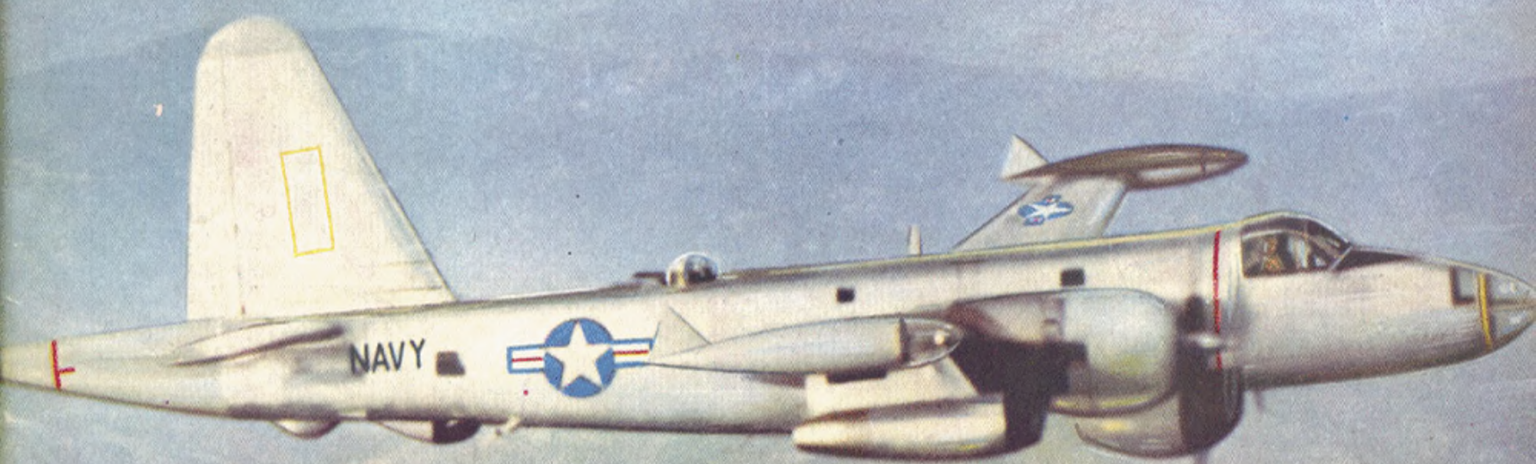


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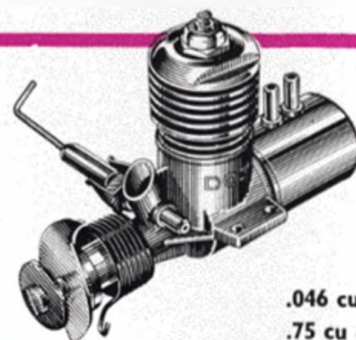
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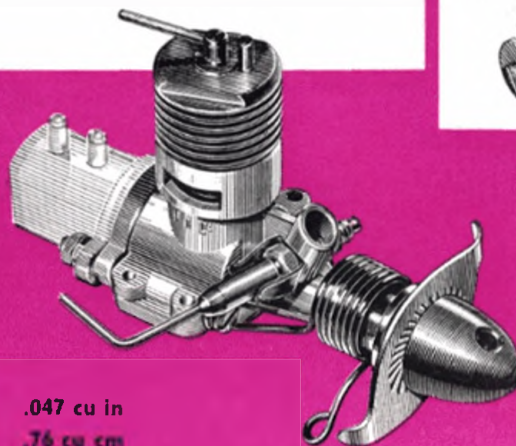
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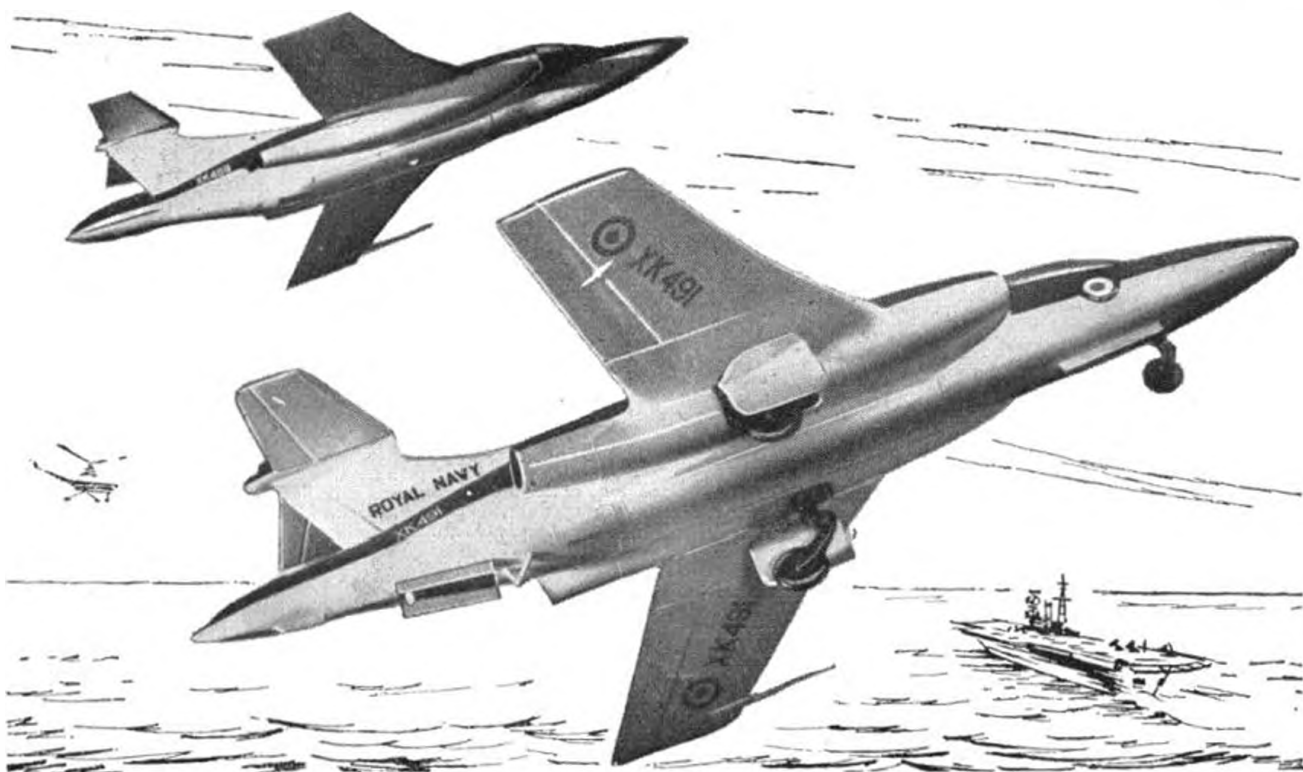


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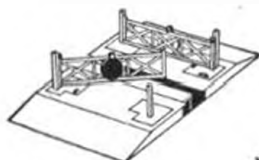
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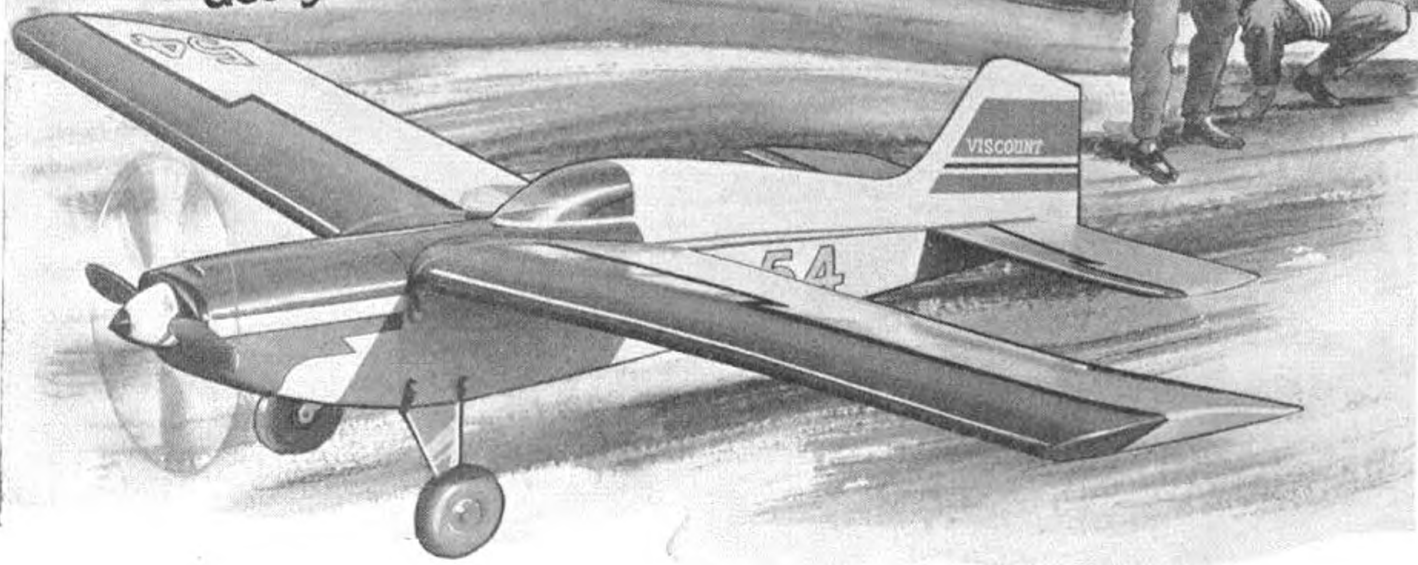
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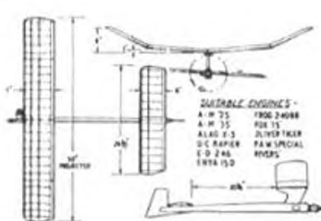


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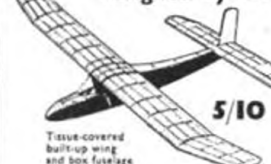


