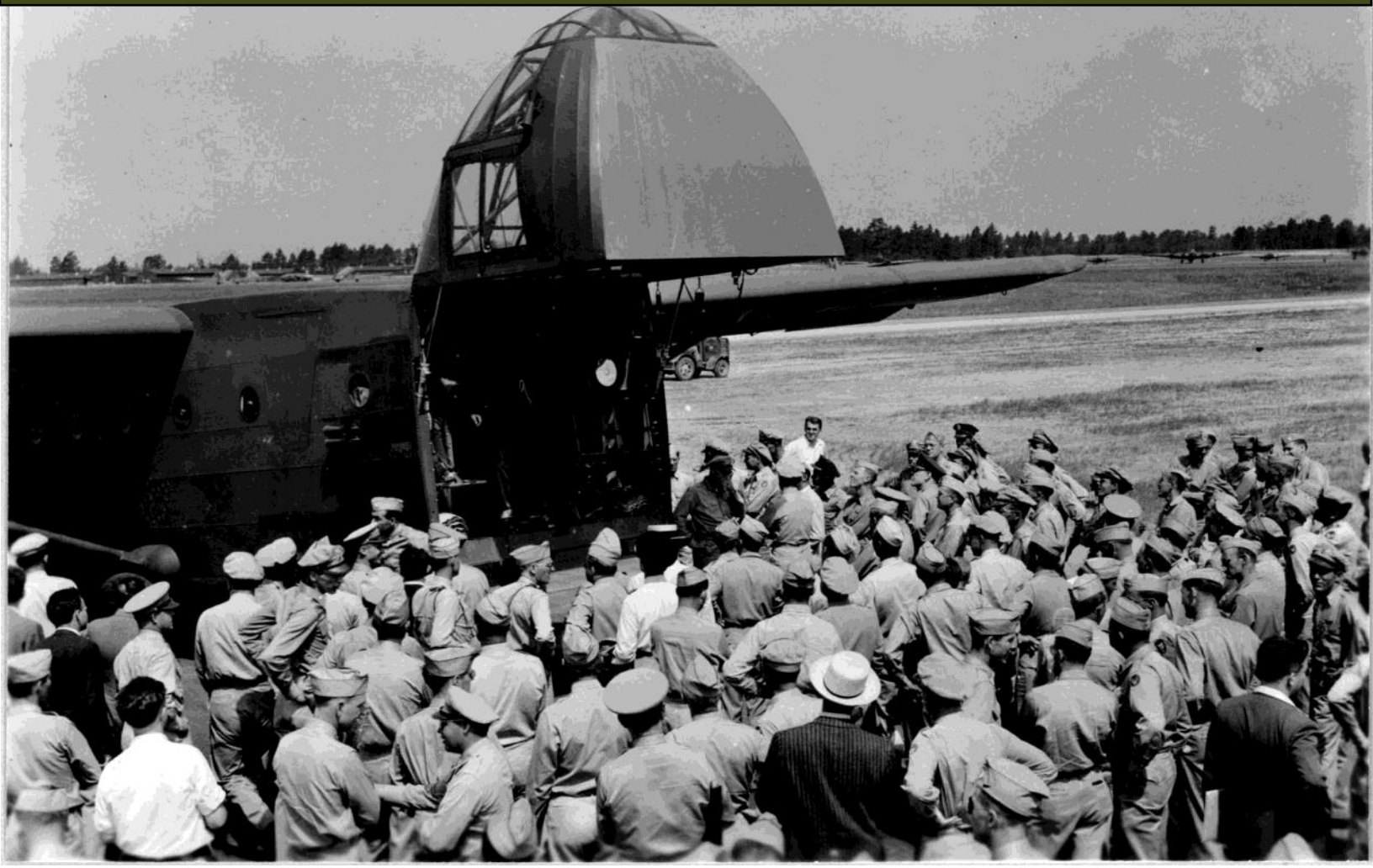
80th Anniversary of the PEA PATCH SHOW the (ARNOLD MANEUVER)

August 4th and 5th



In the spring of 1943 the infant glider pilot training program again stood at a crossroad. The Army's airborne experts questioned whether or not the Army Air Forces could deliver the necessary skill and expertise that would carry the airborne strength into the battlefields at the crucial hour of the conflict. The Army Air Forces was out to prove that it could be done with the equipment developed and the pilots trained. Gone were the fast, blitz like landings and the high speed touchdowns. In were the slow even approaches that resulted in undamaged delivery of troops and equipment even in what could be called "controlled crashes."

This was the situation in August of 1943 when all the top brass of the airborne and the Air Forces gathered at Laurinburg-Maxton to see a highly organized dress rehearsal of what "would be" in the future for glider borne troops and equipment. That Murphy did a class job in organizing and presenting this show is a fact that stands out without a shred of doubt. Had this exhibition not been as successful as it was, there is no doubt but that the glider program both in training and combat would have been very different from the one we knew and learned. — Arthur C Furchgott, Jr.

On August 4th and 5th, 1943, a demonstration of the tactical effectiveness of the CG 4A glider was presented at Laurinburg-Maxton Army Airfield to top Army Air Forces staff, including General H. H. (Hap) Arnold. This demonstration would later be named the Arnold Maneuver but is usually simply referred to as the Pea Patch Show.

Several days before this demonstration, on August 1, 1943, there were two demonstration flights at Lambert Field, St. Louis, MO. of newly built CG-4A gliders, presented by the glider manufacturer, Robertson Company. On the first flight, six people were on board and the flight and landing were satisfactory. On board the second flight were Capt. Milton C. Klugh, pilot; Pfc. J. M. Davis, co-pilot and mechanic; Lt. Col. Paul H. Hazelton, Army Air Force resident representative; the president and the vice president of the Robertson Aircraft Company; and local politicians including the mayor of the city of St. Louis.

Local journalists were documenting this demonstration. At approximately 1500 feet, immediately after Capt Klugh released, the left wing of the glider fell off and the glider plunged to earth killing all on board. The sensational photograph taken of the glider plummeting to the ground was published in all the major newspapers. As disastrous as this incident was, it had nothing to do with the reasoning for the Pea Patch Show. (Nor, did the disastrous British glider mission Sicily, where more than half the gliders ended in the sea drowning over 1,200 men, which occurred several days after Pea Patch on August 9). The fact is, there were grumblings about the need for a glider by high command in late 1942 and early 1943. It was circulating among the upper staff that gliders would have, at best, a fifty percent casualty rate of lost gliders, men and equipment (this number is frequently used today even though the casualties were under 12 percent total for all eight combat missions combined). They also proclaimed that gliders would not be effective in a combat situation, more a disadvantage than an asset.

General Arnold had a different vision and an understanding of the advantages of what a glider could offer. He knew the tactical advantages of landing complete artillery crews with their Howitzers ready to fight. Landing troops together gave a Company the advantage of immediate action and protection. Landing a jeep in the combat area would provide mobility the airborne badly needed. If engineers could quickly get bulldozers into advanced landing grounds to make and/or repair airfields for C-47s, this would allow vital troop reinforcement and resupply and be a great asset to winning and shortening of the war.

