

Fact Sheet: Records Confirmation

The official world governing body for certification of aeronautic records is the Fédération Aéronautique Internationale (FAI). All claims for records must be monitored and verified under controlled conditions, meticulously documented and submitted according to the Federation's stringent standards. Here's a rundown of how the records claimed in Felix Baumgartner's test jumps and final jump are submitted for confirmation as World Records.

- The jump must be conducted in the presence of one or more Official Observers from one of the FAI's designated National Airsport Control (NAC) organizations. Because the Red Bull Stratos launches are conducted in the U.S., the controlling NAC is the National Aeronautic Association of the United States (NAA).
- Shortly before Felix suits up, a blank microSD (secure digital) data card is inserted into the high performance GPS data logger in his chest pack. A visible seal is applied and the chest pack cover is replaced with screws.
- An Official Observer from the NAA remains at the launch site until Felix is inside the capsule and launch is complete.
- After the launch, the Official Observer flies in the retrieval helicopter to the landing site. On landing, if all is well, the Official Observer takes possession of the chest pack and maintains possession until the seal has been checked and the data card removed. An initial analysis is made of the data in order to determine if a claim can be made and to formulate a tentative assessment of the performance.
- Within seven days of a record attempt, the FAI must be officially notified that the jump was successful and provided with basic details of the performance.
- Next, a report containing complete details of the attempt must be prepared and submitted to an NAC organization, including any evidence required (such as GPS data). This report may include adjustments to the figures submitted in the original FAI notification as warranted by data analysis. In the case of Red Bull Stratos, in which an Austrian native is jumping, the NAC receiving the report is the Aeroclub of Austria.
- Once the information is certified as a national record, and within 120 days of the record event, the NAC must submit a complete dossier containing the original evidence to the Fédération Aéronautique Internationale headquarters in Lausanne, Switzerland, requesting that the FAI approve the record as a World Record.
- A final review will be completed by the FAI. Once the FAI is satisfied that all of the substantiating requirements have been met, the World Record will be published and entered into the record books.

Sounds complicated, right? But the complexities are even greater for Red Bull Stratos, because the team has to capture data for a type of effort that has never been documented before. In the words of Brian Utley, the mission's Official Observer from the Contest and Records Board of the NAA, "One of the steps the mission team had to take was incorporate measurement technologies that provide accurate and auditable results beyond the range of current human experience."

Brian explains, “It was clear from the beginning that GPS was the only practical technology that would provide the necessary data record in the environment of the jumps. But there were a number of challenges.” Among them was the fact that the stratospheric environment – and Felix’s goal of supersonic speed -- were beyond any previous use of GPS for FAI certification. Further, because of U.S. Department of Defense restrictions for security purposes, most GPS devices don’t support measurement of altitudes above 60,000 feet.

Once the team selected a GPS system, scrupulous testing was carried out to verify its accuracy. Evaluations included twice dropping an unmanned test pod to simulate manned flight from stratospheric altitudes and comparing the results to those of a Doppler radar.

Brian uses this verified system to retrieve Felix’s jump data and, employing software programs that he has created, produces the analysis and reports that are submitted to the NAC and, ultimately, the FAI for “homologation” (certification).

In March 2012, for example, Felix’s test jump set a new record for Vertical Speed (pending confirmation). Preparation of the nine-page report required a month of work, in part to resolve errant GPS data created when Felix was briefly inverted. The overall process can’t be rushed, because the integrity of the data and process is paramount; but when a record IS confirmed, the result is well worth the wait.

BRIAN G. UTLEY, Official Observer

Contest and Records Board of the National Aeronautic Association

As the official observer for the Contest and Records Board of the National Aeronautic Association (NAA), Brian Utley is responsible for certifying that all requirements for a World Record have been satisfied, including analyzing and verifying the data captured during Felix Baumgartner’s jump from the edge of space and submitting it for confirmation by the Fédération Aéronautique Internationale (FAI), the governing organization for aeronautic records worldwide.

A native of the United Kingdom who moved to the United States as a teenager, Brian has lived on a variety of continents during decades of work in aviation and with IBM. One of his particular areas of expertise is evaluating and documenting methods of measuring aeronautic performance, and he has been instrumental in developing the application of a secure, high-speed GPS flight recording system to accurately confirm world records, resulting in an improved recording process. He has been a member of the Contest and Records Board (an independent authority in the administration, documentation and certification of all record attempts sanctioned by the NAA) since 2003.

An avid glider pilot, Brian has served as president of the Soaring Society of America and the Soaring Foundation, and he personally established numerous soaring records in his state of residence, Minnesota – including several that have stood for more than 30 years. In 2011, Brian was inducted into the Minnesota Aviation Hall of Fame and was also awarded the FAI’s Tissandier Diploma for his service to aviation.