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Volume XXVII

### ***The Airlifter***

Newsletter of the Troop Carrier/Tactical Airlift Association

***Promoting and preserving the troop carrier/tactical airlift heritage***

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### **Finances**

We currently have \$17,620.98 in our checking account plus \$900 in checks for a total of \$18,520.98 of which \$800 are funds that have been contributed to the USAFM memorial fund. During a recent officers/board members conference call, the board voted to donate \$5,000 to the memorial fund, which leaves us with \$12,720.98 in the general fund. (These funds are mostly dues paid by members. We've been able to achieve this balance by sending out the newsletters and other correspondence by Email and thus saving printing costs and postage.)

### **Chairman's Corner**

*Welcome to all you Troop Carriers, Tactical Airlifters and Trash Haulers. Greetings from the Mile High City, home of an all-time record for February of 22.6 inches of snowfall. I know that doesn't impress you guys in the northeast and Boston area, but we are impressed.*

*I won't repeat your President's words but just echo Mike's sentiments. When and where mobility warriors gather, camaraderie is not a by-product of their gathering but the reason they are there in the first place. Tucson last October was no exception, and I anticipate more of the same in Little Rock in May of 2016. Block out (in ink!) the dates of the 2016 reunion on your calendars and lets swarm in on the Rock like 7-year locusts!*

*Sociologists tell us that current, younger generations have an attitude of mistrust toward institutions and therefore are not prone to associating or joining them; thus professional groups, veterans groups such as The American Legion and VFW, and even churches have trouble maintaining or growing their younger memberships. Tough to do but not impossible. In the last year, under the able efforts of Bill Kehler, TCTAA has experienced much meaningful growth. It has been attributed to an unknown author that family reunions are not really important until one reaches the age of 55 or greater. Most if not all of our TCTAA members meet that criteria; ergo, hopefully the TCTAA will be important to you.*

*Also I would submit to you that one only gets OUT of an organization what one puts IN. Your previous*

*successes and accomplishments while on active duty indicate that you possess significant gifts and talents. The TCTAA can use those talents. Most of us qualify as "Vintage People" and are chronologically gifted placing us in at least the 4th quarter in the game of life. Some members (or their loved ones) are dealing with significant physical issues that impact our ability to serve. So my plea and challenge to each of you is that when the officers or the board of TCTAA make known what skills are needed, step up to the plate, hit one for the Gipper and put the load on the IP.*

*To our new members; welcome on board, strap in and lets kick the tires, light the fires and put another on-time takeoff in the books. At this phase in some of our lives, sex may be a spectator sport but active membership in TCTAA is not!*

*I look forward to seeing all of you on the ROCK in 2016!*

*George Dockery  
Chairman of the Board*

### **President's Message**

*Hi TAC Airlifters - Today is St. Patrick's Day and spring is just around the corner for the people in the Midwest and East as you have had a miserable snowy winter. I remember my days in Rhode Island as a kid and it was a lot of fun playing in the fluffy snow, but when you get up in age that cold is a lot harder on the body. Hopefully everybody weathered this winter and are out planting your spring flowers.*

*Thanks to Bill Kehler and Reunion Committee Team - we are going to Little Rock, Arkansas on 5 - 8 May 2016 for another fantastic meet and greet Reunion. They have arranged for us to be at the Wyndham Hotel in North Little Rock which is right on the Arkansas River for only \$89 a night. If you have not been to a TC/TAA Reunion you have been missing out - they get better and better with every one. You end up seeing guys that you forgot about and meeting new friends that had some of the same experiences you had. The war stories get better every time and sometimes the endings change from year to year. Hope to see y'all at this next important event.*

*Our organization continues to grow - at last count we are at 263 members. Therefore, the Board decided to expand our leadership by including three new Alternate Board Members. These members will be in training to take others place on the board who have been doing it a long time and probably will be stepping down soon. The election results are in and we had 53 voters cast their vote for a 20% voting rate.*

*These officers and Board Members were all voted in unanimously:*

*Vice Chairman - Carl Wyrick*

*Vice President - Bill Kehler*

*Treasurer - Ralph Bemis*

*Board Members - Andy Vaquera, Don Hessenflow, Tom Wark, Jim Elmer*

*New Alternate Board Members with % of Vote Captured:*

*Bill Goodall (75%)*

*Walt Dudow (62%)*

*Rickey Davidson (53%)*

*Thanks to Ken Eith and Roy Spencer for coming forward and volunteering to be considered as an alternate board member. We have your name and probably will be calling on you to step up on the next election.*

*Load Clear*

*Mike Welch*

*President, TC/TAA*

## The “Daddies” of Troop Carrier

If there is anyone who deserves the title of the “father of military airlift,” it would not be Lt. Gen. William H. Tunner as commonly believed (although he commanded the Air Transport Command Ferrying Division, Tunner didn’t become involved in air transportation until the fall of 1944 when he took



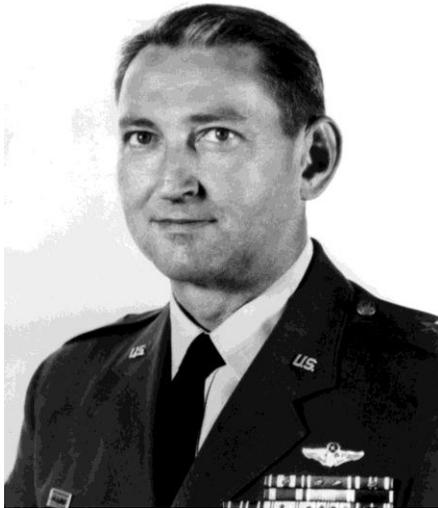
LT. GEN. LEWIS H. BRERETON

command of the Air Transport Command’s India-China Wing) but rather Lt. Gen. Lewis H. Brereton, who developed the first plan for the use of airplanes to move troops and deliver them by parachute behind enemy lines in 1918 then commanded the largest airlift force ever fielded in World War II. When he developed the plan for air-transported infantry, Major Brereton was chief of operations on the staff of Brig. Gen. William L. Mitchell’s American Expeditionary Force Air Service. Mitchell asked his boss, Gen. John J. Pershing, for permission to develop a plan to use air transported troops to assault positions behind enemy lines. Pershing approved the concept and Mitchell directed Brereton to develop a plan. The plan was approved but the Armistice ended The Great War before it got beyond the planning stages. The US Army went back into its prewar mode without recognizing the potential of the airplane in modern warfare. However, Brereton’s experience with the plan would be put to good use two decades later.

