Radio Controlled Soaring Digest

October 2009 Vol. 26, No. 10

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Front cover: Zimmy Zimmerman's ASW 27, 4.5 Meter, 7.5 Kg full-house locally built scale glider and specially built launch ramp. With 300 meters of line on a standard F3B winch, the model can reach 130m to 140m launch height with this launching technique. Photo by Piet Rheeders.
Panasonic DMC-FZ50, ISO 200, 1/640 sec., f75.6, 66mm

Back cover: The September issue cover sported three tip tank equipped Impalas. There must be something sexy about tip tanks because Derek Robertson of Skye fame (August issue cover), has just sent this photo of his latest PSS creation. Eighteen months of messing about and this is the result awaiting its maiden flight. Hard to believe all that work simply gets chucked off a cliff.

R/C Soaring Digest

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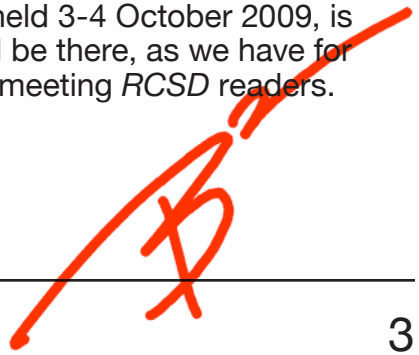
In the Air

Stan Hall, the designer of the Cherokee II (a walk-around of N4653T was presented in the October 2007 issue of *RCSD*), passed away on September 7th. Stan was an engineer for four major aircraft manufacturers, including Northrop (where he worked on the B-35 and YB-49 programs, in addition to the Snark) and Lockheed (where he conceived and patented the YO-3A Quiet Reconnaissance airplane which saw service in Vietnam). He was an Honorary Life Member of the Sailplane Homebuilders Association, now the Experimental Soaring Association. Stan was a rather prolific writer, and the Experimental Soaring Association has both volumes of "The Collected Works of Stan Hall" available from the ESA on-line store <http://esoaring.com/stan_hall_collected_works.htm>.

In addition to the background of the contents page, this issue features a number of cloud images from various parts of the world. The clouds in our area seem to be different than in years past - strange formations, odd lighting, etc. - but then it may be that we're simply observing them more frequently. If that is the case, it would seem as though a few *RCSD* readers are observing clouds more frequently as well. At any rate, we hope you enjoy the photos.

As we write this, we noticed the main CVRC web page announcement <http://www.cvrcsoaring.com/>. Registration for the 36th Fall Soaring Festival, to be held 3-4 October 2009, is closed... With over 300 entries! We'll be there, as we have for the last few years. and always enjoy meeting *RCSD* readers.

Time to build another sailplane!



On the cover...

Zimmy Zimmerman's ASW 27, 4.5 Meter, 7.5 Kg full-house locally built scale glider and specially built launch ramp.

With 300 meters of line on a standard F3B winch, the model can reach 130m to 140m launch height with this launching technique. ASW 27 launch sequence (Zimmy on the left and Stephan on the right)

Photos by Piet Rheeders on the BERG field, Gauteng South Africa, Saturday 5 September 2009.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Uncle Sydney's gossip column

2009 F3J European Championships - Poland

Primoz Rizner becomes FAI Eurochamp at last!

East Europeans dominate in Wloclavek

Sydney Lenssen, sydney.lenssen@virgin.net

The seventh Eurochamps in Poland 2009 saw the eastern European countries come to the fore, showing the western countries how to cope with windy and tricky conditions in which even the best pilots sometimes had to walk a kilometre and more to retrieve their models.

Everyone was pleased to see Primoz Rizner become the seventh Eurochampion, a well deserved win after coming close so many times. Primoz was regarded widely as the one top pilot never to have won an FAI championship: 2009 is his year!

Wloclavek's results promise far wider competition for next year's world champs in France, which should please all F3J fans. Be warned all you front-runners struggling to be chosen for your country's team for France - it will be tougher!

Slovakia will have returned home happiest with Juro Adamek taking third place in the seniors, Jan Ivancik and Juraj Bartek helping to take second place in senior teams. Jan Littva took first place among the juniors with a higher

New Eurochamp Primoz Rizner with his NAN Models Explorer and flanked by second placed Pavel Kristof from the Czech Republic and Juro Adamek from Slovakia.

score than the senior champion. His flyoff dropped score from six was 982.5! He was joined by Daniel Demecko and Peter Capko to take third place in junior teams. Team manager Patrik Michnac could not believe his team's success and spent the banquet eating one-handed and cuddling the big silver/gold team trophy.

Equally happy, if not more so, was Pavel Prhavc, team manager for Slovenia, who led Primoz Rizner, Bojan Gegric and his son Primoz Prhavc to win senior teams. The Slovenian junior team of Marc Jure, Robert Ratiac and Metod Meolic came seventh in junior team results, showing the promise that the next Eurochamps to be held in Bovec 2011 of being much better.

Allow me to praise Primoz Rizner again as the new European champion. I have never seen a champion so popular. A shy man, absolutely dedicated to F3J, he has been a champion in the making seemingly forever, each year collecting prize and trophy in the Eurotour events, but not the big one. I predicted he would take FAI crowns in 2005 and 2006, and then gave up naming him as favourite because he felt it made him nervous to be tipped as favourite for the event.

The Czech Republic did well too, but that was no surprise. Their pilots have always thrived in previous championships, and the country is still home for more moulded model manufacturers than anywhere. Without top pilots to show how models perform and can be improved, sales suffer.

Pavel Kristof came second in the senior flyoffs and Jiri Duchan, second in Turkey's world champs, had to be content with fifth place in Poland. Third member of the Czech team was Jaroslav Vostrel and they took third place in senior teams. Seventh place in the junior flyoffs went to Jakub Lzicar from Czechia and their juniors came second in the team contest.

Other eastern European countries to do well and exceed expectations were Croatia who only just missed third place

Top teams on the podium, all from eastern Europe, first Slovenia, second Slovakia and third Czechia. Fourth team was Croatia, fifth Lithuania and sixth Ukraine, again all eastern European countries.

in senior teams. Lithuania had Ricardas Siumbrys in sixth place of the senior flyoff and came fifth in the teams. Ukraine's Alexender Petrenko was in the senior flyoffs, the first time ever they have gained a flyoff place. Russia had its junior Alexander Dibrov in the flyoffs and managed eighth place in the senior teams and ninth place in the juniors.

So what happened to the established originators of F3J from western Europe who have dominated the European if not the World Championships over the past 12 years? Sole consolation

perhaps were the junior team winners from Germany, Sebastian Manhardt, Johannes Weber and Timo Ganser.

Sebastian almost became the junior champion, but an early launch in the fifth flyoff round spoiled his chance. A brickbat for him sadly: he is a newcomer to F3J and a gifted pilot, the winning junior in Bulgaria and fourth place among seniors and juniors at Hollandglide the weekend after Poland. He will surely become a champion, so more is the pity that he showed his unsporting side when the protest against the early launch was rejected.

Jo Grini and Karl Hinsch were the only senior pilots from the west to make the flyoff, with Jojo in fourth place. Highest western senior team was the Netherlands in seventh place just beating Russia and also Germany in ninth place - yes repeat, 9th place!!

Great Britain crept into 11th position, deeply disappointing for the identical team which gelled so well in Trnava two years before and travelled to Wloclavek in high hopes, only to see team spirits degenerate. No country, certainly not the UK, should underestimate how important it is for all pilots and helpers to be united and compatible. They must share their determination and all activities during preparation and until the end of contest.

Italy flew the western flag in juniors with Carlo and Marco Gallizia taking fourth and fifth flyoffs places. Lesley van der Laan from Holland, who I fancied to become junior champion for the second time, only managed ninth place. Italy and France also did well in the junior teams in fourth and sixth places.

Bouquets for this year's Eurochamps

First bouquet goes to Lionel Fournier from France who was leading the preliminary rounds after eight of the 10 rounds flown. It would have been happily appropriate for France to win a podium place with the next world champs set for Dole-Tavaux in the Jura region in 2010. But the ninth round winds bit him, scoring less than 500 points, and dropping 18 places. F3J can be unforgiving.

Second bouquet goes to Croatia's Damir Kmoch who has been on the brink of flyoffs so often in the past and this time topped the preliminary rounds. He was so pleased, but warned me, "I've been here before and only the flyoffs count, so I must calm down." Sadly he ended up next to last in ninth position.

No flyoff pilot worked harder this year than Jo Grini who was Norway's team manager and also had his hands full spotting for his son Fredrik. This junior, championship flying for the first time, did

Top junior Jan Littva from Slovakia delighted to find himself junior European champion after six flyoff rounds where the top three juniors all scored higher than the seniors managed in their flyoffs.

well to come in 30th and also scored one 1,000 round. A talent for the future if he retains his enthusiasm.