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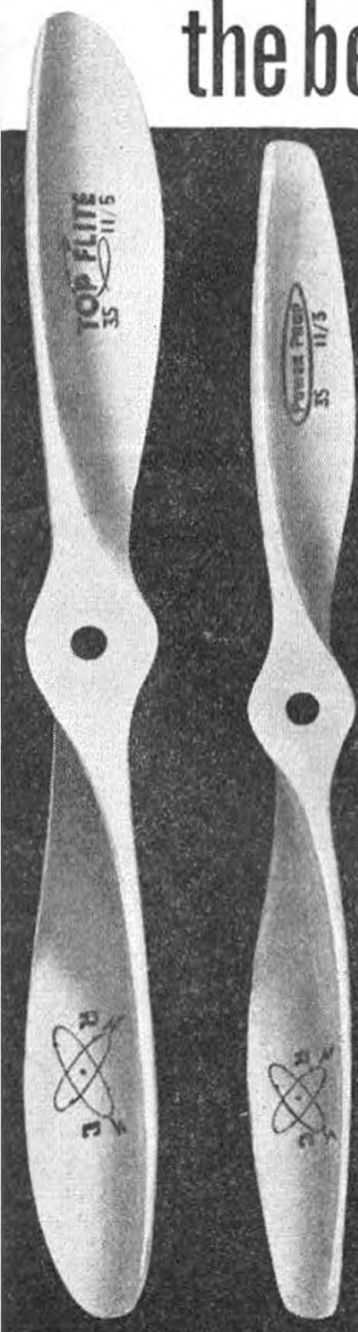
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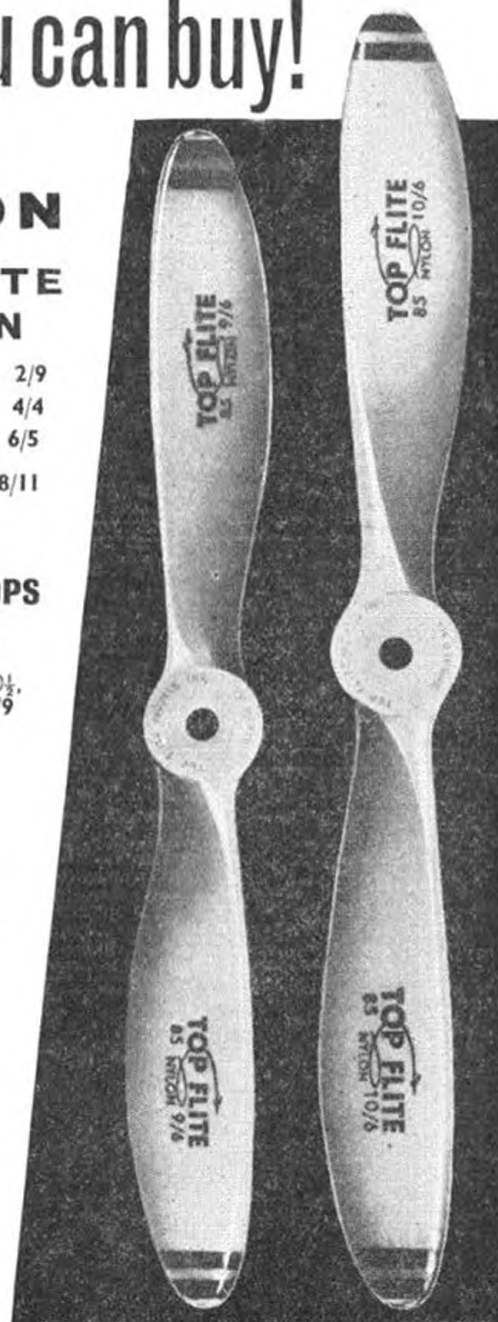
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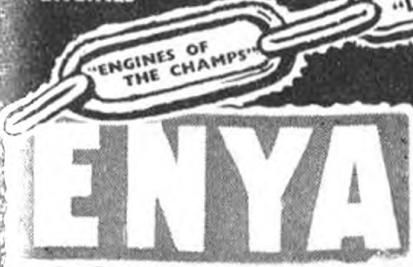
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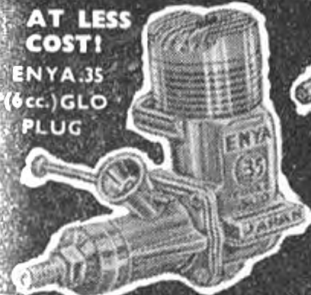
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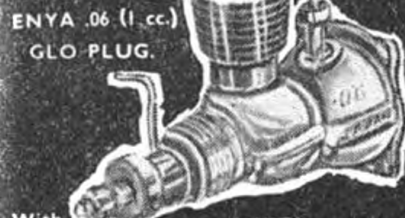
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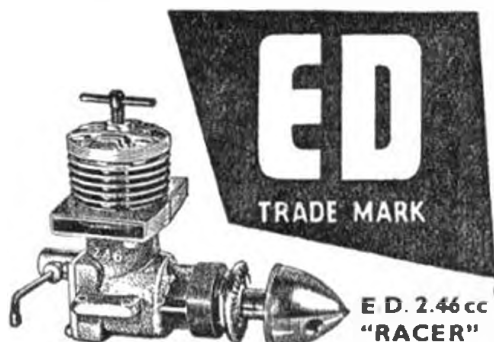
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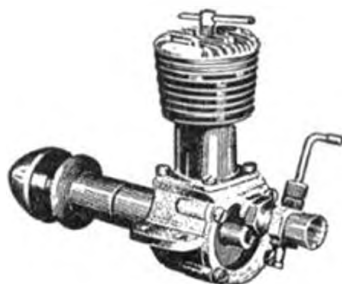
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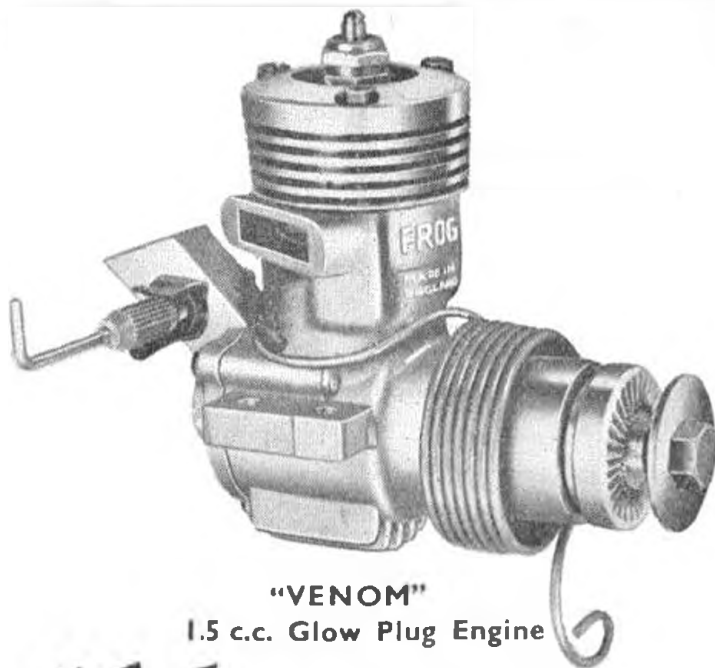


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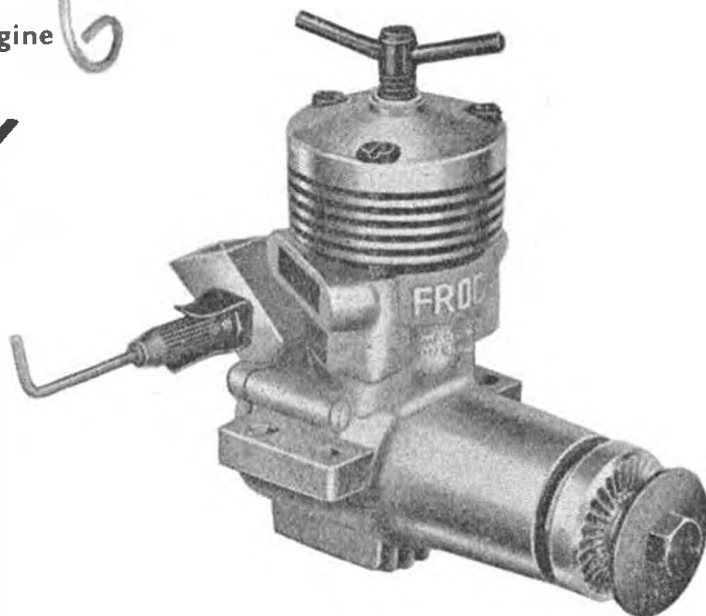
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ON THE COVER

Seen in the latest natural finish colour scheme is a Lockheed P2V-7 Neptune of U.S. Navy, captured here by the camera over Californian coast. The subject of our A.P.S. scale plan this month, the cover picture will serve as a guide to intending builders when choosing a colour scheme.

AEROMODELLER incorporates the MODEL AEROPLANE CONSTRUCTOR and is published monthly on the 15th of the previous month by the MODEL AERONAUTICAL PRESS LIMITED.

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READERS WILL BE AWARE that the aeromodeller-cum-public relationship has been a little strained in the Esher area for some time, and we commented some months ago on a successful solution to the situation, when a special area on the "city dump" was placed at the disposal of the modellers.

Unfortunately, the local club members are still running foul of what we can only term adult intolerance, and pressure is being brought to bear to secure the removal of the lads from their hard-won haven, into which we must record they have put a lot of hard work in order to obtain a reasonable site on which to follow their practical modelling.

Led by their competent secretary, Mr. E. G. Cotton, the Esherites are fighting this new attack tooth and nail, and we had the privilege of attending a protest meeting called in order to put their point of view across to parents and other interested persons. It is pertinent to record that the very pleasant Youth Centre hall was filled to overflowing, the stage being set with a comprehensive display of model aircraft, supplemented by items loaned by the near-local firm of Vickers-Armstrongs.

Strong support had been forthcoming in the presence of Messrs. A. F. Houlberg, S. D. Taylor and C. S. Rushbrooke (Chairman, Secretary and Vice-Chairman respectively of the S.M.A.E.), Mr. C. F. Andrews (P.R.O. Vickers-Armstrongs), Mr. A. Titcombe (Chairman of the Vickers Model Club), Mr. G. Cox, representing the educational point of view, and R. G. Moulton (AEROMODELLER).

Mr. J. E. Jones, Chairman of the Esher Club opened the proceedings by giving a resume of their difficulties with local authority, and called upon various speakers to place specific information before the assembled gathering. Mr. Houlberg — who admitted to having commenced his aeromodelling career in 1909 — stressed the numerous advantages of the hobby, and the many aspects it provided for interesting and healthy recreation both indoor and outdoor.

Mr. Andrews reminded the meeting of the many famous men in aviation who had started with models, and paid full tribute to the value of aeromodelling in full-scale production, etc., and in particular the case of a young Vickers fitter who had advanced his future considerably through the skill and imagination demonstrated in his own-design models.

George ("Famous Biplanes") Cox made the speech of the evening in a well-reasoned discourse on the vital educational implications involved, pointing out the very urgent need for more and more outlets for the absorption of leisure hours.

