

139 AIRLIFT SQUADRON



MISSION

LINEAGE

303 Fighter Squadron, constituted 16 Jul 1942

Activated, 23 Jul 1942

Disbanded, 1 May 1944

Reconstituted and redesignated 139 Fighter Squadron (SE) and allotted to ANG, 24 May 1946

Effective 18 Nov 1948

Redesignated 139 Fighter Interceptor Squadron, 1 Sep 1952 **1951**

Redesignated 139 Tactical Fighter Squadron, Nov 1957

Redesignated 139 Air Transport Squadron

Redesignated 139 Military Airlift Squadron, 1 Jan 1966

Redesignated 139 Tactical Airlift Squadron, 16 Mar 1971

Redesignated 139 Airlift Squadron 15 Mar 1992

STATIONS

Morris Field, NC, 23 Jul 1942

Spartanburg Mun Aprt, SC, 23 Jul 1942

Sarasota, FL, 20 Aug 1942

Drew Field, FL, 22 Aug 1942

Sarasota, FL, 5 Jan 1943-1 May 1944

Scotia, NY

ASSIGNMENTS

337 Fighter Group, 23 Jul 1942-1 May 1944.

WEAPON SYSTEMS

Mission Aircraft

P-39, 1942

P-43, 1942

P-47, 1943

P-40, 1943

F-47D, 1948
F-51H, 1951
F-94B, 1954
F-86H, 1957
C-97A, 1960
C-130A, 1971
C-130D, 1974
LC-130H
C-130H

Support Aircraft

C-47
T-6
T-33

COMMANDERS

Maj William J. Flavin
Maj Fredrick J. Zilly,
LTC John C. Campbell, 1 Mar 1962
Dave Ormiston
Russell C. Evatt

HONORS

Service Streamers

American Theater

Campaign Streamers

Armed Forces Expeditionary Streamers

Decorations

EMBLEM

Mel Graf created the squadron insignia; the fighting cock.



Under the command of Lt Colonel Frederick J. Zilly the Redman-on-a-Rocket was approved by the National Guard Bureau as the 139th insignia. The insignia has a distinct meaning: The Brave is indicative of the great fighting spirit of the United States. The Rocket portrays the speed with which the men of the Air National Guard will avail themselves to the defense of our country whenever called on to do so. The Bloody Tomahawk brandished by the Brave symbolizes the destruction encountered by past enemies of the United States who chose to attack this country through force of arms.



As missions change, new insignia depicting the mission replace those that have gone before. Bob Spencer of the 139th AME Flight created the insignia denoting the Military Airlift Mission. The four happy Vultures represent the four engines of the C-97. The section of the world identifies global airlift. The jaunty passenger and his baggage tells that both people and cargo can be transported anywhere, anytime. The C-97 years were truly memorable ones.



MOTTO

NICKNAME

OPERATIONS

The 109th AW, an Air National Guard wing based in Scotia, New York, has a two-season job. From late March to August in the Northern Hemisphere, the wing carries supplies and scientists to National Science Foundation and European research stations in Greenland. During the summer in the Southern Hemisphere from October to February 109th AW crews fly resupply missions from McMurdo Station on the edge of Antarctica inland to the NSF's domed research facility at the South Pole and to remote locations throughout the Antarctic continent.

The essentials of that mission—delivering food, fuel, vehicles, supplies, and equipment may be the same as for other airlift units, but the 109th is unlike any other C-130 wing anywhere. Tactical C-130 aircrews often fly at night in blackout conditions. Tactical Hercules crews love to land on unprepared dirt strips. On a good day, a Ski-Here crew lands on a groomed skyway. But often snow landings involve searching for a place to land and avoiding berms and crevasses. On hot days, takeoff runs for a standard C-130 crew can go for several thousand feet. An LC-130 crew often has takeoff slides of several miles before the aircraft gets airborne.

Operational training unit, 1942-1943; replacement training unit, 1943-1944.

Spawned in quonset huts, with limited equipment and facilities, the 139th Fighter Squadron came into being on 18 Nov 1948. A group of 22 Officers and 43 Airmen, mostly World War II Veterans, mustered in the Naval Training Center, at the Scotia Naval Supply Depot. Following a formal inspection the assemblage heard Colonel

Richard Ballard, First Air Force Inspector, read the Special Order activating the 139th Fighter Squadron as a unit in the Air National Guard of the State of New York. Appointed as Commander of the newly formed unit was Maj William J. Flavin of Troy, New York, while Major Dale S. Carpenter of Cohoes was named Commander of Detachment "C" of the 202nd Air Service Group. Capt Sal Mauriello was appointed Commander of the 139th Utility Flight and Capt Victor J. Christopher, Commander of the 139th Weather Detachment. Weekly drill

sessions were held in the Naval Reserve Center on Thursday nights and in Jan 1949 the first aircraft arrived the F-47

In 1950, the squadron moved across the runway to its present location and received F-51H The 139th was one of 17 squadrons not activated during the Korean War. In 1952, the 139th was assigned to the Air Defense Command as a Fighter Interceptor Squadron. After the runway at Schenectady was lengthened to 7,000 feet, the squadron received its first jets in the form of the Lockheed F-94B in 1954. "Starfire" operations continued until 1957 when the F-86H began arriving. Receipt of the Sabre saw the squadron and group lose their Fighter Interceptor prefixes and gain that of Tactical Fighter.

By December 1,1957, the unit had received a total of 28 F-86.

On 18 January 1960, the 109th was on its way out of the fighter business and on its way into the global transport business as the first of 8 C-97 arrived at Schenectady County Airport. In 1960, the unit joined the Military Air Transport Service as the 139th Air Transport Squadron. The mission of worldwide transport was assigned along with the C-97A to be used by the Guard.

