

Controlling official observer report for airship speed record attempt by Steve Fossett on 2004/10/27

On September 16th 2004 Art Greenfield, Director, Contest and Records of NAA, asked Daniel Dornheim, secretary general of the Deutscher AeroClub (DAeC), to put Mr. Fossett in touch with the appropriate person in order to have this attempt officially sanctioned by the DAeC.

Daniel Dornheim answered on the same day, that he had passed on the request to Mrs. Marita Krafczyk, President of the Deutscher Freiballonsport-Verband (Ballooning Association) member of the DAeC. Included was the information that Mr. Uwe Schneider (myself) is a member of her board of Directors, and she should be the right person to put Art Greenfield in contact with the appropriate people.

I was contacted by Marita Krafczyk on the same day asking me to be the controlling official observer for the airship speed record attempt by Steve Fossett either personally or to nominate such a person.

On September 20th I asked Christian Michel to be my assistant or, in case I would not be available, to take over the job as controlling official observer.

Preparations before the attempt

Before the attempt I was involved in the discussion between Steve Fossett and Hans Akerstedt from the relevant CIA record working group about how to measure the speed. After some email debates on equipment to use and its accuracy, Hans Akerstedt wrote on September 22nd:

Why make it so complicated?

Observer on board with a stopwatch.

But the altitudes and heights must be recorded by GPS or barograph.

Hans

After that decision I discussed with Steve, Christian and Mr. Weiss, airport director of Friedrichshafen, of how to produce visible marks on the runway for the 1 km distance as well as the 250 m approach on both sides. Steve received clearance from the airport director to use the airport for his record attempt and to lay out marks made of sturdy film on the grass aside the runway.

Christian found some tablecloth made of film that looked ok to us. The material was 1.4 meter wide at a length of 30 meters in bright white. For the attempt itself he cut this film into half to have two lines of 30 meters at a width of 0.7 m. These two lines were used to mark the start and finish line along the runway. For the additional mark of the 250 meters approaches on both sides of the 1000 meter course we used the same material but that time in bright red and only with a length of 10 meters.

Marking the course and approaches

Based on the weather forecast two date ranges were selected for the record attempt. First date range was October 27th/28th and the second range was for November 1st/2nd 2004. I arrived in Friedrichshafen in the late evening of Tuesday October 26th. Christian had already measured and paintmarked 250 + 1000 + 250 m on the runway.

Laying out the start and finish lines

The whole team met at 6:30 am (local, 04:30 UTC) on Wednesday October 27th, 2004 for a briefing. Steve decided to make an attempt and see what the result would be. In case the achieved speed would not have been satisfying another attempt would be made the following morning.

Christian called the follow-me to pick us up to layout the markings along the runway. He, myself and two Zeppelin crewmen drove out to the runway. We laid out the prepared pieces of tablecloth at the positions marked the day before and fixed them with tent pegs and shot bags. We took GPS positions of the footpoints of the marks and I walked with the recording GPS forth and back the marks.

The flight

After all lines were layed out Christian and me returned to the Zeppelin airship. The crew was currently performing the run-up procedures. Christian and I supervised the installation of the GNSS logger in the aircraft. The GNSS logger was switched on and shortly after power on we already had 6 to 7 satellites in sight resulting in a good fix. Christian selected the filename 'FL2710_1' to be used for the upcoming flight which he entered directly in the GNSS logger. The recording was turned on at 06:00 UTC and we verified that it had good reception.

Flight preparations went on and at 06:21:10 UTC the Zeppelin took off with Steve Fossett as PIC, Hans-Paul Stroehle as co-pilot, myself as official observer and Christian Michel as assistant observer on board.

Right after take off we were flying in a gentle turn to the north east of the airport heading for our first run along the course. The approach/departure markings facing north west from the runway were clearly identifiable.

In order to get a good sight onto the markings on the ground we asked the pilots to try to fly along the centreline or even a bit further south allowing us a good view on the runway and the marks.

During each run I filmed the runway with my video camera. I held the camera to a vertical window frame and kept it at that position. I used the picture on the camera monitor together with my direct view to determine when the white 1 km marks left the visible part in the window at the edge of the frame. At that moment I activated the stopwatch. After crossing the finish line Christian immediately noted of the GPS time and the times stopped by Christian and myself between the 1 km marks. Using the GPS time of crossing the finish line we could determine if the time between two runs in opposite directions was less than 10 minutes. Only the turn after the first run took close to 11 minutes invalidating the combination with the previous run.

In total 9 runs were made along the runway (5 heading southwest, 4 heading northeast). After the last run heading southwest the airship was brought back for landing. We touched down at 07:47:06 UTC and then moored to the mast truck. As soon as the airship was on the mast truck it was brought back into the airship hangar and Christian turned off the GNSS logger at 08:02 UTC. Before turning off the logger we watched the number of fixes taken which was displayed throughout the flight on the logger display. More than 7200 fixes were taken matching the number of seconds from the time the recording was started. Christian then removed the logger from the aircraft and took it for later downloading of the track.

Flight evaluation

While I was working on the paper work filling out the necessary record claim forms and verifying the required licenses Christian worked with Hugo Gindele from the Zeppelin company to download the track from the Logger. Please refer to his report for further details.

He used the Zeppelin PC to download the data from the logger with a program from the logger manufacturer. Christian had trained the download of the logger data on the day before. Processing to the data was only on Christians notebook so that the downloaded track could not be modified.

Christian did a number of evaluations of the track log with a program he wrote by himself. The intention of this evaluation was to make ourselves sure that the record attempt was valid (time between runs, altitudes of runs). Of course we will make the program is available in case the record reviewers would like to use it. We also checked the speed determined by the GPS logger against our manual measurement. This showed that our manual measurements were in the same range but resulted in less speed than the GPS track indicates (except for one measurement). But since it was agreed before the attempt to not use GPS measurements but to rely on the manual timing we went forward for the record claim with our manual measurements.

Closing remarks

I am satisfied with the measurements that we both took from the airship gondola to reflect the speed flown with the best accuracy achievable with the given methods. Therefore I can confirm that in my judgement the attempt was made in full accordance with the rules and that the measurements reflect the true performance of the airship during the attempt. All runs were filmed by video and are available on request.



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