

84th MILITARY AIRLIFT SQUADRON



MISSION

LINEAGE

84th Air Transport Squadron

84th Military Airlift Squadron

STATIONS

Great Falls AFB, MT, 20 Jul 1952-16 May 1953

Travis AFB, CA, 16 May 1953-1 Jul 1971

ASSIGNMENTS

WEAPON SYSTEMS

COMMANDERS

LTC Vincc Mankowski,

LTC Ken Hales, 2 Mar 1970

LTC Don Lockstrom, Jun 1970

HONORS

Service Streamers

Campaign Streamers

Armed Forces Expeditionary Streamers

Decorations

EMBLEM

Mid-1959 84 MAS patch approved. Designed by LTC Leon Tannenbaum.

MOTTO

NICKNAME

OPERATIONS

The 84th ATS/MAS and its predecessor units were operational for a total of only nineteen years and eight months, operating at least three aircraft types from three different bases in two nations. The first C-133 A, 40143, arrived at Travis from Dover on 17 October 1958. Mrs. Goodwin J. Knight, wife of California's governor, christened the airplane "State of California" This was also the first C-133 to arrive at Dover, and was named "State of Delaware" on that occasion. The first Pacific flight occurred on 17 January 1959.¹² The C-133B replaced the C-133 A at Travis, beginning with delivery of C-133B 71613 on 16 March 1960.

In Big Slam/Puerto Pine, in March 1960. MATS commander LGcn William Tunncr made a major demonstration of airlift capability, proving the critical need for expanded airlift. A year later, in February 1961, Operation Long Pass moved an Army battle group from CONUS to the Philippines. At one point, ten C-133s were parked wing to wing at Clark AB. The next year, 5-19 August, Operation Swift Strike II moved Army troops and equipment from Ft. Carson, CO to Ft. Bragg, NC and Ft. Jackson, SC.

During Operation Big Lift, in October 1963, C-133s helped move the Third Armored Division from Ft. Hood, TX to Europe. In October and November 1964, Operation Gold Fire I moved equipment for Army troops deploying out of Schilling AFB, K.S to CONUS exercise locations. Operation Blue Light, January 1966, saw C- 133s moving Army equipment to Europe in a rapid reinforcement exercise. The last major exercise was Operation Rcforgcr II, October 1970, taking Army equipment to Germany.

The 84 MAS started moving ICBMs with the C-133B and took responsibility for all ICBM moves in 1959. The first Titan was flown from Lowry AFB to Cape Canaveral in early 1959. The squadron moved the first complete Atlas ICBM from Miramar NAS to FF, Warren AFB on 3 November 1959. Many more followed, going to Vandenberg, Dyess, Cape Canaveral and other bases. The Minuteman came on line in 1962, with the first one airlifted from Lowry AFB to Malmstrom. Others were airlifted regularly from Hill AFB to Minot, Grand Forks and other Minuteman bases.

The ICBM lift capability made 84 MAS C-133Bs essential to NASA projects. In January 1962, the 84th carried the Atlas booster for John Glenn's first flight. Another Atlas was moved to Cape Canaveral in

September 1964 for Gordon Cooper's Project Mercury launch. For Project Apollo, the 84th provided airlift for missions Six through Fourteen.

The 84th flew many other missions. The first C-133 displayed at the 1959 Paris Air Show greatly impressed French President Charles DeGaulle with two low-level passes with two engines out. Another 84 crew made the first C-133 round-the-world flight, in July 1960. Crewmembers pasted 1511 QMS stickers on a Soviet TU-104 parked nearby at New Delhi, India. A unique mission to Cochabamba, Bolivia, in September 1967, carried helicopters that were used to bring out the body of Cuban revolutionary Che Guevara.

The C-133B's heavy lift capabilities brought a variety of special missions. The first C-133 to New Zealand, in October 1960, moved huge snow millers for use in Antarctica. In December 1963, another New Zealand mission took an icebreaker propeller shaft to Wellington for the USCGS Atka. Satellite telemetry equipment went to the Seychelles in mid-1964, NASA tracking antennas were moved to Australia in 1966, and a complete COMSAT tracking station went to Clark AB in February 1967. In more Navy support, the 84th took a propeller shaft and propeller to Atsugi, Japan, in September 1966, to repair the USS Coral Sea. One of the heaviest operational loads carried, 89,776 lbs. in October 1969, was a Minuteman in its shipping container.

Vietnam made great demands upon the C-133. Aircraft being moved to and from SEA were routine cargo. Among these were F-5s, F-4s, O-1 Bird Dogs and helicopters of all kinds including the Chinook, the CH-54 and UH-1. Armored equipment was moved into and within the theater, including some overweight loads of more than 100,000 lbs into Danang and a series of missions into Hue Phu Bai.

The C-133 flew many relief missions due to its lifting ability. In August 1960, 25 iron lungs were moved from Travis to Tachikawa, to meet a shortage during a polio outbreak in Japan. Hurricane relief supplies went to Tobago in October 1963 and Gulfport, MS in August 1969. Mobile schoolrooms were airlifted to Peshawar, Pakistan in August 1964 and C-133s carried rescue helicopters to Peru in October 1970, after a huge earthquake.

The US Air Force C-133 mission ended on 2 August 1971, when the last C-133B was ferried to Davis-Monthan AFB, AZ. The new C-5 was operational and the C-133s were worn out. 84 MAS crewmembers could look with great pride, however, upon thirteen years of outstanding accomplishment all over the world, flying a great airplane.

22 June 1959 C-133 40140 displayed at Paris Air Show. Commanded by Capt Robert McMurry, the airplane made two low-level two-engine out passes in front of French President Charles DeGaulle on 22 June. DeGaulle termed the display "Magnifique!" Other crewmembers were Maj Robert Troute (P), Maj James Myers (P), Lt Warren Sarinc (P), Lt Sidney Cutter (P), 1Lt Charles Greenley (N), MSgt Kenneth Whitaker (FET), TSgt Darrell Johnson (FET), TSgt Joseph Chini (FET), SSgt Henry Turnsk (LM) and A1C Carl Depp (LM). Troute and Myers met Andrei Tupolev during tour of TU-104 parked next to them.

30 June 1959 C-133 A 40143, first one delivered to Travis, reaches 1,000 flight hours. Crew included Maj Billy V. Nickcll (AC), Maj James M. Myers (P), Capt Michael Murphy (P), Capt Harold Tabor (P), ILt Charles Popenoe (P), MSgt Harold Johnson, Jr., and SMSgt John Williamson (FET) and TSgt Anthony Mcrlonghi (FET).

3 November 1959 First airlift of complete Atlas ICBM by C-133B 71614 from Miramar NAS, CA to F.E. Warren AFB, WY. AC was Maj Milton Meiklejohn and 1 Lt Charles Popenoe was CP. LMs were A1C Donald S. Garcia and SSgt Thomas Rolens. Garcia was the first loadmaster to load an Alias on a C-133B.

5 December 1959 C-133 A commanded by Maj Arthur Miller gives 8(1 Japanese civic, military and industrial leaders an orientation flight from Tachikawa AB, Japan. CP was Maj Milton A. Meiklejohn.

December 1959 84 MAS logs 10,000 flight hour since starting operations at Travis AFB in 1958. Airplane was C-133A 71610. Crew included Capt Henry F. Lawrence (AC), ILts Patrick L. Benehan and Gerald L. Webb (CP). ILt W. C. Bengé (N), MSgt Kenneth Whitaker, TSgts Sigmund A. Nelson and Richard W. Jones (FET), TSgt Walter B. Wood, SSgt W. A. Bortfeld and A2C J. Price (LM).

14 January 1960 A Travis C-133 departing for the Far East was hit by lightning three times during departure. The radome was knocked loose from the airplane and later was found in the water near Point Richmond. The pilot was Maj Robert D. Coffee. CP was George Garcia and Lt Donald Binford was the navigator. Maj Coffee recovered safely at Travis.

