



AIRLIFT MISSION—THE AMAZING BERLIN AIRLIFT

Students will learn about the history of airlift missions (both humanitarian and combat) as well as to learn about the incredible Berlin Airlift, and the heart-warming story of the ‘Candy Bomber!’ The U. S. Air Force’s Global Reach is emphasized!

LESSON PLAN (L)

Learning Objectives

The students will

- Learn about the amazing Berlin Airlift that kept over two and a half million West Berlin citizens alive and free
- Learn about the Allied / Axis Powers and how Germany was divided into territories after World War II
- Learn about the wonderful story regarding Air Force pilot Gail Halvorsen, and how he kept Berlin children’s hopes for freedom and dreams for the future alive
- Learn about the history of both humanitarian and combat airlift missions around the world
- Learn about the variety of cargo and refueling aircraft which have been used throughout recent history
- Learn about the U. S. Air Force’s successful development of “Global Reach and Global Power”

Introduction/Background

Airlift and transport missions were not a real priority during the early years of flight, primarily because the small aircraft at the time were not conducive to large cargo loads or multi-passenger movement. As airplanes developed and their size and capacity increased, airlift operations became a reality. The very first successful airlift was accomplished by Germany in 1936, when they transported 20,000 stranded Spanish troops across the Strait of Gibraltar and on to Seville, Spain. It took the Germans 677 flights (sorties) using their modified Junkers Ju.52 trimotor aircraft. After hearing the news of this successful, initial airlift, other countries began developing their own cargo/transport Aircraft. The British utilized transport-bombers, such as Their Vickers Victoria airplane. The United States developed transports that were actually Douglas DC-3 and Douglas DC-4 commercial airliners, and with modifications, these two aircraft became C-47 “Skytrains” and C-54 “Skymasters,” respectively. The conversions included removing the airliner interiors, adding heavier floors and creating large cargo doors. C-47s were affectionately called “Gooney Birds,” and the Army Air Corps first ordered these cargo airplanes in 1940. By the end of World War II, over 9,300 “Skytrains” had been procured. C-54 “Skymasters” could carry much heavier loads than the C-47s (28,000 pounds of cargo versus 6,000 pounds) and the U. S. military (the Army Air Corps and Navy) began using C-54s in 1942.

Grade Level: 4—8

National Science Education Standards:

Science as Inquiry, Science and Technology, Science in Personal and Social Perspectives

National Standards for History:

Chronological Thinking, Historical Comprehension, Historical Analysis and Interpretation and Historical Issues/Analysis and Decision-Making

National Standards for English Lang. Arts:

Reading for Perspective, Understanding the Human Condition, and Multicultural Understanding

Materials Required:

- Magic board and markers
- PowerPoint presentation
- Laptop, monitor, digital projector
- Demo items as listed within lesson plan

Resources:

- General Information:
<http://www.amc.af.mil/library/factsheets/factsheet.asp?id=229> and [id=239](http://www.amc.af.mil/library/factsheets/factsheet.asp?id=239) and http://www.centennialofflight.gov/essay/Air_Power/cargo/API9.htm and <http://www.futurefirepower.com/us-air-force-airlift-global-us-military-aircraft> and <http://www.theaviationzone.com/factsheets/c5.asp> (and [c17.asp](http://www.theaviationzone.com/factsheets/c17.asp) and [c130.asp](http://www.theaviationzone.com/factsheets/c130.asp)) and www.konnections.com/airlift/berlin.htm and www.caa.govt.nz and http://www.grc.nasa.gov/WWW/k-12/WindTunnel/Activities/balance_of_forces.html and <http://avstop.com/technical/weightbal.htm> and http://www.dod.mil/execsec/adr96/airforce_report.html and <http://www.af.mil/information/factsheets/index.asp> and <http://www.Airforce.com/learn-about/history/part4/> and <http://www.answers.com/topic/air-mobility-command> and <http://www.grc.nasa.gov/WWW/K-12/airplane/acg.html> and www.nationalmuseum.af.mil/education

