

# B-29 SUPERFORTRESS *HELL OVER KOREA*

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## 1.0 INTRODUCTION:

*“B-29s flew 1,076 days during the 1,106-day air war in Korea, dropping 160,000 tons of bombs on Communist targets—a greater bomb tonnage than had been dropped on Japan during World War II. Regardless of the many obstacles they faced, B-29 crews performed brilliantly, destroying industrial and military strategic targets in North Korea and supporting U.N. ground troops...The men who flew and supported the B-29s in the Far East Command were an important part of the air war over Korea, but their contribution has seldom been recognized.”*

- Lt. Col. George A. Larson, USAF (ret.). “Final Glory of the Boeing B-29 Superfortress”, *Military History*. March 1998

Five years after the B-29 SUPERFORTRESS (in 1945, the world’s most advanced combat aircraft) played an instrumental role in the final defeat of the Japanese Empire, those same airplanes (and many of the same crewmembers) were called back to duty to fight aggression again, this time on the Korean peninsula when North attacked South in 1950.

A lot had changed in five years. The B-29 was no longer classified by the Air Force as a “very heavy” bomber—its label was now “medium.” (The “heavy” designation was now reserved for the Convair B-36 *Peacemaker*, the largest mass-produced piston engine aircraft ever made; the B-36 did not see action in Korea). The Superfortress was also no longer held in high esteem as a technological marvel—in fact, many American airmen regarded the airplane as clearly

obsolete, and this would lead to some morale problems among the bomber crews during the Korean War.

And although “Twentieth Air Force” still existed, it, too, was largely superseded. Control of the B-29s was split between the highly disciplined Strategic Air Command (under the aegis of Curtis LeMay) and the more “seat-of-the-pants” Far East Air Forces (FEAF). The FEAF Bomber Command (Provisional) was organized to bridge the difference. Planes of the 19<sup>th</sup> Bomb Group (and, briefly, the 22<sup>nd</sup> Bomb Group) flew out of Kadana, Japan. The 98<sup>th</sup> (and, briefly, the 92<sup>nd</sup>) Bomb Group flew from Yokota, Japan. (Yokota will be the wartime home of your B-29 in this Variant.)

“*HELL OVER KOREA*” is a Variant for KPG’s “B-29 SUPERFORTRESS” covering B-29 missions in the Korean War from November 1950 through April 1951, covering a standard six-month bomber crew tour of duty in Korea. **NOTE THAT YOU MUST OWN A COPY OF “B-29 SUPERFORTRESS” TO PLAY “HELL OVER KOREA.”** All rules remain the same except where specifically changed below.

The time period covered in the Variant was chosen because it was the most dynamic period of the war for the B-29. Early missions (i.e., before November 1950) for the bomber met with little enemy opposition, with (relatively ineffective) raids against tactical targets. North Korea’s few strategic targets and industries were also quickly disposed of. In November 1950, however, the Chinese Communists were in the war, and the B-29 began facing its first serious opposition with the introduction of large numbers of Soviet MiG-15 jet fighters. It was now a real contest. However, the MiG-15 had been specifically designed to shoot down B-29s and the aging Superfortresses were outmatched by the jet, even with fighter escorts. Aircraft losses would soon restrict most B-29 missions to night-only attacks, largely in a supply-interdiction role.

## 1.2 COUNTER IDENTIFICATION:

**Communist fighters:** Two fighter types are represented: the Yak-9 and MiG-15. Unlike B-29, there are now ace and green counters for pilot status. No counter on the plane denotes average status.

**Escort markers:** The F-80, F-84, and F-86 represent US escorts when called for. Place in escort box on fighter placement map when used.

