Diary

28th January ?Spennymoor	NE Area Indoor Meet. EZB; HLG. Contact, Jeff Anderson tele: 0385 68493.
11th February Crawley	SE Area Indoor Meet. EZB; HLG; Scale. Contact, Dave Cash. tele: 0342 23242.
25th February Bassingbourn	Crookham F/F Gala. O/G; O/R; O/P; All-in FAI (5 flights, no rounds). Start, 10.00. Contact, Fred Chilton, tele: 0494 443614.
4th March	NE Area Indoor Meet. Contact, as above.
18th March Area venues	SMAE 1st Area Centralised event. F1A Glider (K&MAA Cup); O/R; O/P.

JANUARY 1979 79/01

FFn

FREE FLIGHT NEWS

Contents

Subscription Note	2
California Dreamin'	2
FLUX, F1B by W Ghio	2
Russians, Nordics and Catapults	2
FIK, F1A by I Horejsi	5
NUMBER 6, F1A by J Wilson	6
SMAE Centralised Mini Event	8
A Sweeping Change in Swept Volume?	8
CPKG Free Flight Gala	8

2 Alexandra Close, Netley Street, Farnborough, Hants, England GU14 6AH

Compiled and published by Ian Kaynes, Paul Masterman, Michael Warren and Malcolm Wood.

SUBSCRIPTION NOTE

With Christmas and New Year being here, it's subscription reminder time again. If you wish to renew your subscription for 1979 please complete and return the form that was included with the recent joint October/November edition. Since we've fallen badly behind schedule in the last few months - apologies again - we're sending all the '78 subscribers the January 1979 edition as well. This is intended as a reminder and as an encouragement to you to re-subscribe!

We had 551 subscribers in 1978, a few down on the overall '77 figure, though with a slight increase in the UK subs. Breakdown of the total was as follows:

UK	269	Israel	8	Bahrein	1
USA	55	Belgium	7	Brazil	1
West Germany	24	Portugal	4	Cuba	1
France	22	CSSR	3	East Germany	1
Australia	19	Finland	3	Haiti	1
Italy	18	Spain	3	Indonesia	1
Netherlands	17	Yugoslavia	3	New Guinea	1
Japan	16	Hungary	2	Peru	1
Canada	15	Iran	2	Quatar	1
Sweden	12	Norway	2	Romania	1
New Zealand	11	Rhodesia	2	USSR	1
Denmark	10	South Africa	2		
Argentina	9	Switzerland	2		

CALIFORNIA DREAMIN'

With the temperature in England and the rest of Europe well below freezing point, and with vicious winds sweeping in from Russia, summer-time contests seem far away. But for those of you saving up for that trip to California, here's a contest invitation from Roger Simpson:

The third Sierra Cup International Contest for classes F1A, F1B and F1C will be put on by the Sierra Eagles MAC at Sacremento, California on October 13-14, 1979. This is the weekend following the 1979 World Championships for free flight models at Taft, California. The Sierra Cup has been patterned after the popular Pierre Trebod contest in France, and this year will hopefully replace the Pierre Trebod as "the" contest to attend immediately following the World Championships. It is a contest where the World Champ's competitors can fly in a relaxed atmosphere, and where everyone can compete against competitors from around the world.

Our format this year will change slightly from previous Sierra Cups to accommodate the expected large number of entrants. One hundred to one hundred fifty entries are anticipated.

On Saturday, October 13, we will fly the F1A class by itself. Seven rounds will be flown with flyoffs being flown in the evening. On Sunday the 14th of October both the F1B and F1C events will be flown. On Sunday evening there will be a banquet and trophy presentation in town.

As in the past, competitors will start in groups that will rotate to different pole assignments each round. Timers are assigned permanently to the poles. The flying order is decided by the fliers themselves within each group.

If at all possible, the number of fliers assigned to a group will not exceed 5.

The official announcements and entry forms will be distributed at a later date. We are fortunate to have numerous motels and restaurants in the area, so accommodation is no problem.

FLUX, F1B by W Ghio

As you will see from the note on the drawing, this model is the complement to 'Sprint', published FFn 78/08. There are a few notes to add, having seen the model on the ground and in the air - and having had the good fortune to examine a sample motor tube made by Walt. This unit has a sturdy glass cloth interior, impregnated with epoxy, onto which is bonded a single layer of 1/16th inch balsa with the grain running the length of the tube. Around this is wrapped a further layer of thin glasscloth, again bonded with epoxy. The resin is applied in such a consistency as to ensure it soaks right through the wood. The finished sample tube weighs 30 grams and is 52 cm (20½") long. As we commented before, Walt winds his motors without any protection for the motor tube. Presumably, a broken motor does not damage the tube. Still, cartridges have other uses, besides protection, like allowing rapid extraction of the broken bits? Still, it's a nice Wakefield, and that's what counts.

