Unusual photo depicting three Douglas R4D transports in formation. After 31 years of service the type is still used by the US Navy, Marine Corps and Army, but is slowly and gracefully being retired.
(Photo: National Archives, 80-G-390602)

Douglas R4D variants (USN's DC-3/C-47s)

by Arthur Pearcy Jnr, ARAeS

'The R4D has again proven herself a valuable friend and the "Grand Old Lady" of Antarctic Operations. She is economical and durable, and her versatility in short range, open field ski operations remains undisputed. It is not difficult to foresee the day, perhaps in the near future, when an equally versatile, longer-range, greater-payload, higher-flying turboprop replaces the old warrior, but until that day comes, treat her kindly, keep her warm, push the right JATO buttons, and navigate clear of all obstacles.'

Commander M. D. Greenwell, USN
Commanding Officer VX-6 Sq, Deep Freeze 62.

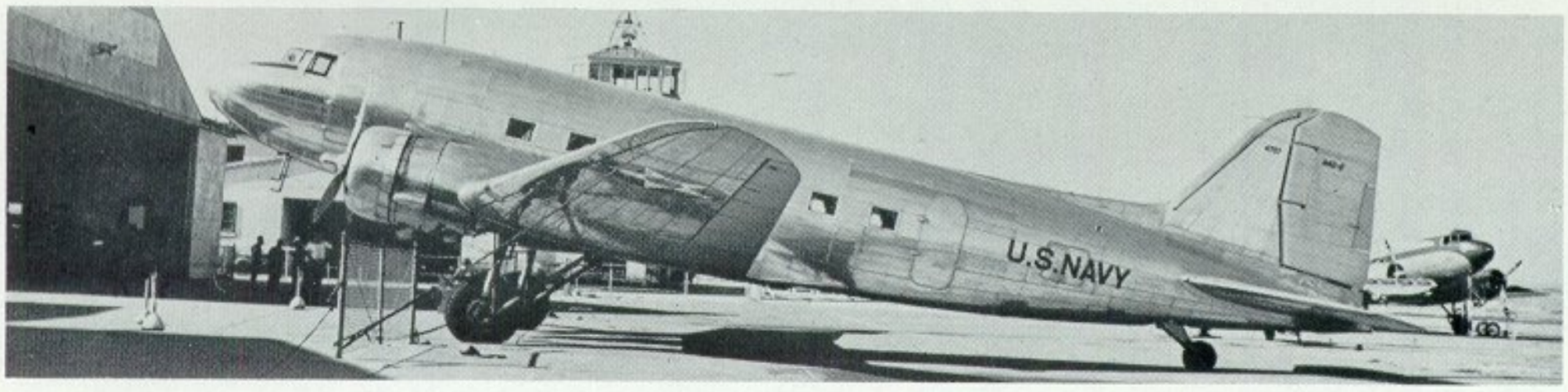
US Navy Douglas Commercials

As early as 1934, the United States Navy purchased its first example of the Douglas Commercial Two. Four more DC-2s followed and all bore the US Navy model designation of R2D-1 and the assigned serial numbers of 9620 to 9622 and 9993 to 9994[1] (*see Table 1 for complete list of BuNos.*). The last two were allocated to the US Marine Corps at Quantico, Virginia, where—subsequently and among other applications—Marines gained airborne experience as paratroopers.

The R2D-1s provided performance advances and advantages so far removed from the ageing Curtiss R4C Condor two-motor biplane and

[1] As William T. Larkins points out in his book *US Navy Aircraft, 1921–1941* (Aviation History Publications, Concord, Calif, published 1961), Navy serial numbers have been traditionally the responsibility of the Bureau of Aeronautics and began in 1917 as 'Building Numbers'. Progressively they became 'Designating Numbers' until 1937, when they were termed 'Assigned Serial Numbers'. Following World War Two they have become popularly known as 'Bureau Numbers' (first as 'BuAer Nos.', then 'BuNos.').—Editor.

Douglas DC-2-125 US Navy model R2D-1 (BuNo. 9622, c/n. 1327) which was delivered to San Diego NAS on December 21 1934 and was destroyed by fire at this Naval Air Station on January 31 1941.
(Photo: Douglas Aircraft ref. 7219)



The first R4D-2 (BuNo. 4707, c/n. 4097) a DC-3-388 originally intended for Eastern Air Lines, went to Anacostia NAS and is seen at San Francisco during November 1941. It was struck-off-charge at Jacksonville NAS on May 31 1946.
(Photo: William T. Larkins)

Photo taken during late 1941 when seven horizontal red and six white stripes were added to US Navy and Marine Corps aircraft. They were removed in June 1942. Depicted is one of the two R4D-2s used by the US Navy in drab finish and carrying the new tail markings.
(Photo: National Archives, 80-G-5169)

Father J. P. Mannia, first chaplain to join the Paramarines and jump with his men, is shown leaving the open door of an R4D-1 (BuNo. 3140, c/n. 4280) which served with the Marine Corps at Cherry Point. It was struck-off-charge on August 31 1946.
(Photo: Imperial War Museum, NY8513)

Early model Douglas R4D seen over the rugged terrain of the Aleutians. Navigation aids were few and far between and the weather was not always as clear as the photo tends to illustrate. Snow remained on the high peaks throughout the year.
(Photo: National Archives, 80-G-377474)

Ford RR Tri-Motor monoplanes they were replacing that, henceforth, the Navy was to maintain a strong preference for the successive Douglas Commercials in military form for many years to come. In fact, at the time of writing, there is no sign of the 'Grand Old Lady' being pensioned-off.

Of the five R2D-1s, the first three served from Naval Air Stations Anacostia (Washington, DC), Pensacola (Florida) and San Diego (California). The remaining two R2D-1s—for the USMC at Quantico—were assigned to Utility Squadron Six (VJ-6M; from July 1937 redesignated VMJ-1) of Aircraft One, US Fleet Marine Force. All five R2D-1s were powered by 710 h.p. Wright R-1820 'Cyclone 9' single-row, 9-cylinder radials.

The R4Ds

A year after World War Two had broken out, the Navy was permitted to order more Douglas Commercials. On September 16 1940, the USN signed an initial contract for 30 R4D-1s (another 103 were purchased eventually), powered by 1,200 h.p. Pratt & Whitney R-1830 'Twin Wasp' two-row, 14-cylinder radials.

The R4D-1 was basically a commercial-standard DC-3 and the first to be delivered was not available until February 1942. This R4D-1 was built at the Douglas Long Beach plant as 4204 (constructor's number or c/n) and was assigned the Bureau Number 3131.

The only R4Ds with R2D-type Wright R-1820s the Navy ever possessed were two R4D-2s. These became available a year before the first R4D-1. NAS Anacostia was allocated one (c/n 4097; BuNo. 4707; impressed ex-Eastern Air Lines), while NAS Pensacola received the other one (c/n 4098; BuNo. 4708; also ex-Eastern). These two R4D-2s had a USAAF equivalent in the C-49D variant. Later on they were given additional suffix letters; first as R4D-2F, and then R4D-2Z, to indicate their VIP flagship interiors.

The Naval Air Transport Service (NATS) was established on December 12 1941, only five days after Pearl Harbor, under the Chief of Naval Operations to provide rapid air delivery of critical equipment and spare parts and special personnel to naval facilities and Fleet forces all over the world.

Douglas transports intended for the NATS organization were diverted from the production lines at Santa Monica and Long Beach, being designated as Douglas R4D with the appropriate 'dash number' to indicate their production block. They had certain minor aircrew and interior equipment changes. Items such as engines, propellers, instruments and other loose items of necessity to naval aircraft were supplied from US Navy stores.

These particular R4Ds were procured by the US Army Air Forces' Materiel Command for the US Navy with funds from the Navy appropriation. Various models of this period were used as personnel transports, air medical evacuation, cargo transports, and so on.

Prior to World War Two, procurement of USN aircraft from the Douglas Aircraft Company had been handled entirely by Navy procurement agencies. With the advent of World War Two, however, it was considered to be more expedient to place one large military contract, and subsequently to allocate blocks of transports for naval use—in accordance with their logistic requirements.

The basic naval R4D designation for the DC-3 aircraft configuration was simply commercial DC-3 transports fitted with an oversize loading door and were comparable to the USAAF C-53 transport. The exterior paint finish was in olive drab camouflage, spare parts were interchangeable with the USAAF C-47 Skytrain, as were the various accessory components.

Most of the 600-odd R4D transports procured for the US Navy during World War Two came

from USAAF contracts. Consequently, the seven main variants in the R4D series each had a USAAF equivalent and carried the same popular names. The R4D-1 was a cargo transport counterpart of the C-47 Skytrain.

Ex-airline R4Ds used as personnel transports were the R4D-3 and the R4D-4 which, respectively, were equivalent to the USAAF's C-53 and C-53C Skytrooper.

Later major US Navy cargo transport variants were the R4D-5 (with a 24-Volt electric system, matching the C-47A Skytrain), the R4D-6 (equivalent to the C-47B) and the R4D-7, identical to the TC-47B navigation trainer.

R4Ds in the Pacific War

With the Japanese increasing their activities in the Aleutian Islands waters, the Douglas transports extended the routes to bases on Kiska, Attu, Adak and Aguttu. Where once the frozen land of the North was serviced only by the occasional 'bush pilot' operators, now the territory had become a busy aerial supply route. US Navy versions of the DC-3—the first of the R4Ds operating with NATS squadrons—were used to service Fleet units building up in the area.

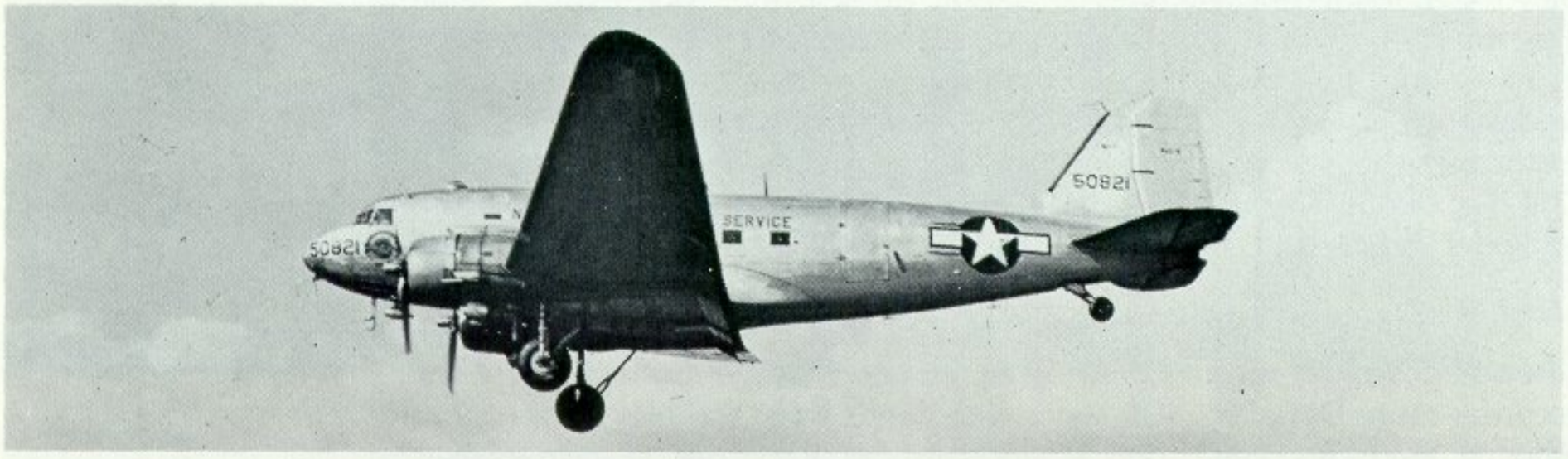
The Alaska-Aleutians flying operations provided a challenge that put the aircraft to supreme tests. The extreme sub-zero weather conditions and the salt-water atmosphere played strange tricks with engines, tyres, airframe and metal skin, hydraulic lines, brakes and other mechanical features. Oil became as thick as molasses, rubber fittings crystallized, grease froze in wheel bearings and the windshields iced-up and frosted over.

Crews learned how to winterize the rugged transports for adaption to the sometimes 40 to 50 degrees below zero temperatures. The Douglas transports came through with flying colours.

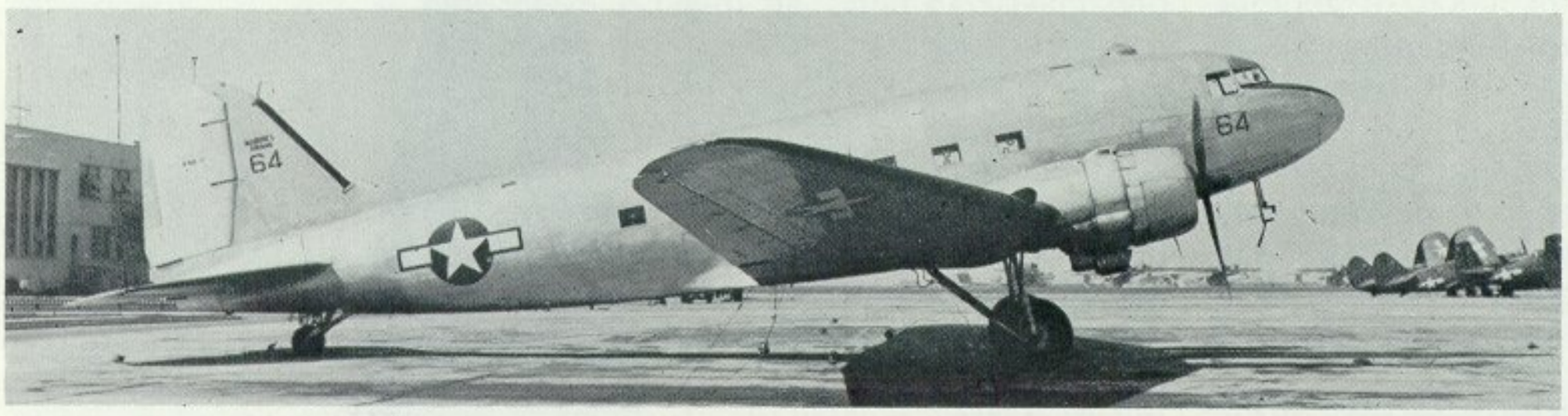
The US Navy, in an official 'well-done' statement after the Japanese gave up in the Aleutians said: 'Retaking the Aleutians would have been postponed for months if air transport had not been able to fly in men and cargo quickly and in great quantities.'

