

Forget a chimney, Santa drops packages from the sky!



**Typhoons Gone Wild!
The Aftermath in Korea**

Meet "Birdman"!!!

Manufacturer's Week – A success!

TACOM

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Lethality, Survivability, Mobility and
Sustainment for America's Army

Aerial Delivery Magazine - ADM

Publisher's Corner

A monumental milestone has just been achieved here at the Integrated Logistics Support Center (ILSC) and Aerial Delivery is at the forefront! As you recall, in our last issue, we were hoping to beat our phenomenal FY03 sales record. Who would have thought that in the very first month of 2004 we would achieve this goal? Amazingly, we just exceeded last year's sales by a whopping ten million dollars!



Gloria Wooten-Standard welcomes Mike Ahearn as the new director of the ILSC

As always, we offer our most heartfelt "Thank You, Thank You, Thank You!" to each and every one of our government, military and industry partners. We simply couldn't have done it without you. These are such exciting times in Aerial Delivery and with such devotion and commitment to excellence by people like yourselves, it will only get better and better.

We fully understand that the key to our success lies in the close bond and ties that we nurture with our government, military and industry partners. This philosophy of maintaining close ties was put into action during the recent "Manufacturers' Week", held at Fort Bragg, North Carolina. The event provided an

opportunity for government and industry acquisition representatives to observe first-hand, how the equipment they provide to the military is used. The outstanding participation and cooperation by those who attended made it the sensational triumph of the year! A special thanks to everyone who called and/or wrote for all of your positive feedback. As a result of its smash-success, "Manufacturers' Week" is now considered a keystone Aerial Delivery event of the year. Be sure to check out our in-depth coverage of this event inside this issue. In this edition we continue our focus on the Aerial Delivery industry by featuring several articles written by manufacturers themselves. These articles add depth and substance to the magazine. Kudos to all who contributed in furthering our knowledge and appreciation of Aerial Delivery. As always, we encourage our aerial delivery colleagues, to include Product Managers, Program Managers, Contracting, manufacturers and military airborne organizations, to submit articles to inform, enlighten and educate the aerial delivery community.

As you recall, in our last issue we said good-bye to a major Aerial Delivery contributor, Pat Kofalt, former director of the ILSC. We are now prouder than ever to welcome his replacement, Michael Ahearn, the new ILSC director. No stranger to the ILSC, Mr. Ahearn was formerly the Senior Team Leader of the Logistics Integration Team. I have worked with him throughout the years and I can tell you there is no one more qualified and committed to excellence than Michael Ahearn. His credentials are impeccable and we are absolutely thrilled to have him on board. As well, we are equally as confident that he will continue to lead us on the path of record-breaking growth.

Before I close, thank you for supporting our nation's defense. Our military men and women depend on Aerial Delivery to accomplish their mission of freedom and democracy. It's a great feeling to know that in the world of Aerial Delivery – "We deliver". Our next issue is due out in June 2004. See you then!

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Submit your Airdrop photos to the *Aerial Delivery Magazine*, we could feature your photo on the Cover! E-mail Michael.Maloney@natick.army.mil

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All articles submitted to *Aerial Delivery Magazine* become property of the Aerial Delivery Sustainment Team and are subject to editing.

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CH-47 Chinook helicopter makes a delicate landing in Iraq



Soldiers in Iraq prepare equipment for sling load operations

Aerial Delivery Sustainment Team Mission

Provide innovative, robust and streamlined total life-cycle logistics and material readiness support to all DoD organizations for Aerial Delivery products.

Aerial Delivery Magazine - ADM



Photo courtesy of MSgt T. Collins, USAF

Uncovering the MiG-25 aircraft is a long and tedious process



Photo courtesy of MSgt T. Collins, USAF

The MiG-25 aircraft is towed out of the sand

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Typhoons Gone Wild - The Aftermath In Korea

On September 12, 2003, the Province of Pusan, Korea was a quiet tranquil place. This was a day like any other for the soldiers stationed so far from home. Weather reports indicated the potential for an upcoming typhoon, but living in South East Asia, typhoons are as common as hurricanes in the United States. South Korea has a typhoon season and residents come to expect them, prepare for them, endure them and then move on with their lives. Residents never really know what to expect from a typhoon until they actually arrive, and oh boy, did this one arrive.

Typhoon Maemi hit the coastal city of Pusan, Korea, at approximately 9:00 pm on September 12th, 2003, packing winds in excess of 100 miles per hour (MPH). If you've ever been to Pusan, Korea, you know that the city is



The one hundred foot shake out tower is demolished

packed with hundreds of thousands residents, with many living in what amounts to nothing more than "shanty shacks". These primitive dwellings, built side by side, are constructed of nothing more than corrugated steel roofs and mud brick walls. Oh sure, there are conventional houses and high-rise apartments scattered throughout the city, but Pusan is an extremely populated area, squeezing in residents in every available nook and cranny. One hundred MPH winds can do a lot of damage, and damage it did.

Residents awoke the morning of September 13th, 2003, to scattered debris; fallen trees and the usual clean-up responsibilities associated with Mother Nature's wrath. However, the Parachute Riggers of the 4th Quartermaster (QM) Detachment were in for quite a surprise.

As they entered their parachute rigging facility located on Kimhae Air Force Base, thoughts of minor clean up duties filled their heads. The Kimhae rigging facility, built in 1990, was considered a state of the art structure at the time. A 100,000 square foot facility built for the American military on a Korean Air Force Base was unique in itself. The facility was designed to house and maintain war reserve assets for the pacific theater. It also provided the 4th QM a modern parachute rigging facility in which to pack, perform maintenance and train their soldiers on aerial delivery equipment. The facility is equipped with a large cargo parachute pack facility, a personnel parachute pack facility, four heavy equipment rigging lanes, a large war reserve holding facility, a 100-foot drying tower and a 100 foot shake-out tower; all of the elements that a rigging facility should contain.

But on that fateful morning after Maemi, all that changed. As the soldiers passed Kimhae security checkpoint, the giant drying tower was no longer visible. As the bus rolled forward, the

full devastation of Maemi came into focus. The strong and sturdy 100-foot shake out tower, the pillar of identity for the 4th QM rigging facility, had been completely leveled. The entire left side of

“The entire left side of the rigging facility was exposed as if a hungry giant had torn it open in search for food.”

the rigging facility was exposed as if a hungry giant had torn it open in search for food. Debris was strewn everywhere. Sewing machines were crushed. Parachute canopies were scattered and lying about, flapping in the now calm but ever-present breeze. It was a scene of total devastation.

The parachute riggers of the 4th QM Detachment now had the daunting task of determining just how bad the damage was. Many questions loomed, were they able to recover anything, and if so, how much? When and how would they resume operations? The Corps of Engineers were immediately dispatched and in one glance, determined the rigging facility a safety hazard. No one was allowed to enter the facility for fear the rest of the structure may collapse. After several inspections, it was determined that the Kimhae rigging facility sustained an estimated 2.5 to 3 million dollars in damage. Underneath this devastation lay 2 million dollars worth of parachute equipment whose serviceability was unknown.

As time crept on, structural reinforcements were put in place and permission to enter the facility was granted. Now the painstaking task of recovering the equipment began.

Each of the parachutes were examined for form, fit and function. Inspecting this equipment became a top priority and when all was said and done, 1.9 of the 2 million dollars of equipment affected by Maemi was recovered and returned to service. The dedicated parachute riggers of the 4th QM Detachment accomplished this incredible feat.