He instanced the steady progress to a shorter and shorter working week (in Russia as elsewhere) and indicated that the need for active and productive hobbies was becoming of paramount importance.

He "brought the house down" when asking what parents would prefer? To have their youngsters become members of a well-organised club where they met others with like interests, pitting mental as well as manual skill against each other in a worthwhile hobby as provided by aeromodelling; or to see them propping up the local coffee bar, lounging on street corners looking for mischief — or clad in leather jacket blinding down the nearest by-pass trying to exceed the "ton"?

We give full marks to the enterprise of this club in placing before the public their reasonable point of view, and in particular to Mr. Cotton and his fellow officials in refusing to be intimidated by local authority and/or self-righteous ratepayers. Far too many clubs have gone under through a lack of appreciation of the individual's rights, or the will to face up to opposition in the proper manner. May we suggest that the Esher club now considers organising a public meeting at which they face their accusers in open debate, for the measure of support they received at this initial meeting clearly demonstrated that they do not stand alone.

*Never let the so-and so's grind you down !

Fees Up

1961 heralds an increase in contest entry fees for all S.M.A.E. events. Following the February Council meeting it was announced that fees for a full senior member will be 2s. 6d. per event and for a full junior, 1s. 6d., while for the International team trials, there is a special entry fee of 10s. All of which emphasises the point which we made last month, that the S.M.A.E. cannot afford to send teams abroad on its own finances. Since it is the contest section of the Society which gains most benefit from the income, it is only right and proper that any move to increase S.M.A.E. revenue should be first directed at that quarter. It might be mentioned that the old scale of fees barely covered the cost of badges and certificates issued to winners in the less popular events.

Scale Rules

Interest in a subject often comes in waves. For years the matter may remain dormant, then quite spontaneously, it is revived and commented upon by modellers in all parts of the World. Such is what is happening right now with scale modelling.

Could we not have a set of acceptable *International* rules requests a German. Why not get down to a really satisfactory set of rules, asks an Australian. Here in Britain, we have always been conscious of the sparse regulations covering free flight and control line scale, and in the U.S.A. a special Rules Advisory Committee has been hard at work defining the A.M.A. regulations and adding such useful items as Judges guidance on pointage.

Fortunately, the feeling for an improved set of scale model rules is so international and the requests so coincidental that it would seem quite probable that an acceptable set of regulations could be drafted for presentation to the Models Commission of the F.A.I.

There are many who would like to compete in an International scale models contest, and for the control-liners we have no doubt that if added to the *Criterium des As*, it would receive handsome support and stimulate enthusiasm further. No World Championship pretensions are expressed, the enthusiasts simply want a recognised set of rules which could be employed by any nation wishing to include scale, either free flight or control-line in its programme, with, perhaps, F.A.I. Sanction for inclusion in the annual calendar.



"Ionic or Doric, eh?"

It occurs to us that although we have heard from a number of fans on this matter, there may still be others who have good ideas to offer. In which case we offer the invitation for them to write to the Editor who will be appreciative of all points of view.

... and others

All S.M.A.E. clubs have recently had the opportunity of making known their feelings on rule changes for the control-line and free-flight World Championship classes through the issue of questionnaires prepared by specialist sub-committees. Apart from the obvious inherent British conservatism and natural aversion to rule changes which could well be anticipated we are not at liberty to disclose the results of the national questionnaires until released by the S.M.A.E. However we would like to comment at this stage on the admirable procedure of soliciting views of clubs and expert individuals, who have responded well. The earlier system of obtaining a national opinion through area committees has worked as well as it could; but did not always reflect the opinions of everyone involved since so many clubs find themselves (though we shall never understand why) unable to take part in area committee meetings.

World Championships

Location for the September triple free-flight World Champs is now settled. It is to be the military airfield of Forchheim, about 20 miles NNW of Nuremburg and is just about as central a venue as could be obtained. Being on the Continental Express main railway line across Europe, Nuremburg will offer few travel difficulties. Accommodation for competitors and officials will be at a nearby gliding school. It is also proposed that the international Tailless contest, which has in recent years become a Netherlands/Germany duel, will be run at the same venue.

Whilst we appreciate that, given due forewarning, this combination will complete the free flight picture and attract renewed interest into the Tailless class, we also feel that it should be treated as a "warming-up" event, rather like the saloon car races before the grand prix events in motor racing. Such a distinction is necessary to avoid any loss of prestige for the three classic main contests.

Stop Press NATS News

AS WE GO TO press we learn that R.A.F. Waterbeach is *NOT* available for this year's National Championships. Urgent arrangements are being made to find an alternative venue at an R.A.F. airfield in the same area.

LOCKHEED P2V-7



THE PLANE ON THE COVER



THE LOCKHEED NEPTUNE first hit the headlines in September 1946, when a P2V-1 Neptune named "Truculent Turtle" took off from Perth, Australia to establish a world long-distance record by flying non-stop to Columbus, Ohio—a great circle distance of no less than 11,236 miles.

During World War II the land based patrol aircraft for anti-submarine and anti-surface vessel operations rapidly assumed a position of importance to the air forces of the belligerent powers. The "off the shelf" designs adapted to these duties, such as the Lockheed PV-1 and PV-2 which were derivatives of the commercial Lodestar transport, never completely fulfilled requirements and so the P2V, special long range type was ordered in 1944. It is of interest to note that 16 years later the aircraft is in production in Japan, for the J.A.F., whereas the original intention of design was for the aircraft to operate against Japan! To add to any already fine record for long service, the Neptune is likely to remain in operational status until the mid sixties!

With such a record of service, and its popularity as a scale subject, we could not resist the inclusion of the Neptune in its latest form, the P2V-7, in our plans range. This has bulged hood "Stinger Tail" which holds the anti-submarine magnetic airborne detection (MAD) gear and belly radome for forward detection. Also two Westinghouse J34 turbojet engines in wing mounting pods, used to augment take off and combat performance—all adding to the attraction of the model.

Maurice Bodey, already well known A.P.S. designer for his *Gannet*, *Viscount*, *Shackleton* and *DC3 Dakota*, was specially commissioned to design this model Neptune, and has produced a fine example for two 1 c.c. engines. M. E. Herons were used in the prototype, which would fly on either engine with the low all-up weight of 24 oz., and on full power the Neptune offers spritely performance, thanks largely to its efficient, high aspect ratio wing which offers a fairly high flying speed with good stability.

Construction follows that of Maurice's earlier Shackleton (AEROMODELLER, December 1959) as this method proves to be strong and quick to build.

Start by cutting the fuselage $\frac{1}{4}$ in. sheet roof to shape as shown on the plan and cement the $\frac{1}{4}$ in. square locating pieces in position on the roof under surface. Cement the formers F3 to F11 in position on the fuselage roof at

Heading shows author with his completed model, whose convenient manageable size is apparent. Other pictures serve to emphasize the charm of this elegant scale model in its natural metal and grey livery

An official picture of the fullsize Neptune in the alternative colour scheme of all midnight blue

An exciting and unusual
37½ in. span twin-engined
scale control line model
for .8 c.c. to 1.5 c.c. engines
designed and built by
J. M. Bodey of Heswall M.A.C.



their respective locating pieces. Now cut the keel pieces from ½ in. sheet and glue these in position along the bottom of the formers and position F1 and F2 vertically on the keel. The ½ in. by ½ in. hardwood nose U/C bearers are threaded through formers F2 and F3 and secured with slow drying glue.

Shape the nose wheel U/C leg from 14 s.w.g. wire, binding and gluing firmly and then set the fuselage frame aside as you can start construction of the wing.

Firstly cut two W1's from 1/16 in. ply and make up the complete wingspar by cementing these to WS2, cut from ½ in. sheet. Cement wing ribs W1 to W5 on the

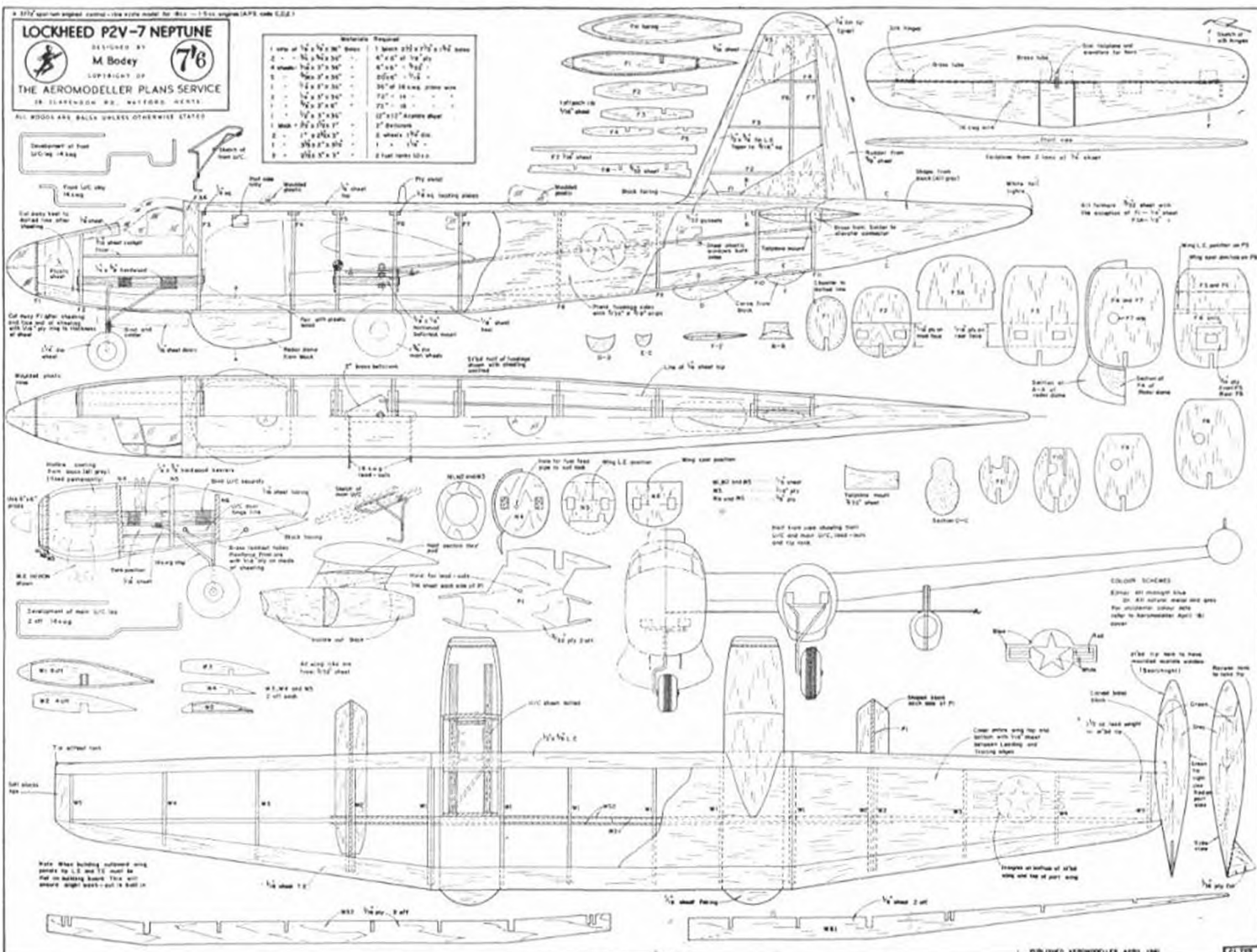
spar (over the plan) and then the 1/16 in. sheet trailing edge and ½ in. by ⅛ in. leading edge (cut down from ¾ in. by ¾ in.) and then shape to section.