The relatively new Transport Unit did not have long to wait before its capabilities were put to the full test. On 1 August 1961, the 109th was alerted for possible "call-up" to support the Berlin Crisis. Extra training drills were authorized, additional equipment was received, and more maintenance men were hired to "beef-up" our "in commission rate" to allow more flying hours.

We were ordered to active duty on 1 October 1961, with induction ceremonies conducted at Hancock Field, Syracuse, New York. Governor Nelson A. Rockefeller, our Commander-in-Chief, reviewed the unit, on parade, led by Lt Col Zilly, prior to relinquishing state control to the federal forces. The 109th then became part of (MATS) Military Air Transport Service. Filler personnel from across the nation were sent to us from inactive duty reserve lists to complete our full strength requirements.

The 109th was returned to New York State after completing its assignment. Demobilization ceremonies were conducted at the Schenectady County Airport on Friday, 31 August 1962. Officers and airmen proudly paraded in front of the reviewing stand in their last official act as members of the United States Air Force.

The first C-130A arrived at Schenectady on March 10, 1971, after a mission in support of ground operations in Southeast Asia. A quick survey revealed a tired aircraft which obviously would be a challenge to the maintenance personnel as well as the aircrews.

The 109th's association with the Hercules dates back to March 1971, when it was assigned the first version, the C-130A. Under Tactical Air Command, the Group's mission at the time was the support of ground operations through airlift and drop. From March 1971 until December 1974, the 109th's C-130A wore the tail code "SG" and were in the SEA camo.

23 June 1972. In the wake of Hurricane Agnes, crews and C-130As of the New York Air National Guard's 139th Tactical Airlift Squadron flew 105 flood relief missions to communities in their home state. Crews and C-121s from the Pennsylvania Air Guard's 171st Aeromedical Airlift Wing flew food to flood ravaged communities in that-state. Other Pennsylvania ANG units provided medical assistance and set up a communications networks to assist in flood recovery efforts in the Keystone State. Altogether, ANG units airlifted nearly 690,000 pounds of cargo to flood stricken communities in New York and Pennsylvania following Hurricane Agnes.

In 1975, the 109th TAG was given the Polar Ice Cap mission to support Distant Early Warning (DEW) stations to Greenland. For the new mission, the 109th replaced its C-130A for a more appropriate version, the C-130D.

An aircraft with a larger cargo capability and longer range than the C-123J was required for the airlift of material and equipment on the Greenland ice cap for the construction of two DYE sites. During 1957, the Air Force conducted extensive testing of a ski-wheel configured C-130A (55-0021) and the tests proved that the aircraft could successfully do what other ski-wheeled aircraft had already done.

In addition to the five C-130D's, the 109th TAG received six C-130D-6's during 1975. Two of these aircraft were removed from service and placed in storage in 1976. The unit's 25 year old C-130Ds and D-6s were replaced, beginning in 1984, by factory fresh C-130H-2 and LC-130H-2 aircraft, four of each type being assigned to the Group. The last C-130D left the 109th on 4 April 1985. With an increase in its missions to support the National Science Foundation, the 109th AW received 3 additional LC-130H-3. Two of which were accepted from Lockheed in November and December 1995, while the third aircraft was accepted in March 1996.

The principal changes to the standard C-130H included modifications to the landing gear to accommodate the skis and fairings, which allow them to be partially retracted. The skis surround around the wheel hubs, and are hydraulically activated. Each ski has an 8-degree nose-up and 15 degree nose down pitch which allows them to follow uneven surfaces. For a snow landing, following landing gear extension, the skis are lowered below the wheels. This process is reversed for refraction. Both nose and main skis are 5.5 feet wide while the mains are 20.5 feet in length and the nose is 10.3 feet long. Weights are 1,000 pounds for the nose ski and 2,000 pounds for each main ski. The lower portion of each ski is Teflon coated to reduce friction on the snow. The weight and the drag caused by the skis and fairings reduce the normal cruising speed on the LC-130H by 10 knots. Very few problems exist with the main gear skis but the nose ski is less rugged and more complicated. The nose ski should always be tilted upwards, and if a malfunction causes the ski to droop the nose down, the aircraft could not land because the tip of the ski would catch with dangerous results. Before every ski landing, a crewmember must assure that the nose ski is in the right position. The skis are put trough intermediate maintenance checks every two years and receive a complete overhaul every five years.

LC-130Hs are equipped for Assisted Take-Off (ATO). An Assisted Take-Off (ATO) is always

impressive to see and this option is often used to assist during take-off from short and unprepared snow-covered airstrips. Four solid propellant bottles are mounted on hard points on the blast deflectors on each side of the fuselage and each bottle provides 1,000 pounds of thrust for 15 seconds. These bottles are installed on the ground prior to the mission and cannot be jettisoned, they remain attached until removed on the ground and changed for the next mission. Following a series of accidents in the Antarctic, the Navy abandoned ATO but the method was successfully reintroduced by the Guard, based on its success in the Arctic. ATO gives the aircraft a safety factor in particular when flights are made to sites at higher elevation and is a definitive plus to lift any significant cargo from certain locations in the Antarctic, as well as in the Arctic.

The 109th's C-130D's were painted in light gray with red panels added for high visibility, which was called the arctic scheme. When the unit received its C-130Hs and LC-130Hs, all wore the European I camouflage scheme until 1992, when they reverted to a new arctic scheme very similar to the original one. The Air Force owns all its ski-birds except for 91-0496, which is owned by the NSF, but operated by the 109th AW on its behalf. The NSF also owned the US Navy LC-130s and arrangements are being finalized between the Air Force and the Foundation to modify 3 ex-Navy LC-130R.

Since 1986, the 109th has played an important role in support of the NSF's research expeditions in the Arctic. Food, fuel and other equipment are delivered as far North as Thule Air Base in Greenland by normal air transport. From there, these supplies are flown by the LC-130H of the 109th. In addition to the polar missions, the 109th AW has other airlift responsibilities in support of Air Mobility Command and will use its C-130H as tactical transports and for aeromedical evacuations. The unit has participated in operations such as "Just Cause" in Panama and "Desert Shield/Desert Storm" in 1991.