The aftermath of Typhoon Maemi

Typhoon Maemi came and went, but the readiness mission of stocking, packing, training and maintaining parachutes still remains. Work has already begun on rebuilding the rigging facility. And you can bet that it will have significant structural improvements. Hopefully, it will withstand Mother Nature's fury and prevent the next typhoon from going wild.

CW3 Leo Venckus is the active duty liaison to the Aerial Delivery Sustainment Team

Photo Gallery



An Iraqi jet, a Russian MiG-25 Foxbat, is unearthed in Iraq

Photo courtesy of MSGT T. Collins, USAF



The Russian MiG-25 Foxbat almost fully exposed. Are we sure there are no WMD's in Iraq?

Photo courtesy of MSGT T. Collins, USAF

Finding a Needle in a Haystack

During airdrop operations, loads are susceptible to being blown off course and subsequently lost. These non-guided or "dumb" equipment drops can experience unexpected winds that can carry the load several kilometers from its intended landing zone (LZ). In a tactical situation, this poses an obvious hazard for soldiers. As they venture out into hostile territory, they become targets for enemy patrols or ambushes while searching for their lost

“With 3000 frequencies available to choose from, outside monitoring or interception of the transceiver signal is virtually impossible”

equipment. Treacherous terrain or dense jungle can further exacerbate search efforts. The natural folds in the earth or thick vegetation can conceal the supplies and prevent efforts to locate the airdropped items even if they are a short distance away.

Airdrop operations are used to deliver supplies and equipment to remote, hard to reach places. By dropping supplies from the air, they limit exposure of military aircraft, vehicles and personnel to enemy fire and observation. Signature Industries of United Kingdom and Capewell Life Support/Aerial Delivery Systems of South Windsor, CT, have teamed up to develop the Airdrop Locator System (ADLS). The



SARBE (Search and Rescue Beacon) 8 GPS (Global Positioning System) with antenna is mounted to the load

transceiver (or beacon) and antenna are mounted to the load being prepared for airdrop. When the airdrop load exits the aircraft the transceiver emits a locator signal (transmissions can be delayed if necessary) to the decoder. The decoder, positioned in any aircraft or ground vehicle, receives the signal and subsequent Global Positioning System (GPS) location. Pinpoint locations of the ADLS are accurate to within 10 meters.



SARFIND (Search and Rescue Finder Decoder) reads and displays the location of the airdropped item(s)

With 3000 frequencies available to choose from, outside monitoring or interception of the transceiver signal is virtually impossible. The use of a two-way "Y" antenna ensures that regardless of how the load lands, transmissions will not be blocked. The decoder, used to receive and decode the signal, is a portable, self-powered unit. The unit plugs into a standard air band radio either in an aircraft or a vehicle on the ground. Once the transceiver transmits the signal, the decoder displays the beacon's identity, GPS location, the time the location was received and the time elapsed since the last transmission. Trying to find the location of airdropped supplies that have blown off-course can be like trying to find a needle in a haystack. Factor in the extra-added danger of the mountains of Afghanistan or the combat zone of Iraq and the challenge of safely searching and finding the airdropped items increases exponentially. Although guided airdrop systems are being developed, non-guided airdrops are still being used. The Airdrop Locator System offers a possible solution for locating "dumb" airdrops in a smart way.

Dan Galarza is the Aerial Delivery Sustainment Team Equipment Specialist and Editor-in-Chief of Aerial Delivery Magazine

RED HOT!

Update On Aerial Delivery NSNs

The Aerial Delivery National Stock Number (NSN) listing now available via the web at: <https://triext.ria.army.mil/air/grp/grp.cfm>. A new look, new format and new NSN's! Although the site is under construction, you can still come check us out!

Aerial Delivery Supports Santa Claus

Normally when one thinks of Christmas time, images of a tree adorned with ornaments and snow gently falling on the ground come to mind. Santa Claus on his sleigh, leading his team of



Santa loads aircraft with packages

reindeer, goes house-to-house, placing carefully wrapped gifts underneath the Christmas tree for all the expectant children as they sleep. Although this Norman Rockwell setting

epitomizes Christmas in America, the holiday setting on the Pacific island of Guam is a little bit different.

“Hopefully we saved some lives,” said Captain Carmichael

In Guam, Santa relies on the Air Force's 734th Air Mobility Squadron, Andersen Air Force Base, to deliver the "gifts" as part of Operation Christmas Drop. Operation Christmas Drop is an Air Force initiative that uses Army aerial delivery parachutes to provide humanitarian supplies for thousands of islanders during the Christmas holiday season. Only unserviceable parachutes are used and instead of disposing the condemned parachutes, they are given a "second life" in helping the needy. To accomplish this task, the Air Force obtained a Denton Amendment from Congress authorizing them the use of military aircraft to fly humanitarian relief missions. Each year, missions are flown to 42 Micronesian Islands within a 700-mile radius of Guam. The populations of these islands are extremely small. One has 2, one has 12, and one has 10 residents. The airdrop bundles weigh approximately 400 lbs. Besides food and water, the list of items in these boxes reads like a shopping list from the local Wal-Mart. Short handled garden tools, books, and snorkel equipment, fishing gear, sports equipment and of course, toys for the kids. Collection of



A native is all smiles after receiving much needed supplies

these items is a year-long effort by the men and women stationed at Andersen Air Force Base.

Operation Christmas Drop was established in 1952 by the 54th Weather Reconnaissance Squadron and eventually transferred to the 734th. The 36th Airlift Squadron based at Yokota Air Base, Japan, provides mission aircraft.

Captain Christopher Carmichael, Fuels Management Flight Commander for the 36th Logistics Readiness Squadron is the current chairman of the Operation Christmas Drop Committee. According to Captain Carmichael, receiving these much-needed supplies is a great help to these folks.

Most if not all of the islands are self-sustained by their own crops and well water. Supermarkets and shopping malls are non-existent. This year's humanitarian mission took on new importance because Super Typhoon Lupit destroyed most of the islands crops and contaminated their wells with seawater. Mostly food and water was dropped to these islands. "Hopefully we saved some lives", said Captain Carmichael.



“I don’t need no stinking reindeer!” Santa employs a loadmaster to help him drop much need packages

The parachutes used for this operation range from G-12, G-13, & G-14's, cargo parachutes to T-10 personnel parachutes. The unserviceable parachutes are collected from different units all over the Air Force and used for one last drop. Local moving companies such as Dewitt Moving and Storage along with Pacific Island Movers donate the boxes. The Sunrise Rotary Club of Guam donated the plywood for this years drop.

This year, the 36th Airlift Squadron, using the operation to fly training missions, flew 12 missions using four C-130 aircraft from 15-18 December. The operation allows aircrews to meet thier training requirements while helping support a worthy endeavor. For all my fellow Item managers out there, the next time you have a large number of unserviceable parachutes consider contacting the 734th Air Mobility Squadron to see if they could use them for this program. Let's help Santa spread his cheer and good will to those who really need it.

Frank Svoboda is an item manager for the Aerial Delivery Sustainment Team

History of the Parachute

In World War One countless balloonists and scores of pilots rescued themselves in perilous situations. The Germans were the first aerial combatants to realize it was an enormous waste of personnel to place a soldier in an extraordinarily risky situation without a life-saving alternative. However, that realization was not immediate with the start of hostilities. Nonetheless, the Germans learned quickly and took hasty measures to save much-needed pilots and balloon observers. Later, much later, the Allies reluctantly reached the same decision.

