

AERO

MODELLER

I have always been a fan of Joe Ott, since his first one of which his book works! remember your and br

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en in 191 at in vly del el

which was augmented by

SIGNED FORMER KITS
FLYING BATTLE PLANES
MAKES BETTER STURDIER SHIPS

or container, was run on steam generated in a Tate and Lyle syrup tin boiler heated on a Primus stove. Well do I remember the frequent interruptions to



MODEL AIRPLANES BUILDING AND FLYING
by JOSEPH S. OTT

running when the lid blew off, showing boiling water over us all... it can be that the book Model Airplanes, B

however, with the not possible, but able to obtain instructor in aer and at the Mechanical Co Aviation Unit promotion for Sergeant. His introduction aircraft in during his his first spiral p follow, aircraft

After him may air m

WORLD FREE-FLIGHT CHAMPIONSHIPS



THE JOE OTT LEGEND

uttered copy with the pages soiled at t had long d not of the the early days, and when he wrote that book he had already been associated with both

NATS SCALE AND CONTROL-LINE

emigrated to the United States when he was about three years old and settled in Windber, Pennsylvania, where he spent his early years growing up with his cousin Weissmuller who was later to wide fame as an Olympic



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AERO

MODELLER



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Cover: In this issue we pay tribute to pioneer enthusiast and manufacturer Joe Ott, whose Civil Air Patrol Stinson 105 is in montage with the cover of his 1931 book and an advert for Ott-O-Former kits. Right up to date is Russia's Eugene Verbitski, worthy F1C winner at the World Champs. Our report starts on p.696.

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HANGAR DOORS

Championship congrats

Elsewhere in this issue appears our report on the F/F World Championships. Apart from the first-class organisation and fine weather, most notable was the British Teams' overall performance which resulted in a well-deserved fourth-place out of 34 in the F1A + B + C Challenge France aggregate – the first time such a category has featured in a World Champs and a handy index indeed.

But let's look slightly further afield. Over to Martin Dilly, GB Team Manager:

'On behalf of this year's British Team at the World Free Flight Championships in France, could I use your pages to thank all the supporters who put in so much hard work and sheer sweat helping with the recovery of models. The strong lift and the abrasive sunflower fields made it a tough three days downwind, and the temperatures which reached 104 degrees made it worse. Without the help of a lot of the truly supportive I am certain we would not have placed so well. By the way – do any of you fancy a trip to Yugoslavia next August? The fields downwind at Zrenjanin are crying out for exploration...'

Can you go to Yugo?



The 1987 British F/F Team at the World Champs, fourth overall on total aggregate. A splendid achievement by (kneeling) Chris Edge, Gary Madelin and Martin Dilly, with (standing) Stafford Screen, Ron Pollard, George Foster, Roger Baggott, Ivan Taylor, Ray Monks, Bill Colledge and Team Trainer Mike Fantham.

All go for the Coupe!

This year's Aeromodelleur Coupe d'Hiver event will be held on 6th December, once again at the now traditional venue of RAF Henlow. Classes flown will be 80gm and 100gm for the Aeromodelleur and Bernard Boutillier Trophies respectively. This year the pre-1956 'Vintage' design will be the recipient of a special award. Avid historians will be aware that, once upon a time, fifteen grams of rubber was permitted for Coupes but no such distinction will be made here! All models, Vintage or not, must fly with the

now-regulation ten grams on board. We hope to welcome a contingent of French enthusiasts and, of course, you too. Notification of attendance must be received at the Aeromodelleur office; we need to know (a) your name; (b) whether you are a competitor or a spectator; (c) in which events you intend to participate; (d) your car registration number; (e) number of occupants and details of their events; and (f) your address and a SAE for more information. Airfield security demands the above – so don't just turn up and expect to get in. See you there!

M.E. latest

Once again the Auditorium at Wembley Conference Centre on New Year's Day will be the setting for the Indoor Model Flying Championships run by Dave Rawlins of DPR Models. 'Hit the Kit' target competitions for the under-13s are at 11am, 1pm and 4.30pm. Score a direct hit and the model is yours! The Junior Superfighter Championship is at mid-day with 'super prizes' on offer for best flights from the slot-together DPR Spitfire, Hurricane or Mustang. Then at 2.30 we have the Junior and Senior National Chuckie Champs for the DPR Chuckie HLG. Top junior will win a Tamtech 1/24 scale car plus Acoms R/C; premier Senior prize is a Riko electric R/C Cessna Skyhawk, also with Acoms gear. There are further prizes for runners-up in these duration comps. Also present will be the famous DPR Workshop. Pre-entry means free admission to the M.E. Exhibition so write now for full details to DPR themselves. See their advertisement elsewhere in this issue.

Great fun is promised! Make 1st January at Wembley a model flying superday for young and old... we'll be there – will you?

Tigre's pad

Mick Wilshire tells us that from the end of October, Tigre Engines/World Electronics, UK home of Super Tigres and Talisman R/C gear will be resident at: Tech School Building, Leavesden Airfield, Leavesden, Watford WD2 7BZ. Telephone number is 0923 671240. By the time you read this he should be reasonably well

Who, what, where? This much-travelled photograph has been passed into our possession for identification. Can you help? Only clue is the legend 'Frost Cup, August 28th, 1938' on the original. Note early SMAE number CA-1 on the fin of the model which, incidentally, is Brown Junior powered. Opposite page: Disney pilot and Swedish Snuffen referred to in text below Terry Rose's view of a stick-and-tissue Santa. Merry Christmas!



settled in so – best of luck at the new address, Mick.

Festive frolics

When Vic Smeed enters the office bearing a sheet of festive wrapping paper, first thoughts are of unexpected gifts (actually, the true first reaction was to dive under the desk, but that's another matter). In fact, a number of Disneyland aircraft depicted thereon was the motive for scrutiny. We couldn't resist Donald Duck's mount, particularly as it bears a passing resemblance to the petite Swedish C/L models Snuffen, one of the myriad of designs featured in Vic's latest nostalgic pot-pourri Model Flying – The First Fifty Years and currently on the editorial building board...

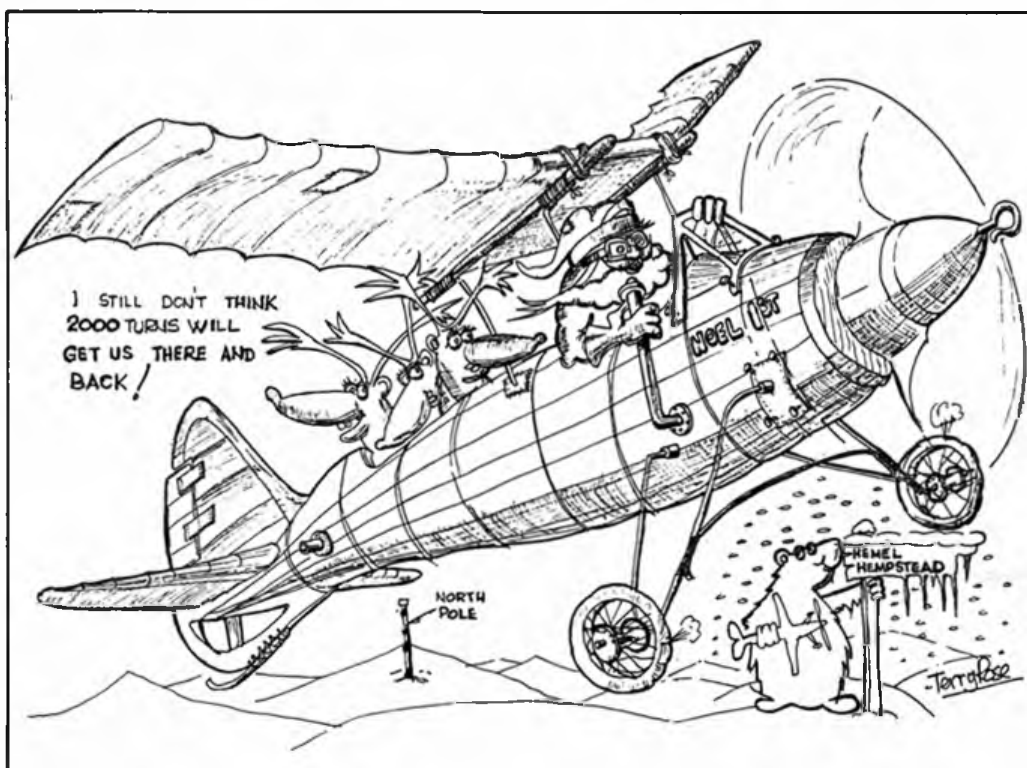
Peter, not Rita

CO₂ enthusiast Peter Gibbons, he of the Peterborough Club and Chart/Micromold competitions at Old Warden, wishes to make it known – ref. our recent Oxford Rally report – that it was his good self who placed third in CO₂ at said event, not the mysterious R. Gibbons quoted in the results. Why he should think the initial 'R' might refer to 'Rita' is anyone's guess but who are we to question this? And thanks for the kind remarks about the magazine, Rita...er, Peter.

By the way, Peter tells us that the Peterborough MFC are always keen to welcome new, keen model fliers. Such as, for example, fifteen-year-old Clifford Smith who won the John Haggart Memorial Trophy at Vintage Weekend with his Sabre-powered Simplex, beating substantial Senior opposition in the process. In the area? Want to know more? Contact Peter at 56 Welland Road, Peterborough PE1 3SG.

Yeovilton reshuffle

One of the country's more imaginative aviation museums is the Fleet Air Arm's collection at Yeovilton. We learn that halls there are to be changed around, a focal point for a new layout depicting the RNAS in WWI. Sections of period airfield are to be constructed and in these settings will be placed the Museum's Sopwith Baby Seaplane, Pup, Camel and Triplane, the Albatros DVa and Fokker Triplane, and Spad IX. All good aeromodelling subjects; well worth seeing, we'd say, in their new surroundings. Oh – and there's to be a Flight



Simulator at Yeovilton, too. Go and practice carrier-deck landings!

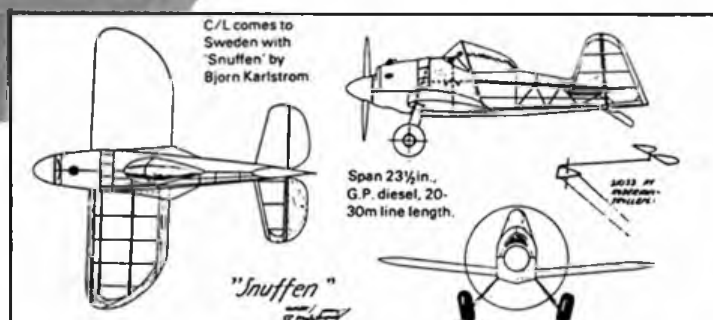
Skua news

One of the most-enjoyed items on our last Vintage Weekend menu was the SAM 35/Blackburn Skua competition run by Peter Spence, a 50th anniversary celebration in its own right. Pleasant, then, to read the latest British Aerospace house journal, wherein appeared an efficient resumé of this event, headed by a photo of Peter, plus Skua, and a certain Chet Lanzo... Company periodicals are a useful medium by which to promote aeromodelling activities. An avenue you could pursue? Tell us if you do...

Lledramp Ilegpull

Remember our account (Vintage Extravaganza, November issue)

of Pat Mardell's neat low-winger, allegedly a Swedish design for steam power, entitled Lledramp Flash? 'Twas after publication that we realised we had been the subject of a gentle leg-pull. 'Lledramp' backwards is... yes, you've got it. Pat's model was inspired by the infamous D.A. Russell low-wing giant of pre-war years, and the whole confabulation was made up on the spur of the moment to baffle ace reporter Alex Imrie, who may very well have some words of his own on the subject next month... So stop chasing through those vintage mags. You won't find the Flash!



What's on

22nd November
SMAE F/F TRIALS - RESERVE DATE
Venue: Botolph Claydon or North Luffenham; to be confirmed. Contact: Phil Ball. Tel 0322 865361

6th December
AEROMODELLER COUPE D'HIVER
Venue: RAF Henlow. 100gm, 80gm, CDH plus Vintage, run in combination. Pre-entry essential. See announcement in Hangar Doors

1st-9th January 1988
80TH MODEL ENGINEER EXHIBITION
Venue: Wembley New Hall and Conference Centre. More space, more displays and (it's up to you) more model aeroplanes! Open daily from 10am to 7pm except for late night opening till 9pm on 7th January and earlier

close of play at 6pm on 9th January. For more details see Hangar Doors in this issue and the advertisement panel on p.656. Do come!

31st January
SMAE S.E. AREA INDOOR FLYING MEETING
Venue: Leisure Centre, Haslett Avenue Crawley, West Sussex. Mixture of indoor disciplines, regulated in time slots. Contact John Dolding Tel 0293 510272

Now's the time to let us have details of your model flying event. Send all the advance information as soon as you've planned it. We'll do the rest. 1987 has been a great model flying year so go for 1988!

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tattered copy with the pages soiled at appropriate places, showing where it had lain open on the workbench for long periods. Although, of course, I did not know it then, the author was one of the biggest names in model aviation in the early days, and when he wrote that book he had already been associated with both full-size and model aeronautics for almost twenty years.

Early days

Josef Stephen Ott was born on 28th April 1900 in Freidorf, Austria. His parents emigrated to the United States when he was about three years old and settled in Windber, Pennsylvania, where he spent his early years growing up with his cousin Johnny Weissmuller who was later to achieve world-wide fame as an Olympic swimmer and as the star of Tarzan films.

Tribute to a sky flier

Alex Imrie tells the story of America's pioneer model aircraft designer Joseph S. Ott

WHEN JOE OTT passed away on 25th June 1986 at the age of 86, his passing on this side of the Atlantic went almost unnoticed. He was virtually unknown here, yet he had made such a significant contribution to the hobby that he had been inducted into both the AMA and the NFFS Halls of Fame. Although his early activities were known to UK modellers at the time, mainly because of his excellent book on balsa modelling which was published by Goodheart Willcox in 1931 and made available here through Percival Marshall, the type of model aeroplane kit with which he was involved during the 1930s was not imported to these islands in any numbers, while his later kits - from 1940 to 1945 - and the modelling magazines advertising them were, understandably, not generally available in this country because of wartime restrictions. By the time UK modellers could avail themselves of American modelling goods, Joe had left the scene.

I have always felt a special affinity to

Joe Ott, since his name was probably the first one connected with model aeronautics of which I ever became aware. A copy of his book was around in my father's workshop for as far back as I can remember, and as an 'aviation-mad' youngster I devoured it from cover to cover and was familiar with all its illustrations before I could even read! My father built some models from its pages, the best remembered being an SE5 of about 45 inches span. The compressed air engine described in the book's final chapter was also constructed, and not having an air tank or container, we ran it on steam generated in a Tate and Lyle syrup tin boiler heated on a Primus stove. Well do I remember the frequent interruptions to running when the lid blew off, showering boiling water over us all... It can be seen that the book *Model Airplanes, Building and Flying*, with the never forgotten name of Joseph S. Ott on the front cover was part of my heritage. I still have it after all these years, complete with examples of my earliest graffiti, and treasure the old,

Moving to Chicago, Joe got the aviation bug when in 1911 he witnessed early flights of Lincoln Beachey, the American pioneer aviator, and soon afterwards he joined the newly formed Illinois Model Aero Club. He built his first model aeroplane in 1912 and while still a teenager helped various aviation undertakings in the area in a spare-time capacity amassing a wealth of technical knowledge which was augmented by further study when he took correspondence courses in aeronautics.

He joined the US Army as soon as he could and hoped to gain entry into the Aviation Section of the Signal Corps; however, with the end of WWI this was not possible, but on sheer ability he was able to obtain an assignment as an instructor in aeronautics at Kelly Field and at the Texas Agricultural and Mechanical College where he taught the Aviation Unit of the ROTC. This brought promotion from Private to Technical Sergeant. He was also involved with the introduction and use of working model

aircraft into the US Army, and it was during his army service that he patented his first invention, a securing clip for spiral puttees. Other inventions were to follow, many of them related to model aircraft.

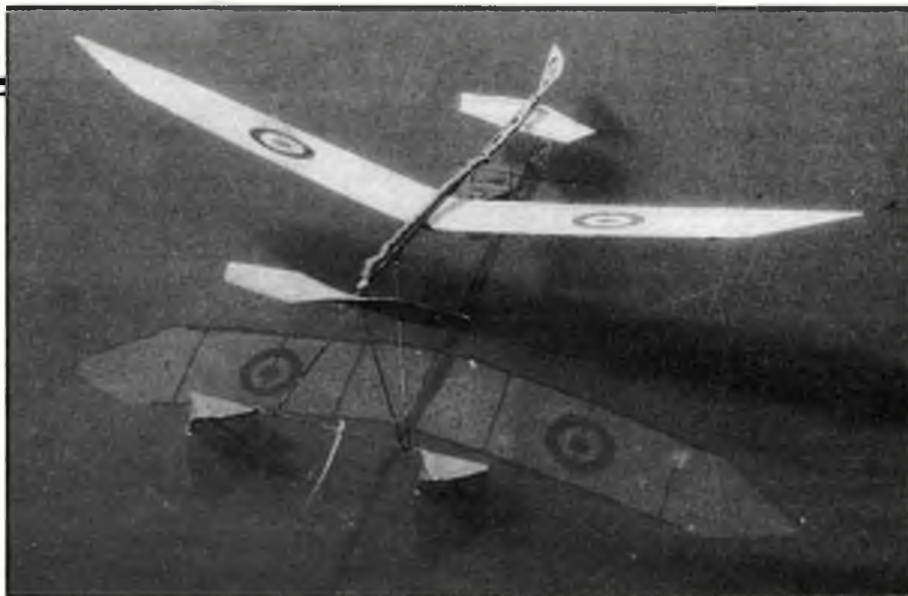
After three years' service he found himself home in Chicago where he managed to obtain employment with local aircraft companies converting wartime machines for civil use. At one time he was engaged in work for the US government, modifying DH4 bombers into mailplanes. Despite this full-size aviation involvement, Joe was a very industrious modeller who made all types. In 1923 he began to consider the commercial aspects of the hobby, being particularly interested in producing components that enthusiasts found difficulty in making themselves. As well as working on the development of compressed air engines and associated items, he sought to publicise successful designs by making up working drawings and compiling descriptive articles in order that other modellers might benefit from his experience. The article that he wrote for *Aerial Age* in May 1922 describing two of his hydro models was the first of many contributions that he would write for a number of magazines over the next twenty years.

Compressed air

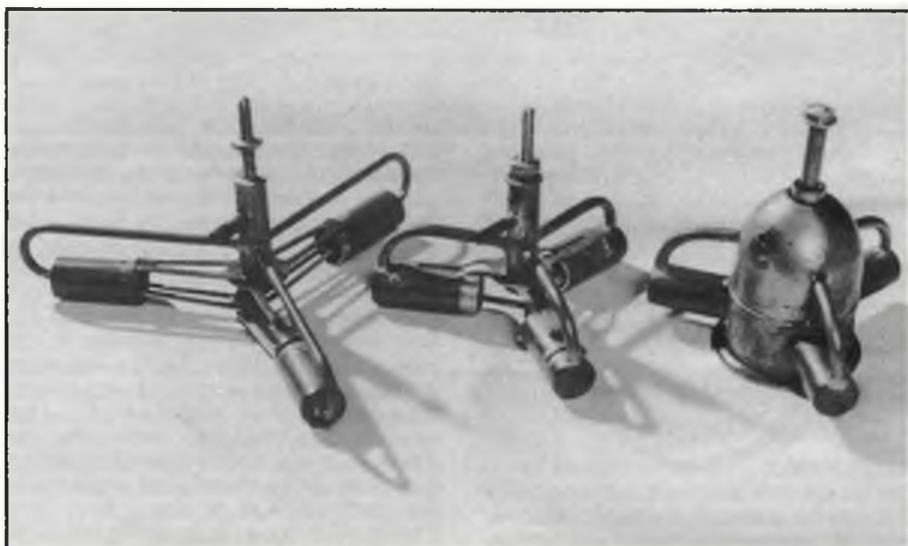
By making a close study of German and British compressed air engines Joe began to develop motors of this type, leading the way to mass production of light, inexpensive practical power units that were within the reach of the average model enthusiast. Forming an association with the Amalgamated Sales and Service Corporation, Joe Ott designed items were available from late 1928 from the Model Aircraft Division of this company. For models to fly well they had to be light; and the reduction of weight clearly became an obsession with Joe who named his products 'Featherweight'. Compressed air engines and containers, flash steam boilers, floats and wheels were so labelled and he also produced propellers and accurately-shaped wing ribs based on full-size aerofoils, as well as supplying miscellaneous materials and tools especially for the model aeroplane builders. Additionally, he undertook to design two new flying models every month, one for rubber power and one for



compressed air. These plans and building instructions were given away free of charge, this gambit possibly being the first Joe Ott sales device designed to attract customers.



Heading: Joe Ott at the peak of his success in 1943. Above: Described in Aerial Age in 1922, this 21in. tractor seaplane made from white pine and bamboo weighed less than one ounce and was capable of flights of 500 feet after a six-foot run ROW.



The Sky Flyer 3C compressed air engine flanked by (left) the Ott Featherweight of 1928 and the Dobe-Ott engine with enclosed crankcase from 1930. Kits of parts for the Sky Flyer 3C sold until 1934 for 99 cents.

Despite apparently good results, Joe set his sights on even higher production figures than had been possible with Amalgamated, and arranged for production and sales via The Norlipp Company early in 1929. It was at this time that he produced a kit of components for a suitable model for his compressed air units. This was a 48in. flying scale model of the Fokker Super Universal high-wing monoplane, complete with pneumatic tyres on the wheels. The model was covered in high grade Japanese silk. Just what amount of prefabrication was involved in this model is not known, but all parts were said to be ready formed, requiring only assembly. The model sold less engine, propeller and air container for \$7.50. Suitable power plants were also available, prices varying between \$13.00 and \$16.00 depending on the type chosen.

The Ott Featherweight engines were manufactured in various configurations - Joe, being a natural promoter, tried everything to increase sales - and assembly kits as well as complete engines were available in single- to six-cylinder configurations. The three-cylinder type was the most popular; indeed, very few of the Ott four, five or six cylinder engines were actually sold. One feature that aided

production was that cylinders, pistons and connecting rods were all the same size for these 1/2in. bore and 5/8in. stroke engines which were fairly large, having a diameter of six inches. Cylinders were made from brass tube with soldered end caps; but during the association with Norlipp, solid, drawn cylinders were introduced which, being of slightly shorter length, reduced the stroke to half-an-inch. The air containers at this time were made from seamless copper foil, but the demise of the manufacturer who supplied this material brought about a reversion to the normal type with soldered seams.

In the midst of all this activity the Wall Street Crash in October 1929 knocked the bottom out of everything including the compressed air engine market. But surprisingly, despite the difficult financial situation prevailing, Joe somehow managed in 1930 to obtain a business relationship with a large Chicago correspondence school. This caused the appearance of a new engine known as the Dobe-Ott. Much more compact than previous designs, it had a reduced overall diameter, the three cylinders being held in a circular frame while a spun brass 'crankcase' fitted to the engine gave it an improved appearance. However, the

commercial arrangements did not 'pan out' (as Joe later said) and the enterprise lasted only some six months.

Joe now decided to promote and sell his products through his own company, Model Aviator Products, which was run from the basement of his home. After offering the Dobe-Ott engine with its reduced stroke and enclosed crank cover, and the remaining Featherweight engines, Joe introduced a third main engine type from the end of 1931. Called the Sky-Flyer, a name that he had adopted as his trademark for other products, this was really a composite motor embodying the best features of the Featherweight and Dobe-Ott engines; and as it also cleverly utilised components for previously-manufactured engines, no costly re-tooling was necessary. No longer of enclosed type, most engines were of three-cylinder layout. Overall diameter was now 3.1/2ins. as a result of soldering the cylinders further down the stamped brass frames than had been done previously on the original Featherweight. The Sky Flyer 3C, which weighed 1.1/4oz produced ten ounces of thrust driving a coarse pitch sixteen-inch propeller at almost 1000 revolutions per minute on 110 pounds of



air pressure. It sold at \$3.50 completely finished but was also available in kit form at \$1.50, although to combat competition these prices were eventually reduced to \$2.95 and 99 cents respectively. This engine and other variations were advertised until the beginning of 1934 when, apart from the increasing availability of practical internal combustion engines for model work like the Brown Junior reducing the demand for compressed air motors to a point that made their continued production uneconomical, Joe was fully occupied in creating the mass production of his model aircraft kits that would establish him as America's leading model designer in this field. He stated that some 40,000 units of his engine designs had been sold in one guise or another during the active years of production.

Model writer

In the late 1920s the use of balsa wood and quick-drying cement saw a marked change in model aeroplane construction in the USA. Hitherto these materials had been used mainly to produce 'stick' models, but soon 'fuselage' designs appeared; and the ability to construct varied shapes of light, strong construction naturally led to flying scale models. This activity required drawings of the various aircraft types, and Joe Ott was one of those who rapidly drew-up working drawings for suitable models. By this time he was writing regularly for *Popular Aviation* and he quickly made a name for

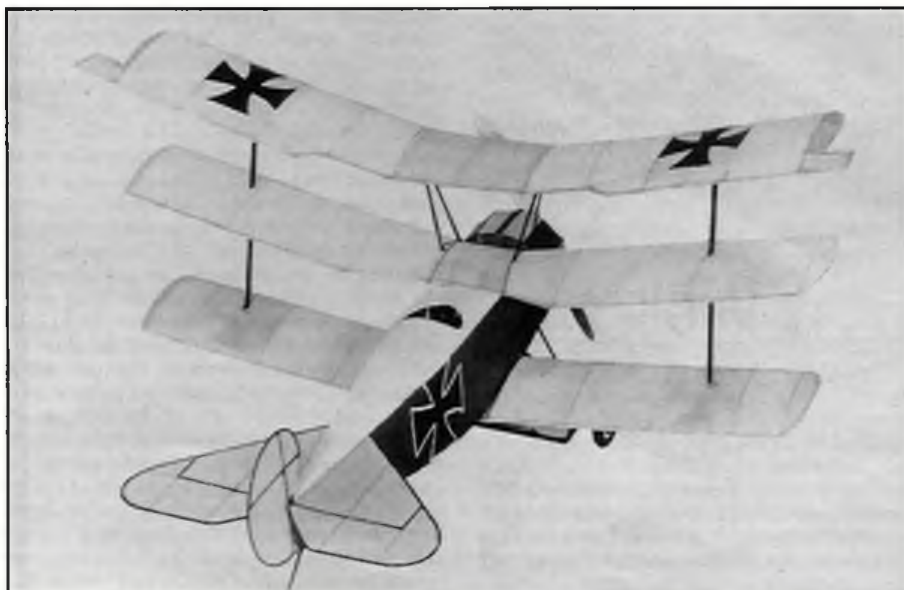


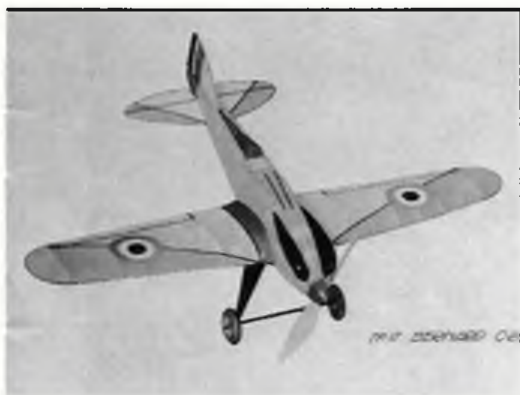
What Joe Ott was all about. ... Two youthful enthusiasts display Joe's SE 5 and Harold Fiefield's Fairchild 71 Monoplane; both models were described in Popular Aviation in 1930. The SE5 (October) was No. 1 in Joe's Sky Flyer range.

himself because of the excellence of his articles. The model size given in these descriptions varied, but full-size wing rib and fuselage former shapes meant that modellers had little difficulty in making the model. He chose appealing designs like the wartime SE5 and Fokker Triplane as well as modern military and civil machines in the news; and at one time plans for featured models were given away by the publisher for only the five cents mailing cost using a clip-out coupon from the magazine. Joe's own Sky Flyer series presented the most popular designs in 15in. span size that could easily be doubled up to make a thirty-inch span model, and these plans were such a success that Joe was swamped with the response to his advertisements. Many dealers and other kit manufacturers were not slow to react. The plans did not include any identification other than stating the 'Joe Ott' design origin so they could be used in kits or by stores, there being ample space for such agencies to apply their own names. Megows and Scientific amongst others took advantage of Joe's 10-cent plans whose sales reached a peak of 10,000 copies per week. When bought in bulk the attractive dealers' discount could make them as cheap as two-and-a-half cents each. It was the great demand for his plans that caused Joe to embark on kit production, although effective distribution of these was to present a major problem at first.

The National and local programmes of model activity that were undertaken by a variety of organisations from the early 1920s now increased dramatically in number (they would eventually combine into what was to become the Academy of Model Aeronautics). In the Chicago area Joe was secretary of an association called International Model Flyers (other officers being Joseph Lucas and Paul Lindberg) which aimed at providing courses of instruction in building via selected Joe Ott designed models which Joe made available on demand in kit form to department, hardware and school supply stores. He was also responsible for the compilation of the IMF Model Maker's Manual, a forty-eight-page handbook which, apart from containing introductory explanations and building instructions, gave details of the organisation structure and planned competitions. Experience with the IMF led Joe to form the Junior Sky League of America which had its clubroom in the administration building at Sky Harbor aerodrome in Northbrook, Illinois. Joe's aim was the promotion of airmindedness. It was the beginning of his campaign to equip boys with an aeronautical foundation through model aeroplanes

The Fokker Dri Triplane was included in Joe's book Model Airplanes Building and Flying, and it was kitted by Scientific in 1931 for \$1.25 in 15in. span form.





