

25th FAI F3A World Championships – Sauce Viejo, Argentina

Canada F3A Team Technical Report – by Dave Reaville

The following report was prepared for the Model Aeronautics Association of Canada on November 26th, 2007.

The Canadian Team, supported and sponsored in part by MAAC, participated in the 25th World Championships this past week. We had a very safe and successful trip to Argentina and represented our country and fellow RC flyers to the best of our ability. It was without doubt the highlight of my personal RC experience and one that I will never forget.

We saw many technological items of interest, not only to us personally but to many other enthusiasts of the sport. Listed below are just a few of them.

One of the first planes of interest was spotted at the Galvez practice site prior to the start of the event. The Italian team member Sabastiano Silvestri's Angel S (Shadow) was powered by a Hacker motor, Flight Power 5350's and driving a unique counter rotating carbon fiber prop. The plane performed very well and had a pronounced audible tone when in flight. It was not overly noisy but definitely different than the regular prop noise footprint we are accustomed too. The most interesting flight characteristic was the very slow down line breaking that the plane exhibited. This plane, under the control of Sabastiano went on to place 5th in the finals.



It featured a gearbox design by Micheal Ramel (one of the jury members). Props were 22" in diameter and the gearbox was designed such that each prop supported equal load, but not necessarily equal rpm.



Team Canada also had the opportunity to practice with the Japanese F3A Team the next day at Galvez. As this is one of the top F3A teams present, we were treated to some very good flying along with the chance to see some very innovative aircraft design and accessories. Tesuo Onda's YS 170 powered Narlar biplane drew the largest crowd with its "snap together" assembly. Their planes are absolutely immaculate and quite frankly, the envy of all who had a close look. Here is a shot of the clips that hold the bottom wing to the fuse. These are simply pulled back to attach and release.





Here is an inside shot of the clip mechanism.

The top wing is secured with two wing mounted cabins (each with a lock pin) and a center mount that allows the top wing to be quickly detached.



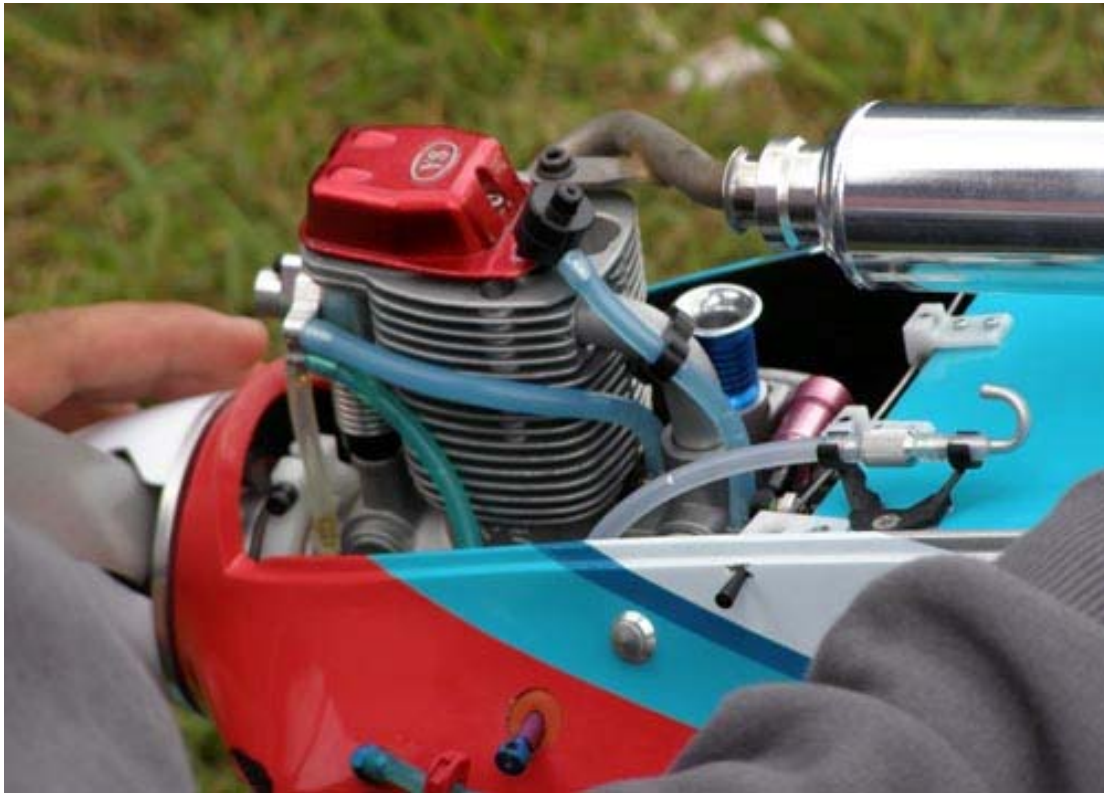
The cabins then swing up and are held in place for easy storage in the wing bag. A very well thought out and functional design.