The wing can now be cemented to the fuselage formers F5 and F6 by temporarily removing fuselage keel between these formers.

Cut and shape the tailplane from 2 laminations of ½ in. sheet dividing it at the elevator hinge line and hinging the elevator to the tailplane to move freely and smoothly. Fit the elevator horn and cement the whole assembly in position between F10 and F11.

(continued on page 183)

FULL SIZE COPIES OF THIS 1/6TH SCALE REPRODUCTION ARE AVAILABLE AS PLAN CL.783
PRICE 7s. 6d., PLUS 6d. POST FROM AEROMODELLER PLANS SERVICE





RAF Rufforth, York.. Jan. 22nd
reported by Ron Firth and Ken Long

FOR THE THIRD year out of four the Northern Area Winter Rally was held on a day almost perfect for model flying. In Power and Rubber some 44 four-minute maximums were recorded showing the high standard of contest flying in these classes; however the 42 Glider competitors could only manage 5 three-minute maxes, between them in the calm conditions. There were 190 entries in the nine contests held, this being almost double the 1960 total and reflects the increasing interest in these winter events.

The "half-hour scramble" attracted 15 entries with a wide variety of models and this contest was won by Tony Young (St. Albans), whose chuck-glider recorded almost 17 minutes in the air; second place was taken by P. Thorpe (Mexborough) flying a D.C. Bantam-powered unorthodox "Dunne" type biplane, whilst John O'Donnell was third using an unloaded P.A.A. rubber drive model. The event took place about midday, the entrants timing each other over two half-hour periods. The minimum recordable flight in the event was 30 seconds and the maximum 2 minutes.

Tony Young also won Chuck Glider, with 2.51 being the aggregate of the best three flights out of nine. In the Rubber fly-off D. Morley (Lincoln) was half-a-minute better than Henry Tubbs (Baildon); others in this fly-off were Stoker (Baildon), Wisher (Croydon) and Duce (Liverpool). Glider winner D. Partridge (Croydon) repeated his 1960 success, this time with 8.41. In Open Power consistent F.A.I. Power contestant Bert Spurr (Teesside) flying his Oliver-powered *Ripthor* was 45 seconds better than Tony Young (A.M. 3.5 *Amazoom*) whilst poor Savini (Liverpool) left his third round flight late and did not return in time for the fly-off and had to be content with third place.

The Radio event was organised smoothly by the York M.A.S. and a large proportion of the 17 entries recorded flights. Noel Williams (York) won with 92 points.

Northern Area Comp. Sec. Peter Hollis was the hardest working man on the field and he was assisted by members of the Teesside, Baildon, Sheffield, Rotherham, Mexborough and Halifax clubs in running the Main Control point. It is a pleasure to report that all these people received the thanks of several of the competitors as they left Rufforth at dark.

Control-line

At the T.R. circles, admirably situated upwind, a mighty gathering of C.I. enthusiasts were making the most of the wonderfully calm weather conditions. The T.R. events organised by members of the

(1) Open Power winner A. W. (Bert) Spurr of Tees-side with his Oliver Tiger-powered "*Ripthor*" (see March issue for drawing) which made 4:41 in the fly-off. (2) Ray Shirt of North Sheffield with modified Ritz type A/2 which has MVA 342 section, shorter tail moment and internal d/t action. (3) Open Rubber winner D. Morley of Lincoln managed 5:33 in the fly-off. Model has the "Lincoln" tipping fuselage dethermaliser. (4) Joe Barnes (at right) of Liverpool piles on turns for his "Topflite". (See page 200 for drawing and details.) Placed 9th with 11:12

Wharfedale club got underway shortly after 11 a.m. with the first heat in class 1A.

The event ran smoothly, and at the end of the first round the fastest time for the 5 miles was 5.03 by Junior J. Northage of Wharfedale with his Oliver Tiger Cub powered model turning in over 70 laps tank.

Then followed the 1A final, during which Hart of Chorlton and Nixon of Hincley somehow came unstuck, both models pranged after approximately 11 min. 45 sec. had elapsed. As can be seen from the number of entries this class of T.R. model is commanding greater support from enthusiasts than the other two classes.

The class A event boiled down to a 3 cornered fight between Thornaby, Wharfedale, and Stockport. Although times for the 10 kilometres were not exceptionally good, the general standard of flying was very high.

Fastest heat time was 5:26 by Wharfedale's Long Davy team with their ETA 15 model. This team also won the event after a hectic "scrap" with Pasco of Thornaby (Oliver Tiger).

A very welcome sign was the obvious increase in interest in the class B event which this year was well supported. A variety of engines were evident, all of which were well up to the high standards set by the four finalists.

The 10 mile final was a very clean race between ETA 6 c's, OS MAX 29 and an ETA 29V model, all circulating at over 100 m.p.h. The winner was Edwards of Wharfedale who also put up the fastest heat time (3:32 for 5 miles) and showed remarkable consistency throughout the race. His ETA 29V powered model repeatedly turned in 42-46 laps tank.

During the day many staunch "single-strand" users saw their models bite the tarmac due to lines sticking together. It seems certain that a wet and oily runway is no place for this type of wire. Out of three T.R. events no less than 6 models pranged in line tangles which in many cases were caused by one chap who "Always flies on single strand", no matter what the prevailing conditions.

Fortunately spectators were few around the C.I. Area, but this did not stop the race controller from implementing some very strict precautions, with the result that the risk of accidents to people was kept very low.

In conclusion, the organisers would like to thank all those who entered and helped to make the 1961 Northern Area Winter Rally the best ever recorded.

NORTHERN AREA WINTER RALLY RESULTS

Open Rubber

5 in fly-off

(25 entries)

1. D. Morley (Lincoln)	12:00 + 5:33
2. H. Tubbs (Baildon)	12:00 + 5:02
3. T. Stoker (Baildon)	12:00 + 4:39

Open Glider

(42 entries)

1. D. Partridge (Croydon)	8:41
(2:41 3:00 3:00)	
2. B. Sulway (Croydon)	8:06
(3:00 2:35 2:31)	
3. T. Stoker (Baildon)	7:55
(2:20 3:00 2:35)	

Open Power

(39 entries)

1. A. W. Spurr (Teesside)	12:00 + 4:41
2. A. Young (St. Albans)	12:00 + 3:32
3. S. Savini (Liverpool)	12:00

Radio Control

(17 entries)

1. N. Williams (York)	92 pts.
2. D. Blunt (Cheadle)	79 pts.
3. W. Neild (Cheadle)	72 pts.

Chuck Glider

(8 entries) agg. of best 3 out of 9 chucks

1. A. Young (St. Albans)	2:51
2. R. C. Pollard (Tynemouth)	2:09
3. C. D. Carr (Tynemouth)	1:59

1 hour Scramble

(15 entries)

1. A. Young (St. Albans)	16:51
2. P. Thorpe (Mexborough)	13:47
3. J. O'Donnell (Whitefield)	11:40

1/4 T/R

(18 entries)

1. I. Bell (Novacastrina)	11:15
2. L. A. Hart (Chorlton)	188 laps
3. D. Nixon (Hinckley)	144 laps

F.A.I. T/R

(17 entries)

1. K. Long (Wharfedale)	5:43.5
2. T. Pasco (Thornaby)	6:08.2
3. K. Maddocks (Stockport)	8:54.0

"B" T/R

(10 entries)

1. R. Edwards (Wharfedale)	7:32.4
2. J. Bowdon (Cheadle)	9:02.5
3. A. Wallace (Novacastrina)	11:01

Total entries: 190

Fastest T/R heat times

1/4 A

J. Northage (Wharfedale) 5.03 (Heat 2)

A

K. Long (Wharfedale) 5.26 (Heat 3)

B

R. Edwards (Wharfedale) 3.32 (Heat 1)

North Western Area Winter Rally

Chetwynd, Nr. Newport

Feb. 5th.

THIS GRASS AIRFIELD in Shropshire was the scene of the third in the series of rallies in Northern England during the first few weeks of the year. Dull overcast and moderate to strong westerly winds did not deter the hardy enthusiasts, nor did occasional rain showers dampen spirits. Winter rallies are, after all, not for the hearthside flyers! John Hannay was seen airing his new A/2, quite a departure from the "Topscore", and one which might well herald a "Scandinavian" look among British gliders.

Glider winner J. Birks of Chorlton flew his O'Donnell-designed lightweight for a handsome lead in rough conditions

RESULTS

Rubber	1. J. O'Donnell (Whitefield)	...	...	8:27
	2. D. Fletcher (Timperley)	...	...	7:51
	3. A. Wisner (Croydon)	...	...	6:51
Power	1. J. Chadwick (Ashton)	...	...	7:39
	2. P. Manville (Bournemouth)	...	...	7:07
	3. A. Buckley (East Lancs)	...	...	6:35
Glider	1. J. Birks (Chorlton)	...	...	7:04
	2. G. Freeston (Sheffield)	...	...	6:29
	3. B. Spencer (Chorlton)	...	...	5:35

NEPTUNE continued from page 181

The bellcrank assembly can now be made up by firstly locating the bellcrank bearer between F5 and F6 and then securing the bellcrank on the pivot bolt to move as freely as possible. Thread the 16 s.w.g. pushrod down from the rear fuselage to the bellcrank, linking it to the bellcrank and elevator horn, and fit the 16 s.w.g. leadouts, securing the cup washers (as for the push rod), but do not fashion the end loops yet. It is advisable to completely plank the fuselage at this stage.