So well before St Louis and Sicily, Gen Arnold tasked, then Major, Mike Murphy to develop a program that would validate the usefulness and versatility of the CG-4A glider and, above all, the proficiency in which the glider pilot can fly the glider in all conditions including surprise. In essence, create a demonstration that would prove beyond a doubt that the glider and the glider pilots would be the Army Air Forces' greatest asset on winning the war.

Mike Murphy was a glider showman. He could land a glider on a dime, could use the tip of the wing to turn the glider and in the air was known to do continuous loops, all with the CG-4A glider. His Squadron, 38th Troop Carrier Squadron, said his ability to do almost anything with a glider made them *"The Glider Squadron*". Murphy also knew that to sway the Generals and Colonels, any demonstration of the tactical operations of the glider would have to be unique and dramatic. He had to show how effective the glider itself was in the combat *zone.* How it could perform in different landing situations, delivering vast numbers of troops ready to fight.

EXPERIMENTAL GLIDER WORK /

DEVELOPMENT OF THE PROGRAM— History of the 38th Troop Carrier Squadron

The experimental glider program had been organized by headquarters Army Air Forces (AAF) to assure the development of the essential techniques for achieving the maximum utilization of the glider. The 38th Troop Carrier Squadron was selected to conduct this experimental work in advanced tactical glider operations in collaboration with airborne command personnel stationed at nearby camp McCall, Hoffman, North Carolina.

EARLY OUTLINE DIRECTIVE

Major Michael C Murphy was notified by headquarters AAF on 22nd June 1943 that he had been designated to supervise the operational glider training program and that he would represent headquarters AAF in all operations outlined. The squadron, with its normal glider echelon, was placed under direct operational control of headquarters AAF and was available for this experimental work. The full capabilities of the CG-4A glider were to be determined and all personnel involved were to be trained to a high state of proficiency in the tactics and technique of tactical glider operation. The trained personnel were to be used as a nucleus to train all future glider personnel in the standardized procedures developed during the training period.

Headquarters' airborne command was to assist and advise in determining tactics and technique of airborne troops. Occasionally, airborne troops were to be flown in the gliders, however, the primary purpose of the operations was to determine the technique for glider operations and the transportation of troops was not to interfere with the actual experimentation.

Thorough briefings and critiques were to be employed.. Detailed records were to be kept on all operations for purposes of developing training methods, directives, and guides. Standing operating procedures were to be established for glider operations. An outline of the program indicated that training should include familiarization rides for every tug and glider pilot in all positions and all extremes in speed and tow positions in order that there will be a mutual understanding of all problems involved. Sufficient basic glider instruction should be given to make the glider pilot thoroughly competent to utilize his machine to its maximum capacities.

Various types of landings should be practiced with emphasis on accuracy. Landings should be made with and without wheels and at speeds

varying from fast to slow. Obstacles should be erected around small areas and landings made within those areas. Landings also should be made on unimproved small fields. In addition, techniques should be developed and instruction given in landing gliders in all types of terrain including brush, into small trees, plowed fields, and water.

Further, a high degree of proficiency was to be attained in low altitude navigation. The most compact and flexible glider formations possible were to be developed and unit operations were to be conducted so that gliders would be landed in all types of terrain.

A rehearsed demonstration was to be given to the press and army authorities after all personnel had reached a high state of proficiency. The maneuver was to involve a small tactical situation using a small number of gliders with technique as near perfect as is possible to attain.

Upon completion of the experimental training activities, a complete report was to be made concerning the deficiencies noted in the maintenance of equipment. Personnel of the squadron was to give all possible assistance to the sub-depots in overcoming difficulties as they arose during the training. In order to educate such maintenance personnel in the maintenance of equipment used in glider operations .

Operations:

The squadron arrived at Laurinburg Maxton Army Air Base on 21 June 1943 and began training in tactical glider operations on 24 June 1943. The activities for the first ten days were concerned with the training of glider pilots in the normal, constant glide technique.[1] Previous training had developed the fast, uncontrolled glide technique and even toward the end of the training period glider pilots occasionally would revert to their former practices of fast landings. It seemed essential that the glider pilot should be taught from scratch in the proper glide technique as determined by tactical necessities.

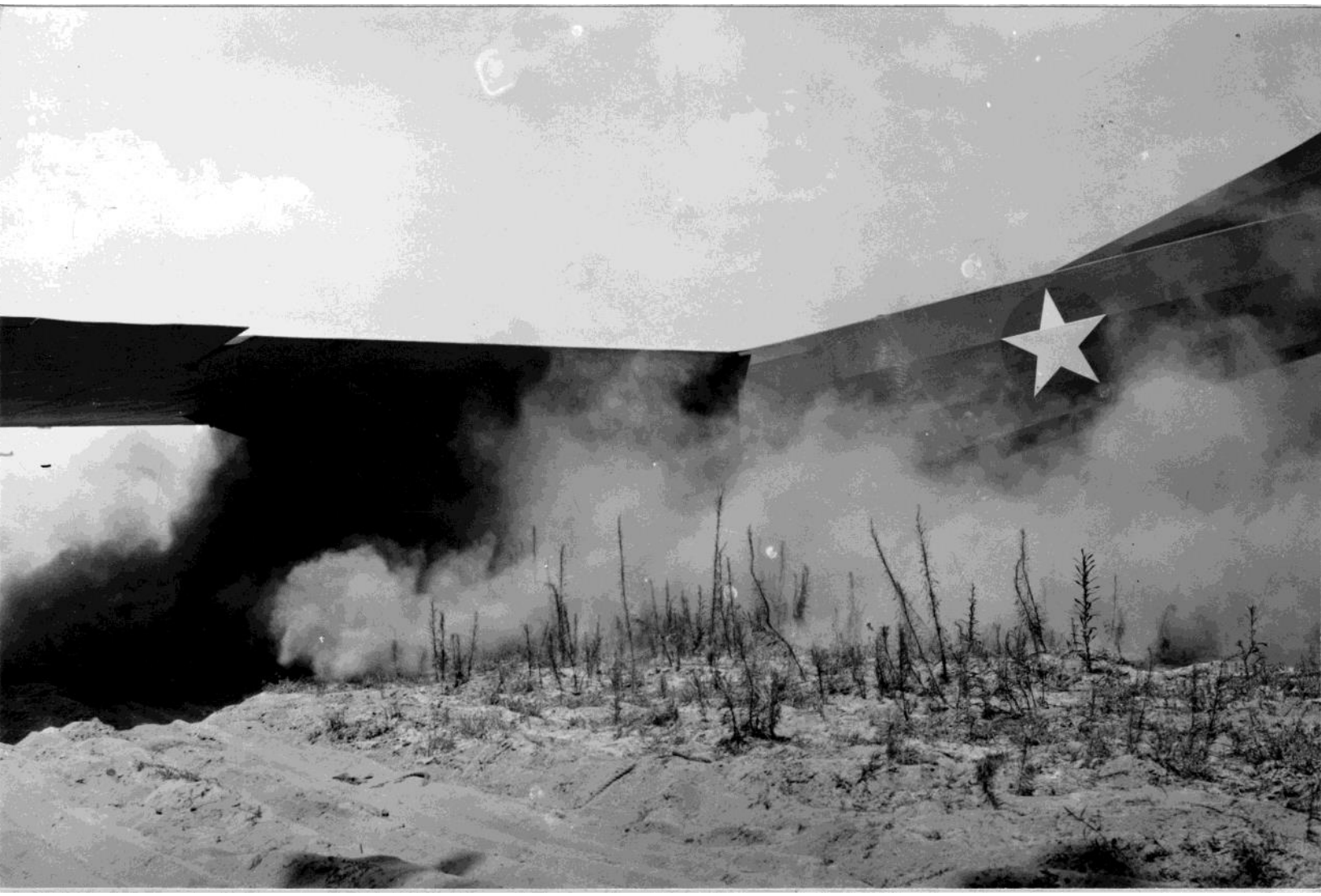
During this first phase of training, glider pilots were permitted to land the gliders without loads, on the main airport, without using any obstacles to develop the technique of the normal glide.

