



Memo to club members and all other readers:

We sincerely thank Andy Sephton for his essential work as membership secretary Data Protection Officer and treasurer (without those offices being filled, there would be no club.)

We are equally appreciative that Richard Arnold has stepped in to resume his former occupancy of the same positions. (And Martin Skinner stepping in as DPO.)

Membership of Peterborough Model Flying Club costs only £15 per year. For this you get a quarterly magazine (temporarily appearing monthly), organised events and competitions at Ferry Meadows and indoor at Bushfield, fortnightly indoor clubnights in Winter at Peakirk, close links to SAM 35 and the BMFA plus the support and companionship of one of the best “real aeromodelling” clubs in the country. We currently have just under 70 members. Our membership secretary/treasurer is:

Richard Arnold, 21 Signal Road, Ramsey, Cambs, PE26 1NG.

If contacting him please add your BMFA number, car registration, full address & postcode, Phone numbers, magazine preference (electronic or paper) and agreement to club privacy notice.

The Editor thanks all contributors who have made these “emergency” monthly issues possible: if your contribution does not appear here, it will be in the next edition, due in early June.

Old Warden dates for 2020 (provisional)

July 25/26. Sept 19/20

SAM 35 weekends scheduled at Buckminster:

(Provisional) June 26/27/28, Oct 3/4

Essential Calendar entry: Flying Aces 6th Sept 2020

PETERBOROUGH MODEL FLYING CLUB



MAGAZINE



May
2020

GROUNDED!



The second in a series of MONTHLY crisis editions.

*Produced both as a paper copy and as an e-mail attachment for PMFC members, and subsequently on our website
www.peterboroughmfc.org*



The shed is tidy. The garage is clean and its door is a new colour. Even the loft has been cobwebbed. A faint aroma of cellulose dope mixed with air freshener lingers in the air. In the workshop a Slicker fuselage is taking shape, a wing panel weighted down to hold it true. A fully-rigged 90" Falcon in a workstand occupies the lounge (although certain gentle hints from Sharon are beginning to imply that her legendary tolerance is becoming slightly stretched.) On the dining table photos and plans of the new fishing boat project lie underneath a Velie Monocoupe for which I have not yet found a box. The kitchen worktop is temporarily occupied by a partly-assembled Tudor house in miniature on which Sharon is bonding some thinly rolled out modelling clay prior to pargetting.

Oh, and on the patio is a Black Magic that I must remember to put away in its garage storage box before dark.

Outside, the doors of both garden workshops lie open for easy access. The hedges are loud with bickering sparrows, although not one is to be seen. The resident squirrel has gone to ground in search of some quiet. The weather is perfect for flying, the neighbouring treetops stationary in the evening light.

So what's all this I hear about lockdown, then?

I succumbed to the temptation to provide a frivolous conclusion to the above, but in the real world on the day in which I wrote it, more than eight hundred souls perished of the virus. If not known to us, they were at least friends we never had that chance to meet. Perhaps it is a good thing that we humans can adapt so rapidly to accepting our present circumstances, although for very many lockdown is a barely tolerable situation that has to be endured. And when normality resumes, it will be a different normality. So much is still unpredictable. Our hobby will, we hope, provide us with a focus at a time when such a trivial thing become so important in keeping us occupied. On behalf of the Committee, I send very best wishes to all our readers, and I hope that our magazine, now monthly, will bring a little diversion and remind all that we are a living community of fellow Real Aero-modellers.