In the 1920s and 30s Brereton served in a number of roles, including as an instructor at the Air Corps Tactical School where he, along with Captains George C. Kenney and Claire Chennault, opposed the efforts of the “bomber mafia” to make “strategic bombing” the Air Corps’ primary mission. The three officers believed that the Air Corps role was to

attack enemy targets on the battlefield and that fighters and attack aircraft were just as important as long-range bombers. In July 1941, Maj. Gen. Brereton took command of Third Air Force in Tampa, Florida but the assignment was short-lived. He was ordered to Manila to organize and command an air force to defend the Philippines against the Japanese. One of his two aides was 1<sup>st</sup> Lt. Edgar Wade Hampton, whose background was in attack aviation with the 27<sup>th</sup> Bombardment Group. As soon as he got to Manila, Brereton organized Far East Air Force as the command organization for all Air Corps units in the Philippines. He recognized that air transport was needed to support operations in the far-flung islands. However, only a handful of transports were in the Philippines so obsolete B-18 bombers were converted to transports after the arrival of B-17s from the States. He requested additional transports to support his growing air force but they ended up in Australia.

On December 8, 1941 (Manila time), Japanese aircraft attacked US installations in Hawaii and the Philippines and brought the United States into World War II. Brereton was apparently already utilizing the services of Philippines Airlines, a new company owned by Filipino businessman Andres Soriano and under the direction of former US Navy enlisted pilot Paul I. Gunn. Within a few days after the outbreak of war, Brereton commandeered PAL and commissioned Gunn and two of his other pilots. Gunn was placed in command of an ad hoc air transport squadron that consisted largely of his own airplanes and pilots.



BRIG. GEN. E. WADE HAMPTON

As the situation in the Philippines declined, it became obvious that Far East Air Force needed to relocate to a more secure area where it could reequip and develop into an effective fighting force. On Christmas Eve 1941, Brereton left Manila for Australia in a Navy PBY. The following day, Gunn left with several FEAF staff officers, including Lt. Wade Hampton. When he got to Australia, Gunn was ordered to remain to organize an air transport capability. (His wife and four children were stranded in Manila and became prisoners of the Japanese.) For the next month,

there was no formal air transport organization in the Southwest Pacific. Gunn and other pilots flew missions as directed by Brereton's headquarters, which he had located on Java.

On January 22, 1942, Brereton activated a new unit as the Air Transport Command (later changed to "troop carrier.") At the time, Gunn was away on a mission and Lt. Hampton was placed in command. Two weeks later the headquarters relocated from Amberly Field to Archer Field and Capt. Gunn assumed command. A provisional air transport squadron was organized under the ATC with Lt. Hampton as commander. The squadron was later designated as the 21<sup>st</sup> Transport Squadron. Hampton scrambled to find airplanes, pilots to fly them and mechanics to maintain them. His airplanes consisted of a handful of transports, including Gunn's Beech 18s (C-45s), a couple of converted B-18s and a C-39 that had belonged to the depot in Manila that had been flown out of the Philippines along with three C-53s that arrived by ship with a contingent from the 7<sup>th</sup> Bombardment Group. They were joined in early February by three Air Corps Ferrying Command B-24s that had been sent to the Far East joined the new organization along with ten crewmembers with transport experience.

In late February, as it became apparent that the Japanese were prevailing in Java, Brereton left for Calcutta to take command of a new Tenth Air Force. Brereton and other Air Corps officers believed that the best route to defeat Japan was through China. Although the Japanese controlled much of coastal China, the interior was under Chinese control and, at the time, Burma was still in British hands. One of Brereton's new responsibilities was to organize an air transport system throughout India and into Burma and China. He assigned Brig. Gen. Earl Naiden to develop such a system. A controversy arose when Brereton was advised that a Ferrying Command unit, the 1<sup>st</sup> Ferrying Group, was being assigned to India with the expressed purpose of delivering cargo to China. Brereton protested that such a plan was in violation of Army doctrine, which stipulated that all units in a theater should be under the command of the theater commander. The new Army Air Forces staff agreed and the unit was assigned to Tenth Air Force. In June 1942, Brereton was ordered to relocate to Cairo, Egypt to organize a new air force in the Middle East. Although the assignment was supposed to be temporary, his orders were changed and the transfer became permanent. In November, his Middle East Air Force became Ninth Air Force after Lt. Gen. Frank Andrews took command of the Middle East theater. Along with fighters and bombers, Ninth Air Force included the 316th Troop Carrier Group, which Brereton used to fly supplies into Egypt in support of rapidly advancing British Eighth Army forces and to supply advanced bases in the desert for his B-24s.



IX TROOP CARRIER COMMAND EMBLEM

Brereton remained in the Middle East until September 1943 when he and his headquarters transferred to England to become the US tactical air force to support the Allied landings in France. A massive troop carrier organization was to be part of the reorganized Ninth Air Force. Immediately after his arrival in the UK, Brereton left for the United States for a short leave and visits to some of the new units that had been designated for his command. He made several recommendations for the troop carrier groups that were slated to move to the UK, one of which was that they remain in the US for training due to the better weather. He also requested that all C-47s be equipped with self-sealing fuel tanks and the installation of Rebecca/Eureka navigational equipment. A compromise was worked out under which the tanks would be shipped to the UK but the Air Staff had assigned such a low priority to the troop carrier units that they never arrived. By the time of the invasion, IX

Troop Carrier Command had become the largest air transport organization in US military history.

During the planning for the invasion, there was discussion of forming a single Allied organization to command airborne operations. The new unit would be made up of American and British airborne divisions and troop carrier/air transport squadrons. The formation of the new unit was opposed by the British unless it was under British command and senior US officers, including Eisenhower, opposed it because such an organization would place airborne units under Air Corps command.<sup>1</sup> Eisenhower finally

<sup>1</sup> It is commonly believed that the US Army Air Forces superseded the Air Corps. However, although the Air Corps headquarters was abolished, the corps itself continued as the statutory air arm of the Army until 1947 when the Air Force activated. All air officers were commissioned into the Air Corps.

agreed to recommendations from Generals Henry H. Arnold and George C. Marshall that such an organization should be formed and Brereton, who had recently received his third star, should command it. Brereton was informed of the plan, but was less than enthusiastic about it. His recommendation was to transfer the American airborne units into Ninth Air Force. Of course, Eisenhower was opposed to such an idea. He ordered the formation of the Allied army with Brereton in command. A British officer, Lt. Gen. Frederick "Boy" Browning would be his deputy. Brereton began looking for officers in the United States with troop carrier experience to join his staff. One such officer was Col. Philip Cochran, who had just returned to the US a few months before after the failed glider operation in Burma.<sup>2</sup> Another was his former aide, Wade Hampton, who was now a colonel. Brereton remained in the Army after the war and went into the new Air Force. He retired in 1948. He died of a heart attack in 1967.

