

= Bockscar =

Bockscar , sometimes called Bock 's Car , is the name of the United States Army Air Forces B @-@ 29 bomber that dropped a Fat Man nuclear weapon over the Japanese city of Nagasaki during World War II in the second ? and last ? nuclear attack in history . One of 15 Silverplate B @-@ 29s used by the 509th , Bockscar was built at the Glenn L. Martin Aircraft Plant at Bellevue , Nebraska , at what is now Offutt Air Force Base , and delivered to the United States Army Air Forces on 19 March 1945 . It was assigned to the 393d Bombardment Squadron , 509th Composite Group to Wendover Army Air Field , Utah in April .

Bockscar was used in 13 training and practice missions from Tinian , and three combat missions in which it dropped pumpkin bombs on industrial targets in Japan . On 9 August 1945 , Bockscar , piloted by the 393d Bombardment Squadron 's commander , Major Charles W. Sweeney , dropped a Fat Man nuclear bomb with a blast yield equivalent to 21 kilotons of TNT over the city of Nagasaki . About 44 % of the city was destroyed ; 35 @,@ 000 people were killed and 60 @,@ 000 injured .

After the war , Bockscar returned to the United States in November 1945 . In September 1946 it was given to the National Museum of the United States Air Force at Wright @-@ Patterson Air Force Base , Ohio . The aircraft was flown to the Museum on 26 September 1961 , and its original markings were restored . Bockscar is now on permanent display at the National Museum of the United States Air Force , Dayton , Ohio , next to a replica of a Fat Man .

= = Airplane history = =

Bockscar , B @-@ 29A @-@ 40 @-@ MO 44 @-@ 27297 , Victor number 77 , was assigned to the 393d Bombardment Squadron of the 509th Composite Group . One of 15 Silverplate B @-@ 29s used by the 509th , Bockscar was built at the Glenn L. Martin Aircraft Plant at Bellevue , Nebraska , at what is now Offutt Air Force Base , as a Block 35 aircraft . It was one of 10 modified as a Silverplate and re @-@ designated " Block 36 " .

Silverplate involved extensive modifications to the B @-@ 29 to carry nuclear weapons . The bomb bay doors and the fuselage section between the bomb bays were removed to create a single 33 @-@ foot (10 m) bomb bay . British suspensions and bracing were attached for both shape types , with the gun @-@ type suspension anchored in the aft bomb bay and the implosion type mounted in the forward bay . Weight reduction was also accomplished by removal of gun turrets and armor plating . These B @-@ 29s also had an improved engine , the R @-@ 3350 @-@ 41 . The Silverplate aircraft represented a significant increase in performance over the standard variants .

Delivered to the United States Army Air Forces on 19 March 1945 , Bockscar was assigned to Captain Frederick C. Bock and crew C @-@ 13 , and flown to Wendover Army Air Field , Utah in April . The name chosen for the aircraft , and painted on it after the mission , was a pun on the name of the aircraft commander . It left Wendover on 11 June 1945 for Tinian , where it arrived 16 June . It was originally given the Victor (unit @-@ assigned identification) number 7 but on 1 August was given the triangle N tail markings of the 444th Bombardment Group as a security measure , and had its Victor changed to 77 to avoid misidentification with an actual 444th aircraft .

Bockscar was used in 13 training and practice missions from Tinian , and three combat missions in which it dropped pumpkin bombs on industrial targets in Japan , in which Bock 's crew bombed Niihama and Musashino , and First Lieutenant Charles Donald Albury and crew C @-@ 15 bombed Koromo .

= = Atomic bomb mission = =

= = = Mission and crew = = =

Bockscar was flown on 9 August 1945 , by the crew of another B @-@ 29 , The Great Artiste , and piloted by Major Charles W. Sweeney , commander of the 393d Bombardment Squadron . The

plane was co @-@ piloted by First Lieutenant Charles Donald Albury , the normal aircraft commander of Crew C @-@ 15 . The Great Artiste was designated as the observation , instrumentation support plane for the second mission , and another B @-@ 29 , The Big Stink , flown by Group Operations Officer Major James I. Hopkins , Jr . , as the photographic aircraft . The mission had as its primary target the city of Kokura , where the Kokura Arsenal was located . Its secondary target was Nagasaki , where two large Mitsubishi armament plants were located .

Bockscar had been flown by Sweeney and crew C @-@ 15 in three test drop rehearsals of inert Fat Man assemblies in the eight days leading up to the second mission , including the final rehearsal the day before . The Great Artiste , which was the assigned aircraft of the crew with whom Sweeney most often flew , had been designated in preliminary planning to drop the second bomb , but the aircraft had been fitted with observation instruments for the Hiroshima mission . Moving the instrumentation from The Great Artiste to Bockscar would have been a complex and time @-@ consuming process , and when the second atomic bomb mission was moved up from 11 August to 9 August because of adverse weather forecasts , the crews of The Great Artiste and Bockscar instead exchanged aircraft . The result was that the bomb was carried by Bockscar , but flown by the crew C @-@ 15 of The Great Artiste .