Starting with the 1998-99 austral summer, the 109th AW is assuming responsibility for air support in Antarctica in support of the National Science Foundation. On 18 February 1998, Navy's Antarctic Development Squadron Six (VXE-6) officially passed responsibility for the mission to the Guard's unit. The Navy will fly its LC-130s for the last time next to the 109th's ski-birds in the Antarctic before being disestablished in the spring of 1999. The 109th AW will be the only organization left in the world flying the ski-equipped LC-130s. The Guardsmen are very experienced and the NSF calculated that using a single LC-130 unit will produce savings of \$25 million between 1998 and 2002. The biggest saving will come from the differences in operation of an active duty squadron and the Guard. The Navy squadron used to deploy for five months as a relatively self-contained unit with about 350 people and it is estimated that the Guard will do the same job with 268 less people at any time.

Getting scientists and supplies to the principal U.S. base at McMurdo Station requires a 2,100 nautical miles flight from Christchurch, New Zealand. McMurdo Station, the largest of the three permanent U.S. research stations is built on the bare volcanic rock of Ross Island's Hut Point Peninsula and is the headquarters for flight and U.S. logistics support. Nearby are Williams Field with its "skiway" and the Pegasus site with its permanent ice runway for wheeled landings

which allow C-141s and C-5s to land during the austral summer within a mile of McMurdo. It took three years for the National Science Foundation to build this runway and need constant maintenance to stay operational, but this is all worth it when it takes three to four C-141s to equal what six to twelve LC-130s can take in cargo from New Zealand. From the Pegasus site, the LC-130s carry scientists and supplies to into the heart of the frozen continent at remote sites.

Flight crews face unpredictable weather and have virtually no assistance from navigation aids or en-route radar. Survival is a key word in this kind of inhospitable terrain and every member of the flight crew plus every passenger aboard the LC-130 carries a bag of specially issued "extreme cold weather" clothing. Additionally, the aircraft carries survival equipment for a week, including water and food, sleeping bags, tents, shovels and two sleds for travel if necessary.

Flight operations are a lot different in Antarctic. For example, aircraft are not tied down even though winds can get very strong. When the LC-130 comes to a stop after taxiing, the heat caused by friction of the skis melts the snow before freezing again and holding the aircraft in place. When the aircraft is ready to "slide," the wheels are lowered through the skis to break the ice and after the wheels are raised up; the aircraft can slide forward to taxi. Takeoff from a skiway usually doesn't cause problems, but on unprepared snow, it's another story. Snow and wind conditions are always different and pilots have to experiment. The aircraft needs a lot more distance to get airborne due to the friction of the skis slowing the LC-130 on soft snow. Air National Guard pilots will start with 100% flaps for maximum lift to reduce weight on the skis and then return to 50% flaps before liftoff. When one technique doesn't work, the pilot will try different flap configurations and look for better snow. Landings in unprepared snow at remote sites also pose a challenge to flight crew who doesn't have information on the conditions of the surface. A technique developed by VXE-6 to assess the conditions of the surface before landing requires the aircraft to fly a series of ski-drag. During this tricky procedure, the aircraft will be skimming the surface with only its main skis touching the snow in the proposed landing area followed by a climb to altitude to observe the area and look for any hints of crevasses. Three to four passes are normally made before the crew will risk a full-stop landing.

The basic design of the skis, which are made of aluminum and steel, dates back to the 1950s. Improvements have been made to the design to simplify maintenance. Spare skis are kept in New York, New Zealand (the wing stage from Christchurch to go to Antarctica), and at McMurdo Station. Another set goes to Greenland at the start of the season there. "The skis are very strong," notes SMSgt. Charlie Weissend, a 109th maintenance supervisor. "Occasionally, the skin gets dented, but they are very beefy."

While the Teflon coating keeps the bottom of the ski slick, the friction upon landing creates enough heat to melt the surrounding ice if the aircraft is stopped for any length of time. When the ice refreezes, the aircraft gets stuck. Skis can be retracted individually and together are designed to support the weight of the aircraft. The crew can rock the aircraft back and forth to

get it to break free when it gets stuck.

The skis also produce considerable drag. The LC-130s have a +48 drag count with the skis retracted, which reduces airspeed by about twenty knots. The LC-130s cruise between 270 and 290 knots while the wheelies cruise at between 290 and 310 knots. The drag count goes above 100 with the skis deployed.

Everyone in the 109th who deploys has to go through survival training. "We go to the regular Air Force cold-weather survival school, but it doesn't completely meet our needs," observes Huard. "Alaska has trees, and there aren't any in Greenland or Antarctica. We can't snare a rabbit for dinner. The only food we have is what we bring on board the aircraft."

The wing's life support section runs its own survival training course, called Kool School, which is sanctioned by the Air Force. Kool School starts with a day of academics in New York. Once at Raven Skiway, the 109th's training area in the interior of Greenland, instructors teach new personnel how to build a snow shelter (the instructors live in a wooden hut, however), how to generate drinking water, how to use survival gear, and how to live and work in extreme conditions. Adds Huard: "After three days of that, an LC-130 with its skis down coming to pick you up is happy sight."

"The aircrew qualification training for the LC starts with all the normal training at Little Rock," says Capt. Cartyle Norman, one of the unit's aircraft commanders, referring to the C-130 schoolhouse at Little Rock AFB, Arkansas. "Everybody goes through basic copilot qualification. However, our course is much simpler since we train only for single-ship airdrops in clear visibility."

The copilots then go through C-130E-model to H-model conversion in New York by flying with an instructor in the 109th's wheeled aircraft. Next up is the LC-130 differences class. (One copilot wryly describes the class as, "Her? is the ski-up, ski-down lever.") This class is followed by a check ride in the Ski-Bird in New York.