After Brereton left the Southwest Pacific, Hampton began making his mark in air transport operations. In March 1942, Major Gunn left the Air Transport Command and transferred into the 3<sup>rd</sup> Attack Group. He was replaced by Lt. Col. Erickson Nichols. Wade Hampton took command of the 21<sup>st</sup> Transport Squadron when it formally organized. Immediately after the squadron activated, Hampton planned and participated in the first military airlift in American history when his squadron moved an antiaircraft battalion from Brisbane to Darwin to defend against Japanese air attack. Hampton and Nichols combed every corner of Australia looking for airplanes. They received a number of airline transports that had been flown out of Java as well as several older-model B-17s that were unsuitable for combat operations. When General Douglas MacArthur arrived in Australia, he ordered that the defensive line would be in New Guinea and ordered troops to secure the northern coast. Unfortunately, the Japanese landed and captured the principle towns of Lae and Buna before Australian troops could march overland from Port Moresby. Hampton's squadron began dropping supplies to Australian troops as they fought along the rugged Kokoda Track in the Owen Stanley Mountains in defense of Port Moresby. Japanese troops were on the outskirts of the town when Allied troops defeated a Japanese landing party at Milne Bay. The Japanese began retreating north along the track while being pursued by Australian troops. Hampton's transports kept the Australians supplied.

Hampton and his men worked closely with Australian air and ground units developing procedures and equipment for air transport and aerial resupply. There were no US airfreight units in Australia so Australian troops loaded the airplanes and flew with the loads to dispense the cargo on airdrop missions. Procedures were worked out where a team of Australian infantrymen would load their unit's cargo then fly on the mission. One of the men positioned himself on the floor across from the open door and literally kicked the bundles out of the airplane. The bundles themselves were developed locally. Some were nothing but ice cream containers filled with rations and ammunition packed in straw. The Australian troops started referring to the American transports as "biscuit bombers." Rigging responsibilities were given to US Quartermaster laundry units because they had responsibility for packing parachutes. Much of the cargo was dropped without parachutes. The use of Quartermasters to process and handle cargo

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<sup>2</sup> Operation THURSDAY failed because the British Commonwealth troops failed to meet their objective of capturing the airfield and city of Myitkyina in Burma.

became routine in the Army Air Forces. Oddly enough, it was Hampton's former boss who authorized the formalization of what came to be known as the "dropmaster" skill.<sup>3</sup>

In July 1942 the "transport" designation was replaced by "troop carrier." Hampton's 21<sup>st</sup> Troop Carrier Squadron continued to be a major force in the Southwest Pacific. A second squadron, the 22<sup>nd</sup>, had also been formed when additional aircraft were procured. As with the 21<sup>st</sup>, its personnel were men from combat units who had arrived in Australia by ship and were waiting for their aircraft to arrive. In order to more fully utilize experienced US personnel, Australian pilots and mechanics were assigned to the US squadrons. RAAF pilots flew as copilots with American crews. Also in July, Maj. Gen. George C. Kenney arrived in Australia and began a reorganization. Although Kenney sent most of the officers home who had been in the Philippines, Hampton was not one of them.



C-47 DROPPING CARGO

Until late 1942, the 21<sup>st</sup> and 22<sup>nd</sup> were the only American troop carrier squadrons in the Southwest Pacific. Finally, in October two additional squadrons arrived, the 6<sup>th</sup> and 33<sup>rd</sup>. General Kenney activated the 374<sup>th</sup> Troop Carrier Group to command them. Wade Hampton was in temporary command for a few days as a major then became operations officer. He would again command the 374<sup>th</sup> several months later. He flew missions into Wau during the Papuan Campaign and was awarded a Silver Star for valor. In March 1943, the 54<sup>th</sup> Troop Carrier Wing activated to replace the former Air Transport Command and Hampton became chief of staff. In May, he went to the United States on temporary duty and when he returned he again took command of the 374<sup>th</sup> group. The history of

the 54<sup>th</sup> Troop Carrier Wing refers to him as "the daddy of troop carrier."

After being overseas for more than two years, Colonel Hampton returned to the United States but did not remain there long. When the First Allied Airborne Army organized, Hampton went to England to join the staff. In April 1945, he took command of the 61<sup>st</sup> Troop Carrier Group. After the war, he took the group to Trinidad. After a stint at Air Transport Command headquarters, he attended the Air University then took command of the 316<sup>th</sup> Troop Carrier Group at Greenville AFB, SC. He took the group to Smyrna AFB, Tennessee. In June 1950, the Korean War broke out. In August he went to Japan where he evidently joined the staff of the Combat Cargo Command. (His military biography says he was with the 314<sup>th</sup> Combat Cargo Wing.) In December 1950, he became vice-commander of the Combat Cargo Command and continued in that role with the 315<sup>th</sup> Air Division when it replaced it. The following April he returned to the United States and became director of operations and training of Tactical Air Command. In June 1952, he transferred to USAF headquarters to the Office of Director of Plans. In 1954, he returned to Greenville, since named Donaldson, to become deputy chief of staff for operations at Eighteenth Air Force. The following February he became commander of the 63<sup>rd</sup> Troop

<sup>3</sup> The dropmaster function remained with the Army when the Air Force was formed. During the Korean War, the dropmaster field was authorized in the Air Force.

Carrier Wing. In 1957, he was promoted to brigadier general. In September 1958, he went to MATS Western Transport Wing at Travis AFB, California. In July 1961, he returned to USAF headquarters as director of transportation. General Hampton died on October 4, 1963.

### Bootlegging “San McGoo” (San Miguel Beer) into Vietnam...

...it’s been over a half-century, so the Statute of Limitations **MUST** have run out by now....

© Fred Horky



(This is the C-123 I flew half-way around the world to Vietnam in 1963)

My first Vietnam experience was in the Charlie-Ace-Deuce-Trey (C-123) in the very early days of that war. That was in 1963, and a war then distinctly different from that which followed. It reminded those of us who were there more of the old “Terry and the Pirates” adventure-comic strip, than the distinctly unpleasant business the war later became. (See

[http://en.wikipedia.org/wiki/Terry\\_and\\_the\\_Pirates\\_\(comic\\_strip\)](http://en.wikipedia.org/wiki/Terry_and_the_Pirates_(comic_strip)) ) “Loosey-Goosey” might be another way to describe things.

The airplanes were still in their natural state (dirty, unpainted bare metal) finish instead of the camouflage that came along a few years later. More importantly, they hadn’t yet been modified by the addition of a pair of J-85 “booster” jet engines. Without the jets, the “pucker string” always hung out, especially in the “High-Hot” operations on heavy-weight takeoffs, and when clawing over the mountains to the various Special Forces outposts in the mountainous “Eye Corps” (Roman numeral I, as “I Corps”) in the north of the country: Khe Sanh, Kham Duc, Ashau, Gia Vuc, Plateau Gi, Kontum, Pleiku, and all the rest. We were in ‘nam on 6-month temporary-duty “Joint Classified Training Mission” orders from the 464<sup>th</sup> TCWg at Pope AFB, NC. (Training. Yeah, right.) Most of our maintenance guys, also TDY to Danang from Pope had to do routine flight line maintenance, rain or shine, in the steamy-hot al fresco of Danang’s flight line. The only exception was that more in-depth “Phase Inspections” were done by a Pope team at Clark Air Base in the Philippines ...the same Clark that was obliterated by ash spewing from the Mont Pinatubo eruption many years later. Each of our flight crews could thus look forward to a “mini-R&R” of flying a C-123 across the South China Sea to Clark to “input” the airplane into the phase inspection. At least one more day would be needed to fly an FCF (functional check flight) on the plane coming out of Phase Inspection, with optimally a third day to fly it back to Danang. None of us ever returned to

Vietnam before making a run to the huge Base Exchange at Clark, armed with our own and everybody else's shopping lists for the needed but usually sold essentials not found at the dinky little Danang BX. This could range from camera film and new socks down to things like Gillette "safety razor" blades (remember them?) and tooth paste.



