



Missions for
America
Semper vigilans!
Semper volans!

The Coastwatcher

Publication of the Thames River Composite Squadron
Connecticut Wing
Civil Air Patrol

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19 September, 2017

CALENDAR

See the Squadron Calendar for Meeting Details

23 SEP-Scarecrows Festival-Preston
26 SEP-TRCS
30 SEP-Pilot's/Ops Meeting-Hartford
01 OCT-O Flights
06-07 OCT-AOPA GON Fly-in
14-15 OVT CLC
21 OCT-CTWG Smallbore Rifle Clinic
4-5 NOV-UCC
10 NOV-Armed Forces Nights-Groton Elks
11 NOV-Cadet Ball-Berlin

CADET MEETING

19 September, 2017

C/CMSgt Ryan Schantz briefed the Cadets on hurricane preparations and safety.

The leadership lesson consisted of a video of a speech by Adm. William H. McCraven, former commander of the U.S. Special Operations Command. The topic, "My Ten Lessons from SEAL Training, was the subject of the commencement address which he presented at the University of Texas.

Lt Col Kinch judged cadet efforts at folding the national ensign.

A team building activity called "A Star is Born" was held. The cadets formed a circle. One of them started by tossing a roll of toilet paper to a second cadet while holding the loose end. The second cadet then passed the roll to a third cadet, etc. the object was to form a five pointed star without ripping the paper.



The Start



A Toss



The Finish

SENIOR MEETING

19 September, 2017

Capt Miller lead a discussion of methods using the sector search and wing null techniques.

Lt Richards and Lt Heard presented information about the preparations for the TRCS exhibit at the Preston Scarecrow Festival.

Lt Col Rocketto informed the membership about the upcoming citrus fruit sale fundraiser.

ACHIEVEMENTS

Lt Joanne Richardson served as the mission staff assistant at the Aerospace Education Workshop held at CTWG HQ on Saturday last.

C/SSgt Christopher Munzer earned his ICUT rating.

AIAA-CTWG AEROSPACE EDUCATION WORKSHOP

The American Institute of Aeronautics and Astronautics (AIAA) and the Connecticut Wing (CTWG) sponsored a one day aerospace education workshop at Wing HQ on Saturday last. The workshop was underwritten by a grant from the Hartford Section of the AIAA.

The students were Civil Air Patrol (CAP) Aerospace Education Members (AEM) and CAP Aerospace Education Officers (AEO). AEMs are active and retired teachers who are committed to advancing an aerospace agenda as part of their classroom curricula. AEOs are CAP senior members who work with cadets and senior members.



Carly Imhoff tests a model of a Javan Cucumber seed. It has a lift to drag ratio of 4 and can glide hundreds of yards in wind.

AEMs Carly Imhoff, Kate Kraven, and Dory Manfre and AEO Capt Keith Hall participated in a full day of activities which included briefings on CAP programs, hands-on activities which can be brought to the classroom, and demonstrations fashioned to provoke student awareness of and interest in the many facets, scientific and cultural, which comprise aerospace activities.

The staff consisted of a highly experienced and professionally recognized aerospace experts and teachers. Lt Col Carl Stidsen, CTWG historian and librarian at the New England Air Museum's John W. Ramsey Research Center is a USAF retiree and CAP Command Pilot.

AEM Ms Rachel Manzer was the second person selected as National CAP Teacher of the Year. She has received the AIAA Foundation Award for Excellence in Teaching, and is selectee for the Teacher in Space Program. She teaches at the CREC Academy of Aerospace and Engineering in Windsor.

Manzer has taught the Connections in Education (ACE) syllabus ACE is a Civil Air Patrol program which provides engaging and meaningful cross-curricular aerospace lessons that support science, technology, engineering, and math (STEM) initiatives and enrich the school curricula.



Ms Manzer commences her powerpoint presentation on the CAP ACE program. Mr. Sharack observes from the right.

AEO Capt Keith Hall prepares a paper airplane model.



Manzer spoke about CAP programs that are available for free or at little cost: STEM Kits, Aerospace Excellence (AEX) and ACE, all of which she has implemented in her school.