From 1942 through 1947, the Army Air Corps procured 1,164 C-54 “Skymasters.” Special Note: the U. S. Air Force was not a separate branch of the U. S. military until 1947. However, from its very beginnings as a distinct entity, the Air Force has NOT just used its airlift capabilities to transport combat troops and supplies into, and out of, theaters of war (as exemplified by Operation Desert Storm, one of the largest strategic airlifts since World War II). Humanitarian airlift efforts have always been a key component and top priority for the Air Force, and these missions have made an extremely positive impact on the lives of countless individuals around the world. For example, in June 1948, when the Air Force was still in its infancy, the Soviet Union decided to block all roads, railways and rivers going into the city of Berlin (which was still in ruins after World War II). They cut all power as well, so the 2.5 million inhabitants of West Berlin faced certain starvation. There were, however, three narrow air corridors left open, as the Soviets thought the Allies’ airlift capabilities would be negligible. The United States, Britain and France agreed to join forces to keep West Berliners supplied with coal and food, and above all, to keep them free from Soviet rule. The Berlin Airlift, nicknamed “Operation Vittles” lasted for fifteen straight months, and nearly 2.3 million tons of supplies (4.6 billion pounds) were flown into Berlin during 277,000 flights (there was one flight every three minutes)! The workhorses for this incredible humanitarian airlift were C-47s and C-54s, and that is what makes this whole airlift operation so amazing—none of the gigantic cargo aircraft of today, such as the C-17 “Globemaster III,” the C-5 “Galaxy” and the C-130 “Hercules,” were in existence! More recently, the Air Force has been heavily involved in global humanitarian airlift missions, which provide relief and assistance to victims of civil war, famine, floods, earthquakes, wildfires, harsh winter weather, etc. Some of the countries that have benefitted from these humanitarian operations include Somalia, Bosnia, Kosovo, Greece, Peru, Ecuador, Venezuela, the former Soviet Republics, Rumania, Rwanda, Iraq, Turkey, Mozambique, Madagascar, Pakistan, India, Japan, Haiti, Honduras, El Salvador, Nicaragua, Afghanistan and Indonesia! Some of our states that have benefitted from the Air Force’s humanitarian efforts include Oklahoma, Kansas, South Dakota, Louisiana, Hawaii, California and Florida. In 1992, the Military Transport Service (airlift division) merged with Strategic Air Command’s refueling operations to form the Air Mobility Command (AMC). AMC is a major command which is headquartered at Scott Air Force Base in Illinois, and it provides worldwide cargo and passenger delivery, air refueling and aeromedical evacuation. It is also the command which is the focal point for all Air Force humanitarian airlift operations. With regard to air refueling operations, the two primary aircraft that allow the Air Force to have such amazing “Global Reach” are the KC-135 “Stratotanker” and the KC-10 “Extender.” They extend the range of our tactical fighters and strategic bombers during overseas operations, and they also provide refueling support to the Navy, the Marine Corps and many aircraft of our allied nations. Not only do these aircraft play a key role in the mobilization of our military assets, they are also capable of transporting litter and ambulatory patients utilizing patient support pallets during aeromedical evacuations! Regarding modern cargo aircraft, such as the C-17 and the C-5, their inherent performance and flexibility greatly improve the ability of the Air Force’s ‘total airlift system’ to fulfill its global air mobility requirements. These requirements have increased significantly, since the size and weight of U. S. mechanized firepower and equipment have grown in response to the improved capabilities of our potential adversaries. Finally, the ultimate measure of airlift efficacy is the ability to rapidly project and sustain an effective combat force in close proximity to a potential theater of war. Most assuredly, the U. S. Air Force has that ability! And, its proficiency in providing humanitarian aid is beyond repute!