The center pylon bracket is equipped with two attachment pins that capture the wing as it is slid forward into place. The nylon clip is then snapped into the locked position (as shown here). This locks the wing in place and provides a strong rigid mounting.



The Narlar also sported an immaculate engine compartment with the YS 170 Dingo and Asano exhaust set up. It featured some custom venture applications as well as an exotic looking venting/one way valve apparatus and mount. Easy to use chin mounting locks as well.



Koji Suzuki's OS 200 powered Zeque exhibited a very clean installation of the exhaust system pictured below. The 4 strokes do create a lot of vibration so having a way to dampen it is a must for increased longevity of equipment.



Suzuki's OS 200 4 stroke also has quite a long intake attachment compared to other setups I have seen. This could help reduce intake noise and give a better, more consistent needle setting.



The OS powered Mid-Rex flown by Suzuki is a unique design, very thin fuse like a profile plane, and the sides of the fuse were angled to form an A like shape when looked at from the front view.



Another innovation (actually started by our own team member Chad Northeast) was the expansion of the trailing edge of the rudder. Chad experimented by adding strips of balsa to widen the trailing edge profile of his Enigma's several years ago. This caused an increase in drag and gave the plane a more solid, locked in feel and appearance in flight. People obviously noticed and we observed three examples ... two are shown here with the first being a rather large application on Gerhard Mayr's Daggrom airframe. As you can see by the picture it's pretty wide.



Not to be outdone Quique Somenzini also had his own adjustable rudder trailing edge device on his two Oxai Euphorias. It was an even more elaborate application of this technology.



To provide adjustability, these two carbon fiber strips are drilled, slotted and overlaid, then attached to the trailing edge of the rudder. Depending on conditions, the mounting screws are turned out, the strips spread apart (to widened) and then retighten in the desired position. He won the championship with this setup so look for variations of this application on other airframes shortly

We also saw numerous battery mounting methods on various electric airplanes, one of which was the plate mounted pack. This allowed the battery set, mounted on a special plate, to be quickly changed out with limited fuss. Here is a picture of several sets ready for use.



We witnessed the use of several different battery brands, all with good success. The battery technology has grown considerable in the past few years and with the reduced size of the preliminary and finals schedules going into 2008-09 we see no reason to have a decline in their application due to weight issues. There is also a 50 gram additional allowance coming into effect next year.

Flight Power 5350's were used by Great Britain (as well as 4270's in a Twister!), the Italian team, Portugal and by myself to name just a few.

Thunder Power 5300 Extremes were used by Chad Northeast & Dezso Vaghy; with Chad going with the 5000 V2's for the semi finals. US team members Jason Shulman and Andrew Jesky also used the 5000 V2's along with Irish flyer Ray Keane.

Poly Quest 5000 packs were used by the Korean team.

The engines Chad observed in use were about a 60/40 split glow to electric, maybe 50/50. The 2 strokes had no power that he saw with YS easily the dominant 4 stroke with almost near exclusivity among glow engines. Hacker is the dominant electric however we both feel the Plettenberg's demonstrated equal if not better performance. Neither power plant was at a disadvantage in the strong winds.

Engines used were:

Plettenberg - Canada, Korea, Great Britain and Belgium

Hacker – USA, Portugal, Ireland, Great Britain, Italy, Norway, San Marino

OS - Suriname, Japan, Brazil and Australia

YS – USA, Japan, Venezuela, Russia, Columbia, Argentina, Ireland, Ecuador Thailand and Australia.

Radio's used were flown on the 35, 40 and 72 MHz bands with one single 2.4 GHz in use. I observed many MZ-14's, 9Z's and JR 10X's (one 12X on 2.4 GHz), and one Graupner designed MC24 (JR) with a possible 2.4 module.

Overall Futaba appears to be the most used radio with the 14mz being the most popular by far although it is a close split between Futaba to JR.

On behalf of the entire team we would like to thank MAAC for its continued support and we look forward to Portugal in 2009!