During Clark's monsoon (rainy) season, flying the FCF could even mean waiting for the necessary VFR (visual flight rules) weather required. That might delay the FCF (and the return) for several days. If you were really sneaky (and/or lucky), the airplane might "break" or otherwise fail its FCF, so it could take even longer. Your scribe was never that dishonest, of course, but others who WERE sneaky enough would employ about every excuse imaginable to simply enjoy civilization again: inside buildings with actual air conditioning and real roofs (no canvas) instead of sleeping under mosquito nets in a tent, not

eating in a field kitchen chow hall, and last but certainly not least, the opportunity to perhaps ogle a real American airline "stew".

Today one needs to be quite old to remember when they were "stewardesses", and not "flight attendants". (More important, when they were invariably PRETTY!) Those PanAm and other "stews" would be on their crew rest stops of military-contract flights from the states, and could be found in their bikinis working on sun tans at the Officer Club pool. It's funny how some things are remembered fifty years later, but then, six months in a tent in an oriental combat zone will really work on your brain.

Now about those Combat Essential Supplies I mentioned. That early in the "Terry & the Pirates" phase of the Vietnam War, Danang was at the end of LONG pipeline for routine resupply, which included Class 6 (booze), PX supplies, etc. Back then, this was accomplished by a single, very slow Navy LST, a WWII leftover that was something like the USS Reluctant. You might remember that name as the little supply ship that was the real star of the WWII-era play and movie *Mr. Roberts*, seen running its regular route described as "from Tedium to Apathy, with an occasional side trip to Boredom." That LST necessarily stopped at every other port along the way up the long Vietnamese coast from Saigon. As the northernmost and last in a military supply system that worked as all military supply systems have since Caesar, Danang got what was left. Often, not much. It was often like the earthy old expression about the last runt puppy that can't find a puppy-servicing fixture on momma.

With that as background, my story will now describe what happened when Danang really got short on REALLY essential combat supplies. (NOT "beans and bullets", but rather Whiskey, Scotch, gin, and beer.) We simply had to resort to direct action to remedy the situation. In other words, a little

bootlegging.



The Bronze “temple gong” seen hanging over the bar has its own chapter in this saga. Short version: “He who enters, covered, here; shall buy the bar a round of cheer.”

The acronyms DNCOOM (Danang Non-Commissioned Officers Open Mess) and DOOM (Danang Officers Open Mess) were rather fancy names for what they actually were: basically just two screened “hooches”, a little larger than the rest, but hooches nonetheless. But that doesn’t mean they didn’t still need booze! An aggressive solution was obviously needed, so the two open-mess sergeant-managers

(with the concurrence of the Colonel commanding the base) called their counterparts in the Clark Air Base clubs directly, to set up a little under-the-table purchase of liquid libations.

Emergency situations require emergency solutions!

Thus, just before it was my turn to fly to Clark (i.e., civilization as represented by the Philippines), our squadron commander got me aside and emphatically told me that under NO circumstances was I to accept ANY air “channel traffic” cargo for my return flight to Vietnam. None! Nada! Zip!

No matter what that cargo might be in the way of essential supplies, for example airplane parts, that the Military Air Transport Service “Cargo Traffic Control” office at Clark might have for Danang, we had our own HIGHER priority supplies to import!

Our flight to Clark was an uneventful five hours of droning across the South China Sea, and we “input” our airplane into the inspection system. The airplane we were to bring back wasn’t quite ready, and by the time we’d checked it out and flown the Functional Check Flight, our trip had stretched to a couple of days. Meanwhile surreptitious planning, coordination, and payment was going on directly between NCO and Officer clubs at Danang and their counterparts at Clark. Of this, we had no knowledge. Finally, all was ready for the flight back to ‘nam.



When my copilot and I went to the Clark Base Operations to file our flight plan for the return to ‘nam, we recited our “can’t-accept-cargo!” of our instructions to the somewhat-suspicious MATS cargo officer. I’m not sure he believed that we “...were already max’ed out on weight and simply couldn’t accept any cargo for Vietnam.” At least, he didn’t accompany us back to the airplane! There, we found that what we had said was true: the airplane was rapidly being maxed out with cargo! Two trucks had suddenly materialized at the rear cargo ramp, and the troops were busily transferring a large amount of boxed cargo into the airplane. One truck was marked as NAF (non-appropriated fund) property of the Clark Air Base NCO Club; the other was similarly marked as from the Clark Officers Club.

Our cargo compartment had suddenly gotten about three feet deep in booze! Behind the cases of San Miguel beer cases seen strapped down here in this picture; were more cases of “hard stuff”: Canadian whiskey, Scotch, bourbon, rum, and gin. There was even a case or two of wine for the serious connoisseurs. You can be sure that SSgt Square, my loadmaster, tied it all down with his cargo net and straps using extra care; at least as carefully as, say, the 12,000

lbs of dynamite we’d recently hauled from Bien Hoa to Danang for the civilian contractors then expanding that base.

Anyone who has carried even a single case of booze any distance will know that the stuff, like all liquids, is heavy. So despite that the stack of booze boxes wasn’t nearly as impressive looking as, say, a “deuce and a half” truck, our airplane was definitely “feeling” every bottle. Thus while we had no manifest showing official cargo on board, on takeoff it was indeed a struggle to get our “empty airplane” off Clark’s long runway, and after that a further slow climb to thrash the old turkey up to our 8,000’ cruise altitude. I recall we were almost to the VOR (Visual Omni Range) station at Lubang Island, a few miles southwest of the opening of Manila Bay and SIXTY miles from Clark, before we reached cruise altitude. It was our last checkpoint before we started trudging across all that water.

After droning for several hours over the beautiful aquamarine waters of the South China Sea, our navigator announced that we were crossing the invisible line in the ocean that demarked Vietnam’s ADIZ ...the Air Defense Identification Zone. Sure enough, the USAF radar site at Monkey Mountain near Danang (call sign “Panama”), saw us on their radar, and dutifully challenged us to establish our bona fides as being “good guys”.

However, instead of the usual challenge and response procedure, proving ourselves to be on the same team by responding with the proper classified “authentication codes” for that date, the Panama radar controller went straight to the core of the matter. He simply asked sharply; “...do you have any booze on

board?"

***I don't know if they would have let us land if we had answered "no".*** © Fred Horky



San Miguel has long been a favorite beer among American G.I.'s. The now-huge international company has a most interesting history, see [http://en.wikipedia.org/wiki/San\\_Miguel\\_Beer](http://en.wikipedia.org/wiki/San_Miguel_Beer) [http://en.wikipilipinas.org/index.php?title=San\\_Miguel\\_Corp](http://en.wikipilipinas.org/index.php?title=San_Miguel_Corp).