21 January 1960 C-133 A 71615 moves 54,000-lb, the heaviest single cargo ever. AC was Capt Robert G. Caesar. LMs were SSgt J. Noland and A2C E. McEntirc. Other crewmembers were Lt J. Holt and Capt Harold Tabor (P) and engineers MSgt L. Peck, SSgt O. Dodge and TSgt M. Willis.

28 January 1960 Capt J. W. Ross and MSgt J. H. McKay receive AFCM for performance aboard a C-133B with two engines and both GTUs out, on a 23 May 1959 flight from Wake to Tachikawa.

Late January 1960 Record turnaround Travis-Tachikawa-Travis, via Hickam, Wake and Midway. Under AC Maj William R. Stanton, trip was made in 83 hours 30 minutes. Other crewmembers were 1 Lt Howard F. Kulm and RAF FltLt Andrew L. Wilson (P), Maj Harold Anderson, 1 Lt Michael Intille and Capt William D. Siffker (N), MSgt James A. Sargent, MSgl Paul Weber and TSgt Richard W. Jones (FET) and SSgt Hilding E. Olson and A2C John B. Price (LM).

16 March 1960 C-133B commanded by Capt Robert McMurry lands at MI. Home AFB with problems in two props. Plane was part of MATS fleet in Operation Big Slam/Puerto Pine. Newsmen aboard included Herb Levy (Vallejo Times-Herald), Jack Foisie (San Francisco Chronicle). Les Bell (San Diego Tribune) and John Rice

18 March 1960 First C-133B, 71614, delivered to Travis, flown by LtCol Leon F. Tannenbaum.

14-19 March 1960 Approximately half of 3,360 hours scheduled for Travis airplanes in Operation Big Slam/ Puerto Pine flown by C-133s. One airplane logged 28 flight hours in space of 32 hours.

7 April 1960 First Titan missile to arrive at Vandenberg AFB flown from Lowry AFB, CO in 84th MAS C-133B.

June 1960 C-133B makes first aerial delivery of Atlas missile from Miramar NAS to Vandenberg AFB, CA. Crew was Maj Robert L. Troute (AC), Maj J. H. Casey (CP) 1 Lt Charles F. Popenoe and K. M. Gibbs (P), MSgt J. Horn and M. W. Glisson (FET), and SSgt Robert L. Pillow and 11. Watson (LM).

7 July 1960 84 MAS passes 20,000 hours of safe flight since 1958.

20 July 1960 First C-133 round the world (RTW) flight departs, returns 3 August, with 84 hours flight time. Aircraft was C-133B 71614. Crewmembers were Maj William R. Stanton (AC), Maj Hampton K. Wallace (alt. AC), 1Lt Joe Fonts (P), Capt James Faircloth (N), 1Lt William H. Black (N), SMSgt Kenneth Whitaker (FE/FET), TSgt Raymond E. Wctsel (FET), TSgt Billy D. Shipman (FET), TSgt Clyde Bush (LM), SSgt Donald Garcia (LM), CMSgt Robert R. Carroll (MX supervisor), TSgt Joseph Kammcr, Jr. (MX crew chief), TSgt Thomas S. Rotello (MX, propeller specialist). Hamilton AFB flight surgeon Lloyd Gould also was on the crew. Itinerary was via Hickam AFB, Wake Island, Clark AB, Saigon, Bangkok, New Delhi, Karachi, Dhahran, Wheelus AFB via Khartoum, Mildenhall AB, Scott AFB and Travis.

20 August 1960 Travis C-133 moves 4 iron lungs from Travis to Tachikawa, the first of 40 that President Dwight D. Eisenhower ordered to be sent after polio outbreak in Hokkaido. Final destination was Sapporo Medical College Hospital. AC was Capt Harold Tabor. Other crewmembers were Capt Thomas A. Gross and Timothy F. O'Neill (P), 1 Lt Willard E. Klein (N), TSgt Darrell C. Johnson, Calvin L. Thompson and Charlie M. Edmonson (FET), and A2C Kenneth D. McEntirc (LM).

September 1960 Maj George Beckwith assumes command of 84th ATS from LtCol Leon Tannenbaum

Mid-September 1960 C-133B crew makes record one-hour ground time at Midway NAS. Crew was Maj Walter J. Madigan (AC), pilots Capt Vern F. Van Buskirk, Richard M. Barkley, and Robert G. Cox, Capt Maurice G. Vincent (N), MSgt Wilfred J. Simoneau and TSgt Leroy D. Thompson (FE) and SSgt Mason W. Mauldin (LM).

October 1960 Change of command from Maj George Beckwith to LtCol James D. Grace, formerly deputy commander and commander of 1501st Air Transport Group. Beckwith retired after service since 1943.

15 October 1960 First of two Travis C-133Bs hauls 36,000-pound Peter Snow millers from NAS Quonset Point to Christchurch, NZ, for Deep Freeze VI. AC was LtCol James D. Grace. Other crewmembers included Maj Milton A. Meiklejohn and RAF FltLt Andrew Wilson (P), Capt John C. Kasper and Ronald E. Droste (N), MSgt Walter W. Boehme and Paul F. Beardshear (FET). The LM

was SSgt Charles D. Phelps. 70,000 New Zealanders toured the aircraft. The second C-133B 90527 arrived Sunday, 16 October 60, with a load of 25 ½ tons. The first airplane flew via Fiji, the second via Canton Island.

January 1961 Last C-133A (62011) leaves Travis for Dover AFB. AC was FltLt Andrew Wilson, CP Capt Bruce Prouse, and engineers were SMSgt C. C. Hicks and TSgt T. D. Tigncr.

23 January 1961 C-133B Flies first Atlas into Forbes AFB, KS. AC was Capt D. E. Holmes.

11-22 February 1961 Operation Long Pass moves Army battle group from CONUS to Philippines. Early 1961 84 ATS passes 50,000" flying hour since receiving airplanes. AC was Capt Bill Miller.

Summer 1961 Maj Joseph H. Casey and crew make safe landing at Midway NAS despite intense rains that flooded the runway to a depth of one foot. Crew recognized in Good Show article in December 1961 MATS Flyer. Other crewmembers included Maj Eldred. Stein (CP), 1 Lt Charles E. Newton and Capt Walter C. Bengel (N), TSgt John W. Dech and James C. Peterson (FET) and LMs TSgt Frank Sullivan and SSgt Mason W. Mauldin.

10 June 1961 First Travis C-133 crash. C-133B 71614 disappeared 33 minutes after takeoff from Tachikawa AB, Japan. Eight crew killed. Only limited floating debris recovered. Cause believed to be from engine nose case failure leading to aircraft breakup in flight. Crew included Maj Lawrence J. Ceretti, HQ 1501st ATW (FEAC), Capt Ray L. Willman (AC), Capt Donald E. Holmes (P), Capt Leon M. Miller, 2223rd Instructor Sq (N), 1Lt Nathan L. Patterson (IN), TSgt Oral G. Converse and TSgt Howard Otero (FET), and SSgt Billy R. Edwards (LM).

September 1961 First C-133 lands at Shcmya. AC was LtCol James D. Grace. Other pilots were Maj Robert J. McMurry and Capt K. M. Gibbs. Navigators were Capt R. I. Ladendecker and 2Lt R. L. Millikan. Engineers were TSgts J. W. Dech and Raymond E. Wetsel, along with LM A1C H. E. Gately.

23 October 1961 Maj Don Maudsley takes command of 84"ATS.

January 1962 84" MAS C-133B 90523 moves Atlas missile for John Glenn's first flight. LMs were A2C Andrew Leary and SSgt Al Hansen.

26 January 1962 Airlift first Titan from Lowry to Cape Canaveral, for first launch. AC was Maj Frank Schneider with CP Capt Robert Caesar.

