



BREAKING A 36 YEAR OLD RECORD

by Stan Buddenbohm with Lee Hines

We are talking about the “Holy Grail” of hand launch glider, Ron Wittman’s unlimited ceiling record of 90 seconds, plus a second flight of 88.6 seconds, set on the 18th February, 1973 at the Tustin Blimp Hangar. The invention of tip launching with a free flight glider, thanks to Mark Bennis and Mick Page, gave tired javelin throwers like me a new lease on life. Bruce Kimball showed us that, and inspired us, when he won the outdoor Nationals several years ago by tip launching.

No record is easy and this one was the toughest for me. The plan took shape. I designed and kitted an approximately 100 sq. in. outdoor glider called DynoMite (AMA has a 100 sq. in. limit on indoor gliders). For about 3 years I have thrown this size model to quietly practice for the record. Ralph Ray and I travelled to the Nationals at Johnson City, TN, in 2008, where I had a flight of 86.5". Then we went to a contest in Moscow, Idaho where my flights were only about 80 seconds. Next up was the 2009 Nationals at Johnson City, TN again. My 82" flight was the longest of the meet but not near the record. My models had a much improved glide; unfortunately they also had killer poor transitions from launch to glide. The glide gave me

hope, my determination did not waver.

Outdoors, transitions from launch to glide seem fine. There are two reasons for that: thermals help and we are less demanding outdoors. If the high throwers have a stall at the top that costs 10 ft. it still seems very high and we overlook it. But indoors a stall that large looks horrible. There is no way to have that and get the record. Could a near perfect transition be had indoors? I believed so and began a serious program to solve the prob-

lem.

During this time Ralph and I began preparing for the next likely venue, Moscow, Idaho. We also wanted to investigate the Tustin Blimp Hangar where Wittman set his record. That was probably the oldest indoor glider record still existing.

No one has been able to fly in the facility for at least 10 years. The rumor was that you could, for \$2,000 a day! Several have tried, receiving the same answer.

We were hoping to get it for a contest around March of 2010. Ralph Ray (past national gas champion, past HLG record holder, current national catapult champion and record holder, a dozen patents, designer of the famous carbon ZIPP bicycle, professional engineer, the list goes on much longer) never gives up. He used his extraordinary telephone skills to get past the usual answer the city of Tustin gives about the Blimp Hangar. We don’t know about our contest proposal, yet, but during the process Ralph found a way to get a small group inside the hangar on short notice. AMA is really helpful with this type of situation and we were able to secure a record trials sanction with only three days notice. Norm Furutani had been helping us throughout the project and stepped in as our Contest Director. Lee Hines volunteered to be the CD if Norm could not attend.

Two new hand launch gliders were ready the day of the event, October 22, 2009, and Ralph had some new Standard Catapults. He was going after Bob DeShields’ 11 year old record, also set in the Hangar. Among the nine attending there were six past and present HLG record holders: Tim Batiuk, Lee Hines, Phedon Tsiknopolous, Ralph Ray, Dick Peterson, and myself. What an honour to be flying in the presence of these champions.

It turned out that I had learned. Both of the new models ended up flying the same good patterns, very predictable with not perfect, but pretty good transitions, much better than I have had indoors to date. My launch was on and Tim Batiuk seemed a bit perplexed. I had to admit to him that I usually hold back a little instead of pushing myself, tired of being injured, but that there was no choice but to go all out now. I believe that Tim had some great 86" flights but struggled to the death with girders.



Fig. 1 (top of the page) Stan Buddenbohm and his IHL Glider “ Holy Grail” at the Tustin Blimp Hangar, Tustin , California, USA.

Fig. 2 (above) The Tustin Blimp Hangar, where the record sessions took place, one of the largest all wood buildings in the world. It was used in the Second World War to house Dirigibles (Blimps)

The World Record Series

It is weird to have plenty of time, timers, and space. When I worked up to 92" in practice, I started going official. The series consist of nine flights, of which the two best are retained.

Series One:

- 1) 94.8"
- 2) 88.1", a small end bit of the tip cracked but I decided to carry on as I had only trimmed this model and everyone was waiting to go to lunch.
- 3) 85.9"
- 4) 88.4"
- 5) 87.0"
- 6) 90.0"
- 7) 88.0"
- 8) 85.2"
- 9) 83.6", I had pulled off more of the cracked tip bits to avoid any dropped parts and it really effected the times

Series Two

These flights were started after lunch, about 3 PM, I waited until the gaggle of tourists had left and the air seemed to settle at the far end, the North end of the hangar. I repaired the tip damaged in earlier attempt, but decided to go with its twin, which I had just trimmed out.

