# George Cunningham '40
## Military Service

I was not able to get all of the detail of George's tour of duty in the service during WW2 because he became ill and was not able to continue the interview. I was able to obtain from other sources what he knew he might face if he were to be in actual combat.

He was drafted into the Army sometime in 1941, a year after he graduated from CB. He somehow landed in the Army Air Corp, now called the Air Force. He went to school to learn how to become a navigator on a B-24 bomber. It was a very risky assignment. Attached Is information about the B-24 and the navigator's responsibilities.

He then went with a crew to Alaska to develop ways to safely fly during a "Whiteout". This is a dangerous assignment. Attached is information about a "Whiteout".

I know during the end of the war George was stationed inthe Pacific. I do not know if he was in combat. He went to Japan after Japan's surrender to help maintain order.

See model of B-24 in Archive

Lubbock Avalanche-Journal
lubbockonline.com
MEDIA

# Navigator's job in a B-24 was fraught with danger

By Ray Westbrook

Posted Jan 27, 2013 at 9:34 PM

The indelible memories of a navigator aboard a B-24 bomber in World War II reveal in vivid detail how tenuous was victory, and how momentary life could be in every hour of a combat mission.

Lt. Michael J. Cambon didn't continue in an Air Force career after the war ended, but he still speaks of the unbelievably complex orchestration required to form a bombing raid on Germany by planes overloaded for takeoff on runways sometimes too short.

Now a resident of Lubbock, Cambon was living in New York when he heard about Pearl Harbor, and decisively enlisted for military service. He could have waited to complete a semester of school, but patriotism prevailed.

"Rose was appalled by my decision," he said of his older sister. "She was certain she could have wangled some sort of deferment that would have enabled me to sit out the war at home."

Cambon's eyes weren't quite adequate for pilot training, so he was assigned to navigator school.

"Aerial navigation required basic subjects such as trigonometry and plane geometry, but also spherical trigonometry for celestial navigation.

"Tools were circular calculators to convert air speed, compass heading and wind drift into direction and speed on the ground; plotting instruments; and the sextant for celestial navigation," he recalls.

He even learned Morse Code in case the radio operator was knocked out of action.

Practice was done in a trainer with navigation stations plus pilotage - finding the way by recognizing landmarks on a chart.

"Some training ships were converted from old bombers," he said. "Four crashed during training flights, killing seven."

Aircraft identification was crucial, and crew members were trained to identify a plane from a photo flashed on a screen in a second or less. In combat, it was a life or death decision, Cambon said.

Early morning

He was part of the 466th Bomb Group stationed at Attlebridge in England:

Missions began with a wake-up call at 3 to 5 a.m. by a sergeant with a flashlight, waking up only the men scheduled to fly that day. Dressing was done n haste since the fire in the stove was long gone and the barracks were ice cold.

This was the worst part of the day - the cold, the dark and the fear."

Heavily loaded planes needed all the power of their engines and every inch of runway to get off the ground.

He described the planes moving to position for takeoff:

As the planes approached the end of the runway, each pilot stopped, turned his ship 45 degrees and locked his brakes while he ran each engine to full power.

The angle parking was necessary in order to avoid blasting the ship behind with prop wash. When our turn came for takeoff, the pilots wheeled the plane around on the end of the runway, taking care to squeeze every last foot available for our run."

Brakes were locked while the engines roared at full throttle.

At this point, 5,000 hp were straining at the leash and the ship vibrated like a wild thing. You can't imagine noise like this - 5,000 hp with no mufflers."

He said, "The planes took off at one-minute intervals. I was on the flight deck, sitting on the floor in crash position with my back against the armor plate of the cockpit bulkhead. All other crew members were similarly braced near their stations."

Mission takeoff

Cambon added, "From my position, I could see the long orange flame shooting from No. 2 engine exhaust and watch the landing gear strut bouncing up and down and gradually lengthening as the wing lifted the load.

