

Radio Controlled Soaring Digest

March 2013

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Front cover: José Carrion performs a close fly-by with his 7 meter home made Nimbus 4 at La Muela, near Madrid, Spain. Photo by Pierre Rondel
Canon EOS 10D, ISO 400, 1/750 Sec., f6.7, 65mm

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Kevin Farr provides coverage of this annual event held in Cape Town, South Africa. This year saw excellent weather for the two day competition. Photos by Kevin Farr, Alan Ball and Dave Lentil. Alan Ball's video can be viewed at <http://vimeo.com/58694981>.

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Dave Garwood and Steve Mintz brave the weather and discover something about radio waves.

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Product Review Hakko FX-888 Soldering Station and FX-8801 Soldering Iron 46

Accurate temperature control and a sturdy and comfortable feel — a near professional class unit at an affordable price.

Back cover: Miniature stick models are often used in non-flying practice sessions to mimic the planned aerobatic competition maneuvers. Kevin Farr captured this one at rest at the TOSS Aerobatic Event in late January of this year. Full coverage of that event begins on page 4 of this issue.
Panasonic DMC-FZ100, ISO 100, 1/640 sec., f4.0, 50mm

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In the Air

We received a note from Dave Garwood regarding electrifying the Dream-Flight Alula Evo, too late for the February issue which carried Dave's kit review. Dave received a request from Umberto Rossi concerning a project of this kind and Dave responded with the following links:

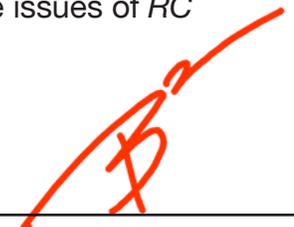
E-lula Electrified Alula Thread - RC Groups:
<<http://www.rcgroups.com/forums/showthread.php?t=1274230Share>>

Electrified Alula videos:
<<http://www.rcgroups.com/forums/showpost.php?p=23755567&postcount=3>>
<<http://www.youtube.com/watch?v=URmrGEpA9n8>>
<<http://www.youtube.com/watch?v=SGiBOGiOOpm>>
<<http://www.youtube.com/watch?v=rilXICaLitY>>

There are, of course, also relevant threads on RCGroups, with at least two general threads on the Alula which are more than 100 pages in length.

The article on Li-ion batteries which appears in this issue, page 24, comes from *Tech Briefs*, a NASA publication. We hope it will be an enlightening read and would appreciate feedback, positive or negative, as to whether similar articles would be appropriate for future issues of *RC Soaring Digest*.

Time to build another sailplane!



Two Oceans Slope Soarers

TOSS AEROBATIC EVENT 2013

Kevin Farr, kevin@fvdv.co.za
photos by Kevin Farr and Alan Ball



Five Years! Five long years, that's how long we have been waiting for that near perfect event. For the event that has wind all weekend, from the right direction, consistent for more than a few hours at a time, and for more than one day at a time. And so the slope pixies came to our aid and delivered just that. The perfect slope precision aerobatics challenge, hours in the sun and a herculean call for consistency, as it appeared Mother Nature was not going to let up on us with all of the elements gathered in a heady mixture.

And so, on a breezy clear Saturday morning, the 26th of January 2013, a record field of 23 entrants gathered up on Red Hill above Simonstown, Cape Town, South Africa.

After a meet and greet the previous evening that had seen all and sundry gather at the local watering hole to quaff beer, wine and while away an hour or two, 13 nervous Sportsman's Class and 10 apprehensive Expert Class entrants took in the pilot briefing and safety tips. Again the TOSS committee had out done itself and the preparations were at the ready. A mass of wings, booms, humans and tails made their way down to the flight-line amid chattering banter.

After a short Judges briefing to ascertain that all four Judges were in fact on the same page, in the same place and at the same time, the first of the brave souls stepped up to the flight-line and took on the challenge in perfect South East conditions. For those not familiar with the format, two pilots are airborne at any given time.

There are two more nervous individuals in the ready box, being... well ready, and then a third set of contestants aware of their place in the queue and gearing up as Uncle Bill, Safety Officer, yelled the commands and called out their names in a no nonsense sort of a way. The routine is simple. Six statutory manoeuvres, and four optional with each finger testing manoeuvre to be performed singularly.