February 62 First Atlas missile delivered to Dyess AFB, TX, in C-133B 90534. Crew included Capt Robert Caesar, LtCol Fred Koren and LtCol Donald Maudsley (P), SSgt Charles Phelps (LM), 1 Lt David Anderson (N), TSgt Joseph Tierney and SMSgt Anselmo Dominguez (FET).

2 August 1962 84" ATS crew delivers GAM-77A Hound Dog missile to a SAC base, as part of ongoing operations to deliver Hound Dogs.

5-19 August 1962 Operation Swift Strike II moves troops from Ft. Carson, CO to Ft. Bragg and Ft. Jackson. C-133s including 62000 operated from Pueblo Airport and Buckley Field, CO. Among the airplanes used were C-133B 90535, 62000 and 90530. 84" MAS loadmasters assisting Army ground personnel were SSgt Donald A. Athcn and A1C John E. Prewitt.

Mid-August 1962 A Travis C-133 crew set a ground time record at Buckley Field, during Swift Strike II. LM MSgt Harold K. A. Grade, assisted by A2C William T. Kennedy, directed a nine-minute onload out of 15 minutes total when ready for takeoff. SECDEF Robert McNamara personally congratulated the crew, under AC LtCol Hampton K. Wallace. Other crewmembers were 1 Lt James P. Gibbs (CP), 1 Lt Wayne K. Robins (N). MSgts John S. Williamson and Roy M. Jackson (FET) and A2C William T. Kennedy (LM).

20 October 1962 C-133s airlift USMC Onlos assault vehicle from El Toro MCAS to Caribbean location as part of support for response to Cuban Missile Crisis.

14 November 1962 First Minuteman missile moved by air in C-133B 71610 from Hill AFB to Malmstrom AFB. AC was Maj Roy M. Johnston.

10 April 1963. C-133B 90523 crashed 3/4 mile from Travis while making practice instrument approach during local training. It was initiating a low visibility circling approach when it went into a steep turn and crashed. Nine personnel aboard were killed. No cause was ever determined. Crew included: Maj Roy M. Johnston (FEAC), 1Lt William H. Grey (CP), 1Lt Leonard R. Dorman (CP), 2Lt Edward Melda (N), 2Lt Russell R. Zablan, Jr. (N), TSgt Donald D. Cox (FET), TSgt Joel H. Nipper (FET), TSgt Lloyd J. Richard (FET), and A3C Charles W. Wittle (Maintenance).

5 July 1963 Last production Minuteman I ICBM airlifted from Hill AFB to Malmstrom AFB. BGen H. E. Goldsworthy, commander of the ICBM site at Malmstrom, praised the 84h MAS record of delivering 1st MAS commander LtCol Lawrence A. Doyle completes documents with Col Bernie S. Bass, director of the Air Force Museum, to transfer C-133A 62008. Copilot on the 17 February 1971 mission was LtCol Donald Flanders, the 39th MAS commander. (USAF)Minuteman missiles between 15 November 1962 and 15 June 1963.

6 September 1963 First of 150 Minuteman II missiles airlifted to Minot AFB. AC was Squadron Leader James Munro, RAF. LM was SSgt James A. Wells. Other crewmembers were 1 Lt Wayne P. Bundy (CP), Maj Milton A. Meiklejohn (FE/AC), MSgts Raymond E. Wetsel and Orrin A. Nelson (FET) and SSgt Jerry D. Sivertson (FE/Unq).

11 October 1963 84 ATS C-133B 90535 airlifted relief supplies to Tobago Island, after Hurricane Flora. Cargo included 2,000 cots. AC was Capt John Burnett, CPs were Capt Michael Intille and 1Lt Darl Henderson, Nav was 1Lt Charles Newton, MSgts Willie Maynard, Jr., and Carlos Duarte were engineers, and LM was SSgt John Robert Nagel. Flight mechanics were A2C John Moschogianis and Gilbert Ulivarre.

22 October 1963 Operation Big Lift moves Army troops to Europe to demonstrate rapid reinforcement.

26 October 1963 84 ATS airlifts Titan II launch vehicle for Project Gemini from Martin plant in Baltimore to Cape Canaveral in 90532. Crew was commanded by Capt George Caruana, with Maj Walter J. Madigan (CP), SMSgt Marshall Glisson and MSgt Herman Dupuis (FET), SSgt Bernard F. Curry, III (LM) and Capt Richard C. Lee, equipment officer.

20 November 1963 500 Minuteman ICBM to be produced delivered from Hill AFB, UT to Minot AFB, ND. BGen James W. Chapman, Jr., 1501s' ATW commander, observed loading. AC was Maj Laurence Randall. Other crewmembers' names were not available.

22 November 1963 Capt David D. Anderson, 84th MAS navigator, was appointed aide to MGen George B. Danny, WESTAF commander. Anderson was a member of the first class to graduate from the US Air Force Academy, in 1959.

November 1963 LtCol John E. Matthews takes command of 84th ATS.

14 December 1963 84th ATS C-133B 90533 moves 18-ton, 40' -long icebreaker propeller shaft to Wellington, NZ, for USCGS Atka. This was the first C-133 into Wellington.

26 April 1964 First C-133 to Australia moves 50,000 pounds of tracking equipment for Project Gemini from NAS Moffett to Woomera, South Australia via Kings-ford Smith IAP, Sydney. AC was LtCol John Matthews, LM was SSgt N. F. Tank, and ILt Gary W. Goldenbogcn was CR Other crewmembers were LtCol H. W. Ritter (P), Capt F. M. Blum and 1 Lts J. B. Dana and J. L. Moriaty (N), MSgt F. L. Moter, TSgt W. L. Carmichacl and SSgt N. W. Halfhill (FET).

August 1964 Three 84 ATS crews move three mobile schoolrooms to Peshawar, Pakistan. One airplane was C-133B 90525. ACs were LtCol Fred Koren, Capt Charles H. Clark and Maj Edward M. Fox. Routing was via Torrejon AB, Spain, Incirlik AB, Turkey, Maurpur, Pakistan, New Delhi, India and Bangkok, Thailand. All airplanes completed an eastbound round the world flight on the mission. Shortest elapsed time was nine days, 14 hours and 20 minutes. There was a total of thirty other crewmembers and three maintenance men aboard the aircraft.

Mid-1964 Travis C-133 airlifts 28 tons of satellite telemetry equipment to the Seychelles Islands. AC was LtCol Van E. Brown. Hughes personnel aboard were Joseph Pctrcla, Jack Collins, Gerry Holm, Tony Mazeika, Daryl Strickland and Russ Schuffert.

September 1964 84 ATS crew airlifts Atlas launch vehicle for Project Mercury launch with Gordon Cooper. Aircraft was C-133B 71614.

October 1964 LtCol Dan Jacobs assumes command of 84th MAS.

15 October 1964 Exercise Gold Fire begins. C-133s among MATS airlift of 1st Infantry Division personnel from Schilling AFB, KS to exercise areas around Ft. Leonard Wood, MO.

18 October 1964 Travis C-133B moves last Atlas missile from Offutt AFB, NE to Norton AFB, CA. The move marked the end of five years of Atlas service at Offutt under the 549th Strategic Missile Sq.

24 December 1964 84th ATS delivered 2,300 pounds of clothing collected by the 84th ATS and Girl Scout Troop 527, Vacaville, CA, plus 800 pounds from Brookfield Elementary School, Sacramento, to two orphanages in Suwon, South Korea.

December 1965 C-133B moves first two HH-3C rescue helicopters to Vietnam from Bridgeport, CT.

8 January 1966 84th ATS redesignated 84th Military Airlift Squadron (MAS) with redesignation of MATS to Military Airlift Command (MAC).

1966 Three 84th MAS C-133s haul NASA tracking site antenna components to Perth, Australia. Aircraft commanders were LtCol Dan Jacobs, Maj Robert Williams and Capt Charles F. Popenoe. Anticipated mission time for each aircraft was ten days and 80 flying hours.