Learning how to use the LC-130 operationally takes place in either Greenland or Antarctica. Copilots fly with an instructor for two or three weeks practicing airborne radar approaches critical to landing on the ice and actual landings in the weather. The final exam comes in two parts. Copilots first fly to one of the outlying camps and land on the ice. They then use the Assisted Takeoff, or ATO, rocket bottles hung on the aircraft to get airborne. It takes roughly twice as long for an LC-130 copilot to become fully qualified as it does for a copilot flying a standard C-130.

The extra training is essential. Landing and taking off from the snow is a science, and crew coordination is paramount. For the first part of the landing, getting close to the skiway or the snowfield where the crew is going to land, the navigator runs the show. During the final approach, the copilot gets the aircraft lined up, finds the landing area, and continuously checks and announces the current speed. The flight engineer calls the altitude, and the pilot lands the

plane.

Capt. Norman describes a typical landing: "The aircraft commander sets up for a ten-mile final approach. The navigator gives the brief for known skiways and gives specifics for weather as well as details, like 'the camp is off to the left.' The navigator will bring us down to 300 feet above ground level and one mile distance. Meanwhile the copilot will look out and find the skiway. The copilot has to be confident. The other crewmembers need to help, but not too much. The copilot has to be the loudest voice the pilot hears. The key is to find the second set of flags, pairs of bamboo poles with colored material strung between them that mark the boundaries of the runway. If the second set is in the right place, the third set will be there. In weather, the loadmasters lie on their bellies on the cockpit floor helping to look for the flags through the floor windows.

"Once the flags are located, the copilot will take over from the navigator and set 100 percent flaps. The pilot calls that he has the skiway in sight at 100 feet. The flight engineer starts to call altitudes at 100 feet, then fifty, forty, thirty, twenty, ten, touchdown. The copilot calls the vertical velocity and the drift. It is hard to tell the difference between the horizon and the surface at these low altitudes."

The pilots generally land on instruments, but the ice, weather, and proximity to the Earth's magnetic poles can play havoc with them. "The radar altimeter is less accurate on snow or ice," notes Delia Pia. "On one landing, the radar indicated 150 feet altitude when we hit the snow."

When the crews make open snow landings or when they go into an unfamiliar camp, they take a known altitude setting and go to 1,000 feet above ground level to set up for landing. They survey the area and look for berms. Then the pilot picks a point and lands into the wind. The ATO rockets are always attached to the aircraft before they go to unfamiliar areas. "On a hard-packed snow runway, we keep the nose high to slow down. On a new runway, the nose ski goes down immediately," says Delia Pia. "We want to stop as soon as we can."

Once on the ground, the aircraft's engines are kept running. In the cold, they might not start again. The crew needs to keep moving to prevent the aircraft from getting stuck. Ground times are minimal.

"The loadmasters really earn their money," says Huard. "As soon as we stop, often at places that may be at 10,000 feet above sea level, they are out there in minus forty degrees Fahrenheit with all four engines running. They are offloading JP-8 [fuel to run the vehicles at the camps], unloading cargo manually, or using tracked vehicles to pull the load off. They work hard."

Takeoffs from the snow are triumphs of hope over physics. The object is simple—get to sixty-five knots and get the nose up off the snow. "Once we get the nose up, it will fly," says Capt. Norman. "Getting to that point is the trick."

The combination of the cold, the parasite drag (interaction between the skis and the snow), the

winds, and the weight of the cargo on the aircraft all have an effect on getting airborne. Takeoff slides using the skis on open snow are routinely five to eight miles long and often go as far as twenty miles. Remaining fuel then becomes a critical item.

"We have no Golden Rule for takeoffs," observes Norman. "We can try different flap settings, move the cargo to the back of the aircraft to change our center of gravity, or stop and unload some of the cargo. We have left scientific equipment on the ice in order to get up. We try to put things in our favor."

The bottles are about four feet in length and weigh 140 pounds each. Eight are needed for each takeoff. Hung at the back of the main landing gear fairings, the bottles equate to the power of an additional engine for about fifteen to twenty seconds. The flight engineer fires the bottles by pushing a button in the cockpit when the aircraft commander calls for them. Timing is critical. Firing the bottles too early doesn't give the aircraft the boost needed to get the nose ski up and the aircraft airborne.

The wing has two problems with the ATO bottles. They were all manufactured in 1954, and the unit is running out of them. "We are pursuing a re-placement," notes Delia Pia. "Without them, we either can't go into some of our sites in the future, or we will have to do something else." Two things that might help include the increased use of airdrops and the wider use of hard-packed snow technology currently used at McMurdo at other strips to allow wheeled aircraft to land more easily.

The NSF acts as the clearinghouse for Greenland scientific research. While not unusual, it is a little odd to see civilians from the Falcon Fund, or a magnetic field study group, or college students ready to do a climatic study waiting at the 109th Aerial Port Flight building in New York before boarding a departing LC-130. The 109th makes six-day rotational deployments to Greenland.

The Kangerlussuaq (kang-er-loose-whack) Airport sits at the head of the 105-mile long Søndre Strømfjord on the west coast of Greenland. The location provides the perfect base for the 109th AW's operations all over the ice-covered island. Originally known as Blue West 8 when it was opened as a refueling point for aircraft ferried to Europe in 1942, the United States occupied the base (later named Sondrestrom AB) until 1991 when control was turned over to Denmark. Greenland is a Danish protectorate, and the Greenlandic home rule government now runs the field.

The village of Kangerlussuaq exists to support the airport. One of the daily social highlights is the arrival of the Scandinavian Airlines System 767 on its Copenhagen-to-New York flight. Former base barracks buildings house some of the townspeople as well as the deployed crews. The 109th uses the former base fire station for mission planning, maintenance control, spare parts storage, and as an aerial port facility.