The biggest bouquet is deserved by the Polish organisers who made the most of the fantastic facilities of Kruszyn Airfield just outside Wloclavek, a venue perfect for F3J competitions and scene of many previous aeromodelling contests. Permanent hangars gave shelter for models and contestants, an indoor and outdoor cafe kept up a supply of pizzas and cold beers, and the grass stretched long distances in every direction with few trees to soar.

The Poles were slightly anxious about running their first big F3J event and brought in CD Serdar Sualp from Turkey and Martin Kordic, line manager from Croatia, to manage the contest. In the event, the organisation ran smoothly thanks to a team of keen Polish modellers and Aleksandra Hans, the interpreter, who mastered everyone's names with a smile. Congratulations to everyone involved.

How many preliminary rounds make a championship?

Before the champs started in the weeks of preparation, it was planned to have 15 preliminary rounds plus two flyoffs in the five days allotted. This was quickly revised to two practice rounds for all systems to be tested, followed by 12 official preliminary rounds for both seniors and juniors. Then the contest would be decided with six flyoff rounds for seniors and juniors, allowing one dropped score.

In the week before the contest, weather forecasts promised that time would be lost to rain, and indeed the second day, Tuesday, saw only the second round of seniors flown before flying was halted for the day. Rain also interrupted a couple of times for an hour or so in the following days.

Far more influential were the strong winds that tended to blow from late morning until early evening most days. Some unkind contestants reckoned that we were enjoying typical English weather. I can assure them that it wasn't.

Strong winds are common in the UK and most places too. But I have not experienced such a prolonged period of rapid gusts which could spring up within seconds without warning, fierce enough to take you a full kilometre downwind if you took two turns, and developing fast enough to leave you no time to adjust ballast. I didn't count how many models landed out over the five days, but there were dozens, more than any other top level contest I have witnessed. Some pilots - no names - landed out with their second models after relaunching.

Maybe it was this factor which allowed the more neighbouring countries to thrive. But that's the only excuse for the poor results of so many pilots who were expected to do well.

Lost time to rain meant that only ten rounds were flown. My experience is that even at the most important competitions, flyoff places are mostly decided after six rounds and a dropped score. Let's check what happened in Wloclavek.

After six rounds, if we had gone into flyoffs, the places would have gone to Ricardas Siumbrys of Lithuania as top, Lionel Fournier, Arijan Hucaljuk of Croatia, Karl Hinsch, Damir Kmoch, Primoz Rizner, Jiri Duchan, Bojan Gegric of Slovenia, Alekender Petrenko of Ukraine and Jo Grini.

When the preliminary rounds were halted after ten rounds - a majority decision by the team managers guided by contest director Serdar Sualp, seven of the ten leading pilots after six rounds were still there, with Lionel Fournier, Arijan Hucaljuk and Bojan Gegric dropping out to be replaced by Primoz Prhavc, Pavel Kristof from Czechia and Juro Adamek from Slovakia.

I see no definitive lesson to be learned or the need for any change in approach. What is certain is that if any future championship has to be curtailed by

Line up of senior pilots, helpers and towers and models just before the first of six flyoff rounds, late afternoon and early morning next day. Contest organisers also muscled in!

weather or unforeseen circumstances, then it does not matter too much after six rounds. More importantly, to find the most consistent champion pilot at least six flyoff rounds should be contested. As in Poland, these flyoff rounds are best run over two separate days, early morning and late evening if possible. Do not make the 15 minute contest easy!

How did the flyoff naming competition go?

Not so many entrants this year for the flyoff bets, and with so many hot favourites sliding down the leader board, I am pleased to say that Uncle Sydney was the winner, naming seven of the ten flyoff places. That involves a bit of cheating since I named Primoz Rizner or Primoz Prhavc to win a place and in the event, both did. Even so I genuinely named six.

Second, third and fourth places went to Philip Kolb - who felt free to enter since he was not competing - Jo Grini and Luc Bocquet, all of whom named four flyoff places. Not so easy this year, and promising to be far harder next time!

I should also apologise for two mistakes in my preview gossip. Sebastian Feigl let me down, not coming close to retaining his title as predicted. Also among the Polish team juniors, I should have reported that Patryk Olszewski would fly and I got his name completely mixed up. Sorry and thanks to Marek Malinowski for spotting my error.

Time to change new rules for old!

In December this year the CIAM bureau meeting will decide what should be on the agenda for next April's FAI meeting in Lausanne. This time F3J rule changes are possible, and if you want to see any changes, the best bet is to get your national body to submit draft proposals with the correct wording and the reasoning to justify change. In UK this needs to go to BMFA before the end of September.

Only one change seems likely to be approved at this stage, and that concerns the penalties for flying lower than three metres over the safety corridor and designated safety areas.

Tomas Bartovsky, CIAM's RC-soaring committee chairman, became convinced of the need for rule change last year at the world champs in Turkey. All pilots there will remember the slope-soaring created by the super marquees and a line of trees just behind them, and several pilots saved their scores by cruising up and down, sometimes for half the slot or more, sometimes more than once.

An arbitrary rule was announced before the contest started that pilots flying below treetop level when sighted from the safety corridor by the line managers would be penalised unless they came in straight for a landing. Several 100 point penalties were imposed, and several pilots got away without penalty. The fact is that no contest director or line judge can truly measure how high the model is flying above a tent or anyone's head.

Current thinking is that F3J rules should change so that in future no measurement of height clearance is required. Instead the penalties for landing in the safety area or corridor will be severe enough to deter any pilot from risking it. And the penalty for actually hitting a person or object will be even higher.

Actual wording has yet to be decided, and there is likely to be a debate about the severity of penalty. Landing in the corridor, even with a wing tip, is likely to cost 300 or 500 points deducted from the pilot's final score. Touching or hitting a person could mean a zero for that round, or a zero for the next two rounds, or disqualification. Such rules will certainly make any pilot think twice even in the heat of competition.

CIAM would welcome comments and/or your views on rule changes, and Tomas Bartovsky urges national committees to bring forward their proposals.

Uncle Sydney and Uncle Hal's gossip column

2010 F3J World Championships - France

Pre-preview for next year's FAI world championships

Many pilots set to repeat their challenges

Sydney Lenssen, sydney.lenssen@virgin.net

It is far too early to start forecasting winners for next year's F3J world championships to be held in Dole-Tavaux in the Jura region of France. But from team selections over recent weeks, the stage is already set for the most nail-biting competition ever. One easy prediction for wine lovers, the local lubricants will provide solace for those who don't make the podium!

Few countries require their F3J pilots to travel further to win team places than the United States of America, and from 5-7 September - last weekend - 31 seniors and 4 juniors competed for honour and privilege in Denver in what amounts to a "do-or-die" contest, you make it and there's no second chance!

The US team for France next year will be Cody Remington, Daryl Perkins and Richard Burnoski, all the same as last year in Turkey. Brendon Beardsley is again in the junior team, joined this time by Connor Laurel and Michael Knight. I don't know who will be team manager, but surely nobody is better qualified than Jim Monaco who led the organisation of the Colorado selection contest, also placed 17th, and has held the manager responsibility for the last two WCs.

The German team for France holds little surprise with Philip Kolb, Karl Hinsch and Tobias Lammlein who clinched their places last weekend too in the German Eurotour event at Ludwigsfelde in stormy weather. Their juniors will be Manuel Reinecke, Timo Ganser and Max Finke who is only 11 years old!

Special congratulations are due to Philip Kolb because he won to bring his total of 2009 Eurotour wins to six, out of 14

contests so far, with one more to go next weekend in Bovec. Can he keep up this form in 2010?

Australian places are already determined after their qualification process, which takes the form of using the duration scores from the F3B contest at Jerilderie. We shall see Carl Strautins, Jim Houdalakis and David Hobby. Carl competed at Hollandglide and Trnava in recent weeks to get more European exposure so he should be hotter than ever. David Hobby had to be lucky because he only won sixth place and those above him didn't choose to join the team.

Norway's competitors are set with seniors Erik Morgan, Per Pedersen who was a helper this year in Poland and Jo Grini as ever. Juniors will be Stein Marius Pedersen and Jojo's son Fredrik, both having cut their teeth in Poland.

News from UK is still uncertain with one more league event to come and two of the places still up for grabs. Same applies in Holland and France the host country. Michelle Goodrum from South Africa is pleased that one more trial contest is still to come having enjoyed a busy summer of F3B in Czechia, and they should know the team in about three weeks.

Daryl Perkins' Icon

New Zealand are set to pick their team next weekend, and many will be hoping that Joe Wurts wins a chance to represent his adopted country for the first time in F3J. I am rooting for Sven Zaalberg, an old flying mate of mine, to make sure he gets to France next year too.

Not much news as yet from the eastern European countries who did so well in Poland's Eurochamps, but I am confident that their successes in Wloclawek will provide a new impetus and make the competition even hotter.

Prior to the US team selection contest I contacted the Remington family in Louisville Colorado, knowing that both mum and dad of Cody were volunteer timekeepers. I requested notes and trivia for my gossip column, not recognising that in Hal Remington I have a rival. I cannot do better than to copy most of what he sent.

Left: Seeming near collisions during tow were frequent.