Later landings were made over obstacles, with and without loads during the succeeding weeks of training. Various obstacles were erected on the main airport for one period of training. The first obstacle was simply a rope strung between two 20-foot poles. It was found necessary to hang long strips of yellow bunting along the rope in order that it might be seen from a distance sufficient to allow the pilot to start planning his approach before releasing. The arrangement for the second stage provided an 800 foot circle (later 600 foot) bounded by 10 foot stakes and a rope strung along the circle, marked by strips of bunting every few feet… the third obstacle was a square, 600 feet by 800 feet, made by planting 40 foot pine trees every 20 to 30 feet around the perimeter. The first landing into the latter obstacle were made without loads, but during the third week airborne command troops were made available and succeeding flights were made with loads from 70 to 100% capacity.

Most glider pilots were greatly surprised at the difference in the feel of the gliders when carrying loads. Proficiency was lacking and sufficient confidence was not acquired until several flights were flown with fully loaded gliders. It was suggested that most of the tactical training should be done with “near-full loads,” because the average glider pilot experience some difficulty with load changes. Live loads were not necessarily since sandbags had proved adequate in training.

One flying experience was particularly effective in developing air discipline and glide control.

All available gliders would be towed to 3000 feet in a formation of three ship elements. The gliders would release over a prescribed spot on the field, thereby putting each glider in precisely the same spot to begin free flight. All were instructed to make a 45 degree turn immediately upon release and follow the leader in a circular flight pattern until the altitude for the approach was reached, then to leave the pattern if necessary to make a precision landing into the 800-foot circle. The lead glider was to make a sharp turn to the left upon landing in the dispersal area and stop with the nose of the glider



Into the sand: probably too much of the old style blitz landing here.
—Photo curtesy of the U.S. Air Force Historical Research Agency

Learning the "Normal Glide[1]" -- here a 90 degree turn and constant glide to a slow landing -- 16 July 1943, mid - point of the experimental period.

—Photo curtesy of the U.S. Air Force Historical Research Agency

up against the rope. The second glider to a line on the right, wing tip to wing tip, and so on with succeeding planes around the circle as spokes in a wagon wheel.

A small field close to the airport was chosen as a practice field for the advanced training purposes. All kinds of landing terrain were present and all but one direction of approach was blocked by pine woods, large bushes, houses, etc. Small groups of gliders were dispatched into small, predetermined areas on the field. Some problems involved approaches to small areas barely wide enough for the glider and only long enough to allow safe landing with emergency stopping techniques. Detailed briefing was given for each problem, utilizing photographs blackboard drawings and full verbal descriptions.

All pilots, whether taking part in the mission or not, were required to listen to the briefing and to observe the flying of the mission. It was necessary to disperse the gliders up against the wooded area in the field on many missions. Emergency stops, brakes, nose skids, and other measures were used to place the glider in the proper positions. Strips of bunting were placed on the ground 300 to 400 feet in front of the wooded area to indicate the point at

which the gliders were to land. Since gliders had to be stopped within a very short space, landing had to be made at low speeds to ensure no damage to the aircraft.

Landings were made with tactical gear, training gear, and skids to demonstrate the relative distance for stopping. The relative distances required for a “dead stop” varied from a short distance from the training gear, a longer distance for skids, and the greatest distance for tactical gear equipped gliders. All pilots made flights in tactical-gear gliders, landed both on that gear and on skids. At least two landings on skids were made by each glider pilot. More than these were considered unnecessary because landing technique is not different from landing on the training gear. The main knowledge gained is that once on the ground the glider is completely uncontrollable. The pilot must make his spot landing by his proper approach and point of initial contact.

Tail parachutes were installed on several gliders and were found to be very satisfactory in decreasing the distance necessary for a glider landing. Instruction was given in the technique and use of the tail parachute but its employment was to be limited to emergency situations.

Tug pilots received instruction in glider operations. Most became surprisingly proficient in a short time, and a large number became quite enthusiastic. All tug pilots quite unquestionably learned enough about gliders to be of help to them in their understanding of the other end of the tow. It is considered very necessary that all tug pilots receive this training.

Water landings were made both on wheels and skids. Two landings were made on skids and one on tactical gear. The normal landing is made with the nose slightly high, allowing the tailwheel to touch slightly before the landing gear or skids. With this type of landing on skids, the glider planes across the water for 150 to 200 feet, then settles slightly and stops. The landing distance is comparable to that on skids on the ground.

A Typical Day

An example of the operations conduct with the advanced type of obstacle is found in the following account of the training activities for 4th July 1943:

0615, briefing period we'll use area surrounded by pine trees, approximately 30 feet tall, area 800 to 600 feet. Will land from South to north, on the 800-foot length. Instructed if it is obvious to pilot that he cannot get in, either turn or continue over area. First takeoff.

0700 precisely. There followed 13 flights, of which nine made successful landings within the area - some were not ideal in technique, but all were fair, and a few were very good. Two ships found in time that they would not make the area safely and change course to miss the entire area. Two other ships cracked up. One failed to stop in time, damaged both wings (Capt. Flood of 38th.). The other came in with very poor judgment throughout approach, attempted to stretch glide while still 200 feet from initial line of trees, held nose very high (30 degrees), landed straight on into a tree, stalled in and washed-out gear, etc.

0830, flying halted for critique. Decided that pilots not yet efficiently advanced for such an obstacle area. Decided to operate in new area, put up to pine trees, land over these and up to a bunting panel, 800 feet distance.

0915, flying resumed to new area. About 60% of landings were in the area. Many were overshot. One was badly undershot, poor judgment being used, since ship could have been turned