The attractive Bernard C-20. Orange and white tissue was stuck together with an overlap of 1/8in. before covering. A thin black tissue stripe covered the join.

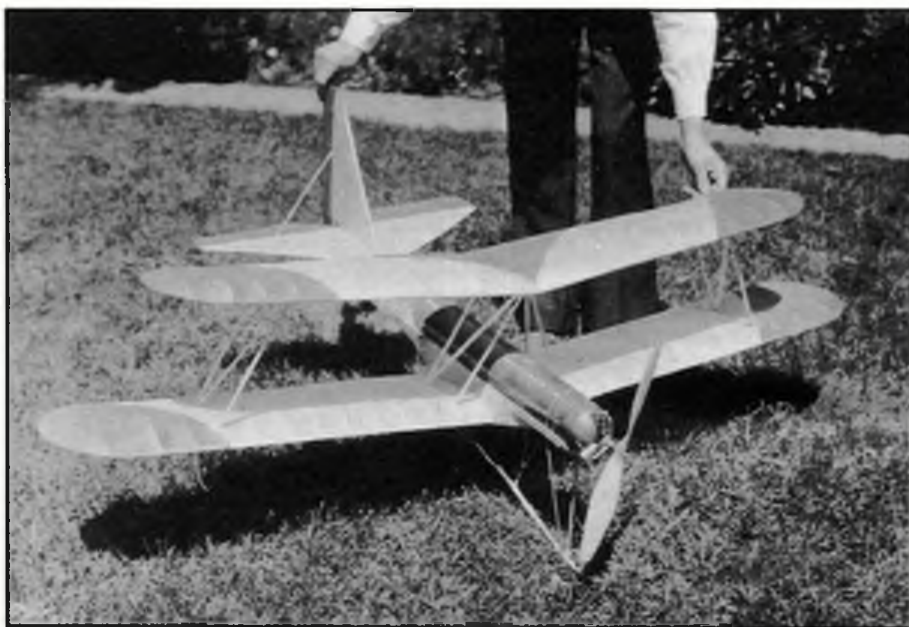


This home basement workshop was the headquarters of Model Aviator Products. Gordon Christoph, one of Joe Ott's youthful associates poses in front of the Laird Super Solution (left) and the All American Rocket, giving prominence to Joe's recently published book.

that would fit them for careers in full-size aviation. With all this activity, just how Joe ever found the time in 1931 to write the excellent book already mentioned is not known, but the need for a standard text book to replace the basic IMF Model Maker's Manual was sufficient reason... and he did it, dedicating it to '...boys - of all ages - who find interest in doing things, and in doing them well...' Popular Aviation commented that it was '...the best model airplane book that we have seen, both in the matter of the contents and in its general makeup. The instructions are complete, and it is copiously illustrated with photographs and scale drawings of all sorts of models... That Ott knows his stuff, you'll agree, and he has more than turned himself loose in this volume...'

Today, more than 50 years on we agree wholeheartedly with these remarks. The book was so far ahead of its time that it was a sensation, but one must remember that this was in the depth of the Depression, and not everyone had the \$2.50 to spare. Its distribution through the publishers' outlets also provided a means to recruit further modellers to the JSL and Joe seized upon it, ensuring that publicity material and enrolment forms were included with the book.

Joe's Model Aviator Products 1932 catalogue, heavy with compressed air



The kit for this 60in. compressed air driven biplane cost \$4.50 without engine and container.. It was described in Popular Aviation, September 1932, as Sky Flyer No. 33.

items, lists twenty Sky Flyer plans and states that three new plans would appear every month. His own plans were now getting ahead of the Popular Aviation series, since he was listing models that would not appear in article form for some six months to come. Although he was now the Model Editor of Popular Aviation, he did not confine himself to that journal, but wrote for Popular Mechanics, Aviation Mechanics and Model Airplane News amongst others. His own business had also expanded to the extent that he was supplying the trade with finished and saw-cut propellers, insignia, celluloid wheels, tissue, dope, banana oil, thinners, cement and other materials. Joe Ott had

definitely arrived. He had done this by sheer ability and hard work. Here was a man who worked literally until the task was completed. Tireless and enthusiastic, he could accomplish more in one day than most others would achieve in a week. His boundless energy was prevented from further production only by the mere fact that there were just twenty-four hours in the day. Often when he had finished his usual work he would dictate his articles far into the night. However, working on new designs, the time-consuming assembly of drawings, photographs and all the other tasks necessary before submitting material to a publisher had to take second place to a new venture that had been born

Judges at the first Popular Aviation Model Contest in 1933. From left to right: Major Reed Landis (a WW1 ace with ten victories), Joe Ott, Matty Laird (President of the Laird Airplane Company) and B. George Davis (Editor of Popular Aviation). Hundreds of entries were received, including some from the UK, and amongst the winners were Bill Atwood and Howard McEntee.

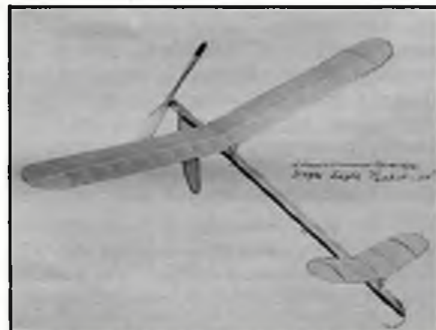




The components in this 1933 Joe Ott prefabricated kit included ready-formed wire parts and cut-out ribs. The cement came in the glass bottle.



This finished single-surfaced stick tractor Sky Hi-Flyer was classed as a contest type. C.H. Grant acknowledged that Joe Ott was one who had mastered the stability problems of the tractor model.



The Single Eagle Pusher of 24in. span could be built with single- or double-surface wing. Its performance was such that builders were advised to paint the wing tips red or green in order to keep it in sight at high altitude. (Ott's own correction is shown).



George Mueller pictured with the Great Lakes Trainer, described in Popular Aviation, August 1932.



Harold Fiefield about to launch a 30in. version of the Curtiss Hawk P6E (Sky Flyer No. 24, July 1932 Popular Aviation).

out of the ever increasing demands for his designs. He now embarked on the work that would make the Joe Ott name a household word in the hobby - the manufacture and marketing of popular priced complete model aircraft kits.

Mass production

Joe's last Popular Aviation article as Model Editor was on the Gee Bee Transport in the November 1933 issue. From the beginning of 1934 he entered into partnership with Donald F Duncan Inc, the makers of the famous Gold Seal Yo-Yo which had taken the country by storm. Joe's expertise was responsible in this association, known as Model Aircraft Products, for the mass production of many different types of model aeroplane kits at a scale previously unheard of in the industry. Many of the kit manufacturers were newcomers with products of questionable quality and there was fierce competition amongst them in those lean Depression years, but Joe Ott already had an excellent reputation and when Duncan sold his half interest Joe had no difficulty in joining in a new partnership with the Whitman Publishing Company of Racine, Wisconsin, well known publishers of popular games and children's books, to produce and sell his kits.

These partnerships obviously allowed Joe to enjoy mass production facilities. His inventive mind was put to good use in modifying and updating their existing plant and machinery to suit working in model aircraft materials. He was the first to cut balsa with specially-sharpened saws that produced a smooth cut at a single pass; other manufacturers at this time used a two-stage procedure of 'cut and sand'.

However, equally important was the fact that these partners had already established sound distribution outlets for their products and these were used to the full with the new line of model kits. It was Joe's ideas that gave expression to the standard of the kits produced. Although these were generally of the low priced variety sold by the '5 and 10 cents' stores

like Woolworths and Kresges, he insisted on having bright multi-coloured boxes, full-size clear plans, top grade balsa wood, machine-cut propellers and complete, excellent hardware.

Jim Noonan, when reflecting on the Ott kits of this period some fifteen years ago recalled that '...the balsa that went into these kits would bring tears to your eyes today. I saw three and four-pound indoor stock, white and flawless, go into millions of kits which retailed for ten cents or a quarter.'

By 1936 a figure of 30,000 kits per day had been achieved and in a marvel of distribution, Joe Ott-designed kits were made available right across the United States, not only in city stores, but also in drug stores, gas stations and on newspaper stands. Thus, even in the smallest township in the land, anybody could reach these breathtaking boxes with their infectious contents. Is it any wonder that in the prevailing fever of aviation enthusiasm that American boys went 'Joe Ott mad'? The emphasis was on flying scale types including modern military and civil aircraft, record breakers, air-race winners, and well known lightplanes.

These kits were available in a selection from 12 to 24in. wingspan, there being also a number of non-scale flying models and a selection of solid kits for the true scale enthusiast. The choice was vast, the quality first class and they were cheap. No wonder Joe Ott kits were popular!

Joe Ott was never one to live in the past or to rest on his laurels. In business he was continually looking ahead and seeking any changes that would increase the mass production of his kits or improve their distribution. With this go-ahead attitude, he naturally had changes in business associates, but when these partnerships dissolved and Joe moved on to fresh associations, his kits were still manufactured and sold by the previous companies; and his freedom was such that he was still able to supply these agencies with certain new designs. A major change in this procedure took place at the end of 1937 when J L Wright Inc, the makers of

Lincoln Logs and Allied Toys contracted to manufacture and sell all of the Joe Ott kits. This entailed a complete take-over of all kits from previous outlets. Doubtless Donald F Duncan, Western Coil and Electrical Company (the Whitman manufacturer) and Samuel Dubiner (for whom Joe had also designed kits) had a backlog of Joe Ott kits, and presumably sold these until their stocks were exhausted, but the manufacture was now firmly under the banner of J L Wright Inc.

Joe Ott Manufacturing Company

With the coming of reliable model petrol engines Joe built a number of large flying scale models powered by Hurlerman Aristocrat, Brown Junior and Baby Cyclone motors. However, it was not until the appearance of the small bore engines like the Ohlsson 23 that he introduced a number of power models that were marketed as kits through the J.L. Wright outlet. These included the 50in. Howard DGA 11 and Roscoe Turner's Pesco Special, as well as the Gas King Junior which could also be flown as a floatplane. In 1939 he developed his 60in. Kingfisher which when operated on floats employed an additional 12in. centre section increasing the wingspan to six feet. This model, described in the February 1940 Air Trails, was Number One of a projected series of Joe Ott designs for that magazine, but in the event they only published this first model.

Joe now formed the Joe Ott Manufacturing Company which at first continued to market kits under the J.L. Wright arrangement until the demise of that concern. These numbered some seventy different models varying from 5.1/2in. span solids to the Kingfisher, but the majority were rubber driven flying scale models of eleven to forty-two inches wingspan retailing from five cents to one dollar each. Most of these kits featured the now famous Joe Ott Picture Plan which was a blueprint-type full-size drawing on the rear of which were detailed



George Mueller again, this time with the prototype PZL-6 on 5th October 1932. The model is yet to be fitted with its radial cowling. (Sky Flyer No. 29; December 1932 Popular Aviation).

constructional sketches in black and white.

In mid-1941 the Joe Ott Company was completely re-organised to occupy a new, modern three-storey building. Some 500 people were eventually employed in the production and packaging of kits; twelve bandsaws were working three full shifts each day and a large railway freight car of bulk balsa was transformed into kit contents which numbered 50,000 daily at times. When this mass of kits was distributed on the efficient network that Joe Ott kits had established throughout the USA one can all the better believe the claim that '...probably more youngsters were introduced to model aeroplane construction by Joe Ott kits than by all other kit manufacturers combined!'



At one time a built-up model was given away with each gross of kits ordered as part of the promotional campaign, but this seemingly simple device produced a major problem when sales to a nationwide department chain store produced an order for several hundred thousand kits. It was not possible for the company's employees to make these built-up models in the time available and an advertisement was placed in a local Chicago newspaper offering \$1.75 for building one. The response was overwhelming. 1800 youngsters turned up. Each was given three kits, and within a week some 2500 finished models were ready and the contractual arrangements were met. Although this procedure sufficed on this occasion, there was an ever-increasing demand for completely built-up Joe Ott models for display by dealers, and a group of eight experienced Chicago model builders performed this work at home, each being paid on a pro-rata basis. Eventually the demand was such that the normal guaranteed delivery of about three weeks could no longer be made. Possibly the standard of the hurriedly-made enthusiasts' models did not warrant using this method again! New models were continuously being added to the Joe Ott range and the draughting and tooling that this entailed meant that Joe could no longer do all this unaided, so he employed a team of eight designers who worked under his personal supervision.

Ott-O-Former

Coincident with the latest reorganisation was the introduction of a new line of models to be sold by Sadler Sales Inc; and some of these designs incorporated a completely different approach to modelling than that used hitherto. This was hailed by the trade as '...positively the easiest to build ever. At least seven Patents cover the jig type of construction by means of which the models are assembled.



Gordon Christoph holds the Curtiss 02C-2 Helldiver, a model which was described in Popular Mechanics.



Joe Ott with his 60in. Baby Cyclone powered Mister Mulligan which he described in the January 1937 Popular Mechanics. Note the extended needle valve to clear the propeller.

The plan makes the jigs and bond paper substitutes for balsa in many structural parts. The whole set-up looks very good and is the first new development in model construction in years! Joe Ott knows how to merchandise. His boxes were always superb, and his plans are so good we are surprised other manufacturers haven't followed suit long ago!

The prefabrication of model aeroplane kits obviously made them more appealing as it removed most of the intricate cutting-out of parts that many beginners found irksome. But there was a more important aspect that plagued many modellers, and this was the tedious work needed to ensure accuracy of assembly. One of Joe Ott's main endeavours was directed to this end. He wanted each and every model to be a success; boys were his public and many boys were impatient to fly, so everything done to ensure them speedy, accurate construction was effort well spent. The fuselages of scale models could be complicated structures and Joe simplified the construction of such models with his Ott-O-Former method as well as halving the usual building time. This system

employed formers with rectangular central openings that were slipped over a basic fuselage shape; but because balsa formers tended to split easily, he developed the use of card formers for this purpose. These were far stronger and more flexible than balsa and therefore quickly gained acceptance with modellers. The die-cut card parts, which included tailplane, rudder and wing tip outlines as well as fuselage formers were first produced in a 22in. series of models selling at 15 cents each. Eventually this was extended to all the Joe Ott kits.

Balsa shortage

When by mid-1942 the very real risk of a balsa shortage made the industry look at means to surmount this, Joe was already well established with the use of his card formers. He thus stole a lead over the other manufacturers due to his foresight, not actually caused by the balsa shortage but brought about by his search for a better former. He had found that thin card was a better material for this purpose, doubtless also finding it more economical.

WPB General Conservation Order M-177 of August 1942 ruled that balsa was a critical wartime material and model manufacturers would in future only be granted 100-board-foot allocations. Poplar and pine were pressed into use while Joe Ott was by now using basswood with jute board formers. He was now offering thirty different kits (in various sizes) of the popular wartime types of aircraft that appealed to the youth of America. While some manufacturers held to the normal type of construction using substitute materials, the bigger kit producers turning out large numbers of flying scale models were quick to emulate Joe's Ott-O-Former type of construction, although they had to be careful not to infringe the Patents that protected his system. One example was Comet's Speed-O-Matic, which was really a keel type of construction rather like our own Keelbild, which was in turn related to



Walter Fromm seen in August 1939 with one of four development models of the Kingfisher; here it is seaplane guise with Joe Ott designed 35in. Silver Flash Pontoons. A change to wheeled landing gear was claimed possible in only thirty seconds!

the Cleveland systems; but it used card formers like the Ott kits. Comet's Speed-O-Matic did away with the fuselage foundation frame of oblong cross section, and used both vertical and horizontal outline crutches on the card formers.

Ott-O-Tube

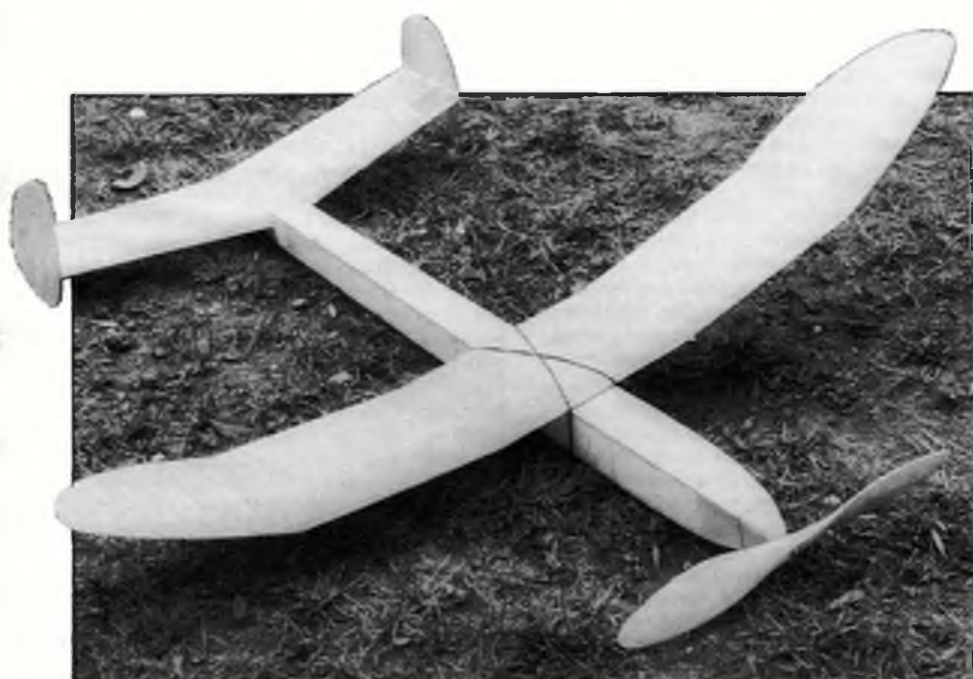
Late in 1943 Joe Ott produced his 40 1/2in. (3/4 inch to 1 foot) Mosquito. Because of the slender rear fuselage he was forced to use a tube jig which became part of the fuselage structure, thus introducing his Ott-O-Tube construction. Extended rubber motors on sticks protruding behind the scale outline was his normal practice on multi-engined rubber driven models, but on the Mossie he used motors enclosed in tubes of rolled paper which acted as jigs for the nacelles and extended aft to give reasonable motor length. Later the Ott-O-Tube method was used on various single

engine types but it did not enjoy the success that had accompanied the original Ott-O-Former system. This period marked the crest of the wave for the Joe Ott Manufacturing Company with their rubber powered Battle Plane kits of famous wartime types. The Company had three full pages of colour adverts in the November 1943 issue of Model Airplane News. Never again would they use such a vast advertising display.

Bild-A-Set

Joe Ott's inventive, fertile mind was continually creating new ideas, and in order to develop and produce yet another system of model assembly for practical kits he designed for DA Pachter Co. for ten months from the end of 1943. The result was known as Bild-A-Set. Ribs and formers of a patent coated newsboard (all completely prefabricated) were held vertically in slotted card jigs of triangular cross-section which were pinned down over the plan with drawing pins. Special wire clips retained the longitudinal members in place while the cement dried. This 'assembly line' method of model construction was revolutionary and was said by the trade to be the 'greatest advancement ever made in the model airplane industry'. The Pachter kits available from early 1944 included all the well known fighting planes of the time; but before long balsa again gradually became available. Modellers who had been starved of their favourite commodity for two years were keen to see the end of substitute materials and despite nationwide advertising this method of construction possibly did not receive the attention that it might otherwise have enjoyed.

Sun Spot was a 36in. Class C Stick design which was flown in National and local competitions between May and September 1940; at that time the kit was given away free with one year's subscription to Air Trails magazine.





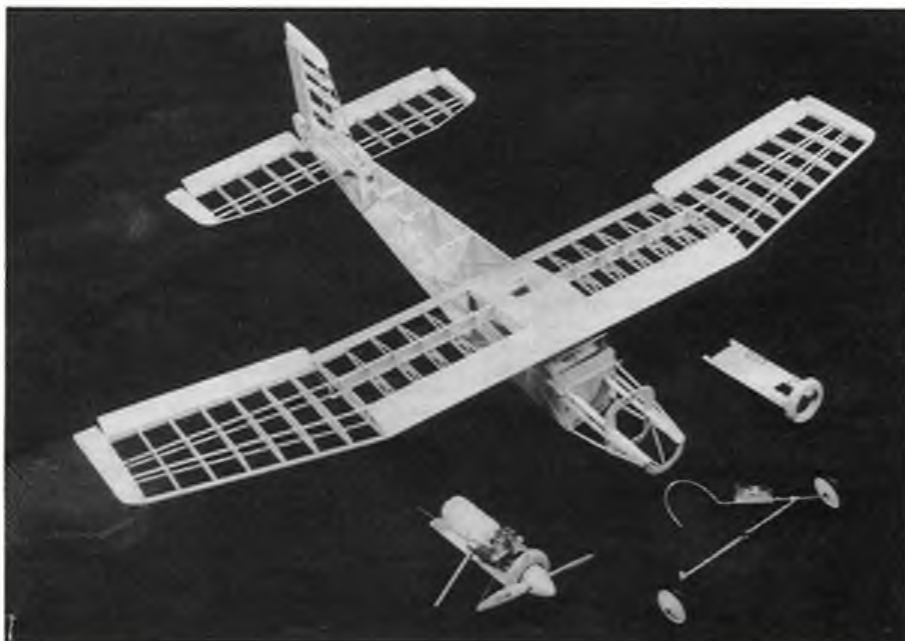
Tom Perzentka with the 72in. Ott Streamliner with monowheel undercarriage. Power was supplied by an inverted - and buried - Dennyrite Airstream which drove the propeller through a five-inch extension shaft.



Above: A typical display of Battle Plane kits at Neisner's Store.



Above: The Ott-O-Tube Mosquito featured moveable control surfaces and retractable landing gear. Below: The prefabricated 58in. R/C Golden Falcon which Joe Ott designed and engineered when he was over eighty years old.



Final approach

Balsa was, of course, also being increasingly used during 1944 by the Joe Ott Manufacturing Company in kits that had previously relied on card for speed of assembly and strength with basswood stringers. With balsa stringers, Joe maintained that the card formers were still better than balsa and the resilience of this material made it more suitable anyway; thus the balsa formers were replaced by card again in 1945 despite the plentiful balsa supply. Although the Joe Ott Manufacturing Company continued for some time and Joe Ott kits were still being sold into the late 1940s, Joe left the model industry and started a packaging company, designing over the next twenty years his own high-speed machinery for filling collapsible metal tubes with various substances. This was followed by work as a design engineer in industry for fifteen years thereafter. He followed the changes that took place in the model aircraft hobby and returned to his first love briefly when at over eighty years of age he undertook to design and produce a highly prefabricated radio-controlled model. That Joe had faith in the old Bild-A-Set system is shown by his adoption of some of its methods in the construction of this radio model, which was his last venture.



Joe Ott and his contribution to the hobby warrant a more detailed look than has been possible in this appreciation. This will be done at some future date. Thanks are due to a number of sources in the above compilation, notably John Brown, Jim Noonan, the AMA Museum and especially Mrs Dorothy Ott without whose help this article would not have been possible.



Scale and Control Line at the 19



Fine weather and close competition at Barkston Heath during August Bank Holiday Weekend made this a Nationals to remember. Over to our reporting team

Free-flight Scale

Report by Bill Dennis

The popularity of F/F Scale at the Nationals continues and this year's event, which was blessed with superb weather and excellent flying, was the best I can recall. Out of a total of twenty-five entries only one model failed to qualify and the majority managed to ROG - a dramatic improvement over previous years.

The calm weather enabled the rubber and CO₂/Electric events to be run in the afternoons, attracting a sizeable and appreciative crowd each time. Spectators and contestants were kept in line by chief judge Barrie Hotham, who exercised all the authority of a lion tamer!

Rubber Scale

Once again the most remarkable model was by Barry Hetherington - this time, a 60in.

Dewoitine 338 if you please. Its brief qualifying flight from a hand launch was most steady and realistic, even including a touch-and-go on the roof of a van which had just moved from the flightline to an even more stupid place! Eventually Barry achieved a glorious ROG with all three props under power, and the ensuing bonus lifted him well clear into a very popular and deserved first place.

Mark Hinton placed second with a large and lightly-built Farman Moustique. Its early flights verged on the stall but a change of propeller resulted in a much more positive pattern. Third came Paul Briggs' well-known Hurricane which looked just right climbing away from the runway - unfortunately we did not see the retracting U/C.

Of the other models, Charlie Newman's Breguet 693 was eagerly awaited and it performed well from handlaunches. The first attempt at an ROG looked good until the

climbout tightened up into a sickening crunch on the runway. Thankfully the damage was limited to one inner wing panel.

CO₂/Electric

There was almost an even split into the CO₂ and Electric models this year, and the performance I enjoyed most was again by Barry Hetherington with his Telco-powered Stinson Trimotor, which would make an excellent *Acromodeller* plan - hint! (*It's going to be! GC*). Newcomer Kevin Wallace had produced a very nice and light CO₂ version of my Bristol MID, which was also present, now with electric power. Luckily the models could be differentiated by our contrasting ideas on the colour of the tailplane! Kevin is now promising to build a larger diesel version which will be most welcome.

Another new face to the scale scene was Trish Dennis with a Sopwith Swallow, fitted with a Knight and Pridmore electric unit. First attempts were underpowered but Derek Knight himself was able to provide an experimental motor with higher gearing to a 6in. rubber propeller, and this did the trick.

Ian Pallister's twin-CO₂ Catalina would have been a strong contender if it had managed an ROG, but unfortunately the runway was too rough for the wheels on the take-off dolly. Ian was also one of a number to suffer in that his final attempts had to be taken late following organisation delays totalling almost an hour, by which time the weather had suddenly deteriorated.

Power

There were four new models out of seven this year and all flew well. The first two rounds took place in the calm of Saturday evening and surprisingly only Coates, Manley and Dennis qualified at this stage. Eric's Austin Whippet looks bulky and is quite heavy, but a lusty-sounding Mills 1.3 hauled it into the air for a first-rate flight. Terry's 1½ Strutter also did well but the DH Hawk Moth - all of 44in. for a Mills .75 - was surprisingly overpowered and climbed much too steeply.

Of the misfortunes, Mike Smith's perennially unlucky Bristol F2B struck a runway light, putting the model out of action overnight; and the replica Mills 1.3 in Charlie Newman's 504N decided to blow its compression screw through

the head, stripping its threads in the process.

The following evening was windy so it was a dawn patrol on Monday morning, several competitors looking a little worse for wear following the previous evening's traditional binge at the George in Grantham. Indeed, your editor was not seen at all on the flightline! (*How dare you! I was attending to important C/L matters. GC*). It was still windy but paradoxically everyone now qualified.

Rob Presnell got his new DH Moth away well from a take-off but the glide still needs sorting out. A large propeller slowed down Dennis' Hawk Moth for one good flight, and Mike Smith's Bristol qualified from a handlaunch, but it was a second successive win for Charlie Newman's Avro, with the Sopwith in second place and Derek Knight's little electric Fairchild Argus third.

Thanks go to Charlie Newman and his team of judges - Doug Hunt, Paul Briggs, Barry Hetherington, Barrie Hotham, Chris Chapman, Derek Knight and Peter McDermott.



Heading: A happy Bernard Seale after a successful second-round flight with his C/L Thulin NA. Below that: F2C winner Steve Smith aims for his pitstop. Above: Eric Coates' 4th place F/F Austin Whippet. Below: Family teamwork for Chris Bradford's Dakota. Bottom left: Alas no more - Bernard Sexton's fine Gee Bee Z. Below right: Close-up detail of Bill Brown's SVA5.

87 SMAE Nationals

Control Line Scale

Report by John Robarts

C/L Scale was held in the usual Barkston Heath wind. During our fun-flying on Saturday evening, the conditions were perfect. Sunday morning brought the wind; not strong but enough to tax everyone's skills. Some models tend to balloon when landing with flaps down, and others, such as undercambered-wing biplanes can have problems all the time.

CD Margaret Staples was running around the line park cracking the whip to ensure that the first round should start promptly. The eight competitors had mustered a wide cross-section of aircraft types.

The first to draw was Pete Styles from Bristol with his now familiar Nakajima PA27. The lightweight model was blown about in the wind, but as there were no mechanical options this wasn't the ideal model for this event despite its delightful flying characteristics.

Next came 'Red Barrel' Geoff Burkett. Having semi-retired his well-known Fokker Triplane, he brought out his very smart new SE5A in Old Warden colours. This was adapted from a Dennis Bryant plan with an Enterprise Model Services three wire bellcrank for throttle control. The combination of wind, abrasive tarmac surface and a broken exhaust forced Geoff to abandon his taxi manoeuvre, losing him points.

Third to fly was Wally Cordwell with his DH Dragonfly. This new model, although a little on the heavy side battled through the wind in fine style, even if it was a touch fast. Wal suffered from a bouncy touch-and-go and landing, as did most of the others.

Next was in my opinion, the best model at the Nats, a Gee Bee Model Z built by Bernard Sexton from a Vern Clements plan. Unfortunately, a control problem crept in and after rising and falling apparently unstoppably, it hit the ground very heavily, and was a total writeoff. A hasty examination by Bernard found a small stone had jammed the elevator, causing loss of control...

John Robarts took off with his trusty DH Chipmunk powered by a much modified Merco 61 which gave more than enough power for second highest flying points in that round despite one of his electric options giving up the ghost.

Chris Bradford flew his Douglas C47, a veteran of two World Championships, with his usual skill to finish the first round two points



behind the DH Chipmunk.