With the advent of aerial warfare, Allied air commanders were opposed to providing parachutes to pilots, worried that wearing a parachute might encourage early, unnecessary abandonment of only slightly damaged aircraft; after all, aircraft were at a premium, but there were a lot of military men who wanted to pilot flying machines. It certainly was a more glamorous aspect of war.

Implementation was another matter, and a great deal of time was needed before parachutes could be manufactured and supplied and before lives could be saved. However, many World War One flyers and balloonists did ultimately owe their lives to parachutes.

Early Exhibition Parachutists

There were many experimental parachute descents made before the turn of the twentieth century. As early as 1485 to 1495 the renowned Leonardo DaVinci had an idea for a device (a "tent roof") that would let someone down safely from high buildings, but it stayed a concept, never getting off the drawing board. It would be up to others to make the actual tests.

It is generally agreed among recorders of history that Sebastian Lenormand of France did make a successful jump from a tower of some height using a fourteen-foot-diameter canopy in an effort to develop a way to escape buildings on fire. About that time, the de Montgolfier brothers, Joseph and Étienne, tested a variety of parachute designs. It is said that in one of their experiments they dropped sheep on a seven-foot canopy without injury to the befuddled animal.

In the next decade the Montgolfiers concentrated on balloon design, development, and testing. But it was slow work. Their first successful ascent was an unmanned hot-air balloon on June 5, 1783, at Annonay, France. They ultimately developed a balloon capable of lifting a human. Their place in history became assured, and as balloons improved, and people went higher and higher and could fall greater distances, interest in parachute design and testing rapidly increased.

In October 1797, Jacques-André Garnerin was credited with being the first genuine parachutist by jumping from a hydrogen balloon over London, England. He landed safely, but the severe oscillations he underwent in his descent clearly showed a need to go back to the drawing board.

Over ensuing years, others in France, Poland, and England valorously tested their ideas- and progress was made, often at a dear cost. But the price was considered worthwhile to each of the experimenters and they continued work.

In 1890, Käthe Paulus of Germany was the first parachutist billed as a "professional." Her rig was a parachute described as a "folded exhibition attached-type," commonly used by early balloon jumpers. Suspension lines from the canopy were attached to a concentric wooden ring with a mesh-like center similar in appearance to that of a tennis racket. For stowage during ascent the wooden ring was secured close to the bottom of the canopy by two "tie lines" and the slack suspension lines were loosely accordion-folded on the mesh surface. The apex of the canopy was securely attached to the balloon by means of a "break cord" and when the hot-air lifting device reached a desired altitude Käthe used a knife to cut the connecting break cord. The canopy easily and quickly inflated as she dropped and landed to admiring, rousing cheers.



A DaVinci "tent roof"

In 1901, Charles Broadwick, an American, designed a parachute assembly he defined as a "pack on the aviator." The canopy was enclosed in a fabric container that was laced closed with break cord. The pack was part of a fabric assembly that was put on in the same manner as one dons a coat, with arms through armholes of a sleeveless "jacket." The jacket extended below one's buttocks, in the style of a car-coat, and was wrapped about a user's lower body, then secured vertically along the user's torso. In use, a parachutist fastened a static line to the aircraft, with the opposite end of the static line secured to the lacing on the pack on the user's back. Simply by falling away from the aircraft, the force exerted by a jumper's weight was sufficient to break the lacing on the back pack and the canopy (also fastened by a break cord to the static line) deployed as the jumper fell away, with the break cord snapping in two when forces on the deployed system were adequate.

Broadwick's foster-daughter, Georgia Thompson Broadwick, was known as "Tiny" because of her small size and eighty-pound weight. She made her first parachute jump at age fifteen from a hot-air balloon over Raleigh, North Carolina in 1908. Five years later she became the first woman to jump from an airplane when Glenn Martin (who went on to become a renowned aircraft designer and manufacturer) piloted her over Los Angeles. Later the same year she was the first woman to make an intentional water jump when she parachuted from a hydroplane into Lake Michigan. In all, Tiny made 1,100 parachute jumps, the last one in 1922, and she lived into her eighties.

Pioneer Mail Pilot Lindbergh

In the peacetime years that followed World War One, "Lucky Lindy" was another nickname earned by six-foot-four Charles "Slim" Lindbergh, Jr. long before his famed, daring solo flight in May 1927 across the Atlantic Ocean in the "Spirit of St. Louis." In the two and a half years before then, in emergency situations, he parachuted to safety four times, once as an army student pilot, again as a test pilot, and twice as a contract pilot for the U.S. Air Mail service.

He had also been given another nickname (con't page 7)

New Faces



Jay Connors is the new Team Leader for the PM Force Sustainment Systems' Cargo Airdrop Team. Prior to taking this position, Jay was serving as the Cargo Airdrop Team's Project Lead for the 500' Low Velocity Airdrop System (500' LVADS). Jay previously worked for Battelle Memorial Institute where he served as a Principal Research Scientist responsible for a variety of personal protective equipment and vehicle armoring programs. Before working for Battelle, he was employed by the Army Research Laboratory's Weapons and Materials Research Directorate (ARL-WMRD). At ARL-WMRD, Jay worked as both a mechanical and materials engineer working in the Composites and Lightweight Structures Branch. Mr. Connors can be reached at (508) 233-6394 and DSN 256-6394
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The Aerial Delivery Sustainment Team (ADST) is pleased to welcome a new administrative assistant. Pam Wardwell brings over 12 years of corporate experience to the team. Pam previously worked for American Express and Carlson Wagonlit Travel. In 2002, she changed careers and joined the Logistics Assistance Division at Natick, Soldier Biological Chemical Command. In November 2003, Pam Wardwell joined the ADST and can be reached at (508) 233-6231 and DSN 256-6231.
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Tape Craft Uses Experience and Expansion to Enhance Services to the Military

Atlanta, Georgia – Tape Craft Corporation (TCC), a subsidiary of YKK Corporation of America, is pleased to announce that the 150,000 square foot expansion of its state-of-the-art webbing manufacturing facility in Oxford, Alabama, is nearing completion. When finished in March 2004, the expanded building will have manufacturing, warehousing, and distribution operations all under a single roof.



In an effort to expand and consolidate manufacturing in Oxford, Tape Craft adds another 150,000 square ft

The plan to expand and consolidate into the Oxford plant began more than a year ago with a manufacturing engineering project guided by two top engineers from YKK Japan. After much evaluation, they concluded that the key to TCC's future success would be to merge operations from three locations into one. Based on this conclusion, they devised a one directional manufacturing system that has created the most modern webbing factory in the world. The expansion and consolidation will enable TCC to increase throughput and reduce delivery lead-times as well as inventories.

According to Myra Ray, VP Manufacturing for Tape Craft, "We are so excited about this consolidation. With a more streamlined production system, we'll be able not only to maintain current markets, but also to expand into new ones. One such area is the U.S. Government. Although TCC has a long history in serving this market, today's military needs are much more sophisticated and high-tech than in the past. Now that our operations have been fully modernized, we'll be able to develop products to meet those diverse needs."