A thirty-minute flight from Kangerlussuaq gets the crews into the interior of Greenland and

Raven Training Skiway This field, where the 109th crews practice airdrops and make skiway and open snow landings, is the middle of nowhere, at least in the Northern Hemisphere. Lt. Col. Nils Grier, Denmark's deputy defense attache to the United States, describes being at Raven as "standing in the middle of the ocean." He's close—the ice is 7,000 feet thick there. Snow and ice fill the horizon.

The area is dominated by the Dye 2 radar site, which was abandoned in place—equipment, books, beds, tables, and chairs in 1992 when the DEW Line system was shut down. The four-story building with attached radome was built on stilts. The entire facility had to be jacked up periodically to stay above the ice. The door to the facility which isn't even locked, now sits just above the snow level.

The small camp of Mark and Lou Albershardt is the only other structure at Raven, which rarely sees high temperatures above the teens. The couple maintains the skiway for nearly five months of the year, makes weather observations, and provides communications for the 109th. Lou also likes to bake cookies for the crews. "We're not necessarily hermits, but it's peaceful and quiet. We really like this setting and enjoy the arctic wonders," notes Mark Albershardt. "I also happen to have an unnatural fascination with Hercs."

Maintenance at Kangerlussuaq is everything maintenance in Antarctica is not. The weather is better for the sixteen maintainers who deploy. Daytime highs reach the sixties during summer days. The base has a hard runway and ; nose dock hangar. Parts not in the supply kit are easy to get, since home is only a six-hour flight away. And most of the Greenland deployments involve only two or three aircraft.

"The cold in Antarctica creates its own challenges," understates Sgt. Weissend. "We had a rear bearing support come apart at the Pole. We had no hangars to work in, so we had to work out on the ice. We put up a tent for the maintainers. But in minus thirty to forty degree temperatures, we can spend only fifteen minutes working. Then we have to spend fifteen minutes in a tent with the heater. And sometimes we have to take off our gloves to be able 1 turn a wrench."

In the cold, rubber seals harden. Parts contract. Systems leak. Propellers and engines have to be preheated. Prior to a mission, the maintainers have to heat the cargo hold first. Putting a heater hose in a cold cockpit can crack the windows. "We have to start about four hours ahead of time to get the aircraft ready," adds Weissend. Since most flights are scheduled for eight a.m. departures, the maintainers have a four a.m. start time.

The 109th sends seven aircraft at a time to the Southern Hemisphere. Six go to the ice, and one remains in New Zealand as a spare. An aircraft needing heavy maintenance, which is done at the Air New Zealand facility in Christchurch, rotates off the ice to New Zealand and the spare is called up. The aircraft are also thoroughly washed away from McMurdo, which has a high sea salt content in the air. If a necessary spare part is not in New Zealand, the nearest parts bin is

13,000 miles away.

The deployed maintainers are in Antarctica for a total of about twelve weeks. Aircrews and maintainers rotate in and out for six- to eight-week assignments, flying commercially to and from New York unless they are changing out a deployed LC-130.

Weekly rotations for maintenance personnel typically feature six or seven consecutive twelve-hour days in the twenty-four hour flying operation, with days for most spent at Williams Field or Pegasus ice runway, both of which are on the sea ice.

The aircrews have six consecutive twelve-hour days, most of which are spent flying to the South Pole to provide material and equipment for the ongoing South Pole reconstruction project. "One day is no different from another," notes Carlyle. "It's just like the movie *Groundhog Day*."

"We are living in a minus forty-degree environment," explains Huard. "Antarctica offers little in the form of entertainment. We eat, drink, go to the gym, and watch lots of television. There is a bowling alley. The Coast Guard runs morale tours to see huts left by famous explorers like Robert Scott and Ernest Shackleton. But LC-13 crews tend to miss most of them, since we have to fly six or seven lines a day Monday through Saturday."

The weather changes quickly at the South Pole and crews frequently have to turn back. If the weather is bad at McMurdo Station, they head to a nearby landing site that has been fully mapped and determined to be free of crevasses. Crews check the navigation system data, head into the wind, and descend until they are able to land. The downside to this emergency site is a fifteen-mile taxi back to Williams Field.

The 109th Airlift Wing is a unique organization with a unique mission. It has state and federal commitments like any other ANG unit. It works with the Navy's underwater construction program. The wing's personnel have to be diplomats, dealing with the governments of both Denmark and Greenland. They have to work with a civilian organization, the NSF, and meet their needs. In fact, the NSF pays for much of the wing's yearly operations. They also have to fly and fix their aircraft in conditions that often exceed the listed operating limits. The 109th has accomplished that last task without a Class A mishap in twenty-seven years.

"There is not a cookbook for what we do," concludes Col. Delia Pia. "We always face different situations—jacking an aircraft with skis on it in the snow, transferring fuel with engines running, and working in temperatures so cold we are making our own contrails on the ground. We have to be innovative to come up with solutions to these challenges. But it's the challenges that keep people doing this."

The tour of active duty proved to the Guard, the Air Force, and to the Nation, that the 109th Air Transport Group was ready. Before the first week of active duty with the Military Air Transport Service (MATS) had expired, an aircraft of the 139th Air Transport Squadron, departed Schenectady County Airport on the first leg of a 4000 mile flight bound for Chateauroux Air

Station, France, carrying cargo for MATS. Subsequently, the 109th flew to Great Britain, West Germany, Alaska, Norway, Ecuador, and many other countries.

October 1999: 109th AW aides in the rescue of Dr. Jerry Nielsen, a doctor with breast cancer symptoms and based at isolated Amundsen-Scott Research Center in Antarctica.

Sept. 11, 2001: 109th provides immediate support after the World Trade Center is attacked. Nearly 50 civil engineers, services and public affairs personnel are deployed to Ground Zero within the first 24 hours. Since then, the 109th has continued to voluntarily deploy in support of military operations in Southwest Asia and around the world.