= = = Kokura and Nagasaki = = =

During pre @-@ flight inspection of Bockscar , the flight engineer notified Sweeney that an inoperative fuel transfer pump made it impossible to use 640 US gallons (2 @, @ 400 l ; 530 imp gal) of fuel carried in a reserve tank . This fuel would still have to be carried all the way to Japan and back , consuming still more fuel . Replacing the pump would take hours ; moving the Fat Man to another aircraft might take just as long and was dangerous as well , as the bomb was live . Group Commander Colonel Paul Tibbets and Sweeney therefore elected to have Bockscar continue the mission .

Bockscar took off from Tinian 's North Field at 03 : 49 . The mission profile directed the B @-@ 29s to fly individually to the rendezvous point , changed because of bad weather from Iwo Jima to Yakushima Island , and at 17 @, @ 000 feet (5 @, @ 200 m) cruising altitude instead of the customary 9 @, @ 000 feet (2 @, @ 700 m) , increasing fuel consumption . Bockscar began its climb to the 30 @, @ 000 feet (9 @, @ 100 m) bombing altitude a half hour before rendezvous . Before the mission , Tibbets had warned Sweeney to take no more than fifteen minutes at the rendezvous before proceeding to the target . Bockscar reached the rendezvous point and assembled with The Great Artiste , but after circling for some time , The Big Stink failed to appear . As they orbited Yakushima , the weather planes Enola Gay and Laggin ' Dragon reported both Kokura and Nagasaki within the accepted parameters for the required visual attack .

Though ordered not to circle longer than fifteen minutes , Sweeney continued to wait for The Big Stink , at the urging of Commander Frederick Ashworth , the plane 's weaponeer , who was in command of the mission . After exceeding the original departure time limit by a half hour , Bockscar , accompanied by The Great Artiste , proceeded to Kokura , thirty minutes away . The delay at the rendezvous had resulted in clouds and drifting smoke from fires started by a major firebombing raid by 224 B @-@ 29s on nearby Yawata the previous day covering 70 % of the area over Kokura , obscuring the aiming point . Three bomb runs were made over the next 50 minutes , burning fuel and exposing the aircraft repeatedly to the heavy defenses of Yawata , but the bombardier was unable to drop visually . By the time of the third bomb run , Japanese anti @-@ aircraft fire was getting close , and Second Lieutenant Jacob Beser , who was monitoring Japanese communications , reported activity on the Japanese fighter direction radio bands .

The increasingly critical fuel shortage resulted in the decision by Sweeney and Ashworth to reduce power to conserve fuel and divert to the secondary target , Nagasaki . The approach to Nagasaki twenty minutes later indicated that the heart of the city 's downtown was also covered by dense cloud . Ashworth decided to bomb Nagasaki using radar , but , according to Bockscar 's bombardier , Captain Kermit Beahan , a small opening in the clouds at the end of the three @-@ minute bomb run permitted him to identify target features . Bockscar visually dropped the Fat Man at 10 : 58 local

time . It exploded 43 seconds later with a blast yield equivalent to 21 kilotons of TNT at an altitude of 1 @, @ 650 feet (500 m) , approximately 1 @. @ 5 miles (2 @. @ 4 km) northwest of the planned aiming point , resulting in the destruction of 44 % of the city .

The failure to drop the Fat Man at the precise bomb aim point caused the atomic blast to be confined to the Urakami Valley . As a consequence , a major portion of the city was protected by the intervening hills , but even so , the bomb was dropped over the city 's industrial valley midway between the Mitsubishi Steel and Arms Works in the south and the Mitsubishi @-@ Urakami Ordnance Works in the north . An estimated 35 @, @ 000 people were killed and 60 @, @ 000 injured during the bombing at Nagasaki . Of those killed , 23 @, @ 200 @-@ 28 @, @ 200 were Japanese munitions workers , 2 @, @ 000 were Korean slave laborers , and 150 were Japanese soldiers .

= = = Landing and debriefing = = =

Because of the delays in the mission and the inoperative fuel transfer pump , the B @-@ 29 did not have sufficient fuel to reach the emergency landing field at Iwo Jima , so Sweeney flew the aircraft to Okinawa . Arriving there , he circled for 20 minutes trying to contact the control tower for landing clearance , finally concluding that his radio was faulty . Critically low on fuel , Bockscar barely made it to the runway at Yontan Airfield on Okinawa . With only enough fuel for one landing attempt , Sweeney and Albury brought Bockscar in at 150 miles per hour (240 km / h) instead of the normal 120 miles per hour (190 km / h) , firing distress flares to alert the field of the uncleared landing . The number two engine died from fuel starvation as Bockscar began its final approach . Touching the runway hard , the heavy B @-@ 29 slewed left and towards a row of parked B @-@ 24 bombers before the pilots managed to regain control . The B @-@ 29 's reversible propellers were insufficient to slow the aircraft adequately , and with both pilots standing on the brakes , Bockscar made a swerving 90 @-@ degree turn at the end of the runway to avoid running off the runway . A second engine died from fuel exhaustion by the time the plane came to a stop . The flight engineer later measured fuel in the tanks and concluded that less than five minutes total remained .