- 1) 94.8"
- 2) 96.8", this was one of the record flights
- 3) 95.4"
- 4) 91.6", something sounded like it cracked
- 5) 0", the nose broke off meaning a dropped part. This plane had never crashed so the nose breaking was just from the throws. I did not repair but switched back to its twin that had the damaged tip I had fixed.
- 6) 89.5", my repair held but the end of the tip cracked a different place. These were not structural breaks but were from the fragile tip being crunched in my palm during the spin. I just carried on.
- 7) 83.0"
- 8) 85.1"
- 9) 97.6", I decided the damaged tip just could not glide well enough and stopped to quickly repair the nose of the other model with some carbon splices. The result was the second flight of the record set.

Series Three:

Still feeling feisty I wanted to try again.

- 1) 94.2"
- 2) 95.5"
- 3) 93.4"
- 4) 85.0", felt like something cracked but I could not see what.
- 5) A few seconds. Something really cracked and the model went wild to the right into the girders.
- 6) 57", used an older model which stalled to the ground.
- 7) 83.3", light stalls with the same model
- 8) 89.6", switched back to the model with the broken tip
- 9) 90.0", and called it a day.

The record was broken right away in the first series, but some cracks in the tip of the left wing made the times less than the best they might have been, so that repairs were made for the following two series. The best two flights in a series were 96.8 seconds and

97.6". During my three series of nine official attempts I had many flights over 90". Lee Hines was of the opinion that the best launches were at or just under the catwalks, that is reaching about 130 ft, although in my estimate, I think I was reaching about 100 ft. Hines and others witness that nearly all the launches were acceptable and well placed, never a bad one in about 40 flights, something they considered quite extraordinary.

All flights weren't good but that was due to something cracking. I actually broke the 7" x 3/16" x 5/8" nose off on launch, it had never crashed. It is hard to understand how violent are the forces on these gliders. That flight was funny, the nose went about 20 to 30 ft to the right and the model went up something over 50 ft. It fluttered down pretty much like a parachute, rocking a little.

I was so pleased that my body responded, I don't think I had a bad launch. At least 40 full throttle throws left me sore for a few days, but not injured!

The Catapult records

Next day, Friday, Oct 30, 2009, we went back to the hangar, to now try for Indoor Catapult Glider (ICLG) records.

With my Johnson City USIC catapult gliders, I was getting about same times as at that venue. That left it up to Ralph to concentrate on his assault on Bob DeShields' Standard Class CLG record of 205.4", set on February 2nd, 1997.

Ralph carefully and methodically worked his trim and launches such that his little missile was clearing the 130 feet high catwalks by 10-15 ft! He had two most amazing launches which unfortunately did not count, as they landed on the catwalk half circle, after perfect recoveries. Then, somehow, after a tense moment, the glider came off! The first time it glided down with no damage, while the second time it struck the wall and needed some CA body repairs. Our collective looks of amazement were not documented, so you must take my word for that. Think of the odds that even one time landing on catwalk would come flying down and not become a fixture and plaything for the hangar ghosts...but twice!!

Ralph got several excellent flights over the record



Fig. 3 Stan and Ray with their models at the Tustin hangar, the broken left wing in Stan's model documents the great forces acting at launch.



Fig. 4 Stan Buddenbohm (L) and Ralph Ray , with "Holy Grail" IHLG on the table.

times, his best two being 104.4" and 104.5"

His set of nine flights were: 101.8", 89.9" (*Perhaps this is the one that slid on and off the catwalk*), 97.1", 100.6", 104.4", 104.5", 102.9", 102.6", 71" (*the 2nd flight that slid off the catwalk*).

For this hard earned total score of 208.9" Ralph was launching better than anyone I have ever seen, had perfect transitions and ultimately beat Bobby DeShield's twelve-year-old record by 3.4".

We were indeed two happy record setters when we went to lunch afterwards. Well, thanks again to all that attended, those that gave me good advice and encouragement. And special thanks to Ralph for his skills in getting us a shot in the famous Tustin Blimp Hangar. Let's hope our contest proposal is accepted and all the flyers that want to can give it a try.