Two Oceans Slope Soarers



The Durban Crew

Enter the box, do your three rolls, find the centre line, find the horizon, complete the manoeuvre and leave the box. Next contestant to do the same, then onto the next manoeuvre until all six statutory moves are complete, then you do your optionals based on the same idea, and hence complete a round.

Now the ready box is about the scariest place on earth. Once you have stepped to the flight-line your fate is in your hands, literally, but sitting in that box is about as nerve wracking as it gets, but does also help you to focus very sharply on the task on hand.

Enter to combatants in Sportsman's class and there were some who took to it like ducks to water, opened up a substantial gap in the first round, and were able to defend from there on.



Notable at this stage would be Jacque du Toit, who suffered lock-out on his glider before the contest had even started. The resulting loss of his Toucan to an untimely impact left him with only one option. Simply borrow another contestant's glider and without hesitation continue to compete for the rest of the day, and the following one as well.

The expert class were next to compete their schedule and showed signs of brilliance and as the duels intensified, realisation filled the air that once more the competition had improved, intensified, and that the entire field would be separated by no more than a camel hair by the end of proceedings.

Round one in the bag!

Without so much as a break between rounds, it was deemed safer to reverse the classes and put up the Expert class first, as conditions did show signs of going a bit South and wrecking the whole affair.

Deteriorate it did, not to the point of being un-flyable, but just not as great as it was in the first round. And blow me down with a glider in hand, if the entire set of contestants didn't just step up the ante a whole bunch. More time was taken to gain altitude, manoeuvres were more considered, accurate and centered, with the scores from the judges climbing in appreciation of this. Thanks to our Contest Director Jeff Steffen for calling this one correct. Only notable mishap was Marc Wolffe's glider exploding midair as the center wing panel gave way folding like a tissue and taking him out of the contest due

In the pits, Kevin and Louis about to commence the round.

Two Oceans Slope Soarers



Malcolm Riley Launches the Dorado

to lack of any distinguishable part of the glider. As conditions once again gained momentum, then switched back to South East, the Sportsman's Class took to the air, flew through the round gaining confidence all the time and setting the bar even higher for those that will do this for the first time next year. Final pairs were up at 4:00 in the afternoon completing a long slope day no matter how you looked at it.

Round 2 in the bag!

Back to the watering hole, meals taken in, and a raft of weary sunburnt contestants made for bed and dreams of more of the same.

Overnight, in the wee hours and with the aid of sucker sticks, epoxy and a vacuum bag, Alan Ball and Ryan Matchett tinkered away to make good Alan's glider wing for the next day. Michel Leusch threw in a new servo on his aileron due to failure, and Christo Le Roux added half a soda can to his leading edge covering some nasty twig damage, such was the commitment to make good and be part of the final day of the event. Wind or none, the contestants were going to be ready!

And this is where the plot changes from all the previous years.

Cue an exact replica of the day before. Perfect South East. 30-40 kilometres an hour caressing the slope with huge amounts of lift grabbing gliders right

out of the hand on launch. Up stepped the Sportsman's Class, with nerves far more settled and everyone aware of their roles and requirements, we were able to whizz our way through the round. Air battles raged royal between contestants as was seen between Dean Halley and



Russel Conradt launches another glider

Two Oceans Slope Soarers





How we got some of the footage used in the video
<<http://vimeo.com/58694981>>



Two Oceans Slope Soarers



Jeff Steffen, with Jeff taking an ill timed snap into the bushes below, racing down the hill to collect the glider, racing back up the hill and managing to complete the round.

Next up the Expert Class and with conditions strengthening all the time, blowback added to the test and capabilities were tested to the max as the schedule whizzed by, about as fast as the gliders.

Scores climbed and dipped throughout the rounds as the battle for the top spots heightened and the points were so close that moves that were slightly off were punished. Some mastered the first round, others pulling out a magical second round, but in the end it was Louis Genade that flew the most faultless and perfect Round 3, with all and sundry blown away as it were.

Round 3 in the bag!

Off to Dixie's Restaurant for the awards presentation.