The end of the runway was marked by a row of red lights, and hopefully the pilot had us off before we reached them. As soon as we were in the air and the landing gear was retracted, the pilot eased back the throttles, raised the flaps and made other adjustments in the engine settings."

The crew checked the equipment to be certain everything was working, and moved into the forming portion of the mission.

Leading the formation was a plane striped in bright, gaudy, contrasting colors selected for their high visibility. He held to a fixed course around the radio beacon until all three squadrons were complete and the 466th Bomb Group was ready to join the wing. Then he headed for home. Some guys called this forming ship the Judas Goat, because he left before the slaughter."

Building strength

He said, "As I recall, we circled 45 minutes to an hour, around and around, gradually building our strength as each plane arrived. Other wings were assembling in adjacent areas, and at a pre-set time each one left and slipped into its assigned place in a gigantic bomber stream heading for Germany."

World War II correspondent Ernie Pyle, whose columns Cambon had read before the war, once visited the bomb group. In a syndicated column about the war that was saved by Cambon, he described the aerial portion of the invasion of Normandy. In it he mentioned first the high-speed dive bombers before turning to the bombers like the one in which Cambon served:

"And then the heavies. They came from directly behind us. At first they were the merest dots in the sky. You could see clots of them against the far heavens, too tiny to count individually. They came on with a terrible slowness.

"They came in flights of 12, three flights to a group and in groups stretched out across the sky. They came in 'families' of about 70 planes each. Maybe these gigantic waves were two miles apart, maybe they were 10 miles, I don't know. But I do know they came in a constant procession and I thought it would never end."

Pyle wrote of the bombing, "They began ahead of us as the crackle of popcorn and almost instantly swelled into a monstrous fury of noise that seemed surely to destroy all the world ahead of us."

His account added, "By now everything was an indescribable cauldron of sounds. Individual noises did not exist. The thundering of the motors in the sky and the roar of bombs ahead filled all the space for noise on earth. Our own heavy artillery was crashing all around us, yet we could hardly hear it."

High altitude

Cambon said the temperature at final altitude could range to 50 degrees below zero, but there was heating from electrical connections:

"The pants had the cord that plugged into the plane's power supply, the jacket and boots connected to the pants, and the gloves snapped onto terminals at the ends of the jacket sleeves."

Cambon said the engineer would walk to the catwalk in the bomb bay and prepare the bombs by pulling a pin from each fuse. "This permitted the small propellers on the fuses to spin off and arm the bomb after it dropped from the plane."

Referring to Sgt. Walter Frederick, nose turret gunner, he said, "Freddy and I had crawled through the tunnel under the cockpit past the retracted nose wheel to our positions in the nose."

He closed and latched the access door behind the gunner.

I plugged into the intercom and oxygen, hooked up my sling seat and laid out my charts, calculator and plotting instruments on the navigator's table in front of me. As navigator, I also had the job of recording all battle details for our debriefing later. This included reports of planes downed, chutes observed and numbers and types of enemy fighters."

Formation tightened

He said, "The pilots tightened the formation, the gunners were intent on the sky and I was absorbed in plotting our position ... I was beginning to lose my radar due to jamming by the Germans."

He said, "Deep in enemy territory and not far from the target was the I.P. - initial point - where the bomber stream altered course and began their bomb run. The bomb bay doors were opened and we donned our flak vests and helmets."

He remembers that ahead and above their plane, a waist gunner was dutifully dumping chaff - aluminized paper that confused enemy radar - when the box slipped out of his hands.

It must have been nearly full, because when it crashed into our nose turret it completely shattered the Plexiglas. Our nose turret gunner was startled but uninjured by the shards of plastic and shower of chaff. He was exposed to a frigid blast of air - 250 mph at minus 40 to 50 degrees - and even with his protective clothing couldn't survive long."

Cambon related the emergency in mater-of-fact language:

He asked to unhook his intercom and oxygen and I advised the pilot that I was about to unlatch and open the turret doors. The pilot asked him to hang on a few more minutes since we were approaching the target and he had to release the bombs.