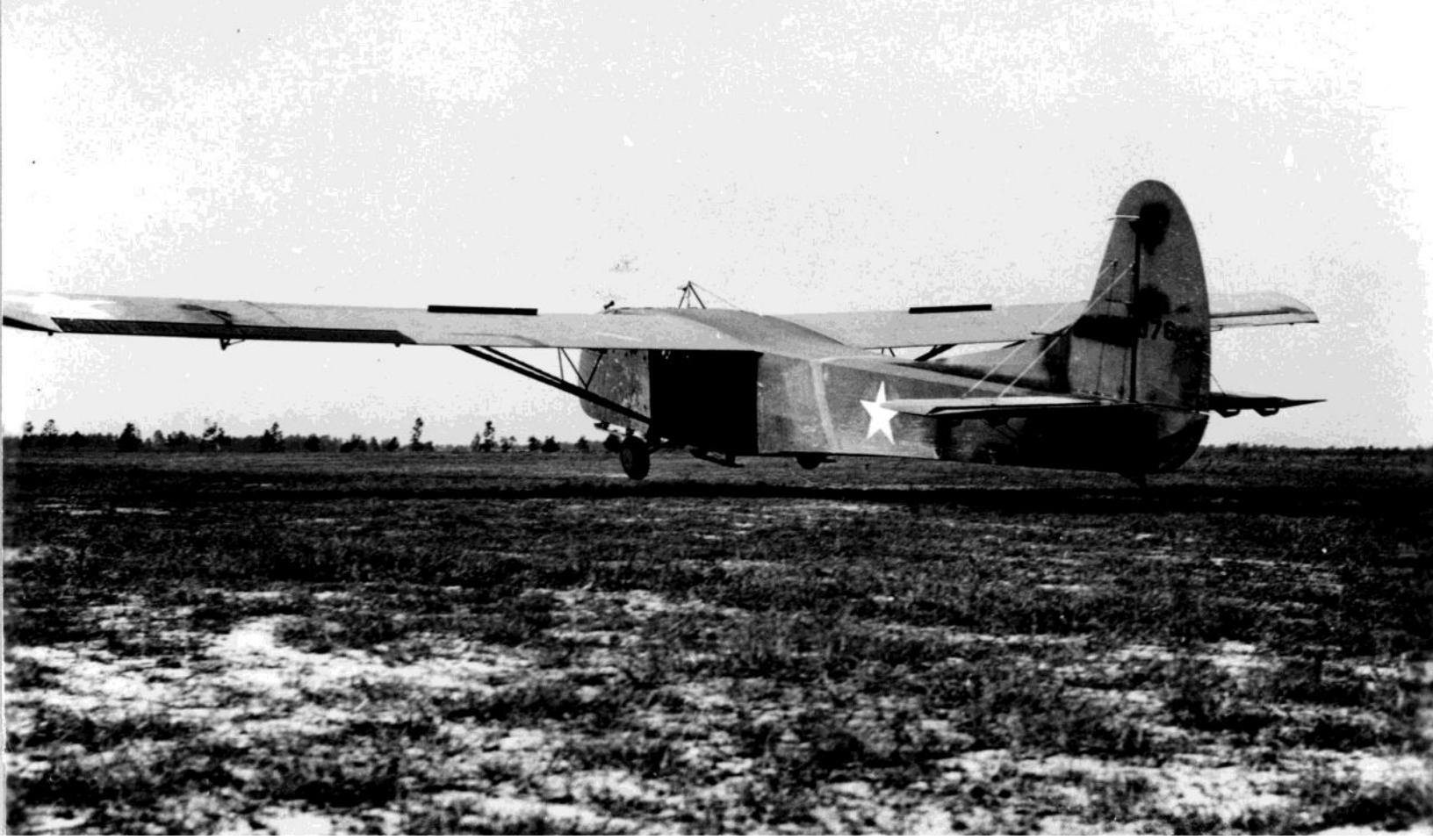
Over the clothesline early in the experimental period, 7 July 1943. This one isn't yet ready to come in over trees — he's too high!
—Photo curtesy of the U.S. Air Force Historical Research Agency

The next three photos are titled

LANDING GEAR AND THE GROUND

Over the bushes with the tactical landing gear, wheels. onto a sandy field.

—Photo curtesy of the U.S. Air Force Historical Research Agency



A neat landing with wheels.
—Photo curtesy of the U.S. Air Force Historical Research Agency

These came in on skids and took shelter between the trees. The three C-47's that towed them are visible. [barley]
—Photo curtesy of the U.S. Air Force Historical Research Agency

A neat landing with wheels.
—Photo curtesy of the U.S. Air Force Historical Research Agency

Landing with skids.

—Photo curtesy of the U.S. Air Force Historical Research Agency

in sooner, missing the area but landing safely, instead of which the ship was damaged, washing out gear. Another ship landed slightly hard, not hard enough to wash out gear, but gear did give way.

1115, flying halted for mess.

1230, critique and briefing. Major Murphy stated that it seemed obvious that the practice hitherto had not been taking sufficiently seriously. Spot landings are the most important maneuver for the glider pilot, and each landing must be viewed by the pilot as a technical landing, over a concrete wall, to stop before hitting another concrete wall. Morning landings were handicapped by lack of wind, but fault lay in fact that pilots were judging speed by ground speed, instead of feel of glider. All glider pilots to observe landings within the wooded areas. Plans for entire approach should be carefully laid even before release from Township. Five ships to land within wooded area this afternoon to demonstrate for those who had not seen in the morning shift.

1315, first takeoff. First ship failed to stop in time, hit trees damaging both wings. Second ship turned away from area, seen he could not make it. These landings were made with tailwind of approximately 6 mph. Three landings following were all in, landed up wind period two of these utilized already broken trees to come in low. new paragraph major Murphy made two flights to demonstrate landings onto the wheels, to be done in case pilot needs to throw away some altitude at last minute to keep from overshooting; push nose down, get ship on ground, use nose skids and brakes.

1500, meeting to discuss these landings and the principles behind them. Ruled that all pilots would utilize constant glide right to ground except in exceptional circumstances, as above. new paragraph 1545, flying resumed. New area, panels only. Note for wooded or restricted area; Tail is always lower than wings when passing over obstacle. Most pilots under shooting.

Pilot Activities

Both glider and tug pilots were skeptical of the particular type of training conducted at the experimental glider school. Tug pilots generally were lacking in the desire to work with gliders and the training only partially eliminated that feeling. Many glider pilots considered themselves completely trained previous to the special training since they already had been functioning with tactical outfits. However, all glider pilots were convinced of the value of the special training before the course was half completed.