Another AEM, Mr. Stuart Sharack was the first person selected as National CAP Teacher of the Year and is also a recipient of the AIAA Foundation Award for Excellence in Teaching. He is noted for running after-school elementary school aerospace clubs, the annual Ledyard Aerospace Festival, and the Federal Aviation Administration's summer ACE program.

Sharack presented a wide range of hands-on activities which can be implemented within a classroom or squadron.



Manfre nervously launches a quadcopter on her first solo.



A smile of success as she achieves a perfect hover.

The lunch break consisted of a selection of Chinese food. Both CTWG Commander, Col James Ridley and Chief of Staff Lt Col Matthew Valleau met with the teachers and discussed subjects of mutual interest.

Lt Col Stephen Rocketto, CTWG Aerospace Director of Aerospace Education won the National Science Foundation's Presidential Award for Excellence in Teaching Mathematics and Science, The Department of Education's S. Christa McAulliffe Fellowship and the AIAA Foundation Award for Excellence in Teaching. He worked in the space program in the 1960s,

flew as a charter pilot, and taught science for 30 years.

Rocketto offered a number of activities and demonstrations designed to support the aerospace curricula in school and squadron.

Lt Joanne Richards, Thames River Composite Squadron served as Mission Staff Assistant and provided valued ancillary services.

At the end of the day, each participant received a gift of two books with aerospace themes and a certificate of attendance.

AEROSPACE CURRENT EVENTS

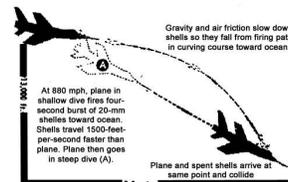
Strega, piloted by James Consalvi, won the National Championship Air Race at Reno. He beat Steve Hinton, flying Voodoo by a "spinner." Average speed was over 480 mph.



(Credit: Kristoffer Glenn Pfalmer)

AVIATION CHRONOLOGY

21 SEP, 1956-Grumman test pilot Tom Attridge shoots himself down while testing the cannon's in an F11F Tiger. The cannons are fired during a 200 Mach 1 dive from 22,000 feet. During the dive he overtakes and passes the rounds fired and when he pulls out at 7,000 feet, one of them is ingested by his engine and shreds the turbine blades. The aircraft is guided to a crash landing and Attridge emerges with minor injuries.



22 SEP, 2003–David Hempleman-Adams becomes the first person to solo the Atlantic Ocean in an open-air, wicker-basket hot air balloon from New Brunswick, Canada to Blackpool, Ireland. He is also the first person in history to achieve the “Adventurer's Grand Slam,” climbing the highest peaks on the seven continents and reaching the geographic magnetic north and south poles. Check out its entry in Wikipedia to learn more about this amazing man and his adventurous daughters.



(Credit: BBC)

23 SEP, 1931– The first US Navy experiments with shipborne rotary-wing aircraft are conducted. A Pitcairn XOP-1 autogyro flies onto and off the first Navy aircraft carrier, the *USS Langley*..



The autogyro circles the Langley, known as the “Covered Wagon because the deck resembled a canopy.” (Credit: US Navy)

24 SEP, 1930– John W. Young is born. Young is the first person to fly into space six times, the only person to pilot four classes of spacecraft, flew to the moon twice and walked on the moon once.



(Credit: NASA)

25 SEP, 1955–The Royal Jordanian Air Force is founded.



The first fighters in the RJAF were DeHavilland Vampires. (copyright Mike Freer)

26 SEP, 1947 – Eight days after the creation of the United States Air Force, General Carl A. Spaatz is named the first Chief of Staff.



The Spaatz Award is the highest honor which a CAP cadet can earn and carries with it the grade of Cadet Colonel.

27 SEP, 1913– Katherine Stinson becomes the first woman in the United States to make an official airmail flight.



Post card depicting Miss Stinson and her aircraft.

collision occurred over Brocklesby, New South Wales, Australia. The accident was unusual in that the aircraft involved, two Avro Ansons of No. 2 Service Flying Training School RAAF, remained locked together after colliding, and then managed to land safely. Both navigators bailed out after the aircraft struck, followed shortly afterwards by the injured pilot of the lower Anson.