July 2007: A 109th C-130 and crews deploy to Afghanistan, marking the first time since Vietnam that aircraft from the unit flew their own aircraft in a combat theater of operations.

September 2008: Crews able to get C-130 fuselage onto C-5 Galaxy and transport to the base for training purposes.

Sept. 16, 2008: Crews take off for first time using 8-bladed props.

109th Airlift Wing Slated to Transport About 12 Million Pounds of Cargo By Master Sgt. Willie Gizara, 109th Airlift Wing SCOTIA - The New York Air National Guard's 109th Airlift Wing kicked off its annual support for the National Science Foundation in Antarctica as the first ski-equipped LC-130 headed south Oct. 15, 2010 from Stratton Air National Guard Base in Scotia. The 109th plays a critical role in supporting the National Science Foundation research across Antarctica. During the 16-week summer season, more than seven hundred airmen from the 109th and six LC-130 ski-equipped cargo planes support the U.S. military's Operation Deep Freeze mission. These aircraft will run supplies to field camps across the continent and the South Pole station. Based at the United States Antarctic Program base at McMurdo Station, the 109th is slated to fly about 400 missions across the continent, with more than half of those moving passengers, cargo and fuel to the South Pole. On average, the 109th moves about 12 million pounds of cargo each season. All supplies that reach the United States Amundsen-Scott Base at the South Pole are ferried there by the 109th. Over the past eleven years, the New York Air National Guard crews have conducted 1000 missions to the South Pole and back, moving 25 million pounds of cargo as the station was being rebuilt. During their deployment about 120 Wing members are "on the ice" at any one time, flying and maintaining the aircraft. The wing's members work 12 hour days for six days each week and then work a half day on Sunday. Wing members rotate through McMurdo Station. The minimum tour is three weeks at the station. The time involved in getting there means wing members are away from home for four weeks while supporting the missions. All airmen who go to the Antarctic receive specialized survival training.

The maintenance crews normally attain a 95 percent reliability status for the aircraft, allowing the flight crews to carry as much cargo as possible to remote Antarctic outposts. The wing accumulates roughly 4,000 hours of flying time in the 16-week season, almost as much as most units fly in a year. Operation Deep Freeze, overseen by the 13th Air Force at Hickam Air Force

Base, Hawaii, provides logistical and operational support to the U.S. Antarctic Program and the National Science Foundation. The U.S. Air Force, Navy, Army and Coast Guard lend operational and logistical support to the National Science Foundation's research and exploration in Antarctica. This support is provided by the Joint Task Force Support Forces Antarctica, led by the 13th Air Force. JTF-SFA coordinates strategic inter-theater airlift, tactical deep field support, aeromedical evacuation support, search and rescue response, sealift, seaport access, bulk fuel supply, port cargo handling and transportation requirements. Christchurch International Airport, New Zealand is the staging point for deployment to McMurdo Station, Antarctica, a key research and operational facility for the U.S. Antarctic Program.

McMURDO STATION, Antarctica -- The stadium is packed. Thousands of cheering fans rise to their feet. The cacophonous roar is deafening. Striped officials wait patiently at midfield. Trumpets blare announcing the arrival of the home team. Then, out of the access tunnel, the starting lineup hustles on to the field, led by the team's MVP. No, this is not Joe Namath and the Jets. This is the mighty LC-130 Hercules, known affectionately among those who fly and maintain it, simply as... 'Ski-Bird.' I've waited weeks for this moment. And this is not to take away from the tremendous contributions of the other team players. The C-17 is arguably the master of heavy Antarctic inter-continental airlift, with the C-5 making a cameo appearance in New Zealand at the front and back of the season. The Australian A319 and Kiwi 757 provide world class passenger and cargo lift at crunch times. KBA's Baslers and Twin Otters seem to fearlessly go anywhere at any time. Ah, but the LC-130 is all heart...and a lot of muscle. Only the LC-130 can project such mighty feats of daring-do out to the remote corners of the world's coldest, windiest, and highest continent. And then do it all over again on the polar opposite side of the world. Need five pallets slung together with telescope parts delivered to the South Pole? Call the Skibirds. What about some big tractor dropped off in the middle of nowhere with no time to drive there? How about drift off-loading of fuel bladders, followed by airdrop, followed by an open snow landing from the navigator's airborne radar approach. There's only one option.

Lumbering from New Zealand to Antarctica at roughly half the airspeed of its gigantic wheels-only U.S. Air Force cousin, this most muscular of the world's ski-planes holds its own on the snow and ice. If Antarctic aviation is a full-contact team sport, then the LC-130 makes a good case to be its most valuable player at McMurdo. And the men and women who fly, maintain, and enable this science support mission live up to that challenge each and every season. The 109th Airlift Wing, New York Air National Guard, has been maintaining and flying LC-130s in Antarctica since 1988. They've been operating ski-planes on the Arctic and Greenlandic icecaps since 1975. Since the Naval Aviation left Operation Deep Freeze in the late 1990s, no other flying organization has maintained the continuity, skilled workforce, safety record, and sheer ability to survive and operate in polar regions as have the 'Raven Gang' of the 109th. This is a story of men and women from small towns in upstate New York. Of Total Force Airmen who serve in uniform, sometimes daily, sometimes monthly, but always with pride and distinction. Of Warfighters, who like their brothers and sisters in the C-17, train, prepare, and deploy for combat when they're not here plying their snow trade. Yet, this is a story of how this same small community in upstate New York, leveraged its unique expertise to become one of the most effective inter-agency partners in executing the National Science Foundation's polar

mission. Though it is but one part of the Joint Task Force – Support Forces Antarctica logistics team, the LC-130 holds a special place in the lineup.

