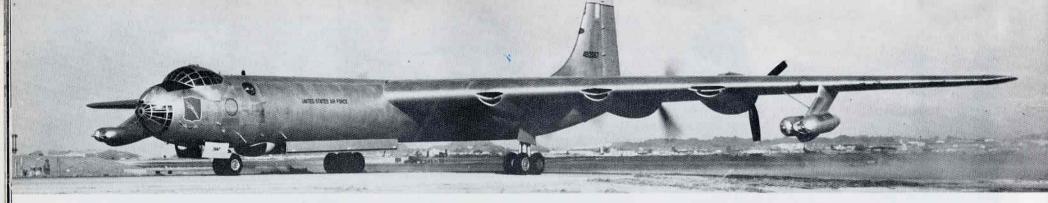
Two RB-36Ds of the 28th SRW in full regalia, Ellsworth AFB, SD. Flash colors were most often in Squadron color; each Wing's three squadrons being assigned a color, generally red, yellow or blue. 691 in the foreground wears blue, the RB immediately behind it has a yellow flash. (USAF)

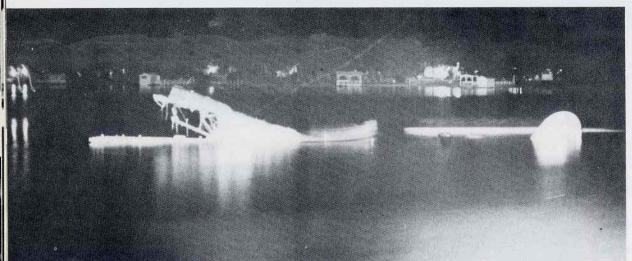
A three-ship element of RB-36Ds of the 15th SRW. Such formation shots are rare, particularly of RBs, which would have operated alone in combat. Nevertheless, the three-ship element in the so-called "Hometown" formation was considered the ideal defensive arrangement. (USAF)

# 'Hometown' Formation









Not having a war to fight, B-36s were kept busy with training flights and occasional practice deployments. This D of the 92nd BW(H) is seen at Kadena AB, Okinawa, August 7, 1953. The 92nd has by now lost its tail code, the only distinguishing marks being the Wing badge at the nose and the Squadron color tail stripe and nose gear door. In this case it appears to be yellow. (USAF)

The B-36 was overpowered and easy to fly, very much a "pilot's airplane" and very popular with its crews. Nevertheless, attrition did occur. The first fatal crash of a B-36 was this B, 44-92079, which ended up in Lake Worth on the night of September 15,1949. (Fort Worth Star-Telegram)

By the mid '50s, B-36 markings became extremely plain. The SAC stripe and badge replace Wing badges. Squadron color was sometimes carried on the fin, nose gear door and front of the jet pod. Large buzz numbers served to mark individual aircraft. This D-10, 44-92053, has gone through Featherweight conversion. Note the lack of nose turret and forward gun blisters. Also, it was common at this time to plate over the bombadler's window in the nose as the more sophisticated K-3A radar made electronic weapon aiming more accurate than visual aiming. (USAF)



# B-36F, B-36H, RB-36H & B36J

A new version of the Wasp Major gave the B-36F series improved speed and climb. The R-4360-53 offered 3800 hp., and was first installed on ship number 109, which flew on November 11, 1950, and was later delivered as B-36F-1, 49-2669. This installation was made standard, beginning with production ship 134 (49-2270). K-3A radar systems and APG-32 gun laying radar were also made standard and, beginning with the first ship on the April 1950 production contract, B-36F-10 50-1064, a chaff dispenser was installed to confuse hostile radar.

Top speed of the B-36F was up to 417 mph and service ceiling 44,000 ft. with standard combat load and 264,300 lb. combat weight. Thirty-four B-36F aircraft were delivered from May to November 1951, interspersed with 24 RB-36F reconnaissance types which had a crew of 22, 14 cameras, and 409 mph top speed at 262,800 lb. combat weight.

The first B-36H was flown on April 5, 1952, differing mainly in internal details. Among the changes were an improved bombing system with the project name of Blue Square, relocation of the K system components to pressurized compartments to facilitate inflight maintainance, and a completely rearranged flight deck with a second flight engineer's station. The B-36H was credited with a 416 mph top speed and 44,000 ft. ceiling. Eighty-three B-36H and 73 RB-36Hs were delivered from May 1952 to July 1953. They could most easily be distinguished from earlier models by the twin radomes of the AN/APG-41A tail gun system.

The last 33 aircraft were completed as B-36J aircraft, whose wings now accommodated an additional 2770 gallons of fuel in the outer panels. This increased gross weight to 410,000 lb. while top speed at 171,035 combat weight was 411 mph. The B-36J was first flown on September 3, 1953, and delivery to SAC began the following month.