Right: With relaunches always looming, the guys doing the towing had to be both strong and quick in addition to having the endurance to perform the task 80 or more times during the three day contest. Trevor Stubbs and Jim Laurel tow for the Seattle team in this photo. Dave Kalamen also served as tow man for team, in addition to being a pilot in the competition.

Above: Mike Lee's Shadow after a collision while in the landing approach.

Two of Michael "Chainsaw" Knight's Supras in the pit area.

Brendon Beardsley gives the F3J kick during a post-contest practice session on Sunday while father Dave holds tension.

Uncle Hal's gossip column

Hal Remington

The US team selections were held over three days with the 35 pilots in ten teams. Juniors and seniors flew together but their scores were tallied separately. The format for the contest did not include flyoffs and all pilots flew for all three days. First two days were all 10 minute rounds and a total of 13 rounds were flown. The final day was all 15 minute rounds and five of these were flown. The scores were combined over the three days with one throw out from the 10 minute rounds and one from the 15 minute rounds.

The planes competing were mostly Espada RLs and Rs, Supras, Orcas, Icon 2s, Pike Perfects, a few Xplorers and a couple of Aspires. More than half the competitors were using 2.4 GHz radio systems.

Over the three days the weather conditions were pleasant, fairly typical for Colorado conditions at an altitude of 5,280 feet, but the thin air gave some challenging flying conditions. Winds were relatively light and the lift was very light in the early morning. As the day progressed there were areas of huge lift along with huge sink. Going the wrong way often meant relaunching or landing out, which quite a number experienced.

End of day two saw the usual suspects having graduated to the top ten positions, namely Daryl Perkins, Richard Burnoski, Cody Remington, Josh Glaab, Skip Miller, Mike Lee, Ben Clerx, Jeffrey Walter, Thomas Cooke and Jon Padilla. Top five positions were really close so everyone had to remain on their toes - or with fingers twitching. Daryl and Richard had flown nearly perfect rounds and didn't need a throw out. Cody and Skip had one bad score each with Josh having two minor hits, so all of them needed perfect scores for the remainder to avoid dropping out of contention.

Day three dawned with challenging morning conditions and 15 minute flights unlikely. Those leaders unlucky enough to draw these were Mike Lee, Jon Padilla and Cody Remington. Cody managed to eek out 13 mins 45 secs and 99 landing points to make his 1,000. Through round 16 the top five continued to post great flights with no serious losses, the lowest score being 995.87.

At that point in the final day it became clear that five 15 minute rounds would be flown, which in the rules meant that instead of only one throw out for the 16 rounds, a second throw out would apply for the 15 minute rounds. Because of that it wasn't clear on the posted scores what the true order for the five top scores was. The battle for the top three places was still unclear and any of the top five had a chance.

End of round 17 made the top two spots a little clearer and Josh Glaab took a hit which would be a throw out. Only a major hit among the top pilots would change the ultimate outcome. In round 18 Cody took a short tow and posted 14 minutes 58.22 plus a 99 landing, topping both Glaab and Perkins.

The penultimate round saw Skip Miller against Richard Burnoski and clear lift was indicated to the side of the field. Snag was it was the opposite side to Skip's launch spot. He took a short tow and reached the lift at 50 ft high and nursed it to win the round, Richard managing to overfly. It was exciting, but in the end didn't matter because the final throw outs settled the order.

The junior team with two newcomers seem set to gain plenty of practice with Brendon because all three come from Seattle in Washington.

I asked Hal and Sue for a few quick notes on what happened in Denver. What I got was a super exciting account of the drama, the only embarrassment - which must have made the writing more difficult - was that Cody managed to top the contest and in the process beat master pilot Daryl Perkins. All six pilots will be the teams to beat next year!

— Sydney Lenssen

Weird cloud formation photographed at the Lismore Glide-A-Fair competition, Northern New South Wales, Australia, by Brenton Lohrisch on 22 August 2009. Nikon D70, ISO 200, 1/500 sec., f11, 70mm

A LITTLE MORE COMPLETE HISTORY OF RC RADIOS

by Pete Carr WW3O, wb3bqo@yahoo.com

Up until now the focus of this series has been on store-bought radios.

Before they were available and before the Citizens Band 27.25 MHz band was assigned for R/C use by the FCC, Hams built their own gear. An FCC license was required to use these frequencies.

Much of the early development work in R/C began in garage and basement workshops. For example, Walt Good and his brother were Hams who brought their equipment to the early AMA Nationals before World War II and amazed everybody with their control.

In those days a ground based transmitter was linked to a hand held controller by a long cable. The pilot was required to tap out his Ham call sign on the controller when commencing operations and again before switching off. The tubes inside the transmitter used several 67.5 volt batteries, and some D-cells wired in parallel to light the filaments. A long whip antenna was mounted on the side of the transmitter case.

Temperature changes inside the transmitter caused the operating frequency to shift so the receiver in the aircraft needed periodic adjustment over the course of a days flying.

One of the many resources available on the Web is a Yahoo Group for "ClassicRC."

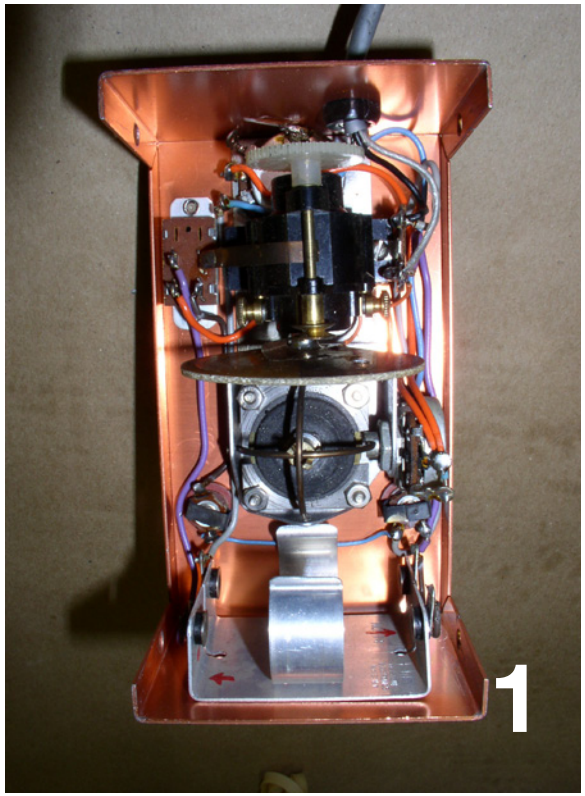
Dan Thompson, WB4GUK from Kentucky, is a frequent contributor and has been kind enough to share pictures and information about radios that he built. Dan was working on multi-channel controls using pulsers.

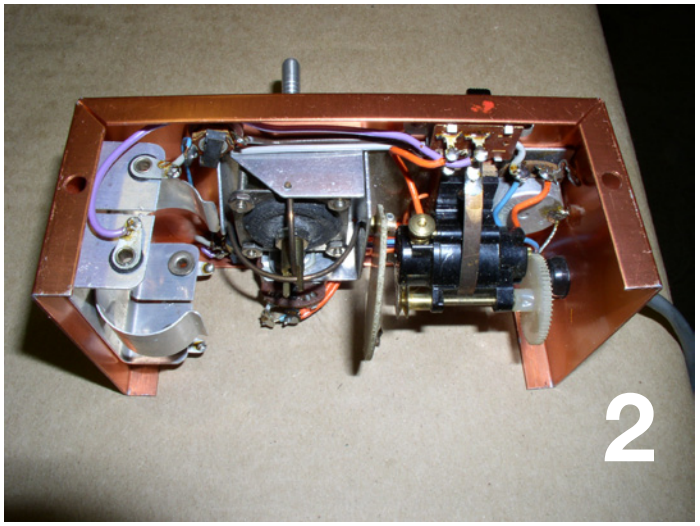
One of Dan's transmitters used a Mighty Midget Motor that spun a contact plate. Today we have 555 integrated circuits that will do the same thing in 100th of the space. You can imagine the daunting task of not having all the little parts and pieces that we take for granted today.

Dan, by comparison, had it easy compared to the Good brothers who had to wind their own inductors and polish quartz to make radio crystals of the right frequency. Little things like solder with the flux already built in would have been science fiction to them.

For a more graphic look into the ancient past, log on to www.rchalloffame.org. The collection of R/C radios they have is awesome. While much of it is of the manufactured variety they do have some homebuilt equipment.