It was a similar story at Guadalcanal in the Solomons. Following the battle of Savo Island, 14 specially-equipped Marine Corps R4Ds were flown from San Diego to New Caledonia and under Southern Combat Air Transport (SCAT), they maintained a daily service into Henderson Field on Guadalcanal.

SCAT was one of the tools of the Commander Air South Pacific (COMAIRSOPAC). Their unarmed R4Ds ran regular schedules between New Zealand, Noumea, Efate, Espiritu Santo, and Guadalcanal. As the US forces built or captured

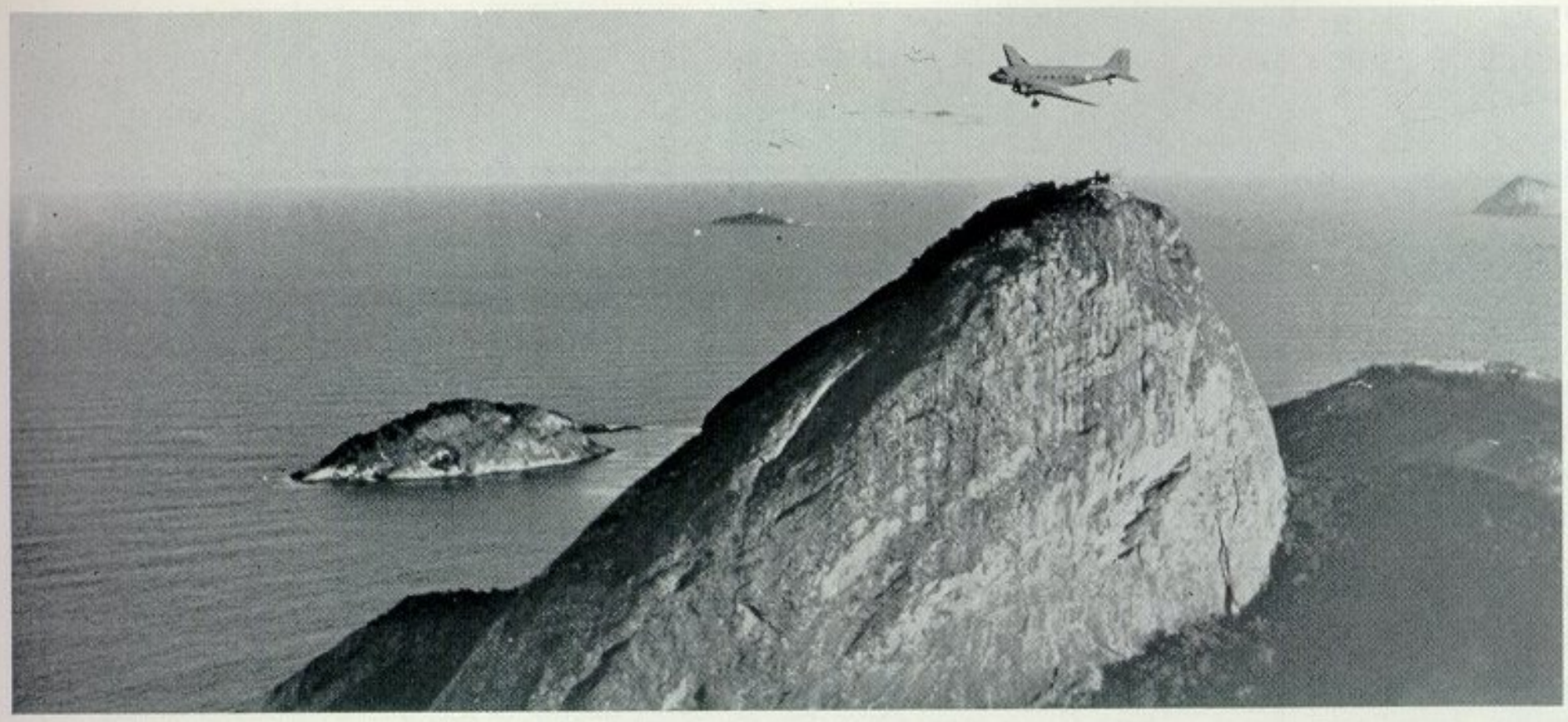


An R4D-6 (BuNo. 50821) of the Naval Air Transport Service (NATS) taken at Oakland NAS on April 1 1946. Note that the BuNo. is repeated on the nose. Also see photo of same aircraft after conversion to model R4D-8 on page 69.
(Photo: William T. Larkins)



An R4D-3 Skytrooper (BuNo. 06996) of the Marine Corps seen at Alameda NAS, California on March 6 1946. This model was similar to the commercial DC-3 and the USAAF C-53.
(Photo: William T. Larkins)

Only 17 Douglas R4D-4 transports were built. Photo depicts BuNo. 07003 of the Naval Air Transport Service (NATS) at Oakland NAS on April 9 1946. Two-star rear admiral insignia is carried aft of the cockpit. Model was similar to the DC-3.
(Photo: William T. Larkins)



The Douglas R4D transport operated in all theatres of operation during World War Two. Photo shows an R4D over the Sugar Loaf Mountain, Rio de Janiero. (Photo: National Archives, 80-G-390598)

airfields up the Solomons chain of islands, the line was extended to them. Most flights combined passengers and cargo. When operations required, SCAT transports made all sorts of special deliveries of material and personnel.

These R4D transports and others which were added to the SCAT command flew a total of almost 1,000 sorties—aggregating 1,000,000 miles—into Guadalcanal; and, on each flight out, they carried wounded back to base hospitals.

When Japanese dive-bombers blew up a ship which had rushed in gasoline two days after the enemy had destroyed fuel dumps on the island, it meant there was no aviation spirit for the Army Air Forces' fighters based on Henderson Field. They called on the R4Ds who flew in 600 US gallons of fuel on each sortie. This was kept up for a week before surface ships arrived.

The SCAT R4Ds had two extra fuel tanks in the cabin, just aft of the cockpit bulkhead. Oval in section and about six foot long they were, supposedly, bullet-proof and rested on shaped athwartships timbers. A six-inch wide plank nailed to the timbers between the tanks was a catwalk to the cockpit. Aft of the tanks the sides were lined with bucket seats which could be folded to give more space for cargo. Even when the seats were occupied, some cargo was lashed to the floor between them.

For the retaliatory invasion of Guadalcanal in August 1942, all land-based aircraft of the USAAF, USN, US Marine Corps and Royal New Zealand Air Force—comprising about 291 aircraft—was commanded by a naval COMAIR-SOPAC and a great airfield was constructed on the island of Espiritu Santo in the New Hebrides group. A partly-built airfield was taken over by the US forces on Guadalcanal and, as Henderson Field, played a major part in the ensuing campaign.

Throughout the Pacific campaign, SCAT operated its regular schedule; which eventually extended as far as Australia. A typical SCAT unit was contained in the 3rd Marine Amphibious Corps which had an Air Delivery Unit as part of what came to be known as the 'Cactus Air Force'. These unarmed R4D-1s and early C-47s—for, like the crews, the transport models were mixed—carried a variety of loads which ranged from flying in supplies to New Zealand troops at Bougainville to dropping supplies and troops by parachute.

During 1943–44, Carrier Aircraft Service Unit 19 (CASU 19) was located at Banika Island in the Russell Islands and at Segi Point and Munda—both on New Georgia Island. Segi Point was a true backwater of the war, being a 2,200-foot strip of crushed coral with the jungle at one end and the open sea at the other. On one side was a bluff about 200 ft high and the other was bordered by a lagoon. The task of the personnel of CASU 19 was to service any Navy aircraft which flew in. Spare parts required were flown in by SCAT Douglas R4D transports.

The Marine Corps combat air transport group with its Douglas transports carried cargoes which included virtually every conceivable item used by Allied units in the Pacific Theatre of Operations. When the lift included urgent medical evacuees, jeeps, oxygen bottles, fighter aircraft belly-tanks, flame throwers, fresh meat and food, medical supplies, ammunition, mail and troops, the gross load limit was often exceeded by a ton. On occasions, the overload exceeded the gross weight limit applicable to sister transports flying with various US airlines by as much as two tons.

A Marine Corps R4D was first to land at Green Island, north-west of the Solomons and second in at Emirau Island in the Bismark Archipelago. They participated in the Munda push, transporting parapacks to be dropped to the Marines below. One of the R4Ds came overseas on August 1 1943, following a long flight from Camp Kearny, California, to Tontoula, New Caledonia, and was immediately put into service. On a flight between Guadalcanal and Espiritu Santos, New Hebrides, this transport was lost for three hours in a storm. The aircraft battery cell had blown out, leaving the instruments useless. With a cargo of stretcher

patients aboard, the navigator was as bewildered as the crew but, with amazing good fortune, they completed the flight. By July 1945, this R4D was flying on its fourth complete change of engines, and its tenth complete tyre change.

Another R4D was taken straight from the Long Beach production line as SCAT was in the midst of rapid expansion. Following its commission to active duty on March 10 1943, this transport became a familiar sight as Marine Corps pilots set it down in the Carolines, Admiralties, Solomons, Russells, Hollandia, New Guinea, Auckland and Sydney. Like the other R4Ds in the group, it lifted an average gross weight of 28,500 pounds on each flight. In the beginning of the Munda campaign, when Seabees (Navy Construction Battalions) were grading out the shell- and bomb-pitted landing strip, this Douglas transport flew in from Guadalcanal with nearly two tons of badly needed supplies. Three weeks after Smar was invaded and the Seabees were grading the mud and coral landing strip, it flew in with a precious cargo of jettisonable belly tanks for USMC Chance Vought F4U Corsair fighters.

Three Japanese 'Betty' (Mitsubishi G4M) Navy bombers caught an R4D of the group on the ground at Manus Island, Bismark Archipelago. One of the bombs exploded within 30 yards of the parked transport, tearing a hole in the nose, ahead of the pilot's feet. In less than 18 months this R4D had logged a total of 1,900 hours and flown 285,000 air miles.

In a typical four weeks operations report, this SCAT group logged 2,400 combat flying hours in 948 flights, carried 1,320,848 pounds of freight, 543,629 lb. of mail, 7,034 passengers and 198 medical evacuees. The grand total of passenger, mail, cargo and medical evacuees, over the typical four-week period, equals 610,051 ton-miles. Twenty per cent. of this amazing figure involved instrument flying conditions and was accomplished by a hundred or so transport pilots averaging 24 years of age and 60 hours of transport flying within combat areas per month.

The pilots were drawn from the Navy, Marines and Army Air Force. They did a phenominal job, especially so as the majority was just out of flight school and woefully lacking in general flight experience. Most of the aircraft had external art expressions—nudes of course!—for adornment. And names to go with them; 'Vulgar Virgin', for example, was just one which survived many of the battles in the Pacific.

SCAT performed essential services in a highly commendable way. Without the R4Ds and their willing young aircrews, most certainly the Solomons campaign would have taken longer, cost more lives or, even perhaps, have failed.

When the Solomon campaign ended in 1944 the remnants of SCAT and a Marine Air Wing were located on Bougainville and were transferred to the Southwest Pacific Command. By the end of the Pacific War, one SCAT group embraced a distance of 3,360 statute miles, employing 14 landing strips and operational stations and engaging 550 pilots and 825 crew members.

Operation High Jump

The US Navy's *Operation High Jump,* with 13 ships and 4,000 men was the largest Antarctic expedition ever organised. Led by Admirals Richard E. Byrd and Richard H. Cruzen, it photographed most of the continent's coastline during 1946–47.

A total of 26 aircraft accompanied the US Navy expedition. This air armada was made up of six Douglas R4D-5 transports, six Martin PBM Mariner flying-boats, two Curtiss SOC Seagulls, two Grumman J2F-6 Ducks, two Convair OY-1 Sentinels, a Noorduyn JA-1 Norseman on skis, and a selection of seven Sikorsky helicopters—one HNS-1, two HOS-1s and four HO3S-1s—which operated from platforms on the forward deck of the ice-breakers. Most of the aircraft were painted bright orange for visibility reasons. The six Douglas R4D transports were equipped with JATO bottles for take-off from the aircraft carrier USS *Philippine Sea* (CVA-47) and were taken on board at Norfolk, Virginia during the last few days of December 1946.