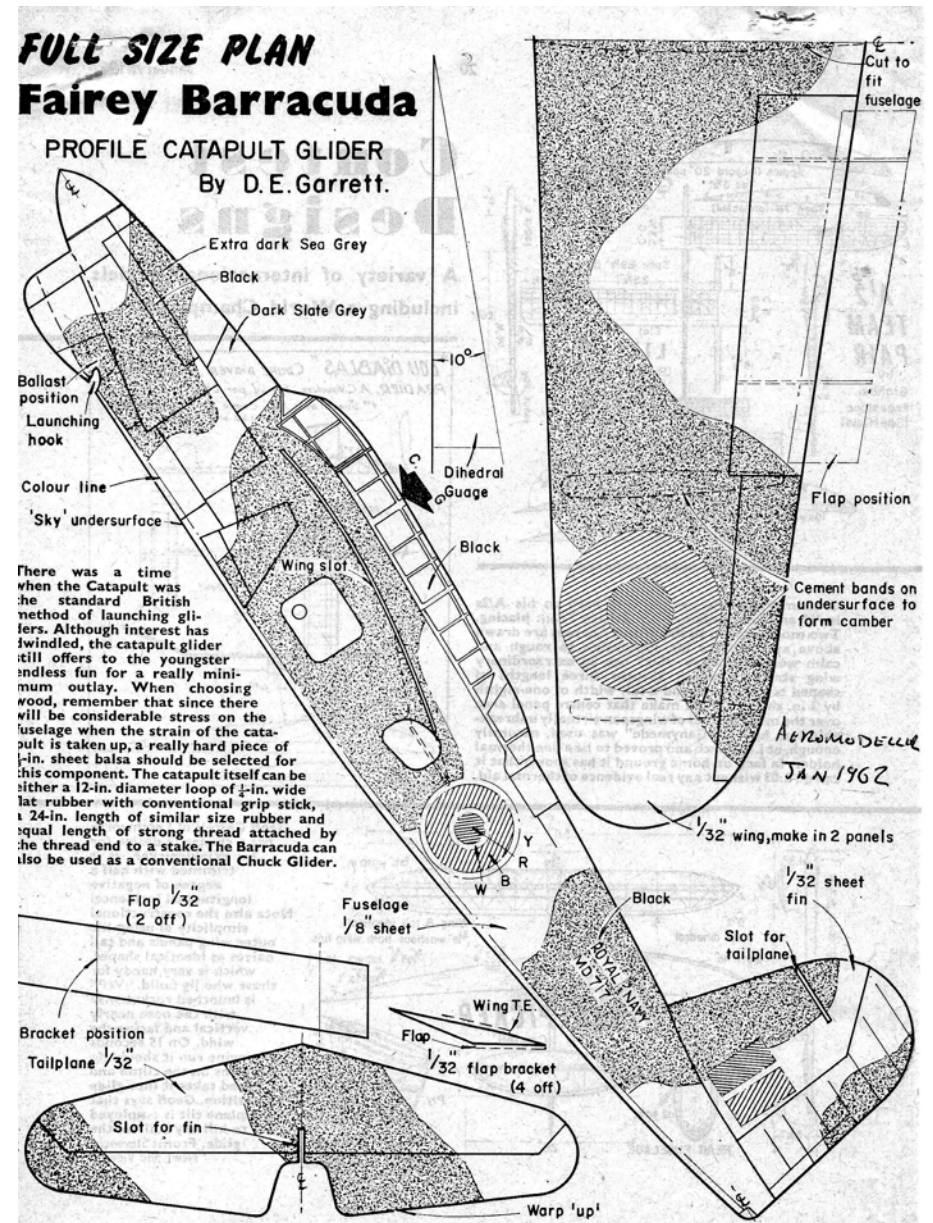
COMMITTEE POSTS:

- | | |
|------------------------|-----------------|
| President | Brian Waterland |
| Chairman | Brian Lever |
| Vice Chairman | Dave Leeding |
| Secretary/PRO | Martin Skinner |
| Magazine | John Ashmole |
| Treasurer/M'ship Sec | Richard Arnold |
| Data protection | Martin Skinner |
| F/F Sec | John Ashmole |
| C/L Sec | Roger Silcock |
| Sports/Scale Sec: | Russ Lister |
| Safety/Ferry Liaison : | Dave Rumball |
| Webmaster | Andrew Green |

Front cover: Stay fit, lads, we'll be back in business soon, along with Dave Rumball, at Ferry.