Range and interference were two very important considerations in early R/C. The operating mode of the day was amplitude modulation which means that the receiver can hear stray signals when the transmitter is between commands. When the aircraft is several hundred feet in the air the added antenna height allows even more interference to be picked up. For that reason many of the early transmitters used up to 5 watts of RF power to overcome interference. The





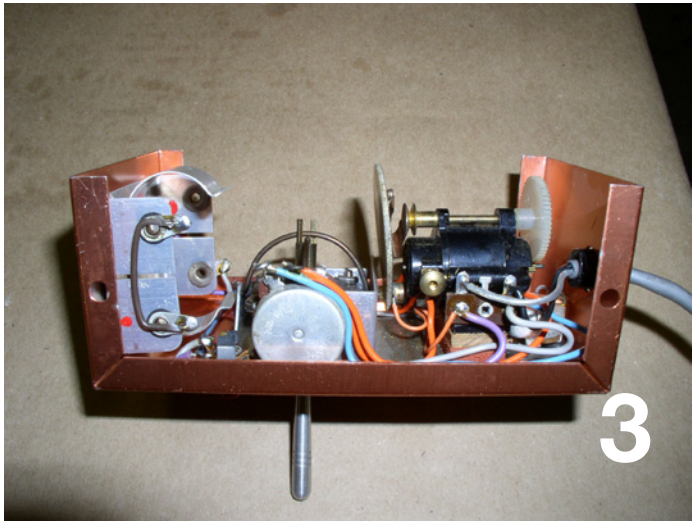
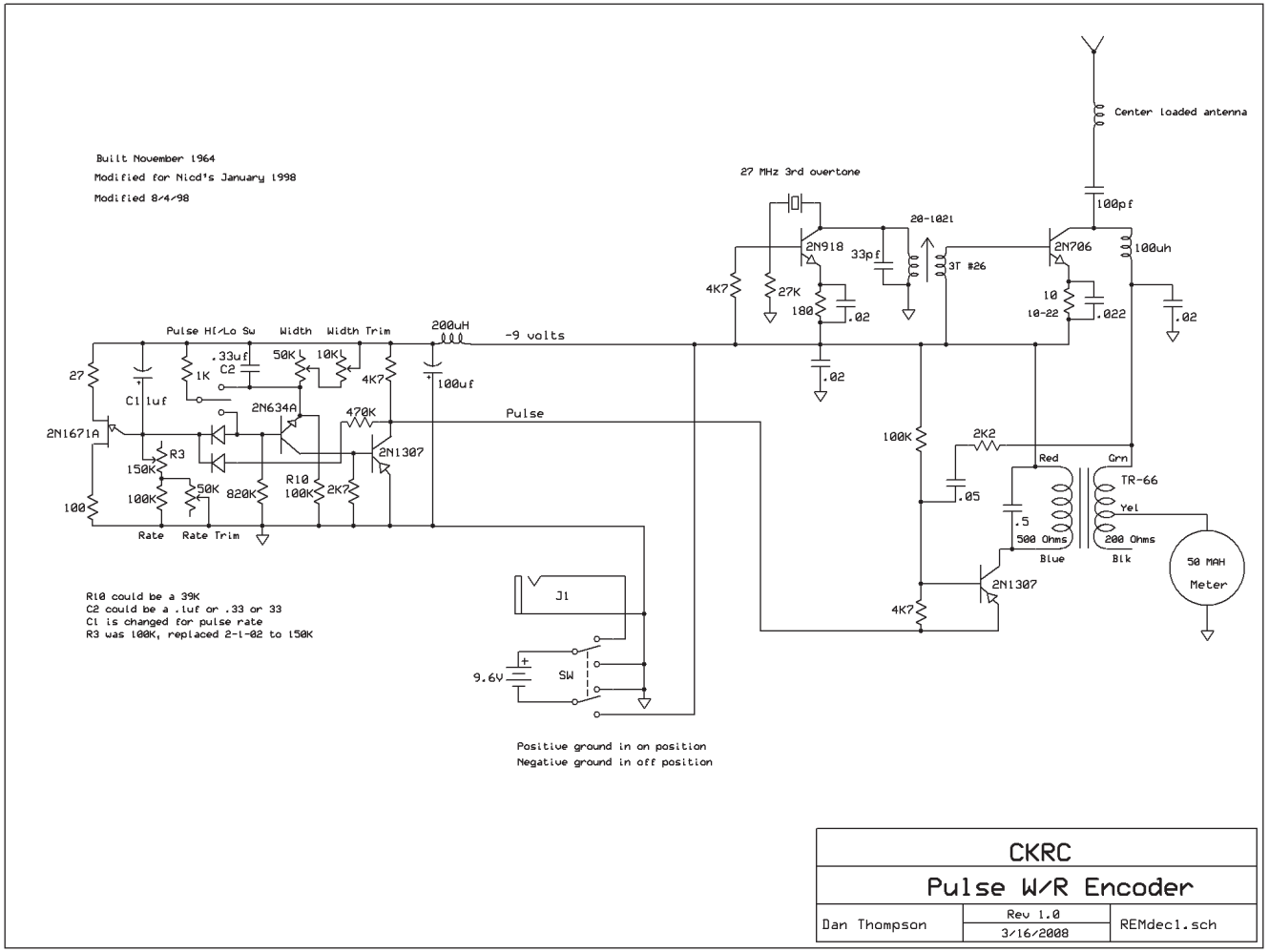


Photo 1: A great view of the gimbal stick and innards of Dan's controller. The battery clips connected D-cells that powered the Mighty Midget motor.

Photo 2: This controller has a gimbal stick with two axis and a pulser driven by a Might Midget motor. The connecting cable goes to the RF section that was remotely located.

Photo 3: A side view of the controller and better look at the switching disc on the output of the Mighty Midget motor.

Photo 4: The front of the case of the controller has an OK Cub decal on the top. At first I thought that the maker of .049 gas engines had also been in the radio business. Dan informed me that it was just a spare decal that he had. Note the cable that led to the transmitter.

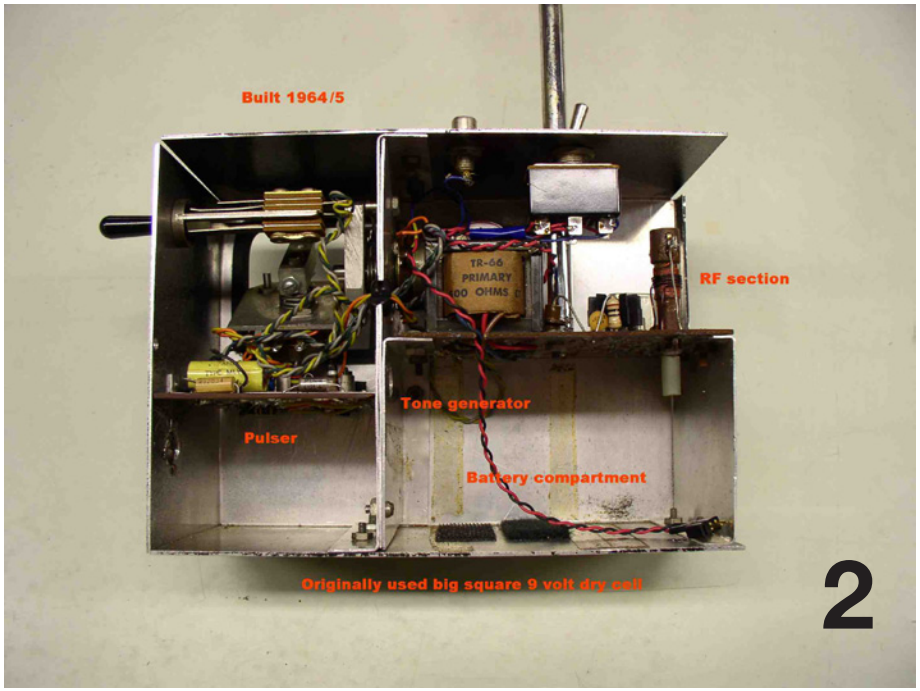


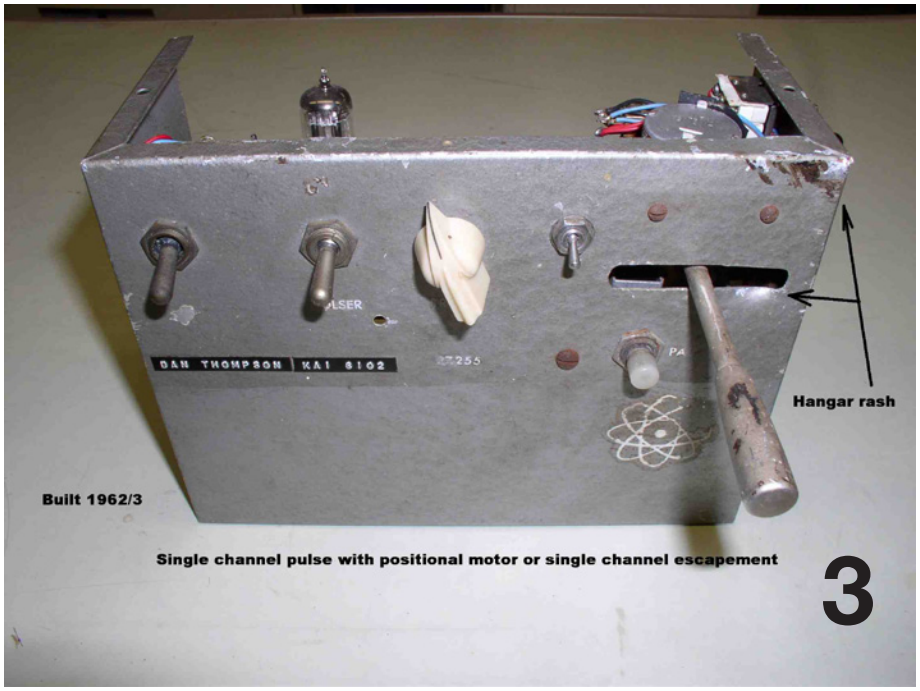
Above: PULSE W/R encoder: This is the schematic of the transmitter used in Dans' radio. It operates on the CB band and uses the center loading coil in the antenna. It also uses a 2N706 transistor for the RF final power output. The left side of the drawing show the rate and width pots for control with companion trim pots.