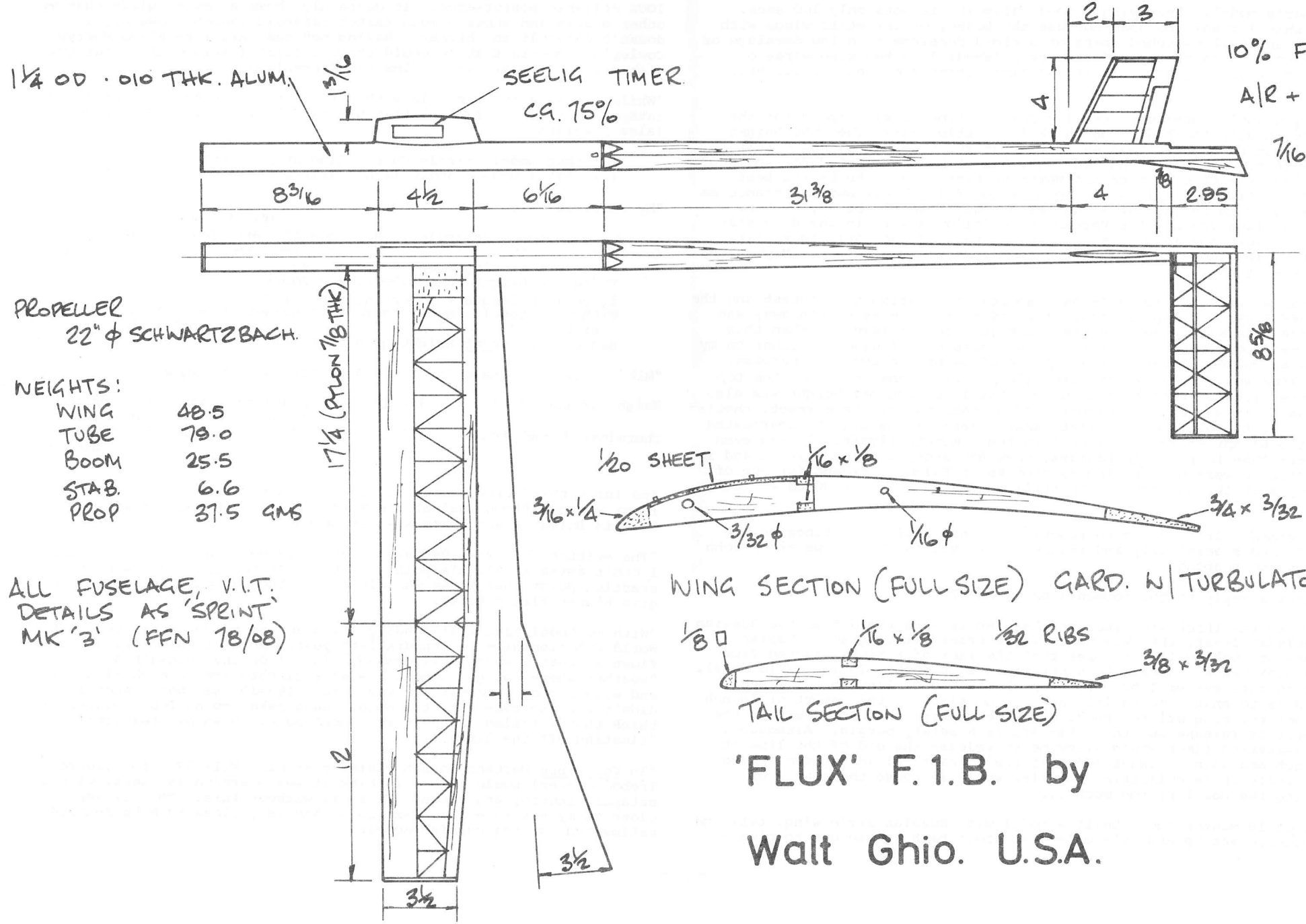
RUSSIANS, NORDICS AND CATAPULTS

A few months back, FFn received one of Mike Segrave's splendid and argumentative letters. He had some interesting thoughts on A/2s and on zoom launching in particular:

"I am getting thoroughly sick of those who say the Russians get little or no height from their catapult. They call it 'the mythical fifty foot height gain' and produce figures to prove it can't be done. Too much drag, they say. Well ... look at the 1977 NFFS Symposium and Ivan Horejsi's article. (He's a better A/2 flier than any of these critics and moreover has a much better head for this kind of thing.) He says that despite flying his calm air model and catapulting it against the Russians' birds, they still beat him despite the fact that he (Horejsi) gets over 180 secs. The Russians use the B6356 airfoil which is not really highly regarded as a calm air foil but allows a high-speed tow with low decalage (2½ degrees) or even less if an autostab is used. Let's say that this will give about 150 secs off a normal (i.e. non-catapult) tow. If these same models do over (well over) 180 secs on their catapult, this time will be about 190 secs. That's 40 secs difference. At a sink rate of 150 secs from a normal tow of 1.15ft/sec this gives a height for the start of the glide of 170 plus (40 x 1.15) or 170 plus 46 feet. Mythical?

"Thinking of some common design faults, take as an example John

SCALE 1:6 ALL DIMNS IN INCHES.



PROPELLER
22" ϕ SCHWARTZBACH.

WEIGHTS:

WING	48.5
TUBE	79.0
BOOM	25.5
STAB.	6.6
PROP	37.5 GMS

ALL FUSELAGE, V.I.T. DETAILS AS 'SPRINT' MK '3' (FFN 78/08)

WING SECTION (FULL SIZE) GARD. W/ TURBULATORS.

TAIL SECTION (FULL SIZE)

'FLUX' F.1.B. by

Walt Ghio. U.S.A.

Cooper's model. Even with a good catapult, it gets only 160 secs. See what I mean? He does not use the B6356, or the stiff wings with D box and double-webbed spars or a rigid fuselage or a low decalage or a biconvex stab or tapered tips or polyhedral or two wing wires or auto-stab or lacquer finishing or timer start from hook or ... etc. etc..

"If you don't agree with the figures for time or sink speed for the B6356, that's too bad. You think it's optimistic? Then the height gain must be greater than 46 feet. But YOU think it glides better than that? If that's the case, why has it been neglected for so long? Why have the GF 6 Thomann and Wortmann been thought to be the best gliding foils? Simple - everyone is too full of his own importance as a designer to think that anyone else could possibly be any better. The Russians and now the Koreans have followed suit in the demonstra-tion. Just how long does it take the rest of the world to realise that a clean model with a high catapult is the way to win. Maybe they don't want to...

"I was at the last two W/Cs as a spectator. During the contest and the flyoff I watched Lepp launch. I stood behind him as he ran away and watched closely to observe the point just before launch. When this was reached I marked the point; the first time I used the lines on my hand as guides, later, I had a piece of paper for the same purpose. One line was marked as the base, (Lepp's feet) and the other the top of the circle. When he catapulted, the levelling-off height was also marked. It was a third higher. If my mathematics are correct, that's-fifty feet. Olofsson (a first class observer) was also flabbergasted by the height of Tchop's launch in the 5 minute flyoff. It was even better than Lepp's. In Denmark, they had stopped using aileron and in my opinion were not getting as high as in Bulgaria except for one of Tchop's in the 6th round. It still seemed to be about 30 to 40 feet though."

It seemed fair to get some reaction to this analysis. Since he was mentioned specifically and critically in Mike's letter, we asked John Cooper to respond:

"First a reply to the comments on my model.

"Due to the thick wing section the wing is more rigid than the Russian models (at least, that was my estimate after twisting some Russian wings at Roskilde!). I agree that the lack of a timer started from the hook has a bad effect on performance (probably losing me 10 secs). Due to this system I have to keep about 10ft of line on the winch; this is to enable me to let the line go slack at the moment of launch to get the ring off the hook. My line is stretched about 6ft at the moment of release and the other 4ft is a safety margin. Although a hook-started timer would allow me to release the end of the line at launch and gain at least 10ft, it isn't practical in England, where the delay in re-collecting the line would increase the chance of losing the model by too much ...

"About 18 months ago I built a model with Russian style wing, tail and incidence set-up and it's only just about been sorted out to give a 100% reliable performance. It certainly shows a better glide than my other models and shows a much faster catapult launch, however, it doesn't catapult any higher. Having noticed this I recalled Martyn Cowley's comments that he could throw a balsa fuselage HLG about 50% higher than a model with a flexible fibreglass boom.

"Whilst I agree in principle with Mike S. that the Russian models do catapult very well, I think that his calculations are based on two false premises:

(a) that models circle on the line at 170 feet
(b) that a non-catapult launch starts the model off at 170 feet.