In the end it was that man, Louis Genade, who took the Expert class and Noel Cochius who flew beautifully to take the Sportsman's Class, in what can easily be described as the tightest contest in the



Two Oceans Slope Soarers





Two Oceans Slope Soarers



Noel Cochius, Sportsman Class winner, and his Aldij

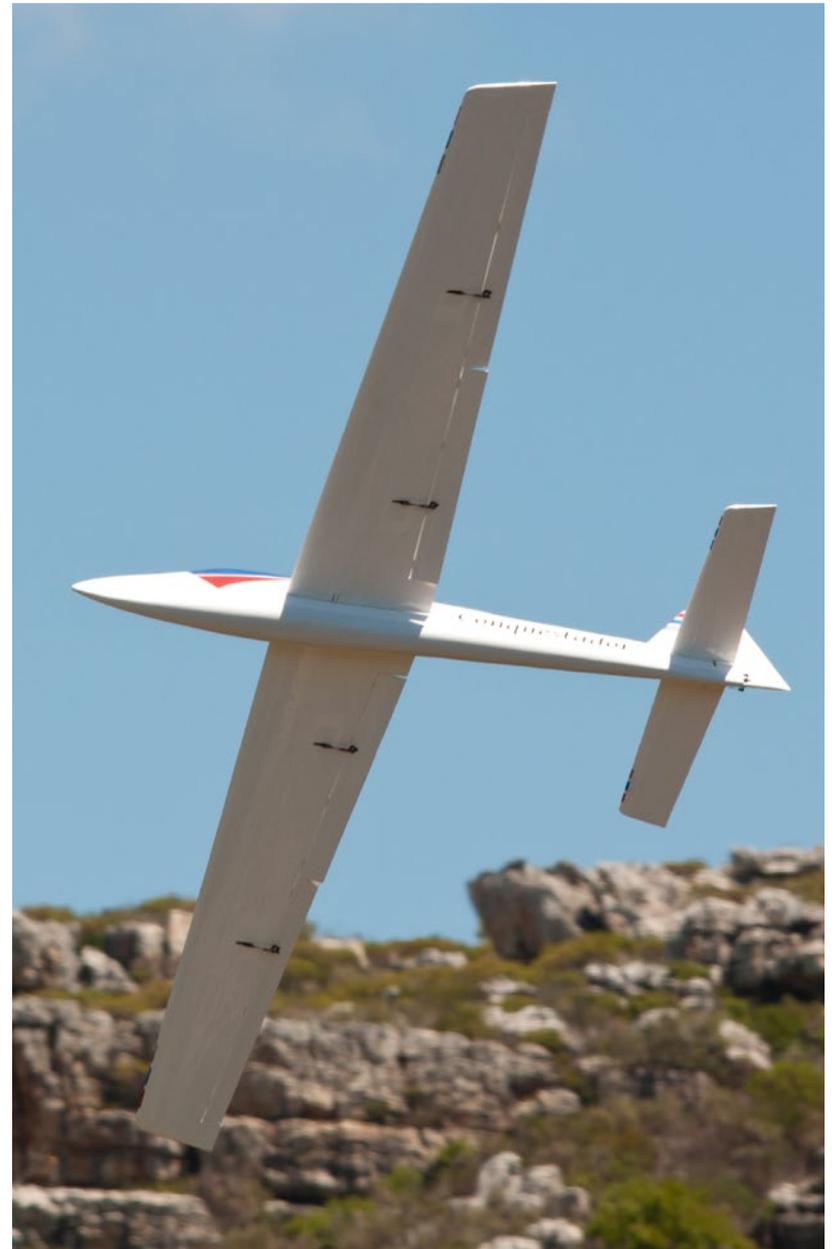


Louis Genade, Expert Class winner, and his Aresti



Two Oceans Slope Soarers





Two Oceans Slope Soarers

history of this event. Fantastic event. Well done one and all!

A huge thank you needs to go out to the following:

To all the Durban lads who arrived on Thursday, climbed our mountain, drank our beer, ate our food and attempted to take our trophy back with them. This competition would not be the same without your fanatical support, all out friendship and dedicated participation.

To all our Judges, four in total, for their unflinching dedication to the task at hand, and the manner in which they have over the years assisted in the unlimited growth of this unique event. In no particular order, Andrew Anderson, Claude Mackrill, Kurt Mackrill and Stuart Nix.

To the fantastic sponsors who outdid themselves this year with a very generous showing indeed, and without whom this type of event would really not be possible.