A persistent, unproven G.I. bar-story rumor held that the San Miguel brewery had been owned or controlled by General Douglas MacArthur, who had long-held links to the Philippines, as had his father, General Arthur MacArthur, before him. While there are possible connections, the story remains a rumor.....

An interesting sidebar:



**2<sup>nd</sup> Lt Hiroo Onoda, 1944**

Decades later I learned that when we had flown over Lubang VOR in 1963 on our way back to Vietnam, we'd also flown over the last Japanese soldier of World War II, still fighting that war and holding out for the Japanese Army to return. Lt Hiroo Onoda would hold out for a further ELEVEN YEARS, refusing to surrender. When he finally came out, it wasn't to surrender. He waited until his former commander from all those decades earlier had been located in Japan and brought to Lubang, where he personally relieved the now-old soldier of duty. He then turned in his issue Arisaka Type 99 rifle ....still in good working order and with over five hundred rounds of ammunition ....several hand grenades, and his officer sword (seen hanging at

his side in the next picture, and returned to Japan with honor. Thus, he never did actually surrender! Go

to this link for the whole story .....[http://en.wikipedia.org/wiki/Hiroo\\_Onoda](http://en.wikipedia.org/wiki/Hiroo_Onoda)



**2<sup>nd</sup> Lt Hiroo Onoda, 1974**

Postscript: Lt Onoda passed away in Tokyo on January 16<sup>th</sup>, 2014 at the age of 91. His will to survive remains an inspiration to his countrymen.

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#### TACTICAL AIRLIFT

##### [Captain Lowell W. Jones and Captain Don A. Lindbo](#)

It was a little after 0300, in the early hours of 27 December 1966. The speaker standing before a serious-faced gathering of tactical airlift pilots and navigators was Lieutenant Colonel Luu Kim Cuong, Commander, 33d Wing, Vietnamese Air Force. Colonel Cuong was explaining to this joint gathering of American and Vietnamese airmen that the mission to be flown in the next few hours was to be the first airborne assault in a new offensive against the Viet Cong in the Mekong Delta region of South Vietnam. Vietnamese paratroopers, together with a sprinkling of American advisers, would be airdropped into two separate drop zones and form a pincer movement against a known battalion of Viet Cong. The Vietnamese Air Force would be flying C-47s; and the Americans, C-130s. Once again, the most widely known use of tactical airlift was being employed to initiate this new offensive against “Charlie.”

Tactical airlift, as it is known in the military today, was not developed by accident; it was born and bred. In 1908 Lieutenant Frank P. Lahm climbed aboard with Orville Wright and became the first military passenger in a heavier-than-air craft. In 1912, Captain Albert Berry stepped into the “wild blue yonder” with a parachute as his companion and completed the first successful jump from an airplane. From this beginning, the story of airlift has unfolded into a vast arena that offers many challenges.

Although progress was slow, the trend continued, and by World War II airlift started to become a part of air power along with the fighters and the bombers. In 1918, some military planes were used for the transportation of mail, beginning the air transportation system of today. It was not until after World War I,

however, that the military's first transport aircraft was built. Known as the Martin GMP or XT-1, it was a 12-place aircraft, patterned after the Martin bomber. Then with World War II such aircraft as the C-46 (the first aircraft designed for paratroop operations), C-47, C-54, and C-60 brought military airlift into its own. Since all these aircraft were versions of commercial designs and the later C-97 was a converted bomber (the B-29), the C-82 built in 1944 became the military's first cargo aircraft specifically designed for that purpose.<sup>1</sup> Following the "Hump," the Normandy invasion, and other airlift episodes, the pace quickened as new areas of conflict required great reaction and mobility of forces.

Since World II, a tremendous airlift capability has been needed to meet transportation requirements. The Berlin Airlift, Korea, Dien Bien Phu, the Congo rescue, the Dominican crisis, and now Vietnam are only a few examples of the mounting importance of airlift and the capabilities required.

Over the past decade, the overall airlift mission has evolved. The new concepts and tactics needed to support the Army in combat brought about an increasing requirement for a more sophisticated type of airlift support, which (has become known as tactical airlift. The Tactical Air Command was given the primary responsibility of this mission. In contrast to strategic airlift (intertheater), which is the long-haul capability of the Military Airlift Command, tactical airlift (intratheater) provides direct airlift support to Army forces. This direct support environment requires TAC to maintain a dual capability: one is to support airborne assault, and the other is to provide airborne, airmobile, and conventional Army forces battlefield mobility and forward area resupply. This is the job now being performed in Southeast Asia.

### *airborne assault*

The airborne assault operation conducted on 27 December in the Delta region of South Vietnam was the first phase of a new offensive, but it was not the first employment of airborne assault in Vietnam. Numerous airborne operations involving personnel drops of hundreds of troops have been conducted in South Vietnam. U.S. Air Force C-123s and C-130s have been performing a majority of the drops, but other old-timers such as the C-47 still do their share of the work.

These airborne assault operations are not such "old hat" that they are taken for granted. Exercise Swift Strike III in 1963 employed mass drops of men and equipment using newly developed techniques and procedures. The "pop-up" method of airborne delivery was tested at this time, using the C-130 in a new in-trail formation, flying low and fast to the drop zone, and then "popping up" to drop altitude over the drop zone. This procedure and others were tested again during Exercise Deep Furrow 65, when joint NATO forces were dropped in a war exercise in Turkey. Since then Exercises Rapid Strike and Frontier Assault (February 1967) have been conducted to test other new techniques, the latter specifically to test new equipment under arctic conditions.

It is during the airborne assault operation that the heavy-equipment airdrops are used to the greatest extent. Large numbers of airdropped troops must be supplied with their unit equipment quickly so that operations on the ground can be initiated immediately after the drop. For heavy-equipment drops performed by the tactical airlift fleet, a simple roller conveyer or "skate wheel" device is installed in the

C-7A and C-123, and a more sophisticated 463L Materials Handling System is installed in the C-130. In each of these systems the load is strapped to a platform with a collapsible packing of a corrugated cardboard called honeycomb, which absorbs the shock. An extraction chute, deployed at drop time, cuts a breakaway strap and pulls the load from the aircraft. The main parachutes (normally six or fewer) are then deployed and the load is on its way. The use of airborne assault will continue as long as the requirement exists to rapidly deploy a force directly into a distant combat zone.

### *intratheater logistical airlift*

Although the airborne assault operation is the most challenging role of tactical airlift, intratheater logistical support of the Army is the more important role. This support is accomplished in two ways by tactical airlift forces: airland and airdrop. Airland is self-explanatory and is performed by all the aircraft of the tactical airlift fleet. Air Force C-7As (formerly the Army CV-2), C-123s, and C-130s operate daily into and out of a variety of places, including some of the shortest and most insecure landing strips in the world. These missions originate in response to routine requests, which are scheduled daily, and rush or emergency requests, which require the swiftest resupply possible to save an outpost or military operation. Not all these requests can be fulfilled by airland operations, for lack of usable landing area. The development of airdrop techniques, along with the newer extraction modes, has produced reliable systems to supplement airland when it cannot be used. This is particularly true in supporting small units of the Army in forward areas, where landing zones are usually not available.