The pilot of the upper Anson, however, found that he was able to control the interlocked aircraft using his ailerons and flaps, coupled with the still-functioning engines on the machine underneath. He was then able to make a successful emergency landing in a paddock near Brocklesby. All four crewmen survived the incident, and the Ansons were repaired and remained in service with the Air Force.

28 SEP, 1980– Jaromir Wagner is the first to fly the Atlantic standing on wing! The trans-Atlantic voyage was made aboard a Britten-Norman Islander. The flight required five hops: West Germany to Scotland to Iceland to Greenland to Newfoundland to New Jersey.



(Credit: detail-historie-59)

One of the pilots who flew the Islander, Robert J. Moriarty, flew a Beechcraft Bonanza under the lower span of the Eiffel Tower on March 31, 1984. Got to You Tube to see the cockpit film.

29 SEP, 1940-The 1940 Brocklesby mid-air



Ansons Stacked Together

30 SEP, 1958-Aquila Airways terminates its Southampton-Madeira route and retires the last British scheduled flying boat service



Postcard featuring a Shorts Solent 5 departing Funchal, the capital of Portuguese Madeira.

**Operation Vittles/Operation Plane
FOare
The Berlin Airlift
24 June, 1947-13 May, 1948**

*by
Stephen M. Rocketto*

In the long history of warfare, besieged cities are oft conquered when their food supplies are exhausted. Airlifts are the most modern way to relieve a siege. Some are failures. The British attempt to air supply the garrison at Kut Al Amara in Iraq in 1915 failed and the 13,000 Allied troops went into the prison camps of the Ottoman Empire.

In 1942, the Red Army surrounded the German 6th Army which was holding Stalingrad. The Luftwaffe attempted to resupply the besieged but lacked the resources. Some 91,000 German soldiers marched off to Stalin's gulag and only 5,000 ever came home.

However, when the Japanese shut down the Burma Road in 1942, the United States Army Air Force took up the challenge of supplying vital war materials to China. For three years, aircraft flew from India to China, over the Himalayan Mountains. The commanding genius of the operation known as "Flying the Hump" was Brigadier General William H. Tunner who wrote:

Once the airlift got underway, every drop of fuel, every weapon, and every round of ammunition, and 100 percent of such diverse supplies as carbon paper and C rations, every such item used by American forces in China was flown in by airlift. Never in the history of transportation had any community been supplied such a large proportion of its needs by air, even in the heart of civilization over friendly terrain...After the Hump, those of us who had developed an expertise in air transportation knew that we could fly anything anywhere anytime.

In 1947, The Soviet Union initiated what is

arguably the first major action in the Cold War by shutting down access to the U.S., British, and French sectors of Berlin. To relieve the siege, General Tunner would be asked to make good on his boast.

Part I

The Political Situation

When World War Two in Europe ended in April of 1945, the major allied nations, the United States, Great Britain, and the Soviet Union established zones of occupation in the national territory of Germany. Throughout the war, the Allies considered their policies in respect to a defeated Germany but no firm decisions were made. The British were extremely suspicious about Soviet intentions in Europe. George Kennan, who was a most perceptive US Foreign Service Officer and specialist in Soviet affairs warned the State Department that Soviet ambitions in eastern Europe would be inimical to the formation of independent states from the pre-war nations.

Berlin, the German capital, had been a valued prize but General Eisenhower, the commander of the Allied Expeditionary Force in Europe, was reluctant to risk the casualties since Soviet troops were so much closer. Soviet forces took the city and as the dust of battle settled, the Roosevelt and Churchill governments accepted a plan which would place the western sector of Germany under the control of the Great Britain, France, and the United States and the eastern region under Stalin's Soviet Union. Berlin would be located some 100 miles inside the Soviet zone but occupied by the four powers. Just as the war ended, President Roosevelt died and was succeeded by Harry Truman who decided to accept the plan to subdivide Germany and Berlin.

The Western Zone was the most heavily industrialized regions of Germany, stretching from the seaports on the Baltic to the Ruhr Basin in the south. Russia occupied the agrarian east upon which much of pre-war Germany depended for its food. Byzantine negotiations ensued to

divide the “spoils” and these were complicated by differences in policy; the United States and Britain on one side and the Russians and the French on the other. Fundamentally, the differences had their roots in historical experience. Both France and Russia had suffered enormously from German aggression in World Wars One and Two. Their objective was to reduce Germany to a third class agrarian nation so as to never again threaten either of them.