To all the contestants. Kudos and well done one and all. This event relies on your unbridled sportsmanship and dedication to keep growing as it is.

To the Two Oceans Slope Soarers Committee and Jeff Steffen as Contest Director for a perfectly managed competition and David Semple crunching the numbers to confirm and audit the outcome.

And finally to the caterers and Theunis Van Niekerk for serving great food as usual and keeping the entire crew fed and happy.

Alan Ball's video of the event can be viewed at <<http://vimeo.com/58694981>>.



The Judges and Contest Managers



Two Oceans Slope Soarers



Shot of the contest by Mango pilot Dave Lentil

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Kevin Farr
Chris Leal
InterMet Africa
Russell Conradt
Simon Vacy-Lyle – Framgram
Gus Thomas

EVENT RESULTS

Sportsman Class

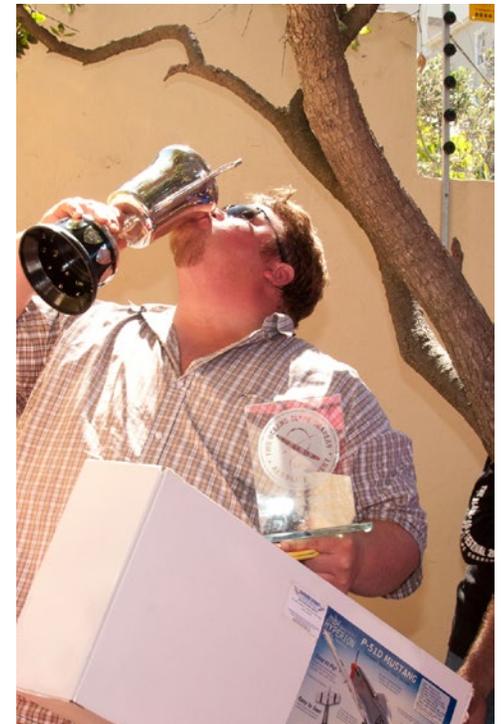
1. Noel Cochius
2. Dean Halley
3. Jeff Steffen
4. Simon Vacy-Lyle
5. Alan Ball
6. Hans van Kamp
7. Ryan Matchett
8. Alfred Brink
9. Schalk Human
10. Jacques Du Toit
11. Tim Watkins-Baker
12. Tim Blegenhout
13. Mark Phillips

Expert Class

1. Louis Genade
2. Michel Leusch
3. Christo Le Roux
4. Kevin Farr
5. Steve Meusel
6. Russell Conradt
7. Malcolm Riley
8. Dave Greer
9. Gus Thomas
10. Marc Wolffe

Upper right: Louis Genade, First Place Expert Class
Lower right: Noel Cochius, First Place Sportsman Class

RC
SD



Research Paves Way For Larger, Safer Lithium Ion Batteries

Wednesday, February 13 2013

Looking toward improved batteries for charging electric cars and storing energy from renewable but intermittent solar and wind, scientists at Oak Ridge National Laboratory have developed the first high-performance, nanostructured solid electrolyte for more energy-dense lithium ion batteries. Today's lithium-ion batteries rely on a liquid electrolyte, the material that conducts ions between the negatively charged anode and positive cathode. But liquid electrolytes often entail safety issues because of their flammability, especially as researchers try to pack more energy in a smaller battery volume. Building batteries with a solid electrolyte, as ORNL researchers have demonstrated, could overcome these safety concerns and size constraints.

"To make a safer, lightweight battery, we need the design at the beginning to have safety in mind," said ORNL's Chengdu Liang, who led the study. "We started

with a conventional material that is highly stable in a battery system - in particular one that is compatible with a lithium metal anode."

The ability to use pure lithium metal as an anode could ultimately yield batteries five to 10 times more powerful than current versions, which employ carbon based anodes.

"Cycling highly reactive lithium metal in flammable organic electrolytes causes serious safety concerns," Liang said. "A solid electrolyte enables the lithium metal to cycle well, with highly enhanced safety."

The ORNL team developed its solid electrolyte by manipulating a material called lithium thiophosphate so that it could conduct ions 1,000 times faster than its natural bulk form. The researchers used a chemical process called nanostructuring, which alters the structure of the crystals that make up the material.