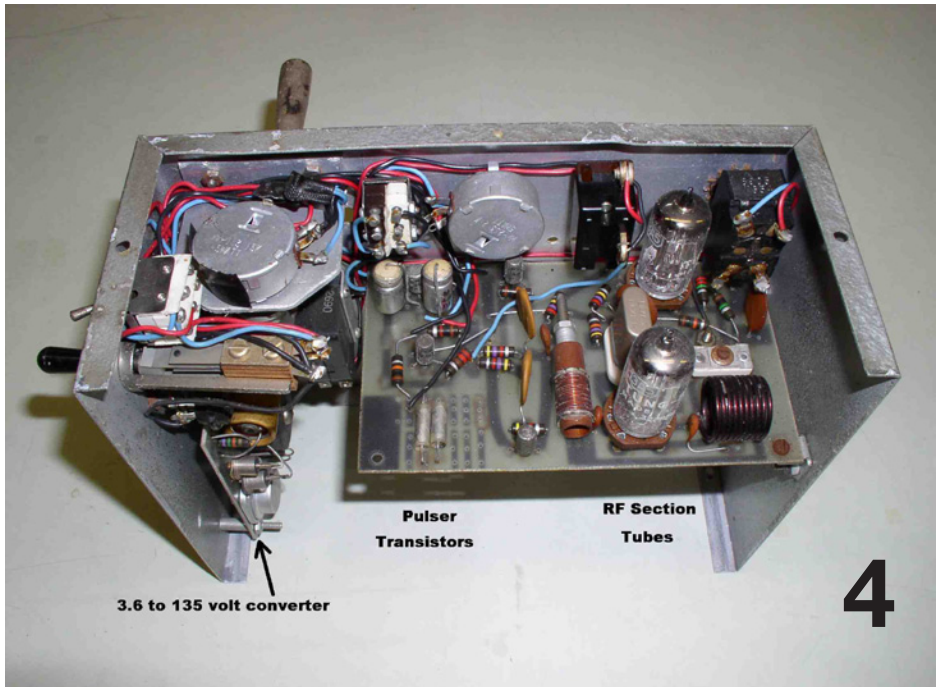
<u>Opposite page 1 & 2</u>: This homebuilt transmitter is notable for several innovations. It used a stick instead of buttons for control, it had adjustable trims, and the meter monitored milliamps of current where later transmitter meters displayed RF output. Even the sheet metal of this fine unit was hand bent. It was built by Dan Thompson WB4GUK

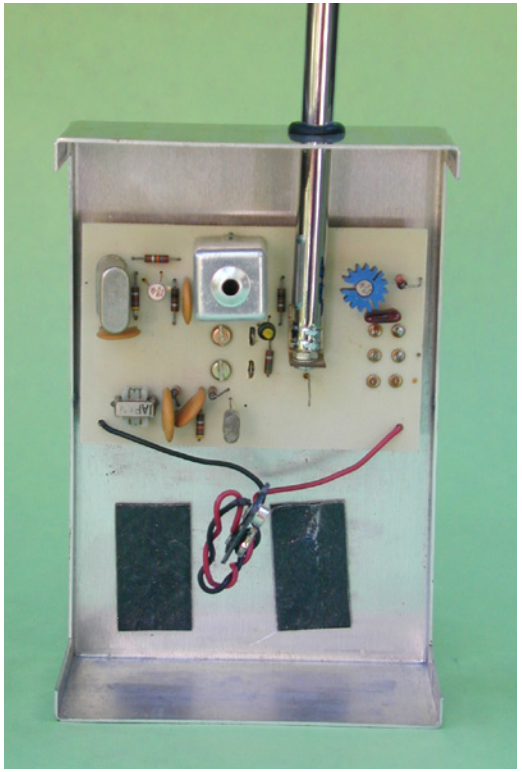
<u>Opposite page 3 & 4</u>: This is another of Dans' transmitters, this one using tubes. Again, the metal work was hand made along with the rest of the unit. The tubes are mounted on a printed circuit board. Notable is the 3.5 to 135 volt converter that fed the grid and plate of the tubes. The pulser was transistorized making this a hybrid unit.


Pulse rudder/elevator and positional throttle
P.A.
27.145 MCS.
AMPLIFIER
D L THOMPSON
TRIM
U
R
1
Built 1964/5

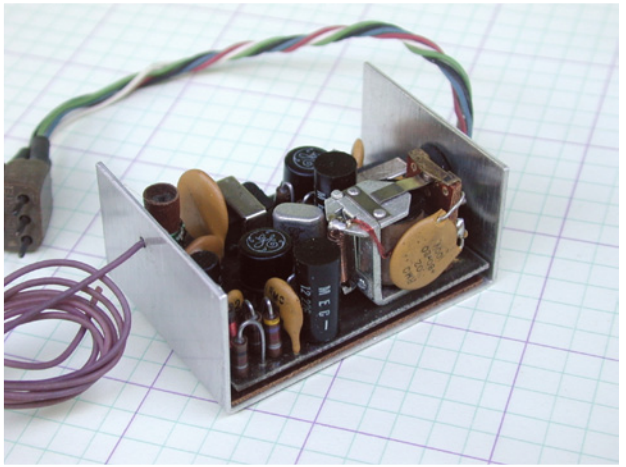

Built 1964/5
TR-66
PRIMARY
OHMS
RF section
Tone generator
Pulser
Battery compartment
Originally used big square 9 volt dry cell
2


DAN THOMPSON KAI 8102
Hangar rash
Built 1962/3
Single channel pulse with positional motor or single channel escapement
3


Pulser
Transistors
RF Section
Tubes
3.6 to 135 volt converter
4



Above: The front and interior of the Controlaire Mule transmitter. The only two controls were on-off and the tone transmit button. Aircraft steering was accomplished by sending a single tone for left turn, two tones for right and a "quick blip" for sequential motor control. Tone length determined the amount of turn. A single 9-volt battery was used for power and would last through several months of hard flying. The telescoping antenna had a loading coil in the middle to tune it to the 27 MHz band. Range was excellent when both transmitter and receiver were properly tuned.



Right: A Controlaire superhet receiver with relay output. The relay switched the servo motor on and off for steering commands. The enormous brown disc capacitor was to suppress sparks across the relay contacts. The hole on the lid gave access to the main tuning inductor. This was used to fine tune the receiver to the transmitter frequency. These receivers were a big improvement over tubes.

higher power put extra load on the dry batteries so they had to be monitored and replaced when they were drained.

Two developments helped the situation. First there was the invention of the transistor which ran on low voltage and the other was the use of heterodyne receivers in the aircraft.

Previously the receivers had used the regenerative method of detecting radio commands. Heterodyne, also know as superheterodyne, made the selectivity of the receiver much better so that stray signals were ignored.

Since the receiver was made much more reliable the need for high transmitter power was greatly reduced. Transistorized transmitters of about a half watt RF became the standard. This, in turn, allowed them to become hand held units of light weight and low maintenance.

I entered the world of R/C by acquiring a Controlaire Mule transmitter and companion superhet receiver that operated on the 27.25 MHz Citizens Band. This was before the Band became popular with truckers and hobbyists. The band had originally been the 11-meter Ham radio band and was split off by the FCC. You will believe that Hams were not too pleased with that change!

OS, the same Japanese company that makes those wonderful model aircraft engines, also made R/C servos at the time. The OS servo used a small DC electric motor that was also used as the automatic film advance motor in high-end cameras. The servo I used was relatively strong and very reliable if my fingers were quick enough. Like Dans' transmitter pulser, the OS servo used the motor to rotate a switch disk that controlled the degree of rotation.

My own airborne pack wound up in a Midwest Li'l T sailplane of about two-meter span. I learned to fly by gliding the ship down a long hill, then walking down to pick it up. It was good exercise and a heck of an education.

All the while basement builders were working with pulsed tones, multiple tones and variable frequency tones to send commands to the aircraft.

Ace RC of Higginsville, Missouri, started a bi-monthly magazine written by Tom Runge called *Grid Leaks*.

This publication became a medium of exchange for these experimenters and their ideas. To this day the material presented in *Grid Leaks* is legendary in the R/C community and required reading for anyone who likes to melt metal (solder). There are several sources for these issues of *Grid Leaks* so, if you are interested, please contact me via e-mail for URLs and such.

