



Flight Desk

February 2005

The official newsletter of Chesham Model Flying Club Ltd

Volume 17

Issue 1

White Hill Centre

February Club night 23rd Feb

7.30 for 8.00

A talk by our very own BOB RANDALL

"Going to war in a matchbox"

Bob was a Horsa pilot during WW2 and his talk will be covering

'Training for capturing Pegasus Bridge, France'

and

'Recovery of gliders in France'

Lets make this a good turnout for a very interesting talk

Editors Ramblings

I don't have a lot to say this time around. As we all know, the weather has not been too kind to flyers. We managed a session on the last Saturday in January which proved to be pretty cold and with a blustery wind. Some flying took place and I was pleased to see Nobby was not put off following his recent solo rating. Bob successfully destroyed the fuselage of his electric Ironic following a stall and plunge manoeuvre that he has been practising. I had only just suggested he should paint "kill" markings after he chopped me out of the air recently.....too late.

We are pretty thin on stories this issue. Geoff has stepped in with a useful guide to the finer points of soldering. There is always room for other budding authors, or even wilting ones!! As always, you can contact me at:

webmaster@cheshammodelflyingclub.co.uk

Colin Hooper

Committee Matters

The programme of events for the next few months is:

February 23 rd	Club Night WHC @ 20:00
March 9 th	Committee meeting WHC 20:00
April 20 th	Club Night WHC 20:00
April 26 th	AHA Team Trials LIMITED CMFC FLYING
May 11 th	Committee meeting WHC 20:00
May 22 nd	Bombing Competition @ NG 10:00
June 4 th	Balloon Bursting competition @ NG 15:30
June 15 th	Silent Flight @ Pednor 18:00
July 13 th	Committee meeting WHC 20:00
August 17 th	Silent Flight @ Pednor 18:00
September 11 th	AHA Team Trials LIMITED CMFC FLYING
September 14 th	Committee meeting WHC 20:00
September 18 th	Allan Crook scale competition @ NG
October 19 th	AGM @ WHC 20:00
November 9 th	Committee meeting WHC 20:00
December 21 st	Club Night @ WHC 20:00

Pednor Planning Application - Latest News

Received from the Council on 03 February 2005

SCHEDULE OF REASONS FOR REFUSAL

The proposed extension to the number of days and times that powered aircraft can be flown would result in a significant increase in intrusive noise and disturbance which would be audible from nearby dwellings, particularly those along Pednor Road and Chartridge Lane. It is considered that the flying of powered model aircraft sporadically for four hours a day on each weekday, in addition to Saturday mornings, would result in serious detriment to the amenity and quiet enjoyment of the occupants of these nearby dwellings. As such the proposal fails to comply with policies GC3 and GC7 of the Adopted Chiltern District Local Plan - 1997 (including The Adopted Alterations May 2001 and July 2004

Chairman's Soapbox

PEDNOR PLANNING - LATEST

Our latest planning application, the third in a year, to extend midweek power flying to five days a week, has been met with another refusal by the planning officers under the delegated power procedure. The difference between this one and the previous one was that we were asking for a condition to limit the amount of power flying, within the 9.00am until 6.00pm period, to a maximum of 4 hours. Thus on any weekday this collective amount could not be exceeded. Now, - this was asked for by me, on behalf of the applicant (CMFC) as an eleventh hour addition to the previous application. The case officer at that time said it couldn't be accepted as it did not form part of that application. However, she told me at the time that it would make a difference, but we would need to make a fresh application including this request as an integral part of the application, which we have duly done.

For the membership to totally grasp what has taken place to date, there follows two more letters which I submitted to the Council in order to try to remove any misunderstanding that they might have about the facts as they stand. Also, to demonstrate that in our opinion, and according to all planning policy guidance that might apply, there is no reason that can be substantiated as to why the application might be refused. After the letters,

is an account of my conversation with the planning officer who was dealing with this latest application.

Letter dated 14. 01. 2005

F.a.o. Chief Planning Officer

FURTHER INFORMATION IN SUPPORT OF APPLICATION
CH/2004/2265

Dear Sir,

On Thursday 13 January, I visited the planning office to inspect the file of the above application. As with our previous applications there are letters of objection describing an existing situation that is far from reality regarding sound levels and in particular the amount of use regarding the flying of models powered by internal combustion engines.

The sound levels are 'acceptable' otherwise we simply would not have permission!