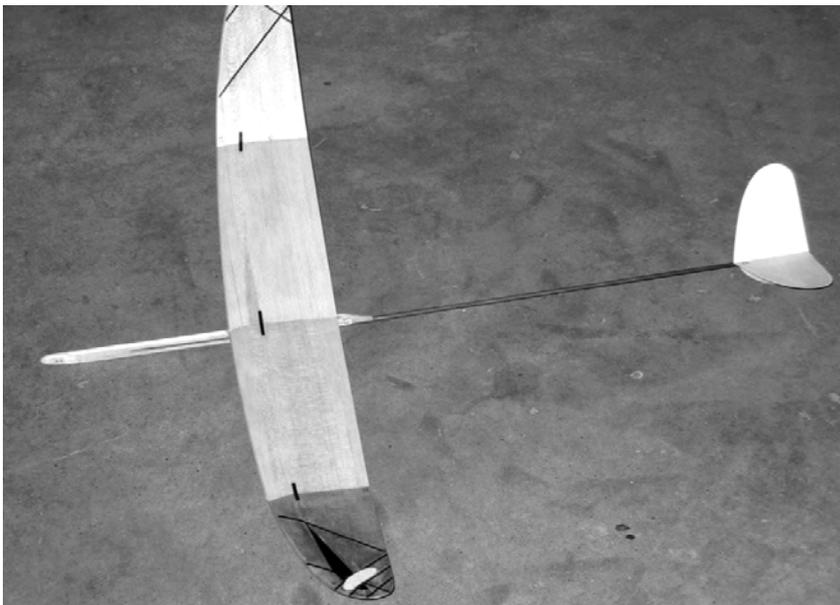


Fig. 5 A view of the "Holy Grail" IHLG designed and built by Stan Buddenbohm.

Epilogue, Flying on November 22, 2009

(We add this additional record from reports in the Internet. Ed)

Three weeks later, on November 22, 2009 at another session of flying at the Tustin facility, Stan able to set two new records. The information came out first from a posting by Norm Furutani on the Hip Pocket Aeronautics website.

Timers for these flights agreed, for the most part, within a few hundredths of a second.

Standard CLG Cat 4

- | | | |
|-------------|-------------|----------------|
| 1). 109.3" | 4). 111.8" | 7). 112.1" |
| 2). 110.8" | 5). 88.7" | 8). Hit rafter |
| 3). 111.1"* | 6). 112.2"* | 9). Hit rafter |

Hand Launch Glider Cat 4

- | | | |
|-----------|-------------|-----------|
| 1). 98.8" | 4). 101.0"* | 7). 99.4" |
| 2). 94.5" | 5). 92.5" | 8). 96.6" |
| 3). 98.8" | 6). 103.8"* | 9). 99.3" |

(the two highest flight times are marked *)

Other observers recorded their reactions to this very special session. Joe Mekina put together a web page to share the photos taken by Bucky Servaitis and Lee Hines, and Jim Buxton got the task of editing up the video and getting it on You Tube. Here is a link to the page:

<http://www.picturejoe.com/tustin/>

Bucky Servaites is quoted on the Joe Mekina website:

"Since I was an observer at the record trials yesterday in Santa Ana and am still really pumped, I felt I would share some of my thoughts concerning Stan's performance:

For some reason I didn't expect Stan to do much with this event since he already claimed the record some months previous. He chucked up a few test flights doing 80" or so each time with little effort. Stan then started an official series and times started in the mid 90"s and went up from there. The 99" flights became ho-hum and everyone was rooting him on to eliminate the one or two small stalls at the top. Stan continued to make small adjustments, less tip weight, a little more skew to tighten turn, etc. All of the time he announced what he was doing. The launches and flight pattern were so consistent that the total time could almost be judged as to where the model was landing in comparison to the middle line in the concrete floor. The 103.8" flight landed way beyond the middle line and has been recorded on video".

Plans Available

The 24" x 36" full scale detailed plan of the "Holy Grail" record setting indoor HLG is available. Along with the plan, Stan has written a three-page article with more information about indoor TLG - nothing is held back. The plan has been submitted to the NFFS for publication, but copies are available: US Priority Mail in a tube: \$35, First Class envelope: \$32, Outside US Airmail envelope: \$33, Outside US Priority Mail tube: \$50.

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