Obviously, building and restoring these old rigs is pointless unless you can park them in a wonderful vintage sailplane from the same period. I've attached a list of some of those aircraft and sources for plans, kits and related documentation.

Recently I completed a 1955 DeBolt Champ with electric power and a Royal Apollo 27 MHz R/C system.

The plans were purchased from an Internet vendor and this presented an interesting problem. Plans which were published in such magazines as *Model Airplane News*, *Flying Models*, *RC Modeler* or *Model Aviation* have all the parts drawn on them. Plans like the Champ, which were copies of kit plans, had some parts not shown. Specifically, the bulkheads of the fuselage were already stamped out in the kit so were not drawn on the plans.

Plans from kits may require you to make these drawings and parts from the top and side views of the fuselage. It's not a big deal but points up the difference in the two types of plans.

Other sources of vintage model kits are RC Universe and Ebay, but you need to be aware of the quality of these items. Kits with wood that is 30+ year old may have warped or pieces lost. Plastic parts such as the canopy might have discolored or deformed due to heat.

Ray Hayes of Skybench Aero told me that Otto Heithecker, the man that made the Challenger sailplane famous, had made a hobby of buying kits and keeping them for when he retired. He was supposed to have a collection of these icons of the hobby that was unrivaled. I can imagine the excellent care he gave these unbuilt kits and would have no problem buying one if it was available. Not everyone takes that kind of loving care of kits so you need to be cautious with your purchases.

Early R/C builders and fliers were used to making mistakes and learning from them. They expected to have trouble so they took extra care to fly in locations where no one would get hurt if the plane misbehaved. If you decide to restore an old R/C radio you need to take similar precautions to insure that nobody gets hurt. Causing damage to property or injury to someone will take all the fun out of your day! Please use extra care when testing or flying this equipment.

Special thanks are in order to Dan WB4GUG, John KI4ODG, Bill Kuhlman and Jerry Slates for their extra efforts in sending me pictures, captions and equipment that made these articles possible. These gentlemen and the hundreds of others who participate in or just lurk on the Yahoo Groups have been an amazing inspiration.

Thank you all!

FAI has received the following Class F (Model Aircraft) World record claim:
==========
Sub-class :F3 Open (Radio Control Flight)
Category: Glider
Course/location : _to be advised
Pilot : Valery MYAKININ (Russia)
Date :11.09.2009
==========
Claim number : 15588
Type of record : 155: Duration
Performance : 39 h 3 min 9 sec
Current record : 36h 03 min 19 sec (08.09.2001 - Nicholas SHAW, UK)
==========
and
==========
Claim number : 15589
Type of record : 160: Distance in a closed circuit
Performance : 777 km
Current record : 739.2 km (09.09.2007 - Valery MYAKININ, Russia)
==========
The details shown above are provisional. When all the evidence required has been received and checked, the exact figures will be established and the record ratified (if appropriate).

Soaring Circuits

Electronics for the R/C Soaring Enthusiast

coming soon...

CAM — Competition Altimeter for Models

Designed for the new 200m height limited electric soaring format, the CAM is small, light, and easy to install. Just plug it in between your receiver and ESC. That's it! The CAM automatically shuts your motor down at 200 meters or after 30 seconds per the emerging height limited soaring rules. The CAM is currently undergoing field testing by some of the top names of the e-soaring community and is set to be released this fall. This new competition format promises to put the "soaring" back into electric sailplane contests. Even inexpensive RTF models can compete! Stay tuned for more details...

<http://home.epix.net/~rcbrust/>

Mammatus cloud formation at the US F3J Team Trials, Denver Colorado, September 6 2009

DVD Review

Radio Carbon Art

Brian Keeffe, briank@buzzbee.biz

The Short Review: Had I watched this DVD 6 months ago when our flying season began (and when I was first handed the DVD to review!!) — I'd be a better pilot now. It's that simple.

The Long Review: Radio Carbon Art's Soaring Master Class 1 DVD is a great tool for getting you on track, loaded with tips and tricks from one of the hobbies best, Mike Smith.

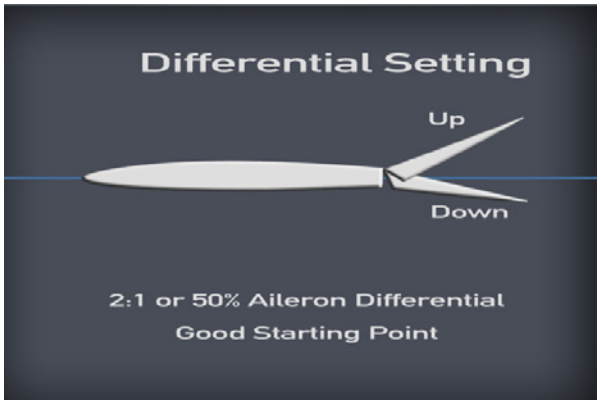
If you are getting back into flying thermal duration and find the new molded ships substantially different than what you flew 12+ years ago (as I was), get this DVD and you will have the tools necessary to understand what these modern wonders are capable of, how to set up your radio and aircraft, and how to maximize their potential.

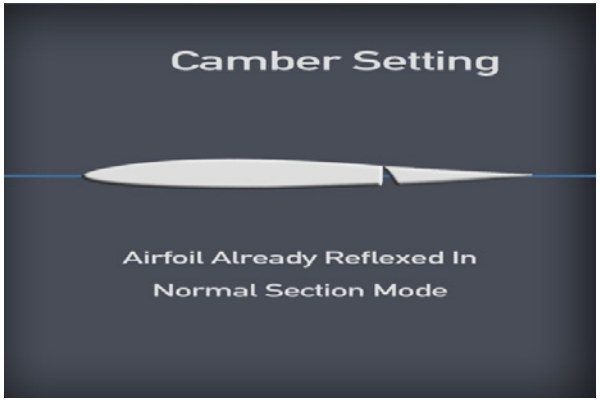
If you are making the step up to these airframes, get this DVD.

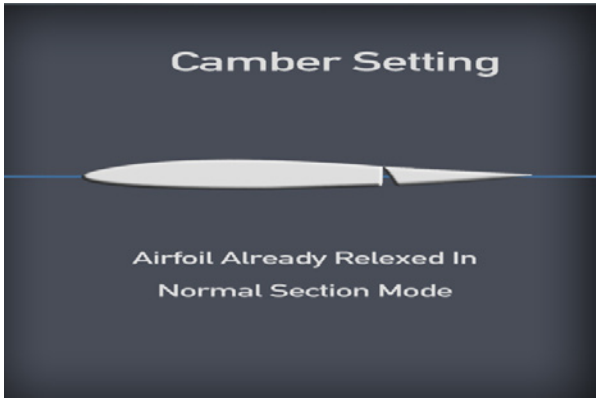
If you are tentative with your skills or unsure of a starting point with a new purchase, get this DVD.

If you just need a tune-up, get this DVD.

If you like having good reference material lying around to brush up with, get this DVD.







The Content: Radio Carbon Art (RCA) and the narrator/uber-pilot and all around good-guy Mike Smith begin the DVD with the idea that you have purchased a new (or used) ship, installed the gear and are now ready for the radio setup and trim portion of the build. It is assumed that all servos and linkages installed and operational.

Mike jumps right in with the first order of business on a new ship — Center of Gravity.

What I really liked about this DVD and Mike's approach is that information is given in a casual "if it looks right, it probably is" kind of approach. Not being an engineer or scientist ("If a hammer won't fix it you have an electrical problem."), and certainly not having the free time it takes to sift through the plethora of information available, having someone with Mike's credentials talk you through the steps to get your aircraft to an "almost there" flying state works VERY well for me.

It's obvious from what he explains and how he conveys it that he's arrived at these basic steps after a lot of trial and error and teaching others. That's a real time saver for me. I'll ask the detailed "how come" questions later, like when the kids are out of college and I'm sitting in an RV park somewhere.

This approach to instruction alone was a real selling point for me.

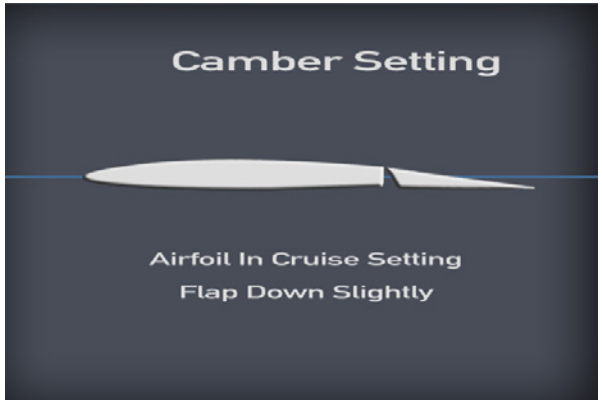
All subsequent chapters in the Soaring Master Class 1 DVD (18 chapters from Center of Gravity to light air and heavy air flight demos) use this casual "rule of thumb" approach.

