39 MILITARY AIRLIFT SQUADRON

MISSION

LINEAGE
39 Ferrying Squadron constituted, 9 Jul 1942
Activated, 28 Jul 1942
Redesignated 39 Air Transport Squadron, 24 Mar 1943
Disbanded, 18 Oct 1943
Reconstituted and redesignated 39 Air Transport Squadron, Medium, 4 Nov 1953
Activated, 16 Feb 1954
Redesignated 39 Air Transport Squadron, Heavy, 8 Sep 1957
Redesignated 39 Military Airlift Squadron, 8 Jan 1966
Inactivated, 31 Mar 1971

STATIONS
Hamilton Field, CA, 28 Jul 1942-24 Jan 1943
Hickam Field, Territory of Hawaii, 25 Jan 1943-18 Oct 1943
Dover AFB, DE, 16 Feb 1954-31 Mar 1971

ASSIGNMENTS
11 Ferrying Group, 28 July 1942
19 Ferrying (later, Transport) Group, 18 Nov 1942-18 Oct 1943
1607 Air Transport Group, 16 Feb 1954
1607 Air Transport Wing, 18 Jan 1963
436 Military Airlift Wing, 8 Jan 1966-31 Mar 1971

WEAPON SYSTEM
C-54, 1957
C-133

COMMANDERS
2nd Lt William M. Home; 28 July 1942-unknown
Not manned, Jan 1943
Unknown, Jan-18 Oct 1943
Maj Thomas K. Trainer, 16 Feb 1954
Lt Col John F. Zinn, Jr., 16 Au 1954
Maj Clyde V. Hendricks, 1 Jan 1957
Capt William J. Wilson, 11 Apr 1957
1st Lt Paul F. Miritello, 25 Apr 1957
Maj John McGarry, 29 Apr 1957
1st Lt Richard B. Kinney, 6 May 1957
Maj J. B. L. Levesque, 10 Jun 1957
Maj Alvin Moore, Jr., 3 Sept 1957
Lt Col John K. Thompson, 24 Mar 1958
Lt Col Walter F. Derek, 4 Jan 1960
Maj Henry J. Wurster, 17 Mar 1961
Lt Col Alex H. Gay, Jr., 6 Nov 1961
Lt Col Henry J. Wurster, 15 Mar 1962
Lt Col Rayvon Burleson, 16 Mar 1967
Lt Col George M. Conner, 15 May 1968
Lt Col Donald V. Flanders, 16 Jan 1970-31 Mar 1971

HONORS
Service Streamers

Campaign Streamers
Asiatic-Pacific Theater, WWII

Armed Forces Expeditionary Streamers

Decorations
Air Force Outstanding Unit Award
26 Dec 1965-23 Jan 1966
13 Nov-18 Dec 1967
1 Jan 1968-31 Dec 1969

EMBLEM

On a disc divided by a white barrulet per fesse debased, Air Force golden yellow and black, edged black, the upper part charged with a black eagle, swooping downward, head, tail and talons white, trimmed green and bearing in each talon a white lightning bolt, all above white boxes of material edged green issuing from the barrulet; in base four golden yellow stars fessewise.

MOTTO

OPERATIONS

Activated in 1942 to ferry newly manufactured combat aircraft to combat units deployed overseas. Primarily flew B-25s and B-26s to Southwest Pacific Area, also ferried aircraft to Africa for units assigned to the North African Campaign and European Theater of Operations. Inactivated in October 1943 during realignment of Ferrying Command to Air Transport Command.

From activation until November 1942, as part of 11 Ferrying Group, Hamilton, the 39th helped provide dispatch and control over ferried aircraft moving to the Pacific and may have ferried some planes. Upon joining the 19th Ferrying Group, the squadron prepared to move to the Pacific, but was moved without personnel or equipment in January 1943 to Hawaii. Personnel of a disbanded airways detachment were used to man the squadron and the 39th provided dispatch and control of aircraft being ferried through Hawaii. By June 1943, the squadron had only a handful of people and, until disbandment in October 1943, was never to exceed 11 personnel.