Blast of air

As soon as he performed this chore, I opened the doors. The blast of air threw the back against my table and my mission log and charts whipped back and plastered themselves against the maze of wires and controls under the pilot's instrument panel on the flight deck.

I helped Freddy struggle out of the nose turret and plugged his oxygen into the bombardier's outlet. Together we strained to close the doors, but even the two of us with all our might could not prevail against the wind to get the latch to lock. In desperation, I took a spare heater cord and wired the handles as tight as possible while Freddy braced himself against the doors. The wind still whistled through the opening, freezing the exposed areas of my face. Freddy crawled back to the flight deck with a walk-around oxygen bottle, and I recovered my charts and equipment. Luckily, they had not jammed any of the flight controls."

He noted, "The flak on the bomb run was heavy. The sky was full of the three-dimensional polka dot pattern of bursting shells - clover leafs for the 88s and stovepipes for the 105s. We could feel the concussion from the near bursts, and the flak sounded like a hammer when it ripped through the fuselage.

Planes are hit around us, some trailing smoke from an engine and losing altitude, some streaming flame from a fuel tank before exploding in a ball of fire. Our gunners watched stricken craft fall and counted the chutes.

I noted all their observations in my log."

Normandy combat

Pyle, on the ground, wrote of similar aerial combat over Normandy:

Chutes came out of some of the planes. Out of some came no chutes at all.

One of white silk caught on the tail of a plane. Men with binoculars could see the flier fighting to get loose until flames swept over him, and then a tiny black dot fell through space, all alone."

Of the continuous stream of bombers, he wrote:

Nothing deviated them by the slightest. They stalked on, slowly and with a dreadful pall of sound, as though they were seeing only some thing at a great distance and nothing existed in between.

God, how you admired those men up there and sickened for the ones who fell."

# Consolidated B-24 Liberator

ıe **Consolidated B-24 Liberator** is an American heavy bomber, designed by Consolidated Aircraft San Diego, California. It was known within the company as the Model 32, and some initial oduction aircraft were laid down as export models designated as various LB-30s, in the Land Bomber sign category.

its inception, the B-24 was a modern design featuring a highly efficient shoulder-mounted, high pect ratio Davis wing. The wing gave the Liberator a high cruise speed, long range and the ability to rry a heavy bomb load. Early RAF Liberators were the first aircraft to cross the Atlantic Ocean as a atter of routine. In comparison with its contemporaries, the B-24 was relatively difficult to fly and ıd poor low-speed performance; it also had a lower ceiling and was less robust than the Boeing B-17 ying Fortress. While aircrews tended to prefer the B-17, General Staff favored the B-24 and procured in huge numbers for a wide variety of roles.[3][4] At approximately 18,500 units – including 8,685 anufactured by Ford Motor Company – it holds records as the world's most produced bomber, heavy mber, multi-engine aircraft, and American military aircraft in history.

ıe B-24 was used extensively in World War II. It served in every branch of the American armed forces well as several Allied air forces and navies. It saw use in every theater of operations. Along with the 17, the B-24 was the mainstay of the US strategic bombing campaign in the Western European eater. Due to its range, it proved useful in bombing operations in the Pacific, including the bombing Japan. Long-range anti-submarine Liberators played an instrumental role in closing the Mid-lantic gap in the Battle of the Atlantic. The C-87 transport derivative served as a longer range, higher pacity counterpart to the Douglas C-47 Skytrain.

the end of World War II, the technological breakthroughs of the Boeing B-29 Superfortress and her modern types had surpassed the bombers that served from the start of the war. The B-24 was pidly phased out of U.S. service, although the PB4Y-2 Privateer maritime patrol derivative carried on service with the U.S. Navy in the Korean War.