Nacelle formers N5 and N6 should now be cemented in position.

Secure the engine bearers through N5 and N6 with slow drying glue and position N4 on the bearers. Bind the main U.C. legs onto the bearers, then fit the fuel tanks between. The jet pod cores P1 are now cemented to either wing and both wing and nacelles planked. Follow this by positioning the nacelle rear fairings, cut from block.

Roughly carve the engine cowls from soft block, hollow out, cement each onto N4, and add formers N1, N2 and N3. Sand the whole nacelle to shape.

Remove the cowlings, fuelproof the inside and engine bearers and then bolt the engines in position



Before positioning the fin and rudder, complete the fuselage by adding the rear fuselage fairing from soft block. Attach the fin and rudder to the fuselage and cement the tiptanks in their correct position. Complete the jet pods from soft block around their cores P1 ensuring that they are accurately shaped. Undercarriage doors should now be added, cut from 1/16 in. sheet.

Radar dome and the block blisters on the rear underside of the fuselage are now shaped and glued in position. Sand the whole model and cover the complete airframe with lightweight Modelspan and treat with at least four coats of sanding sealer. When a satisfactory finish has been achieved, the model can be colour doped. The cockpit goes on last to avoid smears of dope.

The colour scheme should of course be authentic. Present overall colouring for Neptunes being natural metal, but builders may prefer the earlier midnight blue of U.S. Navy machines. Choice of colour scheme is a matter of the builder's personal preference, but remember that the Neptune is in service with the J.A.F., besides the U.S. Forces.

The model is best flown on 50 feet lines using 6 in. by 6 in. airscrews and its stable performance will impress any novice at "twin" flying.

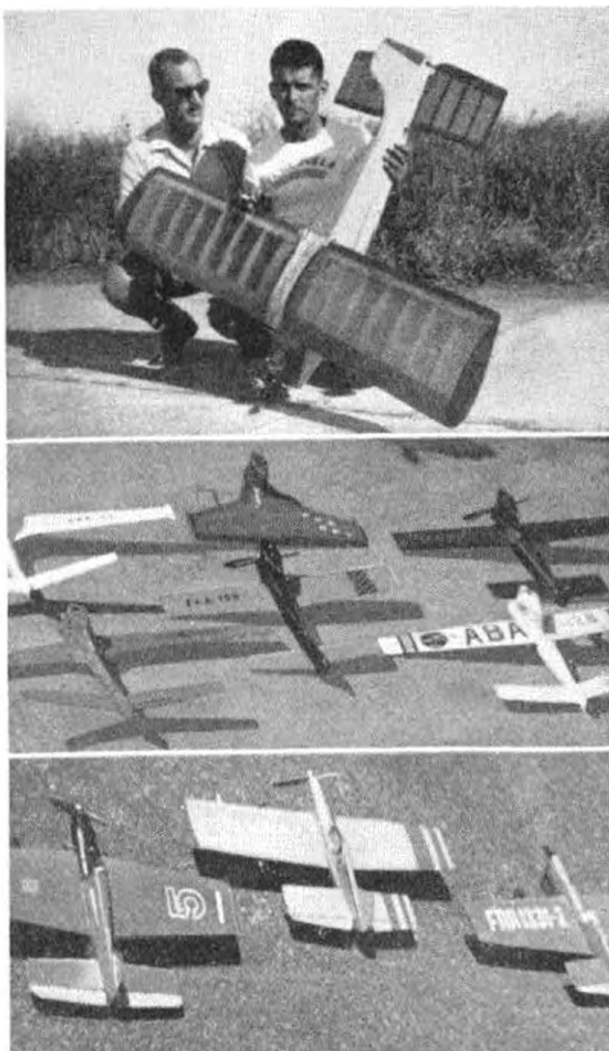
World News

NEWS HAS JUST filtered through of the South American Championships, organised by the Aeromodelling Federation of Argentina from 18th to 27th November last year at Buenos Aires. The meeting opened with C/L stunt and on a team basis, the order of results was Argentina, Brazil, Bolivia and Uruguay. Individually, Brazil provided both the senior (Cesare Gama) and junior (Antonio Nakagami) champs who flew Johnson 35 *Thunderbirds*. After the event up to four *Thunderbirds* were flown at a time in formation, to considerable applause from the public. The aerodrome of Merlo was used for free flight, and for A/2. Brazil again provided the champs and won the team prize. Top man Paulo Costa made 13:36 with a Ritz *Continental*, having one downdraught and four max's. Progress was leisurely with one event per day and next was F.A.I. T/R, won by Argentina using Oliver and Super Tigre G30D. Best time was around 7:30 for an overall speed of 80.7 k.p.h. This was by Juan Zorzoli's team, and he also won F.A.I. speed at 189 k.p.h. with a Super Tigre G20V.

F.A.I. free flight power was won by Paulo Costa again for Brazil, using a Blanchard *Gawn* with Enya 15D. Our correspondent also mentions that the Bolivians were flying O.S. 15 *Dixielands* (how's that George Fuller??). Till this stage, everything had gone the way of either Brazil or Argentina; but in Wakefield, Uruguay provided a good margin shock win to collect team prize though Hugo Benedini of the Argentine placed top with 13:46. Pirelli was used by all the leaders.

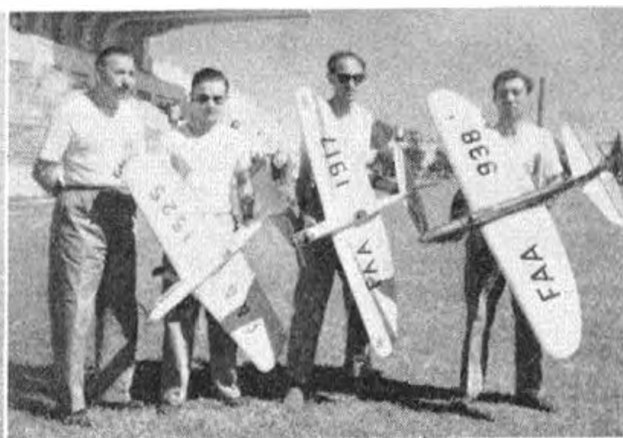
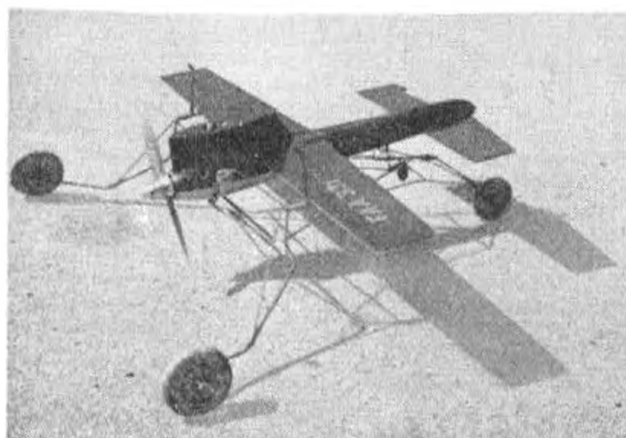
Radio control was perhaps the centre-piece of this Championships and took place at Moron military airfield. Only single control was flown, and on points, Argentina won team prize though the sole representative from Venezuela, Rafael Martinez, took top individual honours with a Fox 29 *Livewire* and Metz Mecatron 3 for rudder and engine. He was closely followed by Alfonso Arantes from Brazil who flew a Webra *Komet Livewire Rebel* with Ace Commander gear.

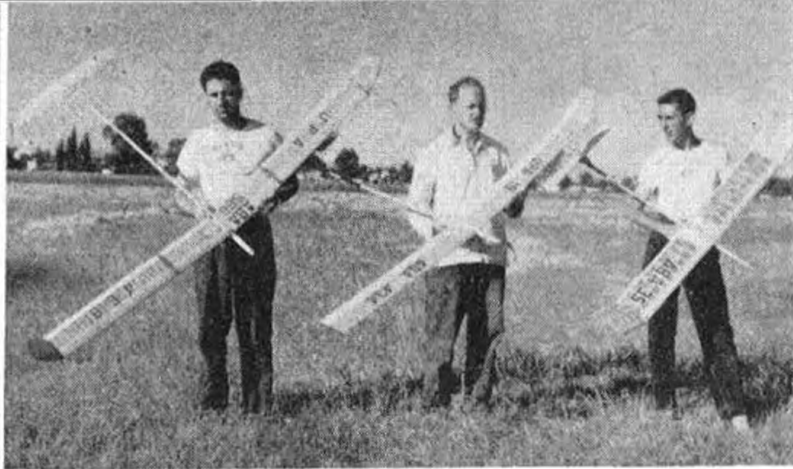
Though no team was present from Chile on this occasion, it is thought that the next Championships in two years time will provide a full house attendance. Certainly from the variety of equipment listed in this contest report it is evident that the S. Americans have all the World's model goods available to satiate their tremendous enthusiasm for the hobby. Next month we shall be telling the story of how they sponsored a New Year's demonstration tour by Dale Nutter and Bob Palmer of Los Angeles which should have advanced



SOUTH AMERICAN INTERNATIONALS

Top: R/C winner R. Martinez and Fox 29 *Livewire* with R. Cereda of the Argentine. Centre: Variety of shapes among the speed entries, Delta and black one from Argentina, vee tails from Brazil. Lower: Argentine team racers have low aspect ratio, use Olivers and Super Tigres. Below: Zorzoli's winning F.A.I. speed entry has a Super Tigre G20V. Below, right: Argentine team in aerobatics with a Nobler and two *Thunderbirds*, using a Veco and two Foxes





Left: Team of power modellers from Bolivia with Dixielander. Centre: A/2 team from Brazil, Walter Hutin and Paulo Costa (winner) with Continentals, and Josao Maia. Right: Brazilian Wakefield entry

the C/L and R/C standards by a great leap.

The mails are taking their time! Another November event was the Japanese F.A.I. Nationals at Narashino in Tokyo. Enya 15D's dominated free flight power with Kusuyama first of 21 competitors at 710 secs., and in speed, the O.S. Max 15's led with Murakami making 174 k.p.h. There were 30 in Wakefield, led by K. Yoshida at 725 secs. and yet only 10 in A/2, won by H. Suzuki at 611 secs. This is the first indication we have had of greater interest for power and rubber having far greater support than glider in Japan.

An inch of water over the frozen ice flying field used for the Helsinki V.L.K. International contest on February 12th made movement, especially towline activity, a bit tricky. Though on the F.A.I. calendar, all 154 entrants were from the home country of Finland, a Swedish team being unable to get across in a four seater plane due to bad weather. Water in the wingtips was a common complaint, and in fact only 94 entries were flown. Fortunately, a low wind speed of 3-5 metres per second relieved the agonies of splashing recoveries.