"My reworked calculations show:

Model without catapult launch does 150 secs from 155-160ft.
" with " " " 190 secs
Therefore sinking speed = 1.05ft/sec
Therefore height to do 190 secs = 200ft.
Since line length + towers height = 170ft.
Without catapult launch there is a height loss of 10-15ft.
With " " " " " " gain of 30 ft.
Hence an apparent height gain of 40-45ft.

"Mike's measurements with his hand appear to me to show:

Height of top of circle = 150 ft. (the Russians drag loose line on the ground when circling)
Therefore launch height = 150ft + 1/3 = 200 ft (equals height shown above)"

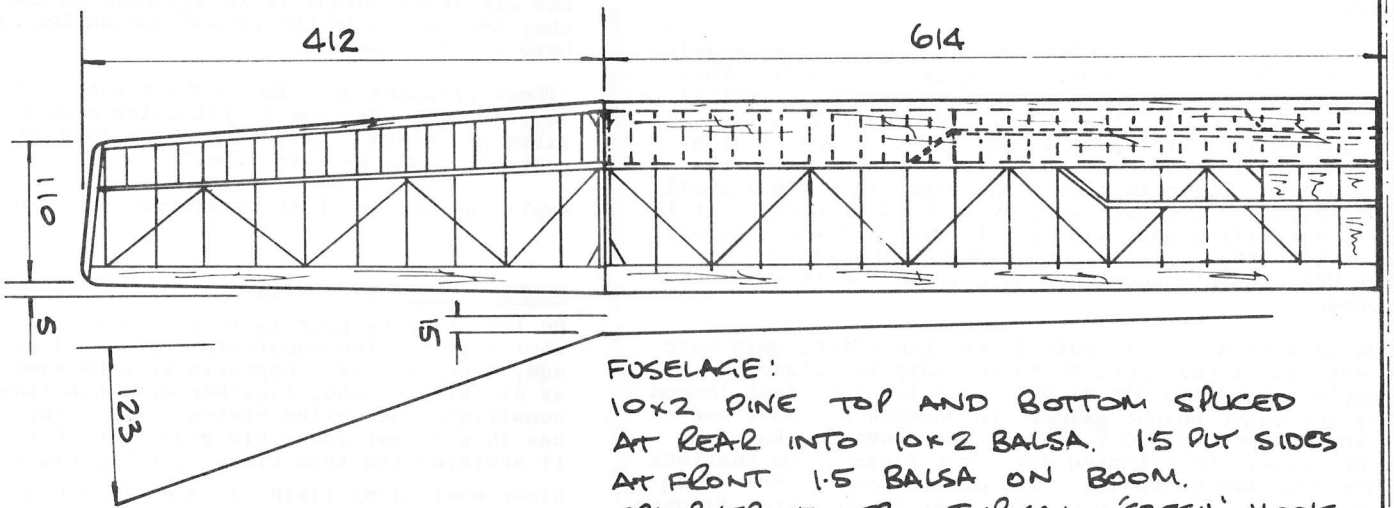
And for a third view, we turned to a thoughtful and experienced flyer who had flown against the Russians and seen them in action both in Bulgaria and Denmark - Per Grunnet:

"The extract from Mike Segrave's letter is very interesting to read. I don't agree in all his points, but his letter is a much better starting point than those who claim that the catapult launch does not give higher flight times.

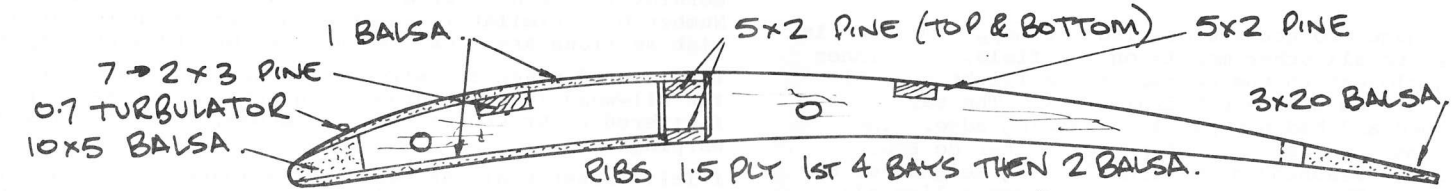
"With my model 'Jazzica' I had quite a lot of trim-flights before the World Championships in Denmark last year. Most of these flights were flown in what I would call dead-air (and I define dead-air as "weather where you get almost the same flight-time in each flight"), and with a good catapult the model made 185-195 seconds. When I didn't use the catapult, the model would make around 160 seconds. I think that a failed catapult is almost equal to an old-fashioned "floating off the line".