New on the scene was Bernard Seale from Sussex with a Thulin biplane, powered by an Enya 46 4-stroke. In the windy weather, this well engineered model - which has had very little flying time - seemed rather under-powered but to have great potential. The wind took its toll and the pilot abandoned the flight.

The last to fly was Bill Brown from Edinburgh, who took time off from the stunt circle to air a model built during the late 1960s and early 1970s. His Ansaldo SVA was superbly constructed from the APS plan MA 359. Flight was fast, furious and safe but lack of throttle control on the Merco 61 prevented a higher score. Nevertheless, such was Mr Brown's workmanship that he achieved top static marks and fifth place. During the second round, everyone except myself improved upon his score, Chris Bradford putting in a beautiful flight with the trusty Dakota. Also worthy of note in this round was Bill Brown's wingover with the Ansaldo, which was a true stunt manoeuvre, right over the top! Quite superb to watch.

Commiserations go to Bernard Sexton whose Gee Bee, after so much painstaking detail work, was destroyed so quickly.

One absentee was Ron Truelove. Where were you Ron? You were missed and will face a court martial for being AWOL! Lastly, let's have more new faces in C/L Scale. You will be made most welcome. This is a most friendly discipline so get whittling the balsa this winter...

Handicap Speed

Report by Dick Mc Gladdery

Probably not everybody is fully conversant with the Speed handicap system, so a brief explanation may be useful. SMAE rules encompass some ten classes of speed model, which for competition purposes are pitted against each other on the basis of the percentage of the appropriate class record achieved by each model; the higher the percentage, the higher the placing and, of course, a new record is '100 per cent plus'. It is a workable, if not entirely ideal system which makes for a rich variety of model sizes and shapes, since the best solution for one class does not necessarily transpose easily to a larger or smaller class.

The weather was somewhat kinder than in recent years and in the circumstances a rash of new records might have been expected (last year there were three '100 per cent plus' scores) but in the event, there was only one. The speed event 'went independent' this year, with a separate cage on an adjoining area instead of being tacked on the back end of the T/R cage as in years past. The new position seemed to result in more spectators than usual, who took the opportunity to get a clear look at things in the pits, where the business of preparing, repairing and modifying of models was in constant progress, as well as to watch the flying itself which carried on with fairly regular frequency.

The teams of John Allcock and Joe Myszkowski have won at many meetings with their Class II (.09) symmetrical monoline model, edging the record up a little at a time - and they did it again. Their best flight of 139.99mph equated to 100.31% handicap and although they were kept sweating until the last flight of the competition, it was good enough for first place. The motor is a sleeved-down Webra Speedy with a home-made steel pipe and a pipe-pressure fuel system. A home-made carbon fibre single-blade propeller is used, but Joe reckons that he is on the limit of performance with his present steel liner/piston (modelled on the Rossi R15 Mk II) and is talking of an ABC set-up for next year, which should permit more RPM and longer life.

Second place was taken by Peter Halman with his FA1 (Class IV) model. He completed only one official flight (174.88mph/99.21%) for which he used his second-string prototype Irvine .15. Satisfied with that, he then swapped to his No.1 Irvine to try to topple Allcock/Myszkowski from first position, but he suffered an infuriating series of mishaps (including accidentally firing the shutoff in the middle of an official attempt) which left him but one attempt on the Monday. Unfortunately, the weather then laid on a nice



Clockwise from top: Rubber Scale winner about to ROG - Barry Hetherington's splendid Dewoitine 338. Above left: Paul Eisner's astonishing Class III Rossi R15 MkII speed model. 190+ on 52ft lines is worth seeing! Left: OS Max 61V in Ken Morrissey's Class VII winner gives over 200 mph. Below left: Harry Leyland was 4th in Old Time Stunt with this APS Foxstunter. Below: Proud winner of Mini-Goodyear after a fast and furious final, Nigel Higgins was teamed with Bob Horwood. Above: Merco donated a new 61 to the highest-placing Merco-powered Stunt winner. Bill Draper (right) was prevailed upon to make the presentation to Nev Dickinson, 4th overall.



brisk, cool breeze placing Peter in a dilemma; he could reduce the propeller load (less pitch) slightly and be reasonably sure of getting a timed run, but he would lose speed; or he could go for bust and hope the motor could cope with the wind. The latter approach was selected, but to no avail, for the motor conked out after only a few laps. A disappointment; but the Irvine is looking very promising for a motor that was only run for the first time early this year.

It is hoped to get it in production by Christmas; there are certainly plenty of people eager to buy.

Class III (Open 2.5cc) is another class with but one effective participant in the compact shape of Paul Eisner, who took 3rd handicap place with his astonishing Rossi R.15 Mk II model. This is virtually an FAI with a small wing, but the real secret is in the lines. The model is quite light at 16.3/4oz. which allows (just) the use of a pair of 0.012 in. (0.30mm) wires; grouped, of course. These wires alone are worth 15-20 per cent speed gain compared with the pair of ungrouped 0.016 in. (0.4mm) required for FAI. The motor features a 12mm shaft made by Peter Halman, a Halman piston in a Rossi liner; and a Halman 'fat' pipe was also used. Paul had hoped to crack the 200mph mark, but the motor was a bit off colour and after a prolonged tinkering session, Paul wound up in the same position as Peter Halman - one flight left on Monday - and suffered the same result exactly.

Last year's winner, Ken Morrissey, brought out his OS .60 Millennium Falcon again, but it took until Monday before he was sufficiently hyped up to fling it around. Ken reckoned the motor was a bit tired and his best run of 201.71mph supported that view. Even so, it's still very impressive at this speed - see the February '87 *Aeromodeller* for details. Prior to each flight, I thought it was advisable to shoo the spectators back from the net - just in case. Most people back away as soon as these beasts get going, but I saw one bod drinking up the power display with his nose practically poking through the mesh of the net! Ken also found time to try a new FAI model (in practice only) and to take second spot in F.21 with his Irvine 21 model.

Making a welcome return to speed, Dave Smith flew a Novarossi .21 in the F21 class, which he won, also taking 5th handicap place. This he did in between getting himself into the 1/2A final. The model is still quite young, and he achieved 166.81 mph on a two-blade wooden propeller, trimmed to diameter but otherwise unworked. With a CF single blader and a bit of development, he could be pushing Peter Halman's record of 174.49 mph before long...

Another old face to return to the lists, Gordon Isles has got the FAI bug again. He posted a personal best of 162.69 mph with an extensively 'Halmanised' Rossi R15 Mk II powered model. He also brought along a dinky Tee Dee .049 (Class I) semi-scale Spitfire 22, built from a plan in a Stateside mag. It was not intended entirely seriously, but it was at least equipped with a bladder fuel system - essential if you want to get any sense out of these tiny motors. A test flight revealed rather too lively control response for flying in a pylon and Gordon sensibly withdrew it before damaging this beautifully built and finished model.

The general level of performance nowadays is very high indeed and even as a whole was its usual cheerful, friendly, self with Jo Halman bearing the brunt of the timekeeping aided by Carl Roedling and Babs Roberts keeping the herd in the pits in order. Here's hoping for more of the same next year!

Midge Speed

Report by Andy Brough

Last year there was a half-hearted attempt to run a Midge comp, but lack of advertising and an uncertain starting time led to virtually no entries. What a contrast this year. I had urged the C/L Technical Committee to include a Midge event and to specify a time and place. Pre-entry was not required so we had no idea how many would turn up. We need not have worried, as seventeen entrants registered!

The proceedings commenced just after 2pm by which time most of the competitors were either

sorting out their lines, or their engines; and there gathered a goodly number of spectators, most of whom had not seen the like of this before. As we were using the Mini-Goodyear circle and line park the event had a proper feel to it, and contest director John Noble made efficient use of the circle by getting into the circle the first person ready, rather than stick rigidly to the running order.

Ken Morrissey took an early lead with his PAW-powered Midge, although 86.8 must have seemed a little slow compared with his 10cc model's 200 mph! In fact, Ken's speed looked like being the fastest in Round One until Mick Taylor arrived with his untried Elfin powered Midge.

At this point, I must explain about Mick's predicament. Shortly before Old Warden he broke his foot and is currently on crutches. His recently built and untried Midge obviously needed a pilot, so yours truly stepped in, and off we went for a practice. Now Mick's wife Heather declined to launch it so it was going to be up to him. The starting routine consisted of me holding Mick's right crutch, Heather holding the model and Mick flicking. The crutch handed back, I picked up the handle and Heather passed the model to Mick. Now, there was no way Mick could run, so a javelin launch it was to be; and it was, the Midge going into a beautiful wing over. However all was recovered and a near 90mph run was achieved. A tweak on compression and off we went to fly. A repeat of the starting procedure (including the wing over) eventually led to a 90mph run, and a lead at the half-way stage.

Unfortunately, by the second round the mini-Goodyear circle was required by the mini-Goodyears! Well, it was their circle; so we all had to move to a point adjacent to the circle and somehow we got a little disorganised, people being a little too spread out. However, round two proved the most exciting. Mike Bennett, who didn't manage a flight in round one, recorded 93.7 mph, soon to be followed by Barry Wade's 102.8 which nobody was going to beat. Mick Taylor changed to a team race type wooden prop but we managed only 87.95, worse than the first flight! Tom Hughes had a very sweet sounding Mk 1 Javelin powered Midge but its 80.9 was only good enough for 8th place. Just as the second round came to a close, Malcolm Ross (of Heaton/Ross team race fame) recorded 91.3 from his Frog 150 Midge - with perhaps just a little arm power, Malcolm? However, as at Old Warden it was the Elfins that ruled the day taking 1st, 2nd and 4th.

I must congratulate John Noble for his brave attempt with the only non-Midge entry, a Mills Mk II powered Bullet. However, the best it could manage was 61.5 and that with 25% bonus. Good on you John, both for the Bullet and for running the comp.

I must thank Amerang for providing Jet-X kits for the first three places and, of course, for making the Midge kit available again.

1/2 A Team Race

Report by Jim Woodside

Twelve teams mustered under the eye of Mark Jarvis, to whom thanks must be extended for running the event at short notice in the absence of the RAF for this year's contest.

As John Horton and Don Haworth had not entered with their formidable machine, the outcome was far more open than has been the case in recent years. In fact only three home-built specials, Clarkson/Needham's Sesqui, Whorton/Short's BBF and Malcolm Ross's 1.5 were to be seen.

The weather was on its best behaviour this year and I think no team suffered from 'third choice syndrome'.

In the first race of round one Clarkson/Needham set one of the meeting's best time of 3:46 to lead home eventual winners Langworth/Broadhead (3:59). The second race welcomed Taff Bollen back to racing after a year's absence. His 4:20 looked good enough for a 'semi' place, as did the 4:03 of Lorrimer Ross despite a lean spell during their second tankful. Heaton/Campbell's 4:16 in Race Three showed more promise than actuality as they had lean



Top: This much-modified Moki gave a new Open Goodyear Record to Dave Clarkson and Ed Needham. Below that: Bernie Langworth and John Broadhead - victors in 1/2A T/R. Above: F2C winners yet again - Steve Smith and Colin Brown. Below: Cotterell/Worgan aired their new carbon-fibre-fuselaged Open Goodyear model (right). Bottom: Fitzgerald/Thomson (Wharfedale) emerged winners of B T/R.



runs and hesitant pauses on take-off. Hill/Metcalf had to be given two attempts in Round Two when their heat did not reach fifty laps before their opponents Munro/McInnes retired.

Round two on Sunday afternoon was again favoured with warm, calm conditions. By now some of the rust had been cleaned out of dormant equipment! For their patience in waiting overnight Hill/Metcalf made 3:45; Heaton/Campbell improved to 3:49; Langworth/Broadhead to 3:46 and Clarkson/Needham to 3:42, the best heat time.

The fastest six teams went forward to the semis on Monday morning. As is often the case in the closer-racing conditions of the semis times slowed and 'ole man trouble' appeared. Struck down by the latter were Clarkson/Needham with a broken crank while the fastest time of only 3:54 went to Heaton/Campbell.

The Finals: Yes, the plural is correct! Sadly this turned into something of an anti-climax. The first attempt at 3.00pm lasted only a few seconds as Bernie Langworth's model, with a sick motor run, staggered into Derek Heaton's lines just as he was taking off. As a result Dave Campbell's pretty model was destroyed. Sportingly Langworth/Broadhead offered to lend their reserve model to Heaton/Campbell in order to re-run the final.

At 3.30 the start whistle saw Smith/Bollen's model spin-in on take off! However, the other two got away without incident on this occasion. Dave Campbell was first to pit at about thirty-two laps. Having been assured the unfamiliar model should achieve fifty lap range a small tweak on the needle was administered - the next tank yielded around eighty laps!!! Meanwhile Bernie and John cruised on to a comfortable win in the first all-Oliver Cub final for several years.

F2C Team Race

Report by Dave Clarkson

Apart from the years in which British international team selection is made by means of a single Trials, the best F2C contest of the year in

England is at the Nationals. That was certainly true this year. Sadly the trend of declining entries over recent years continued for only eighteen teams flew - a pity, for the weather over the three days of competition was close to ideal (it varied from overcast to sunny with little wind and no rain); and line checking, circle marshalling and jurying actually happened; all of which has been a vanishing rarity this year.

The fact that more than 60% of the entry recorded heat times better than four minutes shows that the F2C scene in the UK remains one of the most competitive in the world. Those teams that broke the 4:00 barrier in the heats are listed below. Mention of individual models is omitted because 'wings' were used by all except Hill/Metcalf who raced their usual elliptical-wing and anhedral-tail heavyweights. Of the nine teams who qualified for the semis, three were Cipolla users, three had chosen the Nelson and the remaining three used specials. Interesting!

Smith/Brown	London	3 31 6	Cipolla
Fitzgerald/Thompson	Sheffield	3 35 0	Burford-Nelson
Sladdin/Gardner	Newcastle	3 39 0	Nelson RE
Pulido/Pastor	Barcelona	3 39 5	Nelson SE
Salisbury/Whorton	Warwick	3 40 2	Cipolla
Heaton/Woodside	Liverpool	3 43 0	Haworth
Sanchez/Olive	Majorca	3 50 7	Nelson SE
Hill/Metcalf	Sheffield	3 57 4	Cipolla
Langworth/Broadhead	Leeds	3 57 5	Burford-Brendel

Fry/Thorpe	London	3 59 2	Nelson RE
Davies/Banks	London	3 59 4	Cipolla

Amongst these 'sub four-minute' teams were two from Spain - Spanish champions Pulido/Pastor from Barcelona who have a Spanish Record 3:28 heat to their name and Sanchez/Olive from Palma, Majorca. Pilot Sanchez is remarkable; he flies with reversed controls. For him 'up' is down and 'down' is up - think about it. Barcelona has perhaps the best purpose built control-line site in Europe and there is a racing club with a circle in Palma. Now we know where to go for our holidays; and Ian MacIntosh, that great ambassador of Scotland in Majorca, who accompanied the Spaniards as manager and interpreter, is the man with the details...

It was good to see the top Brits back in form



Above: Bruce Kopasz was again top in Novice Aerobatics. Below: Second in F2B: Barry Robinson and familiar Northwind 7. Top right: Lilley/Dalglish, 4th in Class 2. Goodyear. Below right: Barry Pickles grimly holds the 2nd place Vintage 'B' Super Saint.



F/F Power Scale

		Flight	Static	Total	
1	C. Newman	Avro 504N	920	1050	1970
2	T. Manley	Sopwith 1 1/2 Strutter	943	988	1931
3	D. Knight	Fairchild Argus	864	1050	1914
4	E. Coates	Austin Whippet	894	905	1799
5	W. Dennis	DH75	791	988	1779
6	M. Smith	Bristol F2B	838	938	1776

Rubber Scale

Rudder Score					
1	B. Hetherington	Dewoitine 338	1378	781	2169
2	M. Hinton	Farman Moustique	1154	778	1932
3	P. Briggs	Hurricane	1033	846	1879
4	C. Newman	Breguet 693	831	971	1802
5	R. Waddington	Stinson	875	671	1546
6	P. Kent	Interstate Cadet	567	731	1298

CO₂/Electric

1	W. Dennis	Bristol MID	1170	944	2114
2	D. Sheppard	Blackburn Bluebird	1101	988	2089
3	P. Dennis	Sopwith Swallow	954	994	1948
4	B. Hetherington	Stinson Trimotor	1098	789	1887
5	I. Pallister	Catalina	845	1031	1876
6	R. Hadland	Pietenpol	832	1014	1846

Control line Scale

			Flight 1	Flight 2	Static	Total	
1	C Bradford	C47	OS35	894	1022	505	1627
2	W Cordwell	DH90	OS40	1011	991	441	1462
3	J Roberts	DHC1	Merco 61	896	810	507	1403
4	G Burkett	SE5A	Merco 61	843	905	485	1390
5	N Brown	Ansaldo	Merco 61	562	632	532.5	1164.5
6	B Seale	Thulin	Enya 46		681	467	1148

		Heat	Semi	Final	
1	Langworth/Broadhead	Wharfedale	3 46	4 01	8 13
2	Heaton/Campbell	3 Sisters Grantham	3 49	3 54	9 31
3	Smith/Bollen	Elliotts	4 19	4 08	DQ
4	Clarkson/Needham	3 Sisters	3 42	RTD	
5	Hill/Metcalf	S C L A M S	3 45	4 20	
6	Lorrimer/Ross	3 Sisters Scotland	4 03	4 18	

Oliver
Oliver
Oliver
Sesque
Oliver
Ross Special

Handicap Speed

		mph	%	
1	Allcock/Myska	0 09 (II)	139 99	100 31
2	P. Halman	FAI (IV)	174 88	99 21
3	P. Eisner	Open 15 (III)	194 52	99 13
4	K. Morrissey	60 (VII)	201 71	95 76
5	D. Smith	F21	166 81	95 60
6	R. McGladdery	FAI (IV)	164 36	93 24

Class Placings

		mph	%
Class I (049)	1 Allcock/Myska	92 17	90 21
Class II (09)	1 Allcock/Myska	139 99	100 31
Class III (15)	1 P. Eisner	194 52	99 13
Class IV (FAI)	1 P. Halman	174 88	99 21
	2 R. McGladdery	164 36	93 24
	3 G. Isles	162 69	92 29
	4 D. Brewin	154 17	87 46
Class V (29)	1 I. Skinner	164 09	88 70
	2 R. Cox	139 00	75 14
	3 R. Roberts	127 37	68 84
	4 P. Rose	125 65	67 92
Class VI (40)	No Flight Recorded		
Class VII (60)	1 K. Morrissey	20 171	95 76
	2 R. Cox	187 98	89 24
	3 R. Miles	143 50	68 12
	4 M. Radcliffe	140 33	66 62
Class VIII (F40)	1 R. Roberts	147 34	85 42
	2 R. Miles	135 57	78 48
	3 C. Parker	125 67	72 75
Class IX (2IN)	1 M. Roberts	122 09	79 58
F21	1 D. Smith	166 81	95 60
	2 K. Morrissey	155 56	89 15
	3 G. Bryant	151 14	86 62

Aerobatics

1	B. Draper	Superhawk
2	B. Robinson	Northwind
3	T. Edlaender	Freebird
4	N. Dickinson	O/D
5	P. Arkley	Tararza
6	J. Lynch	Eagle
7	P. Little	Nobler
8	M. Doyle	Aquarius
9	M. Shaw	Chipmunk
10	J. Ash	Excort

Enya 40
Merco 61
PAW 40
Merco 61
ST 46
ST 60
Fox 36
ST 46
ST 46
Enya 45



after their below-par performances in Sweden. This particularly applied to Smith/Brown who did not suffer from motor breakages this time. They returned a low 18sec/10 laps airspeed for 25 lap range. Salisbury/Whorton had slightly better airspeed and Sladdin/Gardner slightly worse, all for similar range. However Steve Smith is still the most skilled pilot and Colin Brown is still the quickest pitman and these qualities are essential for successful use of the three-stop-heat tactic. Relative newcomers to the top bracket after many years of trying are Mike Fitzgerald and Mark Thomason. They used a Burford case machined by Donald Haworth and fitted with Nelson components including a high-timed AAC piston/liner. In a finely built Barkov type wing model this 'not-so-special' motor gave almost 120 mph airspeed at 34 laps range. Pulido/Pastor, Sanchez/Olive and Heaton/Woodside had similar equipment but the Yorke Bars got it to work and were the best of the two-stop men.

It was much the same in the semis for in Round 1 Heat 1 Fitzgerald/Thomason were the only finishers with a very quick 3:37.6. No-one else went well in the first round of semis so we had to wait until the second round to see who else would qualify. Heats 1 and 2 gave the answer with Salisbury/Whorton in the first heat finishing in 3:37.8 and Smith/Brown fastest of all in the second heat with 3:32.9. In this same heat poor Martin Sladdin and Ian Gardner could manage only 3:38.9 and thus had to settle for fourth place. It is a hard contest when a sub-3:40 does not qualify for a top three placing.

The final started in ideal conditions in front of a huge crowd of spectators safely confined behind the SMAE safety nets. Smith/Brown's motor was a touch cold slowing them slightly. Salisbury/Whorton's was colder, meaning they were slower for a change; but Fitzgerald/Thomason's second beautifully set so all three teams were close. As the race developed the Cipolla motors of the first two short-range teams came on song and their superior airspeed caused Mike Fitzgerald to get the thin end of the body action in the middle so his motor overheated and slowed. Fastest now in the air were Salisbury/

Whorton who were catching Smith/Brown. Immaculate stops by Colin Brown and a slipped catch by Andy Whorton nullified their challenge so Smith/Brown held on to their lead and won for the twelfth time in style.

Class B Team Race Report by Dave Campbell

The entry list this year was again rather low at just seven teams, this being mainly comprised of the regular stalwarts who are determined to keep Class 'B' alive and kicking. Welcome newcomers were the 3 Sisters team of Dave Clarkson and Ed Needham who had installed a 'bitza' Picco .21 and tuned pipe into a model originally built 10 years ago for a Super Tigre .29. As to be expected, however, the drag of two 0.4mm lines was too great a handicap for this .21-powered model to be truly competitive when matched against the brute horsepower of the .29-engined beasts which made up the bulk of the entry. Perhaps there is a case for allowing the smaller-capacity models to be flown on thinner wires, say 0.35mm! Certainly, anything which may result in increased participation would be worth pursuing...

Both rounds of heats were flown on the Sunday in ideal conditions. Last year's winners, Martin Sladdin and Dave Campbell booked their usual place in the final after a two-stop 3:30.9 in the opening race of Round One, the motor set slightly rich - and with leisurely pit stops to avoid any mistake. Also in this race were potential winners Steve Smith and Gordon Yeldham but they were beset with troubles and could not better four minutes. The next heat saw the remaining two final places claimed by Bryant/Myzyska at 3:35.2 and Fitzgerald/Thomason with 3:54.8. Worthy of note in this race was the fact that Mike Fitzgerald was flying a brand-new model, a truly rare event in Class 'B' these days.

The second round saw Clarkson/Needham improve to 4:17 and the Smith/yeldham challenge fizzled out when multi-function valve failure caused their withdrawal.

The final on Monday afternoon therefore

1987 Scale and Control Line Nationals: Results

F2C Team Race

1 Smith/Brown	7:21.0
2 Salisbury/Whorton	7:30.7
3 Fitzgerald/Thomas	8:10.2

Class I Speed

		Best speed
1 B. Wade	Elfin-Midge	102.8
2 M. Bennett	Elfin-Midge	43.7
3 M. Ross	Frog-Midge	91.3
4 A. Brough/M. Taylor	Alfin-Midge	90.0
5 I. Horne	PAW-Midge	89.9
6 K. Morrissey	PAW-Midge	89.1
7 Skitt/Clews	PAW-Midge	82.5
8 T. Hughes	Javelin-Midge	80.9
9 A. Coltham	PAW-Midge	77.6
10 I. Hewitt	PAW-Midge	76.9
11 A. Brough	Javelin-Midge	72.8
12 I. Gibbs	PAW-Midge	72.6
13 T. McDonald	Frog-Midge	72.0
14 P. Martin	Elfin-Midge	68.6
15 J. Noble	Mills-Bullet	61.5

3021	3063	3084	6147
2994	3051	3089	6140
3025	3025	3095	6120
2908	2954	2940	5894
2875	2859	2824	5734
2707	2815	2863	5678
2768	2843	2784	5627
2761	2795	2806	5601
2633	2683	2732	5415
2575	2636	2727	5363

Class B Team Race

	Final
1 Fitzgerald/Thomason (Wharfedale)	3:54 7:48
2 Bryant/Myzyska (Bilston)	3:35 RTD
3 Sladdin/Campbell (Novos/Grantham)	3:30 DQ
4 Smith/Yeldham (Feltham/Elliott)	4:03
5 Clarkson/Needham (Three Sisters)	4:17

Vintage 'A' T/R

1 Andrews/Horwood	S. Bristol	Time Traveller	4:02.7
2 Grooms/Horne		Mac	4:07.2
3 Schofield/Miller			4:09.9

Vintage 'B' T/R

1 Pilgrim/Bower/Horne			4:16.6
2 Pickles/Robinson	Wharfedale	Super Saint	+
3 Hunt/Gibbs	Bilston	Quest	4:50.3

Novice Aerobatics

	Total
1 B. Kopasz	943
1 N. Evans	913
3 J. Davis	907
4 T. Lloyd	904
5 B. Pickles	868
6 D. Bratton	836

Old Time Stunt

1 D. Day	515	Ambassador
2 R. Prentice	514	Boxcar/Stuntwagon
3 M. Doyle	465	Tycoon
4 H. Leyland	460	Foxstunter
5 T. Taylor	415	Foxstunter
6 P. Michel	355	Calamity Jane

Open Goodyear

	Heats	Semis	Final
1 Clarkson/Needham	3:49.7	3:42	7:36.2
2 Pegg/Thorpe	3:51.4	3:55	7:53.6
3 Green/Malcolm	4:18.7	3:55.6	8:18.9
4 Thorpe/Swinburn	3:56.7	4:06.2	
5 Morell/Banks	3:59.1	4:28	
6 Andrews/Horwood	4:02.2	4:01.6	
7 Leeper/Lord	4:19.8	4:54.6	
8 Whorton/Short	4:22.2	4:20	
9 Cotterell/Worgan	4:26.4	4:29	

Class 2 Goodyear

	Heats	Semis	Final
1 Clarkson/Needham	4:16	4:15.9	8:23.7
2 Andrews/Horwood	4:29	4:28.1	8:56.6
3 Callow/Jephcott	4:18.6	4:10.4	8:59.3
4 Lilley/Jephcott	4:18.6	4:10.4	8:59.3
5 Lilley/Daglish	4:24.3	4:38.4	
6 Cotterell/Worgan	4:39	4:35.5	
6 Robinson/Owen	4:38	4:34.2	

Mini-Goodyear

1 Higgins/Horwood	S Bristol	10:12
2 MacNamara/Hodgson	Eccles	10:32
3 Jones/Darke	S Bristol	10:51

1/2A Combat

1 L. Wolkerman

Diesel A Combat

1 P. Stanley

FAI Combat

1 M. Whillance



Combat carnage was - as ever - frequently seen. Nick Perlaki's Oliver-powered foamie awaits attention.



Joe Myska gets ready for the strain as his 'B' team racer takes its turn at the line check.



'Amsterdam Joker' Ron Kaptijn brought along his truly British-styled, nylon covered, Oliver powered Conqueror models.



'Selling-up' notice tells a tale. Was this Dave Harrison's last Nats? PS: No - he was eventually persuaded to Carry on Combat!

final. None of the other teams were able to match these performances though the best race of the semi-finals was undoubtedly the second one involving Clarkson/Needham, Green/Malcolm and Andrews/Horwood with all three teams performing at their best and racing to the finish.

The Novice final between Morell/Banks, Barker/Tompkins and Leeper/Lord seemed to revolve on whether Morell/Banks could reproduce their 'heats' performance: Barker/Tompkins, with previous experience of finals as the 1985 Novice winners would have the least nerves; but Martin Leeper was still looking apprehensive about the whole affair! Morell/Banks could not quite achieve consistency, lacking some of their earlier punch despite having the fastest model and try as they might Barker/Tompkins with their suction-fed Nelson could not keep up with them, while Leeper/Lord retired after a number of problems. The final result was a victory for Morell/Banks in 8:52.1 with Barker/Tompkins over twenty seconds adrift on 9:14.9.

I have no doubt that we will see more of Morell/Banks and Leeper/Lord in the future, both having the potential to challenge the best.

The Open final looked to be a close affair for second place with less than one second separating two of the teams; Clarkson/Needham being clear favourites. This was the best Goodyear final that I have ever seen with all the teams racing hard to the end, two of them breaking eight minutes. Clarkson/Needham managed to get their Moki performing at its best, giving them under '20 seconds for ten' in the air. The other teams were unable to match this air speed and this combined with some immaculate pit work from Ed Needham saw them home to a well deserved victory in a new British record time of 7:36 with Pegg/Thorpe finishing second in 7:53.6 and Green/Malcolm third in 8:18.9.

Overall, despite relatively low entries, this was the best Goodyear competition for many years. Congratulations to all who took part and thanks to Mark Jervis who ran the competition.

Class 2 Goodyear

Report by Bob Horwood

The Class 2 Goodyear event attracted the highest participation yet with eighteen entries. For the first time two semi-finals were flown for the top six teams. Only two teams failed to record times. Performances are improving with competitors learning that fast pit stops are the way to success.

In the first round Clarkson/Needham headed the pack recording a very competent 4:16 with Catlow/Jephcott only two seconds behind on 4:18.6. Third fastest were Lilley/Dalglish in a very creditable 4:24.3 whilst fourth place went to Andrews/Horwood with 4:29.