"Think about it in terms of a big crystal of quartz vs. very fine beach sand," said coauthor Adam Rondinone. "You can have the same total volume of material, but it's broken up into very small particles that are packed together. It's made of the same atoms in roughly the same proportions, but at the nanoscale the structure is different. And now this solid material conducts lithium ions at a much greater rate than the original large crystal."

The researchers are continuing to test lab scale battery cells, and a patent on the team's invention is pending.

"We use a room-temperature, solution-based reaction that we believe can be easily scaled up," Rondinone said. "It's an energy-efficient way to make large amounts of this material."

<<http://www.techbriefs.com/component/content/article/15831>>



Snow Flying

Dave Garwood and Steve Mintz flying at
Maalwyck Park on Tuesday afternoon,
January 29, 2013

Dave Garwood, dgarwood518@gmail.com





Gotta have a ParkZone RADIAN. Man-o-man, what a versatile plane for keep-in-the-car, ready-in-a-jiffy, flying. The Radian thermals well, and climbs fast enough to hold its own at an ALES/LMR contest. And sometimes you just gotta get out and fly.

Above are two cell phone shots of flying the RADIAN from inside the car.

I was exceedingly attentive to radio link problems, being surrounded by so much metal. I flew from inside the car for 25 minutes and noticed NOT ONE PROBLEM - not the smallest glitch. I tried to find a limit by placing the transmitter ON THE FLOOR OF THE CAR, still flying the plane. To the naked eye it appeared the RF link had to go straight through

the transverse-mount, inline, 6-CYL engine. Still, not the tiniest observable problem controlling the RADIAN, in nearly half an hour of flying. This with the Airtronics VG6000 converted to 2.4 with the \$16 Fr-SKY module and \$19 Fr-SKY receiver.

How in the world can this be possible?



Above: Steve Mintz demonstrates lawn chair flying at its best.

Right: Dave Garwood and his RADIANT, ready to do some snow flying.



The answer to that question came from fellow Slope Dog Joe Chovan <greenhawk@twcny.rr.com>:

“Looks like a great day!

“I was always amazed when I would travel to different USMC radar sites and all the soldiers were talking in the radar shelters with their cell phones and the door cracked open to only about 3" to allow the radio waves to “escape.” The radar shelters are big metal (RF proof) boxes. When they shut the door, your cell phone signal vanishes — yet that 3 inch by 6 foot gap was all that is needed for a reliable connection.”



Monte Duccio



In a spectacular sequence, Alessandro Milan launches the 6 meter span DG 1000 belonging to Luca Falivena.

Slope Meetings 2012 edition

Cesare de Robertis, Editorial Director, *Modellismo*
photos by Fabio Fasciani





The Vip Team's Graecalis

I used to go fly at Monte Cucco in the early eighties, along with my friends from Rome that already flew those quarter scale "orchids," as the Germans call them, of 3,75 to 4 metres of wingspan. Huge gliders, we thought in those times. I was a beginner then, but I enjoyed flying there because of the wide and uncluttered landing space.

The first deltas and paragliders were timidly flying there and none of us would have imagined that in a few years those hang gliders would have colonized the mountain, open the National flying school and impair the access to anyone else.

Then, about ten years ago, the municipal administration persuaded the School to grant one week-end per year to model flying. It was an instant success, but the planning was lame and it did not last long.

Fortunately, three years ago, Roberto Ranocchia and Gianluca Fazi took charge of the organization and, thanks to the kindness of the authorities and the active collaboration of FIAM (the Italian equivalent to AMA), they were able to organize a meeting worthy of its name.

In 2012 it took place over a four day span, from June 28th to July the 1st. Four wonderful days with nearly ideal conditions that allowed us to fly from the south slope, far more spectacular, and somewhat easier, than the north one

which we flew from in the previous two years.

There were 86 participants, with 125 people at the Saturday buffet. Compared to the previous edition, during which the vast majority of models were mainly aerobatic (a lot of Stingrays and L-213A), this year, with less extreme conditions and more thermal activity, we had the pleasure to see a greater variety of gliders. The aerobatic types have always played a leading role, this year with two remarkable new entries: the Bhyon designed by Giulio Cornia and the outstanding Graecalis by Michele, Gianmarco and Stefano, the so called VIP Channel Team.