### *463L Materials Handling System*

To support these airland and airdrop roles, a cargo handling system was needed to replace the mixture of nonstandard items that was being used. The system was to include all phases of cargo handling from the terminal to the user and was to provide a rapid aircraft onload and offload capability. This need resulted in the development of the 463L Materials Handling System. The 463L system includes terminal, ground handling, and aircraft equipment designed to standardize the handling of air freight. This system was designed primarily for air logistic missions but has been adapted to the roles of tactical airlift. The 463L aircraft equipment includes rails that are fastened to the floor along the sides of the cargo compartment. These rails have integral locks which secure the standard 463L aluminum cargo pallets in place. The pallets are easily loaded and offloaded on floor rollers which are a part of the 463L aircraft equipment. All tactical airlift C-130 aircraft have had the 463L system installed. This system has proved its worth in ground time saved in loading and offloading aircraft at established airfields having terminal equipment. Considerable time will also be saved for aircraft operating in an intratheater role when more ground handling equipment becomes available at forward landing strips.

The 463L system has been a major factor in the development of new and more efficient aerial delivery systems, which have allowed the theater commander flexibility in selecting the best mode of delivery to meet the tactical situation. The multiple modes of delivery can be broken down into two airdrop methods, paradrop and extraction.

***paradrop***

The paradrop modes of delivery are those in which the load is lowered to the ground with a parachute, whereas with the extraction method the load is considered to fall to the ground, but it is extracted, stabilized, and slowed by the parachute.

*PLADS.* The parachute low-altitude delivery system (PLADS) is a paradrop method of delivering A-22 resupply containers into small, isolated areas where pinpoint accuracy is required. The A-22 container is equivalent to four 55-gallon oil drums. The system can be used to support Special Forces operations or to resupply company-size units in forward areas. PLADS is capable of delivering one 500-to 2000-pound container on each pass across the drop zone. The load to be dropped is placed on the rear edge of the aircraft ramp and is held in the aircraft by a calibrated nylon breakaway strap. A single ringslot extraction parachute is used to extract and lower the load. The ringslot parachute is constructed of concentric rings of material, spaced several inches apart, extending from the skirt to the apex of the canopy.

Approximately 10 seconds prior to the drop, the extraction chute, with its skirt tied (reefed) to a smaller diameter, is deployed into the slipstream and towed behind the aircraft. At drop time, the parachute jump light (green light) is turned on, completing an electrical circuit to an explosive reefing line cutter, which cuts the reefing line and permits the extraction chute to expand (dereef) to its full diameter. When the parachute canopy fully deploys, it breaks the nylon breakaway strap and extracts the load from the aircraft. The load, following a pendulum trajectory, impacts at or near the vertical after swinging 90 degrees of arc.

The PLADS drop is made at 225 feet above ground level (AGL) and at 120 knots speed. The accuracy of this drop is evidenced by the fact that a 20-yard by 20-yard drop zone (DZ) is considered adequate for PLADS operations. PLADS can also be dropped into trees or jungle if necessary, as the relatively high velocity of this drop will enable it to penetrate through the trees with a good probability of load survivability. The high accuracy of PLADS gives it a distinct advantage over other systems, although the one container per pass, with its weight limitation, is presently a drawback. This useful method of airdrop was developed for and is primarily used in the C-130 aircraft, but it has now been adapted for use in the C-123 and C-7A aircraft also.

*CDS.* The container delivery system (CDS) is a method of dropping multiple A-22 containers from 463L rail-equipped C-130s. The system is a recent adaptation of earlier A-22 container drop systems to the 463L-configured aircraft. The C-130 is presently capable of dropping 12 containers weighing up to 2200 pounds each, and the system will soon be approved for dropping 16 containers. This will give the C-130 the capability of dropping up to 35,200 pounds of supplies. The CDS is primarily a gravity drop in that once the aft restraint is removed the containers are free to roll out of the aircraft. An extraction parachute cuts the retaining strap holding the load in the aircraft. CDS drops are normally performed with no flaps, to give the aircraft a nose-high attitude, which speeds the departure of the load once the aft restraint has been cut.

There are now two CDS's for the C-130, the G-13 (24-foot-diameter parachute) or low-level CDS and the

G-12 (64-foot-diameter parachute) CDS. The G-13 CDS can be used for containers weighing up to 750 pounds with one G-13 cargo parachute and up to 1500 lb if two G-13s are used. The G-13 CDS can be performed from as low as 400 ft AGL and employs a pull-up during delivery, which gives a greater density of containers on the ground. The G-12 CDS uses one G-12 cargo parachute and it has the capability of dropping up to 2200 lb. The minimum drop altitude for this type chute is 600 ft AGL.

*Positive ejection systems.* There are many other methods or adaptations for dropping the A-22 and similar containers. The powered-impulse or motor-operated sled ejections are methods of boosting the load from the aircraft. These methods have the advantage of predictable exit time and thereby eliminate one of the many variables affecting drop accuracy. Some of these methods are being investigated for possible adaptation to the tactical airlift fleet. All tactical airlift aircraft (C-130, C-123, C-7A) airdrop the various resupply containers by different means. The reserve C-119 also has the capability to airdrop heavy equipment as well as the various resupply containers needed to support ground forces.

### *extraction*

The extraction modes of aerial delivery are relatively new innovations that have many applications and advantages over some of the existing systems. The extraction systems use either a parachute or ground-installed equipment to extract and decelerate loads from aircraft flying at approximately five feet AGL. Any relatively clear and level area that will permit five to ten seconds of flight at five feet AGL can be used for extraction deliveries.

*LAPES.* The low-altitude parachute extraction system (LAPES) is a self-contained system using a 28-foot ringslot parachute to extract and decelerate the load. The parachute, electrical components, and the dereefing technique are identical to those used in the PLADS drop. Fifteen or twenty seconds prior to the drop, the reefed extraction chute is deployed and towed behind the aircraft. The aircraft continues a descending approach and is stabilized at approximately five feet AGL in a level-flight attitude when crossing the panels marking the extraction zone (EZ). At this time the copilot turns on the green "jump" light and electrically dereefs the extraction chute. The greatly increased drag of the fully deployed extraction chute overcomes the load restraint, pulls the load from the aircraft, stabilizes it, and aids in slowing it to a stop.

The C-130 is presently capable of extracting a tandem load (2 platforms) weighing up to 28,000 pounds, and testing is currently in progress to raise this capability to 48,000 pounds. Besides the heavy tonnage capability, LAPES can deliver loads into narrow areas such as dirt or paved roads, river beds, etc., or into airstrips too short for C-130 airland operations.