Project Featherweight was a program which reduced aircraft empty weight to gain more speed, altitude and range. Class II Featherweights kept all their guns, but the aircraft designated Class III had all the gun turrets and fire control removed, except for the tail guns. The final fourteen B-36s were finished as B-36J (III) carrying 13 crewmen, two guns, and replacing the gunners' blisters with small flush windows. First delivered in February 1954, the B-36J (III) performance included a combat range of almost 4000 miles, top speed

A yellow-flashed B-36H-1, 50-1085, warms up on the runway at Eglin AFB, FL, May 13, 1956. Later B-36 models were virtually indistinguishable from the D version. The only visible difference between this bird and a D was the AN/APG-32 tail radar, which had noticeably longer fairing, which was fitted to production aircraft from the F-10 on. (USAF)

speed 418 mph at 37,500 ft. and service ceiling of 43,600 ft. Featherweight conversions were also made on some older B-36 models between February 11 and December 31, 1954. In this form, the B-36D (III) Featherweight was also capable of 418 mph, and B-36F (III) and B-36H (III) are credited with 423 mph top speed and 47,000 ft. service ceiling, the best B-36 performance. Fort Worth completed production with the last B-36J (III) delivered August 14,1954. Total B-36 deliveries amounted to 383, including the two prototypes. Average cost was \$3,776,000 each.

By 1953, the full force of six Heavy Bomb Wings and four Heavy Strategic Reconnaissance Wings had been organized. Although delivery of new aircraft ended in 1954, the SAM-SAC program (Specialized Aircraft Maintainance-Strategic Air Command) returned each B-36 to the latest configuration. This process continued to April 1957. On October 1, 1955, all four Strategic Reconnaissance Wings were redesignated Heavy Bomb Wings due to the conversion of all RB-36s from reconnaissance to bomber aircraft retaining a latent reconnaissance capacity.

Near the peak of B-36 power, the SAC December 1954 inventory shows ten Wings with 209 B-36 and 133 RB-36s in service, along with 24 Medium Bombardment and five Medium Reconnaissance Wings with 795 B-47, 265 RB-47, 78 B-50 and 12 RB-50 aircraft. The medium aircraft all required aerial refueling for long-range missions.

While the B-36 never saw combat, routine operations brought their share of tragic accidents. Nine ships crashed with 70 deaths in the first two years of SAC operations, one from a mid-air collision with an F-51 fighter on April 27, 1951. General Richard E. Ellsworth was among 23 killed March 18, 1953, in the Newfoundland crash of B-36H-25 51-13721. On September 1, 1952, a tornado struck Carswell AFB and knocked out over 70 B-36s, nearly half of SAC's heavy bomber force. Rapid work had 51 back in service by October 5, but 26 were beyond repair at the air base and were given back to Convair to rebuild. The last was returned to the Air Force on May 11, 1953, except for one beyond hope that was salvaged.

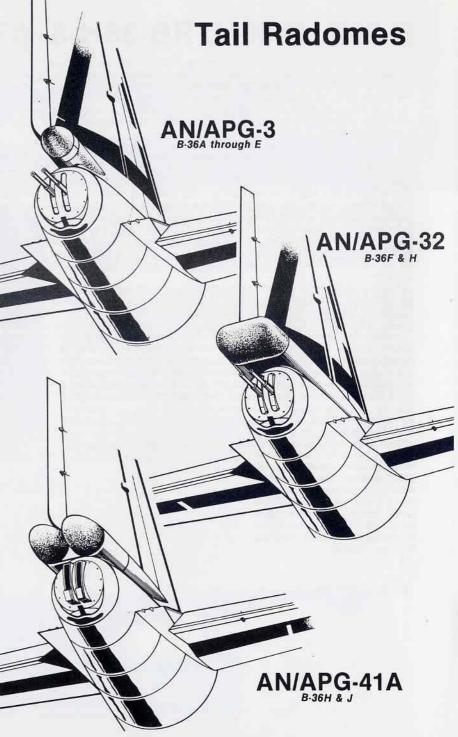
In 1955, the B-I52 began to replace the B-36. SAC's last B-36, which was also the last built (52-2827), left the 95th Bomb Wing on February 12, 1959 and is now on display at General Dynamics, Fort Worth. Texas. The last B-36 to fly was B-36J-65 52-2220, which went to Dayton, Ohio in April 1959 to the Air Force Museum. The only other B-36s left on display are RB-36H-30, 51-13730 at Chanute AFB, Illinois, and B-36J-65 52-2217 at Offutt AFB, Nebraska.





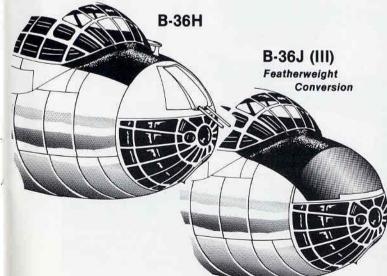
51-13739, a yellow-trimmed RB-36H, shows the entire defensive armament of a late B-36 before the Featherweight program reduced the turrets to one. Later B/RB-36Hs and B-36Js had still another tail radar, AN/APG-41A, distinguishable by the twin radomes. (W. Larkins)

