



THE SHORT LIFE OF TC-1

By Merle C. Olmsted

1922 had been a bad year for the Lighter-Than-Air section of the Army Air Service. In it's worst disaster of the post-war years, it had lost the big semi-rigid airship ROMA, along with 34 of it's crew. In the fall of the year, wind and fire had claimed the non-rigid ship C-2 at Brooks Field, leaving only one C class ship, the C-14.

The remaining fleet of airships was a hodge-podge of U.S., British, and French built types, and in number it was pitifully small. There were a pair of navy D Types, one one remaining C Class, the small Goodyear A-4, two British SST types, and the big French built RN-1, often called Zodiac after it's builders. In addition, there were the tiny OA-1 and OB-1, two man training airships, which were soon to be pioneers in aerial crop dusting. The newest of the lot was the Goodyear AC-1.

There was not much money to spend in those years, but the army was able to place orders for several new ships in 1922. One was for an ambitious semi-rigid, the RS-1, under contract with The Goodyear Tire and Rubber Company. This same company was preparing to build two TA (light training) ships, and three of the much larger TC class ships.

The army TC airships were a development of the navy C class which had been built during WWI, and used in the early postwar years, by both the navy and the army. The TC ships were somewhat larger, being of 200,000 cubic feet volume, and they were designed expressly for the use of helium as an inflation gas. The original contract with the builder, on Air Service Order 414-22, called for three ships, TC-1 through TC-3, but eventually this type was built in greater numbers than any other army type.

Contracted for in 1922, TC-1 was, by early March of 1923, nearing completion at Goodyear's Ohio plant. On the 8th of the month, Major General Mason Patrick, Chief of Air Service, advised Scott Field by radio that two qualified pilots and two mechanics should arrive at the contractor's plant by the 15th of March to participate in the flight testing. (a maximum of seven

test flights was called for in the contract).

Although there was some delay due to changes in fuel and water ballast tanks, TC-1 made her first flight at Goodyear's Wingfoot Lake Airfield on 21 March, 1923. The crew, which had arrived from Scott Field for the test program, consisted of Lts. C. A. Kuntz and F. M. McKee, and Sgts. Harry Barnes and Olin Brown. TC-1 was airborne for two hours on her initial flight on 21 March, and although there was minor damage on landing, Lt. James Gluck, Air Service Representative at Goodyear, wired the CAS (Chief of Air Service) that he felt she was "A decided improvement over others of this type."

At this time there were no markings on her envelope or control car to identify her. Early in March, the Air Service had requested that Goodyear place "registration numbers" on the envelopes of the three TC ships and two TA ships then under construction.¹ These numbers were to read "U.S.T.C.1", U.S.T.C.2" etc. Goodyear advised that they would do this without cost to the government, except for TC-1, which was already inflated.

There is no evidence that any TC ship ever carried markings in this exact manner, but TC-1 did acquire identifying marks before her untimely end.

During the trial flights it was determined that TC-1s maximum speed was 60 MPH, and she cruised at a leisurely 47 MPH. The ship had an endurance of about 10 hours.²

After the acceptance of the ship a controversy surfaced with personnel from the 18th Airship Company at Aberdeen Proving Ground, claiming that the ship was fitted out for their purposes and was supposed to be delivered to them.³ The office of CAS soon cleared this up and Clyde Kuntz and his crew took their new airship back to Scott Field in less than 12 hours, reporting no problems.

The mission of Army airships has always been a somewhat nebulous and vague subject. The TC ships were listed as training and reconnaissance airships, and in fact, the T in the designation, indicated its training mission. The C referred to the ships class.⁴

During the 1920s, the Air Service of the U.S. Army was striking out boldly on a series of record making flights which kept it constantly in the public eye, and provided the latter day historian with one of the most colorful and exciting decades in all of aviation history. One such adventure which did not come off was a proposed flight by airship to Panama. The RN-2 Zodiac had been considered and rejected, and before TC-1 had flown discussions were under way to fit her out for the flight.⁵ TC-1s lifespan was very short, however, and the flight was abandoned.