January 1966 C-133s participate in Operation Blue Light, moving 3rd Brigade, 25th Infantry Division to Pleiku AB, Vietnam.

5 April 1966 C-133B arriving in Saigon diverted for emergency airlift of Army tanks to Da Nang AB. AC was LtCol Clarence Van Meter. LMs were TSgt Marion E. Henken and SSgt Carlton Stroud. Other crewmembers were Maj Robert J. Williams (P), Capt Barry S. E. Rcmely (CP), MSGts Darrell C. Johnson and Robert L. Baker and TSgt Calvin L. Thompson (FET). Navigator is unknown. Two sorties moved four M41 tanks and crew, each tank weighing 51,800 pounds. LtCol Van Meter received the AF Commendation Medal.

26 August 1966 C-133s begin airlifting O-1 Bird Dogs to Vietnam. Routing is from Corpus Christi to SEA, with 4 O-1s on each load.

9 September 1966 Two C-133s (including 90526) move aircraft carrier prop shaft (63' long, 74,000 lbs) and propeller (56,000 lbs) to Atsugi NS, Japan from Mare Island Naval Shipyard, CA. Carrier was USS Coral Sea. AC on one aircraft was LtCol George S. Frum. Aircraft loaders included A3C John R. Ent and Ralph J. Eagen, as well as John B. Lewis in charge. Clearances were as small as one inch for the huge propeller.

19-24 October 1966 Two C-133s move presidential helicopters to Clark AB and Bangkok, to support President Lyndon B. Johnson's trip. Cargo was loaded at Randolph AFB. One aircraft had a VH-3 helicopter and support equipment, and the other load included three UH-1 helicopters. The airplanes arrived at Clark AB 43.5 hours after leaving Randolph.

November 1966 84 crew flies 40,000 lbs of scientific equipment from Aberdeen Proving Ground, MD to Pelatos, Brazil, for a 12 November study of solar eclipse. Routing was via Zanderik, Surinam. The mission crew rested in Rio de Janeiro after leaving Pelatos and returned via Ramoey AFB, PR. AC was LtCol Milton Meiklejohn, with LMs A1C John McFall and A1C John Lewis. Other crewmembers included Capt John Wiggins and 1 Lt John Urban. (P), LtCol William Czabaranek and 1 Lt James Denton (N), MSgt Carl Hillstrom and TSgt Charles Barton (FET), and crew chiefs TSgt Rocco Maiola and A1C Robert Heist.

Mid-January 1967 A Travis C-133B commanded by Capt Gary W. Goldenbogen set a ground handling record at Anderson AFB, Guam. Navigator was Capt Marlin Griffith. The airplane took on 45,000 pounds of fuel and departed for Clark AB 48 minutes after landing. The previous record was set on a mission commanded by Capt James Brewer, also of the 84th MAS.

Mid-February 1967 A complete tracking station for COMSAT was moved from Seattle area to Travis, then by C-133B and C-141 to Clark AB, destined for San Miguel.

February 1967 C-133 on enroute stop at Kindley AB, Bermuda, commanded by LtCol Charles Martin, did an aircraf of a Navy wife with a broken hip. Patient was flown to Andrews AFB.

Late Mar 67 Titan 111 loading record set at Buckley Field, CO. First stage was loaded and aircraft was serviced and ready to depart in two hours and ten minutes. AC was Capt Charles Hines, LMs were A 1C Benton L. Seeley and A2C Benny L. Wigley. Other crewmembers were Capt James L. Zimmer (CP) and engineers MSgt William J. Townsend and SSgt Gerald L. Baxter.

April 1967 C-133 90533 used to airlift 56' 12-ton aeromedical evacuation van from Travis to Danang. AC was Maj James D. Gonzalez.

April 1967 First CH-47 Chinook, weighing 33,000 pounds, moved by air in 84th MAS C-133B from Olmsled AFB, PA to Vietnam. C-133 A could not load the Chinook. AC was LtCol Arthur J. Weir, LM was Johansen. Also aboard were FETs Delmer Aldrich and Charles Grier-son. Attempts to load Chinooks on a C-133 A were unsuccessful, due to smaller aft opening. Cargo dimensions were 51' long and 18 1/2' wide.

April 1967 90535 is first C-133 to land at Mactan AB, Philippines. Maj Lawrence E. Wurm was AC. Other crewmembers were Maj Donald E. Lockstrom (CP), Capts Ralph C. Soulby and Robert E. Maguire (N), MSgt Nicholas I. Vamvakias, SSgt Arthur L. Upshaw and SSgt Larry L. Kent (FET), TSgt Henry A. Turnsk (LM) and A2C Johnny F. Anderkin (crew chief). The 606th Military Airlift Support Squadron provided support at Mactan.

30 April 1967 90534 ditches near Okinawa due to electrical problems in propeller control circuits. Crew included AC Capt James C. Regan, Pilot 1 Lt Lawrence N. Garrett, CP Capt Richard H. Zabcl, Navigators Capt Regis P. White and ILt Herbert W. Nakagawa, FET MSgt William Patrick and MSgt Raymond E. Wctsel, LM A 1C Benton L. Seeley, crew chief A1C Derrell E. McIntyre. Wctsel suffered a broken leg.

18 May 1967 The first of several CH-47s to be airlifted by C-133s arrived at New Cumberland Army Depot, Harrisburg, PA. There were some questions about landing a C-133 on the 5,000' Harrisburg runway, but it proved possible. Airlift of helicopters to and from Army depots saved at least 30 days on each transit and substantial amounts of money.

May 1967 First airlift of F-4 in C-133 from Danang to Hill.

July 1967 Col. Dan Jacobs departs 84 to McGuire AFB, to be deputy commander of the Air Base Group. LtCol Gerald Kchrli assumes command of 84 MAS.

August 1967 Travis C-133B airlifted 32,000 lb submarine engine from McChord to Tachikawa.

September 1967 84th MAS tasked with short notice mission to Cochabamba, Bolivia. AC was LtCol Deryl Nelson, CPs were LtCol Bob Birkland and Maj Gary Wamsley. Load was picked up at Kelly AFB, TX. It was a new Sikorsky H-19 and a new Bell Jet Ranger. Routing to Bolivia was via Howard AFB, Canal Zone. Destination had no approach aids and was at 9,000' surrounded by peaks over 13,000'. Recipients were American civilians linked to US Embassy, though cargo was ostensibly for the Bolivian Air Force. A few weeks later, Time magazine had an article about the capture of Argentine revolutionary Che Guevara. His body was airlifted out of the Amazonian jungle on new Bolivian Air Force helicopters, probably the same that Nelson and crew delivered.

October 1968 84th MAS crew airlifted Apollo 7 capsule from Norfolk NAS, VA to Long Beach, CA. Capt Lorcnce D. Meier was AC in C-133B 90532.

January 1969 C-133B 90531, commanded by LtCol Donald Lockstrom, moved Apollo 8 capsule from Hickam to Long Beach.

March 1969 Maj John F. DcWitt commanded C-133B 71613 to move Apollo 9 command module from Norfolk to Long Beach.

15 April 1969 LtCol Vince Mankowski takes command of 84th MAS.

May 1969 C-133B 90535 moved Apollo 10 vehicle, "Charlie Brown," from Hickam to Long Beach under command of Maj James R. Bachman.

30 July 1969 Apollo support mission for 84, as Apollo Command Module "Columbia" stopped at Travis enroute from Hickam to Ellington. This was the moon-landing mission. Airlift was in C-133B 90526. LtCol Charles Martin commanded crew from Hickam, with LMs SSgt Edwin Sawyer and Bruce Thompson and TSgt James 1. Minter.