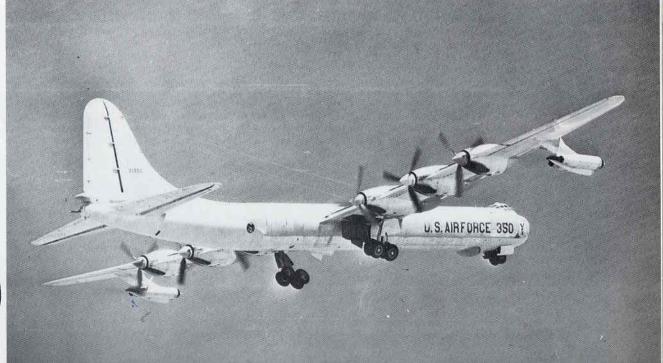


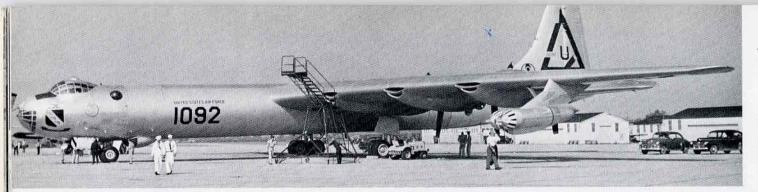




(Above) The last Peacemaker out of the factory, 52-2827, a B-36J-75, clearing the roof at Fort Worth. This is a class III Featherweight, all protruding gun-alming blisters being replaced by flat panels. (GD) (Right) Wheels caught in mid-retraction, this 7th BW(H) B-36H takes off from Eglin AFB, FL, May 13, 1956. Another Featherweight, 350 has retained at least one of its aft blisters. (USAF)







The 11th BW(H) continued to operate from Carswell, re-equipping with newer models as they became available. 1092 is an H-1 seen in 1952 at Detroit. (W. Steeneck Via AAHS)

On September 1, 1952 disaster struck. A tornado ripped across the flight line at Carswell, knocking out 71 B-36s, almost half of SAC's heavy bombers. 51 were back in service by October 5th. Of the remainder, all but one were eventually rebuilt at the Convair plant next door. (GD)



# **B-36 Wings, 1955**

5th BW(H): 23, 31, & 72 Bomb Squadrons: Travis AFB California (was SRW). RB-36, Jan. 9, 1951 to Sept. 30, 1958. Tail code Circle X (15th AF).

6th BW(H): 24, 39 & 40 Bomb Squadrons: Walker AFB New Mexico. B-36, Aug. 28, 1952 to Aug. 27, 1957. Tail code - Triangle (blank) (8th AF).

7th BW(H): 9, 436, & 492 Bomb Squadrons: Carswell AFB, Texas. B-36. June 26, 1948 to May 30, 1958. Tail code - Triangle J (8th AF).

11th BW(H): 26, 42, & 98 Bomb Squadrons: Carswell AFB, Texas. B-36 Dec. 1, 1948 to Dec. 13, 1957. Tail code - Triangle U (8th AF).

28th BW(H): 72, 717, & 718 Bomb Squadrons: Ellsworth AFB, South Dakota (was SRW). RB-36, July 13, 1949 to May 29, 1947. Tail code - Triangle S (8th AF).

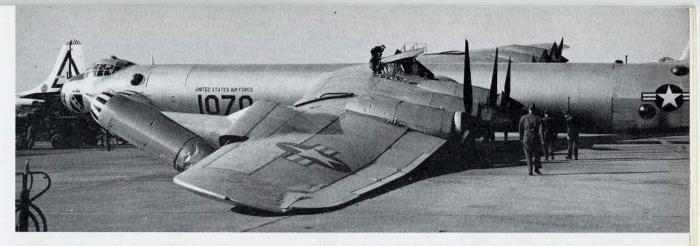
**42nd BW(H):** 69, 70, & 75 Bomb Squadrons: Loring AFB, Maine. B-36, April 1, 1953 to Sept. 15, 1956.

72nd BW(H): 60, 73 & 301 Bomb Squadrons: Ramey AFB, Puerto Rico (was SRW). RB-36, Oct. 27, 1952 to Jan. 1, 1959. Tail code - Square F (2nd AF).

92nd BW(H): 325, 326, & 327 Bomb Squadrons. Fairchild AFB, Washington. B-36, July 29, 1951 to March 25, 1956. Tail code - Circle W (15th AF).

**95th BW(H):** 334, 335, & 336 Bomb Squadrons: Biggs AFB, Texas. B-36, Aug. 31, 1953 to Feb 12, 1959.

99th BW(H): 346, 347 & 348 Bomb Squadrons. Fairchild AFB, Washington (was SRW). RB-36, Aug. 1, 1951 to Sept. 4, 1956. Tail code - Circle I (15th AF).



What the violence of nature didn't do, weight sometimes did. This B-36F-10, 50-1070, of the 11th BW(H) had its left main gear collapse while parked at Carswell, March 20, 1952. (USAF)

The last year that B-36s would win the Fairchild Trophy for bombing accuracy was 1956, when it was won by this crew from the 11th BW(H).