Procedures:

NOTE: Teachers may use as much of the information contained within the “Intro/Background” section as they deem appropriate for their students; similarly, teachers may wish to pick and choose items within this “Procedures” section. Background PowerPoint with Berlin Airlift photographs is at <http://www.nationalmuseum.af.mil/shared/media/document/AFD-121218-021.pdf>.

- Write (on board) the things that will be covered/discussed/reviewed in class, including: World War II had ended, both the Allied and the Axis Powers had divided Germany into territories, the Berlin Airlift, the Candy Bomber/Chocolate Bomber/Uncle Wiggly Wings (Air Force pilot Gail Halvorsen), the history of airlift operations, the types of aircraft used for airlift missions and a PowerPoint presentation.
- Please read the underlined portions at the top of this page for background info, then lead a discussion regarding the 1945-1948 time frame. World War II was over, but Germany, like most of Europe, was in ruins. Ask the class why countries were in ruins (because of all the bombing/shelling that had occurred during the war).
- Ask students what the countries were that made up the victorious Allies (write their answers on the board: the United States, Britain, France and the Soviet Union). Similarly, ask what nations made up the defeated Axis Powers: Germany, Japan and Italy. Tell students that it was the normal practice (after a war) for the winning

Procedures (continued) Please Note: Teacher Addendums with illustrations/helpful hints are on pages 5 and 6.

- Tell the class that the reason for the division of defeated countries (into territories) was to stabilize things until an appropriate local government could be established and rebuilding could begin.
- Refer to page 5 for the Allied Sectors/Zones, and ask students which country they think is designated by green; by lavender; by purple; by yellow. You may wish to draw a color-keyed map on the board or use an overhead projector with the maps on page 5. Please ask students what the red dot is on the map (Berlin)!
- Tell the class that the Allied nations wanted to help rebuild Germany and make it strong and independent, so that it would be able to stand up against communist expansion, and to help with the economic recovery of Europe. The Soviet Union, however, wanted a weak, pro-communist Germany that would add to the communist nations that were along its border (the Western front).
- Ask students what they think the leader of the Soviet Union (Stalin) did to try to make the Allies lose interest and abandon Germany. Answer: He created a blockade of the capital city of Berlin—by June 1948, they had shut down all roadways into West Berlin (the part that the Soviets didn't control). Electrical power and all communication lines were cut—2.5 million West Berliners faced certain starvation!
- Fortunately, in earlier meetings of the three main Allied leaders (Stalin, Churchill and Truman) it was agreed that there would be three air corridors left open into the Soviet's territory of Germany (Stalin didn't think the Allies had much of an air power capability, so he didn't care if the corridors were left open)!
- Ask the class how they think the USA, England and France broke the blockade and kept the citizens of West Berlin alive and free from Soviet rule. It was called the Berlin Airlift, or Operation Vittles, and we flew cargo aircraft into Berlin every three minutes (filled with things they needed to stay warm in the harsh winter and things they needed to keep from starving to death)! We flew in cargo including flour, sugar, dehydrated foods, salt and coal—what was the problem with bringing coal into Berlin—the coal dust got everywhere!
- Ask students what they think they would need if their city was blockaded—write student ideas on the board.
- Tell the class that the Allies flew cargo in for fifteen straight months, and it is probably still the largest humanitarian effort of its kind. There were 277,000 flights, 462 days straight, 2.3 million TONS of food, coal, etc. (4.6 billion pounds)!
- It was truly a great victory for our newly-formed Air Force (and the Royal Air Force of Britain) but an embarrassing political mistake for the Soviet Union. It is considered the first battle of the Cold War.
- Ask the students what the Cold War was (a period of time following World War II when the Soviet Union distrusted the United States and vice-versa)!
- Tell the class that the Berlin Airlift is truly an amazing story, because we'd have to fly airplanes over and between tall buildings and ruins of buildings, and the weather was quite often very bad (snow, fog, rain, etc.).
- While this incredible humanitarian effort was occurring, a young Air Force Lieutenant, Gail Halvorsen, became a hero to the people of West Berlin, and he was known by the children there as Uncle Wiggly Wings or the Chocolate Bomber. He would fly over and 'wiggle his airplane's wings' so the children would know it was him, then he would drop small parachutes down to them with candy attached (to give them hope)!
- The video *As It Happened—Berlin Airlift—The First Battle of the Cold War* is a very integral part of this lesson plan, because your students will hear Gail Halvorsen talk about his experiences, and how the children of West Berlin touched him in a special way. The entire video is 100 minutes long, but the excerpt narrated by Halvorsen is only twelve minutes long, and it contains some amazing footage as well. The video is from the History Channel and is available through them or by ordering it on Amazon.com. We also can loan it to you through our AV Loan Program at the Museum (copyright 1996). Queuing Hint: fast forward until you hear these words: "But no story captures the humanitarian spirit of the airlift more than the remarkable efforts of Gail Halvorsen, the American pilot who became known as the Berlin Candy Bomber!"
- There is a great piece of juvenile literature that fits in with this lesson plan perfectly, so please consider reading it to your class: *Mercedes and the Chocolate Pilot—A True Story of the Berlin Airlift and the Candy that Dropped from the Sky*, by Margot Theis Raven; Chelsea, MI: Sleeping Bear Press; 2002. This book is written from the perspective of a real girl trapped in West Berlin (her name is Mercedes Wild). It reveals how she coped with things during the blockade of her city, and how Lieutenant Halvorsen made a special 'chocolate' memory that she would cherish her entire life!
- For an activity that will tie the whole lesson plan together, please see page 6. This is the parachute-building activity that also appears in another lesson plan in this series, but there is a twist to this student activity!
- Instead of simply tying a large paperclip to the four shroud lines of the parachute, your students should attach a small candy bar to the clip (like those small bars in an assortment bag of Hershey's chocolate miniatures).