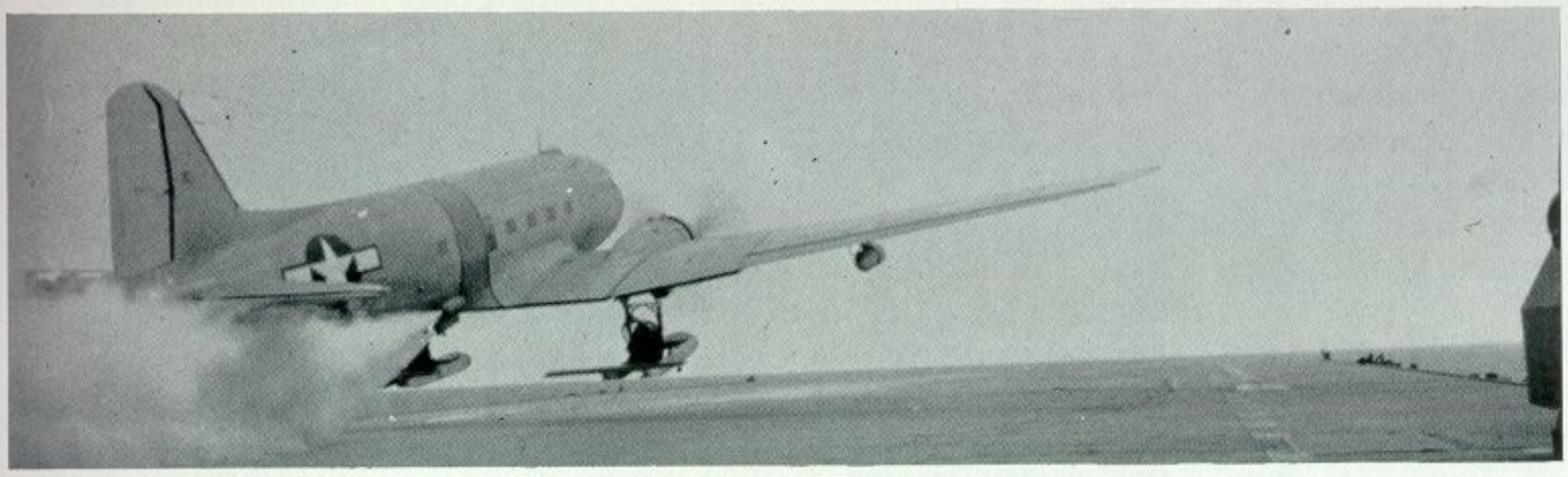
In preparing for the operation the US Navy, after examining the aircraft available, decided to use the six ski-equipped Douglas R4Ds to conduct exploratory flights from the base at Little America IV. Because it was assumed—incorrectly, as later events were to show—that the distance from New Zealand to Antarctica exceeded the transports range, they would be launched from the deck of the aircraft carrier at the edge of the pack ice. This could be done with the aid of JATO—jet assisted take-off—then a comparatively new device.

A carrier take-off in any aircraft was a new experience for most *High Jump* pilots as not more than two had previous carrier experience. Pilots and crews were nominated for the expedition by Commander Air Pacific (COMAIRPAC), Commander Air Atlantic (COMAIRLANT), and Commander of the Marine Corps Aviation. The units executive officer was Major R. Weir, USMC.

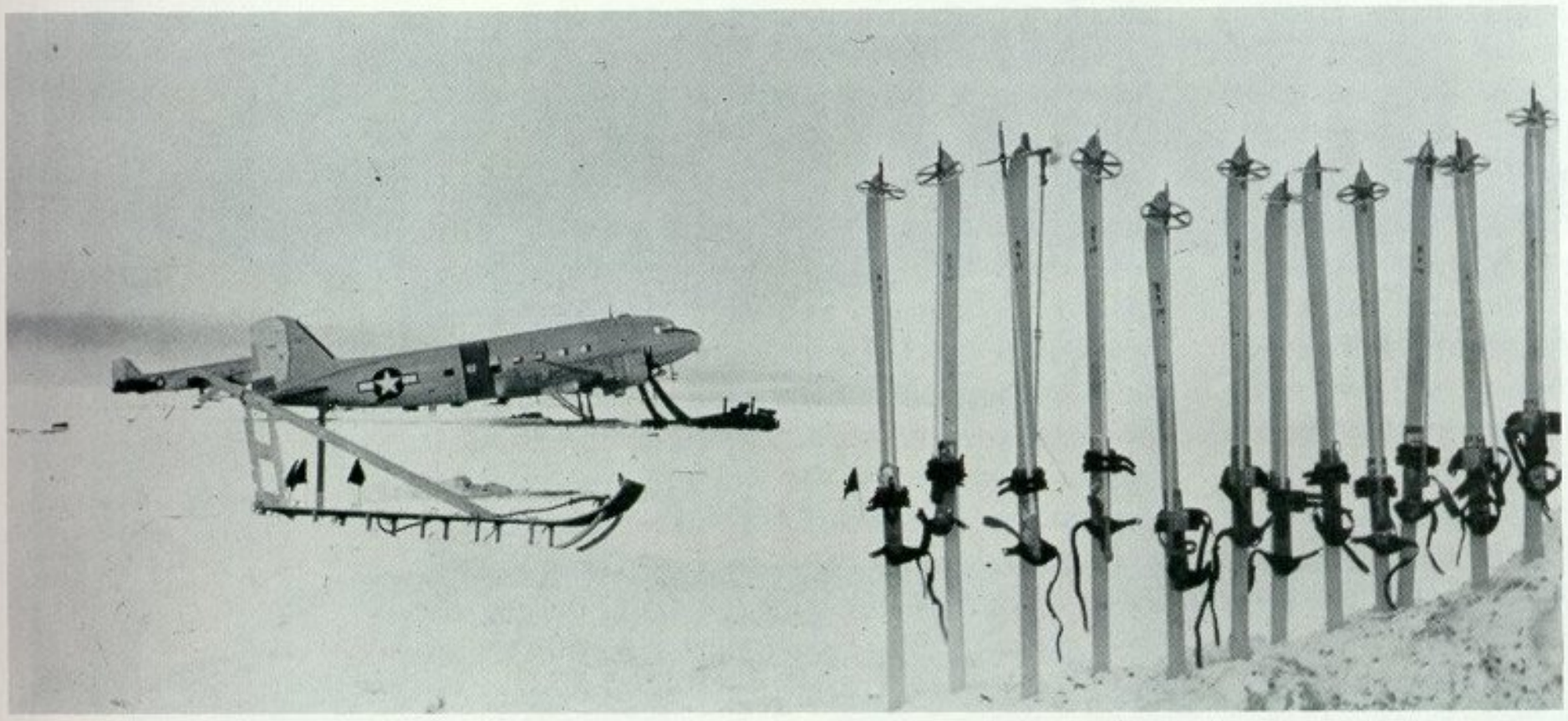
Because of space limitations the Douglas transports were placed at the edge of number two elevator. On take-off they were angled slightly to starboard. Fifteen foot bamboo poles were set up on either side of the flight deck to guide the pilots on take-off. Some pilots cut their JATO in immediately the aircraft began its take-off run, others waited until the R4D was a third way down the deck. Both systems worked equally well. Each aircraft used four JATO bottles for the take-off.

Load weights had been carefully computed. Each transport carried five passengers and the varied gear was equalised to give each R4D the

The USS Philippine Sea *(CVA-47) with six Douglas R4D transports on the deck passes through the Panama Canal en route to the Antarctic. Date was January 8 1947. The aircraft were taken on board at Norfolk, Virginia.* (Photo: National Archives, 80-G-615041)



One of the six R4D-5 transports used in Operation Highjump *seen taking off from the flight deck of the USS* Philippine Sea *(CVA-47) for the flight to Little America on January 29 1947.* (Photo: National Archives, 80-G-609327)



Framed by the implements of the Antarctic, two R4D-5s from Operation Highjump *are seen parked at the Little America base. Note that the wheels have been removed completely.* (Photo: National Archives, 80-G-614082)

Douglas R4D-5 (BuNo. 17097) of the Naval Air Reserve with unusual nose markings. Tail code indicates 'F' for Oakland, 'R' for transport type. Photo taken at Oakland NAS, California on October 23 1947. (Photo: William T. Larkins)

same load. One aircraft carried a special set of camera equipment so that a good appraisal of the ice pack could be made. Other aircraft carried spare skis and fittings. Crew members were limited to 15 lb. of baggage. The landing skis were developed by the Federal Aircraft works in Minneapolis and trials were carried out on the snow fields of Montana. The ski gear consisted of an aluminium toboggan shaped runner for each wheel. A hole in the underside of the ski permitted the wheels to extend through to run on the deck. With a full load on board there was a two-inch clearance between the deck and the skis on take-off. Although the skis retracted with the undercarriage the front curved portion covered part of the engines air scoop, but the decreased capacity did not interfere in cold weather operations. The entire ski installation increased the weight of the R4D by 1,105 lb. Installation for the JATO and modifications for the skis were made by the Naval Air Station at Quonset Point, Rhode Island, later to be the home base of Air Development Squadron Six (VX-6) who were to continue using the Douglas R4D transport in Antarctica for many seasons.

The base at Little America IV was 660 miles away as the USS *Philippine Sea* turned into wind and the first Douglas R4D—BuNo. 12415 radio call-sign 'Victor 1'—roared down the deck, streaming smoke from its JATO bottles. This was another first for the ubiquitous Douglas DC-3. The first carrier take-off with an R4D was made about three hours before midnight—12:14 GMT—on January 29 1947, dusk in these latitudes with Cdr William M. (Trigger) Hawkes, USN, as pilot and with Rear Admiral Richard E. Byrd on board. It circled over the carrier for seventeen minutes until the second R4D BuNo. 17101 got airborne. In company, the two pioneers made the 600-mile flight to Little America IV, where they were sighted six hours and ten minutes later. Hawkes had no difficulty in locating the marked landing area and touched down at 05:16 local time—18:16 GMT—on January 30. Rear Admiral H. Cruzen, USN, Task Force Commander, was on hand to greet Admiral Byrd. When the two veterans of the United States Antarctic Service Expedition of 1939–41 met, Admiral Byrd reportedly said, 'Well, we're home again.'

Once the *Philippine Sea* learned of the safe arrival of the two R4D transports, the other four were launched—BuNo. 17197 at 18:33 GMT, BuNo. 17238 at 18:44 GMT, BuNo. 17237 at 19:07 GMT and BuNo. 39092 at 19:18 GMT with radio call-signs 'Victor 3' to 'Victor 6'—and made their way to Little America IV. The ski-wheel combination had accomplished its purpose, but three inches of wheel protruding through the skis was found to cause excessive drag when taxiing on snow. The wheels were therefore removed from all six aircraft and on two of them, the slots in the skis covered by an improvised plate. This innovation, however, proved to have no significant effect on the aircraft performance.

Operations over the Antarctic continent began on February 4 and were terminated on February 21. During this brief period, 39 flights were conducted for a total of 260 hours in the air. It was found that a gross weight of 33,000 lb. could be lifted from unprepared snow. At first JATO was used, but as the temperatures dropped and the snow hardened, unassisted take-offs were made successfully with the same weight. Although the aircraft could take off from unprepared snow, it was found that dragging the strip greatly facilitated the process. Landings, however, were made preferance under open field conditions to cut down the length of slide out.

The principal mission of the six US Navy 'Gooney Birds' was to explore and photograph the interior. In all, 28 photographic flights produced 21,000 negatives covering the periphery of the Ross Sea and parts of Marie Byrd Land. An exploratory flight on February 15 in R4D-5 BuNo. 12415 with Admiral Byrd on board, crossed the South Pole and flew 60 miles beyond along the 0° meridian. The flags of the countries belonging to the newly established United Nations were ceremoniously dropped as the aircraft passed over the Pole. On four occasions, airborne magnetometers were tested by towing them aloft, and the results were determined to be useful for scientific investigation.

When flying was terminated for the season, the six Douglas R4Ds had to be left at the Little America base. They could not be landed aboard the carrier, and no other ship of the Task Force was large enough to accommodate them as cargo. They were faced into wind and their skis lowered several feet into the snow, to anchor them firmly. Oil was drained, classified instruments removed, and fabric control surfaces stored inside the fuselages. These aircraft were seen the following season, during the Second Antarctic Development Project—unofficially named 'Windmill'—when the icebreakers *Edisto* and *Burton Island* visited the Bay of Whales from January 29 to February 3 1948. Snow was cleared from one of the R4Ds and its engines started, but no attempt was made to fly them. In 1955, another icebreaker, *Atka,* was sent to Antarctica to reconnoitre base sites for the forthcoming International Geophysical Year —1957–58. On January 14 the ship vainly searched for the Bay of Whales. A gigantic calving in the Ross Ice Shelf had removed the Bay and, along with it, about two-thirds of the base of Little America IV, including the airstrip and the six Douglas R4Ds left on it, starting these pioneer 'Gooney Birds' on a drifting path to a watery grave.