In the second round Robinson/Owen improved to 4:38 and Cotterel/Worgan to 4:39 with Heaton/Heaton managing a splendid 4:53.3, left-handed Derek doing the pitting.

The first round of semi-finals was due to start at 9.00 am, but there was a delay of some twenty minutes. When it finally got going Catlow/Jephcott and Clarkson/Needham again led the field with 4:10.4, the fastest heat of the competition, and 4:15.9 respectively with Andrews/Horwood in third place on 4:28.1. Robinson/Owen maintained their form to finish fourth fastest in 4:32.2.

The Novice final was a somewhat disappointing race with only Robinson/Owen performing at their best to record 9:15.7. Both the other teams made mistakes at their pitstops with Lilley/Dalglish finishing in second place with 10:32.9 and Heaton/Heaton, whose motor had become reluctant to start finishing in 11:46.1.

The open final was much more exciting. Clarkson/Needham completed a perfect race with no errors to finish first in 8:23.7 as did Andrews/Horwood to record 8:55.6. Pre-race favourites Catlow/Jephcott made a rather hard landing at the mid-point and this combined with slow subsequent landings as a result of a partially collapsed undercarriage cost them second place by just four seconds.



Stateside visitor Doc Martin fun-flew this amazing Canard. See you in '88, Doc?

Mini-Goodyear

Report by Gordon May

Racing commenced at 4pm on Saturday with the heats for Round One. Weather conditions were almost perfect and seven teams decided that they were ready to go.

Heat 1 saw last year's runners up, Higgins/Horwood of South Bristol flying against the Allerton Grange team of Taylor/Walker. The Bristol team were really motoring in the traffic, and set the pace with a time of 4:22. Taylor Walker lacked the airspeed required for a fast time but nevertheless enjoyed themselves cruising home in 6:38. Heat 2 saw Higgins/May of South Bristol against last year's winners, Tear/Walker of Allerton Grange. The latter duo showed their class by running smoothly to 4:38, whilst Theresa Higgins suffered from an overcooked motor when Pitman Gordon May tried to do a 'one-stopper'. The motor would not restart at 53 laps and their time was a slow 7:08.

Heat 3 saw an all-junior team of John Kit and Robert Teal of Allerton Grange up against Daniel Jones and Phil Darke of S. Bristol. The Bristol team had more horsepower up front and recorded a time of 5:12 against 6:25 by the Allerton Grange lads.

There was no pairing for MacNamara/Hodson from the Eccles club but an all-senior team of Croizier/McAlpine offered to run against them to make up a heat. MacNamara/Hodson had their act together, but the eagerness of the team to do well at their first Nats cost them dearly. They spoiled their second pitstop by climbing too steeply and then tripping the shutoff with a lot of down elevator - twice in succession. Nevertheless they were delighted to record a 5:42 and knew they could do better the following day.

Sunday was dull and humid, and racing was held back until 3pm, whilst the organisers finished competing in other events.

Disaster befell Tear/Walker when they shattered a wing in a warm-up flight. Heaton/Smith of Feltham and Three Sisters took their place in the first heat. Flying for their first round, they were paired against MacNamara/Hodson and this turned out to be a cracking race with the Eccles team improving on Saturday's time by almost a minute to 4:58. Heaton/Smith went very well for 5:03. Heat 2 saw Taylor/Walker and Jones/Darke also improve on the Saturday's times with a clean race recording 5:55 and 4:58 respectively.

Heat 3 was a completely Junior affair which saw Heaton/Smith retire after breaking their best prop, whilst Kit/Teal improved with 6:07. In Heat 4 Higgins/May flew against Tear/Walker, the latter team having to resort to their spare model. The race went without incident until the mid-point, when Robert Tear's model lost a little airspeed and Theresa Higgins found herself in the position of having the faster

model. Given the difference in height between pilots (Robert being considerably taller) Theresa lost her cool and decked the model on the wrong side of the circle. On restarting the motor, pitman Gordon May failed to notice that the up-line had snagged the line connector which resulted in another unscheduled stop, ruining their change of a place in the semis. In the meantime Tear/Walker had sorted out their motor at a pit stop and went on to record 5:04.

There then followed a 'Seeding' of the six fastest teams to run two rounds of three-up semi finals.

In the Heat 1 semis, Higgins/Horwood were matched against MacNamara/Hodson and Taylor/Walker. This should have been a routine run for Nigel Higgins and Bob Horwood but the model suddenly lost nirspeed after about ten laps and then cut altogether. The model was restarted with the needle opened up just a little. In the meantime MacNamara/Hodgson were finding life a little more difficult in all the hustle and bustle in the centre of a three-up circle. Peter Taylor, flying for Bob Walker was enjoying himself immensely and keeping out of trouble. Higgins/Horwood were home first in 4:48 with MacNamara/Hodgson on 5:27 and Taylor/Walker in 5:53.

Heat 2 of the semis featured Tear/Walker, Jones/Darke and Heaton Smith. The race started well and there was some good 'hairy' racing until around the halfway mark. A line tangle brought all three models down and only Tear/Walker and Jones/Darke were able to get away again. Jones/Darke were offered a 'refly' if they felt they needed one, after they had flown their 2nd semi.

Tear/Walker finished in 5:29 with Jones/Darke on 5:11. The same groupings were then asked to fly their second round of semis.

In Heat 1 Higgins/Horwood had their act together and went quickly and smoothly for 4:22. MacNamara/Hodson, now revelling in the competition, improved with 5:06 but, alas, Taylor/Walker had problems with a pit stop and were disappointed with their 6:13.

Heat 2 showed that '87 was not to be the year for Tear/Walker. The weather had turned cooler as the evening sun lost its strength and their motor ran cold as the race progressed. Robert Tear decided to gamble on a quick stop to allow Bob Walker to change the motor settings. In bringing the model in at the Pitman's feet the wing sheared off at the root. Jones/Darke were also experiencing slight setting problems and they failed to improve on their first round semi time, clocking 5:26. Heaton Smith were really struggling with a motor which had gone all nasty to limp home in 7:43.

Finalists were Higgins/Horwood, MacNamara/Hodson and Jones/Darke, whose 1st semi time had proved good enough without the need for a 'refly'.

The final was flown on Monday after the combat final and a large crowd gathered around the 'mini' racing area. This was to be a deadly serious affair with two timekeepers per slot and a full jury of three.

All models were away and running quickly with Higgins/Horwood having the advantage of airspeed over MacNamara/Hodgson and Jones/Darke, despite having the slowest model, always in the hunt.

Once again Higgins/Horwood had mysterious motor problems when they came to an unscheduled stop on the wrong side of the circle after about twenty laps. The model was quickly airborne again but MacNamara/Hodgson had picked up precious laps.

Soon Nigel Higgins again found the motor going a little 'off song' but this time Bob Horwood called him in and the model was landed at the pitman's feet. A slight adjustment and 'The Stinger' was away; this time really singing.

In the meantime MacNamara/Hodgson also had a bad stop, losing any advantage they might have had. The race had now reached the half distance and all three teams had a smooth and uneventful run to the finish. All pilots had received two warnings each for whipping and there was one infringement of not walking forward in the pilots' circle.

Higgins/Horwood were worthy winners for the second time, having also won in '85.

1/2A Combat

Report by Vernon Hunt

For the last three years 1/2A Combat has been spoiled by bad weather, especially high wind. 1987 was an exception. In particular, Saturday was flat calm! Entries were down at 17, and for the first time in many years there were no Irish entries. Loet Wakkerman and sister Monique made an appearance (what else can you strap to your back on a motor cycle?). Most impressive in the early rounds were Dave Harrison, Neil Gill and Loet Wakkerman himself.

By the quarter-finals, it was obvious that the winner would come from one of the above three. Dave Harrison beat Martin Kiszal 2-1 in a tight match. Loet Wakkerman beat Ernie Burles, while Neil Gill came through against Peter Whale. Mike Whillance and Nick Stowe were into an interesting match before Nick Stowe let go of the handle, to be disqualified.

The Semis saw Dave Harrison lose to Loet Wakkerman; Neil Gill beat Mike Whillance. Third and fourth flyoffs were flown on the Saturday, the final being held over until Monday afternoon with the Class 'A' and FAI finals. In the third and fourth fly-offs, Dave Harrison was victorious over Mike Whillance. The final was a strange match. Neil Gill followed Loet for something like three minutes. On the occasions when Loet did get behind Neil two cuts resulted and we had our first Dutch 1/2A winner.

As in all the combat events, heavyweight Danish crepe paper streamers were used. It was thus unlikely that a cut could be taken with 'wing' or 'lines'.

Diesel 'A' Combat

Report by Vernon Hunt

With only one European entry, Ronald Kaptijn from the Netherlands, entry was again low at 28, but at least the good weather prevailed. As in '1/2A' the event was run to the knock-out system, with a first-round 'losers' repurchase. The only changes in 'A' appear to be the use of more sophisticated engines. Originally, the only motors used were PAWs or Oliver Tigers, but now there are some quite impressive MVVS and Rossi powerplants - even the occasional Nelson diesel.

Last year's winner, John James had an out-of-sorts weekend. By the second round he was eliminated after a bout with Mervyn Jones. By Round Three only ten fliers remained; and at the end of this, with only five contestants left, it was necessary to fly an eliminator to get the number down to four and to allow a pair of semi-finals. The first semi-final between Dave Harrison and Paul Stanley lasted about thirty seconds. A mid-air collision destroyed Dave Harrison's model leaving Paul to fly out the four minutes for victory. The second semi between Mervyn Jones and Mike Whillance was more spectacular with Mike edging victory three cuts to two. In the third and fourth fly-off arguably the best match in Class 'A' took place, with Dave Harrison beating Mervyn Jones by three cuts to one.

Things were fairly even in the final, although Paul's Nelson powered model had better upwind tension. In a line tangle Mike Whillance broke a line and spent time on the ground. Back in the air and Paul Stanley took a cut. A second mid-air saw Paul's aeroplane return to the fray with tailplane held on by a bulldog clip, while Mike was doing his best to fly a rather battered model. At the final whistle Paul still held his one-cut lead and was thus a deserved winner.

MacNamara/Hodgson had made a splendid debut at the Nats to capture second place and Jones/Darke, racing together for the first time deserved their hard earned third place.

The racing over the whole three days was very enjoyable, and the final was a real cracker.

FAI Combat

Report by Vernon Hunt

The 'premier' Combatevent was a first outing for the new rules which are effective from January 1988. This was considered the best way of helping to pick a team for the World Championships in Kiev next year. The rulings

include a maximum venturi diameter and this brought about the first problem when Mike Hember's interpretation of a plenum chamber with a hole in it, mounted on the crankcase, was presented. Contest Director Vernon Hunt disqualified Mike, but a separate SMAE delegation allowed him to fly as it was considered that he had conformed to the 'letter of the law' if not the spirit. It is obvious that a further clarification will be required by the World Champs to prevent more rule-bending. This clarification will be submitted by the UK for approval by the FAI next year. Speeds generally were down by at least 5mph. I believe this made for better combat; one well-known pilot remarked that it was the first time for months that he had taken three cuts in a match. Competitors were using existing equipment and had merely reduced the venturi size. This worked well on the USE and front-induction Nelsons, which were predominant. A blast from the past saw John Hammersley (complete with wheelchair) and Paul Stanley equipped with useful-looking rear-valve Nelsons, but cobwebs were apparent and neither survived to the fourth round. The most notable matches in Rounds one and two saw Mervyn Jones beat Paul Stanley by three cuts to two; and Tony Frost beat Dave Harrison four cuts to three. After two rounds only twelve of the original sixteen contestants remained. In Round Three John James made a final exit at the hands of Neil Gill and Mike Hember was disqualified against Mervyn Jones for leaving lines over his opponents' during a model change. The other major surprise was 'newcomer' Jeff Sizer from Peterborough beating Mick Tiernan.

In Round Four Mike Hember was disqualified yet again for letting go of the handle, his wrist strap breaking in the resultant 'fly-away' during his bout with Tony Frost. Dave Harrison lost to Martin Leeper by two cuts to one. Dave removing all the streamer in the first seconds of the match. There were also wins for Mike Whillance and Mervyn Jones who beat Jeff Sizer and Neil Gill respectively.

Only five pilots remained by Round Five. Tony Frost beat Mervyn Jones three cuts to one and Neil Gill beat Martin Leeper by two cuts to one. Mike Whillance had the 'invisible' bye and flew Tony Frost in the first match in Round Six. There were wins in this round for Mike Whillance and Neil Gill. It all got very complicated at this point because 'wins against losses' count, and Mike Whillance had flown one round less. As equipment was running out the pilots agreed to a third and fourth fly-off between Tony Frost and Mervyn Jones; and a deciding final was thus between Neil Gill and Mike Whillance. Tony Frost beat Mervyn Jones with a '+90 to +74' score, a match best described as total carnage. But what a strange final - the only one I can remember where no cuts were taken. Four minutes with three line tangles and ground time the decider! Unfortunately, every line tangle resulted in Neil Gill being the one to suffer...

My thanks to the enthusiasts who made the Nationals possible.

Ron McCairn, SMAE Chairman, at the close of ceremonies with the Mayor and Mayoress of Grantham. We have a photo of Ron with an ice-cream cornet which will remain hidden because of the Editor's fears of job security...



comprised the same three teams as last year, all OPS.29 powered. At the starting signal Sladdin/Campbell were quickly away and were generously handed a six-lap lead by the other two teams who were somewhat tardy in coaxing their engines into life. With all three models now in the air and the race well and truly on it was soon apparent that Sladdin/Campbell had the highest airspeed by far (142mph had been achieved in practice!) covering the thirty laps between pitstops in less than fifty seconds. Nevertheless it was still anybody's race as the other two teams both had good speed and the range for a three-stop final, compared to the five stops required by the 'hare'. The race was providing excellent entertainment for spectators with the sight and sound of three Class 'B' racers on full song something to behold. As the race reached the latter stages Sladdin/Campbell had worked up a ten-lap lead and seemed to have the win in the bag, until the last stop on lap 156 when disaster struck. As Dave Campbell released the model for its last tankful, the tuned pipe and tail support bracket detached itself from the model on take-off.

The result was a noticeable increase in noise and a severe drop in airspeed. Still with a marginally faster model, Martin Sladdin found himself in an awkward situation overtaking the very high-flying model of Bryant/Myzyska. This situation lasted for several laps, Martin being unable to cut the motor as he was having to fly on full 'up' elevator to complete the overtake, so high was Graham Bryant flying. The inevitable mid-air collision occurred resulting in severe prop rash to the outboard wing of the Sladdin/Campbell model and a heavy crash for Joe Myzyska's model, a veteran of ten years' racing. This left Mike Fitzgerald and Mark Thomason with an easy win as the only team left in the race. Bryant/Myzyska were classified second as a retirement with Sladdin/Campbell third, disqualified for jettisoning a component. In all this was a rather disappointing end to what had been an excellent final.

Vintage Team Race

Report by John Noble

A good old RAF motto was (is?) 'Never volunteer'. In a blank moment I forgot it and so the Nats this year included Vintage T/R. A few phone calls and letters showed promise of a good entry, forcing the adoption of one of Derek Heaton's suggestions, that of no Finals. We were out of time and daylight even on that system.

Saturday evening was calm but unfortunately, on Sunday competitors had to cope with quite a stiff breeze.

The very first heat produced the winning time, Andrews/Horwood recording 4:02.7 with their Oliver-powered Time Traveller. Next best that night was the Texan of Bower/Campbell in 4:11.6. For once, the Mew Gull of Isles/Ross had an out-of-form motor and was unable to better 7:33. Visually the most interesting heat was that involving Turner/Waterland against Heaton's, father and son, with their Scout biplane. Both models were Oliver powered. Fortunately Waterland remembered not to try a full-blooded catch, but he stumbled and for a second looked likely to stand on the model...

Sunday saw a few extra entries. Hewitt of Nottingham, in his first-ever race was provided with a pit man, in the shape of Ken Morrissey, and recorded a creditable 4:57. Groome/Horne improved to a second place 4:07.2 and Schofield/Millar of Whitefield achieved 4:09.9 on their first run. A second flight fell victim to the wind, resulting in a bladeless prop, and that rare phenomenon of a diesel shaft run, fortunately without damage to the Tiger.

Class B was of course memorable for the noise! Can anything else compare? Saturday produced one incident when Hunt/Gibbs of Bilston had their control failure on their Quest, fortunately before it left the ground, and overnight leaders were the Wharfedale team of Pickles/Robinson with their Super Saint, twice winners at Three Sisters. Again there were a few extra entries on Sunday, including a PAW-Quest from Lloyd/Gorst which was slower than the Merco version, but with some work on props could be very competitive.



Top: Neil Gill's second-place FAI combat ship is readied for the final. Above: All the gear - Bob Horwood prepares in Open Goodyear.

Pilgrim/Bower/Horne's Fox-powered model improved to 4:16.6, which no one else could match and Hunt/Gibbs returned to the fray to take third place with 4:50.3. Very unlucky was Terry McDonald whose Sorcerer showed great reluctance to leave the ground, and then, when it did, thought it was in the Gold Trophy. Terry's skill won on the first two take-offs, but the third was disaster. Fortunately no other model was involved. One design I had not seen for years was the Red Lightning, but Neville/Neville/Graham had entered one. It seemed tail-heavy with the Eta, so what the original must have been like with an Amco, I don't like to think!

Thanks to all who flew and helped, but especially to Alan Cottam and Matthew Noble of Three Sisters for organising (bullying) competitors and to my long suffering wife Susan for excellent 'backup facilities' on the campsite.

Aerobatics

Report by Glen Alison

Twenty five entrants for this year's Gold Trophy event was slightly fewer than in recent years, and there were no foreign entries, something which always adds interest. Nevertheless, even if numbers were down then the quality was not, as shown by the good scores obtained on the first day. The weather helped as the fresh breeze which started the day dropped off to almost nothing. Actually most stunt fliers hate zero wind as the models can kick badly in their own turbulence and may also suffer loss of line tension. However the first round ended without incident.

Most of the models flown were tried and tested oldies. The Nationals is no place for trying out new creations - but Eddie Sharp flew a very impressive American Sig Magnum. This is a new design on the stunt scene. He powered this with the new Merco 61 Stunt engine developed by Ian Russell. Merco generously offered one of these new motors as a prize for the highest-

placed flier using a Merco engine. As a result of his efforts Nev Dickinson was able to take this home with him.

Closer inspection revealed that there were subtle changes in the top fliers' equipment. Bill Draper is now using a new engine: still faithful to Enya but now with the new 40SS in the latest Superhawk. Tony Eifflaender now flies a .40 version of his own PAW diesel. Barry Robinson has changed to one of the new Merco 61s in his smart silver Northwind.

Some fliers had their share of problems. Pete Iliffe had dirt in the spraybar of his Fox 36 and Dion Beesley had a leaking fuel filter. Both caused erratic running before being sorted out. During the second day the wind was stronger and few fliers improved their scores. The 'top ten' for the flyoff had effectively been decided on Saturday. Ireland's Mitchell Shaw had the misfortune to run out of fuel in the cloverleaf and crashed, but the damage was not too serious and the model was repaired overnight.

Fly-off day

It was much windier for the flyoff, which is in effect a separate three-round contest with the best two flights to count. For this last day the judges, Reg Lowe, John Harley, Dorothy Dickinson and Mick Feaver were joined by M. Bensch, the Belgian International stunt judge, who was paying a visit to our Nationals and kindly accepted an invitation to help. At the end of the first round Tony Eifflaender was just in the lead by four points over Bill Draper who had called an attempt after failing to start his engine. By Round Two the wind was stronger and fliers with small engines were having trouble with penetration. The lead was reversed after this round but scores were going up all the time; and Barry Robinson was very close indeed. Pete Arkley and Nev Dickinson were still in contention.

By the final round the contest was still wide open and it could be clinched by any of the top fliers with an exceptional flight. Barry scored 3089 which was the highest so far, giving him a total of 6140. Three flights later Bill put in a flight of 3084, making his total 6147. Tony did not fly until nearly the end of the round and he managed a superb flight of 3095, but in spite of this his best two added to 6120 giving him third place behind Bill and Barry. Quite a climax to an excellently-run event by contest director Mike Feaver and his team.

Old Time Stunt

Report by Ron Prentice

The Old Time Stunt event took place in two rounds, starting at 2pm on Saturday. Judges were Andy Brough and John Noble. It was pleasing to note that the number of entrants had more than doubled this year.

The first round began with Harry Leyland flying a Foxstunter powered by a Fox 35. His schedule was fast, with some good flying, but was spoiled by the horizontal eights and a very bumpy landing. Ray Gordon was next with his Elfin 2.49 powered blue Ambassador. He started well, with a good take off and excellent manoeuvres until the outside loops, when suddenly the model ploughed into the tarmac inverted. On inspection it appeared that the elevator horn had come off. Peter Michel followed, flying his new OS 35 FP powered Calamity Jane. After a good take off, climb, and dive, his wingover was over-vertical. Inside and outside loops were well placed, but his inverted flight was not good. Peter flew the horizontal and vertical eights in the wrong order, but all the manoeuvres were nicely shaped. Another Ambassador was next to take the air, this time flown by Steve Crawford, who flew well until he reached the horizontal eights, when his motor cut and the model crashed. Terry Taylor of Bristol, flying in his first vintage event, flew a nicely made Foxstunter complete with Fox 35X. Terry is usually an F2B flyer and this showed in his large, smooth patterns. However he confused the two schedules and placed some of the manoeuvres in the wrong place, losing a number of points. Next to fly was Terry Bradley, flying a Stunt Queen with a Frog 500. To begin with, his motor sounded very good and he did some fine manoeuvres but later in the schedule his motor

went sick, hardly providing enough power to keep the model in the air. Ron Prentice was next with what was certainly the oldest design in the competition, a Dennis Allen Boxcar powered by a spark ignition Madewell 49. Following a prompt start and with the unsilenced motor making a deep crackle, Ron flew a good schedule, but he lost valuable points on the outside loops because he miscounted the number. Another Elfin 2.49 powered Ambassador took the air; Dave Day's beautiful red-and-black model fairly leaped off the tarmac, but half-way through the pattern the motor started misfiring. However it did not seem to affect performance and apart from rather wavy inverted flight, it was a really good performance.

Generally the Nobler is not thought of as a vintage design; certainly not the kit version. However, if it is made from the original plans published in June 1952 in Model Airplane News, it just becomes eligible. To prove this, Barry Wade brought along a photocopy of the original article in MAN. His model was some fifteen years old and showed signs of much repair. Obviously somewhat overweight, it seemed to be underpowered and looked as if it was having problems in overhead manoeuvres. Maurice Doyle, who flew the same Oliver Tiger powered Typhoon as last year, flew a very nice schedule, running out of fuel just as he completed the square loop.

Because of the commitments of some flyers in other events, the second round was flown almost immediately after the first. Harry Leyland again kicked off with his Foxstunter, once more flying some good patterns, but unfortunately forgetting the order of the schedule. His inverted flight was steady as a rock, but his vertical eights were well over the vertical. Having successfully repaired his Ambassador, Ray Gordon again flew his fast machine in some very good manoeuvres. He forgot the wingover, but his loops were well rounded. His engine started missing badly, but nevertheless he continued the schedule, until just before the square loop his elevator could be seen vibrating badly and the model smashed into the ground again. Dave Day's second flight was the best he has flown for some time. The whole schedule was smooth and polished and obviously one of the best flights of the day. Peter Michel had an excellent start, with a smooth take off and level flight. His climb and dive were good but a little short, but both inside and outside loops were nicely formed. On the whole this was the best schedule I have seen Peter perform. Terry Bradley was next on the list with his Stunt Queen. He seemed to be struggling from the word go. Soon after take off his motor richened up and sounded very sick. At one point the judges had to hurriedly vacate their seats when Terry suddenly moved over towards them! Eventually his motor stopped while inverted, resulting in an upside down landing with inevitable damage. Ron Prentice, after failing to start the Madewell 49, called an attempt and the next competitor flew while Ron changed models.

This was Terry Taylor who flew a very fast flight, with a very crispy, angled climb and dive. His wingover was not quite so good, but the other manoeuvres made up for it. A very neat and accurate schedule. Ron Prentice, now with his trusty Stuntwagon, made a first-flick start. The model powered into a good, fast schedule. The eights were nice with good intersections; the landing was slightly bumpy. Following this flight Barry Wade's Nobler looked positively slow. However, his second flight was better than his first; but the model still seemed to be having some difficulty getting around the pattern. The final flight of the competition was by Maurice Doyle, who, after a good start, put in a smooth crisp schedule, narrowly missing the ground at the end of the horizontal eights. A nice pattern and a polished performance.

Novice Aerobatics Report by Ron Prentice

A total of twelve competitors entered this year's Novice Aerobatics. The event took place in three rounds, the first on Saturday and the second and third on Sunday. The efficient and ever-helpful judge was John Ash.

The weather on Saturday was perfect so the competitors had nothing to distract them from concentrating on flying a good schedule.

The entrants were, in the order of flying, Barry Pickles (last year's winner) flying a Freebird powered by an OS 45; Robin Cooke, Peacemaker (PAW 2.49); John Davis, Commodore (Merco 35); Chris Wing, Midi Slow (OS 20); Dave Bratton, Sig Acrobat (Merco 35); John Smith, Europa (ST46); Ron Prentice, Mercury Crusader (K&B 40) and deBolt Stuntwagon (Merco 61); Bill Dalby, Messerschmitt facsimile - in fact a very heavily modified Kittyhawk (Merco 35); John Wing, enlarged Peacemaker; Bruce Kopasz, Exodus - a modified Crusader - (ST 46) and late entries Ted Lloyd, own design (OS35), and Nick Evans.

Due to running the Old Time Stunt Event, Ron Prentice was unable to fly in the first round, at the end of which the leaders were Bruce Kopasz (459 pts), John Davis (453 pts) and Barry Pickles (428 pts).

The Sunday morning brought a change in the weather, with a stiff breeze which continually changed direction. Ron Prentice flew his delayed first-round flight at the opening of the second round with his new and almost untied Mercury Crusader. Unfortunately an over-rich engine soon brought disaster, when he lost line tension during the wing over. First to fly in the second round proper was Robin Cooke, whose Peacemaker crashed, but he was able to repair it in time for the next round. Next was Dave Bratton, followed by Bruce Kopasz who put in a very nice schedule. John Smith and John Wing were next, followed by Bill Dalby and Ron Prentice, now flying his vintage deBolt Stuntwagon. Last up in this round were Ted Lloyd and Nick Evans, who flew a PAW-powered Peacemaker.

After lunch the final round was flown, with some good flying evident from several contestants. There was much moving of position by judge John Ash, who was trying desperately to sit downwind of the constantly changing breeze!

Last to fly was Nick Evans, who, as he missed the first round on Saturday, elected to fly two consecutive flights, the second of which proved to be his best performance.

There is no doubt that the winner Bruce Kopasz is a much improved flyer this year and I suspect that this may well be the last time he takes part in the Novice Event. Next year, with practice, he should contest the Gold Trophy.

Open Goodyear Report by Bob Horwood

The Goodyear event at this year's Nationals was somewhat better supported than in 1987 with 21 entries in all. As usual the standards varied greatly; most competitors used pressure-fed diesels but several of them failed to record times even close to their potential. In the first round three teams managed to break the four-minute barrier, Clarkson/Needham using their Moki-powered Mr D to record 3:49.7, Pegg/Thorpe with their Rossi-powered model recording 3:51.4 and Thorpe/Swinburn managing 3:56.7. At the start of the second round Morall/Banks made a late entry and proceeded to set a very competent 3:59.1 with their Rossi Mk 3 model. The only team to come close to 'four minutes' were Andrews/Horwood with their suction-fed Nelson-powered Argander which clocked 4:02.2 to show some of this duo's old form. Cotterel/Worgan abandoned attempts with Martin's new carbon-fibre-fuselage model, returning to their tried and tested RV Rossi model to record 4:26.4 whilst newcomers Leeper/Lord, taking part in their first meeting, managed a creditable 4:19.8 with Martin Leeper looking as though the sooner the race finished the better! The remaining semi-finalists were Whorton/Short in 4:22.2 and Green/Malcolm with a time of 4:18.7.

The first round of semi-finals was at 9.30am and it looked as though a time of under 3.55 was going to be required to make the final. Whilst practising for the semi-finals Green/Malcolm broke their 'best' engine and resorted to their reserve with which they promptly recorded 3:55.3. Clarkson/Needham recorded an excellent 3:42, the best time of the meeting, and Andrews/Horwood 4:10.6 in an easy two-up race. Pegg/Thorpe looked safe for the final but were unlucky to run out of fuel on lap 96. Neither Morall/Banks nor Thorpe/Swinburn could reproduce their heat times.

In the second round of semi-finals Pegg/Thorpe were in the first race and despite a heart-stopping moment when the motor was reluctant to start at the first stop they recorded a comfortable 3:56 to hold the third place in the



Left: 'Whacker' Whillance came through line tangles in the F2D final to victory. Straightforward, robust model. Right: Welcome visitor from the Netherlands, Loet Wakkerman was 1/2A Combat winner.



Sopwith SWALLOW

Our latest full-size plan - Bill Dennis designed this 25½ in. scale beauty especially for KP01 electric power. Trish Dennis flew it at the Nationals...