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## 2.0. PRE-MISSION STEPS

**2.2 TARGET SELECTION.** Roll for the mission target on Tables 2-1a, b, c, d, e, or f depending on what month the mission is being simulated (*if simulating an entire campaign, we recommend you fly six missions per month except for February '51 which would only have five*). Most of these missions will be “Day” missions except

**Design Note:** *The bridges over the Yalu River were probably the most famous B-29 targets of the war. Twelve “permanent” railroad and highway bridges spanned the Yalu and Tumen Rivers from Manchuria and Russia into Korea. The most important of these were the rail and highway bridges at Sinuiju and An-tung (Dandong) in the northwest corner of North Korea. These bridges were 3,000 feet long and very sturdy (the builders had laid the foundations on bedrock). Near Sakchu a double-track railway bridge spanned the Yalu, while at Manptojin (Manpo) both a rail and footbridge crossed the river. Other highway bridges were located at Ongondong, Ch'ongsongjin, Lin-chiang (China), Hyesanjin (Hyesan), Samanko, and Hoeryong.*

*American military commanders were hopeful that these important conduits of men and supplies could be quickly knocked down by airpower but this proved problematic. In addition to being resistant to bomb damage, targeting was made more challenging by restrictions against crossing into Manchurian airspace, forcing bomber formations to fly circuitous bomb runs along the course of the Yalu. The targets were also increasingly well-defended by anti-aircraft guns and fighters (it was a broad area surrounding the Yalu in the northwestern portion of North Korea that would earn the nickname “MiG Alley.”).*

*In early 1951, FEAF experimented with radio-controlled bombs in an effort to solve the bridge-busting challenge. First, the 1000-lb VB-3 RAZON (for RAnge and AZimuth ONLY, the two variables that the bombardier could control) was tried but the bomb was not heavy enough. Next, FEAF tried the 12,000-lb VB-13 “Tarzon.” The bomb was so large that it protruded out the bomb bay during flight, creating drag and control problems (blamed for the loss of two crews). Within just a few weeks, the Tarzons were withdrawn. (Because of its brief appearance, and because of the extensive modifications required to a B-29 to carry it, the Tarzon is not simulated in this Variant. Extensive revisions to the bomb bay and bomb bay doors were required, the radar was moved forward replacing the lower gun turret, and a B-50 nose piece was fitted to give the bombardier better visibility. Only three B-29s were so modified.)*

*Eventually, fighter-bombers joined in the bridge attacks, and by the end of the war, every bridge across the river except one had been destroyed. But the results of the campaign were never as advantageous as hoped. In the winter months, the Yalu was frozen over in many places, making the need for bridges largely superfluous. And in warmer months, enemy engineers built pontoon bridges across the river at critical points.*

where noted on the applicable Table. Note that numerous Tables in this section are now re-numbered.

## 2.3 OTHER MISSION PARAMETERS

A. Note that although “Formation Position” is rolled for (Table 2-4), “Squadron Position” is not. Unlike World War II, most B-29 missions in Korea were flown in small formations (sometimes with as few as three planes) rather than large. Note that his roll is made for “Night” missions as well. As usual, although not in formation at night, the B-29 is never considered to be “out of formation” per Section 4.8.

**Design Note:** *On night missions over Korea, B-29s usually flew in a stream formation with a 500-foot altitude separation at intervals of one to five minutes. Planners learned to vary the separations between aircraft in the same bomber stream to foil North Korean anti-aircraft gunners.*

B. Also note that “HI” (high) altitude is not used in this Variant. Missions are typically flown at “MED” altitude (between 12,000 and 26,000 feet). No missions are planned for “LO” altitude, although bombers may fly at this altitude when out of formation, after take-off, and before landing.

**Design Note:** *The following is quoted from Robert F. Dorr’s B-29 SUPERFORTRESS UNITS OF THE KOREAN WAR:*

*“Even without the enemy, the crews were uneasy about flying the B-29. One crewman described the bomber as ‘loud, shaky and vulnerable’ whilst another said it ‘was too old for the war in Korea.’ Never effective at high altitude, the B-29 was prevented by enemy flak from attacking at lower levels. ‘We flew at a terrible altitude’ says McGill [B-29 pilot E J ‘Mac’ McGill]. ‘20,000 to 25,000 ft. We couldn’t fly higher with a heavy bombload.’”*

*Some B-29 missions in Korea were flown at altitudes not much higher than 18,000 feet. We’re assuming in this Variant that, even without a bombload, performance and fuel considerations are ruling out the use of higher altitudes.*

C. On ALL missions, all gunners (Central Fire Controller, Left Gunner, Right Gunner, and Tail Gunner) will fly on the mission and all gun turrets are considered armed and ready. The “tail cannon” does not exist in this Variant.