## Contents



B-24 Liberator

United States Army Air Forces Consolidated B-24D Liberator over Maxwell Field, Alabama.

| | |
|---|---|
| **Role** | Heavy bomber<br>Anti-submarine warfare<br>Maritime patrol aircraft |
| **Manufacturer** | Consolidated Aircraft |
| **First flight** | 29 December 1939 |
| **Introduction** | 1941 |
| **Retired** | 1968 (Indian Air Force)[1] |
| **Primary users** | United States Army Air Forces |

| | |
|---|---|
| | United States Navy |
| | Royal Air Force |
| | Royal Australian Air Force |
| **Produced** | 1940–1945 |
| **Number built** | 18,188[2] |
| **Variants** | Consolidated PB4Y-2 Privateer |
| | Consolidated C-87 Liberator Express |
| | Consolidated Liberator I |
| **Developed into** | Consolidated R2Y |
| | Consolidated B-32 Dominato |

Citations
Bibliography

xternal links

## esign and development

### itial specifications


XB-24 in flight

ıe Liberator originated from a United States Army Air Corps (USAAC) request in 1938 for Consolidated to oduce the B-17 under license. After company executives including President Reuben Fleet visited the Boeing ctory in Seattle, Washington, Consolidated decided instead to submit a more modern design of its own.[5]

ıe new Model 32 combined designer David R. Davis's wing, a high-efficiency airfoil design created by ıorthodox means,[6] with the twin tail design from the Consolidated Model 31 flying boat, together on a new selage. This new fuselage was intentionally designed around twin bomb bays, each one being the same size and pacity of the B-17 bomb bays.

January 1939, the USAAC, under Specification C-212, formally invited Consolidated[7] to submit a design study for a bomber with longer rang gher speed and greater ceiling than the B-17. The specification was written such that the Model 32 would automatically be the winning design. T ogram was run under the umbrella group, "Project A", an Air Corps requirement for an intercontinental bomber that had been conceived in t id-1930s. Although the B-24 did not meet Project A goals, it was a step in that direction. Project A led to the development of the Boeing B-29 a nsolidated's own B-32 and B-36.[8]

### esign

ıe B-24 had a shoulder mounted high aspect ratio Davis wing. This wing was highly efficient allowing a relatively high airspeed and long rang ımpared to the B-17 it had a 6-foot larger wingspan, but a lower wing area. This gave the B-24 a 35% higher wing loading. The relatively thick wi ld the promise of increased tankage while delivering increased lift and speed, but became unpleasant to fly when committed to heavier loadings perienced at high altitude and in bad weather. The Davis wing was also more susceptible to ice formation than contemporary designs, causi stortions of the aerofoil section and resulting in the loss of lift (unpleasant experiences drawing such comments as 'The Davis wing won't ho ough ice to chill your drink'.)[9] The wing was also more susceptible to damage than the B-17's wing, making the aircraft less able to absorb batt ımage. The wing carried four supercharged radial engines mounted in cowlings borrowed from the PBY Catalina (except being oval in cross-sectio th oil coolers mounted on each side of the engine), turning 3-bladed variable-pitch propellers.

ıe tail plane featured two large oval vertical stabilizers mounted at the ends of a rectangular horizontal stabilizer. As early as 1942, it was recogniz at the Liberator's handling and stability could be improved by the use of a single vertical fin. The single fin was tested by Ford on the single B-24 d an experimental XB-24K, and was found to improve handling. All Liberators were produced with twin oval fins, with the exception of eig

aced in 1945, but were cancelled due to the end of the war. The single fin did appear in production on the PB4Y Privateer derivative.[10][11][12]

ıe B-24's spacious, slab-sided fuselage (which earned the aircraft the nickname "Flying Boxcar")[13] was built around two central bomb bays th uld accommodate up to 8,000 pounds (3,600 kg) of ordnance in each compartment (but rarely did, as this decreased range and altitude). Tl rward and aft bomb bay compartments were further split longitudinally with a centerline ventral catwalk just nine inches (23 cm) wide,[14] whi so functioned as the fuselage's structural keel beam. An unusual four-panel set of all-metal, tambour-panel "roller-type" bomb bay doors, whi erated very much like the movable enclosure of a rolltop desk, retracted into the fuselage, creating a minimum of aerodynamic drag to keep spe gh over the target area, and also allowed the bomb bays to be opened while on the ground; the low ground clearance prevented the use of norm mb bay doors.[15] The occasional need for crewmen to move around inside from fore to aft within the B-24's fuselage during a mission over tl rrow catwalk was a drawback shared with other designs.