Following the mission , there was confusion over the identification of the plane . The first eyewitness account by war correspondent William L. Laurence of the New York Times , who accompanied the mission aboard the aircraft piloted by Bock , reported that Sweeney was leading the mission in The Great Artiste . However , he also noted its " Victor " number as 77 , which was that of Bockscar , writing that several personnel commented that 77 was also the jersey number of the football player Red Grange . Laurence had interviewed Sweeney and his crew in depth and was aware that they referred to their airplane as The Great Artiste . Except for Enola Gay , none of the 393d 's B @-@ 29s had yet had names painted on the noses , a fact which Laurence himself noted in his account , and unaware of the switch in aircraft , Laurence assumed Victor 77 was The Great Artiste . In fact , The Great Artiste was Victor 89 .

= = Current status = =

After the war , Bockscar returned to the United States in November 1945 and served with the 509th at Roswell Army Air Field , New Mexico . It was nominally assigned to the Operation Crossroads task force , but there are no records indicating that it deployed for the tests . In August 1946 , it was assigned to the 4105th Army Air Force Unit at Davis @-@ Monthan Army Air Field , Arizona , for storage .

At Davis @-@ Monthan it was placed on display as the aircraft that bombed Nagasaki , but in the markings of The Great Artiste . In September 1946 , title was passed to the Air Force Museum (now the National Museum of the United States Air Force) at Wright @-@ Patterson Air Force Base , Ohio . The aircraft was flown to the Museum on 26 September 1961 , and its original markings were restored . Bockscar is now on permanent display at the National Museum of the United States Air Force , Dayton , Ohio . This display , a primary exhibit in the Museum 's Air Power gallery , includes a replica of a Fat Man bomb and signage that states that it was " The aircraft that ended WWII " .

In 2005 , a short documentary was made about Charles Sweeney 's recollections of the Nagasaki mission aboard Bockscar , including details of the mission preparation , titled " Nagasaki : The Commander 's Voice . "

= = Crew members = =

= = = Regularly assigned crew = = =

Crew C @-@ 13 (manned The Great Artiste on the Nagasaki mission) :

Captain Frederick C. Bock , Aircraft Commander , Greenville , MI

First Lieutenant Hugh Cardwell Ferguson , Sr. , Co @-@ pilot , Highland Park , MI

First Lieutenant Leonard A. Godfrey , Jr . , Navigator , Greenfield , MA

First Lieutenant Charles Levy , Bombardier , Philadelphia , PA

Master Sergeant Roderick F. Arnold , Flight Engineer , Rochester , MI

Sergeant Ralph D. Belanger , Assistant Flight Engineer , Thendara , NY

Sergeant Ralph D. Curry , Radio Operator , Hoopeston , IL

Sergeant William C. Barney , Radar Operator , Columbia City , IN

Sergeant Robert J. Stock , Tail Gunner , Fort Wayne , IN

= = = Nagasaki mission crew = = =

Crew C @-@ 15 (normally assigned to The Great Artiste) :

Major Charles W. Sweeney , Aircraft Commander , North Quincy , MA

Captain Charles Donald " Don " Albury , Co @-@ pilot (pilot of Crew C @-@ 15) , Miami , FL

Second Lieutenant Frederick " Fred " J. Olivi , Regular Co @-@ pilot

Captain James F. Van Pelt , Jr . , Navigator , Oak Hill , WV

Captain Kermit K. Beahan , Bombardier , Houston , TX

Master Sergeant John D. Kuharek , Flight Engineer , Columbus , NE

Staff Sergeant Raymond C. Gallagher , Gunner , assistant flight engineer , Chicago , IL

Staff Sergeant Edward K. Buckley , Radar Operator , Lisbon , OH

Sergeant Abe M. Spitzer , Radio Operator , Bronx , NY

Sergeant Albert T. " Pappy " DeHart , Tail Gunner , Plainview , TX

Also on board were the following additional mission personnel :

Commander Frederick Ashworth , USN , Weaponeer

Lieutenant Philip M. Barnes , USN , Assistant Weaponeer

Second Lieutenant Jacob Beser , Radar Countermeasures , Baltimore , MD (Lt. Beser flew on both atomic missions , serving as the radar countermeasures crewman on the Enola Gay , August 6 , 1945 , and Bockscar , August 9 , 1945) .

= = National Museum of the United States Air Force display = =