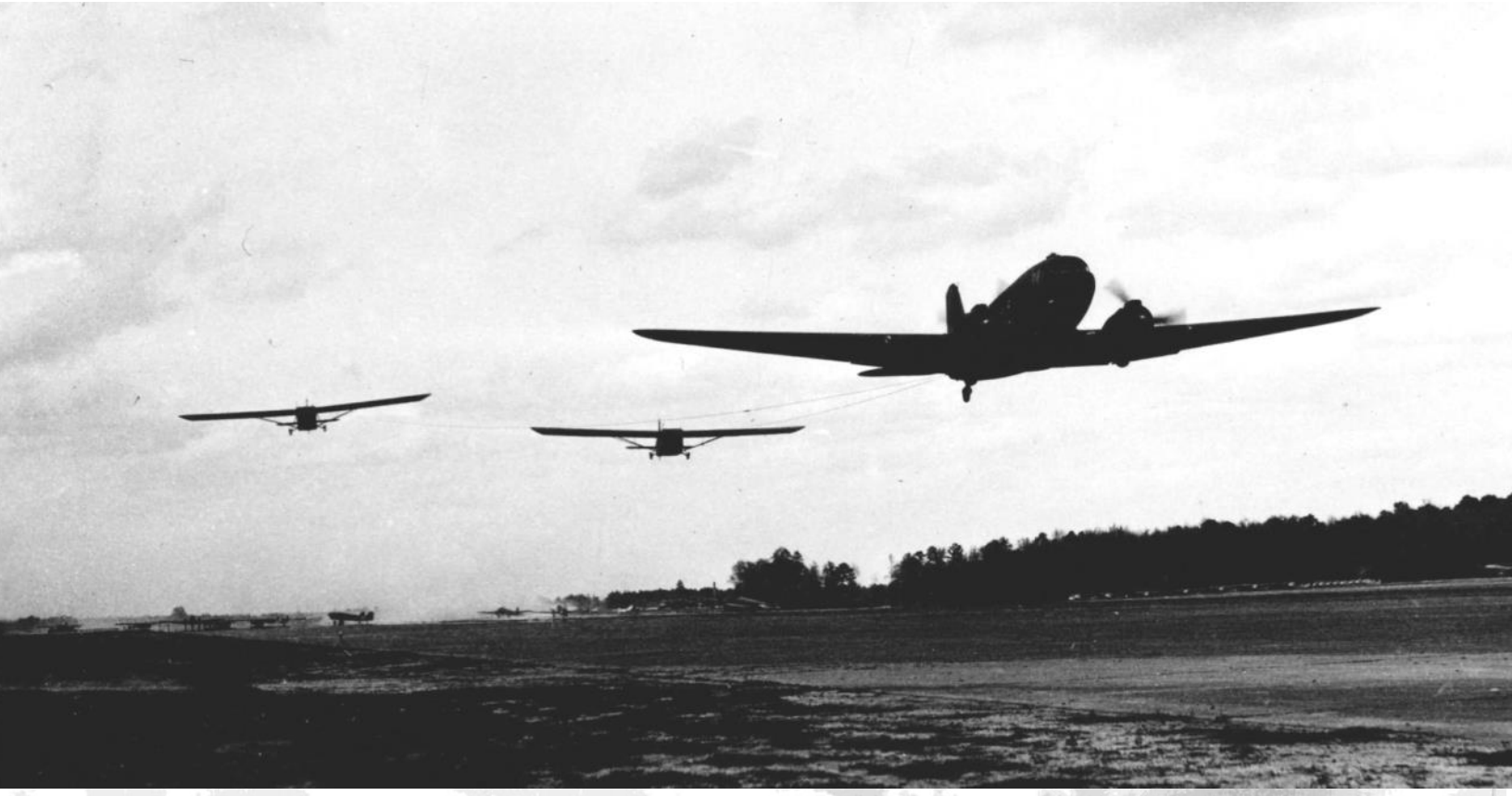
Air discipline was lacking during the period of training on the part of both glider and the power pilots. It was considered absolutely essential that air discipline be instilled in all pilots, and particularly glider pilots since they cannot keep continually at their assigned jobs. Over 90% of all crackups not due to failure of equipment were due to lack of air discipline, failure to follow plans as outlined in briefing.

The glider pilots as a group were particularly difficult to brief regardless of how many times during a briefing a given point was stressed and repeated, some of the pilots present would come up afterwards and request information on this point.

Several deficiencies were noted during the training activities:

1. Tendency to glide too fast, with varying speeds;
2. Tendency to fly too low on the tow;
3. Tendency to fly the tow line tension, no relaxation, resultant over control;
4. Tendency to use landmarks to spot release point;
5. poor ability to judge proper approach pattern; and
6. Briefing.

It was found necessary to give all pilots as many landings as possible over, or up to, real



Double Tow tith the C-47 and CG-4A's.
—Photo curtesy of the U.S. Air Force Historical Research Agency

obstructions which would damage the glider if mistakes were made. Under the harmless rope obstacles, pilots, knowing no damage would result from mistakes, would get into bad habits.

Double Tow

Another phase of experimental work was the double tow. This operation was first suggested and tried after about three weeks of the experimental period had passed. It was conducted primarily to determine the capabilities of the tow plane, for it was thought that more glider flying training could be accomplished if double tow were used for all low altitude work.

The problems that arose during the experiments with double tow and the lessons learned from this type of operation were explained as follows:

The double tow resulted in a considerably more critical type of flying because of the reduced flying speed and continuous use of maximum rated horsepower during the various phases of flying such as takeoff, climb, and cruise. This type of flying made it apparent that the power pilot required considerable instruction and familiarization with this low altitude slow speed maximum power operation before they could be safely checked out as competent first pilots on double tow. They had to become familiar with the low speed maximum power operation and to readjust their previous ideas and convictions of safe operating procedures for the C-53 and the C-47 types of aircraft that had been instilled in them from the very start of their transition training. They had to slow down their speed to a rate that at one time was considered dangerous for those types of aircraft. They had to be continuously on the alert for overheating of engines because the maximum power and low air speed of the air-cooled engines. During the initial experiments on double tow, it was determined that the paddle blade prop would give the most efficiency in this work, and the C-53 planes then being used were converted from the conventional prop to the paddle blade propeller. This seemed to give a slight increase in airspeed per horsepower used and considerably more cooling effect to the engine.

DIFFERENT PROSPECTIVES:

In the June1978 Silent Wings the following was written by glider pilot instructor Arthur C. Furchgott, Jr. and was titled: *DID YOU SAY IN-FLIGHT ENTERTAINMENT* followed by the photo of the band playing in the glider. In this article he gave the following account of the work they had to do under, then Major, Col. Mike Murphy.

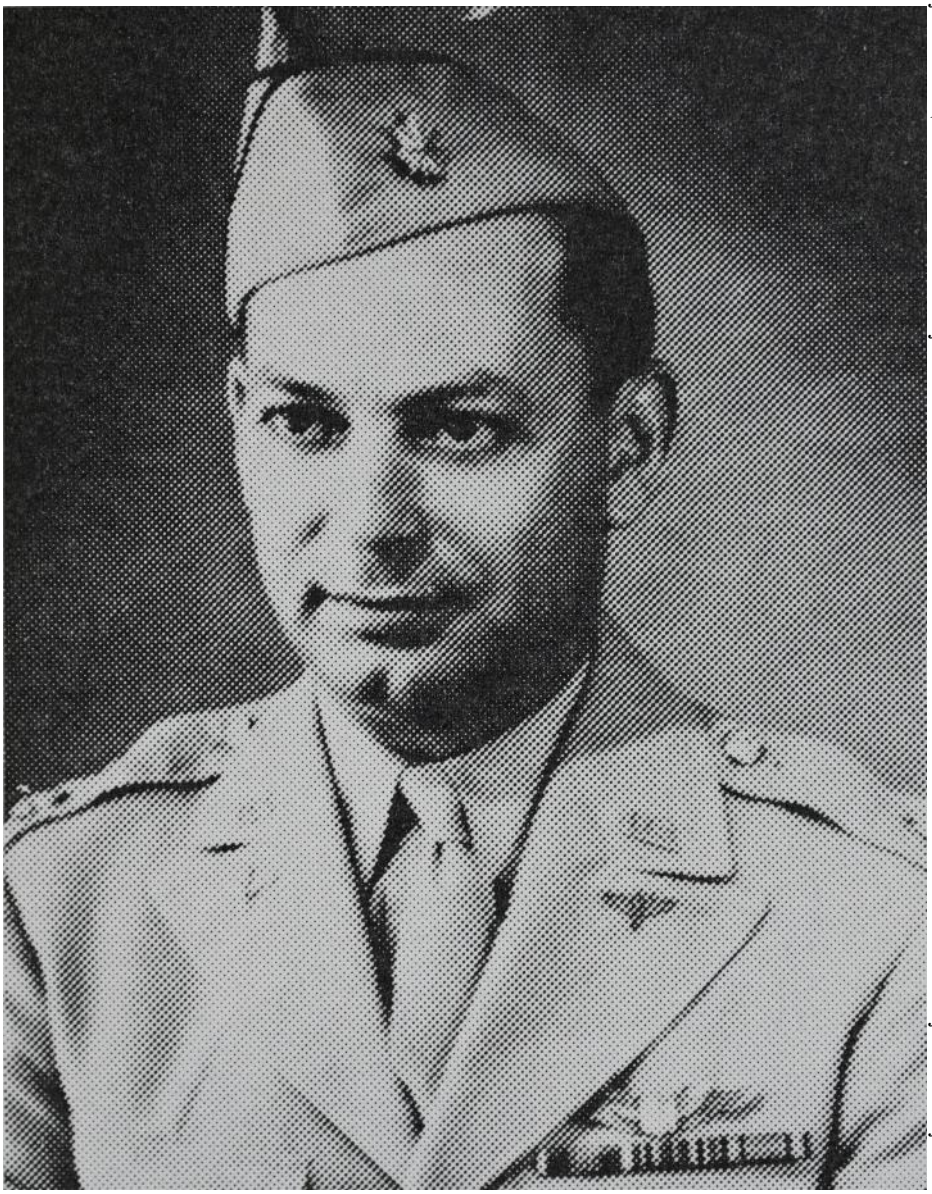
In June 1943 I was a 2nd Lieutenant Flight Instructor in CG4A combat gliders at South Plains Army Air Base at Lubbock, Texas. On June3 28, 1943 nine instructors including myself were told that we were being transferred to the Laurinburg-Maxton Army Air Base at Maxton, N. C. for temporary duty for approximately 45 days to work on a special combat glider course in conjunction with the Troop Carrier Training Command.