Saturday flying is limited further in respect of sound levels by condition and acknowledged by a government inspector as being at an acceptable level, which is why he allowed the appeal against the Council's refusal to allow Saturday flying. He remarked that the casual passer - by in the vicinity of Chartridge Lane would be unaware of the sound.

Regarding the midweek level of use, there is no specific information provided but generalised views which suggest that power flying takes place continually for 4 hours, - 3 days per week, - this does not happen.

Objections on environmental grounds are quite simply not valid. There has not been anyone walking the bridleway over the past 15 years that has ever expressed a dislike for our activities, with many ramblers stopping for a chat and pleased that we are using the countryside in an organised and responsible manner. Genuine and regular users of Herberts Hole do not have a problem with us being there!

There exists a level of opposition to our activities by some people, which amounts to total intolerance. The last appeal highlighted this when one resident of Chartridge Lane protested that one day's flying would be one day too much. Such a viewpoint or similar should not carry weight as a valid objection as it is in itself 'unreasonable'. This was fully acknowledged by the Inspector who allowed our last appeal.

I note that at least 2 councillors have requested that the application go before committee if the planning officers are minded to grant the application. This can be for no other reason than to give the committee the opportunity to refuse, and appease the objectors. If the level of interest warrants this, then the same should apply if the officers were minded to refuse, after all most of our members are Chiltern District council taxpayers and are entitled to expect an equal level of 'consideration'.

Slightly worrying is the fact that the Environmental Officer states in her report that only 2 VEHICLES will be flown. Is she aware that it is the model aircraft that we fly at the site?

Also the amended address for the location that appeared in the local newspaper was still incorrect. Chenies was changed to Pednor, but it still said Holloway Lane, which IS in Chenies. It should of course have been changed also to Hollow Way.

Finally, most comments about usage describe our application as an increase in terms of percentages. As I have gone to great lengths to explain, the usage is not and never will be a problem in terms of being unacceptable as our 'new condition' will guarantee this, and all midweek flying will be at lower sound levels with 2 aircraft only in the air at any one time.

For further proof, - the existing permission for midweek power flying on weekdays allows for a possible 208 hours flying (52 days x 4 hours) on each Monday, Thursday and Friday.

Data extracted from the information already supplied for the period Nov. 2003 - Nov. 2004 is as follows:-

Monday - 10 days used (42 days no flying) - Total flying time 8 hrs 33 mins.

Thursday - 2 days used (50 days no flying), - Total flying time 1 hr.

Friday - 7 days used (45 days no flying), - Total flying time 4 hrs 2 mins.

These incredibly low figures may have in fact been lower if 2 or 3 aircraft were in the air at the same time.

In respect of Thursday's for instance, there is no likelihood that activity is going to be 200 times greater. There is also no evidence to suggest that the ratio between actual use and permitted use will greatly increase.

There may be concerns about the terms of our extended hours being unenforceable.

Our strict rules will take care of this, since we already comply with conditions related to when we fly, how many aircraft are flown at one time, and maximum sound emissions.

Our log sheet system, in operation since 1988, ensures total compliance with any conditions attached to planning permission, club rules and BMFA guidelines. They also would provide details to support / counter any complaint that may be levelled against the club in respect any conditions, rules etc.

Letter dated 26. 01. 2005

F.a.o. Chief Planning Officer

FURTHER INFORMATION IN SUPPORT OF APPLICATION
CH/2004/2265

Dear Sir,

My letter dated 14. 01. 2005 contained a mathematical error on page 2. I t stated 204 hours (52 x 4), - this should of course have read 208 hours and has been amended on the enclosed copy.

To further demonstrate that most objections are unreasonable, I wish to express the current level of midweek use for IC power flying from factual statistics already supplied, in a slightly different way as follows:-

We are allowed at present 12 hours per week, which is obviously reasonable, because we have permission on this basis. The actual time used amounts to an average of just over 15 minutes per week. This figure is therefore a little over 2% of the total time that we are permitted to fly powered aircraft midweek. It is inconceivable that so little activity could result in any justifiable objection giving any weight as a reason to refuse the application.

The usage midweek would have to increase 4,800% to reach the 12 hours already permitted. Given that we have our other premier site which also has overall levels of low use, we estimate that the number of fully paid up members (being those permitted to fly) would have to rise from its current level of 100 to something over 1800. Our membership levels are set in our Memorandum and Articles of Association at 100 full members. Due to annual income from agri-environmental schemes with DEFRA we are financially secure well beyond 2016 and do not have to rely on annual subscriptions to fund annual expenditure. There are no pressures in financial terms and therefore no reasons in the interests of the membership to expand numbers.