In wrapping up her comments, Ray added, "The U.S. Government represents an ideal growth opportunity for TCC. The business is consistent with YKK's interest in pursuing developing markets that will stay in North America. Our overall goal is to expand our reach into new arenas where we can bring the full and diverse range of YKK products to the marketplace. The expansion/consolidation now makes all this possible."

Additionally, Tape Craft has entered into an initiative partnering with Textiles²

Textiles² will assist TCC in coordinating comprehensive product development programs. Textiles² is comprised of a team of former Elizabeth Webbing Mills executives who are well known in the industry. Collectively, they bring more than 100 years of narrow woven fabric experience to the marketplace. This team was instrumental over the last 25 years in many development programs with Natick Research, Development & Engineering Center in providing input into Military Specifications and aiding in the development of value-enhanced products and features.

According to Jeffrey Sparr, Textiles² President and CEO, "Our Company, headquartered in Providence, RI, just 50 minutes from Natick, looks forward to the opportunity to work closely with the U.S.

Government and TCC to bring the committed resources of Tape Craft and YKK to all U.S. Government arms. This new Oxford-based

expansion/consolidation will enable TCC to provide military tapes and webbings that are manufactured within the U.S. and to go beyond current offerings to include many of the nylon webbings covered under Parachute Industry Association and Military Specifications."

Article submitted by Textiles² Inc, Providence, RI

(Con't) History of the Parachute

by the press of the day, "The Flying Fool", but he resented that sobriquet. He answered one reporter of the many in a group that interviewed him after his thirty-three hour solo transatlantic flight, "I certainly resent it. I take no foolish risks and study everything I do in the air. I don't think I am a flying fool."

From the start of his flying in March 1922, at the age of 20, he took planned risks only after first examining options pertaining to an exploit. Soon after Slim learned to pilot a plane, he had dreams about his flying. Dreams became occasional nightmares of endless falling in space; he would wake up bedeviled by terror.

He had seen actual out-of-control planes twist and spin as they fell. He knew how to right a plane for long enough to clamber from a biplane cockpit onto a wing and dive into space. He knew how to protect the ripcord, how to fall clear of an airplane so parachute lines could deploy properly. He knew to carry a flashlight so he could check his canopy and his approach to the ground on an emergency jump made at night. But he did not know what an actual jump was like. He could only imagine. He could only wonder, and keep on having a bad dream now and then.

Slim decided he ought to make a jump to learn what to expect. Once having done it, the experience rid his mind of dread that struck during sleep. "I'd stepped to the highest level of daring, a level above even that which airline pilots could attain."

We are proud to feature articles by the renowned para-historian Jim Bates. His articles now featured in this magazine will provide a historical perspective on the evolution of Aerial Delivery.

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What's Hot

Rapid Descent Devices

They Never Leave You Hanging

If you've ever jumped out of a plane you know there is always a danger of landing in trees or even on high-tension wires. A gust of wind can mean the difference between an easy landing and a hard entanglement. Jumpers have been known to spend hours in trees with nothing to do but wait for assistance.



Capewell's Military Compact Descender

Fortunately, help is on the way in the form of rapid descent devices.

These handy, lightweight gadgets allow soldiers to lower themselves from places from as high as 200 feet. For instance, Capewell Components of South Windsor, CT, has developed the Military Compact Descender (MCD). This lightweight micro-descender features a built-in passive brake that allows users to lower themselves using only one hand. The other hand can be used to hold a weapon or to protect vital body parts during descent. The complete system, to include lines and connectors, weighs approximately three pounds. When fitted into a leg or belt-mounted deployment bag, it measures less than six inches square. The MCD uses 5 mm Vectran braided line. The strength of the line is 5500 lbs. According to Bill Ehler, Capewell's Business Manager, Life Support and Aerospace Products, "The MCD was designed by a former HALO/HAHO (High Altitude Low Opening/High Altitude High Opening) Special Ops soldier intent on providing his comrades with a safe way down from the unplanned event." The MCD meets the American National Standards Institute (ANSI), National Fire Protection Association (NFPA) standards and is certified by Underwriters Laboratories (UL) Inc. and Consultants Europe (CE).

Unlike the MCD, the rapid descent device made by made

by RIT Rescue & Escape systems of Twinsburg, OH, uses Kevlar tubular webbing, the same material used in making helmet head gear and body armor. The Kevlar webbing material is used to prevent melting of the line and tangling due to heat friction during rapid descent. The RIT Emergency Escape System is a self-

The strength of the lowering lines, capable of two tons of holding capacity, ensures soldiers and equipment can descend easily and safely.

contained, pre-rigged, system that allows for quick and efficient egress also using one hand. The standard RIT egress system weighs less than six pounds. The tensile strength of the line is 5500 pounds. The system is also UL certified and approved by the NFPA. According to Omar Jordan, President of RIT Rescue & Escape Systems, the RIT Emergency Escape System is, "Helping to save the lives of those who save others". Currently, Air Force aviators and fire departments utilize the system.

Besides trees and high-tension wire rescue, other military applications can provide a basis for use. Special Operations units



RIT's Emergency Escape System

can perform emergency descents from multi-story buildings or cliffs. Military firefighters can use the descending device to escape from the top-floor of a burning building. Urban tactical raids and rescues can be performed from rooftops as soldiers lower themselves to a point of entry with weapons at the ready. Both descent systems mentioned can be used for multiple applications. The strength of the lowering lines, capable of two tons of holding capacity, ensures soldiers and equipment can descend easily and safely. Whether there is a need to descend from a cliff or from a parachute landing in a tree, rapid descent devices won't leave you hanging.

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Emergency Jumps

On October 22, 1922, 27-year-old Lieutenant Harold R. Harris, Army Air service, entered aviation history as the first person to use a manually operated parachute to make an emergency jump from a powered aircraft.

Others before him, since Jordaki Kuparento's 1808 leap from a flaming balloon over Warsaw, Poland, had made jumps from disabled hot-air and hydrogen balloons. When powered flight began the risks were deplorably illustrated by the growing number of lives lost due to aircraft failures. Wartime aerial combat added to the numbers.

Military balloonists in World War One early on learned the value of parachutes when observation balloons were shot down by enemy fighters.

To save pilots, the Germans equipped planes with static line-operated parachutes. Aviators wearing only a harness simply leaped out. After falling only a few feet, he would reach the end of a line attached to lacing on a container fastened outside the cockpit. His weight would break the lacing, the parachute deployed, and he floated down.

There were many complications: spinning aircraft would snag a deploying parachute; tumbling wreckage sometimes tore apart canopy fabric or suspension lines; flames racing along a fuselage damaged a container and canopy, making it useless; or fire would lick at a canopy for the seconds it took for fabric to leave the container.

The parachute concept was valid, but technique needed improving. A way was needed to be clear of a plane before a parachute was actuated. But World War One ended without a solution. However, lives of airmen were saved with even rudimentary parachute systems.

Lt. Harris, on his history-making occasion, was Chief of Flight Test Section, Engineering Division, at McCook Field, Dayton, Ohio. McCook was the Army Air Service's major research, development, and testing facility.

The pace was hectic; from January 1919, thousands of experimental flights were made testing countless new airplanes. Good fortune sided with the pilots and only two died. (In October 1927, spacious Wright Field was dedicated and McCook Field was renamed Kettering Field and returned to Dayton.)