Highest standard was in Wakefield, Seppo Takko falling only 2 secs. short of perfection with 898 secs., and redoubtable names of Pohjola, Aalto, Hyvarinen, Ella and Hamalainen following in that order, all with more than 825 secs. to their credit. In the A/2 class, Torsten Strang of Vaasa was a surprise winner with a clear lead of 62 secs. over his nearest competitor at 862. New 1961 power rules were used for the very first time and showed that there were about six models capable of making a 3 min. max: off ten seconds engine run. Harry Raulio won at 891, which would have been a perfect score but for an early D/T, and Sandy Pimenoff had to be content with 852 for 2nd place. Strangely, the strongest power club in Finland, from Tampere, was absent so that it no longer stands a chance of getting any International team places as this was the first Finnish eliminator.

"Keep New Zealand green" is an anti-bushfire catchword which the Upper Hutt modellers perpetuate in their newsletter following a grass fire incident while someone was lighting his dethermaliser. Snuffer tubes are suggested, and we reckon this handy spot of advice could well be adopted by many another club flying in tinder dry areas. Another N.Z. news sheet known as the *Prop Wash* comes from TMAC in Auckland and welcomes exchange copies from other clubs. Address is 13, Konini Road, Ellerslie, Auckland New Zealand.

The 7th King Orange Internationals at Miami, Florida, U.S.A. proved to be a benefit for the Chicago modellers who made the 3,000 mile round trip south. Gerry Ritz won Wakefield (693.9 secs.) and A/1 glider (610.7 secs.) while Dan McCombs of Granger, Indiana was flying a Ritz *Continental* to win A/2. (Dan also won Class A F/F power). Also from Chicago, Don Thompson was 3rd in Wakefield, 2nd in A/1 and 1st in Jetex. There were 200 competitors at this meet in the sunny south. To accord due celebration on the occasion of club member Pete Sotich's election as A.M.A. President, a party was held at Gerry Ritz's house. Two reigning World Champs, Gerry himself (for A/2 in '59) and Ed Kazmirski (for R/C in '60) as well as Bob Sifleet, American Nats Grand Champ and Champion of the King Orange meeting were there to pass the honours. Illinois Model Aero Club certainly carried some top level personalities in the model world that night!

From the Wichita Modellers Council news letter we read an interesting requirement in connection with their forthcoming July 12nd Centennial Champs. All first flights must be made by 11.30 a.m., with flights by rounds. Sounds like a point that could be well applied to British Rallies. The Cessna Co. is at Wichita, and has a flourishing Model Club with use of a YMCA Gym: and though the ceiling is only 22 feet, top time for their January 22nd tissue covered rog event was 2:59 by club Treasurer Bill Robinson. Design was not far short of a simplified version of Leif Englund's model in this issue, with straightened edges and sheet prop blades.

At the Japanese Championships. Below: Kikuchi of Hirosaki Enya Group. Right: Iwai, who placed 2nd with 674 sec., comes from Hamamatsu. Bottom right: Narita from Hirosaki, who placed 5th with 627 sec. All use Enya 15Ds. Background looks rather like Chobham Common!





GLIDING is one of this country's most flourishing branches of aviation and it is also a fact that many of today's most successful glider pilots are, or have been at some time, followers of our own hobby. Aeromodellers very often have an advantage over others when learning to glide, through prior appreciation of aerodynamics.

Have you ever wanted to fly the real thing? If you have, then you could become one of the many people who each year learn to glide, through taking a week's course with one of the well-established gliding clubs who offer these facilities.

If you have yet to arrange your vacation and are interested in taking up gliding as a hobby, then a week's course, to learn the arts of the game, will prove a rewarding experience and enjoyable holiday.

The first thing you will want to know will naturally be — how much it all costs. The many clubs holding holiday courses for *ab initio*'s and for pilots of some experience, charge between 10 and 17 guineas for a course, depending on the accommodation and facilities. The fee includes full board and lodging, either in the Club House

or in a local hotel, also gliding instruction and all flying charges.

Instruction is given by qualified instructors in dual control gliders, either the Slingsby T31 (tandem two-seater) or T21 (side by side) and with good weather an apt pupil may achieve sufficient skill after about 40 flights to fly solo and qualify for a Gliding Certificate with "A" and "B" endorsements. After more experience, pupils graduate to the soaring class of gliders including the Olympia, Skylark, etc. It is unlikely that a pupil will go solo during his first week's course, but will be not far short of that (depending, of course, on his aptitude) by the time the week's course is finished.

One's gliding career need not finish on completion of the week's course, and the return home. The many clubs around the country are always glad to

enrol new members. Most of these clubs charge a membership fee which ranges from £5 5s. for clubs near London, to £2 2s. for those in the provinces. Annual flying subscription again varies from £4 4s. to £6 6s. per annum, but this fee covers all instruction and the only charge on top of all this is for your flying, which works out at 3/6 to 4/6 a launch including a circuit and in some cases, ten minutes flying time. The rates after this are charged on an hourly basis and vary from 10/- for a two-seater to 18/- for a high performance glider, per hour.

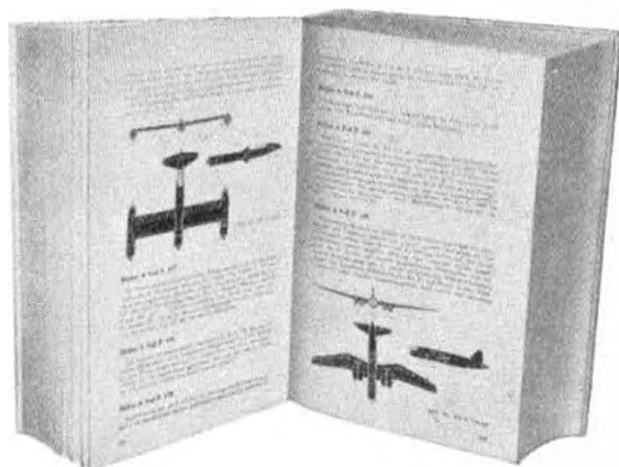
It is difficult to estimate flying costs as this depends very much on how often one visits one's club and how much flying one does. But whilst training, a day's flying will cost about 12/- (*i.e.*, three launches, which is about the maximum for a day's flying). In gliding clubs most of the work is done by the members themselves, who learn to work the launching winch, retrieve the gliders by tractor, or car, operate the signalling bats and keep the flying log. Costs are, therefore, kept to a minimum.

Well, there it is, a really worthwhile way to spend a holiday and begin to enjoy a thrilling sport. We hope to send our own "guinea pig" to sample a course later in the year, to offer first hand opinion on an aeromodeller's reaction to being at the "other" end of the towline.



Heading shows "bungee" launch by Midland Gliding Club on the slopes of Long Mynd. Above is a T21 of the Cambridge Club being tow launched from the aerodrome. On right is a close-up of the same glider with pupil and instructor ready for take-off. Details of gliding courses can be obtained from B.G.A., Londonderry House, 19 Park Lane, W.1.





DIE DEUTSCHEN FLUGZEUGE 1933-1945, by Kers and Nowarra, 816 pages, 693 illustrations, published by J. F. Lehmann Verlag, Munich. DM 68. Available in G.B. price 126s. W. Hersant.

Attractively bound in light blue plastic, this massive tome written in German (with brief explanations in English) is exactly what it sets out to be: a tabulation of all German aircraft produced or projected in the fascinating Luftwaffe era. One-third of the many illustrations are silhouettes of aircraft and missiles, the balance are photographs, many of which have not been seen before. Even for those who cannot read the language, the volume offers itself as an invaluable reference, and though perhaps there is a greater emphasis on uncompleted project prototypes than on those which saw prolonged production through many marks, the galaxy of unorthodox shapes will offer enlightening suggestions for modellers. Two such projects are seen in the illustration above.

EAGLE BOOK OF SPACECRAFT MODELS, by Ray Malmstrom, 64 pages with 9 full size plans for models, published by Langacre Press, price 8.6.

One's immediate reaction to this latest Eagle modelling book is that for author Ray Malmstrom it is a "natural". All nine of the models are most capably detailed in Ray's inimitable manner, ranging from a catapult launched Moon rocket to Jetex-powered Satellites and diesel Hel-saucer. Each is well illustrated with photographs, and for

the novice there is a concise introduction to spacecraft modelling with data on the materials and tools needed. If it is the incredibly unorthodox you seek, or should you be an up-to-date space-minded scholar we have no hesitation in recommending this collection of Malmstrom gems for your enjoyment.

THE MODERN AIRLINER, by Peter W. Brooks, 176 pages, illustrated, published by Putman, price 30s.

Travelling to Zurich last year in the charming company of a dear old lady who confessed to being 83, we endeavoured to offer consolation that the Comet had broken down and that we were having to use a reserve Viscount, in the vain hope that the lady might have been disappointed. Alas, she did not know what aeroplane she was using, nor did she care. Moreover, she rubbed it in that she had been flying abroad for forty years, and though she remembered her favourite pilot was a man named Instone, she neither remembered nor cared what aircraft she had used! To an enthusiast this came as a shock; but on reflection, how typical! Through his executive post with B.F.A. and his intense personal interest in commercial aviation, this author is most qualified to say of British manufacturers, "Too often it appears that national pride, or a reluctance (or inability) to learn from other peoples' successes and mistakes, has led designers along unprofitable lines of development". The sad story of unsuccessful "interim" and "supplementary" post-war prototypes is revealed by Peter Brookes in rather dismal contrast to the competitive progress of American manufacturers.

For the aerom modeller with an interest in full size aviation, this clear and revealing description of the origins and development of the modern airliner offers fascinating reading. We hope that our dear old lady may come across a copy so that she may better appreciate what she has taken for granted throughout her remarkable travelling experience.

LIGHTPLANE REVIEW, by J. Underwood, 43 pages, illustrated, published by Aero Publishers Inc., Box 167 Glendale, California, price \$1.

A new publication which can be expected quarterly and which offers ideal material for flying scale fans. Three-view drawings, descriptions and photographs cover modern and vintage types in quality reproduction. Scope is world-wide and not in any way restricted to the prolific American home-buils. If the first two issues are intended as a "feeler", then succeeding copies are assured of most welcome reception from those who seek this type of information.

BOOK REVIEWS

of special
interest
to modellers

THE FIRST WAR PLANES, by William E. Barrett, 144 pages, illustrated, published by Fawcett, Greenwich, Conn., U.S.A., price 75c.