D. Examine the Flight Log Gazetteer, Table 2-5, to find the modifications (if any) to the rolls for enemy

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fighters on Table 5-1. Note that all targets are listed in alphabetical order. Add these modifications with any for the B-29's squadron position and note them on the Mission Log Sheet.

- E. Auxiliary fuel tanks are not used in this Variant. On the Mission Log Sheet, cross off the corresponding auxiliary fuel boxes.
- F. If this is a “Day” Mission, roll on Table 2-4 to determine if fighter escorts are available.

*Design Note: Here is a brief introduction to the UN fighter types represented in this game:*

- The **Lockheed F-80 Shooting Star** was the first USAF operational jet fighter. The F-80C variant was used in combat in Korea, armed with six 12.7mm machine guns, and possessing a maximum speed of 600 mph and service ceiling of 46,000 feet. However, the straight-wing Shooting Star was manifestly inferior in performance to the MiG-15 and was soon replaced in the air superiority role by the swept-wing F-86 Sabre. (The F-80 was then assigned to ground attack and photo-recon missions, advanced flight training duties, and air defense in Japan.)
- The **Republic F-84 Thunderjet** was another straight-wing turbojet fighter-bomber aircraft. More modern than the F-80 (having become fully operation in 1949), it was somewhat faster and had a higher service ceiling than the comparably-armed F-80—but, like the Shooting Star, it was a generation behind the MiG-15. Once the F-86 assumed the MiG counter-air mission, the F-84 was switched to the low-level interdiction role, for which it was well-suited (the USAF later claimed F-84s were responsible for 60 percent of all ground targets destroyed in the war).
- The **North American Aviation F-86 Sabre** (sometimes called the Sabrejet) was the primary US jet fighter used in the Korean War. The F-86 could out-turn and out-dive the MiG-15, but the MiG-15 was superior to the F-86 in ceiling, acceleration, rate of climb, and zoom (especially until the introduction of the F-86F in 1953). Its maximum speed was 687 mph at sea level and its armament consisted of six 12.7mm machine guns. Key to the F-86's success was the training, aggressiveness and combat experience of its pilots, many of whom had flown during World War II. The official USAF tally after the war was 379 MiGs shot down vs. 103 Sabres lost (a ratio of nearly 4 to 1)... although modern scholarship places the actual ratio closer to 2 to 1.

- G. Place the B-29 counter on the Strategic Movement Track inside the track square labeled “FEAF Bomber Command” facing toward the Designated Target Zone. The mission is ready to begin.

## 3.0. STARTING THE MISSION

No changes to this rule.

## 4.0. THE ZONES

**4.1 MOVEMENT** As noted earlier, there is no “HI” altitude used in this Variant.

**4.2 PRESSURIATION** The Pressurization rules still apply for “MED” altitude.

**4.3 Ω FUEL CONSUMPTION** Fuel consumption rules remain unchanged. As noted earlier, there are no auxiliary tanks used in this Variant. Also, fuel boxes are no longer crossed off or restored as the result of Random Event.

**4.4 WEATHER** The weather rules are unchanged except Jet Stream effects are no longer modeled in the Tables (given that “HI” altitude is not used in the Variant).

*Design Note: As with the World War II bombing campaigns in Europe and Japan, weather certainly affected operations in Korea (even if conditions in were sometimes better than B-29 aircrews had first been led to expect). Forecasting for Korea was difficult because the peninsula's weather patterns were generated in the Mongolian steppes, outside of FEAF's weather observation area. At first, American weathermen tuned into weather reports on Russian radio broadcasts out of Vladivostok, but eventually they realized that it was probably not wise to rely on the word of the Soviets.*

**4.5 Ω NAVIGATION** The Navigation rules remain unchanged. Note that **NO** navigation check is required while **in formation** unless your B-29 is the “Lead” bomber (see Tables 2-2). Navigation checks must be resumed upon dropping out of formation, or upon re-entry into Zone 5 on the inbound leg (flying towards base, when formations are disbanded). Navigation checks are also required in every zone on night missions.