Military aviation research and testing at McCook included parachutes. In 1919 a freefall parachute was successfully tested. Many jumps were made and designers and testers felt the problem of needlessly losing lives had been solved.

But a nagging question remained - "Would a parachute truly have value in a stressful emergency situation with only seconds available?" A test jump was demanding, but it was done under controlled conditions. And jumpers learned to equip themselves with an auxiliary parachute on the front of a harness - just in case! But what would "the real thing" be like? Lt. Harris supplied the answer.

It was an unwritten rule at McCook that every pilot should be able to fly any airplane, from a one-seater to the largest multiengine bomber. Each decision on every device tested was

based on combined reports of all pilots. Such consensus eliminated personal preference, making possible a sound basis for judging worth of a device. Thus, Lt.Harris was testing a plane's new ailerons on his fateful day.

He wrote about his experience (U.S. Air Services, March 1924): "Several officers gathered on the cement runway in front of the Main Hangar at McCook not long ago watching [an] airplane piloted by Lieutenant Wade...

"After Lt. Wade completed his tests...he climbed out of the airplane, carrying his chute over his arm. A visiting officer was interested

in the peculiar-looking object. We explained the way the parachute was fitted to the pilot with straps over shoulders and around the legs, and so on, how the release ring was held in place, how it was operated by a hard pull after he had cleared himself from the machine. We described to him how the large parachute was pulled out of the case in which it was packed, by means of a small parachute, which, catching wind, drags the big chute into position to do likewise.

"The visitor seemed impressed. Several others expressed doubt of a pilot's being able to release himself from an airplane and operate the parachute in an emergency, and little thinking my words would be so soon put to the test, I remarked that it was surprising what a man could do when put to it..."

Lt. Harris decided he would take up a monoplane to test new aileron control surfaces. A test flight had been made the day before and the devices seemed fine. Now Lts. Harris and Fairchild would make a test in simulated combat conditions.

Lt. Harris had trouble properly adjusting his harness. While the other pilot climbed to altitude, Lt. Harris waited for another parachute, but had difficulty with the new rig also:

"[It] had an even smaller harness than my own...I almost yielded to the temptation to conduct my test flight without a parachute, but eventually decided to wear my own chute, even though the harness was somewhat uncomfortable."

At 2,500 feet the dogfight commenced, then, unexpectedly, was quickly over. After a head-on approach and a quick turn by Lt. Fairchild, Lt.Harris was on the tail of the "enemy fighter."

The quarry went into a turning dive at full power, trying to simply outrun the pursuer following at 150 m.p.h. Lt. Harris remembered:

"Of course, for me to keep the sights fixed on Fairchild it was necessary for me at this point also to begin a very gradual turn to the left...As soon as the turn started, hell broke loose...the first vibrations of the airplane were exactly like the heavy tremors of an earthquake. The whole airplane shook violently laterally and the control stick began to oscillate rapidly from side to side. I knew immediately what the trouble was. The experimental ailerons on this airplane were of the type called "balanced,"...[and] as soon as the motion of the ailerons at high speed was started they began to operate themselves...the ailerons' oscillations became extremely violent, with the movement of the control stick in the cockpit estimated by me to be about 1,000 oscillations a minute."

"This control stick movement was being stopped on each

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Emergency Jumps

side of the cockpit by my legs, and, if you can imagine receiving terrific blows on the flesh part of your leg in between the hip and the knee at the rate of 1,000 a minute, you will realize why three days after the accident I could not walk and for days suffered from severe bruises... I knew that the next thing for me to do was leave the airplane and open my parachute...

"All that was necessary for me to do was release my safety belt, which held me in the cockpit, and in part climb on the top of the fuselage. The tremendous wind pressure, probably 250 m.p.h., blew me clear of the airplane and the next thing to do was pull the ripcord..."

"The surprising thing... was that during the whole experience I did not become fearful of the consequences nor feel any faintness or failure of my faculties.

"After leaving the airplane, I looked down at my feet to help my hand locate the parachute release ring and realized that instead of looking down I was looking up and that my feet were pointing to the sky and my head to the ground. I located what I thought was the ring and pulled. Nothing happened, I looked again and realized that I was spinning like a top, my head down and my feet up.

"Three times I located what I thought was the release ring, but each pull simply indicated to me that I was pulling on the leg strap fitting of the harness, which is about three inches below the ripcord rig. As soon as I realized what this was, after the third pull, I simply allowed my hand to travel up the harness... until I encountered the ring.

"During this time my speed of descent must have been quite high, but at no time did I have any sensation of falling, and even with the extremely high wind velocity I had perfect control of my arms and could move them up and down my body at will.

"As soon as the release cord was operated, I felt something snap within me and looked toward my feet to find that I was looking down at the ground... I then looked up at my parachute — not with any sense of relief, because I had none. It all seemed part of the program that the parachute should open without argument..."

"I then looked down again to see just where I was going to land... A man was running toward me on the ground and at the last moment I saw he would arrive under a grape arbor at the same time I arrived on top of it.

"As soon as I saw the grape arbor I was very well satisfied, as I knew the frail laths of which it was built would easily break my fall to the ground... the only damage I suffered being a tear in the best pair of pants I own, and some cuts on my shoes as I went through the arbor. The brick sidewalk below the arbor was not particularly resilient, but I was not rendered unconscious by the fall, although my physical condition was low on account of the terrific beating I had received on the legs from the control stick..."

"I have no way of telling how high above the ground I was when the parachute opened except from the accounts of eye-witnesses of the accident who estimated it to be about 500 feet..."

"From a scientific point of view the accident was important, for it was the first time that a pilot had actually been saved by means of a parachute after an experimental airplane collapse, with the pilot able to give a detailed account of the cause of the accident. It was also fortunate that it occurred about one-

half mile from the flying field and it was observed by at least 15 flying officers, including the chief of the engineering division of the Air Service..."

"Also it was of peculiar scientific interest in that the accident was observed from an extremely close range by another test pilot thoroughly versed in the knowledge of what to expect from airplanes..."

Harold R. Harris made military aviation his lifelong career, eventually retiring as a general. He died in 1988, 66 years after a parachute assured further opportunity to achieve substantial longevity.

We are proud to feature articles by the renowned para-historian Jim Bates. His articles now featured in this magazine will provide a historical perspective on the evolution of Aerial Delivery.

What's Hot Birdman Flies Across the English Channel

Brooklyn, NY - November 21, 2003 - Chances are, unless you were caught in a sudden media black out, you probably heard of a strange Superman like story on your local newscast this past July 31.

This was no Area 51/UFO style hoax, but a spectacular and audacious stunt performed high in the skies when Austrian stuntman

and skydiver, Felix Baumgartner, flew across the English Channel with nothing but a small carbon fiber wing strapped to his back and Atair parachutes to stop his hurtling 20 mile long freefall descent that reached top speeds of 220 mph!

Designed and manufactured by Atair Aerodynamics, these high-performance parachutes have won numerous awards and set world records in the parachute industry. The rigid "wing suit" was designed by inventor/engineer Alban Geissler, and the main and reserve parachutes were designed by inventors/engineers Daniel Preston and Stane Krajnc.