Procedures (continued)

- After all students have built their parachutes and affixed their candy to the paperclip, reserve a spot on a balcony or high point of a gymnasium, multi-purpose room or classroom. Arrange for adult helpers and/or parents and/or other teachers to visit, and have them drop each student parachute (with candy cargo) down to the awaiting student who built that particular parachute! If necessary, you may opt to drop them down to students yourself!

Assessment/Evaluation

The students should be evaluated on their class participation, listening skills and ability to follow verbal instructions, especially when they are involved in participatory activities, class discussions and parachute building and flying.

References

Mercedes and the Chocolate Pilot—A True Story of the Berlin Airlift and the Candy that Dropped from the Sky by Margot Theis Raven; Chelsea, MI: Sleeping Bear Press; 2002

The Candy Bombers—The Untold Story of the Berlin Airlift and America's Finest Hour by Andrei Cherny; New York, NY: G.P Putnam's Sons/The Penguin Group; 2008

The C-47: Flying Workhorse of WWII by Richard D Harvey; Bloomington, IN: Author House; 2005

C-54-PLM Revisited by Ralph L. Stevenson, Jr; Sante Fe, NM: Sunstone Press; 2010

Humanitarian Airlift Operations by Daniel L. Haulman; Washington, DC: U. S. Printing Office; 1998

The Lockheed Martin c-130 Hercules by Peter C. Smith; Manchester, England: Crecy Publishing Ltd.; 2010

The "C" Planes: U. S. Cargo Aircraft 1925 to Present by Bill Holder & Scott Vadnais; Atglen, PA: Schiffer Publishing Ltd.; 1996