Editor@peterboroughmfc.org

Martin has found this plan for a "Garden Chuckie" Barracuda.
.....original span 12"



need to have prop blades made from .020 to .030 5.0 pound C grain wood. Light no-cals use .010 to .014 4.0 to 5.0 pound C grain. The prop spar needs to be rigid and stiff 8.0 to 9.0 pound A grain for heavy no-cals and should be about .095 round in the middle, tapering to .060 round at the ends. The lightweights are made from 6.0 to 6.5 pound A grain, and should be about .065 round to .045 round. The diameter of the props should be in the 10" to 12" range. The pitch should be about 1.2 to 1.5 times the diameter. The blades for all of my no-cals are formed on a 5" diameter can on about a 15 degree angle.

Adhesives:

When building your no-cal, you should try to stay away from super glues, except for special areas. I use Duco Household Cement diluted with acetone (40% glue 60% acetone) for most of my gluing on all my models. It is quick drying, about 15 minutes, and is very light and strong. I only use super glue around the nose bearing, the rear hook, and for gluing the prop shaft to the spar. Super glue is quite heavy if used to build the entire aircraft. When covering the model, I quite often use 3M spray adhesive, or sometimes white glue and water (20% glue 80% water). However, under NO circumstance should clear dope be used for covering indoor no-cals! You might as well put a coat of lead on the model and throw it out.

And that is it! No hocus! No pocus!

I hope the information presented here helps out those who are looking for answers on no-cals. If you would like to ask specific question please feel free to email me:

don@indoorfreeflight.com

And finally,

Some of you have expressed interest in reproducing this web page in part or in whole for various publications. I hereby give permission for all to use, with three (3) stipulations:

- #1 mention my name (who knows maybe you'll get a good seat!)
- #2 mention this web site address (<http://www.indoorfreeflight.com>)
- #3 please send me a copy of your finished article/newsletter/publication because I would love to see it!

Don Slusarczyk 868 Eaglewood Dr. Willoughby, OH 44094



WE have Andy Sephton (left) to thank for the above comprehensive article, and Don as well, of course. Don will receive, as he has requested, a copy of this magazine.

On the same subject, BVW has commented: *I would like to see more No-Cal models flying at Bushfield (Peter Adams and others have shown the way) and am happy to copy plans as long as they can be put on A4 sheets.*

All I ask is that you tell everyone that NoCal was invented by a group of clubs in Northern California and do not repeat the ridiculous canard propagated by the Internet that says, as profile models they are very slim, hence "No Calories."

FREE KIT GIVEAWAY!

...To PMFC Members

Thanks to the generosity of Brian Lever, any one of our members can win one of these kits: all we ask is that some comments, however brief, and perhaps a photo of the build are sent in to the editorial offices during the build.

Note that the Sparfish and the Hart are now so rare they are collectors' items.

(I recently built one of those Lutons, and loved the model, using it for my only venture into indoor scale.)



How does the "Win a Kit Competition work?"

All you have to do is to choose the kit you wish to build and write to the Editor at johnashmole@yahoo.co.uk saying why you have chosen it. The only proviso is that you are asked to write (or tell me by telephone) how you get on with the build. A photo or two would make a nice extra. This month's kit winner will be chosen by a non-PMFC member who is not acquainted with any of the club and the name will be announced by e-mail two weeks after the publication date of this issue.

Each month after that, for the duration of the full or partial lockdown, Brian will add a new kit to replace the chosen one, and will revamp the set entirely after three months.

Go for it, lads! Send your entry to me now!

SOMETHING TO CONSIDER DURING LOCKDOWN?