In its second life, the 39th flew missions originally to points in the Arctic, Europe, Africa and South America, but later also to Alaska and Southeast Asia. From May to about December 1957, the squadron converted to C-133s becoming the first USAF unit to fly the C-133A and flew strategic cargo missions and resupply of deployed forces.

By the end of 1957, there were six C-133s at Dover with more following at roughly one-month intervals. With several 39th Air Transport Squadron (ATS) crews upgraded to fully qualified status, the 1607 Air Transport Wing (ATW) launched its first European flight on 6 October 1957. C-133 A

40145, newly arrived from the factory, was scheduled for the mission, with the first stop at Chateauroux AB. France. Additional stops would include Wiesbaden AB and Rhein-Main AB, Germany and RAF Burtonwood in England. Chateau-roux was the designated European turnaround point and was a standard C-133 destination until the French government asked the USAF to leave in 1967. Going along with the crew were Douglas test pilot Jack Armstrong, project engineer Ray Frankel and Earl Pleasant, the Douglas representative at Dover.

Beginning in December, a 90-day C-133 employment and operational suitability test began. Eight flights would depart from Dover and use bases at Burtonwood, Chateauroux and the Strategic Air Command base at Nouasscur, Morocco. Enroute stops would be Ernest Harmon AB, Newfoundland, Keflavik, Iceland and Lajes AB, Azores. The operating commands were MATS and the Air Proving Ground Command (APGC). Test objectives included determination of the C-133's suitability as a long-range intertheater logistics carrier and its ability to provide emergency aeromedical evacuation between a theater of operations and the United States.

The first trans-Atlantic flights landed at Chateauroux on 4 January 1958. The two aircraft, 40144 and 40146, departed Dover 1:17 apart, carrying more than 40,000 pounds apiece. Their respective times over the 3,420- nautical mile (NM) distance were 10:29 (40144) and 10:21 (40146). At Chateauroux, 40144 turned around to return to Dover while 40146 continued on to other European bases. The aircraft commanders were Col Claude W. Smith and Maj William R. Stanton. Other pilots with Col Smith were 1607th ATW commander BGen Francis C. Gideon and 1 st pilot Maj Stanley L. Forster. The navigators were Maj Edgar M. Parmentier and Capt Stephen A. Byrne. The single engineer was MSgt Conrad R. Stephens, with loadmasters SSgt James D. Cad-dick and AIC Gary L. Bartlcmus.
Stanton's crew included Capt Raymond R. Bern (1st pilot), Maj James M. Myers (CP), navigators Capt Kenneth Humphreys and I Lts Michael G. Muclzo and William B. Lewis. The three flight engineers were MSgts DcRoy W. Cain, Perry T. Heishman and James T. Voorhees. Loadmasters SSgt William T. Kollam and A3C Frederick Williams managed the payload. Myers and Humphreys were from the APGC at Eglin AFB, FL, conducting service tests during the flight. Also aboard was Douglas service representative Claude D. Bell.

It became fully operational on 1 March 1958, but grounded in April and May of that year due crashes.

The first Cargomaster to crash was C-133 A 40146, on the morning of 13 April 1958. Manned by a crew from Dover AFB's 39 Air Transport Squadron (ATS), the airplane took off at 0828 EST on a local flight test mission. Andrews [AFB] Airways had two routine radio contacts with 40146 at 0834 EST and again at 0840 EST. Three minutes later, the aircraft crashed inverted in the Ellendale State Forest, approximately 26 miles south of Dover AFB. All four crewmembers were killed. They were Aircraft Commander (AC) Capt Raymond R. Bern Copilot (CP) ILt Herbert Theodore Palisch Flight Engineer (FET) TSgt Marvin Adair Aust FET TSgt Edward L. McKinley, Jr.