Although the six ski-rigged R4Ds *Operation High Jump* left behind never flew again, they

Key to colour side views

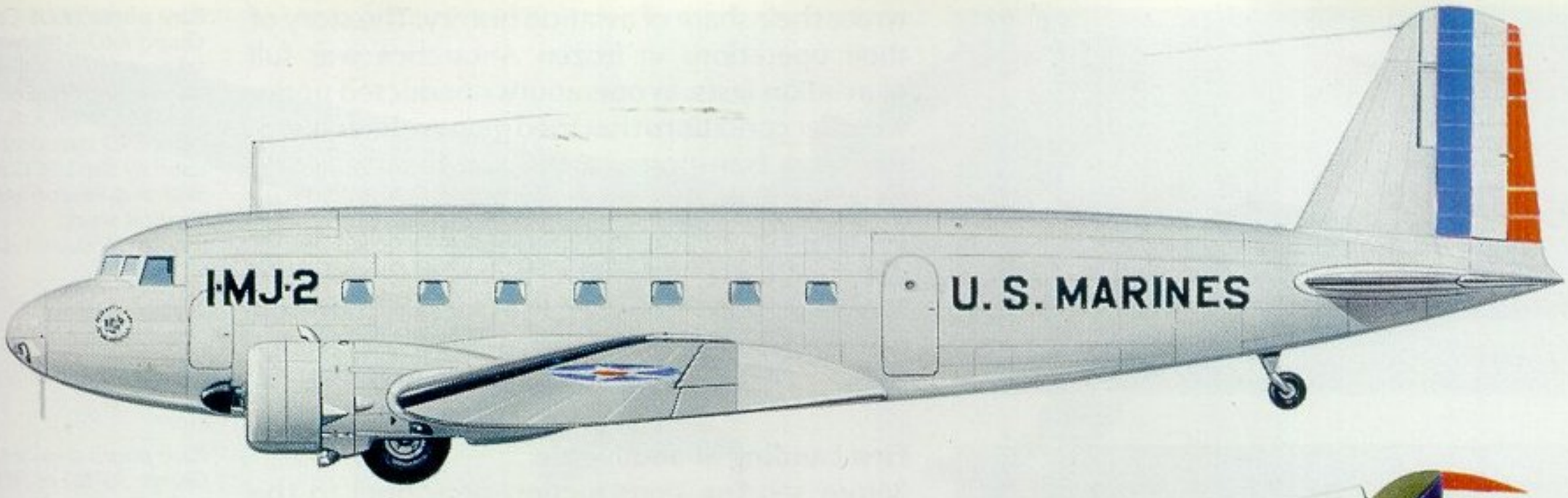
1 *Douglas R2D-1, BuNo. 9994 of the US Marine Corps, one of two operated by VMJ-1 and based at Quantico. A model DC-2-142, c/n. 1405, acquired September 28 1935 and struck-off-charge August 5 1943.*

2 *One of the two R4D-2 transports BuNo. 4708, c/n. 4098, seen in the markings introduced in late 1941, and removed in June 1942. It was struck-off-charge with the US Navy at the end of 1946.*

3 *R4D-5, BuNo. 17243, one of eight operated by the US Coast Guard between May 1943 and July 1944 for transporting personnel, Search & Rescue, and logistics. Four were still in service in 1965, but were gradually phased out.*

4 *R4D-5, BuNo. 17197, was one of the six Douglas transports which flew to Little America in Antarctica from the USS* Philippine Sea *(CVA-47). The main wheels were later removed while the aircraft were in Antarctica with* Operation High Jump.

5 *One of six R4D-6 transports of the Japanese Maritime Self Defense Force (JMSDF) based at Kanoya naval air base. The aircraft depicted is ex-US Navy BuNo. 50745 and belongs to No. 205 Transport Squadron.*



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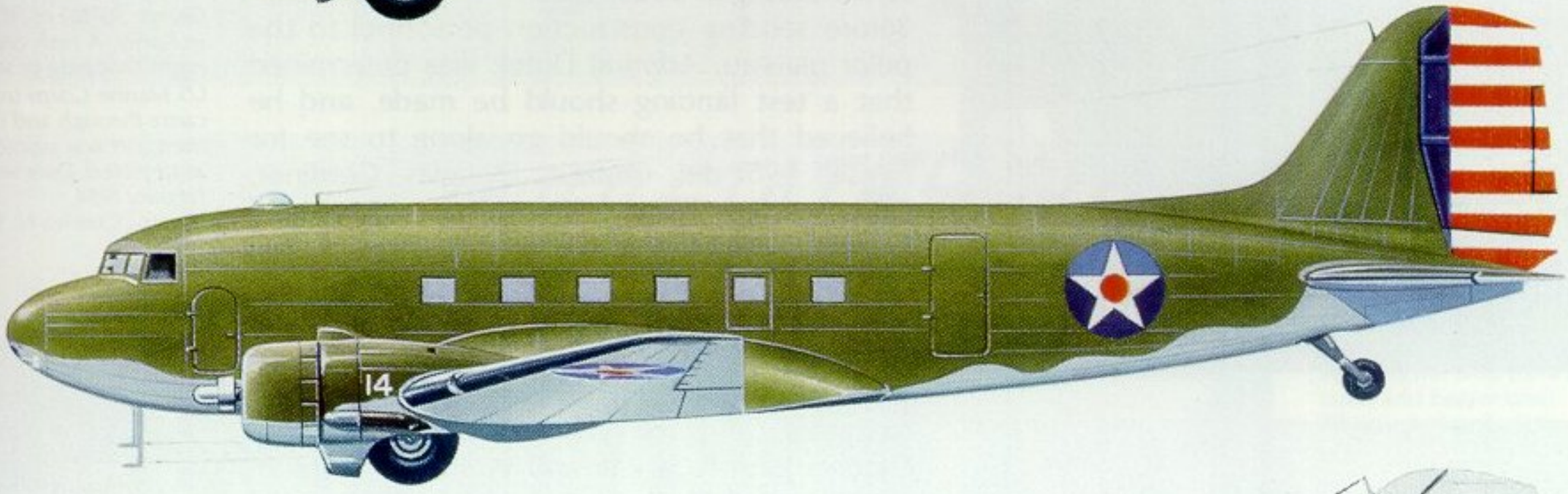

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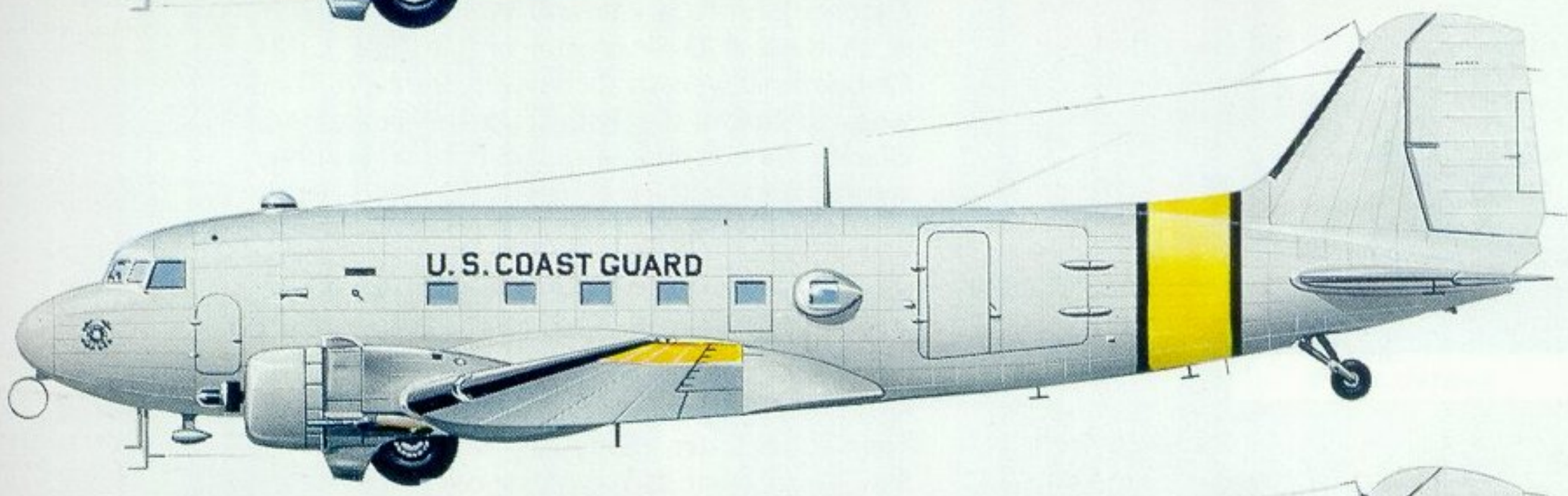

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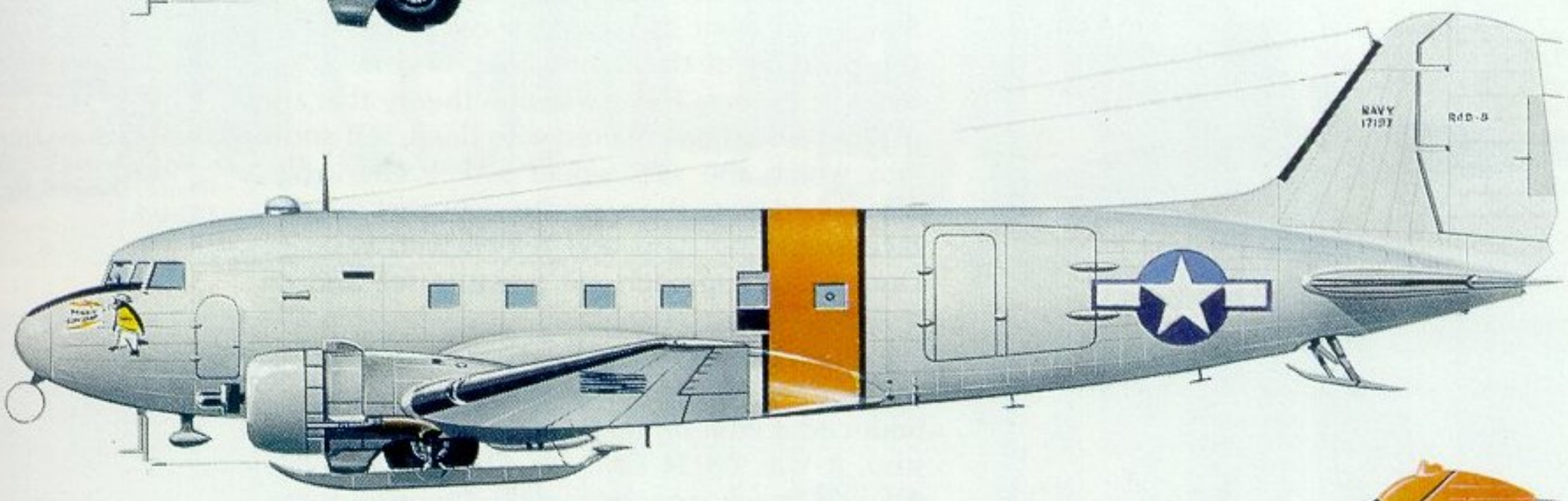

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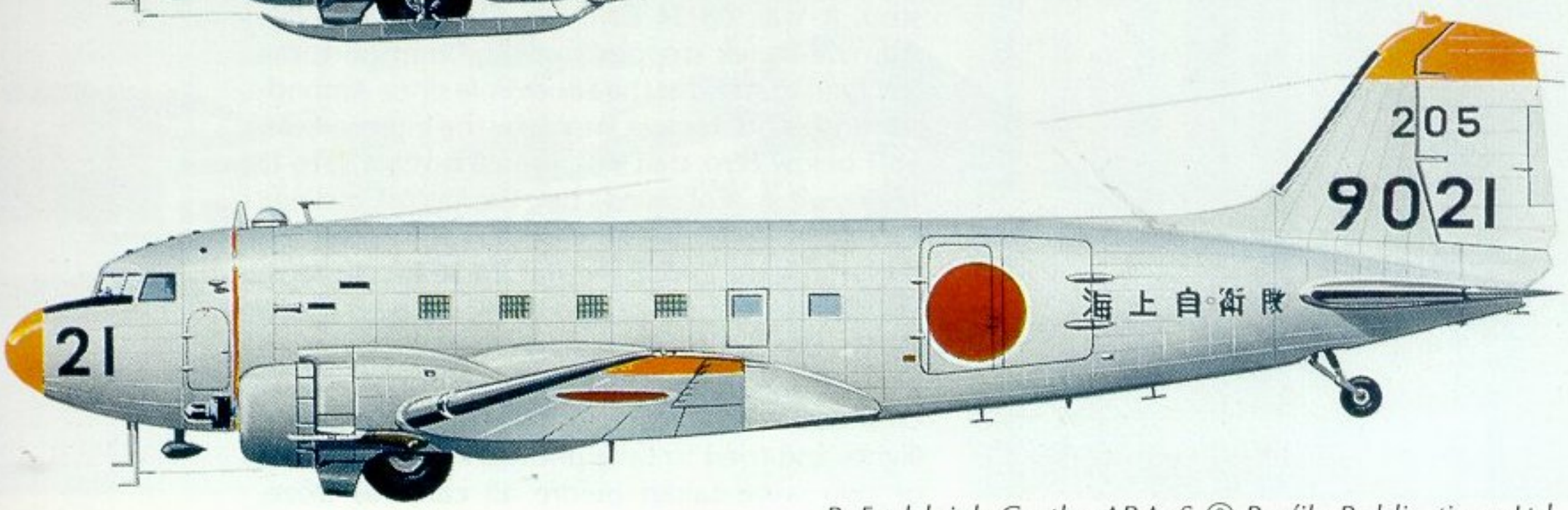

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wrote their share of aviation history. The story of their operations in frozen Antarctica was full of aviation firsts. In operations conducted under weather conditions that tried men and machines, the snow transports carried out their mapping missions with the minimum of difficulty. They had paved the way for the Douglas R4Ds to be operated by *Operation Deep Freeze* throughout the years until 1968 when the Douglas transport was at last retired by VX-6 from Antarctica skies.