I am now into week 4 of isolation. Funnily enough the family have conspired to keep electronic communications at such a level that we are speaking to each other at four times the usual rate. So I am certainly not feeling isolated. However, not being able to meet up and fly with PMFC'ers is certainly a terrible blow and how I will cope with this over a prolonged period is anyone's guess. During the recent spell of beautiful warm and calm weather I have taken to both small rubber and glider hand launches in the back garden. I have "flown" my KK Elf, Peck Prairie Bird, Frog Diana, O/D foam glider and Cloud Tramp. However, a few seconds in the air is hardly satisfying for any true aeromodeller.

So I got to thinking what could I do as a " Garden Flying" project without driving the neighbours mad with noise or models landing in their precious flower beds. I thought what about control line!! The model would require to be electric powered, have some aerobatic capability and fly on relatively short lines. Having just made up a set of lines for the Tribute Voetsak (50' for those who may wish to know) my trusty old tape measure (measuring in good old feet and inches) was to hand. So a check was made on what length of lines by back garden model could realistically operate on. With Sheila's whirly thingy washing line removed and the bird bath repositioned up to 25' was just about possible, although this would require some flight over her very precious herbaceous border. Well I reckoned with a light model I could sell her the idea that it would not ruin the flower beds and be of significant benefit to my mental health. The subject was broached and given tacit approval.

In the back of my mind I remembered a conversation I had with Den Saxcoberg at Old Warden some time ago. Den mentioned that he was developing a small electric powered control line model including a specially designed timer to control all the required functions. I went onto his " Dens Model Supplies" website and sure enough all the required items were advertised for a back garden model. Den makes these complete kits to order and thus I e-mailed him to pre-order and get in the queue.

drastically.

Choosing the right wood:

Wood selection is also a critical factor in building a good no-cal. This wood can be purchased from Indoor Model Supply, or any other good indoor supplier. Some of the wood I use is from a local hobby shop, most places do not care if you bring in a scale and quickly weigh the wood.

5 gram and 6.2 gram:

fuselage outline: .050 x .050 5.0 to 5.5 pound A grain
(do not rely on outline to provide support)
wing spars: .065 x .080 6.0 pound A grain (may need to be .095 high)
wing ribs: .035 x .070 4.5 to 5.0 pound A grain
tail surfaces: .035 x .065 5 to 5.5 pound A grain
motorstick: .015 - .020 4.5 to 5.0 pound C grain 5/16" o.d.
tail boom: .012 - .015 4.5 to 5.0 pound C grain 1/4" o.d. to 1/8" o.d.

Unlimited weight:

fuselage outline: .030 x .030 5.0 pound A grain
wing spars: .030 x .065 5.5 to 6.0 pound A grain
wing ribs: .030 x .060 4.0 to 5.0 pound A grain
tail surfaces: .025 x .050 5.0 to 5.5 pound A grain
motorstick: .010 to .012 4.0 to 5.0 pound C grain 1/4" o.d.
tailboom: .008 to .010 4.0 to 5.0 pound C grain 3/16 o.d. to 1/8 o.d.

Choosing the right covering material:

Covering material is based upon the weight class being flown. Unlimited no-cals should be covered with Gampi tissue to keep the weight down as low as possible. For the 5 gram and 6.2 gram events, Japanese tissue can be used without much of a problem. If you feel that you are more comfortable building a model out of heavier wood, then you can use Gampi tissue. Most Gampi is about 3/4 the weight of Japanese tissue, so the weight you save in covering can be turned into structure. This, by the way, is the method I prefer. I would rather have a stronger model with light covering than a weaker model with heavier covering.

The propeller:

The propeller of a model many times is the most overlooked part of the airplane. Many people spend hours building a model, but do not give the propeller the time that it deserves. I am reminded of a story I was once told about a modeler who was having trouble trimming out a particular p-nut scale model. He got some help from a local p-nut guru during a flying session. The model was trimmed out and was flying quit well. About an hour later the guru saw this modeler launch his airplane, and it flew horrible. The guru went over and asked him what he had changed on the model, the modeler replied "Nothing, just the prop."