ıe Liberator carried a crew of up to 10. The pilot and co-pilot sat alongside each other in a well glazed cockpit. The navigator and bombardier, wl uld also double as a nose or *wiggly ear* gunner (guns mounted in the sides of the aircraft nose), sat in the nose, fronted on the pre-B-24H mod th a well-framed "greenhouse" nose with some two dozen glazed panels in total, with two flexible ball-mounts built into it for forward defensi epower using .30 caliber (7.62 mm) Browning M1919 machine guns. Later versions were fitted with a powered twin- .50 caliber (12.7 mm) M owning machine gun nose turret. The radio/radar operator sat behind the pilots, facing sideways and sometimes doubled as a waist gunner. Tl per gun turret, when fitted, was located just behind the cockpit, in front of the wing, and was operated by the flight engineer, who sat adjacent e radio operator behind the pilots. In the tail, up to four crew could be located in the waist, operating waist guns, a retractable lower ball turret a ail gun turret matching the nose turret. The waist gun hatches were provided with doors, with the ball turret required to be retractable for grou arance when preparing to land, as well as for greater aerodynamic efficiency. The tail gunner's powered twin-gun turret was located at the end e tail, behind the tailplane.

ıe B-24 featured a tricycle undercarriage, the first American bomber to do so,[9] with the main gear extending out of the wing on long, single-ol ut legs. It used differential braking and differential thrust for ground steering, which made taxiing difficult.[16]

## rmament

ıe defensive armament of the B-24 varied from transport variants, which were usually unarmed, to bombers armed with up to 10 .50 calib 2.7 mm) M2 Browning machine guns located in turrets and waist gun positions.

ırly model Liberators were fitted with a top mounted turret, a tail turret and single machine guns located in the waist and in the glazed nose. The D initially featured upper, belly and tail turrets, plus swiveling single guns in the waist and on either side of the nose. The belly turret was riscopically sighted Bendix model. The turret proved unsatisfactory and was soon replaced by a tunnel gun, which was itself omitted. Later odels were fitted with the retractable Sperry ball turret.

ıe B-24H saw the replacement of the glazed 'green house' nose with a nose turret, which reduced the B-24s vulnerability to head on attacks. Tl mb sight was located below the turret.

ng-range naval patrol versions often carried a light defensive armament. Being on long-distance patrols, they generally flew outside the range emy fighters. Also, the necessity of range increased the importance of weight and aerodynamic efficiency. Thus naval patrol often omitted top, bel d nose turrets. Some were fitted with belly pack containing fixed, forward facing cannon

ommand, and British Overseas Airways Corporation (BOAC). Both BOAC and the RAF used converted Liberator s as unarmed long-range cargo carriers. These aircraft flew between the United Kingdom and Egypt (with an tensive detour around Spain over the Atlantic), and they were used in the evacuation of Java in the East Indies. OAC also flew trans-Atlantic services and other various long-range air transportation routes.

vo RAF bomber squadrons with Liberators were deployed to the Middle East in early 1942. While RAF Bomber ommand did not use B-24s as strategic bombers over mainland North West Europe, No. 223 Squadron RAF, ne of Bomber Command's 100 (Bomber Support) Group squadrons, used 20 Liberator VIs to carry electronic mming equipment to counter German radar.