Seven LC-130 Skibirds of the New York Air National Guard wrapped up the five-month Antarctic summer research support season and returned to Stratton ANGB, N.Y., this week. "We flew over 155 on-continent missions in Antarctica as well as intercontinental missions from New Zealand to Antarctica" since last October, said Lt. Col. Clifford Souza in a Feb. 25 release. The unit's aircraft hauled a total of 2,250 tons of cargo and 3,000 passengers over a total of 241 missions, according to the unit. Unit aircraft also flew nine scanning sorties with the experimental IcePod sensor package to measure ice density and fluctuations. "These were the final tests before the IcePod is fully commissioned," said pilot Maj. Joshua Hicks. "Overall it went very well," he added. A total of 575 Guardsmen rotated to McMurdo Station, Antarctica, maintaining a 120-strong contingent on the continent. The first aircraft returned Feb. 23, 2015

F-47

1948-1951

The 109th was activated as the 139th Fighter Squadron (with augmented elements and a weather flight) in the New York Air National Guard at the Scotia Naval Depot on 18 November 1948 under the command of Major William J. Flavin. The initial unit aircraft was the F-47 Thunderbolt ("the Jug") which arrived in January 1949. Weekly UTAs (drills) were held in the Army National Guard Armory, Washington Ave., Schenectady, now part of Schenectady Community College (SCC). The unit was stationed on the west side of the Schenectady County Airport until the base was built at its present 100+ acre location in 1950 at a cost of two million dollars. The base initially consisted of four facilities: Hangar, administration building, supply building and motorpool.

F-51

1951-1954

In the fall of 1951, the 139th Fighter Squadron began a new era with the arrival of the first F-51 H. Eighteen F-51H Mustangs came to Schenectady in new and unused condition. This aircraft was extremely maneuverable and was designed as a fighter interceptor. By now, the 139th had grown to a table of organization) of 350 personnel including 35 pilots. During the era of the first F-51s, the 139th won many awards and trophies. Significant awards were the third place Spaatz Trophy won in 1954 for overall excellence among all Guard units in the nation and the 107th Fighter Group Field Training Award at Spaatz Field, Reading, PA for 1952 and 1953. The field training award was retired by the 139th at that time.

F-94

1954-1957

The 139th ushered in the jet era in 1954 as three new T-33 aircraft were assigned to the unit. The two seat jet trainers were to be used for transition to a jet fighter aircraft, the F-94 Starfire. The aircraft was a two seat, all weather interceptor carrying a pilot and radar observer. It was radar equipped, utilizing the E-I Fire Control System to guide the aircraft to its target. On 1 May 1956, the unit became the 109th Fighter Group with 500 personnel and 17 F-94B Starfires in

the inventory. During this period of the unit's history, the commander, Lt Col. Frederick J. Zilly, Jr., formed the Gordon Ridell Pipe Band from members of the Group. The band soon built an enviable history as it performed throughout New York State and on national television. They played with special pride and enthusiasm for themselves, the unit, and the still new Air National Guard. Other highlights of the early fifties were the base and community hangar dances featuring "Big Bands" like Ralph Flanagan, Tommy Tucker and Les & Larry Elgart Attendance regularly surpassed 3,000!

F-86

1957-1960

Again the 109th Fighter Group updated with a change in jet aircraft in the Spring of 1957. The faster and more up to date F-86 Sabrejet replaced the F-94 Starfire. An earlier model of the F-86 gained fame during the Korean War. By 1 December 1957, twenty were on station at the 109th.

C-97

1960-1971

In January 1960, the jet fighters gave way to the Global Transport mission as the first of eight C-97 Stratocruisers landed at Schenectady County Airport. The Global Transport mission, along with a new Aeromedical Evacuation mission, was totally new for the Air National Guard and the 109th. With transition from single engine jet fighters to four engine transports, our capabilities were soon tested. On 1 October 1961, President John F. Kennedy activated a large number of ANG units and filler Air Force reservists, including the 109th, for one year to support the now legendary Berlin Airlift Crisis. Our unit was placed under the USAF major air command called MATS (Military Air Transport Service). The 109th Air Transport Group (H) became a global transport unit performing missions to Europe, South America, the Caribbean, Hawaii, Japan, Australia, Southeast Asia, the Philippines and numerous places and military installations within the United States. The unit airlifted a total cargo tonnage equivalent to the weight of a navy destroyer escort 45 times around the earth; more than a million miles! To the 109th's credit, this was accomplished without a single aircraft accident. One of the flying highlights of this period was transporting cargo to South Vietnam in support of US forces. The flyers logged a record 1050 flying hours in a single month.

During this period of extended active duty (1 March 1962), Lt. Col. John C. Campbell, Jr. assumed command when Lt. Col. Zilly had to be removed from flight status for medical reasons. New facilities marked that year with the construction of two new aircraft "nose docks," a new dining hall, a new firehouse and a larger aircraft parking ramp to accommodate four more airplanes. These additions were sorely needed to support the demands of the mission that continued until 31 August 1962 when the 109th Air Transport Group (H) was deactivated and reverted back to New York State control. General Joe W. Kelly, MATS Commander, expressed his personal pride and appreciation to the unit and stated, "They have met every task placed upon them." The New York Air National Guard ended the Berlin Crisis with the largest number of fully trained personnel in its history to that time. The dedication and

professionalism arising out of that demanding period was to be carried on into the proud future of the capital district's own unit.

C-130

1971

The first giant Lockheed C-130 Hercules turbo-prop transport arrived at Schenectady in the Spring of 1971. The aircraft is able to fly extremely heavy loads over great distances. Its ability to land and take off in unimproved areas has proven invaluable under battle conditions in the evacuation of wounded and in the delivery of troops, supplies and weapons. In peacetime, the function of the aircraft includes evacuation of earthquake and flood victims as well as food supply and medical air drops to troubled or needy areas throughout the world. With its new tactical airlift mission, the 109th entered into a new period of training with four primary emphases: Formation flying, low level navigation, aerial delivery and short field landings. Lt. Col. Stanley W. Hemstreet assumed command in September 1971. By January 1972, seven C-130s were at Schenectady.