The 2013 edition of the Monte Cucco Meeting will have a more international flavour as we are expecting entrants from the nearby European countries. Now I leave you to the beautiful photos by Fabio Fasciani that are worth a thousand words, and illustrate the wonders of those four unforgettable days.

This article was originally published in *Modellismo*, September-October 2012, Cesare de Robertis, Editorial Director. <<http://www.edimodel.it>>

Our sincere thanks to Cesare for allowing this English version of the article to appear in *RC Soaring Digest*.



Paolo Dall'Acqua, Alessandro Milano, Beppe Sdringola, Giancarlo Verlato, Beppe Ghisleri, and Gianluca Ragni



The precious LO 100 of Massimo De Giorgi.



A Salto flies past with smoke generators on the wing tips



Eio Fornaciari's Standard Austria

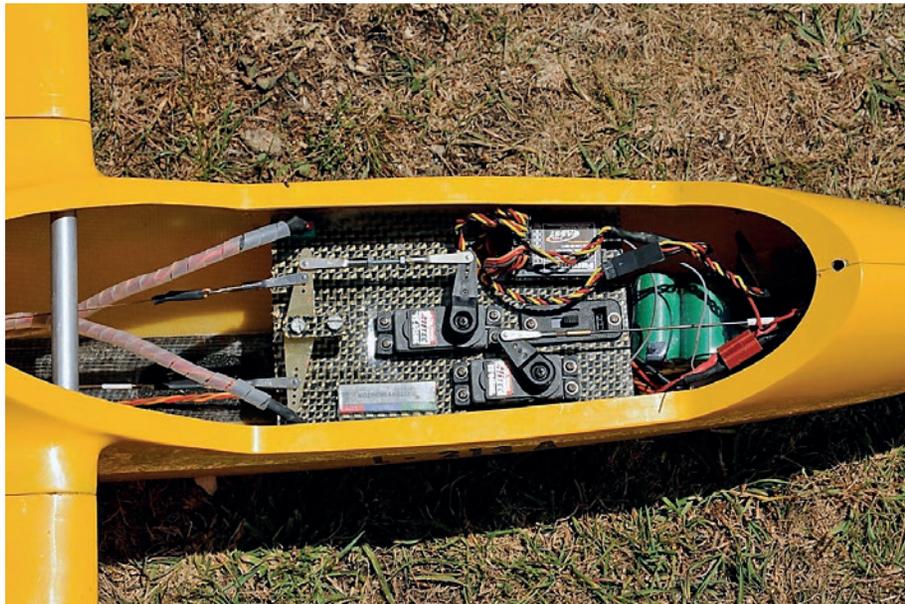


Flaps down and ailerons up, Beppe Mencarelli's Vector comes in for a landing.



Top: Beppe Ghisleri's M 100S

Above: Battery pack, receiver, switch, servos, push-pull beam.



Top: Manta Ray

Above: Detail of the speed brakes on a Salto H101.





Michele Mancini and Giancarlo Verlato



Riccardo Borg and Luca Falivena



Pielorenzo Pessah with his Bazingo



Gianluca Fazi



Francesco Izzo



Fabio Tozzi and Valerio Ceccherini



*Roberto Ranocchia and
Alessandro Milano*



Harry comes from Finland and is a big fan of Italian slopes.

#47 Gianluca Ragni



Enrico Banci



Stefano Ercoli



Paolo Dall'Acqua



Francesco Baldo and Stefan Wurm (Horizon Hobby)



Gianluca Ragni launches Giancarlo Verlatò's Bhyon











The beautiful KA6 of Richard Borg flying now for 32 years.



The M 100S of Beppe Ghisleri, one of the most admired sailplanes of the meeting



Alberto launches a Lancio Bhyon



The beautiful Graecalis of Michele, Giammarco and Stefano.

Some notes on the Park of Monte Cucco

The Park of Monte Cucco lies on the north-eastern border of the Region of Umbria, in central Italy, and is demarcated by the Apennine ridge, with the peak of Monte Cucco towering to 1,566 m, by the ancient course of the Via Flaminia, and by the Rivers Sentino and Chiascio.

The resident population of the Park numbers less than 7,000. In the mountainous areas, human activity is limited to forestry and the management of grazing animals. The bottom of the valley is generally turned over to arable farming, although intensive agriculture

is not practiced. In the small towns lying within the Park boundaries there are many artisan businesses and small manufacturing concerns, as well as hotels and restaurants offering a high level of service and adding to visitor enjoyment of the Park itself.