Rare photo of US Coast Guard R4D-5 (BuNo. 12446) taken at the USCG Air Station, San Francisco, on October 30 1949. A total of eight R4D transports was used by the USCG for Search & Rescue and logistic support work.
(Photo: William T. Larkins)

First Landing at South Pole

Before sending construction personnel to the polar plateau, Admiral Dufek was determined that a test landing should be made, and he believed that he should go along to see for himself. So did Captain Douglas Cordiner, Commanding Officer of VX-6, whose men would be risking their lives in the aircraft. For pilot they chose Lieutenant Commander Conrad S. 'Gus' Shinn—co-pilot was 'Trigger' Hawkes, by now a captain and the US Navy's most experienced Antarctic flyer. Lieutenant John R. Swadener was navigator, and the crew consisted of Petty Officers John P. Strider and William Gumbie Jr. A US Navy R5D Skymaster and a USAF C-124 Globemaster were to accompany the flight. They were to follow the R4D-5 up the Beardmore Glacier, then fly ahead to the Pole, where they would help with the navigation and circle overhead to take photos of the historic event. They were also prepared to drop survival gear if required.

Rare photo depicting R4D-8 (BuNo. 50782) of HEDRON-1 in Korea. A rush order for night dropping of supplies to US Marine Corps troops etc came through and this transport was painted black as depicted. Date was January 1954.
(Photo: Charles N. Trask)

Douglas R4D-8 (BuNo. 12437) is depicted at Oakland NAS during October 1954. On March 17 1959 this transport was delivered to FASRON-200 at Blackbushe to replace BuNo. 17108. It stayed with the unit and was transferred to West Malling.
(Photo: William T. Larkins)

Spectacular photo showing the Douglas YC-47F (51-3817) while under evaluation by the USAF, using JATO bottles for take-off. The transport with BuNo. 138820 and now a C-117D is still serving with the US Navy at China Lake NAS, California.
(Photo: Douglas Aircraft, 012-6-1)

Sera Sera', flew up the Beardmore Glacier, the R5D developed engine trouble and turned back. The Globemaster, piloted by Major C. J. Ellen, flew on to what its navigator calculated to be the position of the South Pole. No one knew what to expect. There was one theory that the plateau would be covered with deep, soft snow into which the skis would sink irretrievably; others had quite the opposite view, that the surface would be hard and ruffled with sastrugi. During the approach, oil pressure fell and oil streamed from the engines.

Shinn made three low-level passes to examine the surface, then made a landing. The R4D bounced a little on the sastrugi and came to a stop. It was 08:34 GMT on October 31 1956. Admiral Dufek stepped from the transport, the first man to stand at the South Pole since Amundsen and Scott. He was struck by the intense cold, 58°F below zero, that was intensified by a 10 to 15 knot wind. Followed by Captain Cordiner, carrying the American flag, he quickly settled the argument about the nature of the surface. He had to use an ice axe to plant the banner. While the pilots alternated in the cockpit to keep the engines turning over the rest of the crew set up a radar reflector to guide future flights and tried to take photographs. Only one or two were taken before all cameras froze,

Whilst on acceptance test flight at Dallas, Texas, this R4D-5 (BuNo. 17239) developed ski trouble. It landed safely, and was later delivered to Operation Deep Freeze and VX-6 Squadron. Temco Aircraft at Dallas modified the aircraft, installed the skis, extra fuel tanks and heater units.
(Photo: Arthur L. Schoeni)

With the famous R4D-5 'Que Sera Sera' as a back-ground after the first aircraft landing at the South Pole, the group includes, (l to r) John Strider, AD2; Rear Admiral George Dufek, Commander of Task Force 43; L/Cdr Conrad Shinn; Lt John Swadener; Wm. Cumbie Jr, AT2; Capt Wm. Hawkes; and Capt Douglas Cordiner.
(Photo: US Navy)

Taken during January 1957 the photograph shows three R4D-5 transports of VX-6 Squadron at McMurdo. The aircraft are (l to r) R4D-5 (BuNo. 17246) 'Korara II'; the famous R4D-5 (BuNo. 12418) 'Que Sera Sera'; and R4D-5 (BuNo. 17163) 'Takahe'.
(Photo: Douglas Aircraft, SM230473)


OPERATION DEEP FREEZE
TASK FORCE 43
DEPARTMENT OF THE NAVY
U.S. NAVAL SUPPORT FORCE, ANTARCTICA
UNITED STATES NAVY
NAVY
UNITED STATES NAVY
8
QUE SERA SERA
XD
12418

'Que Sera Sera' ('What will be, will be'), a Douglas R4D-5 (BuNo. 12418) of Air Development Squadron Six (VX-6), US Navy, made history by becoming the first aircraft to land at the South Pole on October 31 1956. The pilots were Lieutenant-Commander 'Gus' Shinn, USN, and Captain 'Trigger' Hawkes, USN.

A field team of four New Zealand scientists are seen unloading their supplies from an R4D-8L (BuNo. 17188) of VX-6 Squadron at the camp site on the Nimrod Glacier where they conducted geological surveys. Date was November 30 1960.
(Photo: US Navy)

Douglas R4D-8L (BuNo. 17219) is seen flying above the rugged Antarctic terrain between Byrd Station and McMurdo. The landing gear collapsed while landing in Horlicks Mountains. With the undercarriage temporarily repaired the transport was flown to McMurdo with R4D-5 (BuNo. 17246) as escort.
(Photo: US Navy)

Seen at Detroit, Michigan during April 1956 this R4D-6S (BuNo. 99840) is from VX-1 (Experimental) Squadron. Note the 'thimble' radar nose and tail probe.
(Photo: Bill Balogh)

making this probably the worst recorded event in recent antarctic history.

After only 49 minutes on the ground they all climbed back into the R4D. Shinn revved up the engines, but nothing happened. The skis were frozen fast. Four JATO bottles failed to shake the transport loose, so Shinn quickly fired the remaining 11 in two sets of four and one set of three. To those circling above in the Globemaster, it momentarily looked as if 'Que Sera Sera' had exploded and caught fire as it disappeared in a swirl of flame, smoke and snow. It shortly re-emerged as Shinn fought successfully to get the R4D airborne. Course was set for the Beardmore Glacier with the C-124 as company. When Major Ellen saw the R4D was safely on the ground at Beardmore-Scott Base, he flew on to McMurdo Station to spread the good news. Soon, congratulatory messages were pouring in from all parts of the world. 'Que Sera Sera' had become a marked aircraft, and when its Antarctic days were over, the US Navy retired it to the National Air Museum, in December 1958.

As a result of his chilling experience at the South Pole, Admiral Dufek decided to delay the start of construction there for two weeks, in the hope of warmer weather. His decision was also influenced by the fact, that the R4Ds of VX-6 were heavily committed elsewhere, with two being unserviceable.

Air Development Squadron Six

Two Douglas R4D-8 transports were introduced to Antarctica during *Deep Freeze III*—1957–58. Squadron VX-6 had taken these aircraft on charge during August 1957 and at the completion of the summer operating season they were returned to the US for ski modification and general rework at the Overhaul and Rework Facility at Jacksonville, Florida. Four R4D-8s flew from the US to New Zealand in September 1958, and by October 11 two had arrived at McMurdo, a third arriving on November 9. Only BuNo. 17188 failed to reach Antarctica and, as a result of considerable maintenance problems, it remained in New Zealand. In December the famous 'Que Sera Sera' BuNo. 12418 was prepared for ship transportation to the National Air Museum in Washington, DC. The R4D-6 BuNo. 17274 'Charlene' was decommissioned in January 1959 and converted into a 'wingless taxi' for use in the Williams Field area. At the completion of the summer season operations the four R4D-8s were redeployed to Quonset Point NAS, the home base of VX-6 Squadron.

The first R4D loss occurred on September 5 1959 when the starboard undercarriage folded on BuNo. 17163 during a landing at Hellett Station. In view of the age of the transport it was uneconomical to repair. The aircraft had been sent to Hallett with a doctor and hospital orderly

Douglas R4D-6Q (BuNo. 99828) from FAETULANT—Fleet Air Electronics Unit—Atlantic. Photo was taken at St Louis, Missouri, during 1957.
(Photo: Gene Sommerich)

R4D-8 (BuNo. 12441) seen at Decator, Illinois on January 4 1962. The tail letters—which are very rare—stand for Bureau of Weapons, Fleet Readiness Representative, Central Region. This transport was based at Wright Field Air Force Base.
(Photo: Ralph I. Brown)

aboard for emergency surgery. This was two weeks prior to the opening of the season for Deep Freeze 60 and the personnel from the previous season were still in isolation. The second loss occurred on January 6 1960 when R4D-8 BuNo. 17154 crashed near Byrd Station during a near whiteout.[1]

In May 1961 BuNo. 17246 was retired from active service with the US Navy. It had been used for five seasons in Antarctica. An R4D-5 BuNo. 17239 was accepted by VX-6 on November 20 1961 and was deployed and used in Antarctica. Eight days earlier R4D-8 BuNo. 17219 sheered a pin in the port undercarriage while making an open field landing in the Horlick Mountains. The combination of severe damage and the remote location resulted in a decision to abandon the aircraft. A second accident occurred on February 1 1962 at Byrd Station whilst R4D-8 BuNo. 99853 was attempting a JATO when the bottles failed to ignite properly. The aircraft fell back to the ski-way and made a belly landing. It was repairable but remained at Byrd Station to winter over due to the lateness of the season.

In July 1962 the Department of Defense standardized the aircraft designations throughout the US armed forces. The R4D-5/6 became the C-47H/J and the R4D-8 became the C-117D. When the aircraft was modified for cold weather operations the designation included the prefix 'L'.

When *Deep Freeze 63* summer operations commenced only two of the four R4D aircraft assigned to VX-6 Squadron were serviceable. LC-117D BuNo. 99853 was at Byrd Station in need of repairs; LC-47H BuNo. 17239 had been damaged during a late winter storm. Only LC-117D BuNo. 17188 and LC-47H BuNo. 50777 were in operation. LC-47H BuNo. 50777 had arrived at McMurdo for the first time on October 12 1962. On November 22 1962, LC-117D BuNo. 17188 crashed in the Sentinel Mountains, but the aircraft was damaged beyond repair on that location and was abandoned. Three days later on November 25 1962 LC-47H BuNo. 50777 crashed at Davis Glacier and was a write-off. The LC-117D BuNo. 99853, damaged at Byrd Station the previous season, was prepared for a one-time flight to McMurdo. It was then loaded aboard the USNS *Pvt John R. Towle* and shipped to Lyttelton, New Zealand. It was taken by road to Christchurch and repaired.

Six Douglas transports were used during *Deep Freeze 64*. BuNos. 12407 and 17221 had arrived at McMurdo on October 20 1963. This was their introduction to Deep Freeze operations. On November 30 1963 LC-117D BuNo. 99853 was flown back to McMurdo from Christchurch, repairs completed. In February 1964 LC-47H

[1] A whiteout results when light reflected back and forth between the snow surface and an overcast sky becomes so diffused that no shadows exist and the horizon cannot be seen.—Editor

Douglas R4D-5 (BuNo. 39065) drops paramedics during an exercise. Even VX-6 Squadron in the Antarctic had a pararescue team for Search & Rescue operations. This team included a jumpmaster, hospital corpsman, parachute rigger and a general specialist.
(Photo: US Navy)

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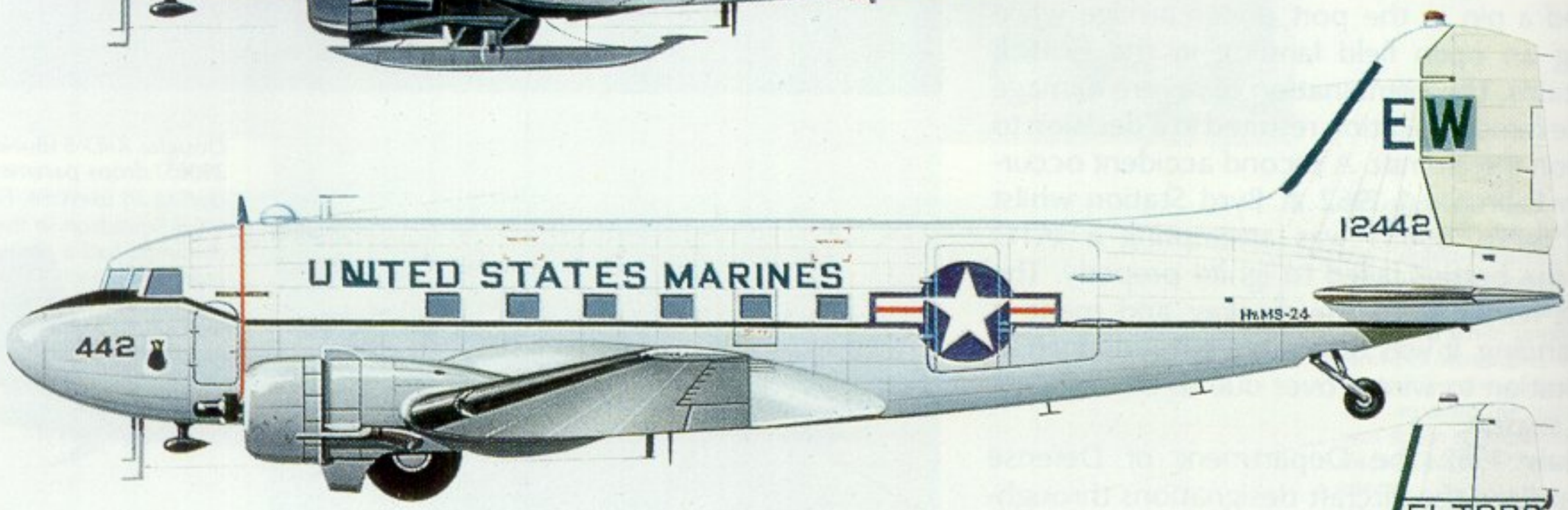