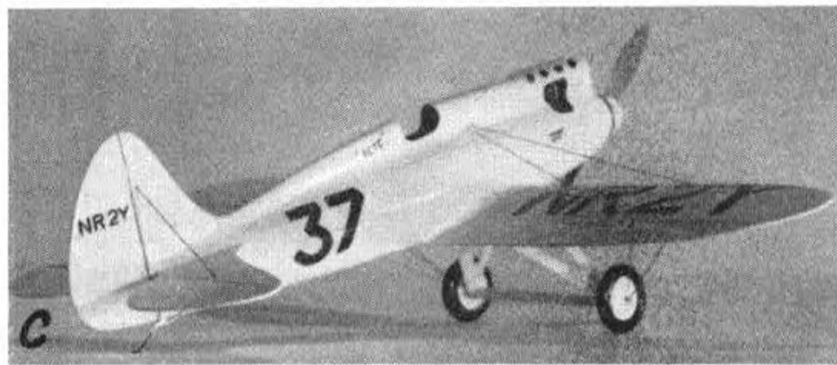
Fawcett books are renowned for packing the largest number of top quality pictures and greatest amount of text matter into an inexpensive paperback. This is no exception, and though the caption style text may not in every way agree with all the experts' opinions, the contents provide a fascinating history of the early war planes which will be valued by all aerophiles. Produced in gravure, it is obviously the result of a long research by the author and includes many rare pictures from the various famous photo libraries of the world.

MINIATUROWE LOTNICTWO, by Wieslaw Schier, 144 pages, published by Warsaw Press.

Quite often we are asked by people who want to exchange correspondence with modellers in the "Peoples Democracies" about materials which can be requested in exchange for British model items. Our answer is always "Literature". This latest book by expert Wieslaw Schier is as good a work on power modelling for the beginner as we have seen from any source. It adopts the unusual pattern of centring almost all of the text on one design, the *Wicherka*, and attractive as it is, the same basic free-flight power shape is demonstrated in widely variant conversions for control-line or glider application. It is also shown as a hydro-model, parachute dropper and photoplane! The effort behind so successful an all-purpose model is most respected by ourselves as plan publishers. If you have an "Iron Curtain" pen-pal, ask for this book and you'll have something we'd have done long ago — if we had thought of it!!



Model News



WHAT IS your club doing as a winter indoor activity? Leif Englund's microfilm covered design in the centre pages of this issue will be an inspiration to those fortunate enough to have the use of a large hall, and there are many clubs who enjoy round-the-pole duration and team race flying. But in many clubs the majority of members prefer models which demand less attention to fine detail; in other words they are more in favour of sports designs as distinct from contest models. Why not follow the example of the Cheltenham M.A.C. and try R.T.P. flying with *scale* models made from the Veron and Keilcraft ranges? Picture **A** shows what can be done. Geoff. Worrell, Chief Test Pilot of the Gloster Aircraft Co. visited the Cheltenham lads to judge their efforts, and was impressed by what he saw. In **B** is that avid scale fan Stan Perry with the *Sopwith Camel* he entered.

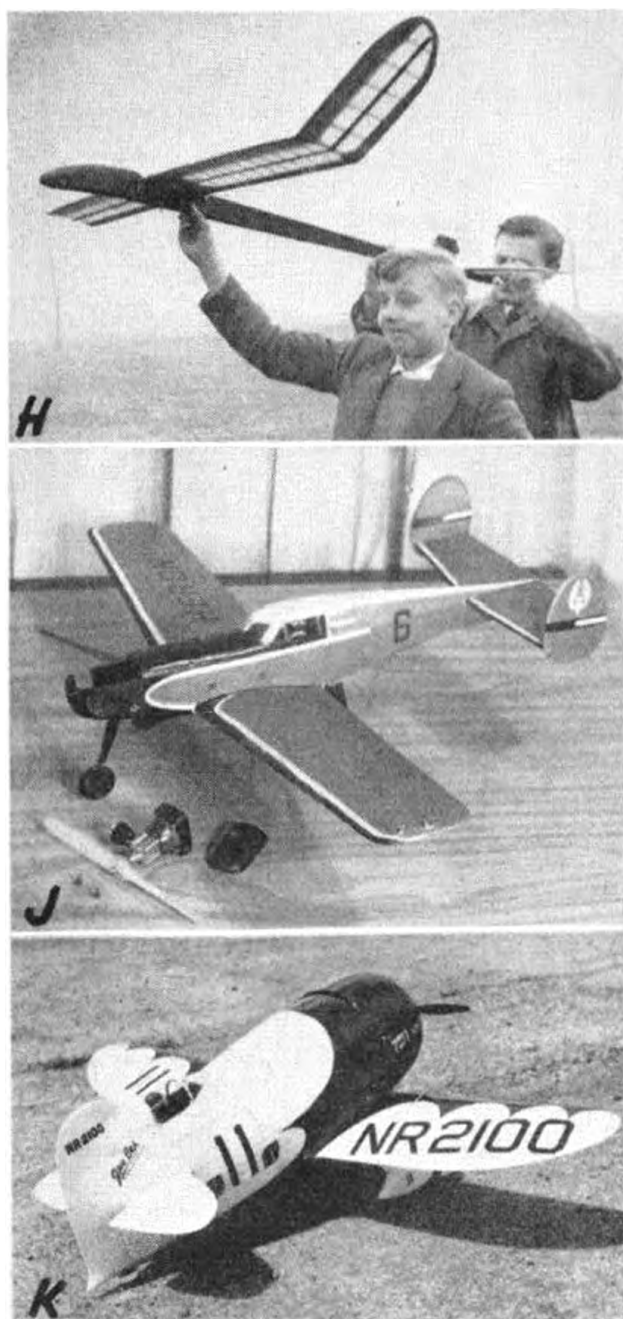
From the simplified post-war style of rubber driven scale model to the pre-war super detailed equivalent in picture **C**. This is a *Howard "Pete"* $\frac{1}{4}$ in. scale racer made from a Cleveland kit by our contributor of racing aircraft types, Harry Robinson, and shows that he is as nifty with his modelling as he is in producing those scale racer drawings.

That the Wakefield in **D** was test flown at 10 a.m. on New Year's day will probably not strike anyone as being unusual until they learn that the designer, flier is that well-known Scotsman Urian Wannop, and the maiden flights took place over his native land at an hour when others are either sleeping off the effects or still celebrating. He's a keen one is Urian, and for him a holiday is a flying day. His Wake is 50 in. span, $4\frac{1}{2}$ in. wing chord, has a 22 by 30 in. prop driven by twelve 26 in. strands of Dunlop, and carries an ounce and a half of ballast in the pylon. Next in **E** is a keen protagonist for the Chas Riall *Rattler* design in A.P.S. K. Sturdy of South Chard, Somerset has a Mills 1.3 c.c. in his Rattler seen here, and has been flying it for more than 18 months. He doesn't think there is another design to touch it for rudder only work and cannot imagine why it has not been built in larger numbers. Moreover, Mr. Sturdy backs his words with contest performance. He won the '59 Devon Rally and took 2nd at the Southern Counties Middle Wallop rally. OMU single channel tone gear is used with an Elmic Conquest escapement.

Maybe our picture **F** is not modelling; but it is none the less interesting for it shows what a couple of keen modellers like T. Minor and G. J. Hindle of Burton upon Trent will get up to when not occupied with all types of model from gliders to F/F scale. The device is a *Bensen-Gyro-Glider* which will be towed behind a car. Having bought it in a damaged condition, the modellers have been busy adding instruments, safety devices and a larger rudder. The rotor is 12 ft. dia. and gives lift for take-off at 25 m.p.h. For the more adventurous, there is also a powered version.

Next, another beautiful scale model **G** from Calgary, Canada. Remember Frank Palmer's *Pfalz* in December issue? That too came from the Alberta centre for scale fans, and this D.H.5 by Gordon Fryer shows the high standard they set themselves. Powered by a Frog 149 diesel, the $\frac{1}{8}$ th scale model is silk covered, has a bungee shock absorbed undercarriage plus torsion bar front leg, carries all scale rigging and dummy fabric lacing and yet weighs only 27 ozs. for its 38 in. span and generous 513 sq. ins. of wing area. Gordon's full scale piloting duties have kept him off the model field for a while; but when he has fully checked the D.H.5 through all tests, we hope to feature it in A.P.S.

How's this for a typical wintery club scene in **H**? Young S. Locke of Burnley is about to test his A.P.S. *Satan* while Senior H. Pickles makes sure of the tail setting. We hope the advice was heeded and only wish



that more adult clubsters would look after the juniors. Want to convert a rubber driven *Frog Heron* to control line? Picture **J** by Peter Bull of Kilkenny shows how to do it. Screw a Cox Pee Wee to a hardwood block, insert in the nose with two screws to hold firm, put a bellcrank in the fuselage and you're ready to fly on 15 ft. lines.

Vern Clement's $\frac{1}{8}$ th scale *Gee-Bee Racer* in **K** is a model that deserves a page of description. Spanning $37\frac{1}{2}$ ins. with a K. & B. 45 for power and full range of throttle control via the Roberts Flight Control system, Vern's model is quite extraordinary for its attention to detail and its designer's fastidious search for accuracy. Only one item is in doubt, and that's the instrument arrangement so if a reader can help here, his advice would be welcome at Box 608, Caldwell, Idaho, U.S.A. Incidentally, Vern sells his *Gee Bee* plan at \$4 a copy.