HERE IS a simple scale model designed expressly around the new Derek Knight electric motor. Trish wanted to have a go at free-flight scale after some success with duration models, but she didn't fancy diesels, rubber or CO₂. The advantage of just switching on and launching are self-evident. With any new power unit, it takes a little time for the optimum size of model to be arrived at; it is noticeable how much larger CO₂ models are these days than when the Telcos first appeared. I designed this model to a similar size as my Bristol 77 published in the May issue of *Aeromodeller*. At the Nationals it flew well and placed third, but it was a little underpowered; this was partly as a result of excess weight and partly because of the large cowling which blanked off quite a lot of the standard propeller. I have retrospectively modified the structure to make it lighter - probably to the tune of half-an-ounce. This will do the trick, but it would also be interesting to experiment with propellers, distributing

more area out towards the tips.

I have also dispensed with the small amount of non-scale dihedral after seeing Brian Downham's Morane Parasol of similar layout flying perfectly well; some elliptical dihedral usually creeps in anyway.

Get building!

Construction is almost entirely conventional, so I will not bore you unnecessarily. The only real design problem was how to arrange wing attachment. The full size wing was a one piece structure, so there is no possibility of using detachable panels, and no serious scale modeller should consider strapping a wing on with elastic bands. The solution was to fix the wing permanently to the removable top decking, which was held in place by internal bands. No locators are used because they often cause damage in a hard 'arrival'.

Engine cowlings for rotary engines are always tricky. Trish was lucky to have one

expertly vac-formed for her by a friend, but other options are papier-mâché or conventional balsa construction.

Cover the model with Jap tissue, and steam-shrink and dope carefully. The areas to receive roundels are sprayed white from an airbrush or aerosol can. The roundels are outlined with this colour dope in a mapping compass and filled in with a brush.

To mask off the roundels, stick masking tape onto a window, overlapping by 1/4 in., draw a circle to fit the roundel, peel off, cut out and stick on. The underside should be given a couple of coats of a pale beige car aerosol, and the top sprayed with your idea of PC10; cowling and sheet areas are mid-grey.

The serial number is drawn with a Rotring pen on white decal sheet, using a combination of straight-edge and careful freehand. There are various 'lift here' and 'Swallow' labels, and these are from white Letraset, ref. no.1570.

For rigging, use the rubber core from shirring elastic. Take a suitable length and stretch it between the fingers of one hand. Then with a sharp modelling knife, in a shaving motion separate the outer thread winding into half-inch intervals, whereupon it can be easily pulled off.

The model is very stable; it flew 'off the board' in a safe left-hand circuit. The only excitement during trimming was when the model was chased and knocked out of the sky by a passing horse, luckily without damage... (Really?! GC).

Finally, documentation. A reasonable three-view and several photographs appear in Harleyford's splendid 'Sopwith - A Man and His Aircraft', and there are two superb photos in Chaz Bowyer's 'Sopwith Camel - King of Combat'.

STARSTREAM



Ducted fun! Ray
Malmstrom's prop-in-a-box
sportster is described and
drawn by John McIntyre



Heading: John's Starstream was a frequenter at Golden Era Day. TD 010 installation shown above...

STARSTREAM IS a beginners' ducted fan model; well, not really a ducted fan, more an engine churning air around inside a box with holes in it. Some of the air leaks out and pushes the plane along.

This abysmal inefficiency yields a docile aircraft. Engine thrustline is irrelevant. Starstream has continued to fly with 30 degrees left side thrust and 15 degrees downthrust caused when one of the engine mounting bolts came undone, though it made a noise like a dying spin dryer as the prop chewed its way through the fuselage...

The original model is powered by a Cox TD010, but a second has now been built powered by a Pee Wee .020 with three bladed prop. This version flies just as well, so as the Pee Wee is still readily available (unlike the lamented .010) we have shown this motor on the plan.

I first saw Starstream fly back in 1976. Ray can usually be relied upon to arrive at the flying field with an interesting model and that Sunday was no exception. Thus about four aeromodellers and 20 cows sat in the deep grass under the high summer sky examining the wreckage of the first (and I strongly recommend the last) R/C Keil Kraft Senator, whilst waiting for Ray to pluck up the courage to test fly Starstream. Would it fly? (certainly) - would the cows eat it? (possibly) - and



...but Starstream is equally happy with Cox Pee Wee 020 power - as shown on the plan - although a three-bladed prop will be needed.

would it land in a cow pat? (probably). For the uninitiated, cow pats are very like kite-eating trees - one will always get you in the end (or the beginning, or any other time).

To the enchantment of all who watched, Starstream circled us while slowly

climbing to about ten feet before the engine stopped. Immediately I asked for the plans; there weren't any. I have been asking ever since. Finally, about a year ago, Ray gave me the model.

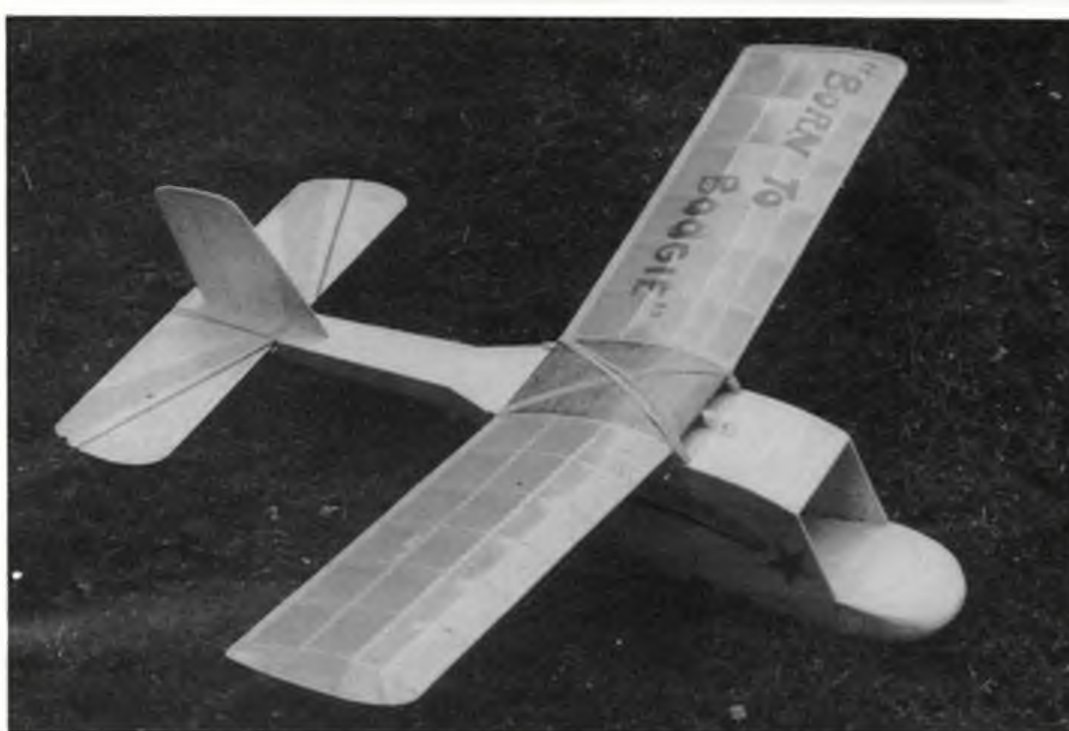
To balsa knife!

Construction is greatly speeded up if all the bits are cut out before starting. Balsa selection is unimportant. If you plan flying into many trees, fences or grass rollers, use a harder grade of wood.

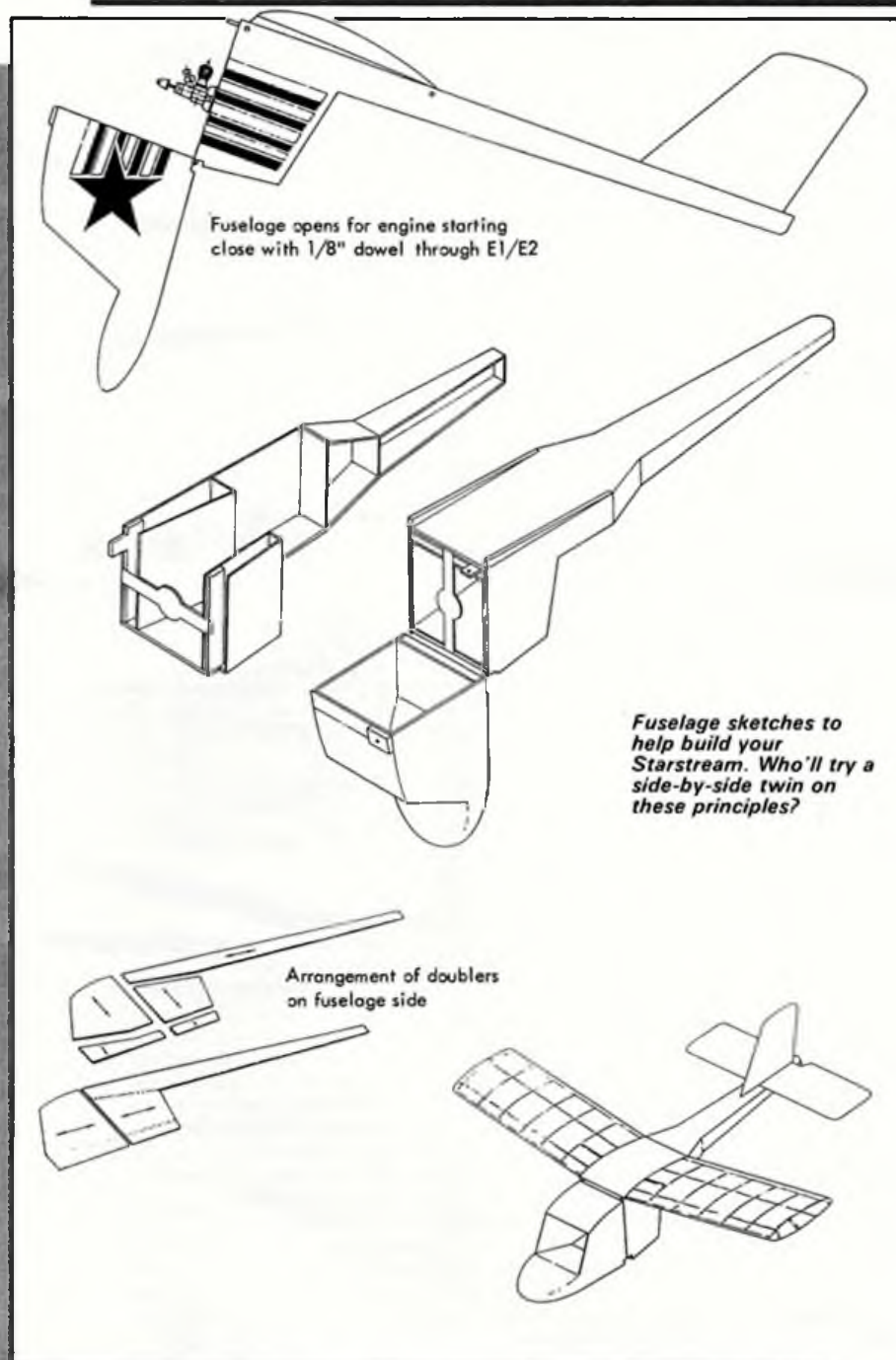
Start by gluing the doublers to the fuselage sides. Remember to leave the 1.9mm gap between the doublers so that the top and bottom of the duct can fit snugly.

Hold the doublers in place with tabs of sellotape and weigh down with heavy books while the glue sets. A layer of cling film or thin polythene stops the books getting stuck down. Add bulkheads F1 - F4, engine mounts E2 - E3 and the duct top and bottom. Make sure everything is at right angles to the fuselage side. Glue the other side on.





'Born to Boogie' says the legend on the wing. Oh well... however you decorate it, this thirty-incher is docility-plus so after test glides it's full power and GO!



Crack the fuselage sides at F4 and F5 by scoring with a knife. With the fuselage upside down on the plan, glue in F5 and F6. Cut and fit the fuselage top and bottom with the grain running from side to side. Make the nose and tail blocks.

Fill in the gaps between the engine mount and the fuselage with scrap balsa, then sandpaper the fuselage. This is easiest if the sandpaper is stuck to a piece of scrap 3mm balsa about 150mm x 50mm (*what's all this metric business? GC*). Double-backed tape works well.

Fit E1, the wing mounting, the wing and the tail plane dowels.

Wing and tail are built in the usual way. Choose a piece of hard 3mm square (*he means 1/8in.sq. GC*) balsa for the leading edge. The wing ribs are made most quickly by cutting out the required number of rectangular blanks, pinning these together and sanding to section.

Cover the wing with lightweight tissue, shrink with one coat of full strength dope and fuel proof. Fuselage and tail are given two coats of sanding sealer, lightly rubbed down and fuel proofed. The original model is decorated with coloured tissue, but there is no reason why paint should not be used on the fuselage. Lastly, fit the engine and the brass hinge.

Off we go!

Balance at the position given on the plan, and test glide (yes, it does glide). Trim by packing under the tailplane.

The engine is started with the fuselage opened. It is a good idea to fill the integral tank of the Cox engines with a syringe to give a predictable length of motor run.

Once the engine is running, close the nose, pinning it shut with a dowel peg through the holes drilled in E1 and E2.

With the throttle fully open climb is sedate so there is no need to worry about gradually increasing power or the other usual trimming procedures. If it glides, it *will* fly.

Turn is set with the rudder. When satisfied, glue locating blocks under the tailplane.

The original Starstream is trimmed to fly in a tight (about 25m) diameter circle to the left.

Good luck and happy flying!

BALSA CUTTINGS

Our sharp scribe Cyano de Bergerac considers a brazen incident, remembers a Battle and looks back to foresight.

ABSOLUTELY TRUE story. There's this aeromodeller, see, who enjoys a quiet fly on a beautiful green farm where the brook tinkles, the cows stare reflectively and the sheep mind their own business. He never makes a sound, just bungees his thermal soarers into the big warm bubbles which drift slowly over from the woods, with now and then a rubber model or a CO₂ job to ring the changes - 'idyllic' is the word you're groping for. The farmer lets a few sites for caravans in the summer, supplying their occupants with bread, milk, eggs and Calor gas. Replete with these commodities, the caravanners often stroll over for a chat with the guider of gliders, and he sometimes lets them stir the sticks themselves for a bit. All very civilised and friendly.

One lovely, benign day, it can be seen from afar that there is a huge something right in the middle of the favourite meadow. Can't be a Nissen hut, it's too big. A hangar, perhaps. Probably an airship hangar. No - it's a mansion. A mobile mansion, utterly dwarfing the Dinky toy of a brand-new Range Rover nestling in its lee. Our aeromod knows he is looking at more money than he is going to earn in the rest of his life. Anyway, he goes to the field next door, pickets his catapult and is about to launch when an opulent chappie issues from the portable palace and comes over. Aeromod, whilst not exactly expecting 'Did you make it yourself, mister?' was not prepared for the opening address - 'I hope you're not proposing to fly that thing here?' He confesses that this had lain within the envelope of his intentions. 'Well, I hope not,' says rich caravan chappie crisply, 'because if you fly into that rig it will cost you a great deal of money.' Our hero is not so taken aback that he doesn't realise he is in the presence of an exhibition of human frailty, but he can also recognise a stinker when he sees one and he doesn't want any complications with the farmers. After all, business is business - flying is free but the caravanners pay. And is it not written 'A soft answer turneth away wrath'? (Yes, it is, in the Book of Proverbs). 'No problem whatever', he replies with a mixture of quiet technical confidence and geniality. 'This model has proportional radio control, and I keep it away from the caravans all the time. There is an exponential feature, it has rate switches, servo reverse and flight patterns can be programmed. If you're interested...' He picks up the end of the line, steps back a smart hundred paces, hooks on and away. With her gentle swoosh the big glider

steams up straight on her own, disengages and picks up a gentle turn, the very picture of peaceful majesty. At this point in the proceedings it comes into our hero's mind that under the strain of generating the burst of quiet technical confidence combined with geniality he has forgotten about a little black plastic switch on the side of the fuselage which is now no longer readily accessible. The two of them stand there until the model disappears through a hole in the sky. 'Hmmm,' says caravan chappie, 'that seems harmless enough. Come and have a drink.' The ending is quite disgraceful. Half an hour and a few cans of Strong later, they are much better friends. As he takes his leave, from the top of the caravan steps aeromod can easily see across the hedge into the next field where, unbelievably, his model is lying, looking pretty damn guilty. Shamelessly he turns to the man whose beer he has just been drinking. 'How about that, then?' he asks...

BoB and PSS

People so closely associated in spirit with the Air Force as aeromodellers tend to regard the RAF as their personal province. Long may it thus continue - if its fortunes had been placed in the hands of the aeromodelling fraternity, it would still be flying proper aeroplanes to this very day. Relatively and historically speaking, the Battle of Britain was but yesterday. If you've got the money, you can still walk out and buy a Spitfire that works. Why, if you don't mind the nose being on upside-down, you can even buy a Spanish-built Bf109. Should a little civil single buzz past a bit low, or a light twin grind over with motors slightly out of sync, we still say 'Hope that's one of ours.' But it wasn't yesterday. Dowding, if he were still alive, would be a hundred and five. We might all give a thought to the likelihood that at

long last a statue will be erected to his memory. Air Chief Marshall Sir Hugh Caswall Tremenhoe Dowding, the man who fought the enemy in the sky with one hand and his enemies on the ground with the other. He succumbed to the latter. A crusty old BoB pilot said to Balsa Cuttings only the other day - 'I don't suppose a statue is going to do him much good at this stage of his career but at least it seems that somebody is trying to say something.' Yes, remember Stuffie Dowding, all ye who pass by. A man we probably wouldn't have got on with, but might have found it hard to get on without.

If you were asked to name the newest attraction you might well plump for Power Slope Soaring. You hurl a radio-controlled foam glider version of some improbable prototype like a Gnat or B.36 off a sufficiently-exaggerated geographical feature for the slope lift to bear it (or a standard house brick if you haven't finished your model) aloft, indefinitely. What it lacks in orthodoxy it makes up for in fun. And what about the latest technical drift? Most of the gen kiddies up in front on the glider scene have contracted Lead Poisoning. They don't add lightness, they bung in the ballast then bore about the sky at a hundred-plus looking for lift. Efficient. Do you remember the Fighter Glider? APS plan G107X. A bit like a Typhoon without the chin; you can see Derek Ridley's at Old Warden. One of those ageless things designed when the lamp of genius was burning. Look at the write-up by 'Flight-Lieutenant' in the January 1944 Aeromodeller. 'It is a well-known fact that a moderately-loaded glider is more efficient than a lightly-loaded one... This type of glider seems to open up a new field for competition, and perhaps after the war we may see full scale models of all the modern fighters and bombers flown as gliders, and a very pretty sight too!'

More than a few cuttings here! The antique finish on this characterful subject - seen at the Nats fun-fly session - demands a loo and cabinet as part of the decor...



**Fine weather and super
organisation at Thouars
from 10-16th August
made this an event to
remember. Martyn
Cowley reports**

RETURNING TO the French countryside near Thouars, venue for the 1987 World Championships was a pilgrimage that for many, myself included, was a nostalgic trip full of evocative memories of idyllic days of Free Flight. Since the early '70s, the French have been regular host to a series of annual FAI Internationals, notably the Pierre Trehod and Poitou, that have become that focal point for Free Flighters in Europe second only to Championship events.

The wealth of experience gained from organising these huge events that frequently attract entries from a score of nations made the French ideal candidates to host this, their first World Championships since all three disciplines, glider, rubber and power, were combined into a single event from 1955 onwards.

The biennial World Champs again attracted entries from over 30 nations, at a time when Free

Flight is experiencing a positive resurgence of interest. In addition to the alternating cycle of European Champs, the FAI has just this year initiated a World Cup Series comprising nominated events from around the globe, and a separate Junior World Champs cycle for under 18 year olds, to start in 1988.

Attending such an event is an opportunity not only for Free Flight competition but also to witness the progress that has been made around the world both in design and construction of models; and of course ultimately to determine the individual Champion.

Why does interest in Free-Flight continue to flourish in the face of the generally widening scope of model flying? Much of the appeal can be attributed to the simple purity and beauty of a flying model released to fly free, responding to changing weather conditions. On a personal level there is the infinite scope for performance increase through aerodynamic experimentation and structural refinements of a well engineered design. But above all, even at this ultimate level of endeavour, it is the opportunity to participate in a rewarding athletic event, at the highest level of sportsmanship, with an unrestricted exchange of friendship and technical information between fellow competitors from around the world.

F1A Glider Thursday, 13th August The first seven rounds

A pleasant surprise, but one not entirely unexpected of the French organizers, was to find all the pole positions set up by 6.30 am and the timekeepers issued with binoculars and stopwatches by 7.30 am, still one full hour before the scheduled start. Even earlier they had been present preventing any vehicle access to the launching area, thereby avoiding the nuisance of stray parked cars that have so often marred the start of the event. Despite generally poor weather in Europe this summer, the Championships dawned clear and sunny with virtually no wind: the classic conditions that have prevailed at so many of the popular summer events in France over the years.

Practice flights had demonstrated a thick layer of still air easily capable of returning flight

times of 3 1/2 to 4 mins, but a gentle stir of air movement meant that conditions were changing fast. Promptly at 8.30 am the first of the seven one-hour rounds opened. Almost immediately Czechoslovakia's Ivan Horejsi towed up and off, first to fly. I hardly dared to watch as within a minute he was down to 80 ft. Over the year, Ivan has consistently placed high at every Championships; and once again he proved his experience with the model comfortably riding the last of the buoyant air near the ground, to record the first 180 sec max of the meeting.

This year's British team comprised Chris Edge, Bill Colledge and Gary Madelin, each at their first World Champs although Gary has previously been on two European teams and had flown proxy for New Zealand back in 1973. All three were well suited for the prevailing calm conditions in France, and this all-new team reflects the growing attraction of glider flying in the UK. The opening round proved no difficulty for them, and for the first time in years Britain was off to a good start with a full score.

By 9am a slight breeze signalled widespread but gentle thermal activity with associated 'down' air that caught some flyers out. Many teams resorted to flapping under their models with good results. Incidentally, flapping becomes technically illegal after January 1988, although even members of the FAI jury at this Championships said they have no idea how to enforce such a ruling.

From the second round, big thermals were the order of the day, and as is common at such events models launched solo upwind in lift were soon joined by two dozen or more competitors, each given a free ticket to the next round. Certainly the large masses of rising hot air were quickly lifting off from the field, and it was possible to launch too late under other thermalling models and not go up with them. One such upset was for Victor Stamov who dropped his second flight and with Makarov out in the third round, this left Victor Tchop the only remaining Russian. But in general, the lift was in wide, well marked patches and favoured those who were patient enough to wait for others to find it, yet opportunistic enough to make a quick decision to get airborne. From the second round onwards 90% of the flyers maxed every round!

The British trio were on great form, keeping a full score until the third round when Chris Edge



1987 World F/F Champ





Heading: The British team acknowledge applause from local crowds at the opening ceremonies, attended by 33 nations. Above: For the second time, Russia's Victor Tchop is world F1A glider champion, 12 years after his victory in Bulgaria. Model features D-box wing with much use of carbon fibre reinforcement to stiffen balsa structure. Left: Nearly nine o'clock at night and East Germany's Manfred Preuss walks out for final flyoff; he gained third place after dead heat in seven-minute flyoff round. Top right: Belgium's only entrant, Leo Reynders, assisted by his brother, kept a cool head throughout a tough day's flying to place 4th with his glass-fibre-covered solid foam core models. Centre right: Fantastic flying from Israel's Kobe Itzakhov who placed 7th in the final 7-minute flyoff round. Below right: Canada's top man in 5th place was Ladia Horak, a regular visitor to contests in USA. Below: A fine performance from Britain's Bill Colledge 21st at his first world championships.



ionships



unlatched getting into position beneath other models. His model fell off the line, and although at first his model thermalled well and appeared safe, two minutes into the flight the bottom dropped out of the lift leaving Chris just seven seconds short. The following round Gary Madelin was out towing for his own thermal, and looked as though he had launched in a good patch which suddenly turned sour on him. The team suffered some inertia before realising Gary was in trouble, and consequently their flapping came too late to save the flight which landed at 125 sec. Bill Colledge, however, kept his head throughout the day max after max, and even made some trimming flights between rounds to correct launch problems he had with the model veering away from the glide circle.

Amongst the notable innovations in construction at these championships was a growing use of Kevlar cloth as a primary building material. The Dutch, in particular Allard van Wallene and Peter de Boer had some very elegant models, typically featuring solid styrofoam cores and carbon fibre spars with an external skin of epoxy impregnated Kevlar cloth for the heavily loaded centre panels. Wing tips were hollow ribless Rohacell sandwich skin to save weight and to give high torsional strength. Orel from Czechoslovakia also used similar sandwich skin construction, with building techniques adopted from the Radio Controlled Glider World Champion Ralph Decker. Full-span wing moulds are made from a stable mixture of sand and epoxy framed in metal tubing. Orel's models were of an exceptionally high standard, and with such techniques now being applied to Free Flight models, it is interesting to speculate whether the 'builder of the model' rule will one day be dropped, as has already happened in many of the R/C classes.

Another very noticeable trend this year was the very widespread use of thin, hardened aluminium foil covered balsa sheeted wings now that this material has become more widely available through specialist suppliers. Ten years after Verbitski's models at Roskilde unveiled this technique the majority of serious contenders, including virtually every competitor from the Eastern Bloc countries, were using this construction which produces significantly torsionally-stiffer wings, directly benefitting airspeed and altitude. F1C currently appears to be dominated by these Russian-style models which have now won several European Championships, and with reigning Euro Champ from '86, Eugene Verbitski, together with Moukhine and Strukov the Russian team truly set the standard...

The Chinese have all flown metal models since 1983, but this year they had models completely foil-covered, instead of staying with the built-up tips and tails they had previously. Flying exclusively with the latest engines from Henry Nelson in the US, these Chinese models were amongst the fastest on the field and so incredibly consistent, thanks no doubt to their delayed glide trim timer function that helps ensure perfect stall-free bunt transitions every time.

The North Koreans also had new foil-covered models, and surprisingly they were still the only ones using flapped airfoils to optimise both power and glide phases of the flight. Their climb rate did not compare to the better fixed-wing models being flown, but they were certainly very competitive.

Interestingly, Eugene Verbitski's latest model, BE-48, which was in its box is also a metal-winged flapper, but he considered it too new to use at the event. The fourth round almost claimed Verbitski. He flew from the far west end of the line, adjacent to a field of sunflowers. His flight turned out to be in lift that quickly evaporated, bringing his model down to only fifty feet after a minute-and-a-half, whence it glided a huge circle across the field, eventually to D/T only ten feet up at three minutes.

For many the fifth round was a tough one. Thomas Koster had the misfortune of a coughing motor run that robbed his climb of altitude to score just over two minutes - a situation that his R/C link could in theory, if not strictly by the rule book, have helped to avert. His brother Kim also went out with a similar time with a flight in bad air. Austrian flyer Reindhart Truppe, who has made it to the fly-offs so many times over the years, also barely made two minutes. The British team, clean up until that round also met with bad luck. Flying from the west end of the line near the sunflower field there seemed to be a distinct trend for thermals to balloon up and then suddenly decay. Both Ray Monks and Stafford Screen - the master of consistency - had flights that looked perfect until the bottom dropped out of the lift, scoring 115 sec and 132 sec respectively. Only Roger Baggott managed to survive the round with a full score.

Sweden's World Champion from 1975, Lars Olofsson had straight maxes up until this last round, but his latest model flirted with lift, dipping below the horizon and reappearing for another half minute only to have a split time on the watches after one had been stopped and restarted as the model went OOS. The outcome was an average score of 176 sec making him the highest placed competitor, at 25th, not to reach the flyoffs.

F1C flyoffs

Four-minute round

By 6.15 pm, the 24 flyers were lined up for the first fly-off round, and after just a couple of minutes it was Shuliang Sun of China who fired up his engine first. The crowd watched keenly as he launched into a perfect, fast, near-vertical pattern. Way up high, a hard bunt put the model into the glide, and as the motor shut off the spectators applauded loudly. It was immediately apparent that Sun's model was in good lift and all along the flight line motors burst into song, as a salvo of screaming models took to the air.

Soon after, the other Chinese flier, Zhigian Chen launched, followed by most of the remaining fliers including Britain's Roger



Top: Chinese models featured metal skins all the way out to tips this year, as seen on Zhigian Chen's model which placed 19th in flyoffs. Centre left: Strongest launch on the field was from Victor Strukov who placed 2nd. Centre right: East Germany's Manfred Thomas, 3rd individual just 11 sec away from 7-minute max. Above: Great performance from Britain's Roger Baggott, 8th overall.

Baggott who maxed safely. Despite his impressive climb, Chen did just over three minutes, and Canada's last man Frank Schlacta also dropped the round following a shallow climb.

Five-minute round

The last round had not been easy, but amongst the 16 remaining, all three East Germans and all the Russians still had full scores and the team prize was still unresolved. Once again it was Shuliang Sun who set the pace, launching first and triggering another mass launch that included most of the others; Czerwinski, Poland; Oxager, Denmark; Meissnest, Germany; Lustrati, Italy; Glissman, East Germany; Denkin, Bulgaria; the Russians Moukhine and Stukov; and Kim, North Korea. But this time the air was much weaker and only the really high-climbing models had enough margin to guarantee a full score.

With only five minutes remaining Roger Baggott had yet to fly. He finally launched very flat and pulled out quite low, but his patience was well rewarded as the model thermalled out and saved the flight. In fact only eight fliers managed to make five minutes, and with Claus Wachtler 16 sec short and the Russians all maxed out, the latter looked favourites for the team prize over East Germany.