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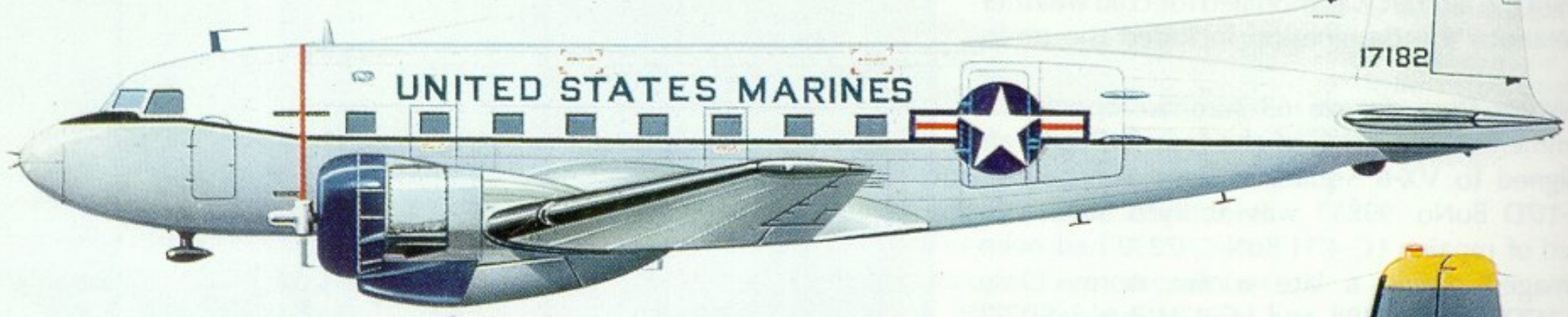

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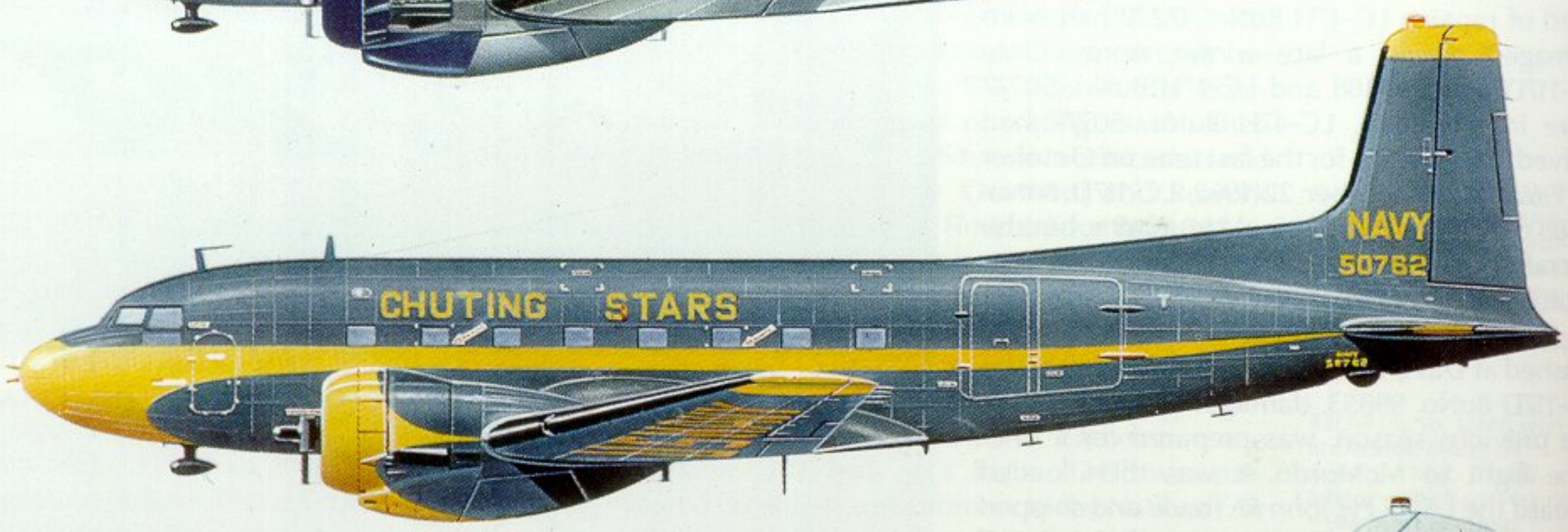

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BuNo. 17239 was shipped to the US for overhaul to be returned for *Deep Freeze 65* operations.

For *Deep Freeze 65* VX-6 gained one new LC-117D when BuNo. 12441 arrived at McMurdo on December 15 1964. Two aircraft were lost during the season. LC-47H BuNo. 12407 was lost at Lillie Glacier on October 22 1964. On January 11 1965 LC-47J BuNo. 50778 crashed at Shackleton Glacier. Both aircraft were struck-off-charge. At the conclusion of the summer season LC-47H BuNo. 17107 and LC-117D BuNo. 99853 were shipped to the US for overhaul. Both returned for *Deep Freeze 66*.

Douglas LC-47J BuNo. 50832 first arrived at at Williams Field on November 6 1965. It crashed on the Ross Ice Shelf at 78° 50′ S 159° 30′ W on February 2 1966. Two other transports were lost during the season. On October 6 1965 LC-47H BuNo. 17239 crashed about two miles from Williams Field. A second LC-47H BuNo. 17107 was lost in the Horlick Mountains on December 5 1965. At the end of the summer operations LC-47H BuNo. 17221 was flown to New Zealand for overhaul. It never returned to Antarctica but was used for internal flights in New Zealand.

With the three crashes during *Deep Freeze 66* it decided that the Douglas LC-47/LC-117 aircraft would be used only on prepared skiways or open field areas where the snow surface was known to be smooth. The reason for this decision was the high incident rate of undercarriage failures which resulted in the crashes.

Air Development Squadron Six (VX-6) gained one LC-117D for *Deep Freeze 67* operations—BuNo. 17092 arrived at Williams Field on November 28 1966 on completion of its deployment in the US. LC-47H BuNo. 17221 was retained in New Zealand and no Douglas transports were lost during this season. On January 10 1967, LC-117D BuNo. 99853 completed its last flight in Antarctica—BuNo. 12441 made its final flight seven days later and both aircraft, plus LC-117D BuNo. 17092 were scheduled for shipment out of Antarctica during *Deep Freeze 68*.

A historic event took place on December 2 1967 when LC-117D BuNo. 17092 made the last flight of the Douglas DC-3 type transport in Antarctica. After it returned to Williams Field from Hallett Station it was prepared for shipment to the US along with BuNo. 12411 and BuNo. 99853. In January 1968 the three aircraft were made ready for loading aboard USNS *Pvt John R. Towle* for their journey home. During loading operations BuNo. 99853 fell back onto the dock and was damaged. It was pushed off on the ice and declared a write-off. However old 99853 did not give up easily, as it was still there a year later, plainly visible from the shore station.

In Antarctica, many a geographic feature bears the name of a brave pilot or hardy crewman, frequently proposed by a scientist or other recipient of their services. The grateful news of some of the beneficiaries extended to the aircraft itself, and on the map of the Antarctica may be found *Dakota Pass, R4D Nunatak,* and *Skytrain Ice Rise* to commemorate, as long as men go to the Antarctica to study its topography, the great contribution that the venerable 'Gooney Bird' made to the first decade of *Operation Deep Freeze*. Obviously, the ambitious programme of the International Geophysical Year could not have been successfully completed without it. Until the Lockheed C-130 Hercules was added to the inventory of VX-6, the Douglas DC-3, or by whatever name one chooses to call it, was the principal means of transport within the confines of Antarctica. During those early years, despite its limitations this Douglas transport gave to the United States programme a flexibility and scope never before achieved in the area. One can only end a review of their accomplishments by awarding them the tested US Navy accolade of 'Well done!'

The Douglas Super DC-3

After the end of World War Two, a number of DC-3 replacements appeared on the market, but were considerably faster, had a larger capacity and were naturally more expensive designs. After rebuilding some surplus C-47s and C-117s as DC-3C and DC-3D, the Douglas Company quickly decided that the only real replacement for the DC-3 would be an improved DC-3 rather than an entirely new design. Consequently, it developed the Super DC-3, which was simply a standard DC-3A airframe with extensive modifications. The fuselage was lengthened by extending the nose section 39 inches forward, and the rear compartment partition 40 inches aft giving an effective cabin increase of 79 inches. Larger vertical and horizontal tail surfaces were fitted, the R-1830 engines were replaced with 1,450 h.p. Pratt & Whitney R-2000s as used in the Douglas DC-4. The engine nacelles were enlarged to completely enclose the wheels when retracted, the tail wheel was made partially retractable and new and slightly smaller outer wing panels were swept back four degrees at the trailing edge to accommodate the rearward shift of the centre of gravity. Seating was increased from the 21–24 of the standard model to 30–38. The first flight of the Super DC-3 took place on June 23 1949. This was a Douglas DC-3S, c/n. 43158, registered N30000.

The original idea was for the customer to turn in a standard DC-3 and, for a price, get a Super DC-3 in exchange. The airlines however did not approve, since the modification price was just about what a pre-war DC-3 cost new. With no customer among the airlines Douglas turned to the USAF. The original Super DC-3 was a Long Beach-built C-47-DL, c/n. 6017, USAF serial 41-18656 which had served the 5th Air Force in Australia during World War Two. During October 1945 as a Douglas DC-3C it was in use by Western Air Lines as N56592.

Key to colour side views

6 *LC-117D, BuNo. 12441,* City of Invercargill, *VX-6 Squadron, was retired from* Deep Freeze *on January 17 1966 and the airframe ex-R4D-6 is basically a C-47B-35-DL with USAAF serial 42-23812, c/n. 9674.*

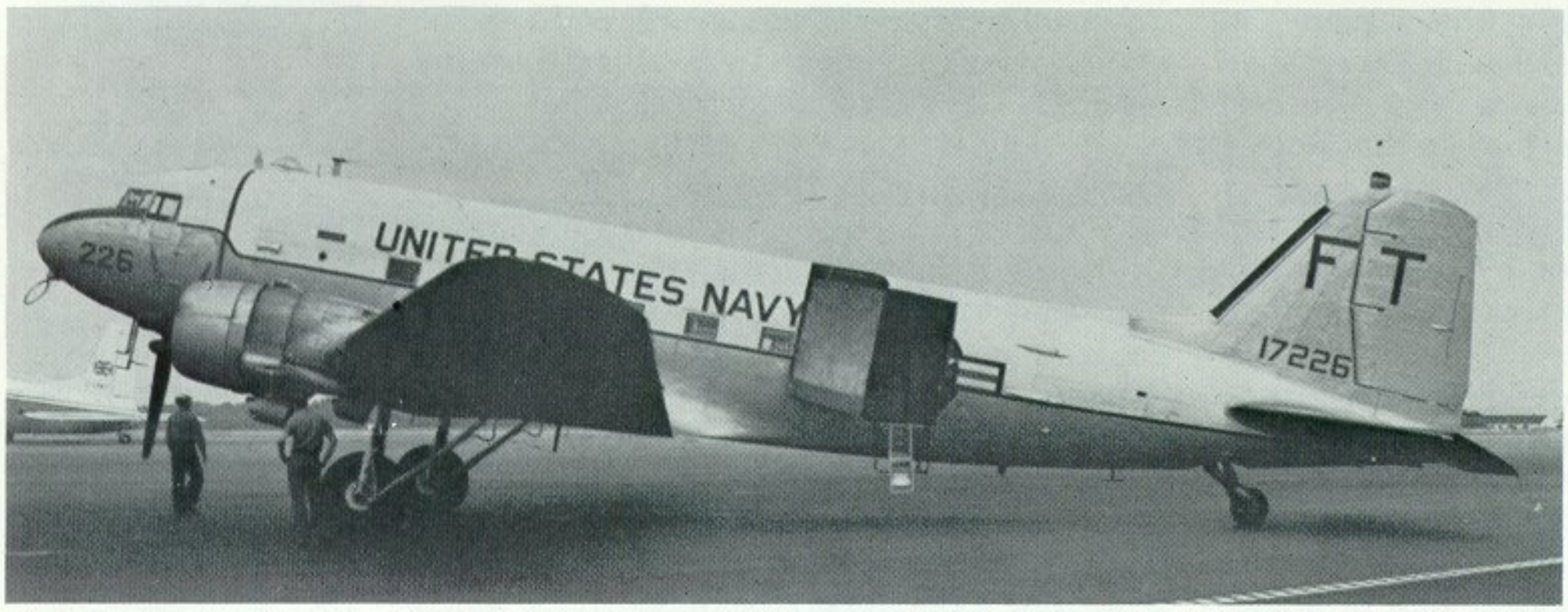
7 *Based at Yuma is the Headquarters & Maintenance Squadron 24 (H&MS-24) which is controlled by No. 24 Marine Air Group. C-47H, BuNo. 12442, shown in the markings of H&MS-24 has seen service with the Naval Air Attaches in Denmark and India and visited Blackbushe and Bovingdon, England, in the 1950s.*

8 *Based at El Toro, California with the 3rd Marine Air Wing (MAW-3) is C-117D, BuNo. 17182, ex-R4D-5 and originally a C-47A-10-DK, 42-92461, c/n. 12264. It is estimated that 75 per cent of the 100 C-117D transports are still flying.*