Bern was a very experienced pilot, with 8,363 hours. He had 568:05 hours as a C-133 first pilot and instructor. Palisch had the hours expected of a ILt copilot, with 1,662 hours. C-133 time was 40:40, including copilot time. The accident report showed Capt Bern in the left seat at the time of

the accident. Weather conditions were an unlimited ceiling, 15 miles of visibility with a surface temperature of 51° and dew point at 39°.

An Air Force multi-command team did an engineering evaluation of the C-133, producing 121 requests for alterations. Two major configuration changes were to limit flap extension to 35° and a redesign of the horizontal stabilizer to prevent a nose-down movement when flaps were extended. This may have been related to porpoising and a "tuck under" problem noted in early C-133 flight-testing. During a rapid descent, the elevators would lock in the down position, forcing the nose to continue to greater negative pitch. A new "beaver tail" extended tail cone did much to cure the porpoising. The elevator redesign changed the leading edges to have a "droop snoot" shape and flight-testing showed that this appeared to be the solution. All C-133s were subsequently fitted with both of these modifications.

During the after-crash investigation, some 17 quality control and design deficiencies were identified in the control system. A Douglas team traveled to Dover to correct the defects so that the airplanes could be taken off of grounded status. The repairs were completed on seven Dover aircraft by 29 May 1958.

The Douglas investigation also identified several conditions that caused extensive unprogrammed maintenance man-hours. Some 22 corrective actions involved 4,600 man-hours per aircraft to reinforce structural skin cracking. Eighteen aircraft were involved in repair project Little Dusty, four done at Dover and the remainder at Douglas. These skin cracks were early evidence of a problem that plagued the C-133 until the very end of its service life and were the specific cause of the last crash, in 1970.

No cause was determined for the crash. Given the C-133's dramatic and rapid stall characteristics, it is possible that the airplane entered a stall and rolled inverted at an altitude too low for the pilots to recover. Former 39 ATS pilot Lou Martin said that the fact that the airplane impacted inverted exhibited the results of a power-on stall and C-133 project engineer Roy Isaacs attributed the crash to tuck-under. Flight testing at Edwards AFB showed that there was little to no warning of a stall, with airframe buffet about four knots before stall when flaps were up and no recognizable warning with flaps down.

Six months after the crash, Flightline Maintenance Squadron commander Maj Charles Gutekunst discovered a C-133 construction detail that led to a theory about the cause of the crash. One morning, Maj George Frum asked him to inspect a C-133A that Frum was scheduled to fly. Frum told Gutekunst to sit in the seat and try to move the elevators. They were completely inoperative. The two pilots followed the control cables aft to the pressure bulkhead. There, the cables were connected to a steel rod passing through a tube in the pressure bulkhead. Rain during the night had frozen in the tube, preventing control cable movement. Both pilots instantly though of Capt Bern's crash and the possibility that he had experienced such a control problem. Bern had flown an undulating flight profile taking the airplane from 10,000' over Dover and down as low as 100' between a house and silo and back to 3,000'. That was the altitude from which the airplane was observed to pitch up to the left, roll inverted and crash upside down.

Using components from the wrecked C-133, Gutekunst experimented in the walk-in freezer at the base meat plant. The temperature was stabilized at 17°, the same as at 10,000' the day of the crash. There had been rain during the night before the crash. After wetting the cable/rod in the tube, it took only four or five actuations before it froze solid. This process was replicated several times. Frum and Gutekunst demonstrated the process to the two Douglas technical

representatives, who "were absolutely shocked." The wing commander, wing safety and Douglas were all notified. The fix from Douglas was to remove the tubes and simply use one-inch holes in the pressure bulkhead. The effect upon aircraft pressurization was negligible. Douglas was especially happy to have the problem identified, for the same elevator control system was used on the DC-8 jet airliner. Frum and Gutekunst were convinced that they had found the cause of the crash. Difficulties with elevator control would explain an "up and down flight path for 40 miles culminating in the stall with full flaps and the inverted spin.