For clarification of any information supplied to date, - please contact me.

Although not 'word for word', an accurate account of our 'discussion' - obviously reduced as far as content goes, -

Today 26.01.2005, I phoned the case officer dealing with our latest planning application, - I was talking to him for half an hour. He told me it is almost certain to be another refusal. He said he had serious concerns about safeguarding the amenities of the Pednor and Chartridge residents. I said, - you mean the small number of those unreasonable ones who are objecting, and whose claims of constant nuisance are suitably 'rubbished' by our factual information. He went on to say that even allowing for our latest proposal of a condition to limit flying to 4 hours max a day, - if achieved it would be unacceptable as the first Govt. Inspector had indicated. I told him

that the Inspector concerned had also said no weekend flying, but we won that back on appeal when the second Inspector agreed that reduced sound levels changed everything. You do realise, I said, that we are asking for those same conditions and will be giving up flying at 82dB(A) and 3 in the air, for 79dB(A) and 2 in the air. In any case, I asked him how he thought our actual power flying activity might increase 48 fold in respect of 3 days at 4 hours per day, or regarding our new application to include all 5 days, - a massive 80 times more power flying during midweek above the times currently being recorded. He said we might advertise in the local paper for more members and it was the 'potential' to cause a nuisance that he was worried about. I told him I was amazed, frustrated and disgusted that such a view carried any weight in planning terms, since it could not be substantiated in any way, given the mass of factual information I had supplied. Indeed the planning officer, of our previous failed application, had suggested to me that the condition we had asked for to limit the total flying time of powered models on any weekday to 4 hours, - would make a difference, - so how come it hasn't and we have been wasting our time and another £110. I told him that in 15 years, no one from the Council had ever visited the site to monitor our activities, and that no complaints have been received by the Council, - how does that exactly fuel your current concern? We have since our formation been the only organisation in the Chiltern District concerned with organising and controlling the sport of model flying with not one scrap of support or understanding from your Council who are clearly incapable of making an honest decision based on factual information. I said we might as well be an unknown bunch of irresponsible individuals just starting out, - as we are being treated as such. Model flying just does not get any recognition as far as you are concerned, and it is more than obvious to a reasonable person, that any concerns you might have should be wiped clean away by the statistics I have supplied to you.

I then told him that a decision should be reached on the 'balance' of probabilities, that is; - was it more or less likely that genuine problems might arise? He said that was valid but his view was that the Council couldn't take that chance in respect of the residents.

I then told him that the solution could be for approval on a temporary period, - that if his concerns materialised and could be properly substantiated by the Council, and not just the 'say so' by objectors, the club could be 'disadvantaged' by refusal when re-applying for it to be permanent, reverting back then to the current permission. He said he couldn't accept that, as it was not part of our application as submitted. I told him in my opinion he was wrong, that again it prejudiced the applicant and the Council

was just looking for excuses. I said I looked forward to the decision letter so we could prosecute an appeal to the DOE requesting an informal hearing to be held at the Council Offices during which I, on behalf of the club, would make a formal request to the Inspector for costs against the Council for unreasonable behaviour.

WELCOME - NEW MEMBERS

A big welcome to all new members, - I hope you all enjoy everything the club has to offer. If so, it will be money well spent, with the opportunity to make many new friends in a club where our permanent sites ensure that you are able to enjoy your sport for many years to come. I look forward, along with the rest of the committee to meeting you at our next club night on Wednesday 23 Feb. - 7.45 for 8.00 'start'.

We have veteran member Bob Randall giving a talk on his experiences in WW2.

Thanks Bob, - we are looking forward to it!

ANOTHER WELCOME - (FROM AL SPICER)

As the Director of Flight Training and Safety for Chesham Model Flying Club, I would like to extend a big welcome to all new club members.

I am a committee and founder member of the C.M.F.C. and have seen this club grow steadily since 1988 when it was formed. We have the use of two prime flying sites, both in beautiful green belt countryside, - one of which we own. Both Sites have excellent close mown take off and landing areas.

The B.M.F.A. (British Model Flying Association) have commented on our club being one of the premier clubs in the country.

Our Flight training scheme for Saturday mornings at our Pednor site, has five instructors including myself, and two 'standbys'. We work on a rota basis, - all seven of us are 'B' certificate rated pilots. There is also the facility for weekday tuition if you so wish, - (by prior arrangement).