Six-minute round

Roger Baggott's model arrived back at the flight line just in time for the start of the next round at 7.35pm but the Russians in particular, with more models to retrieve were under pressure and Eugene Verbitski was disappointed not to get his back until well into the round. All eight competitors had waited silently for the first ten minutes of the round, but again it was Sun first away in confident style, quickly followed by Czerwinski, Glissman and Verbitski. Roger flew within half a minute of the others, having made some trim adjustments before the flight. This time his power pattern was much improved, but he was disappointed by the bad transition into glide that cost him much altitude, and he was down for 171 sec.

Last to fly was Victor Strukov whose model was clearly the most impressive. Thrown with the concentration and force that could surely win an Olympic javelin medal the acceleration seemed instantaneous, and the vertical, half axial roll climb and bunt was flawless.

Of those who flew early only Verbitski had maxed, Sun with 348 sec being only 12 sec short; and Czerwinski and Glissman were down in under five minutes. But the other Russian, Alexandre Moukhine, and Manfred Thomas of East Germany both made six minutes, and so too did Strukov. Not surprisingly the metal-winged Soviet models were dominating the event; all three still with perfect scores and with the team prize already won.

Seven-minute round

Starting at 8.20 pm this would be the last round of the day. Downwind retrievers were still searching through crops for Manfred's last flight, as all four flyers waited for favourable signs of calm, warmer air. Moukhine was first to launch. The flight was perfect but without any real signs of lift he made exactly six minutes. Still the others waited. Only a few minutes remained in the round and Alexander Andrukov, who was helping Eugene, indicated that conditions were improving. Eugene was in good spirits, as always; and raised some smiles by gesturing to the others that they should fly now.

However, with time being close, it was Verbitski who flew first with a perfect pattern. Strukov followed soon after, with another awesome throw. This time the climb went a little flat and it bunted down more than was desirable, but by this time Strukov's model was into its glide it looked at least as high as Verbitski's. Finally, with his best model still not returned Thomas was forced to fly, and despite such formidable opposition, his climb still looked very fast and competitive.

F1C Individual Results (64 entered: 24 in flyoff)			F1C Team Results (25 teams entered)		
1	E Verbitski	USSR	1	USSR	3780 7
2	V Strukov	USSR	2	W. Germany	3780 19
3	M Thomas	W. Germany	3	China	3737
4	A Moukhine	USSR	4	Hungary	3731
5	S Sun	China	5	Sweden	3729
6	R Czerwinski	Poland	6	Canada	3727
7	U Glibmann	W. Germany	7	Czechoslovakia	3720
8	R Baggott	GB	8	Poland	3702
9	K P Wachtler	W. Germany	9	Bulgaria	3696
10	T Oxager	Denmark	10	USA	3692
11	S Lustrati	Sweden	11	Italy	3672
12	G Y Napkora	Holland	12	GB	3667
13	D Kim	N. Korea	13	N. Korea	3576
14	A Denkin	Bulgaria	14	France	3558
15	D Meissnest	W. Germany	15	RFA	3547
16	G Zsemgeller	Holland	16	Argentina	3523
17	D Mateer	USA	17	Switzerland	3422
18	C Patek	Czechoslovakia	18	Yugoslavia	3382
19	Z Chen	China	19	Denmark	3301
20	R Gutai	USA	20	Australia	1224
21	V Patek	Czechoslovakia	21	Austria	1202
22	B Fiegl	Italy	22	Norway	1115
23	F Schlacta	Canada	23	Israel	1077
24	A Bands	R.A.	24	Finland	893
37	S. Screen	GB	25	Portugal	462
43	R. Monks	GB			

Silence fell, with all eyes fixed on the three gliding models. Minutes ticked away with all the models still high. Verbitski was clocked off at over seven minutes, but timekeepers still followed the other models. Then Strukov's flight was confirmed as a max also, with Thomas so close - just 11 sec short of seven minutes. There would be yet another flyoff, but already it was too dark to be able to get the models back in time. The organisers promptly announced the event would resume the following morning, before the Wakefield event.

Eight-minute round

By 6.45 the next morning the two Russians were ready and each made a single practice flight. Both were down on power in the cool damp air, with the climbs noticeably flat and off pattern. A pity that the event couldn't have been decided when both models were right on trim... Verbitski increased the compression a little to boost the power, while Strukov chose to adjust the power trim. The round opened at 7.30 am, and after a short wait, they decided to fly together. Verbitski was away first, still a little off pattern. Turning downwind and going flat the model bunted down and lost some height. Eugene was not too happy, although by most other standards his model was still very high. Strukov followed immediately, and by comparison his climb was again perfect. But the transition lacked momentum and his model stalled several times before settling into its glide. Both models flew like Nordics, although a steady breeze was taking them perhaps half a mile away from the timers after about seven minutes.

Strukov's timekeepers lost his model first, and while Verbitski's model landed soon after he was already being congratulated as the new Champion - a moment he had waited to savour for over twenty years. But excited messages from the Russian retrievers downwind cast some doubt on the result. Even as they spoke, Strukov's model was apparently still in the air. Other spectators nearby, with binoculars, confirmed a model was still up. The rules, however, are quite clear. The officials had timed the flights fairly, to the limits of their visibility, and on the score card Verbitski had won.

But Eugene Verbitski was not satisfied. Unquestionably the master of F1C modelling for two decades, and responsible for developing much of the hardware now standard in the sport, a World Championship victory had nonetheless eluded him until now. Having waited so long for this moment of glory, he would not be satisfied with a controversial victory. Being the true sportsman he is, Eugene approached the members of the FAI jury and asked for a re-fly!

The final flyoff

A quick meeting with the jury, team manager and the two flyers and all was decided. What an incredible finale. At 8.20 am both were ready to re-fly. This time Strukov flew first, not quite as vertical as before, again with some stalls in transition; but the flight looked high. Verbitski was quick to follow, with a much better climb, but for over half-a-minute the model stalled, as he risked it all on this decisive flyoff. The crowd could only watch in awe as the incredible drama unfolded. Both models were clearly visible for the first few minutes, gliding close together as they drifted away over the sunflower fields towards the horizon with the weak early morning sun glinting and flashing off the metal foil covered wings. Visible now only through binoculars, Strukov's model was down first at 7 min 09 sec. Verbitski was still flying, on and on, until finally he D/T'd having already maxed at 8 min 10 sec.

This time there was no doubt. For the second time in one day, Eugene Verbitski was proclaimed World Champion.

F1B Wakefield - Saturday, 15th August

The first seven rounds

While the final flights of the F1C event were still being made elsewhere on the field, preparations were being made to start the final event for Wakefield. The wind of 6 to 8 mph was stronger than on previous days, but still near-perfect for the event. The organisers seemed to have expected the direction to shift early, but as it did not co-operate, they were forced to reposition the line even before the first round opened, resulting in a brief delay of only ten minutes.

The US Wakefield team once again included the maestro Bob White, whose performance in Europe over the years has become legendary with top placings at many World Champs and Internationals. At all these events, he has only ever missed a single max - just before a rain squall at Poitou in 1985!

This year's British team comprised three flyers who each represent an individual approach to Wakefield flying. Ron Pollard was back on the team again, having done more to raise the standard of Wakefield in Britain over the years than perhaps any other flyer. George Foster of RAFMAA who has produced good results using thermistor detection, and Ivan Taylor now on his third consecutive team using his French-inspired high-aspect-ratio-all-balsa-wing designs completed the trio.

The early wind in the cool of the morning was making the first round hard for many. Early

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Even the traditional balsawood D-box leading edge airframe that continues to be the norm for most competitors was not without extensive use of reinforcement, usually in the form of carbon fibre wing spar caps or even individual upper and lower rib caps. The latest trick, used already by several Eastern Bloc countries but attributed to the Russians, is the use of thin tows of carbon rovings closely spaced and oriented at 45°, bonded to the D-box sheeting (either internally or even externally, then perhaps performing a dual role as turbulators) to provide increased torsional stiffness.

During practice days, the Chinese and North Koreans had both been flying extremely high-aspect-ratio models with wingspans of 100 inches plus. Although such models were not prominent in the contest, even during the calm early morning rounds, they do illustrate a completely different direction that F1A glider design could go if contests were organised specifically during periods early and late in the day instead of the peak mid-day thermal hours as at present.

Following their overwhelming success at the last Champs at Livno, the Chinese seemed unbeatable, with all three team members plus the Individual Champion continuing to max out. But other teams were challenging them and Denmark, Italy and Czechoslovakia all had perfect scores as the day progressed. Nahlovski dropped over a minute in the 5th round to end the Czech team's hopes, and with only one flight left Denmark's Per Grunnet missed the flyoff and spoiled his team score. Bill Colledge had a close flight soon after, but this time the Brits were quick to react and flapped him back up to a great height after being down to only 50 ft.

F1A fly offs

Four-minute round

After a full day's competition, twenty-eight flyers were still in contention; almost one third of the entry. Promptly at 6.15pm, right at the start of the round and almost before anyone else was ready, Belgium's Leo Reynders towed up his distinctive high-aspect-ratio solid foam core model and immediately released. He later said he had felt the air building while waiting on the ground for the round to open, and sure enough he was right. Others started to tow too late to capitalise on Leo's flight.

Several minutes ticked by as a dozen models were silently towed in the warm breeze, spread out across the field. Suddenly there was a flurry of activity, with a group of models downwind catapulted up into strong lift, quickly climbing to a good height. Upwind too another patch of lift was well marked and Bill Colledge, who had been circling for a couple of minutes, lost no time in positioning himself for a strong launch.

A little over five minutes into the round everyone had flown, and it was already obvious that the majority looked safe. But only two hundred yards downwind in this direction was the start of the maize fields. Dozens of retrievers were out, armed with radios to keep in touch with their teams, and it was clear that the race was on to get models back in time for following rounds. Bill Colledge, obviously a serious competitor, was well prepared with two models fully hooked up to towlines and he even took the opportunity between flyoffs to test fly his reserve and make trim adjustments.

Five-minute round

At 6.55 pm the pressure was back on the competitors to make another big flight. It turned out that only Finland's Heikki Tahkapaa, who has reached almost every fly-off I can remember, was the only one not to max the last round - twenty-seven still remained. Already flyers were spread out across the field; Czechoslovakian Ivan Horejsi and North Korean Li Chol,

dangerously close to each other as they raced downwind, avoided a line tangle with superb control and experience. Uwe Rusch, 3rd at Livno for East Germany also moved far downwind, and all three were soon able to launch into the first patch of good air marked by the Italian Roberto Cal.

Once again models directly upwind of the starting line gave away a guaranteed max to all those still waiting. Within just a few brief moments almost everyone launched, whether simply going up and off right from the pole position, or by running back into position (for those who had already started towing). The real problem for most was trying to stay out of trouble in the sheer panic of the moment. Dane Peter Buchwald was one of the unlucky ones whose model got strung up in a spider's web of towlines to be dragged out of the sky and badly damaged. But a dozen or more were away into a monster thermal that within just a couple of minutes had their gliders mere specks in the sky. Incredibly high for an evening fly-off. America's Jim Bradley and Britain's Bill Colledge were amongst this main group who managed an easy max, but Australia's Martin Williams, not so well centred, fell short by 14sec. Peter deBoer from Holland was out, and so too one of the Chinese, Yaodong Zhou. Austria's Klaus Saltzer unlatched at only 60 ft yet still managed over 2 mins. Peter Buchwald did max on his second attempt, but his back-up model never D.T'd, so the remains of his damaged model were being hastily repaired - the Danes excel at this kind of drama!

Six-minute round

By 7.35 pm the air felt distinctly cooler and, despite the huge thermals that had still been present only half an hour earlier, it was clear that this would be a shake-out round. During the first five minutes only a handful of the remaining twenty-two competitors chose to circle tow. Horejsi of course; both the East Germans Rusch and Preuss, and Vittorio Brussolo from Italy parked downwind of the others. Everyone was much more cautious, for a max at this stage could prove decisive. Bill Colledge chose to go way downwind on his own and suddenly he launched. After eight minutes

he was first to fly and for a couple of circuits his model held line height. Certainly a brave move, as no one else could have reached his model, but as it turned out Bill was one round too early for this particular tactic. The air quickly faded, perhaps accelerated by the crops he flew over, and he landed in under two minutes.

Meanwhile upwind, Russia's only remaining flyer and World Champion from 1975, Victor Tchop had carefully positioned himself in the middle of an area of the field that had been recently ploughed. No sooner had Bill committed himself to a launch far downwind than Victor released way upwind and immediately it was evident that this was going to be a great flight. Another mass launch followed with spectacular zooming climbs from the many fast tows. But six minutes that late in the day was a long time and accurate positioning would prove more vital than an impressive release. Certainly Leo Reynders' model stood out as being the highest, right in the sweet spot of the thermal.

But suddenly, reigning World Champion Liang Yue ran back to his pole position to prepare his 100 inch span high-aspect-ratio model for a re-fly. After a line tangle, Liang had already decided that the flight in progress wasn't going to be good enough. But the French timekeepers adamantly refused to stop timing the first flight. For over a minute Liang pleaded with them, admittedly in Chinese; but despite the language barrier his intentions were clear and volunteers stepped forward to time for him. Running out of time fast Liang started to tow, only to have the red Very signal mark the end of the round, whereupon he released instantly. What a nightmare for Liang, who then had two

Right: Richard Bertrand was the only representative from Guatemala. Although finishing way down the list he was well pleased with his first Champs. Below: Time-out for Dane Peter Buchwald who placed 10th after hectic flyoffs rounds which included mid-air line tangles, a lost model and some frantic repairs!



models airborne with two sets of timekeepers, the legality of either being by no means clear. As it turned out both scores were within a few seconds of each other at just under five minutes.

It had indeed been a tough round, with only nine of the 22 flyers returning maxes. Kai Sun, runner up at Livno had also dropped, and Bistacchi and Cal were out, but their positions had secured the Team prize for the Italians, beating the seemingly invincible Chinese.

Seven-minute round

Even as the next round started at 8.20 pm, Israel's Kobe Itzhakov's model was returned from downwind, with others still missing. The breeze of just 2 or 3 mph was refreshingly cool after the heat of the day. Only three models were on the line, Italian Vittorio Brussolo. Tchop and Horejsi who chose his balsa sheeted model 85-1, not flown since the opening round. With three minutes already gone Manfred Preuss' glider was returned enabling him to start towing, joined by Itzhakov and Yugoslavia's Sahinovic.

From his favourite location way upwind in the ploughed field, Victor Tchop decided to go it alone. His model continued to hold line height, bouyant but not yet climbing, capturing everyone's attention on the field. There was no doubt the air was good and soon all the others started towing towards Tchop's model. But the young Chinese flyer Yingjie Zhang couldn't bring his model round into wind and was forced to tow in. Rather than use a backup he raced over to retrieve it for another attempt. Already others had launched near Tchop still upwind of the pole positions, including the only remaining Canadian Ladia Horak. Reynders again looked well centred, but suddenly his model was knocked out of the sky as Brussolo accelerated for a launch. Leo's glider lost a hundred feet and Vittorio continued to tow, both models seemingly undamaged but neither able by then to join Tchop. Horejsi, still on tow downwind, waited for the thermalling group of gliders to approach before launching. Zhang however was back too late for the lift and Brussolo finally towed into the crowd of timekeepers. Rather surprisingly Itzhakov and Preuss had not launched and with only a few minutes remaining Reynders' best model was returned for him to refly.

Watching the flights already in progress it was apparent that none looked certain of a max and

the event was still wide open. More drama was in store. Zhang launched, but was unlucky to have his model continue to stall until it was down to a hundred feet. Preuss tried hard several times to release before eventually abandoning his model to fly away complete with towline, while he dashed back to set up his reserve. Then Brussolo launched his spare model which spun down from the launch before finally levelling out, too low to be any threat. With only a minute to go Preuss did manage to launch his reserve glider, and with this model beginning to climb slowly, he was clearly in with a chance. Finally Reynders, who had waited on the ground checking for damage, was last to fly and he too appeared to be in very good air.

Such an eventful round with mid-air, tow-ins and reflights, with two excellent flights still in progress even as the round closed, and no maxes yet recorded. No-one, least of all the flyers themselves had any ideas who had won. Victor Tchop, World Champion from 1975, was anxiously awaiting confirmation. Czech Ivan Horejsi had come very close to winning with a time of 206 sec, but Victor's tactics had paid off with a score of 237 sec. A cheer went up: once again Tchop was the Champ, and fellow Russians lifted him up and tossed him in the air amid more shouts of excitement.

So despite a weak start during the day for the Russian team, and a very strong challenge, notably from the Chinese, the Soviets had once again demonstrated their proficiency at an event in which they have set the standard now for almost two decades. But even as Victor was being congratulated, news came that there would be yet another flyoff - Reynders and Preuss had tied for third place with identical scores of 187 sec.

The final round

Taking his cue from the new champion, Belgian Leo Reynders immediately headed for that same ploughed patch. Amazingly both he and Manfred Preuss zoom-launched simultaneously although hundreds of yards apart. For the large crowd of spectators the comparison between flights would be obvious, and it was soon clear that Manfred's model, being vigorously flapped by the East German team, was maintaining height; while Leo, Belgium's only representative at the event was coming down. Both scores however were very high with Preuss 3rd with 251 sec over Reynders with 218 sec.

F1C Power Friday, 14th August

The first seven rounds

The second day of the Championships dawned somewhat cooler, with patches of clouds and initially a distinct if gentle wind shear, taking early morning trimming flights away at right angles to the indicated wind direction at ground level.

This year's British F1C team was once again a one-club team comprising the very experienced Birmingham flyers, Roger Baggott, Ray 'Veterano' Monks and Stafford Screen on his twelfth consecutive team (including of course European teams). Stafford has recently been experimenting with metal foil wings but had decided to stick with his well-proven balsa sheet models to ensure consistency throughout the rounds, and likewise Roger and Ray were flying all-balsa airframes.



Eugene Verbitski now World and European champion, winning both titles with this BE-43 model. Over the years Eugene has been instrumental in transforming this class of power models.

After the first round there was a wind shift as the clouds burned off and conditions calmed down, requiring the flight line to be moved, which the French accomplished very efficiently in under ten minutes. From then on the weather remained perfect with regular thermal activity interspersed with calm, dead periods.

Model development in F1C has progressed at a greater pace than the other events, if for no other reason than the models don't survive as long and there is more opportunity to experiment when building new ones, to meet the rigorous demands of the class. Denmark's Thomas Koster is renowned for pushing model design and construction techniques to the limit, and it is always a revelation to learn about his latest project. This year's models were once again completely revolutionary, being constructed from solid Rohacell airfoil-shaped cores with carbon fibre spar caps and lightweight epoxy/Kevlar skins. Fuselage components too are made from Kevlar or carbon fibre, oven-cured in moulds. Once again Thomas was using electronic timers on his models, but the real innovation - and one that almost challenges the basic concept of free-flight itself - was the incorporation of a Radio Controlled link to override motor flood-off and the D/T mechanism. Details of his models and ideas alone could fill a book, and must be left for a future report. Thomas' younger brother Kim, was also on the Danish team, flying the same hi-tech models, and Wakefield Champ Lothar Doring who has been working closely with Thomas on the development of these models also had a boxful, but that too is another story. Foam-core composite models were also being flown by several others, notably Italy's Georgio Venuti.

F1A Individual Results (91 entries: 28 in flyoff)

1	V. Tchop	USSR	1250 + 240 + 300 + 360 + 237
2	I. Horejsi	Czechoslovakia	1260 + 240 + 300 + 360 + 206
3	M. Preuss	W. Germany	1260 + 240 + 300 + 360 + 187 + 251
4	L. Reynders	Belgium	1260 + 240 + 300 + 360 + 187 + 218
5	L. Horak	Canada	1260 + 240 + 300 + 360 + 183
6	Y. Zhang	China	1260 + 240 + 300 + 360 + 182
7	K. Itzhakov	Israel	1260 + 240 + 300 + 360 + 177
8	V. Brussolo	Italy	1260 + 240 + 300 + 360 + 139
9	E. Sahinovic	Yugoslavia	1260 + 240 + 300 + 360 + 136
10	P. Buchwald	Denmark	1260 + 240 + 300 + 349
11	U. Rush	W. Germany	1260 + 240 + 300 + 322
12	Y. Liang	China	1260 + 240 + 300 + 285
13	C. Bistacchi	Italy	1260 + 240 + 300 + 213
14	L. Larsson	Sweden	1260 + 240 + 300 + 209
15	K. Sun	China	1260 + 240 + 300 + 189
16	R. Cal	Italy	1260 + 240 + 300 + 173
17	H. Bleuer	Switzerland	1260 + 240 + 300 + 163
18	J. Bradley	USA	1260 + 240 + 300 + 153
19	C. Li	N. Korea	1260 + 240 + 300 + 149
20	E. Dondero	R.A.	1260 + 240 + 300 + 130
21	W. Colledge	GB	1260 + 240 + 300 + 119
22	J. Orel	Czechoslovakia	1260 + 240 + 300 + 68
23	M. Williams	Australia	1260 + 240 + 286
24	P. De Boer	Netherlands	1260 + 240 + 196
25	Y. Zhou	China	1260 + 240 + 186
26	H. Nyhegen	Denmark	1260 + 240 + 173
27	K. Salzer	Austria	1260 + 240 + 137
28	H. Tahkapaa	FL	1260 + 100
29	E. Rodriguez	Spain	179 180 180 180 180 180 1259
30	W. Palmieri	RA	179 180 180 175 180 180 1254
31	C. Edge	GB	180 180 173 180 180 180 1253
32	G. Madelin	GB	180 180 180 125 180 180 1205

F1A Team Results (32 teams entered)

1	Italy	3780 + 37
2	China	3780 + 46
3	Switzerland	3737
4	Denmark	3734
5	W. Germany	3725
6	GB	3718
7	Argentina	3706
8	Czechoslovakia	3706
9	Holland	3693
10	Yugoslavia	3690
11	Sweden	3684
12	N. Korea	3676
13	USA	3675
14	Bulgaria	3643
15	USSR	3634
16	Polland	3634
17	Australia	3595
18	Austria	3592
18	Austria	3590
18	Canada	3590
20	France	3580
20	New Zealand	3580
22	Finland	3539
23	Spain	3511
24	RFA	3425
25	Israel	3398
26	Japan	3279
27	Norway	3270
28	Portugal	3082
29	Belgium	2412
30	Mexico	2228
31	Guatemala	1056
32	Brazil	0916

1987 World Free Flight Championships

disappointments included some big names like past European Champ Stefanchuk of Russia, Jens Kristensen of Denmark, Arno Hacken of Holland and one of the North Koreans, Yong Chol Chi, illustrating that the air could be deceptive and lift could occur in quite tight patches. Britain's Ron Pollard had waited cautiously for over ten minutes with a wound motor before launching, to fall 32 sec short after a climb that lacked any real punch.

George and Ivan both started with three-minute flights, but the second round proved to be a disaster for George when his model completed a full loop after launch. Everyone hoped the model would hit the ground to allow a refly but instead it missed by a few feet, and having wasted the main power burst it was doomed to record only 93 sec. More top flyers were in trouble by the second round with Holland's Anselmo Zeri out with 135 sec, Argentina's Arcangel Armesto with 155 sec and Germany's Bernhard Silz so close at 176 sec.

The breezier conditions, which during Round Two had increased to around 12 mph, should have favoured the style of Germany's double World Champion Lothar Doring, as it had in Spain and Australia. But the loss of his two best Espada models earlier in the year, together with his own interests moving towards power flying had severely limited Lothar's chances, and in Round Two he made an early mistake of 143 sec. Itzhak Ben Itzhak of Israel also proved that his twin anemometer and thermister equipment was by no means infallible with his flight of 114 sec.

However, watching the reigning Wakefield Champion Reiner Hopsass perform left no doubt that not only could such equipment be used to good effect, but here was a flyer in complete mastery of the event. Reiner would prepare his model and without yet winding, would begin to study the twin chart recorders that relayed temperature and windspeed information from one unit upwind, for comparison with conditions at the launch pole. By recognising building, calm, warm air upwind, Reiner could be fully wound and ready to launch within 40 sec. Yet invariably he still had another 30 to 40 sec for the thermal to fully develop and reach him in which to make up his mind before launching not only in lift, but with a fresh motor! Reiner was having a great time, and again looked unstoppable.

Since his win at Livno in '85, Reiner had built

new wings using very lightweight Kevlar over solid Rohacell foam, a technique developed, at least for F1B models, by the Swiss team. The significant increase in torsional stiffness from this type of structure had improved the Espada's resistance to wing flutter at high speed after launch and gave direct benefit to flight performance.

Once again the Russian team of Alexander Andrukov, Yuri Golugonov and Stephan Stefanchuk had the most technically advanced models, all featuring the highly complex delayed prop release, variable-pitch propeller systems developed by Andrukov. Their models also made much use of carbon fibre stiffening caps on spars and even individual ribs, although like many others they were obviously still struggling with wing flutter problems at launch, with Andrukov resorting to mass balance weights on outriggers in front of the D-box leading edge on the model he was flying. By comparison to their performance at previous World Champs the inability (quite often) to sustain steep climb angles throughout the propeller run indicated the 1981 to 1983 Pirelli they were using was past its prime.

The adoption of the delayed prop release hub, and/or the variable-pitch propeller has become more widespread since its first appearance at the Champs in '81. Many of the other Eastern bloc countries had been doing some serious machine-shop work on their front end assemblies, although it was typical to see many flyers not always using the delay prop function during the rounds for fear of wing damage from the extra hard throw required at launch in the already windy conditions.

All the Chinese team had full propeller systems, and they were again trying using their 'own-manufactured' rubber. They were flying with several thermisters at the pole position used in conjunction with a dozen or more long silk streamers upwind on high poles to indicate wind speed. Although they held wound motors for long periods of time and often chose to let the propeller run at launch, their climbs were consistently some of the best on the field.

The last rounds still held a few surprises, with China's Whenyi Zhang's model looping into the ground after some kind of system failure, with the team all maxed out. The refly was flawless. The final flight proved too big a hurdle for Canada's last remaining entrant, Dave Andrews who scored 93 sec. Once again there was disappointment for Alexander Andrukov, twice a European Champion; he missed a place in the flyoffs with a bad last round of 134 sec.

F1B flyoffs

Four-minute round

Definitely the most difficult of the three day Championships; it was almost a surprise to find

that as many as sixteen competitors had survived the seven rounds with intact scores. All the more surprising then that all three of the Chinese team had maxed out, demonstrating once again their mastery of the event, and of course securing the Wakefield team prize. As soon as the flyoff round opened, many of the competitors started winding in preparation. With only fifteen minutes in which to launch none could afford to miss a well-marked thermal at this stage of the day. Bob White waited a minute or two before starting to wind, and then had the misfortune to break strands in his motor. Meanwhile, two of the Chinese, Zhiming Li and Jifa Lu were first to fly, both choosing the same moment to launch from adjacent poles and climbing together strongly in formation. Sweden's Lenardt Hansson and Frenchman Louis Dupuis were amongst those who followed soon after including the third Chinese Whenyi Zhang. But already the bubble of warm air was dissipating and clearly some would not manage four minutes; and even the first two Chinese models were gliding in completely different directions.

Five minutes into the round and Bob was ready to wind again. Nearby reigning champion Reiner Hofsass also started winding; with his uncanny understanding of building conditions this was definitely an encouraging sign. By Reiner's side was fellow countryman and double Champion Lothar Doring, studying the twin chart recorders and discussing the incoming information. Together they were a formidable and intimidating combination of talent. For several more minutes flyers waited, motors wound, for signs of lift. Already all the Chinese team had their three maxes on the score board.

Nearly ten minutes gone and a rising cloud of cat-tail fluffies signalled a calming patch of air; the breeze picked up and Bob White was away to another stunning climb, the model leaping out of his hand like a greyhound set free for the chase. Australia's Peter Fauser chose the same air, but Reiner waited a full half minute before joining them.

Britain's Ivan Taylor still had not flown, and with only four minutes remaining he launched at last along with Russia's only flyer to get to this far, Yuri Golugonov. Ivan's climb looked quite weak after the wound motor had been held so long, but once into the glide his distinctive all-sheet design started to thermal well, and his max was assured.

Five-minute round

Only four had dropped the round, including North Korea's Yong Bom Chang, ending that nation's challenge to an event at which they once seemed unbeatable. Britain's Ivan Taylor had needed to make some hasty repairs after his



Far left: Victory smiles after the flyoffs for Wakefield hero Bob White, flanked by US team manager Walt Ghio and Assistant Manager Ken Phair. Famous twin-fin design reflects Bob's own philosophy - the ultimate sophistication is simplicity. Left: Only Frenchman to reach any of the flyoffs was Louis Dupuis, who folded wings on his way to 15th place. Below left: Reigning champ from '85, Germany's Reiner Hofsass placed 9th flying his familiar Espada design. Bottom: Top Russian was Yuri Golugonov in 8th place.