To this end, the Soviet Union stripped their occupied territories of industrial resources, machinery, and tooling. Factories were denuded of everything from their power plants down to their simplest tools. In addition, Russia had parts of eastern Germany annexed to Poland, soon to be a Soviet vassal state, and France demanded the Ruhr Basin as compensation for their losses.

On the other hand, Great Britain and the United States remembered the lessons of World War One and how the draconian peace treaty obligations forced on the Weimar Republic at Versailles had led to the rise of Adolph Hitler. They also believed that a strong industrial Germany was necessary for the economic health of Europe in general.

The Soviet Bluff

During April and May of 1947, Russia decided to squeeze the Allied powers by exercising their right, under the four power agreement, to govern traffic over the rails, roads, and barge canals which served Berlin. They made numerous and questionable demands which delayed and sometimes halted traffic entirely. In response, the western allies instituted their rights to maintain air routes from the west of Berlin. A scant force of USAF and RAF C-47s and British chartered commercial aircraft brought supplies to the allied garrisons.

Gooney Birds lined up at Tempelhof at the start of the Airlift.



Harassment continued. In the most serious incident, a Russian Yak-3 had collided with a British European Airways Viking which was on approach to Gatow Airport. Both aircraft crashed killing all aboard.

Negotiations among the four “allies” became paradigms of intransigent behavior and deadlock resulted. In another context, George Kennan opined that “nations do not have allies, they have interests” and the morass of arguments, threats, bluffs, claims, and counter claims soon led to a showdown over one such interest, monetary policy.

Any functioning civilization needs a stable fungible medium of exchange, money. Immediately after the end of the war, currency inflation struck the German economy. The old Reichsmark, overprinted as occupation money by the Allies, flooded the market and the value of the Reichsmark for the purchase of goods plummeted.

Consequently, a barter economy developed in which cigarettes and chocolate became a substitute medium of exchange. A cigarette was equivalent to five marks or about five dollars and a chocolate bar was worth about 15 dollars worth of marks, far more than the official exchange rate. Foodstuffs and other necessities of life could not be purchased with German money and the population suffered while the currency manipulators and black marketeers profited.

The economy was in chaos as inflation drove prices beyond the reach of the average citizen and commercial establishments were forced to close. The western Allies decided to issue a new currency at the rate of one to ten of the old. The Soviets offered their currency at the rate of one to one but certain portions of the population would be denied exchange privileges. Neither side could come to an agreement and the meetings between them ended.

On June 24th, 1947, Berlin's surface access from the west was cut by Soviet force of arms. The blockade had started. What the Russians had not

counted on was a cast of characters who understood poker and its strategy of bluffing and stake raising and who could finesse the deck.

The Western Allies Call the Bluff

First among the players was the new President of the United States, Harry S Truman, a wily street-smart poker playing politician who had quickly grasped the implications of the Soviet actions. Truman's military and diplomatic advisors urged him to quit Berlin but Truman understood the Russian bully. When confronted with the abandonment of Berlin during a staff meeting, he succinctly stated that "There is no discussion on this point. We stay in Berlin-period."



The "buck" referred to on the sign on President Truman's desk refers to a marker which indicates who the dealer is in a poker game.

Another player at the table was a brilliant administrator, Lt. Gen. Lucius D. Clay, Deputy for Military Government to the Supreme Allied Commander. Clay was supported by Col Frank Howley, Military Governor of Berlin. Col Howley had no compunctions about butting heads with the Russian generals and acquired the nickname, Howlin' Howley from the manner in which he responded to their demands,



Clay and Howley



When the Russian initiated the blockade, his first thoughts were to run an armored convoy down the *autobahn* and into Berlin. However, an alternate was proffered by an RAF officer who knew that the convoy plan would mean war at a considerable disadvantage to the western allies. For the Soviets had over 300,000 troops on hand in the Berlin environs while the Western allied force numbered only 6,500.

The RAF officer, Air Commodore Reginald Waite had considered the possibility of supplying Berlin by air and Clay, who had previously dismissed this method, was quickly convinced to make the attempt. Clay received strong backing from Ernest Bevin, Foreign Minister of Great Britain.