Martin's other crewmembers were Capt Richard H. Solcm and 1 Lt Ronnie L. Primrose (CP), LtCol Robert W. Smith and Capt Donald Mickiewicz (N), MSgt Weldon Bass and Irving Isaacson (FET). LtCol Ken Hales was AC on the Travis to Ellington leg. LMs were MSgt Norman King and TSgt Donald

A. Athen. Others in Hales' crew were ILts John E. Elsey and Phillip W. Wattles (P) and MSgt Russell A. Yadon (FET).

August 1969 84 MAS airlifts six emergency generators from Sacramento to Gulfport, MS after Hurricane Camille. AC was Maj Donald P. Purdy, LM was SSgt Richard D. King. Other crewmembers were ILt Chester Dilley (CP), MSgt Harry L. Bob and TSgt Kenneth O. Matzinger (FET).

1969 By this time, 84th MAS had provided airlift support to five consecutive Apollo space missions (Apollo 7 through 11).

October 1969 Travis C-133 90522 airlifts heaviest-ever operational load, a Minuteman ICBM in shipping container, weighing 89,776 lbs. Departure was Hill AFB, UT with destination Vandenberg AFB, CA, under command of LtCol Harold K. Hoskins and with LMs MSgt Norman C. King and SSgt Raymond D. Simmons. Other crewmembers were Maj Victor H. Wirta (CP), TSgt William. Laws and Donald A. Athen (FET).

2 December 1969 Apollo 12 lunar capsule "Yankee Clipper" moved from Hickam to Ellington. From Hickam to Travis, the crew was Maj James Bachman (AC), ILt Dale Davidson (CP), LtCol Robert Smith (N), SMSgts George Morar and MSgt Ward Carmichael (FET), and LM TSgt Leonard Jackson. The leg from Travis to Ellington was crewed by LtCol Harold Hoskins (AC), ILts Gerald Tccl and Danny Connors (CP), MSgts Archie Force and George Wilks (FET), and MSgt Donald Athen (LM).

6 February 1970 C-133B 59530 crashed 5 NM NNE of Palisade, NE. Five crewmembers killed. An existing 11" crack above the left side door propagated catastrophically, resulting in tearing of the upper forward fuselage skin. An explosive decompression caused large skin sections from the top and right side of the fuselage to be torn away and the airplane to break up. Cargo included Lycoming T53 and T55 engines in sealed shipping containers and CH-47B Chinook (possibly 67-8487), all enroute to US Army Depot New Cumberland, PA. Crewmembers were: Maj Harold Tabor (AC), ILt Duane Burdette (CP), TSgt James Clouse and MSgt Joe Tircny (FETs), and SSgt Ira Bowers (LM).

June 1970 Travis C-133Bs, along with Dover C-133 As, airlift relief equipment and helicopters to Lima, Peru, after earthquake. One Travis crew flew C-133B 90532 to move a Sikorsky HH-3 from Dover AFB to Lima, Peru. Pilots were Neal A. Long. Dale A. Davidson and ILt John Carson. Navigator was Capt Cal Taylor.

October 1970 C-133Bs participate in Operation Reforgcr II, moving elements of the 1st Infantry Division from Fort Riley, KS to England and Germany. C-133B 90529 flew to Rhein-Main AB, Germany and to Lakenheath and Greenham Common AB, England. AC was Maj John Wiggins, CP was Maj Gene D. Curry, and nav was Capt Cal Taylor. Other crewmembers were MSgt William L. Patrick and TSgt Waldo W. Fuller, Jr. (FET) and TSgt Donald R. Monroe and A 1C Donald W. Hopkins (LM).

3-8 March 1971 C-133B 90531 one of several Travis and Dover C-133s delivering armor to Hue Phu Bai and Phu Cat AB, Vietnam. AC was Maj Barry Stump, CP was Wayne Riley, nav was Capt Cal Taylor. Two missions into Hue Phu Bai with M-41 tanks, two more with self-propelled 155mm howitzers.

1971 LtCol Sidney E. Anderson becomes last commander of 84th MAS.

2 August 1971 Last C-133B, 90533, delivered to Davis-Monthan AFB for retirement¹³. Crew was BGen Ralph S. Saunders, 60 MAW/CC (ACM), LtCol Sidney E. Anderson (AC), LtCol Donald P. Purdy (CP), Maj Stephen F. Worden (N), Capt Edward A. McLaughlin, 60 MAW (ACM/NNQ), CMSgt George Morar and MSgt Harold F. Crince (1/FEt) and SMSgt Robert W. Greenfield (I/LM).

2 August 1971 84 MAS inactivated.

Crash Site 3S27N142E

Travis-based C-133B 71614 disappeared overwater after takeoff from Tachikawa AB, Japan. problems leading to the crash. Roy Isaacs redesigned the horizontal stabilizer airfoil to have a "droop snoot" as one fix. Addition of the "beaver tail" extension to the tail cone was another effort to resolve the tuck-under problem.

The second crash occurred 38 months later and was the first disappearance overwater, approximately 30 minutes after a night takeoff. At 2359L (local) on 9 June 1961, an 84th ATS crew departed Tachikawa AB, Japan in C-133B 71614, bound for Midway and then Travis AFB. The airplane was loaded with 82,500 pounds of fuel for the seven hour and 18 minute flight. Takeoff gross weight was 258,989 pounds, well under the maximum allowable gross weight of 286,000 pounds. Fuel endurance was ten hours twelve minutes. Forecast weather to 35°15'N 145°E was layered clouds with moderate turbulence. Three airliner crews that departed from Tokyo International Airport over the same route reported light to occasionally moderate turbulence throughout the entire climb.

Cleared to an initial cruise altitude of 17,000', the airplane made its first UHF contact with Tokyo Control at 0004L, passing 5,000'. At 0013L, the pilot of 71614 made the first high frequency (HF) contact with Fuchu Airways, estimating Whiskey Intersection at 0033L and 35°N 145°E at 0058L, just an hour after takeoff. Radar tracked the C-133 from eight miles west of Tokyo Range to a point nineteen miles west of Whiskey Intersection. The aircraft IFF/SIF was operating normally at that point, indicating no emergency at that time.

The aircraft did not report at Whiskey, approximately 120 NM prior to 145°E, and no contact could be established on any frequencies. Fifth Air Force declared 71614 missing at 0745L on 10 June 1961 and initiated search operations.¹³ Only a small amount of floating debris was found in the crash area.¹⁴ Debris included clothing from household goods in the cargo and two life rafts showing impact damage, indicating they were still stowed upon impact. The only aircraft component recovered was the fiberglass nacelle top access panel from the number four engine, along with the adjacent skin stiffener panel and the hinged fiberglass access door.

The eight crewmembers lost were:

Maj Lawrence J. Ceretti (FE/AC)

Capt Ray L. Willman (AC)

Wittle (Maintenance)

Not shown is TSgt Lloyd J. Richard (FET)

Capt Donald E. Holmes (CP)

Capt Leon M. Miller (IN), 2223 Instructor Sq, Hamilton AFB, CA.

I Lt Nathan L. Patterson (N)

TSgt Oral G. Converse (FET)

TSgt Howard J. Otero (FET)

SSgt Billy R. Edwards (LM)

All three pilots were very experienced. Ceretti, a flight examiner, had 10,000 hours and 902 as C-133 first pilot or instructor. Capt Willman, flying at the time of the accident, had 3,014 hours (610 as first pilot/instructor) and Capt Holmes total was 6,799 hours (513 first pilot/instructor). Despite such extensive pilot experience, something happened during the departure that caused the airplane to crash. Evaluation of recent flying time and health records gave no negative information and the board concluded that operator error was not a factor in the accident.

During the investigation, ocean currents and prevailing winds were plotted in relation to the debris that was recovered. The most probably point of impact was at or near 35°27'N 142°00'E. Ocean depths at that location are more than 3,600', which precluded recovery of any wreckage lying on the bottom.