**4.7 ABORTING THE MISSION** The rules for aborting remain unchanged. “Aborting a mission” means the B-29 turns around and heads for home (either “FEAF Bomber Command” base square, or another base in Japan in Zones 1 or 2, or any zone containing UN territory, see Table 2-5 and Section 8.4) without bombing the target. Landing location may affect landing modifiers (see Table 8-1). Note that if the target has not been bombed when the B-29 is forced to abort, the bombs may be jettisoned for safety except in Zone 1.

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### 4.8 FORMATIONS

- A. Formation assembly will occur in Zone 5 of the Strategic Movement Track. A bomber must be at “MED” altitude prior to rolling for assembly. The requirement to fly in formation ends with entry into Zone 5 on the **inbound** leg of the mission (flying away from the Designated Target Zone). On “Night” missions there is no formation assembly (in this case, a plane is never “in” or “out” of formation for all rule purposes.)

*Design Note: Although formation assembly (and “disassembly”) points could vary, it was not unusual for B-29s to form up off the southern coast of South Korea. Although this meant flying an indirect route to the target from the base in Japan, it had the advantage of allowing overflight over friendly Korean territory (for emergencies and navigation), facilitated rendezvous with fighter escorts, and circumvented any potential Soviet interference over the Sea of Japan.*

- B. Fighter rendezvous (if available) will always be rolled for after formation assembly in Zone 5 of the Strategic Movement Track. If the rendezvous is missed, rendezvous attempt may be made again (after checking for weather) in any and all ensuing Zones with a -2 die roll modifier. All other rules are unchanged.

## 5.0. COMBAT

### 5.1 DETERMINE FIGHTER RESISTANCE

- A. Each turn (both to and from the target) that the B-29 is in a zone (“Day” missions **only**) with a modifier in front of the slash on Table 2-5), roll on Table 5-1 to determine the number of Communist fighters (if any) that will appear that turn (*note that unlike the Japan game, players are rolling for actual fighters and not just a level of fighter resistance*). In the case of multiple fighters, a subsequent die roll (see Note b. to Table 5-1) will determine whether the fighters appear simultaneously (i.e., in a “wave”) or successively. **NOTE:** A multi-plane attack (simultaneous or successive) is mutually exclusive with the “dogpile mass attack” result (#5) on Table 5-3 (which, in practical terms, is a slight variation of a simultaneous attack).

### 5.3 B-29 DEFENSIVE FIRE

- A.  $\Omega$  If not already allocated to fire at an attacker in the 6 o’clock position, the tail gun turret may be allocated to any Yak-9 fighter (*only!*) attacking from

the 10:30, 12, or 1:30 positions, whether High, Level, or Low, resolved after all other combat involving the attacking fighter is resolved. Passing shots may not be made against MiG-15 attacks.

- B. For each hit a fighter receives, roll one on Table 5-8, using the column appropriate to the target, to determine the damage to the fighter from that hit. Remove destroyed fighters, and place FCA (Fighter damaged but continues attack) counters on damaged fighters. A FBOA (Fighter Breaks Off Attack) result means that the fighter is immediately removed, it does NOT conduct offensive fire (*note that this is different than a FBOA result in the ancestor of our game, Avalon Hill’s B-17, QUEEN OF THE SKIES*).

*Design Note: Here is a brief introduction to the Communist fighter types represented in this game:*