Waite and Bevin. Bevin was a strong trade unionist who despised Communism.

The Soviet Union had no means except acts of war to close down the three air corridors that previous negotiations had created. Clay believed that the Russians were unwilling to start a full scale war and called their bluff. He ordered the commencement of a full scale airlift.

The Berlin Airlift is Initiated

In the poker game with Berlin as the stakes, a hand was dealt to Lt. Gen. Curtis LeMay, Commander of the United States Air Forces in Europe, As it was, the hand was weak. LeMay had some 275 aircraft while the Soviets had some 4000 to put into the pot. General Clay made a decision and, without receiving permission from Washington, called LeMay and asked whether or not he could haul coal, LeMay was not dismayed and replied, "...the USAF can deliver

anything. How much coal do you want us to haul.” “All you can,” replied Clay.

Clear decisive decisions were being made by strong men from Harry Truman on down. Clay, like Truman, sensed that even though the Soviets possessed an overwhelming local military advantage, they would not raise the stakes and risk a war with the West.

The operation needed a name. The former British colonial cousins chose the colloquial “Operation Vittles.” An erudite British punster came up with “Operation Plane Fare” for their part in the airborne relief of Berlin.

At the start, finding the necessary resources to deliver the goods was the problem. The RAF and USAAF managed to make thirty four flights into Tempelhof Airport, delivering 80 tons of food and medicine in four days. This was far too little.

The Operational Problems Involved in Staging an Airlift

Eight problems needed to be solved. First, the entire effort had to be organized in such a way as to coordinate all of the disparate elements of the operation and to solve problems as they arose. The commander and planners had to be as flexible as a politician's promises.

The military also had diplomatic problems to resolve with their political masters, German civilians, and probably most difficult and frustrating, those dealing with their own varied military departments, each like a feudal fiefdom, often dominated by the ego of a rival commander.

When it became certain that a long term effort would be needed, Maj. Gen. William Tunner, a Military Air Transport Service Deputy Commander and the leader of the extraordinary difficult but highly successful “Hump” resupply effort in World War Two was placed in charge. There is some irony in that an expert in moving cargo should have a surname which is a near homonym for the a standard shipping weight of 2,000 pounds



*General William
“Willy the Whip”
Tunner
(USAF Photo)*

The second problem was aircraft. Berlin required approximately 4,500 tons per day: 3,000 tons of fuel and 1,500 of food. The Douglas C-47, the most common air-lifter, might carry around 2.5 tons. Assuming the aircraft might make six trips each day, it would require a minimum fleet of 300 aircraft to meet the quota, not counting spares to make up for grounded and lost aircraft.

The largest usable aircraft was the Douglas C-54 Skymaster. The “Four” had four times the payload of the C-47. Therefore, if it were the main aircraft utilized, the number of aircraft movements and crew requirements would be radically reduced, the problems of air traffic control would be simplified, and loading and unloading the the freighters would be faster.

Tunner and his team called in C-54s from all over the world. Within three months, over 200 Skymasters were engaged in the airlift. This accounted for almost 50% of the entire USAAF fleet. The US Navy even sent two squadrons of their C-54s, designated as R5Ds, from the Pacific.



An R5D Skymaster bearing a Pacific tail identification.

The third issue was crews. Each plane flew with two pilots and a flight engineer or radio operator. A minimum number of personnel would be two crews per plane totaling 1200 pilots and 600 engineers and radio men. Crew requirements were rationalized and special training programs were established to provide more crews.

During the Airlift, reservists were recalled and the Great Falls, Montana air base operated a special 21 day training unit for the Airlift bound crews. Planes were ballasted with full loads, frequencies were the same as used in Germany, controllers followed the Tempelhof guidelines, and approaches and landing were made on runways with the same headings and lengths as those in Berlin.

Tunner had little control over personnel assignments and temporary duty, austere living conditions, and a heavy work load contributed to morale problems. Tunner had to work tactfully around the command prerogatives of fellow commanders and the conflicting interests of their commands. This task may have been one of his most difficult but he was aided by the enormous amount of good will which the relief operation engendered and very favorable publicity produced by the news organizations.