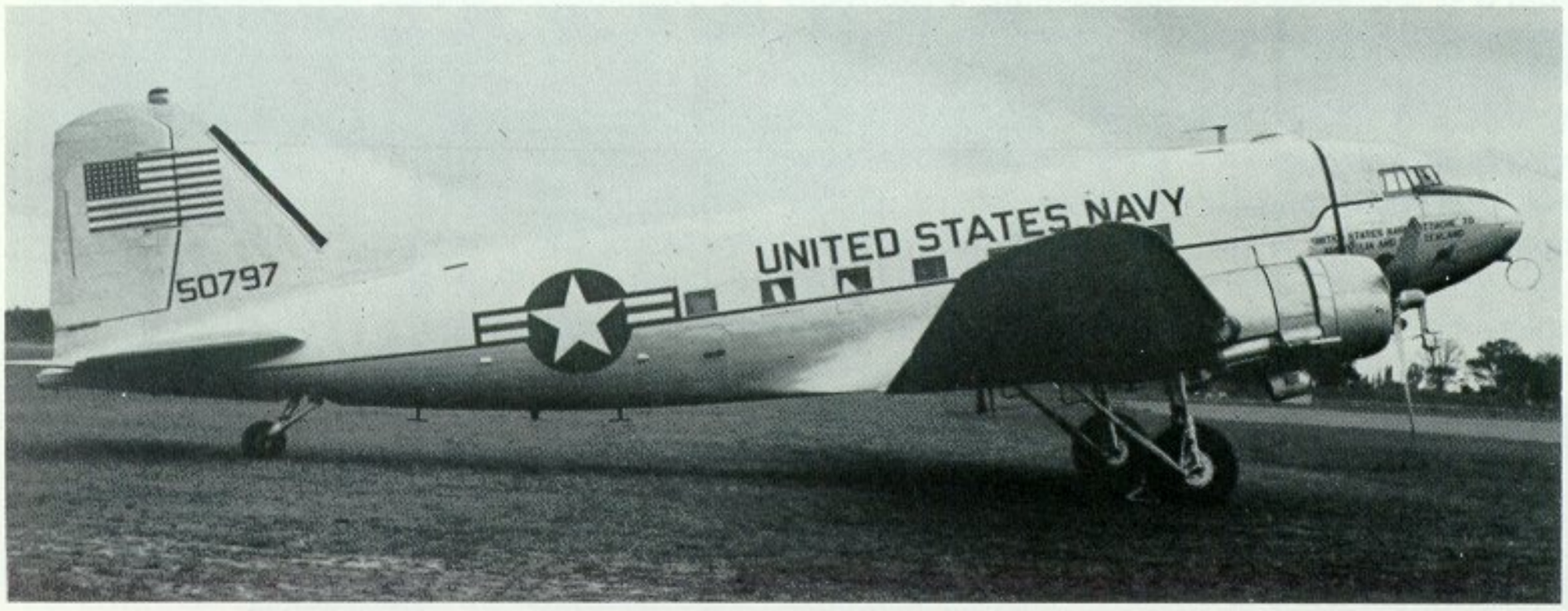
9 *Formed during the Golden Anniversary Year of the US Navy—1961—*The Chuting Stars *was a team of volunteer parachutists from the Naval Parachute Facility, El Centro, California. They used this C-117D, BuNo. 50762.*

10 *One of the 30 C-47s currently on the US Army inventory is 43-9095, ex-R4D-5, BuNo. 39095, of the US Army Missile Command and based at Redstone Arsenal, Alabama. It was delivered to the Army from the Naval Air Facility Litchfield Park in November 1965.*

This R4D-6 (BuNo. 50753) has served with the Marine Corps, with the Commander, US Naval Forces in Germany, and was photographed at Blackbushe on a visit from Rota, Spain during the build up of US Naval forces in the 1950s.
(Photo: Arthur Pearcy)



FASRON-200 had a detachment at Orly, Paris during the 1950s which operated R4D-5 (BuNo. 17226) seen at Blackbushe on July 17 1958. This transport was acquired by the US Navy on May 17 1944.
(Photo: Arthur Pearcy)



Used by the staff of the US Naval Attache to Australia and New Zealand, Douglas R4D-6 (BuNo. 50797) served with FASRON-200 before transfer 'down under'. Most Naval Air Attaches used R4D transports.
(Photo: AP Library)

US Marine Corps transport aircraft were only occasional visitors to the UK. Depicted is an R4D-8 (BuNo. 17194) from an unknown unit which visited Blackbushe on October 19 1956.
(Photo: Arthur Pearcy)

Initially the Super DC-3 was designated YC-129 with the USAF, but in recognition of its C-47 origins it became the YC-47F with USAF serial 51-3817. The main difference from the commercial Super DC-3 were the cargo door, heavier floor, and the 1,475 h.p. Wright R-1820-80 engines instead of R-2000s. The USAF tested the YC-47F but placed no production order, deciding in favour of the Convair C-131. The aircraft was then turned over to the US Navy in 1951 and became the R4D-8X with BuNo. 138659 which was later cancelled and it became standard R4D-8 BuNo. 138820.

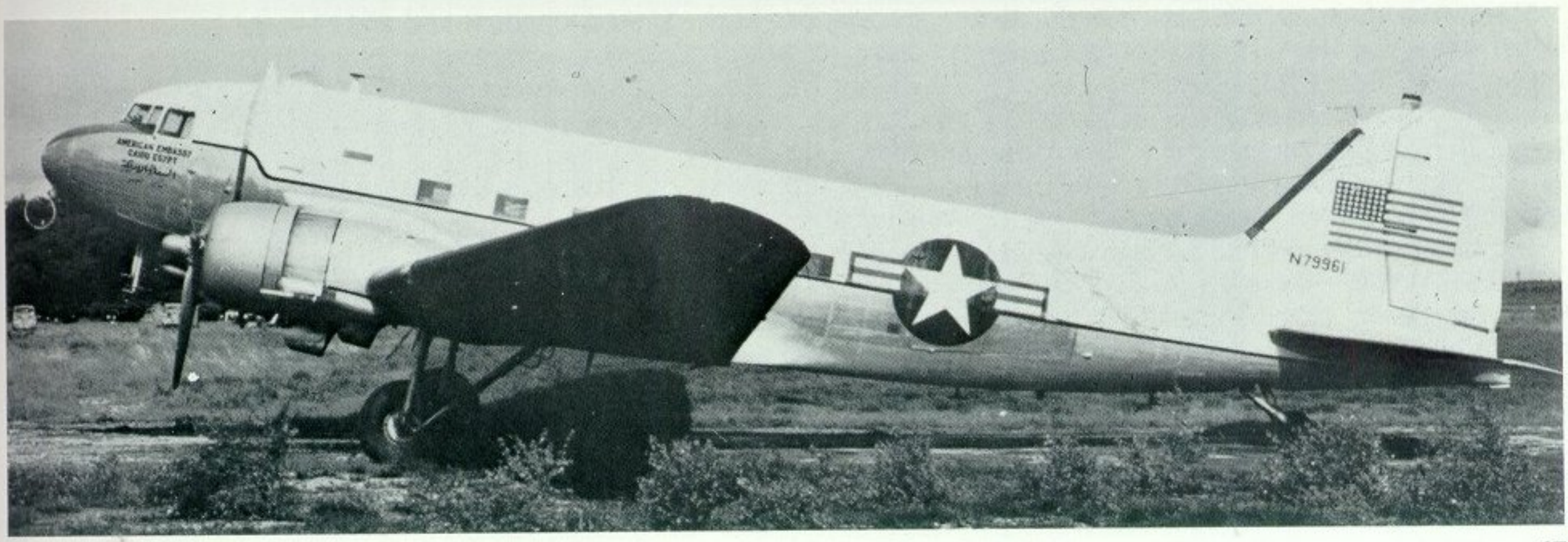
Accepted by the US Navy, 100 of the type were ordered which were converted from basic R4D transports flown to the Douglas factory for conversion. Still on inventory, it is estimated that 75 per cent of the R4D-8s, or C-117Ds as they were redesignated in 1962, are still in service with the US Navy and US Marine Corps, but being retired quite rapidly.

Now over 20 years old the US Navy Super DC-3s are still logging many flying hours in many parts of the globe. This includes the three currently based with the Naval Air Facility at RAF Mildenhall in Suffolk. BuNo. 17116, c/n. 43307 was accepted by the US Navy after conversion on January 11 1952, and has logged nearly 17,000 hours as an R4D-8 and has spent some it its life with the US Marine Corps with AIR FMF PAC or Aircraft, Fleet Marine Force, Pacific, BuNo. 17191, c/n. 43379 is no stranger to the UK airspace as it was logged at Blackbushe on Feb-

A familiar sight in the UK while with FASRON-200 at Blackbushe was R4D-8 (BuNo. 17150) which left for the USA during 1956. Photo depicts BuNo. 17150 in the markings of VR-22 Squadron in the USA.
(Photo: National Archives, 80-G-440840)

The end of the road for the LC-117D in Antarctica. The last three Douglas transports from VX-6 Squadron await shipment to the USA during January 1968. As related, BuNo. 99853 had to be left behind.
(Photo: US Navy)

Rare photo depicting a US Navy R4D-6 (BuNo. 50827) with US civil registration. This aircraft was based at Cairo with the US Embassy and was seen at Blackbushe on its return to the USA during the late 1950s.
(Photo: Arthur Pearcy)



ruary 7 1960. Accepted by the US Navy on December 23 1952, it has logged over 18,000 hours since that date and survived a take-off crash in Japan during 1956. The third C-117D, BuNo. 17171, c/n. 43309 has travelled the world as it was spotted at Kai Tak, Hong Kong on April 20 1962 while serving with MAG-11. This transport was accepted during November 1951 and has flown nearly 17,000 hours since conversion. The C-117D currently in use at Rota, Spain, is BuNo. 50821, c/n. 43322, and visited London Heathrow on August 27 1954. One C-117D, BuNo. 15158, c/n. 43368, crashed at NAS Memphis, Tennessee on April 15 1963 while making a single engine approach in a rain storm.

At least one C-117D received a temporary US civil registration whilst serving with the US Navy —this was BuNo. 17119, c/n. 43378, which had once served with the Marine Corps Training and Replacement Group 20, and which was civilian registered N79966 whilst based with the American Embassy in Cairo, Egypt. The original US Navy Super DC-3 (BuNo. 138820) was last reported to be still flying at the Naval Air Station located at China Lake, California.

NATO and Europe

Apart from Korea, the US Navy had its commitments widely increased during 1952 by the American participation in the North Atlantic Treaty Organization (NATO) alliance. To the traditional Atlantic and Pacific Fleets had been added the US Sixth Fleet in the Mediterranean, where land-based patrol squadrons had started operating—from October 1951 Lockheed P2V Neptune units from Hal-Far, Malta, and later a Martin P4M-1Q Mercator unit (VQ-2) from Port Lyautey in Morocco. A Naval Air Facility was in existence at Naples, while plans were made at this time to build a US Navy airfield at Rota in Spain. For its entire existence the Mediterranean Sixth Fleet has been without a home base, and today is still maintained and replenished entirely at sea, at an extremely high level of efficiency. However the shore based units required logistic support so each facility had at least one variant of the Douglas R4D transport.

The two or three aircraft carriers in the Sixth Fleet—always at the disposal of the Supreme Allied Commander Europe (SACEUR)—regularly exercise with NATO forces in the Mediterranean. This Sixth Fleet Task Force has and does operate as part of the Allied Forces Southern Europe with its HQ at Naples.

The Commander-in-Chief US Navy Europe—(CINCUSNAVEUR)—currently Admiral William Floyd Bringle—is based in London, his main responsibilities being the operational command of both the Sixth Fleet, through the flagship of the Commander, and all shore-based aircraft in the Mediterranean, through the Commander Fleet Air Arm Mediterranean (COMFAIRMED) with HQ at Naples. He also maintains control of all other US Navy movements both surface and air, in the European area, including the Second Fleet Atlantic when on national defence exercises in the Eastern Atlantic.

The two principal Naval Air Facilities in the Mediterranean area are Rota, Spain which serves the Western Mediterranean and Sigonella, Sicily serving the Eastern Mediterranean. These come under the operational control of COMFAIRMED and are responsible for the non-routine maintenance and repair of carrier-borne aircraft, SAR (Search and Rescue), target-towing, facilities fleet mail service and air logistic support. Detachments are located at Naples, Italy and Souda Bay, Crete and come under the control of Maritime Air Forces Mediterranean (MARAIRMED), in conjunction with British and Italian naval forces.

In World War Two Fleet Air Wing Seven with Consolidated PB4Y Liberators was based at Dunkeswell, Devon. During the early 1950s Fleet Air Service Squadron 200 (FASRON 200) appeared at RAF Hendon equipped with Douglas R4D-6 transports carrying the tail code 'JM'. These were later supplemented by the new Douglas R4D-8. During October 1955 FASRON 200 moved to the civil airport at Blackbushe as Hendon was closed as a flying station. During June 1957 the entire tail code system in the US Navy was changed and FASRON 200 was allocated the code 'FT'. While at Blackbushe the unit handled thousands of US Navy and a few USMC movements which ranged from such giants as the Lockheed WV-2 Constellation to the smaller S2F Tracker which flew direct from its parent carrier 'somewhere at sea'. With the closure of Blackbushe during 1959 FASRON 200 took its fleet of Douglas R4D transports to RAF West Malling, Kent where it remained until 1964.