You will find the instructors rota printed in this C.M.F.C. Newsletter with all relevant information on how to contact us, - phone numbers etc.

It is an important club rule that if you are a solo flyer and do not hold an 'A' or 'B' certificate of competence, you must contact one of our instructors to view and assess your flying ability before you fly at either field unaccompanied.

We have three B.M.F.A. examiners within the club including myself, so when the time comes for those 'A' and 'B' Certificates, we can arrange for you to take them.

This club is dedicated to help you the aero modeller, to get the most enjoyment and satisfaction out of your hobby, but at the same time, SAFETY is of the utmost importance.

If you have any queries or need help of any kind, please do not hesitate to contact either myself or one of my instructors, who will be only too pleased to help you.

NEWROUND 'WILDLIFE OBSERVATION SHELTER'

This handsome structure is nearing completion, - thanks to project leader Ray Birdseye and all the 'helpers' who have made it possible. These include your entire committee, seven other members and the 3 Junior Birdseye's. Also, - special thanks to Jeremy Tabb. Through his efforts, the company he works for supplied all the building materials at competitive prices. The total cost will be around £2600. This cost is met entirely from the £10,800 received from Balfour Beatty as a result of their occupation of our site over some 16 months whilst upgrading the West Coast Mainline signalling system, covering the stretch from Watford through to Bletchley.

THE SUN WILL BE SHINING, - EVENTUALLY!

Can't believe that it's February already. As we look forward to some suitable weather to resume flying, now is the time to check out all your equipment. This includes close checks on airframes for signs of possible failure. Check that all moving flying surfaces are secure, along with linkages, and servo and engine installations.

Check out all your ni-cad packs, are they as good as they should be? If not, then get rid of them and obtain some new ones, don't take chances that could jeopardise your safety and that of others. Have you got all your frequency pennants sorted, and silly as it might seem, is your frequency peg in your flight box?

We all know, or should know the club's rules and the guidelines set out to minimise problems and maximise safety in our sport. Don't be the one to ignore them, as our aptly named Director of Flight Training and Safety, - Al Spicer, and his team of instructors are constantly monitoring all aspects of safety within the club. This helps maintain the high standards of safety awareness, and member to member respect that exists in the club, vital in order to keep confidence and that most important ingredient, enjoyment, at a high level. It's your club, - enjoy!

CLUB RULES

There are not many reminders these days of infringements as we all seem to have got the rules licked. At Newground we have some smart aluminium notices on the new gateposts which should serve to make sure that gates are locked, and padlocks secured on gates that are open while flying is in progress.

One rule for Newground not yet published concerns our new Shelter which is officially designated the "Wildlife Observation Shelter", and whilst it is not specifically for this use, it is intended for sheltering from the elements or say relaxing with friends on a nice sunny day. What it is not for, is a general parking area for IC powered aircraft. The barbecue also should not be set up inside! There should be no fuel in or near the building and no paper or combustible materials such as paper left inside, and definitely no one should even think of starting engines in there. Just in case you may be tempted may I remind you of the Field Rule No 3;-

All aircraft should be prepared for flight on the aircraft park (pits area) as shown on the latest issue site map displayed at each site. Flying procedures should be in strict accordance with the safety codes set out in the B.M.F.A. handbook. All aircraft must fly circuits in the same direction, as dictated by the wind direction. The patch should only be over-flown 'into wind'. Prior warning of 'take-off' and 'landing' must be clearly called. No aircraft must ever be taxied toward the pits area.

LOG YOUR FLIGHT!

There are several instances known to the committee where members (yes we know who they are) have not logged their flights. It is accepted that someone could forget, but this is also about visits when no one else is there. You must not assume that it doesn't matter, because it does, as the committee are using log sheet data as the only way of substantiating site usage, in particular information in support of our Pednor planning applications. You must unlock the Hut at Pednor, or the Container at Newground and log your flight(s) at all times.

Field Rule No. 8 - After flying, each member must enter details of all models flown and flight times on the flight log sheet in the club hut, and must also ensure that no litter or rubbish is left at the site.

MEMBERS FREQUENCY PEGS / ACHIEVEMENT LEVELS ETC.

Will anyone who has not received their personal frequency peg, has an incorrect/outdated achievement level colour/rating, and/or does not have

their own gate key, get in touch immediately with any committee member. Similarly, if you change your postal address, telephone number or e-mail address you must contact Dave Anderson, our Membership Secretary, as soon as possible.