*LOLEX.* The Army developed an extraction system called *LOLEX* (low-level extraction), which is presently being used in the C-7A aircraft. The basic difference between LAPES and LOLEX is the type of chute used. LOLEX uses an unreefed ringslot extraction chute instead of the reefed chute. The primary advantage of the LOLEX system is its simplicity in that it does not require the electrical wiring and dereefing needed for LAPES. The immediate extraction provided by LAPES gives a predictable exit time

and a more accurate delivery into a shorter EZ.

*GPES.* Another system that has been extensively tested by TAC but is not being used is the ground proximity extraction system (GPES), which operates in much the same manner as the arresting gear of a Navy aircraft making a carrier landing. The need for ground installed equipment, its cost, and the difficulty of engaging the arresting cable are the principal disadvantages of GPES.

*Free fall.* Another method of airdrop being used in Vietnam is known as the freefall method. Certain relatively indestructible items, such as rolls of concertina wire, have been “thrown” or rolled from the aircraft without any airdrop rigging or parachutes attached. This drop is performed from a relatively low altitude. The aircraft enters a shallow climb at the drop zone to effect the drop by gravity. The C-123 is the primary aircraft used for this type of drop in Vietnam today.

As early as 1963 these new modes of paradrop and extraction were tested and evaluated in joint exercises with the Army; GPES was tested in July and August of 1963 during Swift Strike III. In 1964 Desert Strike, the Indian River series, and Gold Fire I concentrated on the application of LAPES, GPES, and PLADS to current tactics associated with Army operations. Exercise Rapid Strike in May-June 1966 continued the testing of these new techniques. Such exercises have determined the feasibility and value of the systems tested and many have been incorporated in the operations in Southeast Asia.

#### *other TAC aircraft roles*

Aeromedical evacuation is another important role of tactical airlift, especially in Southeast Asia. Operating in the forward areas where the action is, C-123, C-7A, and C-130 aircraft evacuate wounded to the larger established bases, where they can be treated and transferred to other aircraft for airlift out of country. Emergency evacuations are not limited to combat personnel, however, as tactical airlift aircraft often evacuate military personnel or civilians who need immediate attention.

Airlift aircraft are inherently versatile, since they were originally designed to perform a variety of tasks. Because of this versatility, many other jobs have been discovered for them. In addition to the missions we have discussed, the tasks performed by tactical airlift include augmenting the Military Airlift Command (MAC) in intertheater airlift and search and rescue operations, supporting the National Aeronautics and Space Administration during space shots, participating in worldwide combat exercises, serving as airborne command posts, spraying populated areas to suppress disease, defoliating jungle areas that harbor our enemies, and supporting State Department missions such as USO shows and other goodwill activities. This growing list of missions signifies the importance of tactical airlift operations in our world today.

#### *aircraft in Southeast Asia*

The multiple role and versatility of the tactical airlift mission can be seen in day-to-day operations in

Southeast Asia today. Secretary of the Air Force Dr. Harold Brown stated in December 1966:

Within the theater, our C-130's, C-123's and combined Air Force/Army CV-2's have hauled a greater tonnage thus far in 1966 than was airlifted by troop carrier units in the entire Korean War. These tactical airlift forces move troops into battle and supply them with food, weapons, equipment, and ammunition in a land of heavy forests, soggy rice fields, and often unpassable roads. Airlift has been a priceless asset. Without it, our air and ground forces could not have operated nearly so successfully.<sup>2</sup>

In support of Secretary Brown's statement, it is interesting to note that the C-123 and C-130 aircraft flying in South Vietnam last year logged more than 175,000 sorties to deliver 545,000 tons of cargo and more than 1,500,000 passengers.<sup>3</sup>

The C-130 units in South Vietnam are located at four different bases: Tan. Son Nhut AB outside Saigon, and Cam Ranh Bay AB, Nha Trang AB, and Da Nang AB on the eastern coastline near large port facilities. The crews and aircraft rotate from out-of-country bases and stay in-country several weeks at a time. C-7A and C-123 crews are permanently stationed in South Vietnam. The C-123s operate out of Tan Son Nhut, Bien Hoa, Nha Trang, and Da Nang, while the C-7A crews stage at Vung Tau, Cam Ranh Bay, and Phu Cat.

A typical day for a C-130 crew in South Vietnam begins at or before dawn and ends that evening, twelve hours later. Twelve hours is the normal duty day but may be extended to accomplish an important mission. The crew reports to the aircraft approximately two hours prior to the scheduled takeoff time, to make necessary preparations. With each crew member performing his job in a professional manner, the propellers are soon turning as the big four-engine turboprop begins what is to be a full day's work. . . . Eleven tons of rice, C rations, and helicopter parts, plus ten passengers, fill the cargo compartment as the C-130 lifts off on schedule for its destination in the central highlands of Vietnam near Pleiku AB. The cargo and passengers are delivered into a 3000-foot dirt strip that is the center of a large U.S. Army operation. Soon the C-130 is airborne again, with medical evacuees and high-value items being returned to the rear for repairs. After a short flight, the C-130 touches down at the home base. This time the crew receives a mission to carry a load of fuel bladders to an outpost only 40 miles from Saigon, where a large helicopter operation needs the fuel badly. Nine fuel bladders with a total weight of over 30,000 pounds are loaded by forklift, and at destination, only 15 minutes after takeoff, the bladders are rolled out the rear loading ramp without stopping engines. After only a few minutes on the ground, the C-130 is on its way back for another load. The engines are shut down for reloading, and the crew takes time to refuel, check over the aircraft, and possibly buy a hamburger or break open some C rations for lunch. Shortly the C-130 is taxiing out again for takeoff. The round trip, including loading time, takes approximately one hour, and the crew completes four more shuttles before the sun goes down and the short runway at the outpost can no longer be seen. The crew has flown twelve sorties (six shuttles) since the day began, carrying 45 bladders of fuel in five shuttles and 24,000 pounds of supplies and passengers on the first shuttle. The aircraft is quickly checked and refueled, and another crew reports, prepared for a 12-hour night shuttle tour. The night crew normally flies routine resupply missions into the larger airfields.

The activities just described are by no means standard. The missions vary greatly, and so do the loads. One crew may not go into the same airfield more than once a week, and the missions may include airdrops, flare missions, or any of the other tasks previously discussed. The new modes of aerial delivery, such as PLADS and LAPES, are rapidly becoming integrated into the tactical airlift operations in South Vietnam. As for load variety, the tactical airlift fleet literally carries everything from pigs to plasma. The C-123 is the "hog hauler" of the fleet, virtually able to supply an outpost with all its livestock needs. Even though the C-130 performs most of the airlift in South Vietnam and is used as the example here, the tactical airlift fleet relies heavily on both the C-123 and C-7A, which carried the bulk of the intratheater airlift workload before 1965 and still performs operations into the shorter strips where the C-130 is limited.