After arriving at Laurinburg Maxton we were introduced to major Mike Murphy, formerly a well-known civilian sunt pilot. Mike, a very colorful character and a pilot's pilot was an outspoken advocate on the use of military gliders. He had been placed in command of a composite group to develop new techniques in combat glider flying and to show the results in a demonstration to be witnessed by general H. H. Arnold, chief of the U. S. Army Air Forces along with other high-ranking U.S. and United

Nations officers. The next four weeks the entire group became involved in intense maneuvers day and night.

Near the end of July, we were informed by major Murphy at a critique following a full day of flying, that the big day would occur on August 4th, 1943, at which time general Arnold and the other top-ranking military and civilian leaders from the U. S. and our allies would be present.

Major Murphy asked for volunteers for a very special night mission which would terminate the demonstration. This exercise was one that really called for synchronized watches and timing. 6 gliders, fully loaded with troops, were to be towed aloft and the entire countryside blacked out. The gliders were to cut loose at space that's the fried altitudes and times, and were to land completely blind in a L shaped cotton field surrounded on three sides by high trees. The only identification was to be an infrared light placed in a hole in the ground. Each glider would have to make its approach over the slight at a specified altitude and from then on it would be a completely blind landing on a set compass course. After making contact with the ground each glider would turn in one direction or another depending on its number. Major Murphy explained that the infrared light would be located in the same maner as actual combat by a Pathfinder group. The high-ranking observers would be just behind the trees surrounding the small cotton field. After all gliders had completed their landings, portable floodlights would be used to eliminate the field.



Lt Col. Arthur C. Furchgott, Jr USAF (ret.)
—National WW II Glider Pilots Association

Following this explanation, major Murphy again asked for volunteers to fly the six gliders. Nobody volunteered and the tension began to build up. All of us in this special program had a very high respect for the CG-4A glider by this time as we had experienced over 100 minor and major crashes over the past several weeks- most of them intentional- and not one

person had been injured seriously. I don't think that any of us were cowards, but this mission appeared to be more dangerous than most of us felt reasonable. After a few seconds of electric silence, Mike Murphy shouted "By God, if you won't volunteer, I'll fly every glider myself!" Fortunately, this remark broke the ice and practically everyone present volunteered. I was one of the volunteers selected.

Practice makes Perfect!

Glider Pilot Clayton Cederwall wrote in his memoirs: *The main tow plane was the C47, but they tried Lockheed Loadstars, C54's and even P38. The smoothest tow I had was the P38. This was because the counter rotating propellers didn't create as much turbulence. The glider's maximum speed was between 137 – 150 mph, so -the P38 had to fly with flaps down. It sure could climb with that glider in tow.*

We did a lot of flying, both night and day, and practiced different kinds of landings and double and single tows. The big wheels were coming down from Washington D.C. soon and we had to prove to them that the gliders would work in combat. A lot of it was night flying. One of the planned demonstrations was to land in a field that was totally dark. We dug a hole at the edge of the field and put a flare pot in it. The flare could not be seen from the ground, but we could see it from the air. We would come in right over the flare pot and roll towards a flashlight held by a man at the other end of the field. All lights were off on the gliders so nobody could see anything, just hear the wheels as they touched down on the field. In one practice mission the person holding the flashlight heard the glider rolling toward him got scared and started running. The glider still had enough speed, so it followed him for a while.

On July 27th it was announced to the pilots that the demonstration would be on August 4th and 5th. "*You will continue to practice the jobs that you will do in the maneuver, each glider crew pick out a glider and put your name on it*."

Let the Show Begin!

The "Arnold Maneuver"

The climax of the experimental period came when the demonstration, later known as the "Arnold Maneuver", was held on the 4th and 5th of August 1943. On August 4th, the dignitaries arrived, and the day missions and maneuvers were carried off with precision that was like clockwork. An article in the Laurinburg-Maxton Army Air Base newspaper The ***Slipstream*** of 11 August 1943, gave an account of the demonstration and the effect it had on the observers:

"Invasions and operations in which the gliders took part during the two-day demonstration would seem impossible to the layman who did not witness them.

The motorless craft poured hundreds of troops, pieces of artillery, jeeps, machine guns and engineering equipment silently out of the skies into "hostile" territory. Trees, gullies, bushes and rough farmland offered little or no hindrance. A wing tip or so was brushed off here and there -- but the attacking troops tumbled out safe, grim faced and firing at "enemy" installations in surrounding woodland.

In the first public demonstration of a new allied serial weapon -- surprise night attack by airborne troops --six big troop-carrying gliders swooped silently out of the black sky last Wednesday night to a perfect landing.

Released by their toll planes 8 miles from the attack area the big fabric and plywood carriers whispered

The Arnold Maneuver at Laurinburg-Maxton August 1943: (left to right) Lieutenant Colonel Murphy, Major General Joseph E. Swing, General Henry H. Arnold, Colonel Gable, Major General Chapman, and Colonel Reed G. Landis, Chief of Staff of the I Troop Carrier Command. There may once have been some skeptics here.
—Photo curtesy of the U.S. Air Force Historical Research Agency

***The Open mouth of the CG-13A*— Photo curtesy of the U.S. Air Force Historical Research Agency**

Chow line under the wing of a glider, also jeeps, movie camera, a four star flag on a staff car.
—Photo curtesy of the U.S. Air Force Historical Research Agency

A water landing, with oil barrels on their way to help ring the glider in.
—Photo curtesy of the U.S. Air Force Historical Research Agency

The tail parachute as a decelerator
—Photo curtesy of the U.S. Air Force Historical Research Agency

through the Caroline and night to land in close formation without Even so much as a scratched wing tip.