"In Vol Libre Hermann Motsch claims that his 'Muli 77' (the Pierre Trebod-winner) would make - I think it was - around 195 secs. with a catapult launch, and around 170 secs. without this. That is very close to my estimate for 'Jazzica'. And very close to Mike Segrave's estimation for the Russian models.

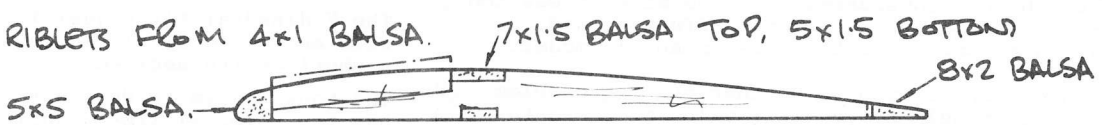
SCALE 1:6 ALL DIMENSIONS IN MILLIMETRES.



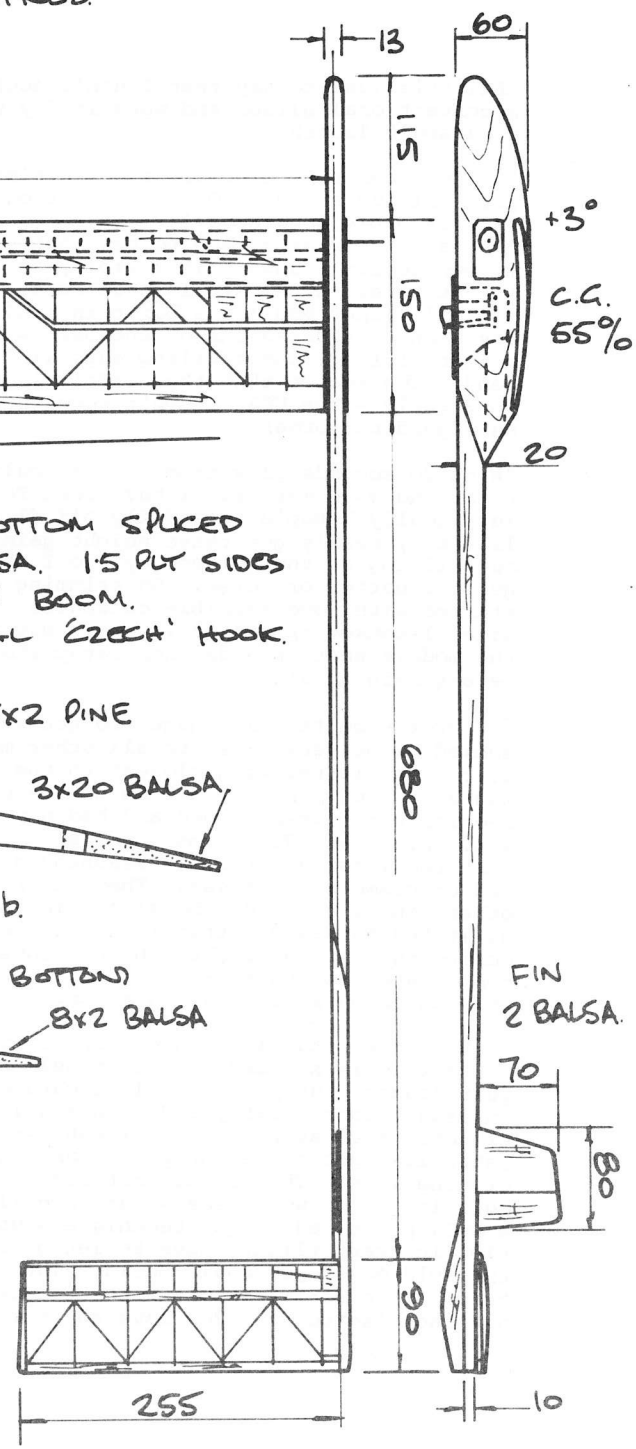
FUSELAGE:
10×2 PINE TOP AND BOTTOM SPLICED AT REAR INTO 10×2 BALSA. 1·5 PLY SIDES AT FRONT 1·5 BALSA ON BOOM.
GRAUPNER TIMER, TYPICAL 'CZECH' HOOK.



WING SECTION (FULL SIZE) B6356b.



TAIL SECTION (FULL SIZE)



'FÍK' F.1.A. by Ivan Hořejši C.S.S.R.

"All this just to say that I don't doubt that it is possible to build a conventional glider and make it fly well over max. in dead-air with a catapult launch.