Care must be taken to ensure you have a well built, and well tracking prop. Heavy no-cals

Choosing a subject (What about motor stick and nose length?):

The nose and motorstick length of the No-cal subject is a major factor in determining the models final weight. For example, the first model I built for 5 gram no-cal was a Farman Biplane. Each wing was about 3" in chord which yielded about 80 sq. inches. However, the model has a short nose. The model complete weighted 3 grams. I added some nose weight to get it to glide and then reweighed the model. To my shock, the model was now 5.5 grams. This 3.0 gram model needed 2.5 grams of nose weight to make it glide. Additional nose weight was needed to get the model to fly with a rubber motor. Because there was more motor behind the CG than in front of it, I needed to add additional weight to compensate for the motor. In this condition the model weighed 6.5 grams, 3.5 grams being nose weight. A quick calculation told me that for each .1 gram weight reduction in the tail, resulted in a .3 gram reduction in required nose weight. This meant if I made the tail .1 gram lighter, I could remove .3 grams nose weight for a .4 gram total weight reduction. I removed some tail structure, .2 grams, and then removed .6 grams of nose weight and the model instantly dropped .8 grams, to 5.7 grams from 6.5 grams.

This is a good example of how choosing a subject can make or break your effort. If you are building any no-cal, a good rule of thumb is to make sure the middle of the motorstick coincides with the CG location. The motor stick should also be 10" to 12" in length (for 5 gram and 6.2 gram), and 8" to 10" for unlimited no-cals. Using this rule, you can determine if the nose length for the subject you have chosen is long enough. If it is not, the rules of no-cal allow you to stretch the models fuselage a little since the rules state the model must be a 'recognizable' model. So if the nose needs to be a half inch longer, so be it, the rules allow it.

The reason you want the motorstick 'balanced' is so that when the motor is added to the model, it will not move back the balance point. If it does, then more nose weight is needed to counteract the motor weight. In fact, on my real light no-cals, there is more motor in front of the CG than behind it. This allows the motor and motorstick to act as nose weight, which in turn lowers the total model weight. The BD-4 No-cal I have actually has .2 grams in tail weight because it was too nose heavy. My general rule of thumb is that an unlimited no-cal should have at least 60% of the motorstick located in front of the CG. Using this rule, no-cals can be built with the least amount of nose weight needed, in fact they may need any at all like my IL-2 WWII no-cal (1.8 grams). This model has an 8" motorstick with about 6" of that being in front of the CG, the motor acts as the model's nose weight. The reason I could do this is that the IL-2 has a long nose. I could not make a Japanese Zero to this weight, because the nose is much shorter, it would need 1 gram in nose weight just to get the CG in the right location.

My final example to drive this point home even further is about my Clipped wing Spitfire WWII no-cal I use to have. When I built it, it weighed 2.8 grams with a 11" motorstick. This model required .5 grams in nose ballast. A year later I decided to shorten the motorstick to 8". The reworked model no longer required the .5 grams of nose weight, since more motor hung in front of the CG than previously. The lighter motorstick also resulted in a weight reduction, and the new model weighed in at 2.2 grams, a .6 gram reduction just because the motorstick was shortened 3". All of the structure remained the same, but just the way the motorstick was positioned reduced the weight



The package includes:- Laser Cut Balsa Parts, Hardware Package, U/C and wheels, Electric Motor, 2 props and O rings, Electronic Speed Controller, Control Line Timer, Control Line Handle and Lines.

Wingspan 23", Line length 20-25 feet (perfect for my garden!)

Total cost for the lot £85. For the sake of my sanity a bargain.

The timer is very clever. Motor run duration from 10- 600 seconds. End of flight warnings (LED visual and power "burps". Motor power adjustable from zero to full power, Motor soft start 0-10 seconds, Motor Run Down 0-10 seconds, Motor start delay for solo flying 0-90 seconds, U/C servo (if used) retracts 10 seconds after flight commences and deploys 10 seconds before flight terminates (minimum programmed flight time of one minute required), Take off power boost (3 seconds), Push button immediately stops the motor at any point of flight profile, duration settings are saved in the memory so a single button push can repeat the flight, provision to fit remote pushbutton and remote LED, ESC configuration capability. L34mm W20mm H 11mm Weight 4gm.