DIARY DATES - CLUB NIGHTS & COMPETITIONS

Please study the list of Diary Dates that Colin has assembled in this newsletter, and mark them in your personal diary now. Too often members ask when is 'this and that', and it's usually because they take little or no notice of the information that is printed especially for them.

COMMITTEE MEETINGS

Your committee is always keen to hear of any views/moans concerning the club from club members. We meet every 2 months at the Whitehill Centre; the dates are in this newsletter, and on the CMFC Web site. If you do have anything you would like to be discussed, then contact the Secretary, - David Turner, at least 2 weeks before the meeting.

FOR THOSE WHO ARE 'UNAWARE'

In the container at Newground, - (a little junked up at the moment), we have lights installed and a power socket, the power for which comes from our brand new generator stored in the lock-up metal cupboard at the back of the container. If you need to use it, - it 'lives' on the paving slab under the bench which is outside. MAKE SURE: - You turn on the fuel tap, set the choke, and then pull start it. ONLY THEN, - plug in the extension lead which is coiled in the plastic bucket, - the lights and sockets can then be used. IMPORTANT! - The output is only 950 watts, ideal for the lights and any chargers you may want to use at the field, - but DO NOT plug in your kettle from home. When you have used the generator turn off the lights etc, then pull out the lead and then turn it off. Next turn off the fuel tap and lock it back in the cupboard. Finally, so that we have fuel in it at all times please state you have used it in the notes column on the log sheet, (e.g. - Generator - 60 mins), - do not fill it with fuel yourself, - it takes petrol and oil mix. IT HAS A 2 STROKE ENGINE and Al Spicer has the fuel for it, already mixed. If the above guidelines are followed, - there should not be a problem, - it will run for over 6 hours on a full tank.

SAFETY AND SECURITY AT THE FIELD

This is now maximised at Newground with all the new gates in place, all suitably padlocked. In view of this, if you are last to leave, take 30 seconds

or so to check that all is OK before locking the container. Most important if YOU have used any of the equipment, do not assume someone still at the field will put it away. YOU deal with it unless you pass on the responsibility to someone else, WITH HIS OR HER AGREEMENT! The safety of yourself and your fellow members, followed by the security of club property is the responsibility of everyone. Do not assume anything whilst at the field, whether it be that your ni-cads are fully charged or someone else has done something for you. Always double-check everything that has a safety implication. Also, do not be complacent concerning the security of your vehicle, - someone passing by may not easily steal it from the site, but they could steal something from inside it. Make sure your vehicle is LOCKED while parked at either flying field!

GANG MOWING AT NEWGROUND

In about 8 weeks time gang mowing of the flying area, pedestrian walkway and car park will commence. If you have a vehicle parked at Newground while mowing is in progress, please make sure that it is parked well away from the edge of the grassed car park area. That is, - please move your vehicle, if necessary, to allow all of the grassed car park area to be mown.

NEW SIGN AT NEWGROUND

We have a smart new sign at Newground, mounted on the earth bund on the right hand side of the entrance, - PRIVATE - NO PUBLIC RIGHT OF WAY. It can't be easily removed as the steel posts are in the ground to a depth of over 4 feet. It is complete with a pair of Aluminium pads with the CMFC 'plane logo.

Did you know that Geoff Walker designed the logo, - It was the unanimous winning choice in a club competition some 15 years ago to have a new design, and will no doubt be around for ever!

A.H.A. TEAM TRIALS - SUNDAY 26th APRIL, & SUNDAY 11th SEPTEMBER. - NEWGROUND

Your committee have approved the use of Newground by the Aerobatic Helicopter Association. I received the following e-mail, -

Dear Dave

I am contacting you on behalf of our Competition Secretary, Adrian Richmond, to find out if it would once again be possible for the AHA to use your site at Tring later this year. We have two dates in mind. The first is Sunday 24th April & the second is Sunday 11th September.

The first date is for a joint Sportsman's & F3C Competition, the second date is for the second round of the F3C Team Trials to determine the Team for the 2006 European Championships (which incidentally we will be hosting here in the UK).

I look forward to hearing from you in due course.

Many thanks & kind regards

Julie Fisher - pp Adrian Richmond AHA Competition Secretary

Best of luck to them for this year, and fingers crossed for some decent weather on each day. Club members please note, - there will be no club flying either before or during the trial including any planned lunch break. Club flying can take place after the trial, when all A.H.A. participants and officials have vacated the field.