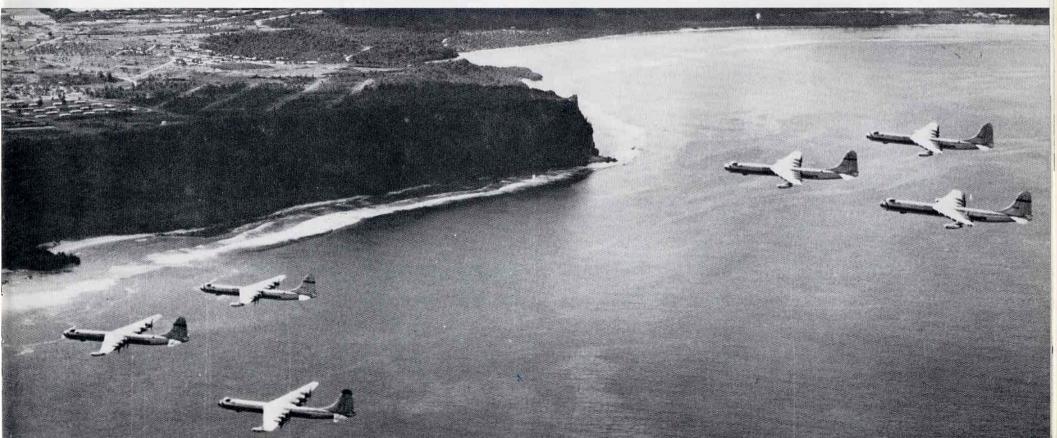


(Left Above, Center & Below) B-36s were famed for their safety record, but when they crashed, the result was often spectacular. On May 28, 1952 this 11th BW B-36F came in too low while landing to refasten a cowling panel which had come loose soon after take-off. When an aluminum and magnesium structure wrapped around nearly 30,000 gal. of fuel came apart on the runway, the fire burned for hours. Happily, most of the crew survived. (USAF) (Above) On November 16, 1956, this RB-36H ran out of altitude a mile short of Denver's Stapleton Airport. The magnesium panels on the fuselage all have disappeared in the fire. (USAF)

Operation "Big Stick" was the first mass flight of B-36s to the Far East. Aircraft from the 92nd BW(H) from Fairchild deployed to Japan, Okinawa and Guam during August 1953. Coming immediately after the end of the hostilities in Korea, the move reaffirmed US willingness and ability to intervene in the area. (USAF)



A pair of three-ship elements approach Guam for a 90-day rotating deployment, October 1954. Beginning that year, B-36 Wings began standing permanent alert at Andersen AFB. (USAF)









Groundcrewmen load ammo into nose turret on this RB-36. The SAC badge was selected in 1952 after a contest the previous year. In 1954 it became, along with the star-studded medium blue band, the standard marking on the left nose of B-36s. Occasionally a Group badge was carried on the opposite side, more often just the blue band. (USAF)

(Above Left) Operation "North Star" subjected B-36s to the roughest possible conditions, including temperatures as low as -40°F. Kicking up a miniature snow storm, this B-36D is taking off from Eielson AFB, near Fairbanks, Alaska, February 15, 1954. (USAF)

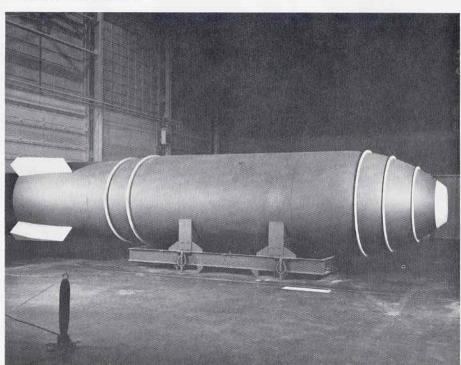
The snow wasn't blowing as hard, but it was just as cold at Thule, Greenland, for this 6th BW(H) B-36 up from Walker AFB, NM. In spite of the strain on the men, the cold weather didn't affect the B-36's reliability. (USAF)



As the Peacemaker neared the end of its career, its markings became increasingly plain and standardized. The RB-36H above carries the SAC band and white underbelly which was standard in the late '50s. The B-36J(III) above right with the SAC badge is extremely rare in having a name, "School Marm". (Merle Olmstead)

In October 1956, this RB-36F lost its rudder over Lowry AFB, but landed safely. (USAF)

The reason for the B-36's existence, a Mk 17 air-dropped hydrogen bomb which became operational in 1954. In spite of being 24½ ft. long and weighing 21tons, it could be carried internally by the B-36. B-52s could only carry it with specially modified bomb-bay doors. (National Atomic Museum)











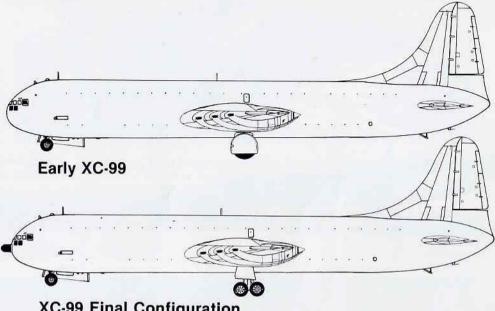
(Above) The XB-52 crosses in front of a B-36 at Edwards AFB, CA, after completing its first cross-country flight. The all-jet B-52 rapidly phased out the Peacemaker. The first production Stratofortress flew in 1954, by 1959 the last B-36 had been retired. (USAF) (Left) Lined up at Davis-Monthan AFB, Arizona, awaiting the smelter, rows of Peacemakers lie under the desert sun. (USAF)