Article submitted by Atair Aerodynamics



The Birdman flies

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Chief, Grady M. Embrey

(Vilseck, GE)

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1670	000034389	BAR,ATTITUDE CONTRO	93	Jan-04
1670	000322705	PLATE,TENSION,PARAC	100	Jan-04
1670	000395073	DEPLOYMENT BAG,PARA	875	Feb- Mar 04
1670	000724941	SEPARATOR	6	Jun - Aug 04
1670	002172421	LINK,PARACHUTE,CONN	27950	Mar - Aug 04
1670	002516601	PACK,CARGO PARACHUT	145	Jul-04
1670	004345782	COUPLING ASSY,AIRDR	90	Apr - May 04
1670	004345783	COUPLING ASSY,AIRDR	430	Apr - Aug 04
1670	007533928	PAD,ENERGY DISSIPAT	15570	Feb 04 - Jun 05
1670	007835988	LINK ASSEMBLY,SINGL	60001	Feb - May 04
1670	008152727	DEPLOYMENT BAG,PARA	300	Jan-04
1670	008726109	PARACHUTE,CARGO	5000	Feb - Dec 04
1670	009993544	ANCHORING DEVICE,CA	235	Feb-04
1670	010167841	PARACHUTE,CARGO	2284	Apr 04 - Aug 06
1670	010272900	SLING,CARGO,AERIAL	2000	Sep 04 - Apr 06
1670	010583811	NET,CARGO,AERIAL DE	512	Jul-04
1670	010626302	LINE,MULTI-LOOP	3	Apr-04
1670	010637761	LINE,MULTI-LOOP	1820	Mar - Apr 04
1670	010653755	PARACHUTE,CARGO	4424	Feb 04 - Feb 05
1670	010992380	TIMER DELAY ASSEMBL	1250	Jun 04 - Feb 05
1670	011622369	RAIL TYPE V	295	Feb - Jun 04
1670	011622381	TANDEM LINK SUSP AS	2000	Feb - Aug 04
1670	011622382	ROLLER PAD	195	Feb - Aug 04
1670	011622383	ROLLER PAD	114	Feb - May 04
1670	011622386	ROLLER PAD	101	Feb - Mar 04
1670	011699154	RAIL TYPE V	25	Mar-04
1670	012350923	DEPLOYMENT BAG,PARA	1070	Feb - Sep 04
1670	012472389	BRACKET ASSEMBLY,RE	225	Mar-04
1670	012489502	PARACHUTE,PERSONNEL	167	Apr - May 04
1670	012622360	CANOPY,PERSONNEL PA	1600	Apr - Nov 04
1670	012721901	HARNESS,PERSONNEL P	14700	Feb 04 - Apr 05
1670	013041057	PANEL ASSEMBLY,REAR	550	Feb - Aug 04
1670	013043006	PANEL ASSEMBLY,MAIN	2500	Feb 04 - Feb 05
1670	013062100	PARACHUTE,PERSONNEL	3400	Feb 04 - Dec 06
1670	013286440	LINK,PARACHUTE,CONN	6989	Jul 04 - Jan 05
1670	013303279	CANOPY,PERSONNEL PA	1000	Apr 04 - Jan 07
1670	013303280	HARNESS,PERSONNEL P	569	Feb 04 - Aug 05
1670	013303283	BRIDLE,PARACHUTE	500	Apr 04 - Jan 07
1670	013303284	RISER EXTENSION,PAR	650	Apr - Oct 04
1670	013303741	LOOP,CLOSING,MAIN	300	Mar 04 - Mar 06
1670	013303742	LOOP,CLOSING,RESERV	20000	Mar 04- Dec 06
1670	013303743	RIPCORD,MAIN RELEAS	20	Mar 04 - Apr 07
1670	013303744	SLIDER,DOME-LIPPED	1500	Apr 04 - Apr 07
1670	013303745	LINES,CONTROL	1900	Apr 04 - Mar 08
1670	013303746	LINES,SUSPENSION	300	Apr 04 - Jun 04
1670	013303747	PILOT CHUTE,MAIN	125	Apr 04 - Jul 05
1670	013303748	BAG,DEPLOYMENT,RESE	250	Apr 04 - Jan 05
1670	013315423	PILOT CHUTE,RESERVE	500	Apr 04 - Apr 05
1670	013323916	CANOPY,PERSONNEL PA	2500	Apr 04 - Oct 09
1670	013347597	DEPLOYMENT BAG,PARA	1250	Mar 04 - Mar 06
1670	013425135	TOGGLE,PARACHUTE	150	Apr 04 - Nov 04
1670	013427686	DEPLOYMENT SYSTEM,R	175	Apr 04 - Dec 04
1670	013538424	BRACKET ASSEMBLY,EX	1890	Feb - Oct 04
1670	013538425	BRACKET ASSEMBLY,CO	300	Feb - Apr 04
1670	014703696	LATCH ASSEMBLY,COUP	177	May - Sep 04
1670	014751207	PADDED POCKET ASSEM	450	Apr - Nov 04
1670	014751990	EXTRACTION PARACHUT	100	May-04
1670	014842234	PARACHUTE,PERSONNEL	14373	Jan 04 - Jun 05
1670	014851654	RAIL DRAS	525	Feb - Dec 04
1670	014851656	PANEL ASSEMBLY,MAIN	538	Feb - Oct 04
1670	014861342	ROLLER PAD,DRAS	275	Feb - Oct 04
1670	014870777	PARACHUTE,PERSONNEL	6039	Feb - Dec 04
1670	014875464	OUTRIGGER ASSEMBLY	284	Feb - Aug 04
1670	014937131	CONTROL BOX	100	May-04
1670	014952016	KIT,BAG	100	May-04

Delivery Schedule

TACOM LARS Directory (Natick, MA)

FSC	NIIN	NOUMENCLATURE	QTY	DELIVERY SCHEDULE
1670	014964748	SIMULATOR,INITIATOR	100	May-04
1670	014965833	KEEPER,EPJD	100	May-04
1670	014996573	PARACHUTE,PERSONNEL	150	Feb-04
1670	015024003	JETTISON DEVICE,PAR	100	May-04
1670	015024013	REFURBISH KIT	100	May-04
1670	015024014	TOOL KIT,REFURBISH	100	May-04
1670	015039820	CONTROL LINE ASSEMB	1000	Apr 04 - Jan 05
1670	015072154	REFURBISH KIT,SLIDE	1000	Mar - Apr 04
1670	015092685	MAST ASSEMBLY,OUTRI	100	Mar - Apr 04
1670	015092687	LINK ASSEMBLY,OUTRI	100	Mar - Apr 04
1670	015092688	OUTRIGGER WELDMENT,	100	Mar - Apr 04
4020	010476814	FIBER ROPE ASSEMBLY	1500	Feb - Oct 04
4020	010476815	FIBER ROPE ASSEMBLY	850	Feb 04 - Jun 05
4030	010484044	SHACKLE ASSY	1899	Jun-04
5305	014946314	SCREW,CAP,HEXAGON H	50	May-04
5340	009370273	STRAP,WEBBING	21353	Feb 04 - Oct 05
5340	014946313	CLAMP,RETAINER	100	May-04
5340	014946318	COVER,EPJD	100	May-04
5365	014912859	SPACER,SLEEVE	250	Feb - Apr 04
5935	014947965	CONNECTOR Y	100	May-04
5935	014948723	CAP,SAFETY,SQUIB	100	May-04
5980	014948721	LIGHT EMITTING DIOD	100	May-04
5980	014952018	LED,BLUE	200	May-04
6130	014948726	POWER SUPPLY	50	May-04
6150	014943593	CABLE,EXTENSION	100	May-04
6150	014946315	CABLE,POWER	100	May-04
6150	014946316	CABLE,MAIN	100	May-04
6150	014948722	CABLE,SQUIB	100	May-04
6150	014948724	CABLE,INTERCONN	100	May-04
6150	014950652	CABLE PLATFORM	50	May-04
6150	014952021	CABLE ASSEMBLY,POWE	100	May-04
6625	014952015	TESTER SQUIB	100	May-04