In Southeast Asia today the airlift task is monumental, requiring not only planes and crews but also men and equipment to support them. As an example of the airlift requirements in South Vietnam, a look at the tonnages handled by Tan Son Nhut Air Base should serve as an eye-opener. During August of 1966, the 8th Aerial Port at Tan Son Nhut set a one-day record of 1201 tons.<sup>4</sup> By comparison, Travis AFB, California, MAC's busiest stateside terminal on a record day in February 1967 handled 951 tons of cargo. This cannot be accomplished with men and planes alone. Aerial port, maintenance, transportation, POL, combat control teams, and many other base support personnel are all responsible for attaining this record. Outstanding performance is required from the tactical airlift fleet *and* the people who support it, and the record shows that this performance has become a reality in South Vietnam today.

#### *needed improvements*

Despite these impressive accomplishments and capabilities, there is a requirement for many near-term improvements to overcome some present limitations. A problem area that is being rapidly improved but still needs further effort is that of decreasing onloading and offloading times. Vietnam experience has shown that this problem is magnified in several ways at some of the more austere airfields, where parking space limits the number of aircraft that can be on the ground at one time to one or two. These fields either have only Army personnel who are completely unfamiliar with the aircraft to assist in on/offloading or have an aerial port detachment of maybe two people with very little or no equipment. As more rough-terrain loaders and forklifts become available at these austere airfields, the aircraft turnaround times will decrease and tonnages will increase.

Tactical Air Command at Langley AFB, Virginia, in conjunction with the Tactical Air Warfare Center (TAWC) at Eglin AFB, Florida, and the newly organized Tactical Airlift Center (TALC) at Pope AFB, North Carolina, is continually studying and testing new methods, techniques, and equipment so that tactical airlift can continue to provide support to anyone, anytime, anywhere.

Considerable emphasis is being placed on the development and procurement of equipment that will improve airland capabilities. Portable, lightweight, readily assembled LZ/DZ markers and lights and a portable instrument landing system (ILS) are some of the items that will improve present airlanding and airdrop capabilities. Very lightweight markers and lights that combat control teams (CCT'S) can jump

with and assemble readily are being developed and tested. The portable ILS under development will be installable in minutes and will bring an aircraft down to an LZ or EZ with weather minimums of 200 feet and ½ mile.

Fertile areas for improvement are the paradrop and extraction modes of aerial delivery. These delivery modes evolved primarily to make up for the limitations of existing airlift aircraft. They are much more expensive than airlanding, but they do enable an aircraft to deliver troops, equipment, and supplies farther forward in the battle area. It is believed that the advent of large numbers of vertical takeoff and landing (VTOL) aircraft will decrease the importance of these delivery Systems. However, the present tactical airlift aircraft, especially the C-130, will be around for many years, so continued interest in improving airdrop and extraction capabilities is vital. Immediately needed improvements include higher reliabilities, improved accuracies, cheaper chutes and equipment, heavier unit load capabilities, and the ability to drop from lower altitudes. Much effort is being expended toward improvement in these areas.

The Army is conducting development efforts toward establishing the capability to deliver cargo/equipment loads of from 2000 to 35,000 pounds at altitudes of 500 feet or less. The Air Force is sponsoring a development program for the airdrop of payloads of 25,000 to 70,000 pounds at minimum altitudes up to 30,000 feet and at airspeeds up to 200 knots. Tests are also being conducted to determine the lowest safe altitude from which equipment can be dropped using present-day chutes and procedures. Wind is the most unpredictable element and the variable most affecting drop accuracy. Lowering drop altitudes drastically reduces exposure time to the wind and thereby has a great effect on improving accuracy.

Tests are being conducted under a program called low-altitude aerial delivery Systems (LAADS). The objective of this program is to use the main parachute(s) both for extracting a platform load of supplies or equipment from the aircraft and for lowering it to the ground. This would serve to lower drop altitudes to 500 feet or less by reducing the vertical distance required for the main parachutes to deploy fully. These chutes, with their large area, provide a tremendous extraction “g” force, creating the problem of rigging the load and platform to withstand it. Another very serious problem is that if the load should snag or hang tip on anything on its way out, the results could be catastrophic.

Airdrop methods are expensive, and the bigger and heavier the item, the more expensive the system becomes. Both low-cost disposable parachutes and reusable parachutes are under development, but it is not known when they may become available. A cost analysis of a heavy drop using 6 G-11 parachutes, based on one delivery and without the recovery of equipment, showed an approximate cost of \$9200. The same analysis showed that a LAPES delivery of the same weight would cost approximately \$2800.<sup>5</sup> Actual costs would be less than these, since some of the parachutes and equipment could be reused. These figures indicate that pursuing some of the new modes of delivery is sound from the standpoint of cost.

Considerable effort has also been expended in the development of steerable parachutes, to be dropped from high altitude. This type of drop could conceivably have many applications, but the cost of the radio control equipment and parachute steering mechanisms may limit its use to special or emergency

deliveries.

There is urgent need for an improved adverse-weather capability for tactical airlift. There is a program to develop the adverse-weather aerial delivery system (AWADS), to provide the C-130 fleet with this capability. When this equipment is installed, flying formation (enroute station keeping), airdrops, and airlanding at remote sites will be possible at night and under adverse weather conditions.

There is a future requirement for aircraft designed more specifically for the tactical airlift role. This is considered necessary to enable tactical airlift to continue supporting the Army in its ground combat role and to increase the capability of providing it battlefield mobility. A true STOL aircraft would be an interim measure until VTOL technology and development are more advanced. A V/STOL transport aircraft with its range, speed, and vertical capability has many applications. A fixed-wing V/STOL aircraft will inherently have much better STOL than VTOL performance; an example is the XC-142, which can take off and land vertically with approximately 8000 pounds of cargo but can carry approximately 16,000 pounds when operating in the STOL mode. Such an aircraft would obviate or certainly minimize much costly and time-consuming runway construction. It would interface with strategic sealift either directly from the ship or from the beach. It would eliminate much transshipment between tactical airlift and Army organic air by providing delivery to the user in the battle area. By being able to land virtually anywhere, it would greatly enhance Army battlefield mobility.

New alloys, plastics, and fiber materials, with greatly improved strength and weight characteristics, are being developed. These developments eventually may make it possible to build a V/STOL aircraft with greater lift-to-weight ratios than the lift/drag of an aircraft wing. If this occurs, the skeptics should be convinced that fixed-wing V/STOL aircraft are entirely feasible and a needed capability for tactical airlift.

The future of tactical airlift is both interesting and challenging. New technological advances have opened many avenues through which tactical airlift operations will benefit. Long-term possibilities include the hot cycle, stowed rotor, folding rotor, rotor wing, lift fan, and vectored thrust concepts.

The requirement to provide the Army battlefield mobility and support in the forward areas remains the primary mission of the tactical airlift force. The present capabilities and future developments that have been discussed are only a part of the continuing effort to expand and improve tactical airlift's ability to accomplish this mission.

*Hq Tactical Air Command*

#### **Notes**

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