"I don't agree on Mike Segrave's estimation that the Russian models will only do around 150 seconds without the catapult launch. They will probably do around 160-165 seconds. The Benedek 6356 airfoil is not, as Mike claims, neglected. Not at all. On my first glider of my own design I used this airfoil, as it was known to give a high flight-time. It didn't in that case, but that was not due to the airfoil. That model was built in 1964 - and ever since the airfoil has been considered one of the best - but very hard to build. It is a thin airfoil, the trailing edge will easily warp and the ribs will bend. The reason that the airfoil is not known in Canada and - apparently - the USA, I don't know, but here in Europe it is rated as a good performer.

"With 30 seconds plus from the catapult launch the height gain must be around 9-10 meters. I have seen Tchop and Lepp in Bulgaria (especially Tchop's second fly-off flight) make launches that looked like they really got these height gains. In Denmark I didn't see much flying on the glider day, so I can't judge about the Russians getting better or worse. On trimming day - the first - the Russians started with some terrible catapults. The models went to the wrong side, Isaenkov spiralled in etc. But after just two or three flights the models shot upwards when catapulted, and seemed to get those 10 meters height gain.

"After the contest I managed to get a close look at Lepp's model. It seemed to be very close to all other models on the field. The inner wing (that is the wing closest to the center of the flight circle) had a little wash-in - 2-3 mm at the dihedral-break. The tailplane-section was flat-bottomed and had a very blunt leading edge. The wing weight was 78 grammes per half, and Lepp told Peter de Bourg that the information about Isaenkov's and Tchop's wing weights of 60 and 65 grammes was false. They weighed around 80 grammes like all other wings, he said. He also said that he had abandoned the aileron, as it had turned out that it should be in almost the same position during tow and in flight. He had considered that the aileron was too complicated and vulnerable considering the little effect it had. Only Isaenkov still used an aileron, and that was on an old model.

"Back to the catapult launch. It is my opinion that the big problem is that it is so hard to trim models to get full value of the catapult launch. When the model is catapulted, the flight speed has increased considerably and even small trim changes will have a big effect. Even at World Championships most of the models that are catapulted get no height gain - and many lose height by spiralling off the line. This should not lead people to think that the catapult launch is worthless - but it calls for intensive trimming and a well practised flight technique - you have to pull hard at the same time in every flight, have to let go at the correct point, etc. In the "old days" you could build a lot of models and keep them all in trim. This is impossible with the new gliders unless you have got nothing else to do. You have to trim and trim the model just to keep it flying properly - and it would be impossible to keep more than two or three models flying at the same time. And the catapult launch and the circle-technique is really hard on the models - from time to time they are pulled in the ground during tow, and the wings are stressed hard in the launch.

"These problems call for another kind of model - quick to build and very rugged. Perhaps an all-balsa wing strengthened with carbon-fibre and glass-fibre. And a fuselage as simple as possible - probably a glass-fibre tube."

Would any readers like to add to the debate?

NUMBER 6, F1A by J Wilson

On the previous page is to be found Ivan Horejsi's F1A ship, no doubt conforming to the constraints proposed by our correspondent from Canada, Mike Segrave. Opposite will be seen an American solution - that of Jim Wilson, who, together with Bob Isaacson and Lee Hines, will constitute the United States team in the '79 World Championships. Jim has this to say about his model, which is drawn in the form in which it achieved its team place last September.

Since most of my flying is done in Southern California and especially at Taft, Number 6 has been developed to be an all-round glider to suit the conditions. These can vary alot, from calm and dead in the morning to strong thermals and wind in the afternoon. Technically, Number 6 is similar to other good gliders in the area. The wing and stab sections are local favourites and the stability margin is average.

The tapered wings are stronger in bending than my earlier ships and the all-wood fuselage produces quick recoveries. The wing hasn't fluttered or broken yet on hard zooms, and both wing and stab resist warping well.

I felt Number 6 at our Team Finals where it did especially well in the calm and light thermal rounds. Trimmed for smooth air, Number 6 will do 190 to 200 seconds in the early evening air at Taft - when the air is most stable.

The V dihedral flies just fine and is easier to build and pack. Those with an emotional block against it can consider it 'tip-hedral' with a short centre section.