# XC-99

The idea of building a transport version of the B-36 came early. Convair had drawings on May 20, 1942 of a passenger version using the 230 ft, wing and twin rudders then planned for the XB-36. On December 31, 1942, the Air Force ordered a prototype cargo plane designated XC-99, 43-52436. Wartime priorities kept development at a slow pace, but by 1944 the design, Convair Model 37, had reached definitive form, with the same six 3,000 hp R-4360-25 engines, wing, and landing gear of the completed XB-36. New was the largest fuselage ever planned for a landplane, a double-deck pressurized structure 182'6" long with a 16.117 cu. ft. capacity for 50 tons of cargo or 400 troops. Height of the fuselage alone was 20'6". Weight was calculated at 135,732 lbs. empty and 265,000 lbs. gross. Range with 100,000 lb. cargo, 5,086 gal, and ten crewmen was estimated at 1,720 miles, while a 10,000 lb. load and 19,112 gallons could be carried 8,100 miles. Cruising speed was 290 hp and top speed was 335 mph at 30,000 ft.

The wings were made in Fort Worth and shipped to San Diego where the fuselage was constructed and the XC-99 was completed. On November 24, 1947, she made her first flight from Lindbergh Field, San Diego, the world's largest landplane. After successful tests, the XC-99 was modified at Fort Worth to the standard four-wheeled landing gear and 3,500 hp R-4360-41s of early production B-36s. The full 100,000 lb. load was lifted for the first time on April 15, 1949 at Fort Worth, setting an unofficial world's record. The XC-99 was officially delivered to Carswell AFB on May 26, 1949, and in September, 1950 transferred to Kelly AFB.

During the Korean war, the XC-99 was used to rush cargo to the West Coast. It reached the 1,000 hour mark in July 1952, and regular weekly runs added up the total to 7,400 hours by the time of her last flight in March 1957. Actually, the XC-99 had a lower cost per tonmile, when fully loaded, than other cargo aircraft. However, at that time, there was seldom enough cargo to make operations economical. Pan American Airways had an option for three in 1945 for their Hawaii run, but dropped the program when it became apparent there was not enough traffic to make the type profitable.



### XC-99 Final Configuration

The XC-99 shared wing, tail and landing gear with the XB-36. It was simply too big to be practical in the post-war commercial market (PanAm dropped an option for three after the expected air travel boom fizzled) and the USAF opted for smaller aircraft. (GD)









What could have been the 747 to its day. A model of the proposed passenger version of the XC-99, which Pan Am was to have ordered. It was intended to carry 204 passengers and 8 tons of cargo between New York and London in 9 hours. Pan Am talked of ordering 15, actually took out options on three, then cancelled the project. (GD)

During the 7400 flying hours that the sole XC-99 served, it achieved a lower cost per-mile than any other aircraft in USAF inventory, still it rarely flew full. The SAAMA arrowhead (successor to pre-war air depot markings) indicated the San Antonio Material Area. The XC-99's nose is now graced with a radome. (GD & Wm. Steeneck)

## **YB-60**

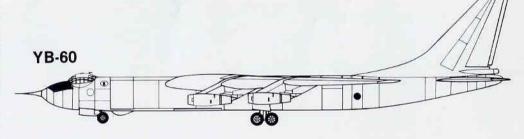
The problem of increasing B-36 speed had led Convair engineers to develop a swept-wing configuration in 1950. At first six turbo-prop engines were considered but before long it became apparent that eight jet engines of the same J-57 type to be used on the B-52 were the most promising power plants. On March 5, 1951, Air Force authorized two prototypes to be modified from production aircraft numbers 151 and 165. Originally these B-36Fs were to be renamed B-36Gs, but eventually the designation YB-60 was applied to this very different airframe. With 72% parts commonality with the B-36, Convair finished the first YB-60 (49-2676) quickly. It made its first flight on April 18, 1952.

A wider center chord on the new wing increase the wing area to 5,239 sq. ft., but the sweepback reduced span to 206'5". Including the instrument probe at the end of the streamlined nose, the YB-60 was 175'2" long, and the sweptback tail was 60'5" high. Eight Pratt & Whitney XJ-57-P-3 turbo-jets, 8,700 lb. thrust each, were paired in four pods. While bomb capacity remained the same as the B-36F, the three forward turrets were omitted from the start, and the four retractable rear turrets were later deleted, leaving only the twin 20mm tail guns controlled by AN/APG-32 radar. Crew requirements were then limited to five men, all in the forward pressurized compartment. A retractable tail wheel was added to balance load changes. Weight was calculated at 153,016 lb. empty, and 410,000 lb. at takeoff. At a combat weight of 260,250 lb. performance included a top speed of 508 mph at 39,250, a 44,650 ft. combat ceiling, a combat radius of 2,920 miles with 10,000 lb. bomb load, and a ferry range of 6,192 miles with a 38,500 gallon fuel load. In spite of an impressive improvement over the performance of the B-36, the YB-60 was inferior in most respects to the Boeing B-52.