Curt Budd remembers that pilots then and later wondered if the pilot stalled the airplane. The Air Force Dash One became available about the time that early copilots were advancing to the first pilot level. Some differences from the earlier Douglas flight manual included lower lift off and climb speeds that placed the airplane uncomfortably close to a stall. Curt Budd said that a heavyweight liftoff went better at 129 knots, rather than the specified 122. For instance, the Dash One climb speed was 140 knots, which felt wobbly to some pilots. The old timers preferred to climb at 145 or 150 knots except on local check rides. Budd wondered if those who adhered strictly to the Dash One speeds got into trouble, such as stalls during step climbs with perhaps a bit of icing.

The investigation board concluded that the most likely cause of the crash was engine nose case failure. This had been a continuing problem with the T34-P-9W and T34-P-7WA engines, with nine such failures since August 1960. Examination of recovered aircraft components indicated that the number four engine and nacelle had separated structurally prior to impact because of an overload such as from an unbalanced propeller. This could have happened when a blade was damaged by inflight strikes from portions of the number three propeller or other structural pieces after a nose case failure. When the engine nacelle separated from the airplane, there was severe damage to the fuselage and wing structure and probably loss of aircraft control and electrical power. This all took place within a four-minute period shortly before the airplane would have reached Whiskey Intersection.

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Number Four

The fourth crash was on another local training flight, on 10 April 1963 at Travis AFB. C-133B 90523 crashed 3/4-mile from Travis AFB, CA, while flying an afternoon local training mission. The primary purpose was for flight examiner pilot Maj Roy M. Johnston to upgrade 1Lt William H. Grey to first pilot. If time permitted, Johnson would also give training to 1Lt Leonard R. Dorman, a new 84th ATS pilot not yet qualified in the C-133.

The airplane took off at 1530 PST for the four-hour flight. Weather was 4,500' scattered with 20-mile visibility and a 10-knot wind from 220°, a typical spring day at Travis.

Shortly after 1534 PST, the aircraft requested clearance for a VOR/ILS approach followed by a circling approach. Clearance was given at 1602 PST and at 1605 PST, approach control instructed 90523 to start a procedure turn, to contact Travis tower and to abandon the approach if final approval was not received at the outer marker. 90523 acknowledged, then contacted tower just after 1610 PST. Tower cleared 90523 for a circling approach to runway 21 L and to report on base

leg, which the airplane acknowledged. The last transmission from the airplane was at 1611 PST, when 90523 responded "523, Thank you," to tower's report that the glide slope was normal.

During the circling approach, 90523 entered a steep turn and crashed at 1612 PST, killing all nine men aboard. Ken Swick had flown with Maj Johnston the day before, on a Minuteman airlift out of Hill AFB. Johnson was anxious to get home to go on leave. The maintenance airman aboard had only six months to go in his enlistment. The cause was never determined.

In addition to the pilots, the crewmembers were:

2Lt Edward Melda (N/Unq)
2Lt Russell R. Zablan, Jr. (N/Unq)
TSgt Donald D. Cox (FET)
TSgt Joel H. Nipper (FET)
TSgt Lloyd J. Richard (FET)
A3C Charles W. Wittle (maintenance)

Normally, a local flight would not have required any navigators, but the 1960s were still a time when each crew-member needed four hours flying per month to receive flight pay. The two unqualified navigators, lieutenants Melda and Zablan, may have been recent arrivals who had not flown for a while and wanted to assure their flight pay for the month. Three flight engineers would have been more common, for a great deal of upgrade training could be given on a local flight. Airman Wittle may have been aboard simply to get a flight in "his" airplane that he maintained.

Except for Maj Johnston, the instructor, the pilots on this crew were relatively inexperienced. Johnston was probably in the right seat, flying copilot to one of the lieutenants, most likely 1 Lt Grey. The weather would probably not have been an issue, for it was the typical clear spring flying weather at Travis, with clouds well above pattern altitude. The airplane would have been quite light, with little or no cargo and fuel for only four hours plus required reserves.

The maneuver was a circling approach, the name for any landing out of an instrument approach that required a heading change of more than 30° or when the final was to one runway then landing was changed to another. For 90523, this might have occurred by turning from a final to runway 21R to land on 21L, quite near the runway approach end. If neither pilot noticed that the airspeed was low, the airplane could have developed a power-on stall at low altitude. In a turn, the stall would have been accelerated and the rolling tendency exaggerated. Stall recovery from an altitude of less than 1,200' might not have been possible, resulting in a crash.

A contributing factor may have been a subtle spatial disorientation for the pilot. A pilot can become accustomed to the sight picture of the runway at normal pattern altitudes, which place the airplane well off to the side of the runway on downwind. In the final phase of a circling approach where the pilot changes heading to the landing runway, the airplane is at a lower altitude and will be closer to the runway. If the pilot fails to adjust for the lower altitude, he may find himself turning more

sharply at the lower altitude to make the final landing alignment. These steeper turns could lead to an approach stall at a high power setting and an altitude far too low for recovery.

As Nick Modders, an 84 MAS pilot, has said, "There are lots of opportunities to die in a circling approach. If the pilot feels he is overshooting the turn to final approach and over-banks and pulls on the yoke to force the over-banked turn when stalling speed is above what it would be for level flight then the plane could easily stall. One of the young pilots may have tried to muscle the airplane to where he wanted it and entered an accelerated stall at an altitude too low to recover, even if Maj Johnston was able to take the controls.

Number Nine

The next airplane lost, C-133B 90534, was flown by an 84th MAS crew commanded by Capt James C. Regan. Fortunately, there were no fatalities. The event took place on the morning of 30 April 1967, when the pilot ditched the airplane off the east coast of Okinawa 47 minutes after takeoff from Kadena AB. The destination was Midway with a load of retrograde cargo from Vietnam to the United States. This is one of two accidents for which the entire accident report was available.

The crew had been in crew rest at Kadena for two days, while various maintenance issues were resolved. They were alerted and reported for the flight at 0500L on 30 April. Following a normal preflight, the airplane took off on runway 23R at 0648L, with a climb clearance to 15,000'. Passing 12,000', the number 1 engine torque oil pressure (TOP) began to fluctuate, with similar problems on the other engines soon after. Capt Regan requested and received clearance to return to Kadena. At 0707L, while reversing course, number 4 TOP fluctuated violently. Regan feathered the propeller, declared an emergency and reported to Kadena that number 1 TOP was fluctuating.

The airplane was 65 NM north of Kadena with radar vectors to the field. The engineers started dumping fuel and altitude was maintained until about 30 miles out. At that point, number one propeller was intermittently in fixed pitch. The pilot started descent. Passing 8,500' for 8,000', propellers 1, 2 and 3 were in fixed pitch. Engineer MSgt Raymond E. Wetsel replaced the propeller bus current limiter in the forward DC distribution panel, but this did not help. Concurrently, the number one gas turbine unit flamed out and could not be restarted. The air driven generator was extended to supplement electrical power but the power subsequently provided was unreliable.

At 0720L, the airplane was in a shallow descent when approach control asked if they could descend in 11 miles to 2,200' for a straight-in approach. Regan stated his desire to level off at 6,000' and do a 360° turn, ending on a 140° heading to intercept final approach. Leveling at 2,500', he had all throttles full and airspeed at 210 KIAS. Ground control instructed a turn to 210°, during which the remaining three engines flamed out.

Capt Regan instructed the crew to prepare for ditching. He turned to approximately 220° and lowered the nose to maintain 150-160 KIAS. Just before the flare, airspeed was reduced to 134-140 KIAS, with final airspeed 110 KIAS just before impact. Ditching time was at 0735L, 35 NM northeast of Kadena in the East China Sea. All crewmembers on the flight deck escaped without injury, but flight engineer MSgt Ray Wetsel, who had strapped himself down in the cargo compartment,

suffered a seriously broken leg during the impact. All crewmembers were rescued by helicopter between 0843L and 0852L and then transported to the General Hospital.