The US Naval Air Facility at RAF Mildenhall, Suffolk was established on July 1 1964 upon the closure of West Malling. Currently operated at Mildenhall are three Douglas C-117D transports —BuNos. 17116, 17171 and 17191—one Convair C-131 for use by Admiral Bringle, and a Grumman C-1A Trader. As the only US Navy flying unit based in Northern Europe its mission is to support logistically all the US Navy shore installations in the United Kingdom and all US Navy ships operating in Northern European waters. The unit offers proficiency training to all US Navy pilots stationed ashore in Northern Europe.

The airports at Blackbushe, Bovingdon and Northolt have recorded numerous movements over the years of the Douglas R4D variants as the type has and still is serving in odd corners of Europe, be it with a US Naval Mission attached to a NATO ally, or in support of a US Naval Air Attache. In 1954 the Commander Naval Forces in Germany based in Berlin had a R4D-6 BuNo. 17269 which by 1957 had been replaced by BuNo. 50753. The US Naval Attache in London operated an R4D-5 BuNo. 17168 while HQs then

The Douglas R4D transport also operated in the Arctic regions, an example being R4D-5 (BuNo. 17217) which was acquired by the US Navy on May 6 1944. It carries the markings of the Arctic Research Laboratory, Barrow, Alaska.
(Photo: AP Library)

Fine air to air study of R4D-8 (BuNo. 12443) of VT-29 Squadron showing the new lines introduced with the conversion to Super DC-3. Originally an R4D-5 (with c/n. 9781) this transport also had a USAF serial 42-23919.
(Photo: US Navy)

First reported in Europe during 1954 this R4D-8 (BuNo. 50821) is a rebuild of the R4D-6 (BuNo. 50821) which Bill Larkins photographed at Oakland in 1946 *see page 52.* *Carrying Mildenhall marks, it was photographed at Nice.*
(Photo: Aviation Photo News)

Still serving the US Navy is the first Super DC-3 to be converted and seen in the latest dayglow marks at China Lake NAS, California. It is BuNo. 138820 and now designated C-117D.
(Photo: Lars Erik Lundin)

at Naples used an R4D-5R BuNo. 17147, coded 'BL'. During 1955 the US Naval Attache to France had R4D-6 BuNo. 99844 which was later transferred to FASRON 200, and the US Naval Attache to Denmark had R4D-5 BuNo. 12442.

By 1957 the new facility at Rota, Spain was taking shape and two Douglas R4Ds marked 'COMAVACTS SPAIN' were R4D-6 BuNo. 50753 and R4D-8 BuNo. 12428, the latter being known as 'Toonerville Trolley' and flown by Lieutenant Commander Albert T. Hall, had hauled everything from rocks to ribbons—typewriter variety—between bases under construction in Spain. Major maintenance had to be done at the Naval Air Facility located at Port Lyautey, whilst minor overhaul was dealt with at Getafe, Madrid.

Keflavik, Iceland, is also a Naval Air Facility which is used as a staging post on the route to and from the United States. This NAF has revealed three models of the Douglas C-47J which are out of context with the ordinary listing of BuNos.—150187, 150189 and 150190.

No Marine Corps aircraft are currently based in Europe, but occasional visits by Douglas R4D-8 transports have been made over the years in support of Fleet exercises.

Naples is the base for the Deputy Commander Naval Striking and Support Forces, Southern Europe (DEPCOMSTRIKFORSOUTH), in addition to being the base for the four star command, (CINCSOUTH), currently held by Admiral Richard Colbert, USN. Because of the situation in Malta, (NAVSOUTH), under the Italian Rear Admiral Birendelli has moved to Naples. There is a separate NATO command for the defence of the Atlantic Ocean—Allied Command Atlantic (SACLANT), with HQ at Norfolk, Virginia which was formed on April 10 1952.

Surplus to Requirements

Records show that two surplus R4D transports appeared on the British Civil Register. R4D-5 BuNo. 17126 which became G-AJIA and served with BEA as RMA Sir John Alcock, and a veteran R4D-1, BuNo. 4699, c/n. 4306 was registered as G-ATXT to Handley Page in 1966, but remained in storage in Florida. On the military side, R4D-6 transports have been supplied to the Japanese, while R4D-1, BuNo. 01985, c/n. 4441 joined the RCAF as 10912 in 1951 and in 1970 was still serving the Canadian Armed Forces.

In the United States, surplus R4Ds were retained by the Navy Department, whilst a large number were handed over to the Federal Aviation Administration who today operate nearly 50 of the type for airways and communi-

One of four USAF Douglas C-47 transports transferred to the US Navy. This is a C-47J (BuNo. 150189) which is based at Keflavik, Iceland and seen at Mildenhall. (Photo: George Pennick)

Taken especially for this Profile, this photo depicts two of the three C-117D transports currently based at the Naval Air Facility, Mildenhall, Suffolk. They are BuNo. 17116 and 17191, the former having once served with the Marine Corps. (Photo: US Navy)

cation flight checking.

Besides the Cairo-based R4Ds with US civil registrations allocated, two others were R4D-6 BuNo. 50747 as N79962 and R4D-6 BuNo. 50752 as N79963. The first was Washington, DC-based while the second was on foreign service—all mail being forwarded via 'US Naval Attache, Box E, APO 231, New York.'

The US Naval Air Facility located at Litchfield Park, Phoenix, Arizona, was a storage depot for the Douglas R4D, numbers of this transport being refurbished for the Korean conflict. During the 1960s a number of R4Ds became surplus to requirements at the depot and were sold. Today the main storage facility for US Navy aircraft, including the R4D or C-47/C-117 appears to be the huge storage complex at Davis-Monthan Air Force Base in Arizona.

It is not generally known that the 1972 US Army Aviation inventory includes 30 Douglas C-47 transports, of which all but four are ex-US Navy R4D aircraft. These perform a wide variety of tasks including paradrops, cargo and cargo parachute resupply hauls, High Altitude Low Opening (HALO) parachute jumps, training, and command and staff administration flights. 'The Golden Knights'—the US Army free-fall parachute team—is based at Fort Bragg, North Carolina, and operates the C-47 on its many demonstrations throughout the USA.

Since first joining the US Navy in the 1930s as the R2D-1, and later as the R4D, there is no doubt at all that the 600-odd transports supplied have seen the world. Despite the introduction of modern jet transports, the C-47 is still kept on inventory with the US Navy and the Marine Corps, whilst the US Army are helping to extend the already long service life this variant of the Douglas DC-3 is still giving to military aviation.

TABLE 1: DOUGLAS DC-2/DC-3 VARIANTS USED BY THE US NAVY

Variant	BuNos.	Qty (Totals)
R2D-1	9620—9622	3
	9993—9994	2
		(5)
R4D-1	3131—3143	13
	4692—4706	15
	01648—01649	2
	01976—01990	15
	05051—05072	22
	08005	1
	12393—12404	12
	30147	1
	37660—37710	51
	91104	1
		(133)
R4D-2	4707—4708	2
		(2)
R4D-3	05073—05084	12
	06992—06999	8
		(20)
R4D-4	07000—07003	4
	33615—33621	7
	33815—33820	6
		(17)
R4D-5	12405—12446	42
	17092—17248	157
	39057—39095	39
		(238)
R4D-6	17249—17291	43
	39096—39098	3
	39100	1
	39109	1
	50740—50752	13
	50753—50839	87
	99850	1
	99852	1
		(150)
(C-47J)	150187—150190	4
		(4)
R4D-7	39099	1
	39101—39108	8
	39110—39136	27
(DC-3A)	99099	1
	99824—99849	26
	99851	1
	99853—99857	5
	99858—99900	43
		(112)
R4D-8	138820 (ex-138659)	1
		(1)
	Total: 682	
R4D-8	(100 conversions from existing models)	

NOTES

30147	R4D-1 operated by PAA—Alaskan Division
37660—37662	R4D-1 (C-47s transferred from USAF)
37681—37685	Believed cancelled
37686—37710	R4D-1 not delivered
91104	R4D-1 transfer
33615—33621	R4D-4R transfer from War Assets Admin. to PAA
150187—150190	R4D-6 (C-47J) transfer from USAF
39109	R4D-6 transfer
39110—39136	R4D-7 cancelled on VJ-Day
99099	DC-3A from PAA

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Additional References

Arthur Pearcy is also the author of the following *Profiles:*
No 96 (Volume 4): Douglas DC-3 (to Dec 1941 only)
No 220 (Volume 10): Douglas Dakota Mks I-IV (1941–70; RAF & Dominion/Commonwealth air forces only)

TABLE 2: US NAVY DOUGLAS R4D/C-47/C-117 DESIGNATIONS

Under a Department of Defense Directive dated July 6 1962, the R4D designations allocated to US Navy variants of the C-47 were standardized with those of the many USAF variants.

Old	New	Role
R4D-5	C-47H	Cargo Transport
R4D-5Q	EC-47H	Special Electronics
R4D-5L	LC-47H	Cold Weather
R4D-5S	SC-47H	Anti-submarine
R4D-5R	TC-47H	Trainer/Transport
R4D-5Z	VC-47H	Staff Transport
R4D-6	C-47J	Cargo Transport
R4D-6Q	EC-47J	Special Electronics
R4D-6L	LC-47J	Cold Weather
R4D-6S	SC-47J	Anti-submarine
R4D-6R	TC-47J	Trainer/Transport
R4D-6Z	VC-47J	Staff Transport
R4D-7	TC-47K	Trainer
—	C-47M[1]	Special Electronics[1]
R4D-8	C-117D	Cargo Transport
R4D-8L	LC-117D	Cold Weather
R4D-8T	TC-117D	Trainer
R4D-8Z	VC-117D	Staff Transport

[1] New type since Jan. 1963

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TABLE 3: OPERATION DEEP FREEZE R4D/C-47/C-117 TRANSPORTS

Desig.	BuNo.	Name	Code	Arrived	Fate or last flight date
R4D-5	12418	Que Sera Sera	XD/8	Oct. 17 1956	Dec. 1958 to National Air Museum
R4D-6	17274	Charlene	XD	Oct. 17 1956	Jan. 1959. Wingless taxi aircraft
R4D-5	17246	Little Horrible—Korora II (1960)	XD	Oct. 17 1956	May 1961. Retired
R4D-5	17163	Takahe	XD/7	Oct. 17 1956	Sept. 15 1959. Abandoned Hallett
R4D-8	17219	Semper Shafters USMC	JD/9	Nov. 22 1957	Nov. 12 1961. Abandoned Horlicks
R4D-8	99853	Wilshie Duit	JD/7	Oct. 1 1957	Jan. 10 1967
R4D-8	17154	Negatus Perspirus	JD/8	Deep Freeze '58	Jan. 6 1960. Crashed Byrd Station
R4D-8	17188		JD/7	Deep Freeze '58	Nov. 22 1962. Cr Sentinel Mts.
R4D-5	17239		JD/8	Nov. 20 1961	Oct. 6 1965. Cr Williams Field
LC-47	50777		JD	Oct. 12 1962	Nov. 25 1962. Cr Davis Glacier
LC-47	17107		JD	Deep Freeze '63	Dec. 5 1965. Returned to USA
LC-47	50778		JD	Deep Freeze '63	Jan. 11 1965. Cr Shackleton Glacier
LC-47H	12407		JD	Oct. 20 1963	Oct. 22 1964. Lost Lillie Glacier
LC-47H	17221	Kool Kiwi	JD/14	Oct. 20 1963	Apr. 18 1969. To Ferrymead Museum
LC-117D	12441	City of Invercargill	JD/11	Dec. 15 1964	Jan. 17 1966. Retired
LC-47J	50832		JD	Nov. 6 1965	Feb. 2 1966. Cr Ross Ice Shelf
LC-117D	17092		JD	Nov. 28 1966	Dec. 2 1967. Retired

TABLE 4: SPECIFICATION

Model	R2D-1	R4D-1	R4D-2	R4D-3	R4D-4	R4D-5 C-47H	R4D-6 C-47J	R4D-7 TC-47K	R4D-8 C-117D
Wing span (ft. in.)	85 0	95 0	95 0	95 0	95 0	95 0	95 0	95 0	95 0
Length (ft. in.)	62 0	64 6	64 6	64 6	64 6	64 6	64 6	64 6	67 9
Height (ft. in.)	16 0	16 9	16 9	16 9	16 9	16 9	16 9	16 9	18 3
Powerplant	Wright R-1820-25	P&W R-1830-92	Wright R-1820-G202A	P&W R-1830-92	P&W R-1830-92	P&W R-1830-92	P&W R-1830-90B	P&W R-1830-90B	Wright R-1820-80
Take-off h.p.	710	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,475
Crew + Troops	3 + 21	3 + 28	3 + 21	3 + 28	3 + 21	4 + 28	4 + 28	3 +	3 + 35
Max. cruise (m.p.h.)	190	190	190	190	190	190	190	190	251
Height (feet)	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	15,400
Max. still air range (st. miles)	1,950	2,125	2,150	2,150	2,150	2,150	2,150	2,150	3,042
Weights (pounds) Empty	12,010	16,600	16,600	16,600	16,600	17,057	17,257	17,257	19,537
Weights (pounds) All-up	18,560	25,200	25,200	25,200	25,200	31,000	30,600	30,600	31,900
Fuel capacity (Imp. gallons)	467	685	685	685	685	670	670	670	1,332

Apparently damaged this C-117D (BuNo. 50780) is seen at Cam Ranh Bay in South Viet Nam. A sister aircraft, BuNo. 17124, was damaged during November 1969 when a Viet Cong rocket exploded nearby wounding some of the crew. (Photo: US Navy)