October 1944, two RAF Liberator squadrons (357 and 358) were deployed to Jessore India in support of itish SAS, American OSS and French SIS underground operations throughout SE Asia. The aircraft were ripped of most armaments to allow for fuel for up to 26-hour return flights such as Jessore to Singapore.[23]

berators were also used as anti-submarine patrol aircraft by RAF Coastal Command. RAF Liberators were also erated as bombers from India by SEAC and would have been a part of Tiger Force if the war had continued. any of the surviving Liberators originated in this Command.

LB-30A (YB-24) in RAF service

Consolidated Liberator Mk I of 120 Squadron Coastal Command RAF, used from December 1941

## ntisubmarine and maritime patrols

ne Liberators made a significant contribution to Allied victory in the Battle of the Atlantic against German U-oats. Aircraft had the ability to undertake surprise air attacks against surfaced submarines. Liberators assigned the RAF's Coastal Command in 1941, offensively to patrol against submarines in the eastern Atlantic Ocean, oduced immediate results. The introduction of Very Long Range (VLR) Liberators vastly increased the reach of e UK's maritime reconnaissance force, closing the Mid Atlantic Gap where a lack of air cover had allowed U-oats to operate without risk of aerial attack.[24][25]

or 12 months, No. 120 Squadron RAF of Coastal Command with its handful of worn and modified early model berators supplied the only air cover for convoys in the Atlantic Gap, the Liberator being the only airplane with fficient range. The VLR Liberators sacrificed some armor and often gun turrets to save weight, while carrying tra aviation gasoline in their bomb-bay tanks. Liberators were equipped with ASV Mk. II radar, which together th the Leigh light, gave them the ability to hunt U-boats by day and by night. Before the Leigh light not a single emy submarine had been sunk in over 5 months, but in combination with radar it was so overwhelmingly fective that many German submarine crews chose to surface during the day so that they could at least see the rcraft attacking them and have a chance to fire their anti-aircraft weaponry in defense.[26][27]

ese Liberators operated from both sides of the Atlantic with the Royal Canadian Air Force and the Army Air rces Antisubmarine Command and later, the US Navy conducting patrols along all three American coasts and e Canal Zone. The RAF and later American patrols ranged from the east, based in Northern Ireland, Scotland, eland and beginning in mid-1943 from the Azores. This role was dangerous, especially after many U-boats were armed with extra anti-aircraft gur me adopting the policy of staying on the surface to fight, rather than submerging and risking being sunk by aerial weapons such as rockets, gunfi

AAF Antisubmarine Command (AAFAC) modifications at the Consolidated-Vultee Plant, Fort Worth, Texas in the foreground in the olive drab and white paint scheme. To the rear of this front line are partly assembled C-87 "Liberator Express Transports".

ermuda, the Bahamas, Puerto Rico, Cuba, Panama, Trinidad, Ascension Island and from wherever else they could fly r out over the Atlantic.

ıe rather sudden and decisive turning of the Battle of the Atlantic in favor of the Allies in May 1943 was the result of any factors. The gradual arrival of many more VLR and in October, PB4Y navalized Liberators for anti-submarine issions over the Mid-Atlantic gap ("black pit") and the Bay of Biscay was an important contribution to the Allies' eater success. Liberators were credited in full or in part with sinking 93 U-boats.[28] The B-24 was vital for missions of radius less than 1,000 mi (1,600 km), in both the Atlantic and Pacific theaters where U.S. Navy PB4Y-1s and USAAF 1-24s took a heavy toll of enemy submarines and surface combatants and shipping.