- *The Yakovlev Yak-9 (NATO codename “Frank”). A single-piston-engine aircraft, the Yak-9 was the most numerous Soviet fighter aircraft used by the Soviet Union in the Second World War. It remained in production until 1948 with a total of over 16,000 built. The Yak-9b was the variant supplied to many Soviet satellite air forces in the early postwar period, including China and North Korea. With a 1,650 horsepower Klimov engine (yielding a maximum speed of over 400 mph, a service ceiling of 39,000, and a good climb rate), an all-metal wing, and a combination 20mm cannon with two 12.7mm machine guns, the Yak-9 was a formidable menace to the B-29. However, it was clearly obsolete in combat against jet fighters. Pilot inexperience and poor tactics compounded the problem.*
- *The Mikoyan-Gurevich MiG-15. One of the first successful swept-wing jet fighters and one of the most numerous jet aircraft ever made, with over 12,000 built (approximately an additional 6,000 were made in foreign production). It entered Soviet Air Force service in 1949, and would subsequently receive the NATO code name “Fagot.” Interestingly, the MiG-15—with a maximum speed of 668 mph, a service ceiling over 50,000 feet, and its cannon armament (two 23 mm guns and a single 37 mm cannon)—was designed specifically to intercept high-flying bombers like the B-29. But in the skies over Korea, it proved superior in the air-to-air role over straight-wing jets such as the F-80 and British Gloster Meteor. Only the F-86 Sabre, with skilled and experienced pilots, was a match for the MiG. (The limited rate of fire of the MiG’s cannons did make it more difficult for Communist pilots to score hits in dogfights.)*

**5.5  $\Omega$  MID-AIR COLLISIONS** This rule is not used in this game.

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**5.6 SUCCESSIVE ATTACKS** Any fighter which scores a hit in its initial attack on your B-29 attacks the B-29 again (roll on Table 5-13; note that it is possible that a Yak-9 fighter eligible for a successive attack will be removed by result of this Table, depending on the dice roll). Fighters which attack in a simultaneous wave initially will also attack simultaneously in successive attacks. Defensive fire is resolved normally in successive attacks. MiG-15 fighters (only!) which score a hit during their first *successive* attack will conduct a second successive attack, as above. After its second successive attack, a fighter is removed from play even if it scores additional hits.

*Design Note: MiG-15 models were exported to North Korea and Communist China beginning in 1950, but the end of the Cold War confirmed that many MiGs encountered by U.S. pilots in Korea were flown by Russian (and Polish) pilots. Soviet aircraft were painted with North Korean or Chinese markings, and pilots wore either North Korean uniforms or civilian clothes to disguise their origins. The Soviet involvement was heavily classified, but early in the war Soviet pilots were heard on radio talking in Russian during combat engagements. Some Soviet pilots were shot down, but the exact number has never been officially confirmed by either U.S. or Soviet air force records. Soviet pilots did not initially concentrate their efforts against the B-29, so it was not until later in 1951 that the jets forced the Superfortresses to abandon daylight missions.*

**5.8 COMBAT PROCEDURE – “NIGHT” MISSIONS** For “Night” missions, there is no Communist fighter resistance in any Zone.

*Design Note: During the time period portrayed in this Variant, the Communists did not have a night fighter capable of seriously challenging the B-29 Superfortress. The Lavochkin La-11 (NATO code name Fang)—an early post-World War II long-range piston-engine fighter—was committed to night combat by the Soviet Air Force in June 1951. However, the La-11 was not up to the task. With a relatively slow rate of climb, it took nearly a half hour to reach the B-29’s cruise altitude, and its speed advantage was so slight that it was relatively easy to evade. MiG-15s were committed to night operations in December 1951 and had more success...*

## 6.0. OVER THE TARGET

**6.1** Note that the Searchlight check for Night Missions is now Table 6-1, note Table 5-14. This applies only if the B-29 is within the Designated Target Zone (*only*). All other Tables in this section are renumbered accordingly.

**6.3 BOMB RUN** There is no thermal turbulence in this Variant.

## 7.0. BOMBER DAMAGE

No changes to this rule except where already noted (no “HI” altitude, no “auxiliary fuel tanks”, etc.)

## 8.0. ENDING THE MISSION

**8.1. LANDINGS** There are five types of landings which can occur at the end of a mission. The first is a normal landing at the “FEAF Bomber Command Base,” the second is landing in Japan (Zones 1 or 2), the third is a landing in UN territory in South Korea, the fourth is a landing in enemy territory (e.g., in North Korea), and the fifth is a crash landing (or ditching) into the sea.