The timer can be purchased separately for £19.50.

For those of you into YouTube there is video showing how easy the timer is to programme and operate. This also gives details of suitable batteries to be used for the system.

Hopefully, I will be able to give you an update on the build and first flights in our next Magazine.

Stay Safe. Brian Lever.

You Can't be Cirrus!

..... Phil Wigley, who clearly knows his models, has been playing games...

I went for another walk today. Blow me, I saw an old mate from school. My old PAL-JOEY. Fancy seeing you here. He had his LADYBIRD with him. I haven't seen you since that SCHOOLMASTER hit you with his BIG-STICK. You were the milk MONITOR as I remember, a right TERRIER. Whatever happened to that little PRINCESS you used to go around with? I thought she was a right UGLY-STICK? I married her, he said. Whoops, is this her? No she left me ages ago, this is my sister JENNY CURTIS. That must have hurt, her father was a MARQUIS wasn't he? Yes, he was a COMBAT KING in the army. What was her name? CAPRICE. Oh, yes, I remember now. How are things now, mate?

It's not good, I've got these strange noises in my attic. BLACK MAGIC, some sort of GALLOPING GHOST, a ZEPHYR!

No, that's bad. Can you come around to ours now.

WOT-FOR? You cannot be CIRRUS, I'm no GHOST-RIDER.

Oh, please come, I'm sure you KANDOO what we CANARD.



Martin Skinner seems to have a penchant for F.R.O.G. Model designs that many of us have never heard of: this he says, is a FROG Delta from the Senior range: it's rubber powered and flies quite well in calm conditions. Needs lots of turns on a loop of 3/16th.

For A4 plan contact Martin, or go to Mike Stuart's House of Frog website.

No-Cal Building Techniques

This page is a by-product of the discussion which came about on the Free Flight mailing list concerning lightweight Indoor No-cals. It has been suggested and or implied by some that we 'experts' are ruining 'beginner' events by taking the fun out of these events, and replacing it with competition. I personally will make no apologies for my competitive nature, but in return will provide and educate those who are willing to listen, with the techniques required.

So you want to build a Contest Winning No-Cal?

Know the rules:

I think most of us are aware of the No-Cal rules. The one thing you need to know is what weight rule No-cal are you building to. As far as I know there are three current No-cal weight classes, 6.2 grams and over, 5 grams and over, and no weight restriction. (Of course there is WWII combat, but that falls into the same weight categories) Once you decide which event you are flying, then you can choose the model you are going to build.

Choosing a subject (How big should the wing be?):

The model selection is based on the event weight class you are going to build. For 6.2 grams and over, you will need a model with a wing around 80 sq. inches. For 5 grams and over, a model with around 65 sq. inches will work just fine. Unlimited No-cal works quite well with models in the 50 sq. inches of wing area range. Why is this? Well, a 6.2 gram no-cal is actually a very heavy weight model. You can build a lot of structure for the weight your allowed. This is why this event is now flooded with racers. Most racers have low aspect ratio wings with long bodies. This type of model could not be built very light because there is so much structure needed due to the overall large size of the model. But since you are allowed so much weight, a large fat chorded model can be built without any penalty.

Subject Examples: Bonzo, Chambermaid, Cassutt Racer

5 gram No-cal is pretty much the same. Most people I know fly their 6.2 gram No-cal in this event because most of their models really weight just under 6 grams and they carry some ballast to bring them up to weight. However, I think that a separate model should be built for this class. A slightly smaller model than what is used in the 6.2 gram is ideal.