Technical Publication Updates

- TM 10-1670-268-20&P/TO 13C7-52-22 (Type V/Dual Row Platform) Change 1 will incorporate Outriggers on specified Type V Platform Loads, change 2 will incorporate Low Cost Aerial Delivery System updates.**
- TM 10-1670-296-23&P/TO 13C7-49-2 (Ancillary Equipment for LVADS) Change 1 will incorporate Low Cost Aerial Delivery System updates**
- TM 10-1670-278-23&P/TO 13C5-26-2/NAVY NAVAIR 13-1-27 (15-ft Ext. Parachute) Enhanced version (currently under revision)**
- TM 10-1670-299-20&P/TO 14D1-2-470-2/NAVY NAVAIR 13-1-41 (Ancillary Equipment for Personnel Parachutes) Adding Parachute Drop Bag (Submitted for LOGSA publication)**
- TM 10-1670-300-20&P/TO 14D1-2-469-2/NAVY NAVAIR 13-1-42 (Ancillary Equipment for Military Free Fall Equipment) Adding Parachute Drop Bag (Submitted for LOGSA publication)**
- Change 1, TM 10-1670-272-23&P/TO 14D1-2-463-2/TM 04296C-23&P/1/NAVSEA SS400-AS-MI-010 (MC-1B/E) USL issues, expanded wash procedure additions (On the LOGSA web site)**
- Change 1, TM 10-1670-276-23&P/TO 13C5-29-2/NAVY NAVAIR 13-1-29 (26-FT HV) DA Form 2028 generated changes (currently under revision)**
- Change 1, TM 10-1670-277-23&P/TO 13C5-28-2/NAVY NAVAIR 13-1-30 (28-ft Ext. Parachute) Release away static line (Submitted for LOGSA publication)**
- Change 1, TM 10-1670-292-23&P/TO 14D1-2-466-2/TM 04296D-23&P/2/NAVSEA SS400-AU-MMI-010 (MC-1C/D) USL issues, expanded wash procedure additions (On the LOGSA web site)**
- Change 2, TM 10-1670-286-20/TO 13C5-2-41 (Sling extraction line Bag) DA Form 2028 generated changes (submitted to Tech Pubs 06 Jan 03)**
- Change 1, TB 43-0002-43 (Maintenance Expenditure Limits for FSC 1670) Re-look life cycle of MC-4 Harness/Container (pending)**

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Manufacturers' Week



The cast and crew of Manufacturers' week

regards to logistical support and procurement issues. The event was all encompassing as it allowed manufacturers to discuss their concerns with war fighters, engineer support and sustainment teams and acquisition personnel.

Having seen the rigging of heavy equipment for airdrop, the maintenance and packing of the parachute, the extensive preparation of soldiers getting ready for an airborne mission, there was only one thing left to see. Soldiers and equipment exiting the plane.

However, on the day of the planned airborne mission, the weather took a turn for the worse and the mission was in jeopardy of being cancelled. So, on a chilly, rainy, foggy day, the manufacturers and government civilians were given a choice. They could either stand out in the freezing rain and observe soldiers in a tactical airborne mission or go back to the hotel. To their credit, they unanimously decided to stay with the soldiers. What followed was a scene to the likeness of the movie, "Band of Brothers". It started with a low rumbling that was barely audible. Then, as seconds passed by the rumbling became louder. As we continued to watch we could barely see the outline of the C-17 Cargo plane before it was lost again in the clouds. As a few more seconds passed we saw the cluster of parachutes attached to the heavy vehicles as they descended gently to the ground.

"And on that day, we realized a great and satisfying truth- We Are All Soldiers."

It took four passes to complete the equipment portion of the drop. As we waited a few more minutes, we again heard the low rumbling become increasingly louder. Unfortunately the cloud cover was denser this time and many of us were sure that by now,

the rest of the mission had been aborted. But miraculously, there it was, hidden by the clouds and fog, was a lone jumper peeking out of the clouds, followed by another and another and another. On that day, manufacturers would count 500 paratroopers safely jumping out of planes using their equipment they provide to the military. And on that day, we realized a great and satisfying truth- We Are All Soldiers.

Dan Galarza is the Aerial Delivery Sustainment Team Equipment Specialist and Editor-in-Chief of Aerial Delivery Magazine

Editors note: On behalf of the Aerial Delivery Sustainment Team, we wish to thank the members of the Parachute Industry Association (PIA) for their help and support in making Manufacturers' Week such a tremendous success. We also thank the XVIII Airborne Corps, 82nd Airborne Division, Special Warfare Center and Pope Air Force Base for allowing us to visit their facilities and their generous hospitality.

SOFTAPS- Not a Hard Sell

The Special Operations Forces Tactical Advanced Parachute (SOFTAPS) is being developed because of performance issues displayed by the Maneuverable Canopy (MC) 1-1C Parachute. During the period of 1988 - 1998 the United States Army Special Operations Command (USASOC) experienced numerous problems with the MC1-1C Parachute, especially when used on high altitude drop zones (DZs). Soldiers experienced extreme opening shocks and canopies experienced extensive apex damage; in fact 40% of all canopies jumped experienced damage. In December 1998, the US Army Special Forces Command (USASFC) requested an interim parachute be provided for use on high altitude DZs until the Advanced Tactical Parachute System (ATPS) Program Office fielded a maneuverable parachute (Pre-Programmed Product Improvement (P3I)), to permanently address their needs. USASFC enlisted the services of the Airborne Special Operations Test Directorate (ABNSOTD) and conducted down-select testing of 6 candidate systems to replace the MC1-1C. This testing was conducted at Ft. Carson, CO, in July 1999. The SF-10A, a Commercial-Off-the-Shelf (COTS) parachute, met the requirements and was selected. The SF-10A parachute canopy was integrated with the T-10 series parachute harness and Modified Improved Reserve Parachute System (MIRPS) as an interim measure until a permanent solution for the MC1-1C was developed.

The United States Special Operations Command (USSOCOM) approved the Operational Requirements Document (ORD) for the SOFTAPS in August 1999. The SF-10A Canopy is a very reliable canopy, in fact over 41,000 jumps have been logged on the SF-10A without incident from its' introduction through the end of calendar year 2002. The U.S. Forest Service has logged in excess of 27,500 and the USASFC has logged in excess of 13,800 jumps from various fixed and rotary wing aircraft. USASOC and USASFC soldiers are currently using the SF-10A canopy with the T-10 harness and MIRPS. All of the test data and operational use of the SF-10A by Special Operations Forces (SOF) to that date have indicated that the SF-10A will meet the SOFTAPS ORD requirements.