This may not be before 3.30pm, and of course depends on conditions at the time.

If anyone wants to visit to see precision aerobatics heli' style, then of course you are free to do so. Please respect the fact that this is 'serious stuff', - do nothing that might affect the concentration of both pilots and the officials in charge of proceedings. There will be an agreed safe viewing area designated on the day by the A.H.A., - and in the interests of safety you should, as always, be 'Alert at all times'!

'WHO GOES THERE?'

Most nights I take 'Willem' my Newfoundland dog to Newground and walk right round the field, - yes in the dark! Twice recently the local police patrol car has come by whilst I have been unlocking the gate. They have stopped and asked me if everything was OK, - a polite way of asking what I was doing. On both occasions they recognised me, as I had spoken to them before on issues of site security. I thanked them for their concern, which they appreciated, and anyway it's good to see that they are interested enough to see that it wasn't a break-in occurring. I mentioned that a 4 x 4 vehicle had pulled into the entrance recently and then 'scanned' the field with a powerful swivel spotlight, managing to pick me up in the beam part way up the grass walkway. They were obviously 'lamping' according to the police, where they will shoot rabbits and foxes, caught in the beam of light, with high powered air rifles when the animals 'freeze'. The police were interested to know whether I had got the index number of the vehicle, - unfortunately I hadn't!

Members Ramblings

Soldering for Dummies

Introduction

Or should that be 'Soldering for Everyone', because I am always surprised to find just how few people seem to be able to make a good soldered joint, be it electrical or mechanical. The main reason for assuming this is based on nosing at other people's models and the fact that if I purchase a second hand model I nearly always have to re-make all the soldered joints!

First of all let me say that I in no way consider myself to be a soldering expert! I am though, fairly confident in producing consistently reliable soldered joints, an ability which probably stems from good tuition by my father who was a really good all-round engineer and from my Technical Apprenticeship at Marconi, which was a superb grounding for good mechanical engineering practice.

Theory

Anyway enough of that and onto the technical stuff, well technique really and a bit of good old common sense. Whether the joint is electrical or mechanical or a combination of both, it is essential that the two components to be joined are bonded together with a continuous film of solder. This means no blow-holes or 'dry' joints (see later). In order to achieve this it is important that the two materials to be joined are compatible and therefore able to be soldered together satisfactorily. There are actually only very few materials that can be successfully 'soft soldered' (i.e. using normal low melting point solder as opposed to high temperature silver soldering, or for much stronger mechanical joints, brazing or welding). However for most aero modelling tasks, soft soldering is all that is necessary. The most easily soldered materials are brass and copper together with steel items that have been tin, nickel, silver or gold plated. All of these can easily be soldered using standard Multi-Core solder (if the right technique is used!).

Cleanliness

The first and most important element to a successful soldered joint is cleanliness. This means that generally any metal item to be soldered needs to be cleaned using fine emery paper to remove any stains or corrosion and

then wiped clean using Methylated Spirits or other suitable cleaning solvent. Generally the only exceptions to this are brand new electrical contacts straight out of the packet such as gold plated 4mm or 2mm connectors used for electric flight power packs or any other brass/silver/nickel plated contacts. It is pretty safe to assume that the solder tag part of these items has never come into contact with moisture/dirt/fingers etc so there is little chance that the surface has corroded/oxidised.

The importance of cleanliness also applies to the tip of the soldering iron, therefore it should be wiped clean frequently between soldering tasks to ensure that the solder on the iron does not oxidise due to lengthy exposure to the air. Also NEVER put your soldering iron away with solder residue on the tip, always wipe away any remaining molten solder with kitchen paper or better still a damp sponge (some soldering iron stands have a small sponge set into the base which when dampened makes keeping the tip clean a doddle).



Temperature

The next critical area is the iron temperature. There may be some compromise needed here but NEVER use an iron which is too small for the job in hand. Simply, the larger the pieces to be joined, the larger the iron needs to be in terms of heat output. This obviously has a bearing on the physical size of the iron so common sense should prevail here. The idea is to get the correct amount of heat to the joint as quickly as possible so as to transfer as little heat to the component(s) as possible. For example, leaving an inadequately sized iron resting on the contacts of a switch for sufficient time to melt the solder on the contacts will allow the whole switch to reach an unacceptably high temperature, which may cause plastic components within the switch to melt. Equally it is very important to ensure that both components being soldered reach the correct temperature so that the solder can flow and attach itself properly to both surfaces. As a very rough guide a 25 Watt iron should be fine for most of our electrical soldering

(joining wires together and onto switches, connectors etc.). However, for soldering battery packs together a 40/50 Watt iron is probably about right, and this would also be suitable for small gauge (say up to 14/16 SWG) steel wire (more of that later). For undercarriage leg assemblies of 12 SWG and heavier, a 75/100 Watt iron would be the best choice.