Don Coyle, who was a Dover flight examiner and simulator instructor with several thousand C-133 hours, had another theory. He believed the crash resulted from elevator blanking when the flaps were fully extended. It was standard procedure to lower the landing gear and go to full flaps at the final approach fix. At Dover, the fix was about 26 miles south of the field. When flaps were fully extended, they left the elevators in a dead area, causing them to "float" with no effect at all. Coyle said the yoke could be run from full aft to full forward with no effect."

C-133 stalls were characterized by severe airframe buffet, the right wing dropped and the nose yawed to the left. Recovery required nose-down elevator and/or application of power. A fully-developed stall might also bring rudder buffet and rudder lock, due to the yaw. There would be altitude loss of 500' to 1,500', depending upon the recovery technique. Capt Bern might not have had the altitude necessary to recover if the airplane had entered a stall, though the distance from the field indicated that the airplane might have been well above pattern altitude.

The 39th ATS set a new world record for payload airlifted to altitude on 16 December 1958. It participated in exercises and maneuvers in U.S. and overseas. The unit flew humanitarian, rescue and mercy missions on several occasions. It participated in the UN Congo Airlift (Operation New Tape) in the early 1960s and the Cuban Missile Crisis of late 1962. Beginning in January 1964, the 39th supported C-133 training for all MATS units. It became the first C-l 33 unit to reach 100,000 accident-free flying hours in September 1964. When the unit was deactivated on 31 March 1971, it had flown 220,287 accident-free flying hours. The squadron received an AF Outstanding Unit Award for participation in an extensive airlift of troops and equipment from Hawaii to Vietnam in December 1965-January 1966 (Operation Blue Light) and another for Operation Eagle Thrust. The 39th flew a record 22,399 hours in 1966, surpassing its old record of 22,336 hours set in 1960 during the Congo Airlift.

C-133A 62008 made its final flight from Dover AFB on St. Patrick's Day, 1971. There was a mixed crew from the 1 and 39 Military Airlift Squadrons. The aircraft commander was LtCol Lawrence A. Doyle, commander of the 1st with copilot LtCol Donald V. Flanders, the 39 commander. Other crew members were 1Lt Donald C. Zartner (CP), Capts James G. Gibson, II and Bobby E. Battle (N), flight engineers TSgt William E. Rcilly and MSgt Francis L. Dugas and loadmaster TSgt Richard A. Kjcr. Because the airplane was being transferred to the Air Force Museum collection, there was a four-man team from the Aerospace Audiovisual Service, including ILtC. F. Arndt. A short two hours later, 62008 flared over the Wright-Patterson AFB runway and taxied to a hangar in Area B on old Wright Field. There, Museum Director Col Bernie S. Bass signed the forms which transferred 62008 to the museum, as soon as Col Doyle added his signature. This was the last flight of the record-setting airplane that arrived at Dover on 10 November 1958. Bobby Battle said, sadly, "She just doesn't belong here."

Back Porch (May-July 1962) was an early Vietnam support mission, to airlift high-priority electrical and mechanical equipment needed for a communications network. Dover aircraft flew 56 C-124 and 21 C-133 missions, augmented by C-47s belonging to the Minnesota Air National Guard's 133 ATW from Minneapolis-St. Paul International Airport. The 1607 ATW Air Terminal at Dover AFB processed just under three million pounds of cargo transported in the operation.

22 - 28 May 1964: Two C-133s from the 1st and 39th Air Transport Squadrons and one C-124 from the 15th Air Transport Squadron were dispatched, carrying emergency fllood control equipment, on a mission to Costa Rica, the equipment was used to prevent loss of lives in the flooded area.

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Sources

Air Force Historical Research Agency, U.S. Air Force, Maxwell AFB, Alabama.
The Institute of Heraldry. U.S. Army. Fort Belvoir, Virginia.
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