All of the crew except MSgt Wetsel were clinging to the floating nose wheel when the helicopter picked them up. Three different helicopters, two USAF HH-43s and an Army HH-21, picked up various crewmembers using slings and hoists. Capt Regan, aboard one HH-43, insisted that they search for MSgt Wetsel. Pedro I, piloted by Capt Joseph Herr, hovered over the wreckage. Pararescueman (PJ) TSgt Leonard Fullerton thought he saw someone floating among the wreckage in the broken fuselage. Lowered to the wreck, he found Wetsel and signaled for a basket. Wetsel was hoisted to the helicopter while Fullerton waited until a sling was lowered for him. Fullerton later received a decoration for his actions.

The accident report particularly noted Capt Regan's aeronautical skill. He faced an unprecedented emergency and performed the only ditching of a C-133, a great achievement in any aircraft. All of his control settings were strictly by the book and touchdown speed was the recommended 10 knots above power-off stall. The report said, "The successful ditching of a four-engine aircraft without power indicated an outstanding ability to remain calm under the mental stress of multiple emergencies and reflected excellent basic pilot abilities. Everyone was able to don a life preserver and everyone survived. Capt Regan further showed his concern as the aircraft commander in his insistence on an immediate search for MSgt Wetsel. Ultimately, his stellar performance was recognized by the award of the Distinguished Flying Cross.

An Army tug was dispatched from Naha Port, on the southwestern coast of Okinawa, to attempt salvage. It arrived on scene at 1830L, eleven hours after the ditching. While the tug was maneuvering into a position to attach a tow line, the aircraft wreckage sank, at 2010L. Contrary to legend in the years since, the wreckage was not towed at all nor did local fishermen salvage anything from the fuselage. The wreckage still afloat was the upside down aft section of the airplane, from the leading edge back.

The crash position indicator and flight data recorder were not recovered. Navy divers attempted to remove a retainer ring secured by twelve bolts. During the attempts over a period of approximately 30 minutes, the work site sank from a depth of one foot to over 30'. The effort was suspended when the sink rate of the tail increased.⁵⁵ The tail continued to sink until the main wreckage was floating with the propeller spinners pointing straight up.

In addition to Capt Regan and MSgt Wetsel, the crew list included

1Lt Lawrence N. Garrett (CP)
Capt Richard A. Zabel (CP)
Capt Regis P. White (N)
1Lt Herbert W. Nakagawa, Jr. (N)
MSgt William L. Patrick (FET)
A1C Benton L. Seeley (LM)
MSgt James T. Dillon (FET/FE)

Cause

The accident investigation board found that the primary cause of the accident was material failure. There was a design deficiency/inadequacy of the propeller electrical system. The system had only a single circuit for propeller blade angle control and for propeller electric power. The failure of one or both resulted in the blade angles becoming fixed at approximately a 40° angle of attack, which was normal for cruise power at 12,000'. However, when the aircraft descended to lower altitudes the engines did not have the power to sustain this high blade angle in thicker air and subsequently flamed out. The investigation board recommended modification of propeller electrical circuits to preclude more than one propeller from being affected by a malfunction. Also, all C-133s were inspected to insure their DC electrical systems were operating properly.

Remedial Actions

Several lessons learned from this accident were applied to subsequent operations. A new pilot procedure was instituted on the insistence of investigation board member LtCol Lou Martin. Called the Estimated Engine Flameout (EEFA), it was evaluated by test pilots at Edwards AFB and approved as a stopgap measure until there was a fix to the multiple fixed-pitch propeller situation. All C-133 ACs were required to satisfactorily demonstrate three EEFA's.

Joe Moraine and Ken Ablett recalled that all pilots practiced four-engine out landings on all check rides after the ditching. The maneuver was initiated at 4,000' AGL over the end of the runway, where all four engines were reduced to flight idle to simulate a four-engine flameout. Gear and landing flaps were extended and the airplane spiraled down to landing without power.

Other C-133s experienced problems similar to those that caused the ditching. Cable connections in the main electrical junction box had been swaged too hard at Douglas. Over time, vibration caused the metal to crystallize and break, isolating the propellers from their controls. MSgts Ike Isaacson and Alva Hervey were engineers on a C-133 departing Utapao RTAFB, Thailand, with Capt Pete Gissing in the left seat. In cruise at 26,000', they found that the propellers were not responding properly to throttle movement. Gissing set up a race track pattern while the engineers troubleshot the problem. They finally found the problem in the engineer's overhead circuit breaker panel, where the strap from the main electrical buss to the propeller buss was burned in two.

Isaacson cut four pieces of wire from a reciprocating engine on the cargo deck. These were wired into the panel and each propeller was checked that it responded to the throttle. Once they were certain that things were staying together, the airplane returned to Utapao where the crew stayed until the airplane was inspected and released to fly home to Travis. On 20 February 1970, Isaacson and Hervey received the MAC Outstanding Individual Safety Award, signed by MGen William G. Moore, commander of MAC.

Douglas designed new supports for the electrical cables so they would survive the high vibration environment. Kits were produced and sent out to Travis and Dover to modify all of the remaining C-133s. There were only three years of service remaining, in which one more C-133 crashed due to other vibration effects and a Dover crew was killed in a civilian aircraft.

Number Ten

The last C-133 to crash was a B-model, 90530, with an 84 MAS crew. The crew, commanded by Maj Harold W. Tabor, had picked up the airplane at Travis from the overwater crew. The destination was Harrisburg, PA to deliver CH-47B 67-18487, returning from Vietnam for depot maintenance.

The crew was alerted at 1800 PST on 6 February 1970, and departed Travis at 2040 PST. Oakland Center cleared 90530 to flight level (FL) 190. At 2051 PST, Maj Tabor requested and received clearance to FL 210 and reported level at 2110 PST. An hour later, the crew requested FL 230, reaching that altitude at 2213 PST. The true airspeed (TAS) was increased to 280.

At 2311 PST, Tabor informed Denver Center that he was increasing TAS to 290. At 0010 PST, Denver Center received and approved a request to climb to FL250. The aircraft reported leaving FL230, the last radio transmission recorded. Denver Center radar lost identifier beacon contact at 0014 PST and radar reflections showed the aircraft in a slow right turn and other nearby returns similar to that from a chaff drop. After a nearly complete circle approximately eight miles in diameter, all returns disappeared at a position ten miles west of the Hayes Center VORTAC and 20 miles due east of the airport at Imperial, NE.

At 0033 PST, United Airlines (UAL) Flight 2747 reported to Denver Center that they saw a bright flash in the sky while they were about 100 miles east of the Hayes Center VOR-TAC. This may be the origin of a tale that an airliner saw a C-133 descending from the clouds in a spin. When abeam Hayes Center, UAL 2747 reported two fires on the ground. A ground report reached the Imperial Flight Service Station telling of an explosion in the sky, a vertical drop to the ground and another explosion. This may have been one by Roy Lusk, a conductor on a Burlington Railroad train. He saw a "tower of light" for five seconds and reflections of light some 20 seconds later. The train crew reported the sightings to their dispatcher in McCook, NH. who passed the information on to Sheriff Jim Short. Deputies and state troopers were soon on scene where fire crews from Hayes Center and McCook dealt with the flames. Military personnel relieved the civilian security forces in mid-morning. The wreckage impacted in a field five miles north-northwest of Palisade, ML. All five crewmembers were killed and the huge C-133 was reduced to thousands of incredibly small pieces. In addition to Maj Tabor, they were: ILt Duane D. Burdette (CP) MSgt Joseph P. Tierney (FET) TSgt James J. Clouse (FET) SSgt Ira E. Bowers (LM)

Only shortly before the accident, Maj Tabor and LtCol Lou Martin shared some beers at Dover, discussion their plans after retirement on 30 March 1970. Both had been assigned to the 40th Troop Carrier Squadron, Neubiberg, Germany and met as their schedules permitted. For Martin, Maj Tabor's death was a personal loss

Cause

The accident investigation board, headed by Col Henry G. Bierbaum from Travis AFB, set up in the National Guard Armory in McCook, NE. Among the investigators was Roy Isaacs, the long-time Douglas C-133 project engineer. The airplane wreckage was widespread, for the C-133 broke up in flight and landed in two large pieces and many smaller fragments. Much of the wreckage was laid

out on the armory floor in its relative location. Several pieces of skin showed propeller strikes. They came from above and slightly aft of the side cargo door, between fuselage stations 280 and 375. A small portion of a cargo floor beam also had propeller marks that matched marks on the blades of the number two propeller.