About 40 hours were logged by the YB-60-1 before it was finally officially delivered on June 25, 1954. Full tactical equipment, including guns, K-3A system and ECM were supposed to have been installed on the second YB-60, but the Air Force never did supply engines, and the aircraft was delivered without flight tests July 8, 1954. Both were scrapped shortly afterwards. A proposal to have B-60 replace the B-36 on Fort Worth production lines was never seriously considered in view of the B-52's superior performance.

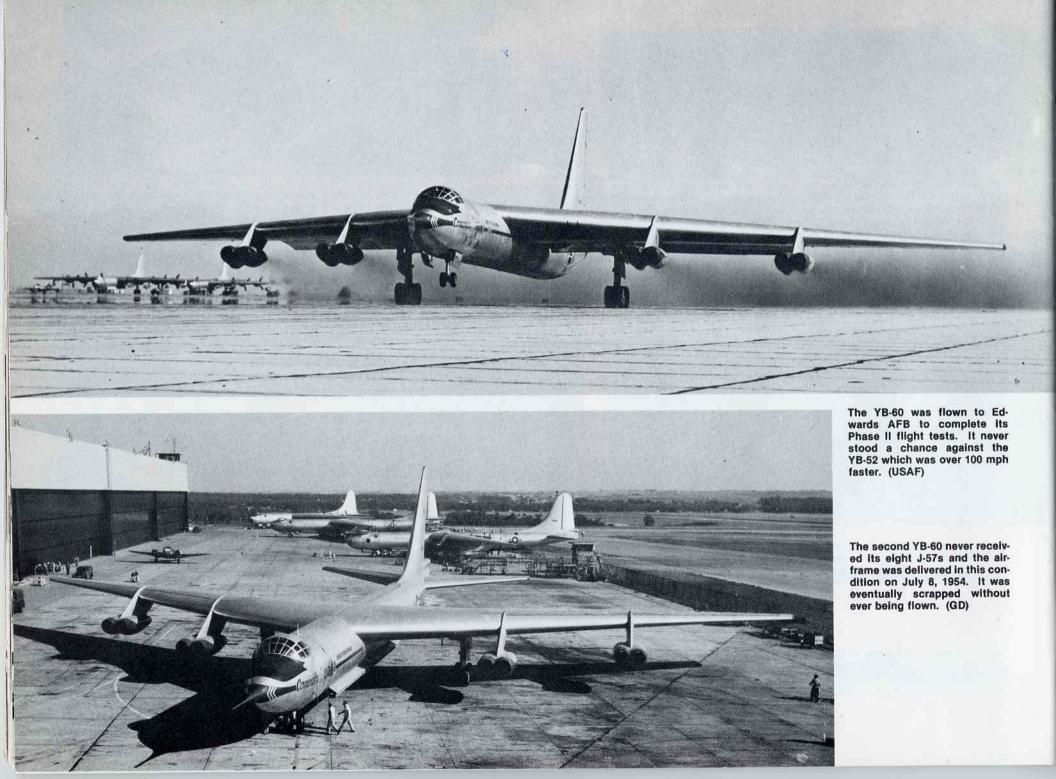


The YB-60, a swept-wing, all-jet competitor with the Boeing XB-52 was originally a B-36F, 59-2676, sharing 72% of the parts of a production Peacemaker. (GD)



Lifting off on its first flight, April 18, 1952, the YB-60 never achieved the performance of its Boeing competitor, having a top speed of 508 mph at 40,000 ft. (GD)





The protoype GRB-36F, 49-2707, participates in the first tests of its 'trapeze' with a temporarily modified F-84E of the 31st Fighter Group, May 28, 1952. A B-29 flies escort for the pair of experimental aircraft. (USAF)



## FICON & Tom-Tom

FICON (Fighter-Conveyor) was a project intended to provide the B-36 with its own fighter type aircraft to be carried into the combat zone. The first such project involved the McDonnell XF-85, ordered October 9, 1945, a midget fighter designed to be carried within the B-36 bomb bay. Although two XF-85 prototypes were built and flight tested from a B-29B in August 1948, the concept did not prove practical.

In spite of that failure, Convair received a contract for a prototype FICON system to carry and retrieve a Republic F-84E single-seat fighter from a B-36. On January 19, 1951 RB-36F-1, 49-2707, was assigned for modification as the GRB-36F prototype and was able to make its first contact flight on January 9, 1952.

The GRB-36F made its first retrieval on April 23, 1952, with the complete retraction and launch of an F-84E, and on May 14, the first composite flight was made with the F-84E stored in the bomb bay during takeoff and landing. The composite GRB-36F/F-84E was delivered to Eglin AFB and by February 20, 1953 had completed 170 aerial launch and retrievals. A YF-84F, representing the swept-wing fighter generation, was then modified as a parasite, and when May 1953 tests seemed successful, contracts were given to Convair to modify ten RB-36D into carriers and to Republic for 25 RF-84K parasites (indicating the shift in emphasis in the program from fighter escort for bombers to recon-fighters extension of the recon-bomber's ability).