Subject Examples: Fike, Lacey M10

Unlimited No-cal is the toughest one to decide on. A compromise has to be found between model size and final weight. If you pick a large long model, it may be too heavy to fly well (Chambermaid). If the wing is too small, (Found Centennial or Pilatus Porter), the wing loading is too high even though the model may be light. A good compromise is a model with around 40 to 50 sq. inches, and around 16" inches on length. Another thing to consider is landing gear. Retractable airplanes do not require landing gear, so weight is saved by the absence of the landing gear

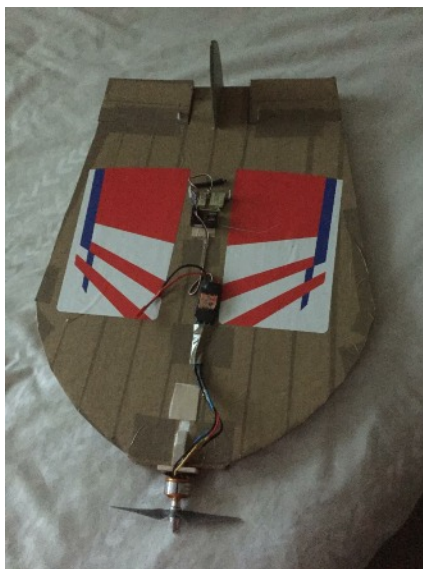
Subject Examples: Bede BD-4, Cessna Cardinal

Please note: BMFA rules state 16" span, no length restriction, Min weight 6 grammes. See BMFA Rulebok p 124. Via link on PMFC website.

From Ray Millard:
(who has upset the Editor badly)

“This may not be suitable for a proper magazine * as it’s probably about as far from real aeromodelling as you can get. With the lockdown in place I’m not sure that I could walk to the local playing field to fly my Sharkface or Mitey without getting my collar felt. So, flying in the garden was perhaps the answer? Our garden is just about flyable on a calm evening but balsa models are a bit vulnerable to damage and they have too good a glide. I found a sheet of foam in the shed and this is the result. The foam is about 3/4” thick and has no section. It’s just cut to shape. Covering is parcel tape.

Does it fly? Well, yes. Under power it’s really gentle gentle and responsive but the glide is the best bit: there isn’t one! The approach can be nearly vertical and seems to be on the back of the stall. Just a touch of power is all it needs.”



* How dare you, Ray! This IS A PROPER MAGAZINE!!!

LETTER FROM AMERICA:

Karl Hube of the Thermal Thumbers of Metropolitan Atlanta is following closely our adventures, as well as sharing our distress.



“Original simple design to encourage club members to build. We are flying with 25 ft of rubber (3/32” from used P30 motors) plus 75 ft of line. This matches the bungee used for the scale gliders event in the Flying Aces schedule and is very close to your bungee arrangement.”

“I suspect you are living very much like we are to avoid the Covid 19 virus. Our county has a “shelter in place” order which means we can go out to the grocery store and the pharmacy for medications. Little else is permissible until further notice. Our schools have been closed until late next month which is near the end of the regular school year. Today, for the third Sunday in a row, we “attended” our church service online while sitting together on the couch. We are told that we have not seen the peak of this disease, so we’ll press on with patience and caution.

After a couple of weeks in isolation you would think that I would have been gluing a lot of model parts. In fact I have been cleaning up the work area and making proper model boxes for storage and transport... the kind of thing you never stop for in the flying season. Now that the work surface is clear, I will start a new model for the Simplified Scale event under the Flying Aces Club rules. These models are really simple and they can be made to fly well.

I am delighted to see your magazine showed an Embryo model in use as that is one of our favourite Flying Aces events. We usually fly three flights to a 120 second max from an RoG launch. They are not very good in the glide, but if you can find some lift they ride it well... so well that I use a pop-off wing d/t to get the model down on those great Summer days. The same class is a candidate to fit in the Precision and Rubber Ratio ideas that you fly.