Trained military observers expressed amazement at the eerie precision of the maneuver. As each ship hit the ground, it's complement of 15 fully equipped infantryman slid out and silently headed for prearranged stations in the surrounding wooded area.

It was almost impossible to see the gliders in the air, even at less than 300 feet, despite a brilliant background of stars. When everything was absolutely quiet period a soft purr could be heard as the air wrestled through the glider rigging.

Only a light rumbling noise-- as if someone were pushing a wheelbarrow across rough ground-- announced each night landing. Once or twice the armed troopers were among the observers before their landed glider was spotted.

A stunt staged Tuesday night for the benefit of general Arnold was repeated on the succeeding night to cap the demonstration. The base band-- 11 members of it-- went up in the glider that was to be the last to land.

At 5000 feet over the field, the band struck up "coming in on a wing and a prayer" and, as the glider slowly spiraled down, followed that with" the Army Air Corps" and "blue skies". The glider remained invisible, and the observers -- who weren't let in on the stunt beforehand -- had their mouths open in awe. The music seemed to come from the stars. "Sounds like a parade up there-- of angels, one trooper remarked."

Just as the glider was about to land among scattered timber which could have ripped it to pieces, the band concluded its serial concert with "what the hell do we care".

Ranking officers emphasized the value of the surprise element involved in the night glider attack, and paid tribute to the ability of the glider pilots. "The thing that particularly impresses me," said general Arnold, "is that these young pilots can do this sort of thing just as well as the older, more experienced Flyers."

One pilot, who modestly withheld his name, said it wasn't such a hard job. "You just sort of come in on your imagination," he explained.

During the first day of the program, the 38th troop carrier squadron landed 22 fully loaded gliders on" Maxbase," Hypothetical enemy headquarters, and within 5 minutes the wooded, rough terrain was surrounded by infantry, artillery and equipment carrying jeeps which the gliders belched out almost at the instant they landed on predestinated spots.

Nor was water and insurmountable hazard for the glider troops. The ability of the CG-4A standard 15 place glider to be set down in emergency in a lake, river or even on the ocean was demonstrated when the squadron, commanded by major Mike Murphy, world champion stunt flyer before the war, landed an infantry group in Lee's pond near the base.

The demonstration was made more realistic when the glider landed roughly[1] and sank quickly to its wings but the troops, their car being slung over their shoulder and "Mae West" life jackets on their backs, emerged as an effective fighting team after swimming ashore.

That, it was pointed out, in the mission of the glider-- to land its human cargo or equipment in enemy territory in good fighting condition with only secondary concern for the beating taken by the glider.

"*Seven days from now*," Major Murphy asserted in discussing night landings, "*we could put 600 gliders down in the field with possibly 70% injury to aircraft and 5% injury to personnel. We're not planning safe and smooth landings. We're getting the men in*."

Just about everything was airborne here during the two-day demonstration. Upon arrival of many by plane from Washington DC, they found luncheon waiting. It had preceded them to the field in a glider named the "*Gourmet*," personally brought in from a nearby mess hall by captain Leigh Hunt, base mess officer, who with his men arrived in full battle dress. The lunch they delivered was a field lunch, brought in as it would be in an airborne invasion.

Both Cederwall and Furchgott wrote about the dramatic last night's demonstration.

Furchgott wrote: *At 10:00 PM after a late dinner, the visiting officers were picked up at the officer's club and driven to the observation post near the area in which we were to land. The first C-47 tow plane and glider took off at exactly 10:00 PM with the other five following in rapid succession. The airport was completely blacked out and there were no lights on the planes or gliders. Each tow plane pulled its glider to an assigned altitude. Glider number one was at 3000 feet, glider number two was at 3500 feet and so on. I was in glider number three at 4000 feet. The first glider was to release from the tow plane at a specific time, with the others*

April 1943 and some fast landings before General Arnold and visiting officers.
—Photo curtesy of the U.S. Air Force Historical Research Agency

August 1943 and the slower-landing gliders come in safely at night. A band stepped our of one.
—Photo curtesy of the U.S. Air Force Historical Research Agency

At 5000 feet over the field, the band struck up “coming in on a wing and a prayer" and, as the glider slowly spiraled down, followed that with” the Army Air Corps” and “blue skies”. The glider remained invisible, and the observers -- who weren't let in on the stunt beforehand -- had their mouths open in awe. The music seemed to come from the stars. “Sounds like a parade up there-- of angels, one trooper remarked."

following at three-minute intervals. It was a very dark night with no moon and the countryside black-out was perfect. It was almost a panicky feeling searching for one small light in a hole in the ground, our only link with the cotton field.

We had been told that the infrared equipment didn't show up, so a small flashlight would have to be used as a substitute. Fortunately, we were able to locate the light prior to our release time. Even so it was a very eerie feeling, silent except for the night swish of the air, to set the course and make it completely blind landing depending upon only a compass for direction and an altimeter to give some hint as to when to start leveling off. When our wheels touched down slightly at about 60 mph there was a slight relief from everyone in the glider. We rolled about

200 feet and turn slightly to the left and came to a stop. It was as dark as the ace of spades and no one was visible.

The ground observers could hear nothing until each glider landed and then a rumble of the landing gear could be heard. The suspense built up with the landing of each glider as the danger of ground collisions increased the fifth glider had just landed safe-

2nd Lt. Clayton J CEDERWALL

84 TC Squadron (Z8) /437 TC

Cederwall wrote, *"On the night the Generals visited, there were about ten gliders that took part in the night demonstration. Everything worked like it was supposed to that night and I got to shake the hand of a general. We never did tell them that we had a flare pot hid at the other end of the field. The last glider that night carried a small band. They cut off a couple of miles from the field at about 5000 feet, when they were over the field without lights, the band started playing the song "On A Wing and a Prayer". And a medley of other songs including the Army Air Force Song. It was quite impressive. The big shots went back to Washington D.C. impressed, the glider program went full speed after that and six months later I was shipped out to the European Theater of Operations."*

The glider remained invisible, and the observers -- who weren't let in on the stunt beforehand -- had their mouths open in awe. The music seemed to come from the stars. “Sounds like a parade up there-- of angels, one trooper remarked."

Just as the glider was about to land among scattered timber which could have ripped it to pieces, the band concluded its serial concert with “What the Hell Do We Care” [Hail, Hail, the Gang’s all Here] .

Ranking officers emphasized the value of the surprise element involved in the night glider attack, and paid tribute to the ability of the glider pilots. “The thing that particularly impresses me,” said general Arnold, “is that these young pilots can do this sort of thing just as well as the older, more experienced Flyers."

One pilot, who modestly withheld his name, said it wasn't such a hard job. “You just sort of come in on your imagination,” he explained.

During the first day of the program, the 38th troop carrier squadron landed 22 fully loaded gliders on” Maxbase,” Hypothetical enemy headquarters, and within 5 minutes the wooded, rough terrain was surrounded by infantry, artillery and equipment carrying jeeps which the gliders belched out almost at the instant they landed on predestinated spots.

Nor was water and insurmountable hazard for the glider troops. The ability for the CG 4A standard 15 place glider to be set down in emergency in a lake, river or even on the ocean was demonstrated when the squadron, commanded by major Mike Murphy, world champion stunt flyer before the war, landed an infantry group in Lee's pond near the base.