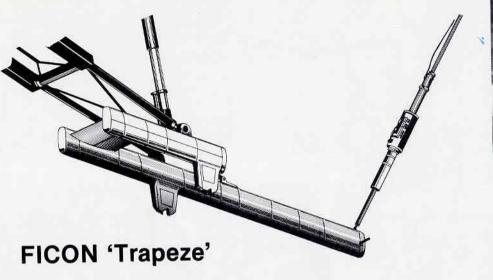
Each carried an H-shaped cradle in the bomb bays which was lowered to retrieve or launch the parasite, and raised to relieve the pilot or refuel the aircraft. The GRB-36D had its ECM equipment moved further aft and retained its cameras and tail guns, but no other turrets or bombs. It could carry the RF-84K out to a 2810 mile radius, launching the parasite at 25,000 ft. Weighing 29,503 lb. including five cameras and four .50 caliber guns, the RF-84K added 1180 miles to the radius, and could dash over the target area at 582 mph

at 35,000 ft. or 629 mph at sea level.

By the end of 1955, the GRBs were in service with the 99th Strategic Reconnaissance Wing, Fairchild AFB, Washington, and were teamed with the RF-84Ks of the 91st Strategic Reconnaissance Squadron, based at Larson AFB, Washington, but the partnership lasted less than a year before the 91st SRS was disbanded and the parasite system discontinued. Serial numbers of the RB-36Ds converted to GRBs were: 44-92090, -92092, -92094, 49-2687, -2692, -2694/96, -2701 and -2702.

Another parasite fighter program, Tom-Tom, came along after FICON was being explored. Parasite F-84 fighters would be towed by means of wingtip hook-ups accompanying a B-36 to a target area. With two aircraft involved, the concept improved penetration capabilities, as well as increasing the amount of bombs that could be delivered on a single target. Also, multiple targets could be selected, if desired. However, as the program got underway, it was decided that Tom-Tom (like FICON) should instead be utilized for long range reconnaissance. Parasite RF-84Fs would be carried within reasonable range of a target, launched and recovered.

RB-36F-1, 49-2707, which had been used in the FICON project, and two Republic RF-84Fs, 51-1848/49 were modified for Tom-Tom. Modifications included podded, articulated hook-up arm assemblies on the RB-36F and articulated jaw-like clamps on the RF-84Fs, which held the fighters in place. Initial flights, without hook-ups, were made in mid-1952 to test various means of approaching the B-36's dangerous vortex-producing wingtips. The first actual hook-up occurred in early 1953 using only one RF-84F. Problems encountered were mainly aerodynamic rather than mechanical. Most of the hook-ups lasted for short periods and all were made during straight and level flight. The majority of the hook-ups were extremely dangerous affairs. The small RF-84Fs were seriously affected by the B-36s enormous slipstream and wingtip vortices. Shortly after a test flight in late 1953, in which severe oscillation caused an RF-84F to tear loose from the RB-36F hook-up arm, the program was terminated.





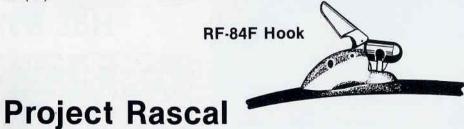
(Clockwise from Above Right) A three-photo sequence shows the stages of 'hooking up' of the prototype GRB-36F with the prototype YRF-84F.







A "production" GRB-36D (III), 49-2696, ground loads a "production" RF-84F, 51-1847. In practice the parasite most often joined up after take off. The RF-84F was a reconnaissance version of the Thunderstreak. Those modified with the latch-hook for FICON were sometimes called RF-84K, 25 of which were assigned to the 91st SRS, Larson AFB, WA. (GD)



Three B-36Hs were modified and redesignated DB-36H director aircraft to handle the Bell GAM-63 'Rascal', a 32 ft., 18,200 lb. air-to-ground missile launched at a target up to 75 miles away. The first aircraft was received into this project March 26, 1953 and the last was delivered July 15, 1955. Their serial numbers were 50-1085, 51-5706 and 51-5710. (Previously the latter aircraft had been used to test a convertible bomber-tanker rig that had been installed in August 1954)







A 348th BS, 99th SRW GRB-36D, one of the 10 that were modified to GRB configuration, in full colors, red and white checkerboard flashes and SAC insignia. The bomb-bay region was extensively modified to house the parasite fighter. (USAF via Col. Harold L. Wood)

'Tom-Tom' Wingtip Hook



Project "Tom-Tom" was designed to double the number of parasites that a B-36 could "carry" but this system had a number of inherent problems. The intense wing tip vortices generated by the B-36 made linking-up difficult and mated-flight tiresome. Also, while the pilot of a FICON Thunderstreak could open his canopy and relax in the B-36's bombbay, the "Tom-Tom" pilot was trapped in his cockpit for a 10 hour flight. (GD)

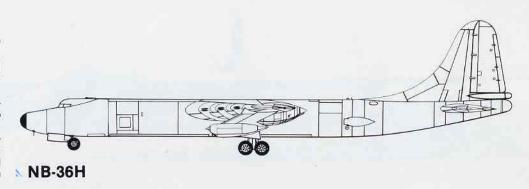
The sole NB-36H, originally designated the XB-36H, Convair Crusader, was the test bed for an airborne reactor, first flown in September 1955. The reactor was a test installation in no way involved in the propulsion system. (GD)



### **NB-36H**

The first plane to carry an operating nuclear reactor in flight resulted from a Convair program begun in 1951 with the first Air Force contract to develop a nuclear-powered aircraft. The Aircraft Nuclear Program itself was cancelled early in 1961, when it appeared unlikely to produce a militarily useful aircraft in the forseeable future, but not before the NB-36H had been flown.