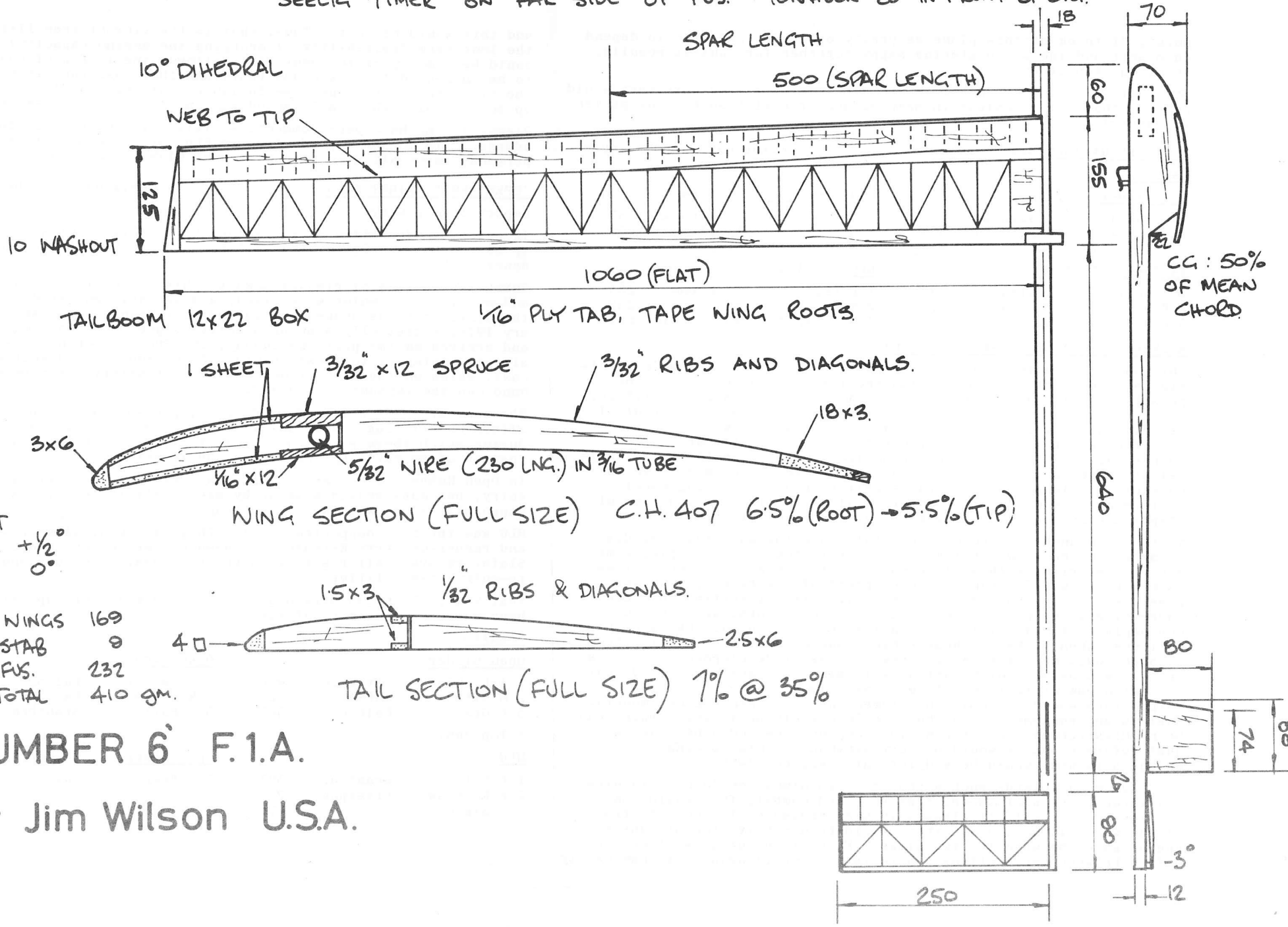
The hook system is developed from Victor Issaenko's 1975 design and has the internal timer start off the latch but not (so far) the timer delayed glide rudder feature.

Detail improvements I plan for Number 7 are a round boom rather than square, and a larger wing wire, as the zooms are hard enough now to put a permanent set in the single 5/32 inch wire. At least the spars aren't the weak link for once! I will also add the timer-delayed glide rudder, as the zooms are fast enough now to make the zoom trim sensitive.

Readers may care to note the use of an all-flying fin - something we commented on last month. Jim has been using this fin layout, plus V dihedral, for three years and says he is happy with both. His final

SCALE 1:6 ALL DIMENSIONS IN MILLIMETRES EXCEPT WHERE NOTED

SEELIG TIMER ON FAR SIDE OF FUS. TONHOOK 20 IN FRONT OF C.G.



GLIDE RIGHT
RIGHT WING +½°
LEFT WING 0°

WEIGHTS : WINGS 169
STAB 9
FUS. 232
TOTAL 410 gm.

'NUMBER 6' F.1.A.

by Jim Wilson U.S.A.

point, "I think of this plane as pretty ordinary, and have to depend on myself and the plane staying happy together for contest results. An oft-quoted story."