Airplane maintenance was the fourth problem. They require minor maintenance, oil changes, and a schedule of major phase checks. Maintenance requires skilled workers, tools, and facilities. With most of the US military demobilized and that the bulk of the remaining technicians stationed everywhere but Germany, serious problems arose.

Tunner's solution was to task his statistically astute staff to design a plan to rationalize the scheduling of aircraft so as to allow a certain portion of the fleet to enter maintenance status in defined intervals of time. For example, suppose ten aircraft each requires one day of maintenance every ten days. A rational schedule to allow for smooth operations would have one aircraft in maintenance every ten days and on any day, 90% or the fleet would be flying. This method has

been successfully used in the China-Burma-India Theatre during the "Hump" airlift.

Mechanics were another problem. Then, the US command realized that a large pool of highly skilled former Luftwaffe mechanics were available and very willing to work. Tunner located Gen. Hans von Rohden who not only had been involved in air transport while serving in the Luftwaffe but also was fluent in English. Gen. von Rohden recruited and organized a complement of German mechanics and also translated US maintenance manuals into German.

The inadequate facilities in Germany also hampered efficient maintenance. To meet the need, Tunner had RAF Burtonwood, a huge base near Liverpool, reactivated and staffed with mechanics brought in from the United States. The facilities were more than adequate in size and offered more amenities than the war-torn German bases. Aircraft in need of major work could be quickly flown to England for repairs and periodic inspections.

Fifth, airbases are needed from which to launch and receive aircraft. Each base requires sufficient runway length, runway strength, and ramp space to allow the aircraft to operate. Most German airfields, heavily damaged by bombs and artillery during the war were not an option.

The air heads for the US effort were situated in the western zones of Germany at Rhein-Main and Wiesbaden and the terminal was located at Berlin's Tempelhof. The British flew south from their zone of occupation into Gatow. With limited airlift capabilities, they used a grab-bag fleet of RAF and civilian two and four engine taildraggers: Lancasters, Tudors, Hastings, and Yorks to name just a few.



RAF Yorks



The Handley Page Halston, the freighter version of the Halifax bomber



An Avro Lancaster over Berlin.



A C-54 executes the tricky approach into Tempelhof

They also used Sunderland flying boats to fly corrosive materials like salt onto Lake Havel. The Sunderland was designed for salt water operations and its control and electrical cables ran through the top of the fuselage and were less like to suffer from the effects of the corrosive cargos. When the Lake froze over, Handley-Page Halifax bombers with special cargo panniers were used instead.



Sunderland on the Havel River

The land airports were first jury-rigged with pierced steel planking and then improved with hard surfaces. The rubble of Berlin provided much of the base over which the concrete was laid and local labor supplied the manpower. The French allowed the United States to construct a new field at Tegel.

Obstacles made approach difficult. Although much of the city had been leveled, a seven story apartment building a a brewery smokestack sat just off the Tempelhof approach. Aircraft were forced to use double the normal approach gradient in order to land.

Sixth, if you want to fly supplies, they must be delivered to an airhead and loaded and then unloaded when delivered. The work crews which loaded and unloaded the aircraft were recruited from the German population. The promise of employment, a hot meal in the middle of day, and opportunities for scavenging attracted a very enthusiastic labor force. Unloading time was reduced to under a half hour and a a record set when a ten ton shipment was removed from a C-54 in five minutes!



Crews of Germans unload sacks of flour from a C-54

Some of the commodities shipped required special handling. Coal and flour were both

packaged in sacks but the coal and flour could lead to serious maintenance problems. The coal dust was so valuable that it was swept out and repackaged for heating fuel. Some very large items required considerable amounts of ingenuity to ship. Bulldozers were cut into segments and then welded back together in Berlin. A few of the brand new Fairchild C-82 Flying Boxcars and giant Douglas C-74 Globemaster I transported some bulky items.

In order to speed up movements, crews did not leave the vicinity of their aircraft during loading and unloading. Food and snacks were brought to the plane. As a lure, Tunner arranged for the food wagons to be staffed by the prettiest women that could be found. Operations delivered the clearance and manifest documents directly to the aircraft commander.



Aircrews seek a sandwich and a coffee at the mobile snack bars set up by Tunner.