Keep it Steady

Finally, physical relative movement of the components being soldered must be avoided at all costs until the solder is completely solidified and cool. Failure to do this will lead to the dreaded 'Dry Joint' (they do light better than when damp... but enough of that!!!!). This expression refers to a soldered joint that has not solidified correctly and is weak both mechanically and electrically due to its different molecular structure. They are easily spotted as the surface of the solder has a 'cracked' dull finish as opposed to a smooth shiny appearance. If spotted, de-solder and start again! DO NOT risk it. However, to completely avoid this problem there is a simple solution....NEVER HAND-HOLD COMPONENTS WHEN SOLDERING. Impossible, I hear you say, and I do agree it is not always easy or practical, so a bit of common sense is required here again. Ideally, you really need two pairs of hands for soldering, a hand each for holding the two components, one hand to hold the iron and another to apply the solder. However, with a bit of ingenuity we can overcome the problem. The first requirement is to invest in a device called a 'Helping Hand'.



These can be purchased quite cheaply from companies like Proops Brothers, Maplin Electronics etc and comprise a heavy metal base supporting a number of articulating arms with crocodile clips on the ends, which can be adjusted and clamped in a multitude of positions. These can be used to support one or both components during soldering

(e.g. wire, connectors or even small metal objects). A cheaper solution for soldering electrical connectors onto wire leads is to drill holes of various sizes in a scrap piece of wood into which round connectors can be slid into and held firmly in the right attitude for soldering. For the very best results use this in conjunction with a 'Helping Hand' to hold the lead. For larger or

more difficult soldering jobs e.g. U/C legs, it is best to make up a simple dedicated jig to hold the relative parts together in addition to wiring the parts together with copper wire. Well there was a lot there and we haven't even soldered anything yet!!!

Basic Technique

Now to the good bit.....y'er actual soldering! The first step is to ensure that the tip of the iron has a smooth flat surface. If the surface is corroded or concave in shape, then reach for a fine file and gently file the tip until flat and smooth (before switching the iron ON!!). Once the iron has heated to temperature the newly shaped tip needs to be 'tinned', which simply means coating the surface of the tip with a thin layer of solder. Once the solder has been applied to the tip and has melted, gently wipe away the excess solder with a rag/cloth or preferably a damp piece of sponge. The iron is now ready to do some serious soldering! As a simple example, let me just run through the operations for soldering a lead onto an electrical connector.

1. Trim back sleeving on wire to expose wire strands and check that they are nice and shiny. If not, cut back more sleeving and if this does not expose new shiny wire, **THROW THE WHOLE LENGTH OF WIRE AWAY**, as it is likely that the wire is either corroded or suffering from 'Black-wire Syndrome'.
2. Secure the wire in a 'helping-hand' by the sleeving, leaving about 5/10mm hanging free.
3. Apply a small amount of solder to the tip of the iron.
4. Gently apply the iron to the **UNDERSIDE** (see Note 1) of the wire end, apply a small amount of solder onto the top of the wire and remove solder and iron as soon as the end of the wire has a thin uniform coating of solder along its length.
5. **WIPE EXCESS SOLDER FROM TIP OF IRON AND PLACE IRON IN STAND** (See Note 2).
6. Now repeat the operation for the end of the connector, leaving a little more solder on the connector, particularly if it has a recessed area for the end of the wire to sit into. Once again you will need a small amount of solder on the tip of the iron to ensure that the heat is transferred efficiently and quickly to the connector, or wire as in (4) above. Failure to do this will mean that the whole connector will get hot before for the small area to be soldered reaches the correct temperature.