Looking at the wreckage on the floor from the stage, Isaacs saw a generally straight line on the portions that had once been just above the side cargo door.⁶⁴ Using a jeweler's loupe, he confirmed that it was a fatigue crack, which was finally determined to be the primary cause of the accident. Electron microscope inspection later at Wright-Patterson AFB confirmed this diagnosis. The cause of the crash was propagation of a crack in a rivet hole in the fuselage skin at fuselage station 505. The crack had grown to 11 inches over time, and in flight it rapidly extended forward and aft to a total length of 17'. The result was an explosive decompression when the skin began to peel away, throwing skin sections and structure from the top and right side of the aircraft into the propellers.

An Army participant in the investigation was Maj Ron Bunch, from the 34th General Support Group at Tan Son Nhut Airport in Saigon. The Army's concern was that static electricity might have caused an explosion due to residual JP-4 in Lycoming T53 and T54 turbine engines in shipping cans. While this proved to not be that case, the Army subsequently made a concerted effort to ensure that all JP-4 was purged from engines before they were packed for shipment.

The solution chosen to prevent further such events was to install sixteen 4" strips ("belly bands") of .080 gauge 7075ST aluminum around the forward fuselage. The bands were riveted to the exterior skin surface between fuselage stations 278 and 680, including four around the section with the forward side cargo door. Their purpose was to prevent any cracks from propagating catastrophically. This was the last major modification to the C-133 before the fleet was retired in 1971.

Travis Accidents

C-133B aircraft assigned to Travis AFB were involved in two accidents that kept them from flying for extended periods. They involved 90533 and 71615. The latter airplane was in maintenance on 20 April 1968 when it jumped the chocks during a full-power engine runup. The airplane traveled about 200 feet, ending up nose-first in a metal Butler building. It did not stop until the wings themselves hit the building. There was extensive damage to the top of the fuselage, landing gear pods and the two inboard engines. One outboard engine and the wing leading edge had minor damage.⁶⁸ A man in the building found himself running across stored medical supplies with the C-133 in hot pursuit. The reason for the accident was that the brakes had been repaired but not properly bled and did not hold during the runup.

The accident with 90533 occurred on 28 March 1969 during a functional check flight (FCF) after coming out of the maintenance dock. Don Wohlever recalled that there were 14 "dock rats" on the airplane, getting a ride in "their" airplane. Part of the flight was a check of the air-driven generator and manual landing gear extension, which left the landing gear lever in the UP position though the gear was down. Before landing, the flight engineer started the GTU and then the airplane touched

down. Unfortunately, when hydraulic pressure built up, the landing gear retracted, resulting in a belly landing and extensive damage to the airplane's underside. The airplane was jacked up, the gear extended again and then the C-133 was towed to the hangar, where it was repaired after several thousand man-hours of work.⁷¹ Fortunately, this was the last major accident involving the C-133, except for the final crash.

C-133 59-0530 Unavailable/26 August 1960/1 September 1960 45581 1501 ATW 26 August 1960; delivered to 1501s1 ATW (MATS) at Travis AFB, CA September 1960; to San Bernardino AMA at Norton AFB, CA July 1961 -September 1961 and May 1962-June 1962 for attention, returning to Travis AFB after each period; to TEMCO at Greenville, TX April 1963 for maintenance, returning to Travis AFB on completion; to Warner Robins AMA at Robins AFB, GA June 1963-August 1963 for attention, returning to Travis AFB on completion; to TEMCO at Greenville May 1965-June 1965 for maintenance, returning to Travis AFB on completion; 1501s1 ATW (MATS) renumbered as 601 MAW (MAC) on 8 January 1966; to Dover AFB, DE for attention by Lockheed Aircraft Services January 1966-February 1966 and April 1966-May 1966, returning to Travis after each period; to TEMCO Greenville April 1967-June 1967, November 1968-December 1968, April 1969-June 1969 and November 1969-December 1969 for maintenance, returning to Travis AFB after each period. Destroyed 6 February 1970, disintegrated in flight over NW Nebraska, due to catastrophic propagation of old crack in skin of forward fuselage. Cargo included CH-47B Chinook 67-18487, destroyed.

The 39 MAS and the 84 MAS were permanently deactivated with the C-133's retirement. The last military flight of the C-133B was on 2 August 1971, by an 84th crew, to deliver the final C-133B 90533 to Davis-Monthan AFB, Arizona.

At Travis AFB, C-133As and the 84 ATS were assigned to the 1501 Air Transport Wing under Pacific Division. MATS. The 1511 (601 under MAC) Organizational Maintenance Squadron supported the C-133s. The wing was redesignated on 8 January 1966 as the 60 Military Airlift Wing (MAW), assuming the lineage and history of the 60 Troop Carrier Wing (Medium), first activated on 1 July 1948 at Kaufbeuren AB, West Germany. The 60 TCW quickly went into the flow of missions supporting the Berlin Airlift. The 60 operated in Europe until it was deactivated on 25 September 1958. When MATS became MAC, the 60 TCW was redesignated as the 60 MAW and activated 27 December 1965. On 8 January 1966, it replaced the 1501 ATW at Travis AFB, CA, assigned to 22d Air Force, which replaced MATS Western Transport Air Force (WESTAF). The 60 MAW operated the C-141 Starlifter and the C-133B until the C-5A replaced the C-133 in Spring 1971. The C-133s began to move to Davis-Monthan AFB as the C-5 strength reached ten aircraft.

Reforger I (January 1969)

The Reforger series of exercises began in 1969 and terminated with Reforger 1993. The name was a contraction of the term Return of Forces to Germany. Its purpose was to reassure European allies during the height of the Cold War that the United States could rapidly move conventional military forces from the US to Central Europe to meet any Soviet advances westward. The American Army was the shield behind which war-torn west European countries rebuilt their economies. The

Reforger exercises showed America's commitment to the North Atlantic Treaty Organization (NATO) alliance.

The first aircraft on the first mission of Reforger I was piloted by Maj John C. Wiggins, of the Travis-based 84 MAS. His C-133B departed Ft. Riley, K.S on 3 January 1969, carrying 26 tons of equipment belonging to an Infantry Division, bound for Germany. The mission copilot was Maj Gene D. Curry, with flight engineers MSgt William L. Patrick and TSgt Waldo W. Fuller, Jr. Managing the cargo were loadmasters TSgt Donald R. Monroe and A1C Donald W. Hopkins. Many more loads followed Maj Wiggins' airplane, including C-133s and C-141 s from all over the United States. MAC aircrews were expected to fly more than 9,000 hours during the exercise.

The first part of the deployment extended from 3 January 1969 until it concluded on 20 January. Some 5,000 Army troops went from Kansas to Germany, along with their equipment that was not already prepositioned in Germany. Despite weather that threatened the airlift, MAC aircrews increased their efforts to keep the deployment on time or even ahead of schedule. A second phase began on 20 January, with C-141 s landing every 30 minutes over a two-day period. The total deployment included 12,000 Army troops and 800 tons of cargo, much of which was hauled by C-133s from Travis and Dover. Travis participation included 23 C-133 missions and 50-60 C-141 missions. The redeployment was scheduled to commence on 8 February, and would involve nearly as many aircraft as the deployment.

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