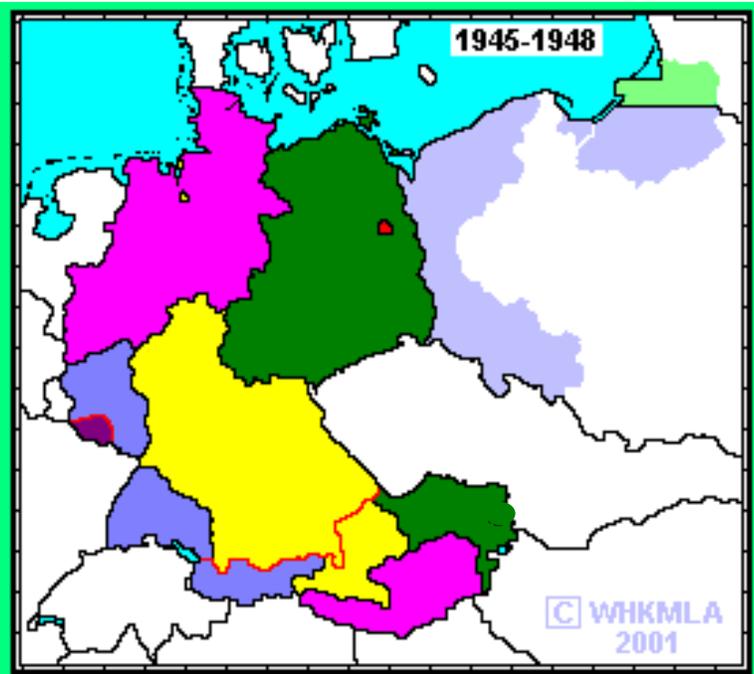
The Boeing C-135 Series: Stratotanker, Stratolifter and other Variants by Don Logan; Atglen, PA: Schiffer Publishing Ltd.; 1998



West Berlin children playing Berlin Airlift!



Uncle Wiggly Wings flying over awaiting children!

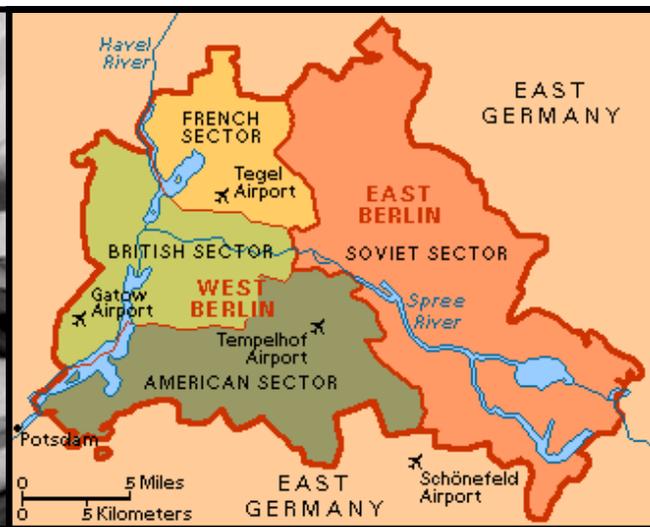


INSERT SHOWS GERMANY'S LOCATION; MAIN DRAWING SHOWS AIR CORRIDORS (NORTHERN ONE IS 160 MILES LONG; SOUTHERN ONE IS 290 MILES LONG; CENTRAL ONE IS THE ONLY OUTGOING ONE).

THE GREEN ZONES ARE SOVIET UNION TERRITORY WITH RED DOT REPRESENTING BERLIN; LAVENDER AREAS ARE THE BRITISH ZONES; PURPLE SHOWS THE FRENCH TERRITORY; YELLOW REPRESENTS THE ZONE FOR THE UNITED STATES OF AMERICA.



AIR FORCE PILOT GAIL HALVORSEN, WHO BECAME A HERO TO THE CHILDREN OF WEST BERLIN.