On May 11, 1953, B-36H-20, 51-5712, was assigned to test airborne shielding of personnel and equipment with a small nuclear reactor. The flight crew's compartment was so completely shielded from radiation that the windshield of leaded glass was up to 12 in. thick and was so quiet in flight that pilots felt as though they were in a glider. Closed-circuit television systems gave the engineers in front visual check on the aircraft's ten engines and reactor controls. The reactor did not power the aircraft itself, but was used to test radiation effects on the NB-36H itself. Forty-seven flights were made from September 17, 1955 to March 28, 1957.





The "Crusader" sported blue stripes and a representation of an atom on its side and the radiation warning symbol on its tail. The cockpit area was completely redesigned with special shielding. (GD)

In 1958, the "Crusader", with shielded crew compartment removed, sat forlorn on its hardstand, awaiting scrapping.



### Serial Numbers of B-36 Aircraft

Model	Qt	Serial Nos.	Remarks
XB-36	1	42-13570	T- DD 205
YB-36	1	42-13571	To RB-36E 2 to RB-36E
B-36A-1	3 5	44-92004/006 44-92007/011	5 to RB-36E
B-36A-5 B-36A-10	6	44-92012/017	6 to RB-36E
and the same of th		44-92018/025	8 to RB-36E
B-36A-15	8 12	44-92026/037	11 to B-36D (1 LOST)
B-36B-1 B-36B-5	12	44-92038/049	12 to B-36D
B-36B-10	15	44-92050/064	15 to B-36D
B-36B-15	15	44-92065/079	13 to B-36D
B-36B-20	8	44-92080/087	8 to B-36D
RB-36D-1	7	44-92088/094	3 to GRB-36
B-36D-1	4	44-92095/098	
B-36D-5	8	49-2647/654	
B-36D-35	1	49-2655	
B-36D-15	2	49-2656/657	
B-36D-25	6	49-2658/663	
B-36D-35	5	49-2664/668	
B-36F-1	7	49-2669/675	D 000
YB-60-1	1	49-2676	was B-36G
B-36F-1	1	49-2677	
B-36F-5	6	49-2678/683	12-2021
YB-60-5	1	49-2684	was B-36G
B-36F-5	1	49-2685	
RB-36D-5	1	49-2686	
RB-36D-10	7	49-2687/693	2 to GRB-36D
RB-36D-15	4	49-2694/697	3 to GRB-36D
RB-36D-20	5	49-2698/702	2 to GRB-36D
RB-36F-1	9	49-2703/711	1 to GRB-36F
RB-36F-5	10	49-2712/721	
B-36F-10	10	40-1064/073	
B-36F-15	9	50-1074/082	
B-36H-1	9	50-1083/091	1 to DB-36H
B-36H-5	6 2	50-1092/097 50-1098/099	
RB-36F-10		0.55 (ABUASAN SEE	
RB-36F-15	3	50-1100/102	
RB-36H-1	3	50-1103/105	
RB-36H-5	5 7	50-1106/110 51-5699/705	
B-36H-10 B-36H-15	6	51-5706/711	2 to DB-36H
There was a second	1	TO A DESCRIPTION	Nuclear test aircraft (NB-36H)
B-36H-20 B36H-20	5	51-5712 51-5713/717	(400 lear test arrotati (115 so. 1)
B-36H-25	6	51-5718/723	
B-36H-30	6	51-5724/729	
B-36H-35	6	51-5730/735	
B-36H-40	7	51-5736/742	
RB-36H-10	5	51-5734/747	
RB-36H-15	6	51-5748/753	
RB-36H-20	3	51-5754/756	
RB-36H-20	3	51-13717/719	
RB-36H-25	6	51-13720/725	
RB-36H-30	6		
RB-36H-35	6		
RB-36H-40	4		
B-36H-45	5	52-1343/347	
B-36H-50	6	52-1348/353	
B-36H-55	6		
B-36H-60	7	52-1360/366	
RB-36H-45	7	52-1367/373	
RB-36H-50	7	52-1374/380	
RB-36H-55	6	52-1381/386	(4)
RB-36H-60	(	52-1387/392	
B-36J-65	12		
B-36J-70		52-2222/226	
B-36J-70		52-2812/818	

ote: Serial and block numbers from USAF Index, except block numbers o 44-92065/098, once B-36C-1, are as tentatively identified by authors.