The most important towns, in terms of size and cultural interest, standing within sight of the Park, are Gubbio to the north and Gualdo Tadino to the south.

Monte Cucco is a Park of underground water-courses and mineral springs, of

pristine rivers, great unspoiled beechwoods and limestone grottoes untouched by mass tourism. It is home to the wolf and the golden eagle. It is a Park of historic towns which, although small, are rich in terms of their cultural and artistic heritage. It is also a place where one can find many extraordinary monasteries. In addition, the unique character of the Park makes it the perfect setting for enjoying all sorts of mountain sports: such as free-flying, caving, cross-country skiing and trekking.





Hakko FX-888 Soldering Station



and FX-8801 Soldering Iron

Distributed in the United States
by American Hakko Products
Valencia, California

Bill Kuhlman, bsquared@centurytel.net

After more than fifty decades using plug-in soldering pencils, exchanging cartridges for differing wattages and replacing cheap threaded tips, I finally made the decision to purchase a reliable soldering station with temperature control and a convenient practical soldering iron holder.

About a year ago I heard of the Hakko FX-888 soldering station, and investigation revealed it to be of almost commercial quality at a reasonable price — well under \$100 complete. After doing some on-line price comparisons, I settled on Production Automation Corporation for the purchase.

The soldering station arrived in a cubical box with a number of separators and sufficient padding. In the box was the soldering station itself, the 65W soldering iron, the iron holder, a compact but comprehensive instruction manual, a cleaning wire, a hex wrench, and a CAL adjustment driver.

The end of the 4' soldering iron cord consists of a keyed 6-pin DIN plug which connects to the face of the soldering station. The soldering station power cord is 54" long and has a standard 3-prong grounded plug.

Once plugged in, the soldering station temperature adjustment knob is rotated to the appropriate heat level (divisions are in Fahrenheit and Celsius) and the unit can then be turned on using the switch on the right side of the unit. The knob can and should be locked in position with the screw on the underside of the knob mount with the included hexagon wrench.

The lamp on the front of the soldering station comes on when power is applied and begins blinking when the set temperature is reached. The soldering iron tip heats quickly and is up to temperature in less than 60 seconds.

The soldering station base is four by five inches. Its three pound weight and rubber feet give it stability on the workbench. The soldering iron is lightweight at under two ounces and fits comfortably in the metal holder. The metal holder has sponge cleaning pads in a depression up front and a metal cleaning sponge in a special lipped opening. The holder comes apart for easy cleaning when the need arises and is as stable on the workbench as the soldering station.

The temperature range goes from 400°F to 900°F; the manufacturer states that the set temperature is maintained within plus or minus less than 2°F at idle. For those of you with a calibrated "tip thermometer," adjustments to the soldering station settings can be made using the included CAL adjustment driver. There are nearly 30 optional tips available for the FX-8801 soldering iron if you don't care for the conical tip which comes with the set.

The Hakko FX888 and FX8801 are designed so that electrostatic discharging is prevented by grounding the combined unit. As well, Hakko says that the unit does not give off any spurious radio signals.

The manual is illustrated with clean line drawings and provides exploded views of both the soldering station and the soldering iron. There is a detailed parts list and a trouble shooting guide.

Using the FX8801 soldering iron is a joy. It fits the hand feels good, and is easily manipulated. It's quite a difference from the "antique" soldering pencils I've used since the 1960s. The tip temperature of our unit seems to be very consistent, even under use, no doubt due to its substantial 65W power draw.

Although the FX-888 has now been superceded by the FX-888D digital unit, Hakko is a company in business for nearly 60 years, so parts for the FX-888 are sure to be available far into the future.



Additionally, because of the advent of the digital version, the analog FX-888 can now be found with substantial price reductions as remainders are sold off.

If you're looking for a temperature controlled soldering station with the look, feel and performance of professional equipment at a very reasonable price, the Hakko FX-888 soldering station and FX-8801 soldering iron combination deserves your attention.

American Hakko Products Inc.
<<http://www.hakkousa.com>>

Production Automation Corporation
<<http://www.gotopac.com>>

Also available through Amazon.com and other retailers.