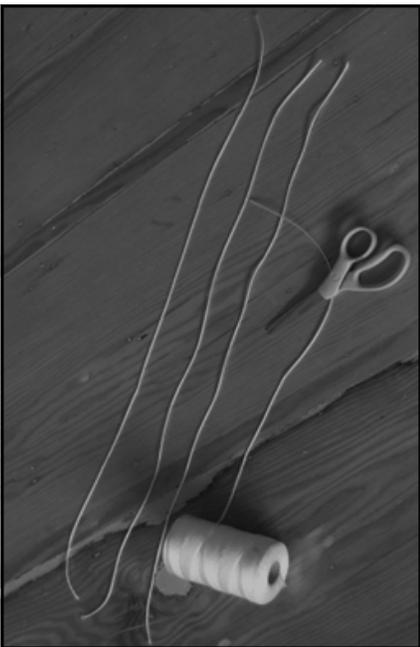
CLOSE VIEW OF EAST AND WEST BERLIN WITH DESIGNATED ALLIED SECTORS.

SPECIAL NOTE: *Mercedes and the Chocolate Pilot*, by Margot Theis Raven; Chelsea, MI: Sleeping Bear Press; 2002, is a wonderful book on the subject of the Berlin Airlift, and it is written from the perspective of an actual girl trapped in West Berlin (Mercedes Wild). Of course, the other featured character is the then-Lieutenant Gail Halvorsen (alias Chocolate Pilot/Uncle Wiggly Wings/Der Schokoladen-Flieger/Onkel Wackelflugel)! The video *As It Happened-Berlin Airlift-The First Battle of the Cold War* is available through the History Channel or through Amazon.com, and the 12-minute excerpt narrated by Gail Halvorsen tells the story of the children of West Berlin (and their plea “please don’t give up on us!”).



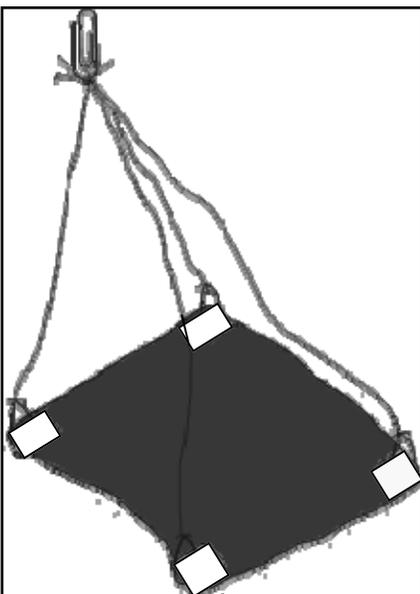
Make sure each student has the following:

- ◆ One paper napkin
- ◆ Four sections of string, each 12 inches in length (you may wish to pre-cut the string before class, or you may opt to have your students cut their own sections of foot-long string using a ruler as a guide)
- ◆ Four small labels or pieces of Scotch tape for securing the strings to the napkin
- ◆ One jumbo paper clip (if you decide to have the class perform steps 9 through 11 below, each student will require three large paper clips)



Making the parachute:

1. Open the napkin completely
2. Place a section of string on one of the corners, so that the end extends onto the napkin about half an inch
3. Secure the string to the corner with the label or tape (hint: it will stay in place better if you curve the end of the string a bit before securing)
4. Repeat with the other three sides of the napkin
5. Carefully gather the four string ends, and ensure that they are of equal length by lifting the napkin slightly off of the work surface (a balanced, symmetric parachute always flies/descends better)
6. Thread the four string ends through a large paperclip and tie them into a single knot
7. Have the students stand by their desks and have them test-drop their parachutes
8. If there is a location with a balcony or other elevated area, you may wish to have your students individually test their parachutes under your direct supervision (make sure there are no persons in the proximity of the drop zone, etc.)
9. You may wish to have students drop their parachutes a second and a third time, with an additional paperclip added for more weight/mass each time
10. You may wish to have your students observe and record descent times during the first, second and third drops of their parachutes
11. A simple chart to record data might include: student's name, drop number and time aloft
12. Have students discuss what happens (and why) when more weight is added to their parachute



SPECIAL NOTE: This activity was originally published in the 1997 edition of Project SOAR: Science in Ohio through Aerospace Resources Curriculum Guide!