F1B Individual Results

(81 entries: 16 in flyoff)

1	R. White	USA	1260 + 240 + 300 + 360 + 295
2	K. Rozycki	Poland	1260 + 240 + 300 + 360 + 175
3	K. Jusufbasic	Yugoslavia	1260 + 240 + 300 + 315
4	J. Lu	China	1260 + 240 + 300 + 277
5	W. Zhang	China	1260 + 240 + 300 + 238
6	Z. Li	China	1260 + 240 + 300 + 232
7	Z. Alpiev	Bulgaria	1260 + 240 + 300 + 230
8	Y. Golugonov	USSR	1260 + 240 + 300 + 188
9	R. Hofsass	W. Germany	1260 + 240 + 269
10	H. Kucharski	Poland	1260 + 240 + 243
11	P. Fauser	Australia	1260 + 240 + 216
12	I. Taylor	GB	1260 + 240 + 160
13	L. Guzzetti	Italy	1260 + 198
14	Y. Chang	N. Korea	1260 + 161
15	F. Dupuis	France	1260 + 108
16	L. Hansson	Sweden	1260 + 83
17	S. Stephanchuk	USSR	175 180 180 180 180 180 1255
18	T. Madea	Japan	180 180 170 180 180 180 1250
19	B. Siltz	W. Germany	180 176 180 180 180 180 1241
19-B	G. Xenaphis	USA	180 180 161 180 180 180 1241
21	M. Kapetanovic	Yugoslavia	159 180 180 180 180 180 1239
22	J. Li	N. Korea	180 180 180 180 156 180 1236
22-F	Tapernoux	Switzerland	180 180 156 180 180 180 1236
24	A. Hacken	Austria	171 180 180 180 180 164 1235
25	R. Schlesinger	W. Germany	148 180 180 180 180 180 1228
25	R. Pollard	GB	148 180 180 180 180 180 1128
37	G. Foster	GB	180 096 180 180 180 180 1176

F1B Team Results

(28 teams entered)

1	China	3780
2	USSR	3729
3	RFA	3682
4	Sweden	3667
5	USA	3666
6	GB	3664
7	N. Korea	3636
8	Poland	3577
9	Yugoslavia	3533
10	Holland	3521
11	Hungary	3500
12	Australia	3495
13	Denmark	3474
14	Switzerland	3460
15	France	3437
16	Israel	3350
17	Italy	3308
18	Finland	3304
19	Bulgaria	3299
20	New Zealand	3272
21	Canada	3425
22	Argentina	3075
23	Norway	2674
24	Portugal	2422
25	Japan	2347
26	Mexico	1937
27	Spain	1918
28	Austria	860

next one was going to be for that special lady.

Rozycki was ready. He opened the prop blades in his hand and launched. As the burst of power took over, his model climbed steeply and then turned hard and zoomed round in a tight right turn, before resuming the climb. Bob knew the time was right, and his classic red and white model absolutely leaped out of his hand and stood on tail as it raced upwards past Krystopher's model. Already the crowd knew the outcome, but all was quiet as they watched and enjoyed the beauty of a perfect flight. With all eyes turned skywards, only the running watches recorded the passage of time as each modeller reflected on his own thoughts of these incredible Championships.

It was over - Krystopher Rozycki landed at just under three minutes, with Bob's model, still high, landing nearly at five. It had been a long time coming, but now Bob White was unmistakably the new World Champion of Wakefield. Engulfed in a crowd of well wishers, Emmanuel Fillon was among the many past champions present to shake Bob's hand, a gesture that spanned half a century. Since 'Manu's' own victory in 1937, the art of Wakefield flying has seen many changes to rules and models, but it has lost none of its thrill.

Fond farewell ...

Looking back at those few brief days in France which brought together so many old friends and established many new ones, the 1987 Champs will long be remembered as one of the finest events, run by competitors, for competitors. The French are to be congratulated for holding an event which was a model of efficiency and organisation with not a single official protest lodged throughout the Championships. It was an event blessed by exceptional weather, and one made all the more enjoyable by the universal popularity of the eventual victors. With the 1989 venue already set for Cordoba, Argentina, the World of Free Flight salutes the new Champions, Victor Tchop, Bob White and Eugene Verbitski.

... and a note from our Team Manager

This year Mercury Models, who handle the fine Zap range of adhesives in Britain, provided tee-shirts for the team and some sponsorship for the members. After years of white shirts with red and white Logos, this year Great Britain were resplendent in pale blue with red and white logo, which made it easy to spot a Brit from afar. Survival was helped by Gatorade, who supported our team in Romania last year to such an extent that enough body electrolyte-replenishing drink sachets were left over to last us this year too.

Challenge France (aggregate overall team positions)		
1	China	11 297
2	USSR	11 143
3	Sweden	11 070
4	GB	11 049
5	USA	11 037
6	N. Korea	10 888
7	Poland	10 874
8	Italy	10 760
9	RFA	10 654
10	Bulgaria	10 638
11	Switzerland	10 619
12	Yugoslavia	10 605
13	France	10 575
14	Canada	10 562
15	Denmark	10 509
16	Argentina	10 304
17	Australia	8 311
18	Israel	7 825
19	Finland	7 736
20	R.D.A.	7 505
21	Czechoslovakia	7 426
22	Hungary	7 231
23	Holland	7 214
24	Mexico	7 165
25	Norway	7 009
26	New Zealand	6 850
27	Portugal	5 966
28	Austria	5 652
29	Japan	5 626
30	Spain	5 429
31	Belgium	2 412
32	Guatemala	1 056
33	Brazil	916

model was retrieved with the tailboom broken in two and he had chosen to continue flying with the same model. Soon after the round opened at 7.20, Ivan was wound and ready to go, again launching with Golugonov and the young Polish flyer Krystopher Rozycki in air marked by the Chinese. But this time there would be no happy ending for Ivan for his model looped and nearly hit the ground, no doubt because of a misaligned tailboom from the recent repair. The glide too was way off trim, and although in good lift the model continued to stall, aggravated by the propeller blades flapping open at each hammerhead. On reflection, Ivan will long regret not using another model for such a crucial flight.

Meanwhile, Reiner Hofsass was having all kinds of trouble. At the very moment of these decisive flyoffs, while winding his motor, his trusty metal-gear winder had broken! Lothar had rushed off to fetch his winder and Reiner later said he was too conservative winding the rubber with this unfamiliar equipment, fearing that he had also broken the magic spell that he and Lothar had enjoyed in dominating the Wakefield event since 1981. From the moment of launch Reiner's climb looked weak, and although the familiar, thin-winged Espada seemed to glide for ever, the magic was indeed gone and Reiner landed half-a-minute short.

With less than five minutes left the US team was again working hard, marking air with fluffies and bubbles. The tension was broken, as again Bob's classic twin fin was on its way, rocketing skywards to applause and shouts from the supporters, 'Go airplane, go!' It was another monster flight, with Bob's model simply cruising across the field at perhaps 800 ft, D/T'ing at almost six minutes only to be caught by Randy Weiler at just under eight. The retrievers were so psyched up that they didn't even want Bob's precious model to touch the ground.

Six-minute round

Now there were only eight flyers left. Australian Pete Fauser's strong challenge had ended and Kucharski of Poland did only a little over four minutes. It was 8.00 pm, and still all three Chinese were in the running, with the promise of a clean sweep. But this time Bob White was quick off the mark launching early, together with Rozycki of Poland, both looking very promising, Bob's Wakefield in particular riding the thermal well, losing some height after the first couple of minutes, but then bumping and starting to climb again.

Yuri Golugonov was winding hard, until he blew a motor. His helper Aleksander Andrukov was quick to get him set up with fresh rubber, and again he was winding furiously, packing on

the turns. The Chinese tactics seemingly had changed, with their flyers now more cautiously going one at a time. After seven minutes Zhiming Lee launched into a strong climb, and Golugonov was wound in time to chase after him as the fill-in breeze picked up. Yuri's climb was poor by comparison indicating that the Russians simply didn't have any good rubber left.

A crowd of nearly a thousand competitors, supporters and locals had assembled to witness the excitement of these closing rounds. Bob White turned round and scanned the crowd to see the US contingent's binoculars still firmly transfixed on his flight - confirmation that his model, now a mere speck on the horizon was still riding high. Then a big cheer - White had maxed! So too had Rozycki.

But the Chinese threat was not over yet with one model still airborne and Lifa Ju, having changed to a model with vertical tip fins, made another impressive climb from a 33 sec prop run after a long hold on the ground. Two minutes later and Whenyi Zhang also made a great climb, high into the evening sky. As the scores came in, the buzz of excitement grew as everyone waited to compare the other flights. Golugonov only 188 sec; Alpiev from Bulgaria 230 sec; the Chinese Zhiming 232 sec, Lu 277 sec and Zhang 238 sec were all out. Yugoslavia's Jusufbasic came close with 315 sec to secure third place. Only Poland's Krystopher Rozycki who had also flown at the beginning of the round could match Bob's max - one of them would soon be Wakefield Champ.

Seven-minute round

The final showdown. Emotions ran high. Bob White, always World class, having come so close so many times, was again at the threshold of realising a dream. Anxiously preparing nearby, Rozycki, who had only recently gained place third in the Eastern Bloc Championships, could hardly believe the chance that now presented itself to him.

By coincidence a Polish and an American timekeeper had been picked for this last round, and under the circumstances the FAI jury requested a redraw. By 8.40 pm all was ready. Krystopher picked his moment and wound as fast as he could, shadowed by Bob, who kept one eye on him as he too wound with deliberate concentration. Bob felt comfortable to let Krystopher make the first move.

It was hard to say who was more nervous at this stage - the competitors or the spectators. Certainly the crowd was nearly bursting with anticipation of a perfect ending to these Championships. One thing on everyone's mind was surely the fond memory of Bob's late wife and constant flying companion Toni, who at this climactic moment was no longer at Bob's side as she always had been before. More than any other flight Bob had ever made, everyone knew this

Wolverhampton Wanderers

Yes - Wolverhampton on 2nd August was the setting for Vintage R/C Glider Fly-in. Dave Jones reports



THE WEATHER, or to be more accurate, the forecast was not kind. The prediction on the Saturday was for ark-building weather so it was not surprising that only seven enthusiasts turned up. As it happened the sun came out by midday and those who did not make it missed a good little event (one might as well blow one's own trumpet). The wind, although a little daunting at around 10mph, proved to be quite flyable provided that models were not allowed to progress downwind. The occasional gusts to 15mph did not last long and the 5mph lulls were a pleasant surprise. There was lift about but it tended to come in large-ish patches and tight little bits. The classic summer's day thermal was not in evidence.

The competition is split into two phases, judging and flying. Judging followed the method sometimes used in Peanut competitions - everyone entered judged everyone else's model, bar their own. There were three categories to adjudicate: finish, construction and overall effect. Each is given a maximum of 600 points so that static marks are of equal importance to the flying marks.

Quality of finish is an obvious consideration here, as is the use of vintage materials. There seemed to be a little prejudice against models that had been scaled up or down but the difference in points was only a matter of some 10%, something that could easily be overcome with a good set of flight scores...

On the field...

The neatest model present was Gordon Rae's Gamma Gull. This is an attractive little plane well worth consideration for sport flying. Neil Campbell's Champ was a pleasure to see. This model is truly Vintage, having been built when

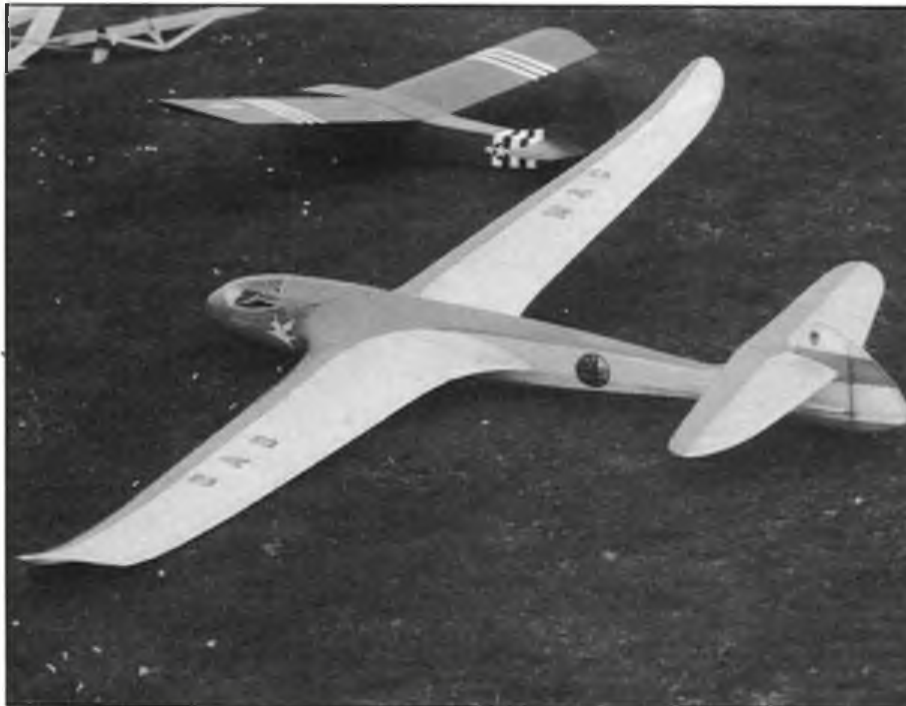
Aeromodeller first published the plan. Tony Ward's Leprechaun was amazing. The wing chord is massive, even by Vintage power standards. The model is a veteran of some sixty flights, some assisted by a pylon-mounted .40 four-stroke on a greater-span centre section. Rudder response is very slow with the original trim tab but an acetate rudder extension has made an improvement. Les Rogers has a penchant for military gliders, so his choice of the Hadrian is not

Above: Get to grips with this! Tony Ward assembles his APS Leprechaun. Below: Les Rogers' Hadrian is an enlarged Aeromodeller design. Who'll be first with a huge Hotspur?

Static scores

1	Gordon Rae	Gamma Gull	1559
2	Neil Campbell	Fillons Champ	1518
3	Tony Harrison	Leprechaun	1508
4	Les Rogers	Hadrian (enlarged)	1412
5	Dave Jones	Sunspot	1407
6	Mike Chiddick	Super Lulu (enlarged)	1360
7	Keith Williams	Mini Sunspot (reduced)	1341

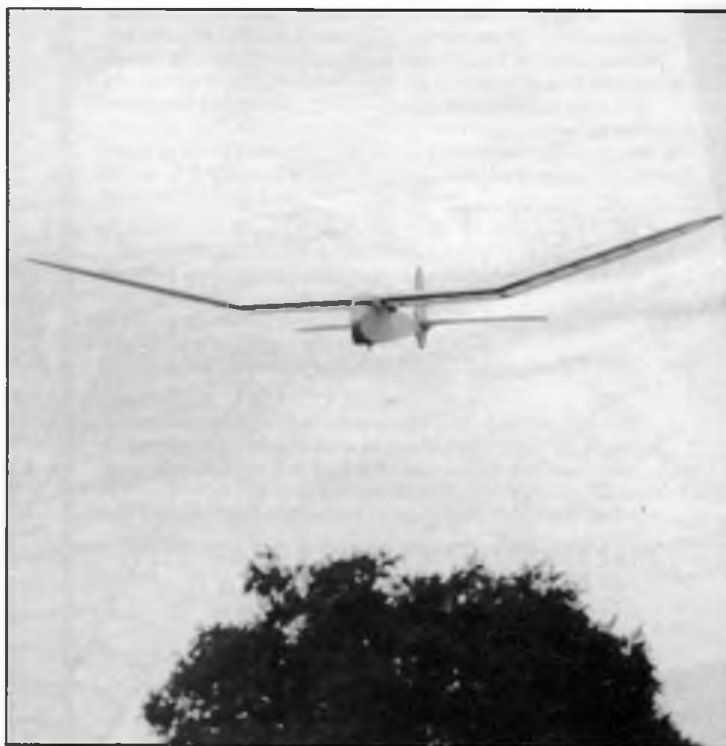
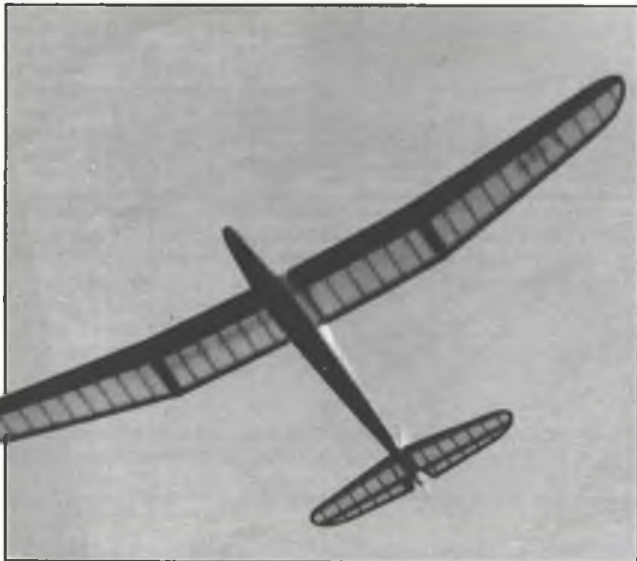




surprising. It certainly has a lot of charm and should fly like a trainer. We currently await its maiden flight. My Sunspot has just undergone its third repair session and is getting a bit tatty now, although it is flying better as I get used to it! Mike Chiddick's Lulu 72 (published in July's *Aeromodeller*) is proving to be a very practical, everyday model. Performance is well up to what one might expect from a modern 'floater' of the same dimensions, and its functional lines possess a certain austere charm. Keith Williams' Mini Sunspot was on its first outing, having elicited praise when shown 'uncovered' at our club. This should be another *Aeromodeller* plan soon. Its performance is marginally better than the Lulu, although it is a more intricate model to build. Handling the Mini Sunspot is just like flying the 'full-size' version, right down to the soft rudder that needs a bit of 'down' to force it into the turn occasionally.



Top left: The unmistakable lines of Fillon's Champ always command attention. Neil Campbell actually built this one back in the late '40s. Larger than standard removable canopy and coaming is a later addition. Top right: Mike Chiddick (left) and Keith Williams with their 72in. Mini-Sunspot as Dave Jones' full-size version minds its own business in the foreground. Mini-Sunspot seen in more detail above right, and landing below that. Below: Gordon Rae's attractive Gamma Gull flies by.



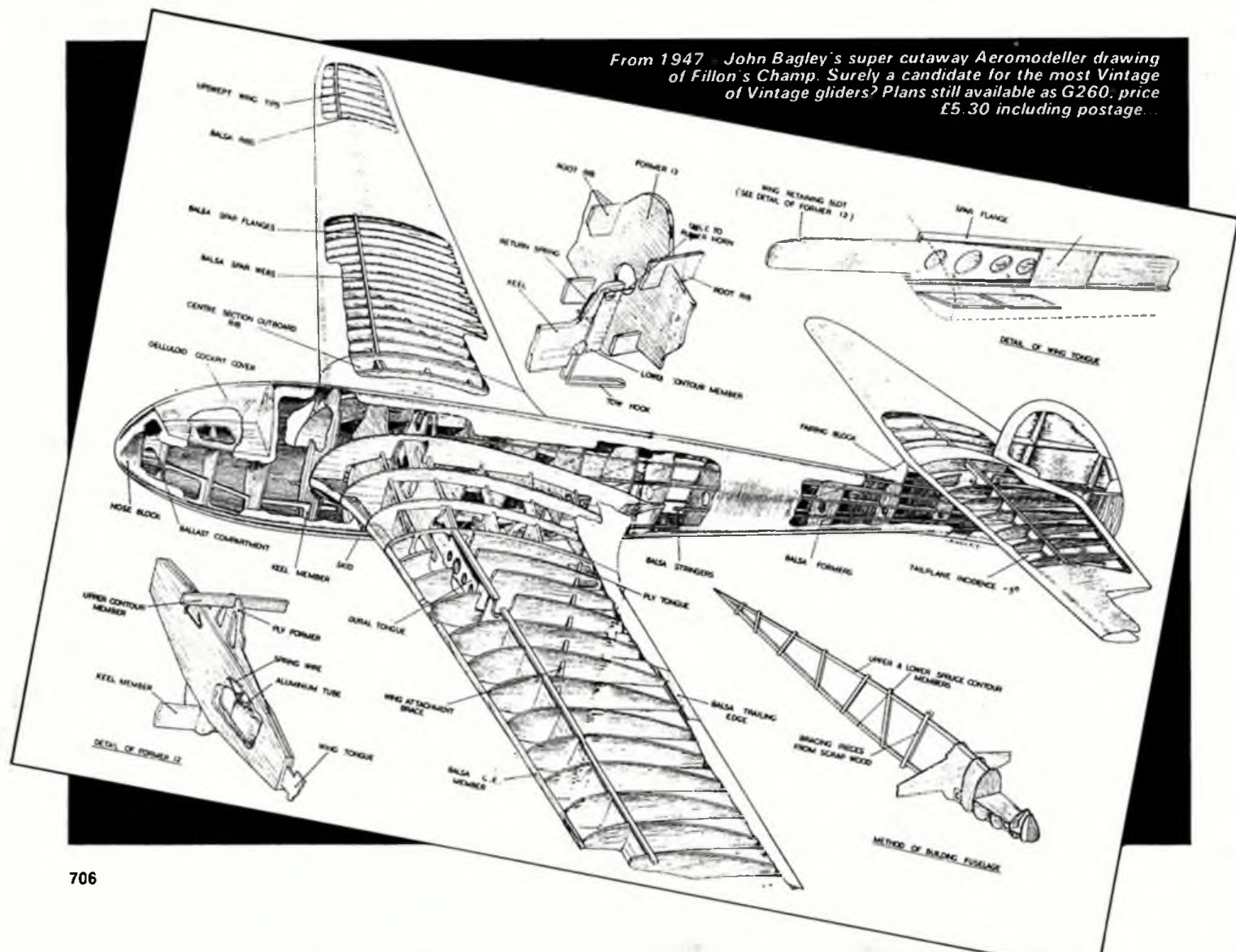
Up and away...

All models handled the apparently inhospitable conditions well. Neil Campbell's Champ was O.K. up to about the 10mph mark but once it got above that it started to fly backwards, the last flight ending in a small tree. This was the only flying mishap of the day. Tony Ward had

Winner Overall: Dave Jones

Top four scores:

			Static/time	Total
1	Dave Jones	Sunspot	1407/1418	2825
2	Gordon Rae	Gamma Gull	1559/765	2324
3	Mike Chiddick	Super Lulu	1360/868	2228
4	Keith Williams	Mini Sunspot	1341/828	2169



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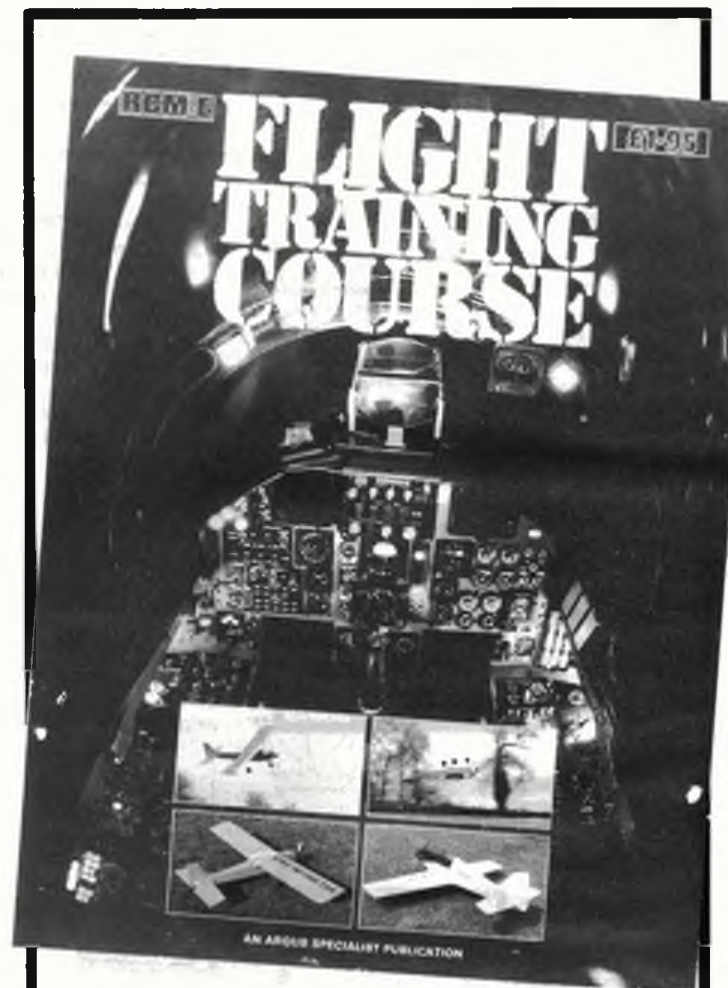
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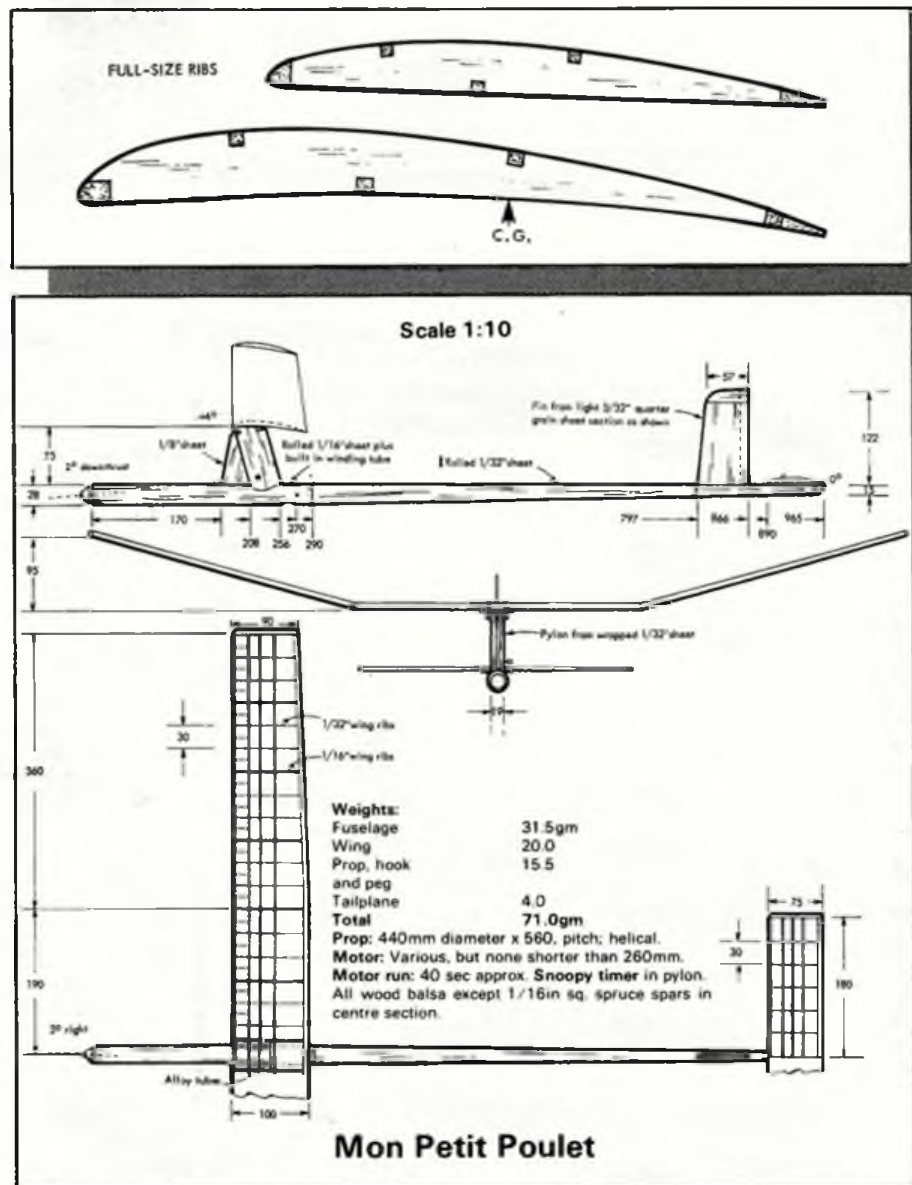
The Coupe d'Hiver season approaches. Here's a model with a pedigree. John Brookes tells us about it

THIS COUPE has been developed from Jean-Claude Neglais' L'Oizoraz, which was published in the May 1967 *Aeromodelleur*. The large diagram shows the three basic developments, although at least seven variations have been tried. Neglais' original is at the top. I was hooked on this design in 1978 after instant success. It flew straight off the building board, probably because I rigged it exactly as instructed. Even the latest one uses very similar angles, but with less sidethrust as it now goes 'right power/right glide' instead of 'right/left'. The most radical variation was No. 2. As well as elliptical dihedral it had a stepped wing section, and the wing pylon was rubber-banded on to allow large scale experimentation with CG positions. This particular model, which was very stable, could be thrown at almost any angle and still get away. I must have been

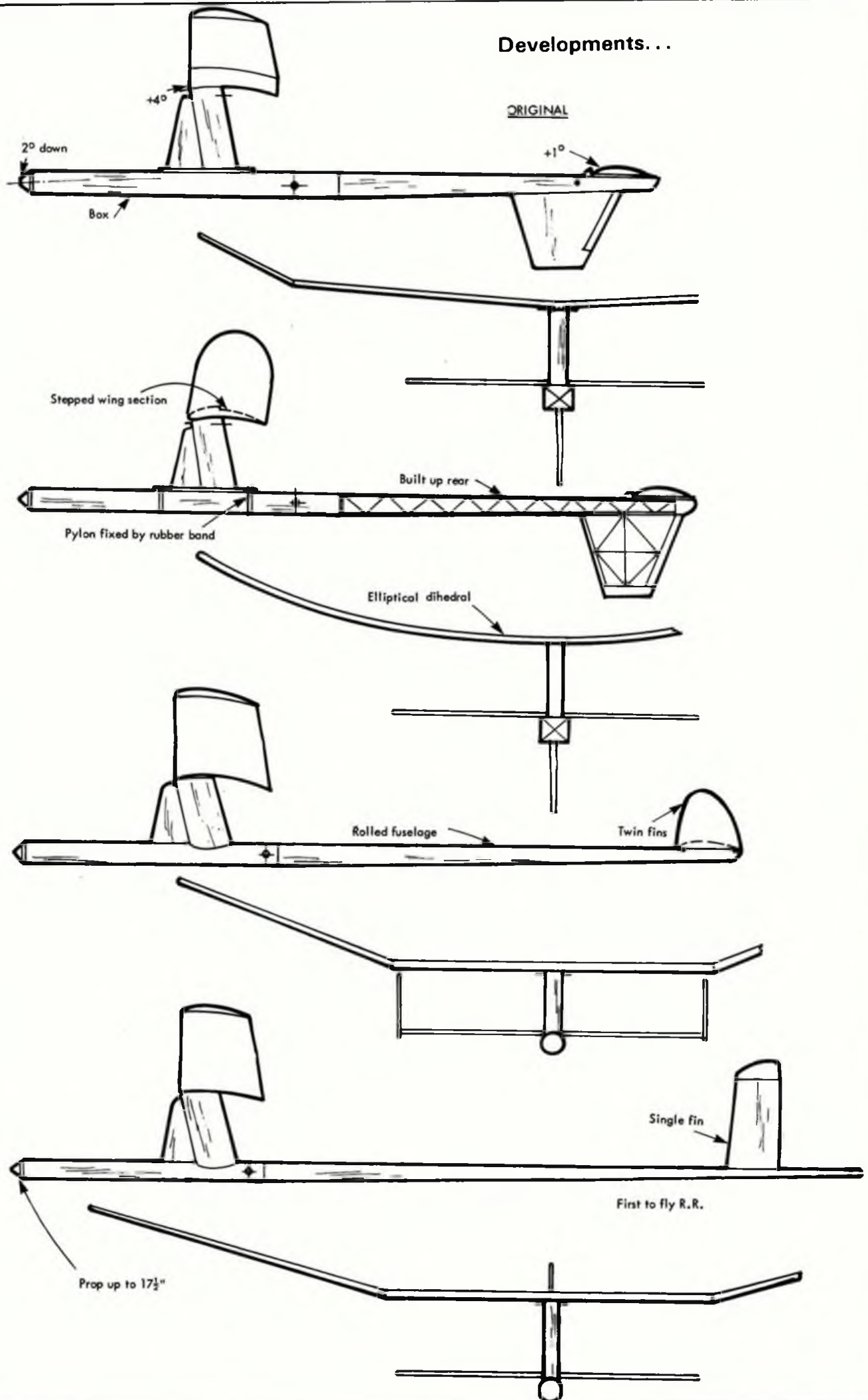
keen on experiments in 1980 as this model also flew for a while with 'crow feather' winglets (like the latest 747s).