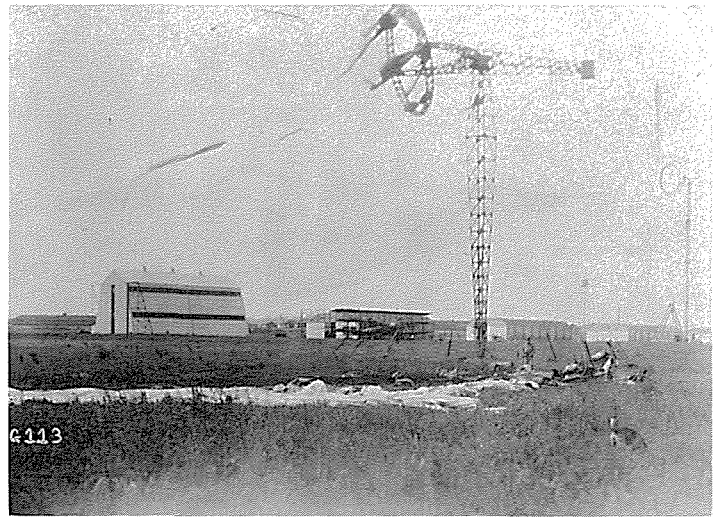
In the spring of 1923, Scott Field had been the principle Army lighter-than-air station for about one year. Most training of LTA pilots and maintenance personnel was conducted there, and TC-1 was badly needed for advanced pilot training. In mid-May, the ship, with three student pilots aboard, plus instructor and engineers, made a cross country flight to Louisville, where the crew observed the Kentucky Derby from their exotic perch above the Derby Grounds. From there the ship continued on to Wilbur Wright Field at Dayton, where she was moored for the first time to an experimental Terry mast for about 15 hours.⁶ The next day, a Sunday, TC-1 returned to Scott Field.

During the calendar year 1922 the Army had lost two hydrogen inflated airships to fire (the ROMA in February and C-2 in October), and there were firm plans to abandon this highly treacherous gas in favor of helium. TC-1 had in fact been designed as a helium ship, but she had never been inflated with it. Hydrogen had been used as a lifting gas during the test phase and when the ship took off in unsettled weather for her last flight on Wednesday, the sixth of June, 1923, her envelope was still inflated with hydrogen.

Not yet two months old, TC-1 was again bound for Wilbur Wright Field. Aboard were two of the original test crew, Lt. Kuntz, in command, and Sgt. Barnes. Also aboard was Lt. Ira Koenig, stu-



Typical army airshipmen of the day - this is the Scott Field crew at Wing-foot Lake for TC-1 trials. Those in flying clothes are, left to right; Lt. Frank McKee, Lt. Clyde Kuntz, Sgt. Harry Barnes, and Sgt. Olin Brown. Identity of the man in civilian clothes is not known. Air Force Museum



The remains of TC-1 at Wilbur Wright Field, 6 June, 1923. The two engines are at lower right. Large aircraft in the background is the Barling bomber. The Terry mast, to which the ship was attempting to moor, can be seen faintly in the background. The mast in the foreground, with strips of fabric flowing from its framework, is the mast which the ship collided with, after breaking free. Author's collection

dent pilots Lts. Courtland Brown, James Jordon and William Flood, Sgt. Fouron Adams, and Pvt. J. Adams. There was one civilian aboard, Mr. A. C. Maranville, an employee of Goodyear.

About the time TC-1 had reached the Illinois/Indiana border, the weather had deteriorated to the point where Lt. Koenig urged a return to Scott Field. Although Koenig was senior to Lt. Kuntz, the latter was in command, and he decided to continue on to Wilbur Wright Field.⁷ Upon arrival there the weather had worsened with wind, rain, and lightning, but the ship was successfully landed, and while held by the handling crew, the fuel tanks were filled, a highly dubious decision, considering the weather.