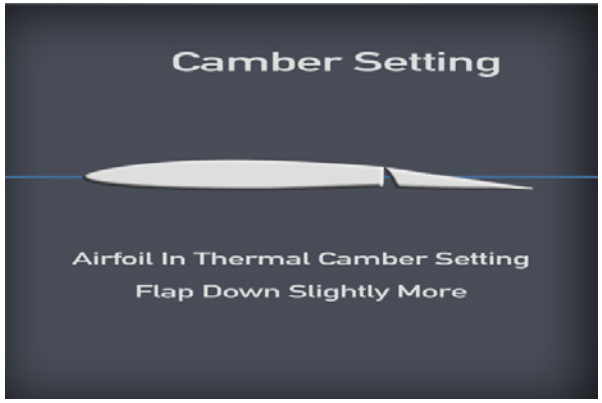
The information is complete and concise, contains enough explanation to qualify the need for attention of a particular aspect, but is brief enough to keep you engaged.

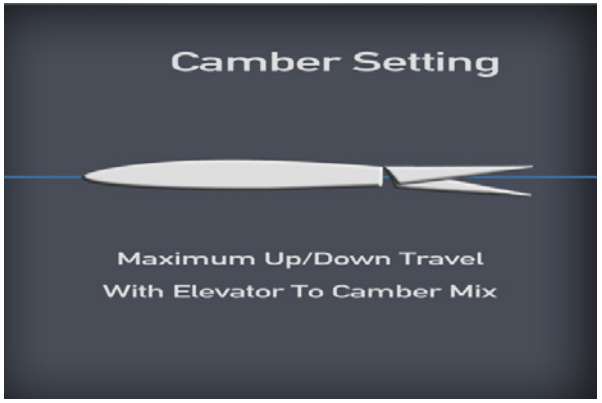
It takes you through all aspects of CG, radio setup (including ergonomics and the feel of the transmitter), control throws, the subtleties of mixing, launching (including tow hook mods and placement), winch control, the zoom, landing approaches, landing timing, and two flight demos.

It's all there: everything I need to know to get the most out of flying these models.

Some of the more experienced pilots might not find much new information in this DVD, but I'm sure there's a whole bunch of folks that would rather watch this DVD than spend the next few seasons of flying using trial and error or endless questions to arrive at basically the same place this DVD will take you.





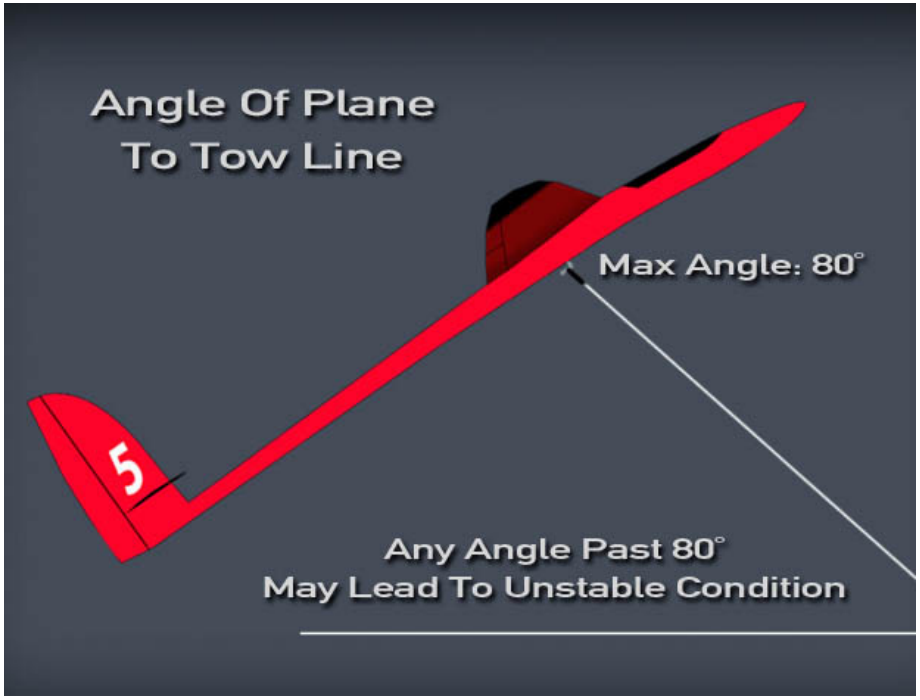


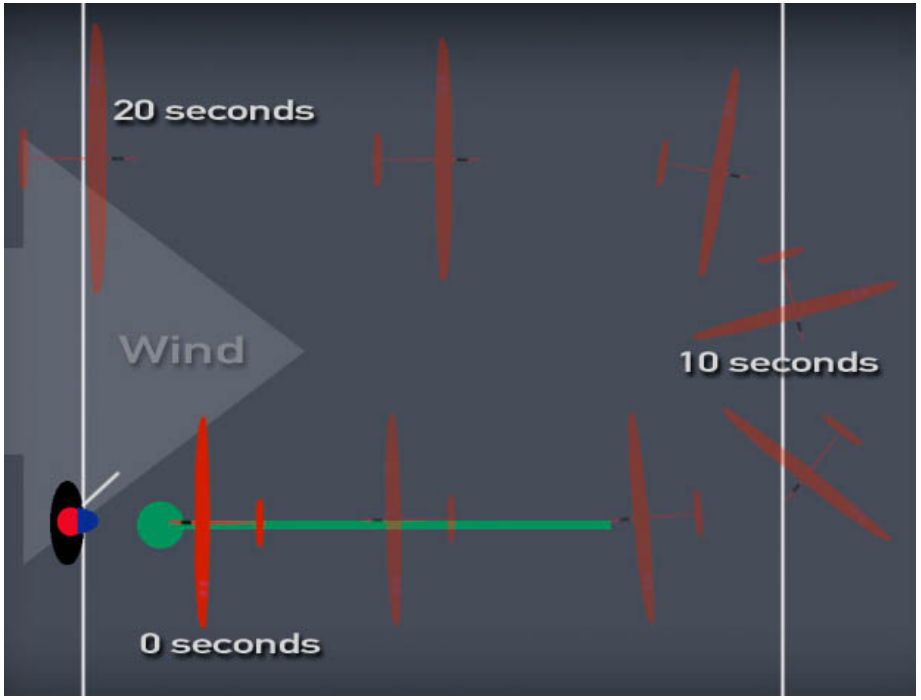
It sure would have saved me a lot of time and embarrassment (there ARE such things as silly questions) while I re-introduced myself to flying RC gliders and the new molded aircraft. I'd be a better pilot now.

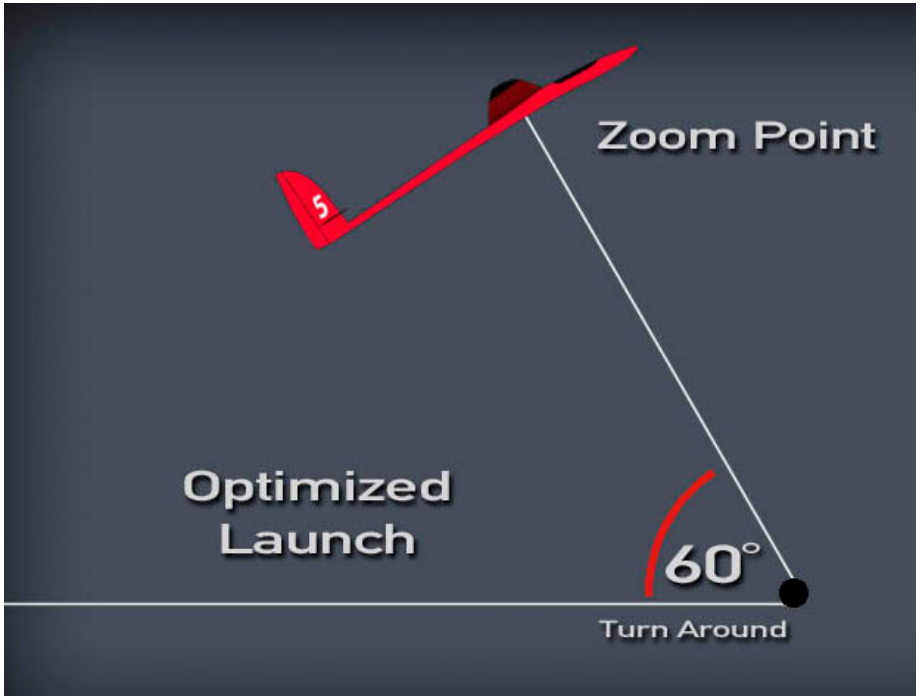
Other Stuff: The production quality of the DVD is good. It's not too slick (any cooler and it would take away from the casual approach), doesn't rely heavily on editing tricks or video effects, but is a far stretch from being amateurish.

Very well done for the intended audience. It's a training video, not *Transformers 3*!!

You can hear what Mike has to say. Camera angles, lighting and composition keep your attention where it should be, and each chapter has enough information to make a second, third or fourth look something that will bring you more detail.







The DVD reads well in the several players I used, including my laptop and all chapter links and such worked. Very complete.