The *Aeromodelleur* report of the Chavenay event won by Neglais states that the weather was quite reasonable, with never more than 10mph drift. However, my best results have come in very windy conditions, including the 1986 RAF Champs with two maxes and three average flights which were good enough. Other places include: 1st Midland Gala '79, 2nd Area Coupe '80; 3rd Winter Mini '81; 2nd Witchford '82; 1st Midland Area '82, 2nd at Nats '82; 1st summer Mini '82 and 3rd Area Coupe '83. After a two-year lay-off I came back last year with 5th at the Nats and a win at the RAF Champs.

The next stage is to go back and build a small version again and make it waterproof by using plastic film and so on to enable me to fly in very wet weather too!



Developments...



**FREE
FLIGHT SCENE**

5th Area Centralised SMAE F/F meeting: 6th September

Heavy, continuous rain is probably the only weather that can, by its effect on visibility alone, render a flying day all but useless. It doesn't happen often but when it coincides with an Area event it's disastrous. It is bad enough breaking models and getting wet but those stalwarts who would usually soldier on at a centralised meeting no matter what (where they can at least see the opposition) will have the nagging doubt that their efforts may be in vain if it is dry elsewhere. And it was!

The first event of the crowded Autumn SMAE season saw almost the entire country swept by strong winds with heavy rain spreading quickly from the south-west. Yet despite a dismal forecast the very north-east escaped. Under a sullen sky, with drift rarely above 10 mph and with humid conditions never quite precipitating to rain Tynemouth had the best of it for a change; and they took full advantage. Alan Jack topped individual scores in Power and with his clubmates Brown and Reavely lifted the Keil Trophy for teams as well. Brown's quite modest flyoff was enough for second place behind Jack. Likewise in F1B for the Gutteridge Martin and Pollard returned five maxes each and with a near flat calm prevailing at the flyoff rounded off a good day with fine flights, once again taking the top two spots. Pollard made use of a high climb to find real lift and eventually D/T'd from 300 feet or so well over seven minutes later.

Perhaps it was lucky that no one flew A/1 at Albermarle as it gave them a chance in something further south! At Driffild, although never very windy, it was continuously wet from 2pm. Nevertheless this had been long enough for Gerry Le Vey to string together some almost dead-air two-minute scrapers in A/1; only his third flight fell seconds short. Everyone else in this class started too late. Davitt likewise completed a perfect score in F1B and the Morley team of King, Fielding and Scott did enough to take third in the Keil. Indeed had it not been for Doug Scott's disastrous six-second final flight they could well have been challenging Tynemouth. Flyoffs at Driffild were taken in a short, clear break in the weather around 6.30pm. These involved Davitt's F1B flight and just Chas Plant in Power as Ray King had opted, rather over-cautiously, to go home early after making a full score. A token flight could well have placed him! As it was both Plant and Davitt found cold, unhelpful air although the latter Wakefield was above the max - enough for third place. The only other top places were filled without exception at Sculthorpe where it was bright and very breezy until the rain at 2pm (but then calmer) and at Barkston where the wind blew hard all day and the rain joined in by 1pm. Fly-offs there were all but ruined by the poor visibility.

Jim Baguley and John Cooper flew well in A/1 at Barkston for the remaining places; and Paul Bond led his Anglia power team and won himself a third place for his efforts at Sculthorpe. It was, however, the more consistent Vikings team of Wills, Bailey and Halford that led the charge on the Keil, falling only a few seconds short of Tynemouth's total and doing themselves a power of good in the

Aeromodeller

NEWS ROUND-UP

710

*Southern Gala pictures
by Dave Hipperson.
Top: No - it's not
Chinese! That's Gary
Odgers' Black Dog F1B.
Left: Phil Ball's
colourful new Slow
Open model. Below left:
Phil Uden watches the
thermistor while flying
Coupe. Below right: The
irrepressible John
White's model box.
Bottom: Terry Dilks'
wife Gwen releases his
Open Rubber model
from winding jig.*



Plugge ratings as a consequence because Bristol & West got clobbered! It chucked it down and blew a gale most of the day at Merryfield; but it says much for that club's determination that no less than twelve of then continuous rain) discouraged further activity. Ashdown Forest was completing three flights in atrocious conditions.

At Beaulieu it was even worse. Although Crookham did return a team score the gusty force six gale raging by midday (and then continual rain) discouraged continued activity. Ashdown Forest was very similar. The pressure is certainly on Bristol & West to do well in Team Rubber with now only a little over 100 points separating them from the second place Vikings team.

5th Area Centralised SMAE Event

A/1 Glider: No trophy (27 flew)		
1	G. Le Vey	9.58
2	J. Baguley	9.46
3	J. Cooper	9.13
4	J. Carter	8.41

F1B for Gutteridge Trophy (20 flew)		
1	R. Pollard	120.30 + 7.23
2	B. Martin	12.30 + 3.12
3	I. Davitt	12.30 + 2.35
4	R. Pavely	12.30 + 2.15
5	T. Dilks	12.30 + 2.00

Open Power - Individual (43 flew for Plugge points)		
1	A. Jack	7.30 + 6.05
2	A. Brown	7.30 + 3.37
3	P. Bond	7.30 + 3.33
4	C. Plant	7.30 + 2.53
5	N. Wills	7.30 + 2.37
6	R. Peers	7.30 + 2.17

Team positions for Keil Trophy		
1	Tynemouth Jack Brown, Reavley	21.58
2	Vikings 'A' Willis, Bailey, Halford	21.49
3	Morley 'A' King, Fielding, Scott	19.34
4	Anglia Bond, Wells, Collins	18.38
5	Lowland Lawrie, Granger, Blair	18.23

Plugge positions after five events.		
Bristol & West	1139	
Vikings	1035	
Anglia	950	
Crookham	799	
Birmingham	687	

Southern Gala: Little Rissington, Friday 18th September

With its traditional home of Odiham lost to free flight a venue for this section of the Southern Gala was still in doubt at mid-season. It was Dave Greaves who discovered that Little Rissington - host to two very successful Nationals in the 70s - was available almost any day of the year as long as it wasn't a Saturday or Sunday. A controversial decision to say the least; but it was decided that a contest on Friday would be far more preferable to no contest at all, particularly in view of the prestigious nature of the Southern Gala awards. It was a pity that notice had to be so short, thus further irritating the problem of people getting time off work. Despite this (and despite some important private arrangements which he put aside) we were lucky enough to retain the services of the usual Contest Director in the form of Mike Howick. He brought with him the required weather at no extra charge - warm, often hot, quite sunny and a light breeze.

Perhaps the new rules have seen the last of flyoffs in HLG. Once again John Walker topped a small field of entrants with not far short of a full score - more than two minutes ahead of the next man! It wasn't quite as calm as last year but the Rissington thermals gave a good account of themselves. By mid-afternoon there were some extraordinarily strong patches,

more reminiscent of the lift over commons like Beaulieu or Chobham. Numerous models were lost on D/T vertically upwards. Dave Greaves had one annoying such flight in CDH quite late in the day when his fast-climbing model centred perfectly and just refused to come down again. The ensuing long chase, although successful, left him too short of time to complete his flights. Peter Tribe had a similar story and was searching for his son's glider literally miles off the drome when another CDH model long since given up as lost by its owner D/T'd down at his feet!

Understandably entries were well down on past years but the standard was high and certainly the total absence of full-size activity interrupting the flying and those endless threats of restriction on movement and access made this one of the most pleasant Southern Galas ever. Antipodean visitor Gary Odgers, fresh from his distinguished 2nd place at Poitou and here in England flying his F1B for the first time on an aerodrome in his life, just would not accept that this wasn't the usual weather. He's going back to Australia to set the records straight immediately. Another rather special occasion involved John White who in recent few years has become somewhat of a fixture at Southern contests turning up, come rain or shine, by way of his trusty push bike, enormous model box with wheels and occasional assistance from British Rail. This time, flying his Skywalker 60 he managed to record what he insisted was his first ever max in an SMAE event. He continued to make two more and so appeared in a flyoff for the first time since he began model flying in 1941! Sadly lack of time precluded his being able to trim a bigger model and he was therefore 'stuck' with the Skywalker for the final flight but he made it four maxes in a row!

A control move shortly before the end of the event left some people who were squeezing in as many classes as possible a little short of time; and worse, out of touch regarding the scores in their particular events. One example was Ian Davitt who actually believed he was in a two-way CDH flyoff with Mike Chilton only to find that after he had staked out his competition and picked better air for a really good flight that they had both been beaten by a third party. It wouldn't have been so bad but the first person the enthusiastic Ian could find to tell that he had won turned out to be the actual winner himself - Pete Jellis. Whoops!

Throughout these final flights there was a very slight north-westerly drift and little evidence of lift. Times were close, particularly in Glider. However, John Cuthbert managed a clear edge in A/1 with a little over 3:30. Pete Watson's very fast-climbing 1/2A machine was just pipped by Tony Hall in better air but in Open (which incidentally had almost twice the entry of 1/2A which with its seven-second run is becoming a very specialist class now) most launched together. Peers and Hopper looked the highest but the former had a very untidy, straight stall on pull-out which at first glance seemed to have robbed him of the chance of the Short Cup. However his model quickly settled to out-glide Hopper's by a few seconds.

The last flyoff and the biggest with almost the entire entry qualifying despite the three-minute max was Open Rubber. It

was good to see conditions calm enough and the max modest enough to allow old stager Ian McDonald into the flyoff this time using a copy of Russell Peers' large Flycatcher. Most models were in the air within five minutes of the start; there was certainly quite a cloud of models climbing together at this time, one of them being Hippersons 550 sq. inch SST 1 out for the first time in two years. It was not surprising that there was some consternation over this model's eventual score which was submitted as substantially more than the other models with which it flew; the product of a three-minute climb and very slow descent. Phil Ball's later flight glided well too but from less height; and Carter, in Hipperson's air was unlucky, mysteriously, to lose time which should have placed him second; if that wasn't enough he landed up in a tree. Retrieval of these final flights was enlivened by a very considerable stubble fire in a field directly downwind. At least two power contestants were said to have literally snatched their models away from the advancing flames.

The idea of using a weekday was almost universally popular with those that attended (although rather a misleading cross-section in terms of research, as presumably most that found it inconvenient were by definition not there). However with Sundays at this time of year becoming over-booked and with such a suitable drome being available I cannot see why this arrangement could not be repeated or even expanded next year, provided sufficient notice is given.

An almost totally transparent CDH from Tennant. No hiding bad construction when you cover in transparent mylar...



Southern Gala: Friday 18th September

Open Glider: Pilcher Cup (24 flew - 10 in flyoff)		
1	W. Colledge	9.00 + 3.36
2	M. Fanthem	9.00 + 3.23
3	A. Gibbs	9.00 + 2.47
4	G. Hannon	9.00 + 2.35
5	G. Madelin	9.00 + 2.35

Open Rubber: Flight Cup (20 flew - 17 in flyoff)		
1	D. Hipperson	9.00 + 9.00
2	P. Ball	9.00 + 6.59
3	J. Carter	9.00 + 6.48
4	J. Walker	9.00 + 6.31
5	D. Wain	9.00 + 5.50

Open Power: Short Cup (13 flew - 7 in flyoff)		
1	R. Peers	9.00 + 7.19
2	J. Hopper	9.00 + 6.56
3	P. Harris	9.00 + 6.38
4	R. Johnson	9.00 + 6.26
5	T. Payne	9.00 + 5.19

A/1: Ripmax Trophy (14 flew - 5 in flyoff)		
1	J. Cuthbert	10.00 + 3.32
2	G. Beal	10.00 + 2.49
3	J. O'Donnell	10.00 + 1.50
4	D. Cox	10.00 + 1.45
5	C. Sharman	10.00 + 1.32

Coupe d'Hiver: No trophy (18 flew - 3 in flyoff)		
1	P. Jellis	10.00 + 3.16
2	I. Davitt	10.00 + 2.36
3	M. Chilton	10.00 + 1.51
4	D. Hipperson	19.45 +
5	R. Chilton	9.43 +

1/2A Power: Quickstart Trophy (8 flew - 4 in flyoff)		
1	T. Hall	10.00 + 3.10
2	P. Watson	10.00 + 3.02
3	E. Redfern	10.00 + 2.47
4	P. Harris	10.00 + 2.36
5	R. Peers	8.52 +

HLG: No trophy (5 flew)		
1	J. Walker	8.23
2	M. Feiston	6.36

The Island of Sorrows

- or how Magnet
Steering was invented.
An Adventure Story for
Boys and Girls by Alec
Green

I EXPECT you remember my grandfather, Camberwell Green. Tall old boy with a twinkle and the right attitude towards folding props. He doesn't do a lot now, although until I grew up he was the greatest aeromodeller of all time, and many a tale he told. One Christmas Eve long ago, back in the days when you could buy a big rabbit for a tanner and were expected to address your bishop as My Lord instead of Bob or Fred, we were sitting round the fire, listening to a talk on the wireless about Christmas in the Tropics. Father was whittling a noseblock over the grate, getting most of the shavings the wrong side of the fender, Mother was trying to get a splurge of scarlet dope off the cat's head and Grandad was sitting back comfortably, smoking That Filthy Pipe. Perched on his hony old corduroy-clad knees, I could feel the blobs of hardened cement digging into my little bottom. Suddenly the programme died away, which usually meant that the grid bias had faded out, and into the ensuing silence Grandad poured the following story.

'I've been on the Warm Seas myself,' he began. My mother groaned and rubbed harder at the cat. 'There, disaster strikes swiftly,' he went on in the lofty tone he knew irritated her most. The relationship between my grandfather and my mother could be said to be one of mutual regard. He regarded her as a smartie, and she regarded him as an untruthful old slob. No thinking aeromodeller would disagree with either of them. 'I was flying solo over the wide, blue uncharted waters, relying on little beyond primitive instruments and my innate navigational talents, when without warning a great storm formed up all around me.'

'Like the time they caught you fiddling

your score sheet at Wimbledon Common,' offered Mother helpfully. Grandad probably thought that was a bit below the belt but ignored it. 'I tossed this way and that, hanging in my straps a lot of the time, going up, going down, wires screaming, fabric flapping, rivets popping, until finally she started to break up. I knew I was doomed but I went down bravely, handling her like a professional until the sea closed over my head, and I was on my way to Davy Jones' Locker. Incredibly, I awoke live and well to find myself washed up on the silver beach of a large island with the sea calm and the sky blue. It was a great long rock sloping upwards to a high bluff, just like a wedge of cheese floating in the sea. There was vegetation and fresh water, there were small animals and fish, so I could manage, but I was alone. Utterly alone. All the chaps who lived there had paddled off on an expedition and never returned. So it was called the Island of Sorrows.'

'Who supplied you with this interesting historical footnote?' enquired Mother. 'With a clarity uncommon in one so prone to deviousness you have just informed

your unwilling audience that you were alone.'

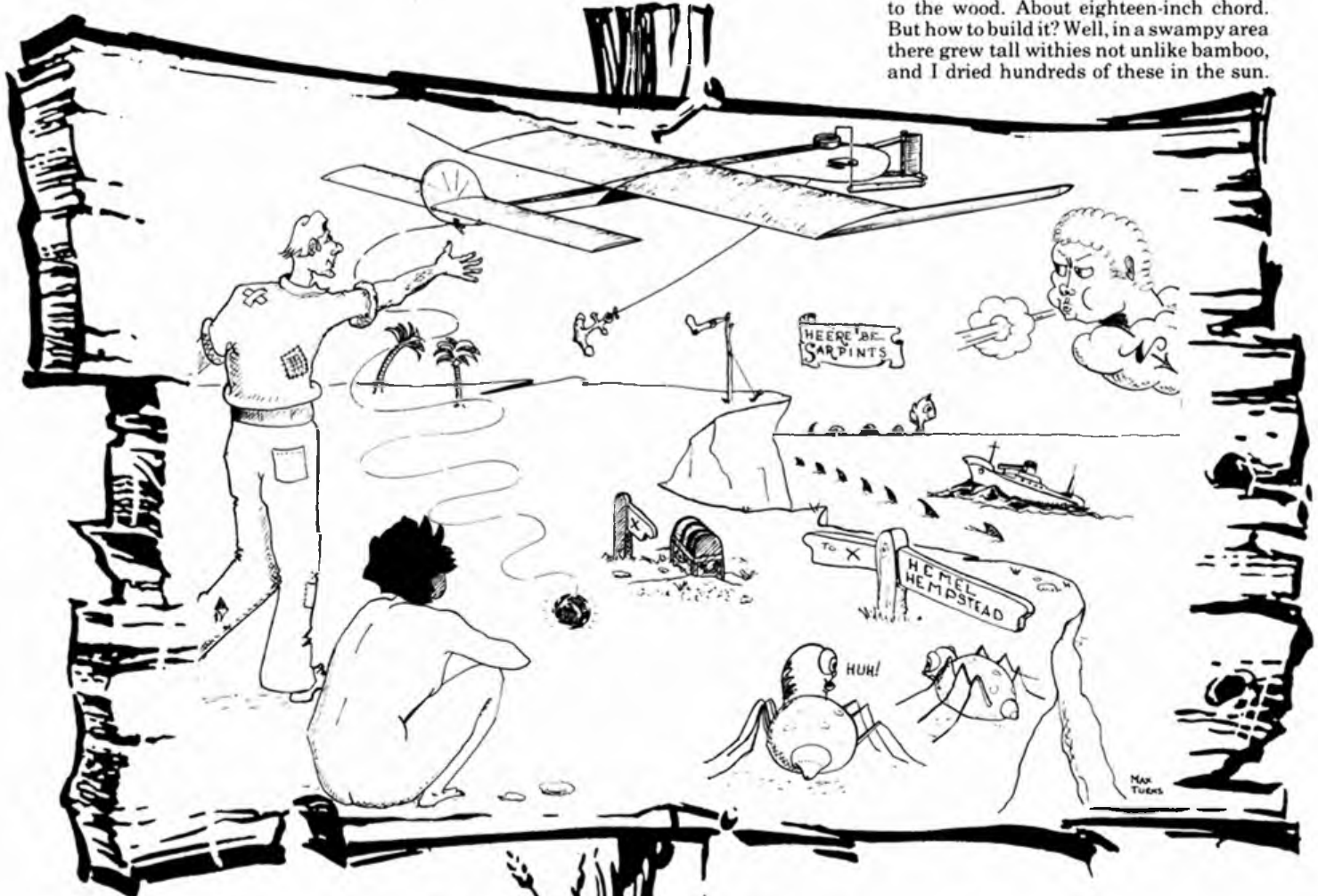
'So I was,' said Grandad. 'Not a living soul to talk to, except the three hundred and sixty-five girls they left behind. It was terrible.'

'Oh, it must have been hell for you,' said my mother sympathetically. 'Do you want a cup of tea, Camberwell Crusoe?' When his big breakfast cup was charged to the brim with steaming oolong and his evil little smoking-machine was drawing well, Grandad proceeded.

'My one thought was to get back to civilisation,' he alleged, fooling nobody at all. 'Yet I had nothing but what I stood up in, a pocket compass and Excalibur, my trusty pen-knife. What could I do?'

'You slew a dinosaur, made a hot-air balloon out of its bladder and talked yourself all the way on to Australia,' suggested Mother, dabbing TCP on the evidence that the cat was unappreciative of her cleansing efforts.

'No,' said Grandad. 'On some rocks a few hundred years beyond the bluff was the wreck of a ship which had foundered with all hands. Suppose I could reach her, and fix her wireless!' Paying no heed to a suggestion that he fixed a wireless nearer home, he continued. 'To reach her by swimming was impossible in those waters where the sharks were inactive only when the seas were so rough as to break you into pieces. At last I hit upon an idea which would test to the ultimate my consummate skills as an all-round aeromodeller. With great labour I felled a big tree - ('With Excalibur, of course,' interrupted Mother) - and hacked out a flat surface for a building board. Then using sticks of charcoal for a pencil and a rather depressing girl as a straight-edge, I drew up the plans of a ten-foot glider directly on to the wood. About eighteen-inch chord. But how to build it? Well, in a swampy area there grew tall withies not unlike bamboo, and I dried hundreds of these in the sun.



When I had graded them, I set to work dressing and trimming them, week after week, until I had the materials for the framework. Then I started to build.'

'Was that when you got all that cement on your trousers?' demanded Mother.

'There was no cement', said Grandad sternly. 'I had to bind every single joint with dried raffia grass, and a long business it was.'

'Raffia is not a grass, it is stripped from palm leaves,' observed my mother. 'I bet you really used the wool from the girls' cardigans.'

Grandad ignored this. 'There was the problem of covering,' he went on. 'Chord-wise binding with raffia grass doped with tapioca paste was my only means, of course, and a curved undersurface could not be managed, however great my need for a slow, lifting wing section. After much inspired research I developed a flat-bottomed one with a very efficient, pronounced top camber. I called it the Camber Well Section.' We all winced a bit at this. 'The glide was as flat.'

'Just flat will do!' snapped Mother, knowing that Grandad's similes were invariably indelicate. Grandad drew a deep breath. 'With this brilliant and beautiful example of ingenious improvisation at its very best,' he said modestly, 'I intended to fly a line out to the ship.'

'Why not save yourself all that trouble and use a kite?' enquired Mother.

'Because,' retorted the old man triumphantly, 'even you can't fly a kite against the prevailing wind. And being the resourceful type, by linking my compass to the rudder and achieving miracles of precise calibration, I ensured

that my glider would fly straight to the ship because -' he paused dramatically - 'I invented Magnet Steering! Yes! Every one of those magnet-steering models you see today is a descendant of my own brain-child, which trailed a line right over that wreck. A twitch on my end at exactly the right moment, and she dipped so that a little carved dangling hook caught in the rigging.' Mother scribbled on the back of the unpaid gas bill, then looked up.

'The undistinguished degree I hold in mathematics from the University of Oxford,' she said, 'enables me to assure the assembled company that the weight and drag factors associated with several hundred yards of line combine to place your claim in the category of absolute piffle.'

Grandad grinned. 'On that island', he said very kindly, 'there lived a species of whacking great spider whose thread was incredibly light and strong. I reeled this up, neutralising its stickiness by running it through a trough of talcum powder.'

'Went round the corner and bought a few tins at Boots The Chemists, did you?' enquired she of the mathematical accomplishments.

'Talcum is ground-up pumice,' said Grandad airily, 'and the whole island was a volcanic rock. Once I had made connection with the wreck, I jiggled a ring down the line, carrying a stronger string twisted from sisal, with a bigger hook. Then the stage was set for doing the same thing with a rope made from liana vines.' He scowled challengingly at Mother, who, not being genned up on liana, was silent.

'Hand over hand, painfully, laboriously, I made my way across the great gulf, with the ravaging sharks

threshing the water into blood-red foam below. Long before I was half-way I felt I could hold on no longer, and must drop into that seething holocaust.'

'Why didn't you?' asked Mother sweetly.

'By some Herculean effort and tremendous will-power,' my grandsire proclaimed, 'I finally arrived, hands bleeding, arms three inches longer than when I started, and collapsed weeping on the roof of the wheelhouse. A great nausea swept over me and I lost consciousness. When I came to, I had barely strength to creep under cover, and spent the night shivering in fitful sleep. The new day, however, brought fresh courage and renewed hope. I found the wireless cabin, and set about sending a message. I thought I knew the meaning of weariness, but oh, that pedal-driven generator...! Anyway, at last I got a contact, and three days later, when I was at the last of my slender supplies of food and water, a merchantman hove in sight. She dropped anchor and six tars rowed across to end my strange isolation. Yet the odd thing was that when it came to it, I didn't want to go, and they had to bind me hand and foot to get me in the jolly-boat. Then, with my now battered model on my knees, they pulled away towards the ship. She weighed anchor at once, making steam from New Zealand, and it was from her stern rails that I had my last glimpse of the Island of Gladness.'

'Just a minute,' said Mother. 'We have the testimony of the three hundred and sixty-five residents that it was called the Island of Sorrows.'

'Ah, well,' murmured Grandad. 'After I had been there a year they changed its name...'



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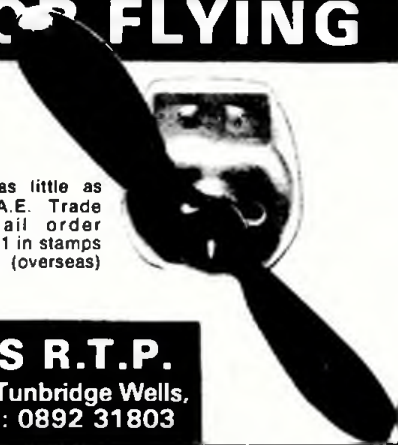
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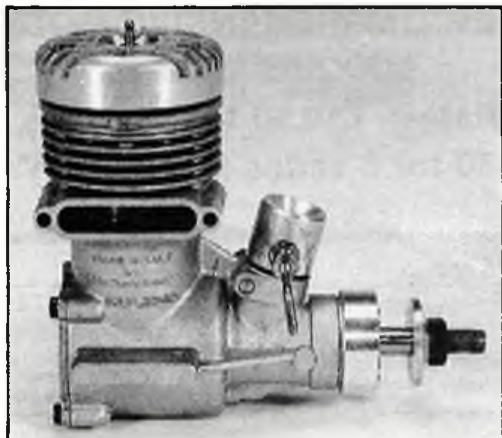
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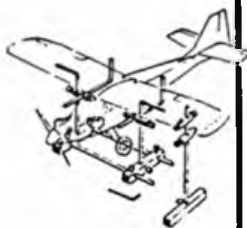
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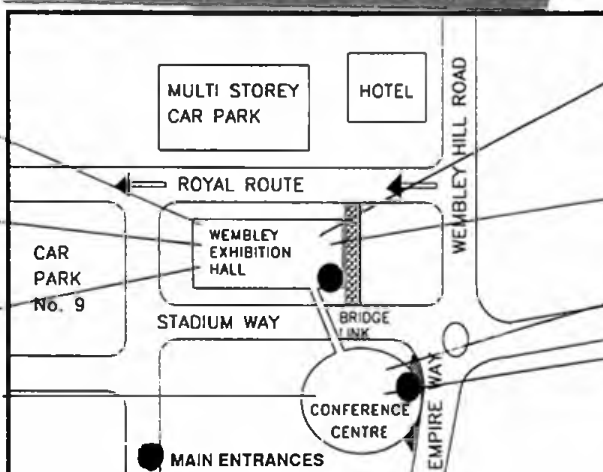
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The issue comes with two free plans (Sopwith Swallow, Starstream) printed front/back on a pull out banner of four sheets. The banner is not included in the document.

Sopwith Swallow by Bill Dennis

FF Electric Parasol wing WW1 fighter

[https://outerzone.co.uk/plan_details.asp?ID=2426 ...](https://outerzone.co.uk/plan_details.asp?ID=2426)

[Document Page: 24](#)

Starstream by Ray Malmstrom; John McIntyre

Ducted fan fun with a Ray Malmstrom sportster brought to us by John McIntyre plus free plan

[https://www.hippocketaeronautics.com/hpa_plans/det ...](https://www.hippocketaeronautics.com/hpa_plans/det)

[Document Page: 25](#)

Champion by E. Fillon

Revisited sketch of a vintage glider available in March 1947 as plan G/260.

[Document Page: 38](#)

Mon Petit Poulet by Brookes

John Brookes describes his Coupe d'Hiver model

[Document Page: 40](#)

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