Nevertheless, the fueling was completed successfully, and most of the crew debarked, leaving Lt. Koenig, Sgt. Barnes, and Mr. Maranville aboard, while an attempt was made to moor the ship to the Terry mast. The cable had been attached to the ship and the winch was drawing it into moored position when, due to a design defect, the cable slipped off a sheave and broke, allowing the ship to drift free, and collide with another mast nearby. At this point the ship caught fire, but the cause is uncertain. Ira Koenig, who was aboard says TC-1 was struck by lightning,⁸ but an Air Service report states it was probably caused by the discharge of static electricity from the ship to the Omaha mast, with which it had collided.⁹ In any case, the end had come for TC-1. Koenig shouted to Sgt. Barnes to pull the rip panel and jump. Both men went over the side a few seconds ahead of Maranville who jumped from an engine outrigger.

Koenig was uninjured, but both Barnes and Maranville suffered broken legs and ankles, the latter's being crushed when the control car fell on him.

On the morning of the 7th, the next day, Major John Paegelow, commander at Scott, sent the following wire to the CAS by Signal Corps telegraphic service:

TC-1 REPORTED BURNED ON MOORING MAST AT FAIRFIELD PERIOD I SENT THE AC-1 THIS MORNING TO BRING BACK AS MANY OF THE CREW AS POSSIBLE PARTICULARS NOT KNOWN PERIOD REPORT WILL BE SUBMITTED AS SOON AS CREW RETURNS PERIOD URGENTLY REQUEST GOODYEAR BE APPROACHED TO CLEAR TC-2 AT EARLIEST POSSIBLE MOMENT OTHERWISE HAVE NO TWO MAN AIR SHIP TO GRADUATE PILOTS BY JUNE TWENTY FIFTH. . . . PAGELOW¹⁰

The accident board found that design defects in the Terry mast

had contributed to the loss of the ship, and also recommended that airships not be allowed to depart their home stations unless the destination field had been notified, and a favorable reply received. This latter would appear to refer to bad weather, availability of handling crew etc.

The board also recommended letters of commendation for Sgt. Barnes and Mr. Maranville.

Hydrogen continued to be the lifting gas for many more years in army balloons, one of which burned from a lightning strike in the late 1930s at Fort Sill, killing its crew.

Its use in Army airships after the loss of TC-1 is uncertain. The older ships, such as the D types, surely continued to use hydrogen, and it is by no means clear whether the forthcoming TC-2 and TC-3 were inflated with hydrogen or helium.

At that time helium was in short supply. The extensive experimental program of WWI had ended, and there was some difficulty in obtaining funds for peacetime production of non-flammable gas.

As far as is known, however, TC-1 was the last Army airship to be lost to fire.

REFERENCES

Memo, Chief of Air Service, to Chief, Property Requirement Section, 13 March 1923.

Letter, Chief of Air Service, to Chief, Information Division, 26 March, 1923. Letters, Major Norman Peek, Engineering Division Representative at Goodyear, to CAS, 29 March 1923 and answer 31 March 1923.

Memo, Chief Property Requirements Section, to Chief, Property Maintenance and Cost Compilation, 6 May 1923.

Letter, CAS, to Chief, Engineering Division, 16 Feb. 1923.

Information copy, letter from J. E. Fechet, Chief Training and War Plans Division to Commander, 19th Airship Company, Langley Field.

Letter, Ira Koenig to author, 4 June, 1960.

Letter, Ira Koenig to author, 4 June, 1960.

Extract from Technical Order No. 34, undated, AF Museum.

As noted in Paegelow's wire, he had sent AC-1 to Wright Field to pick up TC-1's crew, but on arrival there the next day, AC-1's crew found the same highly dangerous conditions that had destroyed TC-1. Unable to moor to the mast, Lts. Flood and Brown were taken aboard for what turned out to be a storm tossed return to Scott Field, where they arrived battered but safe, the next morning.

Unless otherwise noted above, all references are from Record Group 18, National Archives.