For the next four years (1971-1974) the unit practiced and perfected its tactical skills. Then, in 1975, we were entrusted with the first and only active mission in the Air National Guard: Supply of the radar sites in Greenland on the polar ice cap. This was the famous DEW line (for Distant Early Warning) and we soon became familiar with our "DYE sites" and the hazardous demands of flying in the far north. We assumed the mission from the Air Force's Alaskan Command, receiving their eleven C-130s, five of which had those strange looking skis with which we are now so familiar.

In January 1979, the 109th took second place with C-130 (tail number 493) at the International Air Tattoo at Greenham Common, UK. And one year later, in January 1980, we received our first Air Force Outstanding Unit Award. We formalized our support relationship with the National Science Foundation's Ice Sheet Program in Greenland in June of that same year.

27 October 1984 marked the arrival of the first three of four new C-130H's (ski equipped) aircraft direct from the Lockheed factory at twenty-six million dollars each. The follow on of four LC-130H's continued at one a month until a total of eight new aircraft graced the base.

With Brigadier General Stanley W. Hemstreet's retirement in May 1985, Lt. Col. Douglas B. Morey became commander of the 109th. General Hemstreet's almost 14 years as commander stands as the record for longevity in that post.

January 1988 saw our first mission to Antarctica. Two of our LC-130Hs took part in Operation Deep Freeze. February 1988 marked the arrival of our first C-12J, which was headquarters NYANG support aircraft. On 4 March 1989, our base became officially known as Stratton Air National Guard Base, named for Congressman and former Mayor of Schenectady, Samuel S. Stratton. Congressman Stratton passed away in September 1990.

In October 1989, DYE 2 was declared "unfit for habitation" and the DEW Line resupply mission

was reduced by 50%. At the same time, we had LC-130s participating in WINFLY, the movement of supplies and personnel to Antarctica. During the Fall of 1989, the unit was kept busy with many humanitarian missions in support of people who were made homeless by Hurricane Hugo.

October 1989 will be remembered as the beginning of mandatory wear of the BDU (battle dress uniform). That same month, we again received the National Guard Association of the United States Distinguished Flying Unit Plaque, an award with the same criteria as the active duty's prestigious Spaatz trophy. The last flight to DYE 3 in December 1989 marked the end of the DEW Line mission on the Greenland Ice Cap.

In August 1990, 200 unit members deployed for support of Operation Desert Shield which soon became Operation Desert Storm. Colonel Douglas B. Morey relinquished his command and was assigned to Headquarters NYANG in November 1990. Lt. Col. Jack Amerall assumed command of the unit at that time. In December 1990, our small arms range construction was completed, marking the first time we could qualify with small arms without leaving the base. January 1991 saw us holding a "Welcome Home" reception for our Desert Storm veterans.

Lt. Col. Archie J. Berberian II was selected 109th Commander in April 1991. November 1991 saw our organization attain its second Outstanding Unit Award.

March 1992, we achieved a unit membership of 1,000 airmen and returned to training for the airdrop mission.

March 1993 will be remembered by many for our airlift of a local man, Kevin Bates, to Sweden for life-saving emergency medical treatment. Coincidentally, that was the month that our new Aeromedical Building opened. By August of that year, Aeromedical team members were deploying to Somalia. A year later in August 1994, bettering our own 1979 performance, we took first place and won the Concourse d'Elegance trophy for the best looking C-130 in the world with our C-130H (tail number 490) at the International Air Tattoo in Fairford, UK.

Ground breaking occurred in the first two months of 1992 for a number of base construction projects at a cost of six million dollars. They were a new vehicle maintenance building (motor pool) and aeromedical evacuation building, base wide fire suppression system, and outside facelifts of six existing buildings-administration, dining hall, base supply and the three aircraft hangers. The 109th assigned C-130 aircraft also received a facelift in April of 1992, with the reissue of the "Steel Gray and Orange" paint scheme from the camouflage. Stratton ANGB continued to update and modernize by completing a number of self help projects. They included a new mobility storage building, a new recreation field, a renovated and remodeled CBPO, plus recruiting, base supply, aircraft maintenance and visual information sections. A new water main and sanitary storm drain system was completed in 1992.

The 109th and Stratton ANGB grew by leaps and bounds in 1994. New facilities and

improvements included: new main gate entry, aerial port facility, fire station, security police facility, new parking lots. Renovation projects included: roof for operations facility, heating system for Hangar #2, and expansion of medical and aerospace equipment (AGE) facilities. An original C-130D ski bird, aircraft #490, returned home to Stratton in October of 1994 to become a permanent static display at the main entrance to the base. 1995 saw the unit redesignated as the 109th Airlift Wing on 1 October. In December, Col. Archie Berberian was selected to the top position in the New York Air National Guard as the Chief of Staff. Col. Jonathan Adams was selected as the new Wing Commander. Also, in December, approval was announced to design and construct a new ten million dollar hangar, which was dedicated in early 1998. The new hangar was needed to support the three additional new LC-130's arriving in December 1995 and January 1996. Early in 1996 it was announced that the 109th AW was assigned the Antarctic Mission, thus beginning a three year transition process. The 109th AW would now provide single point management to the National Science Foundation scientific research mission in both the Arctic and Antarctic. Col. M. Graham Pritchard was selected as Vice Commander and full time Air Commander of the 109th AW in April 1996.

On February 20, 1998, responsibility for Airlift Support to the U.S. Antarctic Program (USAP) was passed over to Col Graham Pritchard and the 109th from VXE-6, during a ceremony in Christchurch, NZ. The 109th will now be the only LC-130 ski unit in the world.

USAF Unit Histories

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