The demonstration was made more realistic when the glider landed roughly and sank quickly to its wings but the troops, their car being slung over their shoulder and “Mae West” life jackets on their backs, emerged as an effective fighting team after swimming ashore.

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Participating in the demonstration, in addition to major Murphy's squadron, with its gliders and glider pilots and its C47 and C43 cargo and troop carrier planes which towed the gliders, were airborne troops from camp Mackall, North Carolina.

Before returning to his Washington headquarters, General Arnold surmised the entire program with: "*Gentlemen, this demonstration speaks for itself."*

The" Arnold maneuver" was largely responsible for developing renewed interest in the use of glider for tactical operations. Many high-ranking officers of the Army Air Forces, and the Army ground forces who attended the "Arnold Maneuver" had been skeptical about the value of glider for tactical purposes. There is no doubt that the effectiveness and efficiency which were developed during the experimental period and demonstrated on the 4th and 5th of August 1943 turned the tide in favor of an expanded program of advanced training in the tactical use of gliders.

General Hap Henry Arnold
—Curtesy U. S. Air Force

<u>Tribute to a leader</u>

The success of the experimental work and the" Arnold maneuver" is the tribute to the ability and enthusiasm of major Murphy as a pilot, teacher and leader. His unquestioned scale as a pilot of all types of aircraft in his highly persuasive personality were combined with unlimited energy. The high degree of interest and enthusiasm which he developed among the glider pilots who worked with him during the experimental period was certainly the animating force which brought troop carrier glider training to a high point of effectiveness and proficiency.

Lt Col. Michael C Murphy

NOTES:

1. A normal glide, as defined in these operations, is a glide which allows the maximum ground coverage per unit of altitude. It cannot be reckoned in terms of air speeds. However, it must be the slowest speed possible for the safety with any given load, or with any given combination of weather and terrain circumstances. The normal glide was considered absolutely essential for all types of tactical glider flying, since only through that means is it possible to maintain the gliders flight, under constant control and acquire the flying precision so necessary to complete the assigned missions. —Murphy

CEDERWALL, Clayton J.,2nd Lt.:

After the demonstration he was assigned to the 84th Troop Carrier Squadron, 437th troop Carrier Group on 10 September 1943. He arrived in the European Theater with his 84th Squadron in the Spring of 45 and was stationed at Ramsbury Air Field in England. He flew three glider missions. He was the second serial to land in Normandy. In Holland his tow ship was shot down and they ended in enemy territory hiding by the help of the Dutch until they made it to their Command Post. In Varsity , again his tow plane was hit. *"The trip was smooth until we hit the Rhine then we were hit with small arms fire and flat. About 2 1/2 minutes across the Rhine the tow ship was hit in right engine and caught on fire and landing gear came down. The short tow glider cut loose. Tow ship made sharp bank to the right and I saw someone trying to get out of the top escape hatch. We followed the short tow down and landed. We dispersed and immediately started firing on the enemy. My glider received 3 hits from mortar fire, and it blew the glider to pieces and started it on fire. We cleared a house of the enemy and linked up with some airborne and then made our way to the 437th glider pilots command post and stayed there until evacuated."*

Clayton received 2 Bronze Oak Leaf Clusters to the Air Medal, the Distinguished Unit Citation, European African–Middle Eastern Campaign Ribbon with Bronze Arrowhead. Separated from the Army on 6 September 1945.

FURCHGOTT, Arthur C. (Art), Active duty March 1942 with Air Corps reserve commission as a second Lieutenant engineering officer. Too old for aviation cadet (but held a private pilot license). Volunteered for a glider pilot training in may 1942. Took dead stick training at Fort Hayes, Kansas, then soaring at Blackland Army Air Field, Waco, Texas, and CG-4A at Dalhart Army Air Field, Texas., graduating December 7th, 1942, and retained as an instructor pilot. Transferred to South Plains Army Air Field, Lubbock, Texas, February 1943, as instructor. In addition to instructing. Ferried gliders from factory at Wichita and Troy to destinations. On TDY July and August 1943 at the Laurinburg-Maxton Army Air Force with 38th Troop Carrier Squadron under Mike Murphy. Participated in demonstrations for General Hap Arnold in August 1943. Transferred to headquarters Army Air Force, aircraft distribution, at Wright-Patterson Army Air Field in early 1944. Made Chief of Distribution for gliders, liaison aircraft and helicopters. Later made Chief of United Nations Unit for distribution of all aircraft to all allies. While at Wright-Patterson flew L-4s, L-5s, PT-19, C-61s, and co-pilot on C-60s, C-53, C-45 and AT-11s. Discharged February 1946 with rank of Major. Stayed in the Reserves and retired from Air Force as Lieutenant Colonel in 1972.

MURPHY, Michael C., Lt. Col, USAF (ret.) Born in Waynestown, Illinois, November 11th, 1906, and grew up on a farm in west Indianapolis and first soloed in 1928. He received his transport license a year later and had already flown 1000 hours. Mike became known as the flying Irishman during the 1930s and became known for his wing walking, parachuting, barnstorming and numerous aerobatic skills. He was the winner of the US professional aerobatic championships three consecutive times and won the Freddy Lund trophy for aerobatics three times in a row, retiring in 1941, when he entered the military service. In one year alone he won the Midwest National, American International Aerobatic Championships, retiring unbeaten upon entering the army.

Mike was a frequent performer at the Cleveland National Air Races, he was the first to take off and land on a moving car, first to take off and land a sea plane on land and was the first to take off and land upside down, he had built a plane with landing gear on the top. In 1937 he formed an air show troupe, the "Linco Aces" for the Marathon Oil Company., and was also under contract with them for night aerial advertising, skywriting, banner towing and stunts.

Between 1939 and 1941 he was an engineering test pilot for Curtis and the Saint Louis aircraft company. He also did test demonstrations work at Ottawa, Canada for Canadian acceptance of US aircraft. When he entered the Army he was assigned to the 50th Troop Carrier Wing. Assigned to cargo glider operations, he headed the department and was instrumental in rephrasing military glider procedures. Mike developed tow tactics for cargo gliders, activated glider schools and established all training curricula. Mike later went to Europe to assist in the planning of the Normandy invasion. In England he retrained troop carrier glider pilots and prepared them for the invasion. He was the glider pilot of glider number one (1) on the first serial into Normandy breaking both legs in landing. Mike left the Air Corps in 1945 when it was and was awarded the Legion of Merit, Purple Heart, Air Metal and other campaign and service awards.

After service Mike became the manager of the aviation department of Marathon Oil company of Findley, OH., and raised its one plane air force to a fleet. Under Mike's direction Marathon Oil set records, flew 26 million consecutive accident-free miles and 104 million safe passenger miles. This is more than any other corporate fleet. In September 1971, Mike received the National Business Aircraft Association's highest honor, the Meritorious Service Award. To Mike, every World War II glider pilot owes a great debt. Without his undying support, the military glider pilot program of

World War II would have surely failed, and he will always be remembered for the pea patch show at Laurinburg -Maxton.

There was a lot more information including the work the ground crew did during all the training. They gave up passes to stay at their jobs and they worked just as hard as the pilots to keep the planes running, the men fed and the housekeeping done. A total summery was also in the histories of the results of the training and refinement of the glider pilot program. Contact the research team if you would like further details.

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