Maybe after seeing the model in the air, disinterested observers would suggest that Jim's comment in damning Number 6 with such faint praise is unfair!

SMAE CENTRALISED MINI EVENT — Elvington, 19th November

Results

A/1 Glider 8 flew

1 G Madelin	Crookham	547
2 B Harding	Darlington	538
3 S Philpott	Whitefield	533

Coupe d'Hiver 11 flew

1 R Miller	Northwood	485
2 M Evatt	Biggles	450
3 M Dilly	Croydon	440

½A Power 7 flew

1 A Wells	Anglia	585
2 P Bayram	Richmond	577
3 E B Jones	Tynemouth	538

HLG 5 flew

1 P Ball	Grantham	265
2 R Roberts	Wigan	232
3 S Philpott	Whitefield	221

A SWEEPING CHANGE IN SWEPT VOLUME?

This note originates from hearing personal opinions of some control-line attendees at the recent CIAM meeting. These refered to the possibility of reducing the size of FAI engines from 2.5 to 1.5 cc. Before you power flyers turn purple and spiral through the roof, I repeat that it was only idle discussion and a long way from fact, even for the CL fraternity. Their basic point in favour of the change was that the consequent reduction in power would be the easiest way of maintaining safety and ease of flying the models on the current line length. It would be better than restricting model performance aerodynamically and it would avoid the difficulties of adapting hard surfaced circles if the lines were lengthened.

There are a number of points that fall into the advantages or disadvantage category according to interpretation. For example, some say that starting with a blank sheet as far as good 1.5 cc engines is concerned would encourage development of new ranges, but the pessimists reply that the cost and difficulty of setting up a new range of engines would be so great that few manufacturers could contemplate it. A relatively small market undoubtedly means high unit cost when it has to bear present day R&D costs. Starting from scratch could open the way for new avenues of development in models and allow a balance of opportunity to all - the most telling defeat of that argument is to point out that a large number of current competitors would not make the tremendous investment in new models, engines and equipment, and thus the game would be losing. There can be no disagreement that the World Championships and other contests just before a change would be very stagnant events, seeing few advances in what would be a dying large engine class.

If CL do move towards such a change it is almost certain to involve all three classes of speed, team race and combat; this would lead to pressure for all FAI classes to standardise on 1.5 cc. If free flight was left at 2.5 cc, there would be a subdivision of contest engine sales between the two sizes. Even if the details of engines differ between applications, there is an overall amount of commonality and this would be lost. Thus, what is the view of free flighters on the long term desirability of dropping the engine capacity? There could be some specific bonus if it allowed the length of engine run to be increased to 10 seconds (say) and thus ease run timimg, but by the time that it happened, performance could be expected to have gone up to the point where a 7 second run on 1.5 cc might seem reasonable.

Please let me have your comments - distinguishing between those addressed to me for reproduction in FFn, or those sent to me for personal information in my position as CIAM FF Chairman - I W Kaynes.

'CPKG' FREE FLIGHT GALA — Chetwynd, 10th December

Report from L Gray

Incorrectly advertised as a 'Falcons Gala' this event was privately sponsored by John Carter, Russell Peers, Dave Knibbs and Jim Gough, hence, CPKG.

Guaranteed prizes of plaques down to third place in all four events and one for top junior were given, and suitably engraved. Despite the airfield being booked and the advertisements being sent in January 1978, regretfully some prospective competitors were misinformed and arrived on the previous Sunday, the 3rd. The organisers off their sincere apologies to these people. This, and the bad weather forecast, which on the day fortunately did not materialise, served to handicap the turnout on the day.

The weather began dull and windy but improved towards the early afternoon - flying was from 9 in the morning to 3 in the afternoon - during which there was plenty of activity. Tony Evans won glider inspite of an early D/T on his second flight.

In Open Rubber, John Carter beat Russ Peers at the cost of a £1 re-entry, but Russ showed stamina by making all three flights in gas, especially as he was the sole entrant!

HLG was the best supported event. Phil Ball won, after re-entering, and runner-up Barry Kershaw also needed a second go. However, Tony Slater recorded all his flights before midday, and duly spurned the re-entry possibilities.

Next year, the organisers hope more people will turn up, after having been correctly informed of the date!

Results

Open Glider

1 A Evans	Liverpool	490
2 M Gilmore	RAFMAA	427
3 L Gray*	Falcons	363

* Top Junior

Open Rubber

1 J Carter	Falcons	531
2 R Peers	Falcons	501
3 P Ball	Grantham	474

HLG

1 P Ball	Grantham	303
2 B Kershaw	Liverpool	291
3 A Slater		275

Open Power

1 R Peers	Falcons	475