Seventh, hostile acts by the enemy will impede any operation and the Russians, although not overtly hostile, were obstructive. As Kennan had pointed out, our erstwhile allies, the Russians, had overriding interests which were diametrically opposed to those of Great Britain and the United States. Consequently, in addition to their ground blockade, they, engaged in aerial provocations.

They staged anti-aircraft practice in close proximity to the air corridors used by the airlift. At night, searchlights were used to illuminate the supply planes in an effort to dazzle and disorient the pilots. Tunner stated that the nastiest of their acts was the posting of poison pen letters to the

crews which falsely reported the infidelities of their wives. Some of these letters were mailed from the United States!



Staff Sergeant Jake Schuffert's cartoons were a counterpoise to the serious business of airlift missions.

The eighth problem, European weather, seriously hampered air service to Berlin. Rain and fog are characteristic of central European weather and can easily disrupt air operations. Central Europe is a continental temperate climate and average 90 days of fog each year. In the vicinity of Berlin, one can expect pleasant summers but June and August are the rainiest months. Continental winters are characterized by bitter cold and snow.

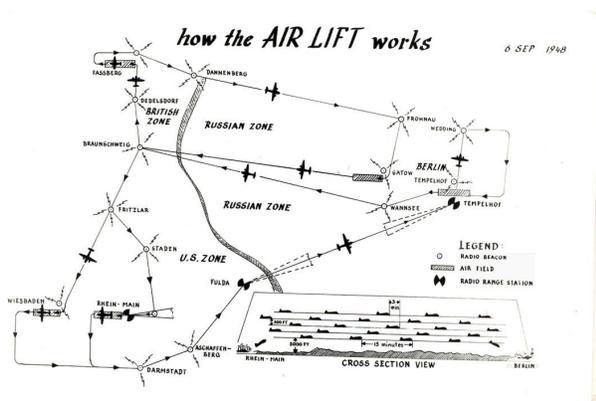
The solution was to run the entire operation under Instrument Flight Rules, in all weather, using an invariant schedule of flight and parameters. First, two inbound flight corridors were established into Berlin: one from the British zone in the northwest and one from the US zone in the southwest. Departures were dispatched through a central westward corridor with US and British aircraft changing course and returning to their home bases after departing the western end.

Meteorologists were brought in from the United States and Great Britain and German weathermen, familiar with local conditions were employed. Weather aircraft maintained a regular schedule of flights, reporting winds, temperatures, and precipitation.



Diagram Illustrating the Four Occupation Zones and the Air Corridors to and from Berlin

Altitude assignments and aircraft separation criteria were established. Aircraft were assigned for take-off in blocks with the slower C-47s preceding the faster C-54s. Aircraft were separated by three minutes in time and as little as 200 feet in altitude. Landing minimums were a four hundred foot ceiling and one mile visibility. Anything less and the pilot was required to fly a missed approach and return to the originating base via the central corridor.



Air traffic was guided by direction finder beacons and radar. Ground controlled approach radar guided the aircraft to the runways.

Standardized procedure, a systematic schedule, and a precise rhythm were established. In Tunner's own words:

It is this beat, this precise rhythmical cadence, which determines the success of an airlift. This steady rhythm, constant as the jungle drums, became the trade-mark of the Berlin Airlift, or any airlift I have operated. I don't have much of a natural sense of rhythm, incidentally; I'm certainly no threat to Fred Astaire, and a drumstick to me is something that grows on a chicken. But when it comes to airlifts, I want rhythm and regimentation. I insisted on complete regimentation in every aspect of flying for every pilot, co-pilot, and radio operator. There was only one best technique for each flying maneuver—take-off, climb out, cruise, descent, and landing. No variations.

At maximum effort, the Tempelhof runway recorded a take-off and a landing every 90 seconds, 24 hours a day. There was no place for the strutting white-scarfed aviator. The Airlift was a grinding and pitiless exercise in efficiency led by a mission oriented cadre and sustained by a heroic army of aviators, maintenance crews, air traffic controllers, logistic personnel, the Germans who loaded and unloaded the vehicles and built and repaired the runways.

Boldness, bravery, bread and eventually the ballots of the free Berliners won the first battle of the Cold War.



The second part of this essay will appear in the next edition. It will feature some anecdotes about the human side of the Airlift.