7. This is where we need yet another hand, so the best solution here is to use a piece of scrap wood with a hole drilled to accept the end of the connector (assuming it is round of course!). If not, it can be held in another crocodile clip on the 'helping-hand' or hand-held if the wire has to be fed into a hole in the connector.
8. Position the tinned end of the wire over the tinned area of the connector.
9. Apply a small amount of solder to the tip of the iron.
10. Gently apply the iron to the UNDERSIDE (see Note 1) of the connector, let the wire end 'fall' into position onto the connector as the solder melts and immediately remove the iron, ensuring that neither the connector or the wire move during the cooling process. If you have been unable to get sufficient solder onto the connector (unlikely as you do not need a huge great blob to achieve a satisfactory joint) then apply a little more solder to the joint before removing the iron.
11. WIPE EXCESS SOLDER FROM TIP OF IRON AND PLACE IRON IN STAND.

Note 1: Heat rises, so wherever possible always hold the iron underneath the joint so that heat penetrates the joint area quickly, rather than heating the surrounding area.

Note 2: Once solder has melted on the tip it very soon starts to oxidise (this can be seen as a coloured 'skin' on the surface) and this will make it more difficult to produce a good clean joint. If solder is left on the tip of the iron for long periods in storage, the flux in it will start to corrode the surface of the tip necessitating regular filing to obtain a good clean surface.

Special Circumstances

As it is not practical to cover every type of soldering task in this article without boring everyone to tears I will just add a few other tips that may be useful to fellow aero modellers.

- **Battery Packs:** A problem may be encountered when trying to 'tin' the tags on cells due to the very shiny smooth surface. Place masking tape under the tag to avoid getting dust in the vent holes, and clean the surface of the tag with 240 grade emery paper. Then, to minimise the risk of oxidation during 'tinning', place the solder onto the tag and press the iron straight on top of the solder and leave it there just

long enough for the solder to melt. REMEMBER TO USE AN IRON OF SUFFICIENT CAPACITY TO AVOID OVERHEATING THE CELLS.

- Soldering Steel: This is commonly encountered when fitting brass clevis adaptors onto wire push rods and is probably a major source of 'bad soldering' due to the fact that solder does not like adhering to steel! The solution which probably provides the best mechanical joint, is to use Baker's No.3 Soldering Flux and non multi-core solder. However the big drawback here is that this flux is highly corrosive and if not completely washed from the joint will soon rust the steel rod! Either, just use Baker's No. 3 to 'tin' the steel rod (which is easily cleaned on its own) and use normal multi-core solder to join it to the brass adaptor or 'tin' the steel rod using the technique described above for battery packs.
- Wire Undercarriages: Again, we have the same problem as above, so it is best to 'tin' the steel wire in the areas that are to be soldered BEFORE wiring the joints together with copper wire. It is best to stick to using a conventional but large capacity soldering iron for this job rather than succumbing to the temptation to get the 'torch' out. There are occasions where it will be necessary to use a small blow-lamp or gas torch in order to heat the job up sufficiently, but BE CAREFUL. It is very easy to overheat the work-pieces, leading to oxidation on the surface of the metal, which will prevent the solder from adhering correctly.

I hope that the above will prove to be of use to those of you who may be a little apprehensive when it comes to soldering and apologies to others who probably 'know it all already'. If anyone has any comments on the above content (good or otherwise) or has any additional 'Soldering Tips', then please let us all know.

Geoff Walker

Instructors Corner

Flying Times

Pednor

Power Monday, Thursday and Friday: - 9am to 1pm

Power (79dB(A) max) Saturday: - 9am to 2pm

Gliders/Electric Any daylight hours

Newground

Power Monday to Saturday: - 9am to 7pm

Sunday & Bank Holidays: - 10am to 6pm

Electric Any daylight hours

Pilot Tuition

Flying tuition is available to any junior or new members who have yet to achieve their 'solo' wings. A flying instructor will be available to attend the Pednor field each Saturday morning from 10.30am to 2.00pm weather and pupil attendance permitting. To avoid the possibility of wasting instructor's time attending an empty field please Telephone the appropriate instructor on the Wednesday or Thursday evening to confirm that you would like tuition on the Saturday.

The Instructor Rota

The rota for the next few months is as follows: -

February	5	Dave
	12	Geoff
	19	Al
	26	Frank
March	5	Dave
	12	Geoff
	19	Al
	22	Frank
	29	Dave
April	2	Geoff
	9	Al
	16	Frank
	23	Dave
	30	Geoff
May	7	Al
	14	Frank
	21	Dave
	28	Geoff

Additional instruction is available at Newground on Saturday or Sunday afternoons with Robin Thwaites. Please telephone to arrange a mutually convenient time.

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Membership Secretary	Dave Anderson	01494-583127
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