Like I said in the Short Review, had I watched this DVD when I first had it, I'd be a better pilot now. Don't waste any more time!!

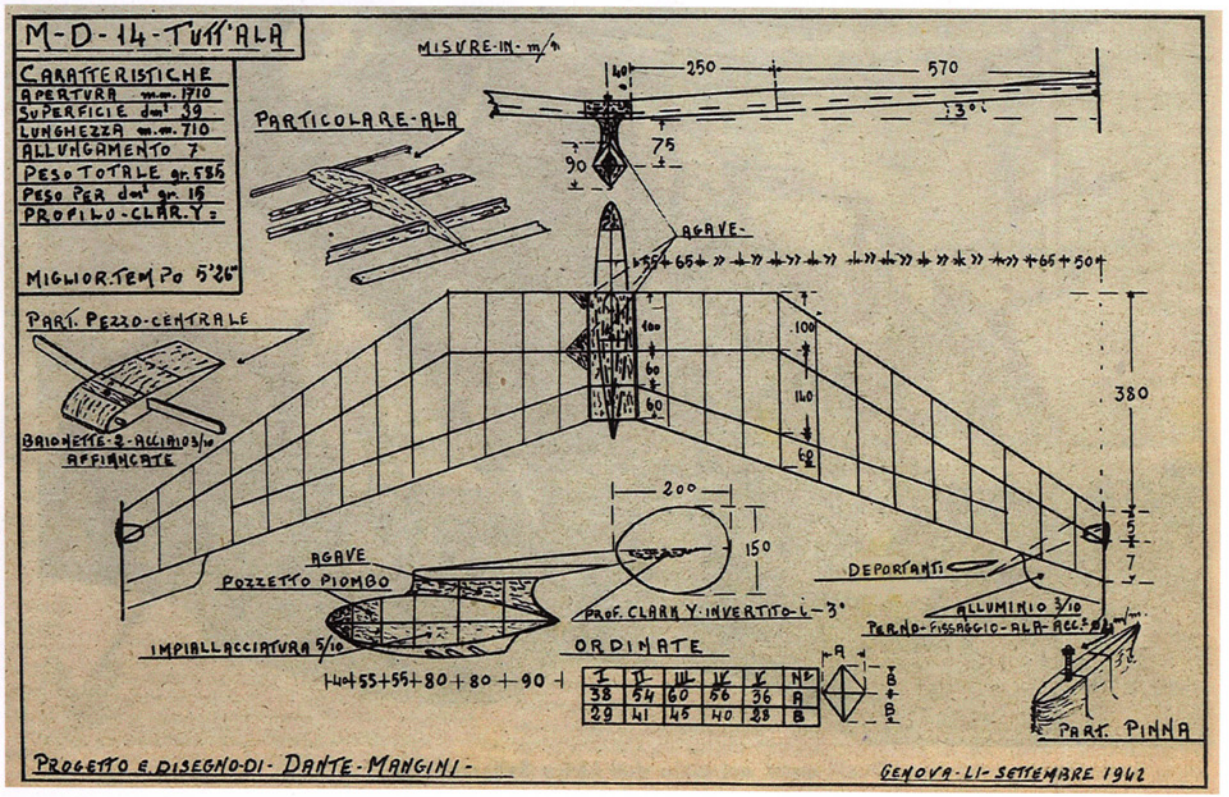
P.S.: Folks selling used aircraft or dealers of new aircraft would serve their customers well by including a copy of this DVD in every airframe sale, or at least offer it.

I'm sure many folks are like me — when they purchased a new or used molded aircraft for the first time, having the information contained in this DVD would have saved an enormous amount of time and frustration!!!

Horten

ante litteram

Dr. Ing. Ferdinando Galè,
<ferdigale@alice.it>



Ante litteram = ahead of one's time

The bell-shaped lift distribution along the wingspan is the main feature of the Horten concept as far as the swept back tailless configuration is concerned.

Surprisingly enough, said type of distribution is found also in several aerodynes (models and aeroplanes), which had been realized without any knowledge of the Horten principle.

One example is presented here, the tailless free-flight glider MD-14, designed and built in 1942 by Dante Mangini of Genoa Italy. The sketch had been originally published on the Italian model magazine *L'Aquilone* (*The Kite*) issue no. 48) and subsequently reported in other publications, such as Reference 1, page 683.

The increasing interest in the tailless configuration has prompted several builders to resume old time tailless models and to rebuild them for radio control.

Nino Renzi, a real oldtimer of Genoa, has built a perfect replica of the IVID 14, equipped with radio control, transforming the original external aluminum flaps into full service elevons. Thus only two servos are required. See Photo 1.

A long time friend of mine, Guido Mascherpajs, is seen in Photo 2 launching the MD 14-RC for her maiden flight. This turned out to be satisfactory from any point of view — directionally stable as a rock, easy to maneuver, no vicious habits of any kind.

This behavior has prompted Guido to look deeply into the matter. Using

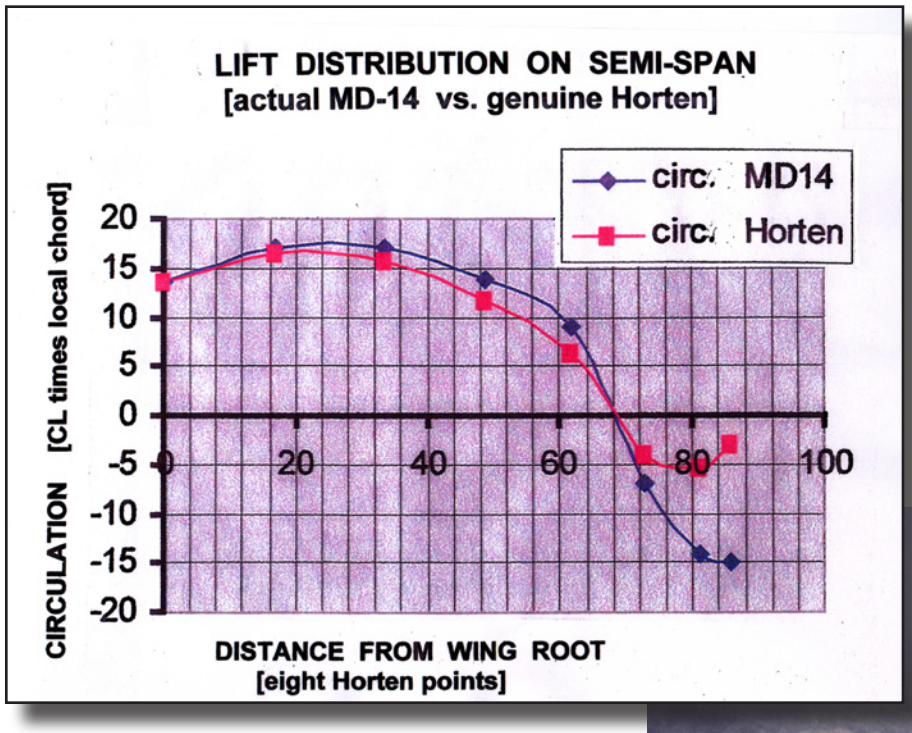
Left: Photo 1 — Nino Renzi, a real oldtimer of Genoa, has built a perfect replica of the MD-14, equipped with radio control, transforming the original external aluminum flaps into full service elevons. Thus only two servos are required.

Below: Photo 2 — A long time friend of mine, Guido Mascherpajs, is seen here launching the MD 14-RC for her maiden flight. This turned out to be satisfactory from any point of view — directionally stable as a rock, easy to maneuver, no vicious habits of any kind.

the information in Reference 2, he has calculated the lift distribution of the MD- 14, which turned out to be bell shaped, quite comparable with the Horten one. See Figure.4, originally published on the Italian magazine *Modellistica*, and reproduced here with their permission. I only took the liberty of translating the captions into English.

Another modeller, the Swiss Lauro Rezzonico, built a larger scale replica of the MD 14-RC. See Photo 5. After the overall wing twist had been adjusted by Guido, a brilliant mind, this model also flew perfectly.

It would appear that there is some true merit in the Horten conception of the



Left: Figure 4 — Guido Mascherpa looked deeply into the aerodynamics of the MD-14. Using the information in Reference 2, he has calculated the lift distribution, which turned out to be bell shaped, quite comparable with the Horten one. This diagram was originally published on the Italian magazine Modellistica, and is reproduced here with their permission.

Below: Photo 5 — Swiss modeller Lauro Rezzonico built a larger scale replica of the MD 14-RC. After the overall wing twist had been adjusted by Guido this model also flew perfectly.

tailless configuration; around the world, it is raising more and more interest. This is not surprising for those who have thoroughly studied the whole matter.

Personally, I did share this way of thinking many years ago, when I exchanged extensive correspondence with Dr. Reimar Horten in Argentina.

———————

References:

1 - La Belle Epoque Dell'Aeromodellismo Italiano (The Beautiful Epoch of Italian Aeromodelling), by F. Galè

2 - Tuttala Horten (Horten Tailless), by F. Galè


N35SM