**8.2 BAILING OUT** Crewmembers may bail out over any of the location indicated above.

**8.3 FEAF BOMBER COMMAND** A B-29 at “LO” altitude in Zone 1 may attempt to land at “FEAF Bomber Command” base assuming it has sufficient fuel to *exit* the Zone (see Section 4.3), receives an “On Course” result on Table 4-8 in Zone 1 (see Section 4.5), and is not otherwise restricted from proceeding as a result of two or three engines being out (see Section 7.2). All the rules for landing in the Marianas in the original B-29 SUPERFORTRESS rules apply to his section.

**8.4 JAPAN or SOUTH KOREA** A B-29 in Zone 1 or 2 may attempt to land at another airbase in Japan. A B-29 in Zone 5 or 6 may attempt to land in friendly UN territory in South Korea. Note that in either case different modifiers on Table 8-1 apply. All rules for landing at Iwo Jima in the original B-29 SUPEFORTRESS rules apply except that no die roll is required for fog. Note the different letter notations to the right of the slash mark on Table 2-5. Safe crewmembers are returned to duty in Japan

**8.5 COMMUNIST TERRITORY** A B-29 may be forced to land in Communist territory in Zones 7-10, or the crew may have to bail out in these Zones. All rules for landing in enemy Japan in the original B-29 SUPEFORTRESS rules (Zones 10-14) apply. Note the different letter notations to the right of the slash mark on Table 2-5.

**8.6 THE SEA** Note the different letter notations to the right of the slash mark on Table 2-5. All rules for ditching at sea in the original B-29 SUPEFORTRESS rules (Zones 10-14) apply. Note the different letter notations to the right of the slash mark on Table 2-5. Rescued crewmembers are normally returned to duty in

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Japan (note, however, that crewmembers rescued in Zones 7-10 may be captured, requiring a roll on Table 8-7 for POW survival).

***Design Note:** B-29 bomber crewmen enjoyed virtually none of the protections “guaranteed” by the Geneva Convention while in Communist captivity. Food was poor and medical care practically nonexistent. Captured airmen were usually held in isolated or solitary confinement for their first few months, fed only two cups of rice a day. They were left with the clothing they had on when captured, regardless of the condition, and slept on a dirt floor, usually without blanket (which was particularly unpleasant given Korea’s cold winters). Periodically, captured crewmen would be removed from solitary for interrogation, usually lasting several hours. After the initial confinement and interrogation period, airmen were transported to a Chinese-run POW camp where conditions were only slightly better (some crude shelter and clothing was usually provided). They remained prisoners until exchanged after the war ended.*

### 9.0. VICTORY CONDITIONS

**9.2 URBAN AREA DAMAGE ASSESSMENT** This rule is not used in this variant.

**9.3 MISSION VICTORY CONDITIONS** A B-29’s bombing results and survival determine whether a mission is a FEAF Bomber Command Victory, a Communist Victory, or a Draw.

- A. A mission is considered a FEAF Bomber Command Victory if the B-29’s bomb run was “On Target” and the B-29 returned to Japan or UN territory, and is not irreparably damaged.
- B. A mission is considered a Communist Victory if either the B-29 was destroyed in combat, ditched at sea, crash landed in Communist territory, or was irreparably damaged in combat (i.e., Flak BIP) or while landing.
- C. A mission is considered a Draw if the B-29 was unable to bomb the target or if the bomb drop was “Off Target”, but returned to Japan or UN territory, and is not irreparably damaged.

**9.4 CAMPAIGN VICTORY CONDITIONS** The cumulative results over 35 missions determine victory in a campaign. At the end of a 35 mission campaign, total the number of FEAF Bomber Command Victories and Communist Victories, and ignore the number of Draws. The side with the most victories is the “winner” in the campaign game. In addition, the survival of an individual bomber or crewmember over several missions

can be measured as a relative performance rating. See Tables 9-2 and 9-3.

### SELECTED SOURCES AND RECOMMENDED READING

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Schnabel, James F., *United States Army in the Korean War; Policy and Direction: the First Year*, Center of Military History, United States Army, Washington D.C., 1972, 443 pp.

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