USASOC representatives met with members of the Product Manager - Clothing & Individual Equipment (PM-CIE) at Ft. Bragg in SEP 02 to discuss the possibility of managing the efforts for the SOFTAPS development and Type Classification - Standard of the SF-10A as the Army common maneuverable canopy replacement of the MC1-1. This discussion was prompted by a decision made by the Army G-8 to merge the ORDs for the ATPS and the Advanced Harness and Reserve Parachute System (AHRPS) into one document. This merged document includes two P3Is, one for an Automatic Opening Device (AOD) for the reserve parachute and the other for a maneuverable variant to replace the MC1-1 series parachutes. Both organizations realized this as an opportunity to fulfill two requirements with the same effort. This also allows for significant savings in time and funding required to complete the development and introduction of a new personnel parachute system to the field. USSOCOM, thru USASOC, has agreed to partner with PM-CIE in this effort and share the costs of this program.

The concept of the SOFTAPS program is to integrate the SF-10A canopy with the personnel harness and reserve parachute being developed by the ATPS program. A new riser assembly was developed in order to complete this integration. Program Executive Officer (PEO) - Soldier approved Milestone A in April 2003 and Concept Exploration testing was conducted at the Yuma Test Center (YTC) and completed in June 2003. The most current program schedule is:

EVENT	LOCATION	TIME
Developmental Testing	YTC	JUN - OCT 04
Operational Testing	Ft. Bragg, NC & Ft. Carson, CO	JAN - APR 05
MS C (LRIP Decision)	Ft. Belvoir, VA	AUG 05
First Unit Equipped (FUE)	Ft. Carson, CO	2QFY06

This timeline is subject to change based on any number of factors including the availability of operational testers, the availability of test aircraft, and weather conditions.

The end result will be a maneuverable static line deployed personnel parachute system that replaces the current system and overcomes the safety and operational limitations placed on the user by the MC1-1 and MIRPS when used to jump into DZs at elevations in excess of 3K ft MSL. The intent is to have a Class VII major end item Type Classified - Standard and fielded to the force that is logistically supportable.

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SOFTAPS main parachute

Manufacturers' Week

It was the most spectacular event of the season! From the kick-off social event to watching the mighty paratroopers of the 82nd Airborne Division appear from the sky through dense fog. The event served a perfect purpose of bringing Aerial Delivery manufacturers, government acquisition personnel and soldiers together for a truly unique experience. Hosted by the Aerial Delivery Sustainment Team, Natick, MA, the event was "Manufacturers' Week". The theme of this event was, "We

Are All Soldiers", with the premise that anyone who supports the U.S. Army is in fact, a soldier. From October 6-9, 2003, eighty government and industry civilians gained special access to Fort Bragg, NC, to visit the most elite

military airborne units in the world. The main purpose was to provide the opportunity for Aerial Delivery Manufacturers (several from the Parachute Industry Association) to observe how the equipment they provide to the military is used. By "going down in the trenches", they were able to experience first-hand, the durability and quality of the components they provide. This first-hand look would also provide the

manufacturers a solid foundation for future Aerial Delivery product innovations and improvements. Conversely, military leaders and soldiers gained insight and answers, as they were able to address specific issues and concerns with manufacturers who

provide the equipment they use.

For many of the 59 manufacturing representatives, it was the first time they had ever seen their equipment used in a military application. Manufacturers generally bid on contracts using technical data drawings, specifications and performance standards. It is not uncommon for a vendor to produce products for the military without ever having seen it in use, or in its intended operating environment. Several of the manufacturers were delighted as they were finally able to

recognize how their sub-component(s) were used and what military application they were used for.

The event started off with an evening social at a local hotel. The informal, casual atmosphere lent itself to anticipation for the exciting activities in store for that week.

The first day on Fort Bragg consisted of a visit to the

XVIII Airborne Corps and 82nd Airborne Division's Heavy Drop Rigging facility. Viewers were able to observe several heavy vehicles being



Vehicle fully rigged for airdrop

prepared for an airdrop-training mission. They also received a briefing and explanation of all the steps involved in preparing vehicles for aerial delivery. While at the facility, manufacturers were excited to see soldiers using their components and assemblies to rig their equipment. From snap-hooks to D-rings to harness assemblies to parachutes, manufacturers marveled and beamed with pride as they watched the soldiers handle the products they make. They also visited the 82nd Airborne Division Parachute Pack Facility. Visitors watched as a Rigger (a certified parachute specialist) demonstrated how a parachute is packed. An experienced rigger can pack a parachute in 17 minutes and can

pack up to 25 chutes in an eight hour day. In turn, the soldiers were both impressed and flattered that the folks who actually make their equipment were standing before

them. They were further complemented by the genuine interest the manufacturers conveyed as the soldiers asked questions and



Peter Bourdon, Vice President of Bourdon Forge Co. Inc. volunteered to don a Special Forces parachute Chris Crispino (L) and brother Jeff (R) look on

expressed their concerns and recommendations.

Having seen the packing of the parachute, visitors were then taken to Pope Air Force to watch an airborne mission in progress. After receiving an in-depth and comprehensive tour of the base, they had the unique opportunity to observe soldiers preparing for an actual tactical airborne training mission. They

watched as young warriors, with camouflage painted faces and battle dress uniforms, donned their main parachute, their load-bearing equipment (personal combat gear), their reserve parachute, personal weapon (rifle), rucksack and Kevlar helmet. When fully attired, these soldiers would be jumping out of planes carrying up to 100 pounds or more of military

"Some observers, feeling such a sense of pride and patriotism for the soldiers, were deeply touched as tears welled up in their eyes."

equipment. Some observers, feeling such a sense of pride and patriotism for the soldiers, were deeply touched as tears welled up in their eyes.

The following day included a visit to the Special Warfare Center parachute rigging, pack and maintenance facilities. This facility supports Special Forces and special operations units. Special Forces units use special parachutes, which allow more maneuverability and control. These parachutes, called MC-4s, (Maneuverable Canopy 4) are used in HALO (High Altitude, Low-Opening) and HAHO (High Altitude High Opening) missions. Typically, airborne units jump at altitudes of 800-1200 feet. However, when MC-4 parachutes are used, soldiers will jump at altitudes from 5,500 to 25,000 feet or higher. Jumpers fall through the air and reach an accelerated rate of 120 mph. They normally



Hundreds of parachutists break through the fog as they descend to the ground

deploy their parachute by pulling their ripcord at approximately 4000 feet.

At those high altitudes, learning to control wind speed and maintaining a correct body position before deploying the parachute is paramount. In order to understand the dynamics of body position in high-altitude parachute operations, visitors toured the Special Operations Wind Tunnel. This wind tunnel is the only military free-fall wind tunnel facility in the world. Arthur Dome, manager of the facility, explained that 30 minutes of training at his facility is the equivalent of 25 actual free-fall jumps. He further explained that because trainees can be critiqued in a safe environment and without having to land, it enables jumpers to correct deficiencies and become proficient with fewer actual jumps. Additionally, the facility enables more jumpers to get trained, is not weather dependent and reduces injuries.

Another highlight of "Manufacturers' Week" was a trip to a military dining facility where guests were able to dine with the soldiers for lunch. Guests were able to experience "life in the army", as they sat and listened to soldiers talking candidly about their personal military experiences.

Although the focus of the week was mainly on manufacturers and soldiers, several government logistics and acquisition personnel were on hand to answer questions in



Manufacturers' receive a briefing on rigging heavy equipment for airdrop operations



Manufacturers demonstrate their "warrior spirit" as they endure heavy rainfall to observe soldiers as they jump out of C-17 aircraft