Anti-Submarine Weapons: Leigh light used for spotting U-boats on the surface at night, fitted to a Liberator aircraft of Royal Air Force Coastal Command, 26 February 1944

## SAAF

### troduction to service, 1941–1942

ıe United States Army Air Forces (USAAF) took delivery of its first B-24As in mid-1941. Over the next three years, B- squadrons deployed to all theaters of the war: African, European, China-Burma-India, the Anti-submarine Campaign, e Southwest Pacific Theater and the Pacific Theater. In the Pacific, to simplify logistics and to take advantage of its nger range, the B-24 (and its twin, the U.S. Navy PB4Y) was the chosen standard heavy bomber. By mid-1943, the orter-range B-17 was phased out. The Liberators which had served early in the war in the Pacific continued the efforts om the Philippines, Australia, Espiritu Santo, Guadalcanal, Hawaii, and Midway Island. The Liberator peak overseas ployment was 45.5 bomb groups in June 1944. Additionally, the Liberator equipped a number of independent uadrons in a variety of special combat roles. The cargo versions, C-87 and C-109 tanker, further increased its overseas esence, especially in Asia in support of the XX Bomber Command air offensive against Japan.

vital was the need for long-range operations, that at first USAAF used the type as transports. The sole B-24 in Hawaii as destroyed by the Japanese attack on Pearl Harbor on 7 December 1941. It had been sent to the Central Pacific for a ry long-range reconnaissance mission that was preempted by the Japanese attack.

ıe first USAAF Liberators to carry out combat missions were 12 repossessed LB-30s deployed to Java with the 11th ombardment Squadron (7th Bombardment Group) that flew their first combat mission in mid-January. Two were shot by Japanese fighters, but both managed to land safely. One was written off due to battle damage and the other crash- nded on a beach.

3-based Liberators entered combat service in 1942 when on 6 June, four LB-30s from Hawaii staging through Midway land attempted an attack on Wake Island, but were unable to find it.[29] The B-24 came to dominate the heavy ombardment role in the Pacific because compared to the B-17, the B-24 was faster, had longer range, and could carry a n more bombs.[30]

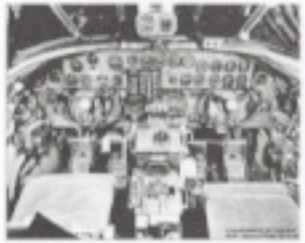
B-24s bomb the Ploesti oil fields in August 1943

### rategic bombing, 1942–1945

A B-24M of the 451st BG

The bomb bay of a surviving B-24J Liberator in 2016

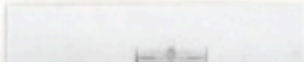
Maintanance mechanics at Laredo Army Air Field, Texas, give a Consolidated B-24 Liberator a complete overhaul before flight, 8 February 1944.



B-24 cockpit

B-24 Bomber flying over China during WW2





wikidot.com Share on Join this site Edit History Tags Sou

# AviationKnowledge

Create account or Sign in

Search

Welcome page
Become a member
Members
Site Manager

## Knowledge base

Aviation topics
Investigation
Lessons/Tips/SOPs
(838 active topics)
(17 articles published)

## Tools

How to edit pages
Methods & Statistics

## Forum

Forum
(6 active forums)

# Whiteout

## Whiteout

Whiteout is a weather condition that causes disorientation and low visibility by snow, overcast cloud and fog. Basically, the whiteout in aviation occurs when the pilots cannot see the visible horizon because of the terrain covered with snow in the white sky. Also, blowing snow may lead to the whiteout due to reduced visibility.

dd9.jpg

## Types of Whiteout

There are several types of whiteout:

- Blizzard: the snow blown by the wind may make it difficult for the pilots to see far distances.
- Snowfall: the amount of snow falling from the sky may reduce the visibility and confuse pilots to clarify the objects.
- Clear air: in the clear air when it is not snowing, the overcast cloud may make it difficult to identify the horizon. Visual illusion may happen when the background is covered with snow, so that the snow surface cannot be seen easily from flying altitudes.

## Prevention

The incident/accident due to whiteout situation can be prevented by pilot awareness. Pilots experience and confidence in controlling aircraft under whiteout circumstances can be achieved by appropriate training and risk assessments. The pilots should determine the potential of whiteout whereas the crews should inform the pilots of any sudden changes in weather (clouds or snow).