We continue to have good results in trimming our first bungee-launched gliders. When we are allowed to fly later this Spring (?) The gliders will be put into action. My thanks go to you and Chris Grant for your advice on getting the class underway.”

From Auckland: Don Spray’s hangar



Who will be the first with a list of the names of all these models? Don says,

“I’m quite enjoying this lockdown caper, aeromodelling is a great hobby to have when you can’t go out.”

(If I get several replies, I’ll ask Don to adjudicate.)

Aero-model Construction

By A. C. Horth (Chairman of the Aero-Models Association)

The great value of the School Aero Club in promoting national interest in aeronautics is recognised by all those who have the future of aviation at heart, but it is to be regretted that very many school authorities throw such difficulties in the way that the formation of school clubs is only slowly progressing.

It may rightly be asked why this state of affairs exists, and if inquiries are made it will be found that the main reason is that an Aero-Model Club would probably interfere with cricket or football, and disorganise the school sports.

A very strong argument in favour of the School Aero Club has been made recently by Mr. Robert P. Grimmer, Secretary of the Arundel House School Aero Club, and the powers that be will have great difficulty in maintaining, in face of the strong case against them, their unbending opposition. There still remains, after the patriotic, sporting, and athletic aspects of the movement, still another and even more powerful argument in its favour, and that is its educational aspect.

We have something here that must overcome the most invincible opponent, for no true educationist can ignore the advantages of school handwork, which now forms an integral part of ordinary school education.

In the great majority of secondary and public schools, woodwork or some other form of constructional handwork is taken, and, even where there are no facilities for its practice, the principles are recognised, and no doubt before long every school will have its handwork room.

The Board of Education attaches great importance to schemes of school handicraft, and has recently issued a circular to secondary schools calling attention to its value.

Handwork should provide means by which exercise is given in the use of tools and the using of various materials; it should be associated, whenever possible, with drawing and design, and should promote inventiveness.

In what better way could the above essential features of handwork be produced than in aero-model construction? What form of educational handwork, woodwork, metal-work, wood-carving, fretwork, or cardboard-work contains more varied tool operations or materials? Where is there more scope for drawing and design? In what form of handwork can the

as a School Handicraft.

(Continued from page 8. Editor and Author of "Educational Woodwork," etc.).

principles of mechanics, physics, or mathematics be better applied, and also where are there greater possibilities for inventiveness and accuracy?

It would be a very difficult thing to find any form of constructive work more suitable for a school handicraft; it does not call for an expensive workshop equipment, the ordinary school woodwork room being quite suitable.

Woodworking forms an important part of aero-model construction, and the wood used is not limited to one kind. The metalwork, which is a necessary part of the work, is light in character, and, with the exception of a small steel vice and a few files, no great increase of tools is needed.

Practice is given in soldering, and this in itself is an extremely useful operation to learn. A copper soldering bit, the use of a gas-ring or bunsen burner, a roll of "Tinol" or a tin of "Fluxite" and ordinary solder is all that is necessary in the way of apparatus.

The use of a fabric for covering the planes gives useful practice in another material, so that, with wood, metal, and fabric, there is plenty of scope for manipulative work, all calling for considerable effort, and, in addition, when the fascinating nature of the work is also taken into account, no school authority could conscientiously refuse to sanction the formation of a club calculated not only to inculcate interest in a great and important movement, but also to give such valuable educational training.

Pioneer work is generally of great difficulty, no matter what it is, and anything that will move the British public from the state of apathy in which it now slumbers is to be welcomed. Can anything be better than interesting the young, who will to-morrow be all-powerful, and, according to the way in which they have been brought up, either make this country the mistress of the air or be content to allow it to fall into the status of a fifth-rate Power?

In the history of aviation the early pioneers were all British, the most important pioneer work has been done in this country, and gradually we are regaining the ground lost in the beginning of this century. Are we going to forge further ahead? If we are, we must support the Aero-Model Club, and most of all the School Aero Club.