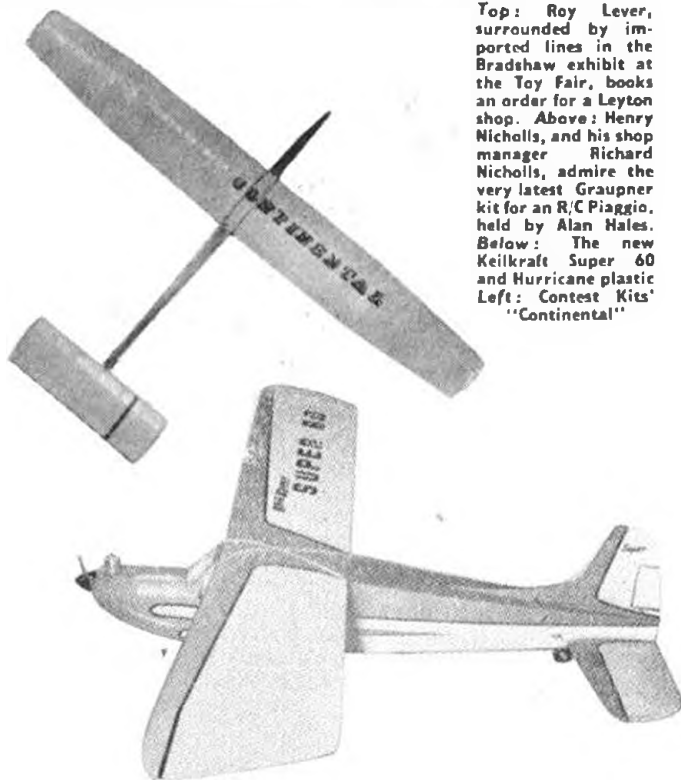
Trade Notes

HIGHLIGHT of the past month has been the eighth annual British Toy Trade Fair, and like it or not, our model trade is closely encompassed within the scope of this same business. Hitherto the Fairs have been held in Brighton; but this year, London was the centre and the West End became the Mecca for toy and model traders from all parts of the world, let alone this country. For that reason we were surprised to see so few manufacturers and wholesalers from the aeromodelling trade among the lists of over 200 exhibitors. Those who "missed-out" on this equivalent of the German Fair at Nurnburg, or the U.S. one at Chicago, will possibly have regrets, for there's no place like an annual show to release new products and assess the market trends for the coming year.

At the A. A. Hales room new items were on show in profusion. All the L. M. Cox ready-to-fly plastics, plus the remarkable *Curtiss Pusher* kit (£5 15s. 9d.) were on full display. Thimble-drome Nylon props from the 3½ in. x 2½ in. three-blader to the 9 in. x 4 in., Handy Reel handles and the well-established engines in the Thimble-drome series were available to order. What caught our eye was the notice on the Tee-Dee range of engines for 1961, of which more is written in *Motor Mart* this month. Undoubtedly, the queen of the ready-to-fly models is the elegant *Comanche*. Its packaging and cleanly-moulded lines are an immediate attraction, and with 32 in. wingspan and 2.5 c.c. engine it even convinces the hardened "make it from a kit" devotee that it is a man-sized job. The Yeoman *Annabelle* 23 in. inland water cruiser for R/C was displayed with prototypes, and a *Hovercraft* for 2.5 c.c. upwards, also useful for R/C which is soon to be another line from the Potters Bar factory. But the radio control model which drew us like a magnet was the latest *Graupner* kit, for the *Piaggio P.149*, on show for the very first time anywhere. This prototype has 3 channels, using Polyton 3 in smart white moulded Tx case, with a Bellomatic on rudder and the new Unimatic for O.S.15 engine speed control. Span of 44 in., and weight of around 3½ lb. gives a high loading; but what a beauty of a fast flyer it must be! Great pride was shown by Johannes Graupner who visited the Fair in person, in the thick moulded canopy which is practically an integral part of the very strong fuselage structure. Extensive plastic mouldings, a fabulous English/German book of instructions and clever detail work place this coming kit high in our estimation as the most adventurous, and up-to-date (for the experienced R/C flyer) available *anywhere*. Price in Britain will be around £5 10s. Another new item on show was the Duomatic servo, of which more in "Over the Waves" this month. Reception of these Graupner lines, handled by A. A. Hales, was immediately favourable so that several enterprising British shops should soon have them in stock.

D. Sebel & Co. had a full show of their *Jetex* kits and

Top: Roy Lever, surrounded by imported lines in the Bradshaw exhibit at the Toy Fair, books an order for a Leyton shop. Above: Henry Nicholls, and his shop manager Richard Nicholls, admire the very latest Graupner kit for an R/C Piaggio, held by Alan Hales. Below: The new Keilcraft Super 60 and Hurricane plastic. Left: Contest Kits' "Continental"



ready-builts on display, plus the only actual flying demonstration of the whole show. A. A. (Bert) Judge was happily engaged in flying a tiny indoor model with rubber band type power and plastic prop, which we managed to catch with the camera. Turning circle was living room size, and by judicious use of wing warps, Bert was using the ceiling dome for extra altitude and duration! Their new kit is *Theron*, designed by a chap with the name of Ron, hence its name! With all plastic fuselage, built up wing and tail, it is a dual purpose towline glider or Jetex (PAA-Loader) flyer of 25 in. span and 22½ in. length. Price is to be 16/9 complete with cement and decorative transfers.

As might be expected, Keilcraft had a massive show, albeit rather packed in one room, but the dominant feature in the floor centre was a double display of the long-expected ready-to-fly plastic semi-scale *Hurricane* with *Cobra*, and the *Super 60* which is without doubt a "pet" project of the Wickford factory. The 20 in. *Hurricane* was hot off the moulds and produced in a quick rush colour of fawn, with the cannon in black. We haven't been told its final colour, but have given them suggestions of Olive Green, Royal Blue or Black; and also expressed opinion of the Spitfire markings on the prototypes! One little appreciated aspect of plastic model design is that of weight distribution, and in the *Hurricane* this necessitates shifting the wing back in order to get the right balance. A pity this, but without use of unwanted ballast, it is the only solution. Nevertheless, K-K's *Hurribus 11c* is a fair representation of the full size — we only wish that someone had proceeded with a Spitfire to mate it! Price is remarkably low at 79/6.

Ready cut ribs, profiled parts, Paxolin engine plate, 16-page booklet, formed u/c, and, above all, a really practical design for the beginner to tackle, are the points most evident in the *Super 60* as an all-out effort to remedy the big gap in the kit trade. Using only the barest dimensional proportions of the *Junior 60*, it is an entirely new design, prototype tested by Eddie K. himself with an Enya 19 for power. This with a Reptone which R.E.P. produced mainly for short range boat control! Hence the push-pull rudder rod in the pic. Plan and booklet give detail for the more popular rotary torque rod action. At 97/6 the 63 in. *Super 60* will be our choice as the staff test model for review equipment — when we can get into the queue for a kit.

In a corner we located a new Contest Kits design titled the *Continental* and looking very much like an A/1 spec glider scaled down from the internationally-

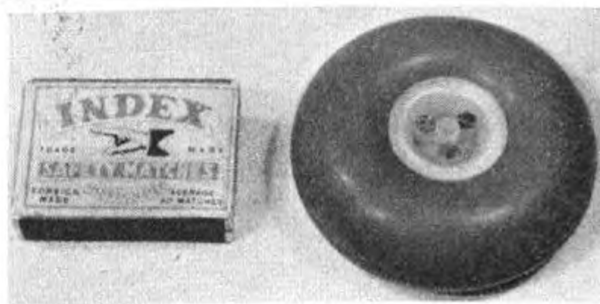
successful *Inch Worm*. Span is 41½ in. for an area of 199 sq. in., and the kit should be available in about six weeks at approximately 12/6.

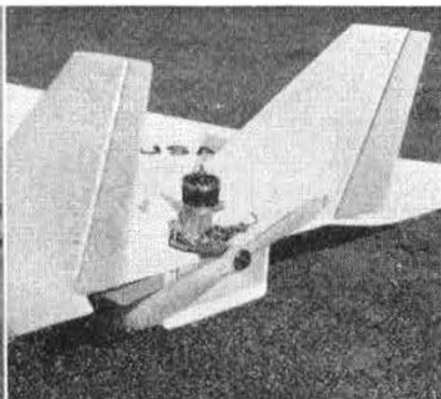
At the Bradshaw Products room, Roy Lever showed us the full range of imported *Sterling*, *Guilow* and *Scientific* lines from the States, plus the "big" kits from *Topflite*, *Veco*, and engines from *McCoy* and others. Never was our favourable dollar situation more evident, and in our presence we were able to see Roy open a completely new account with practically complete stock of all-imported kits. German lines, from *Bruka*, *Engels*, *Pocher* and *Wehra* included the most enormous (and expensive) R/C tanks we've seen; but our eye was taken by something British among all this galaxy of bright boxes, the latest from *Ess Vee Electronics*, now distributed by Bradshaws. It is an all-transistorised, relayless, two channel Rx which can be operated by keying tone or carrier on a tone Tx. The established *CW Microdyne-One* all-transistor Rx is also now available in a tropical version for temperatures up to 130 deg. F. at a surcharge of £1, making it £11 18s. 0d. Another R/C item on show was the prototype of a miniature four-filter set with excellent tone separation and soon to enter production.

All in all, a great show. We are even more sorry for the retailers who did not attend than for the manufacturers who weren't there to book orders.



Right: Bert Judge was flying a little ready-made for indoor work at the Toy Fair. Below, left is the new Sebel kit with plastic fuselage for Jetex or glider flight. Bottom right: From Ed. Johnson, first samples of those famous "sit and stick" wheels used by all the U.S. aces, made by Citizenship and 34/- per pair. Hubs are specially moulded nylon





Over the Waves



THE S.M.A.E. HAS DROPPED single channel radio control from the 1961 National Championships programme. Some of you will already know this, and the decision has met with mixed feelings. Whatever your personal view of this it must be realised that the decision is a reflection on the past performance of single control events. Since 1947 when the radio control class was introduced to the Nationals programme, the standard of flying in the single channel class has become lower every year. We do not intend to pick people to pieces over this but there are definite reasons for the decline in performance of single channel flying up and down the country.

The time has come to develop a completely new outlook and approach to single control flying. It is not the slightest use looking upon it as a stepping stone to multi radio control, a very common attitude among modellers one meets at rallies is "Oh yes, it is single channel but that is only until I get multi channel radio."

Do not form the impression from this that we disapprove of modellers wishing to enjoy the pleasures of multi channel flying, but it must be emphasised that the single channel event is a serious competition class and must be treated as such. It requires as much skill to produce the competition flight pattern as does the multiple control class and to do this, many hours of intensive practice, are required, all of which will amply reward the flier.

The big question arising from the dispersal of the single channel event will be what is the reason for such a move? The answer is that the average performance of entrants at the Nationals in past years has been of such a low standard that many have not even left the ground during their attempts.

It is shocking to hear of entrants getting their models airborne and then turning to the judges and asking them what comes next (one can imagine what the judges answers in such cases are). This sounds far fetched, but it has happened.

The answer to those who object to the loss of this class is to practice hard and improve flying standards. It can be done, and we hasten to say that there are fliers capable of impeccable flying with the simplest of carrier wave gear and simple clack-clack escapement.

If the standard of rudder only flying improves over the coming season, the S.M.A.E. will surely reinstate the single channel class but it is up to the participants in such events to prove its worth in the Nationals.

Top three photographs show Bob Linn's radio control B70 (F/F version page 202) has Veco 19 power. Is Bob's first attempt at single channel R/C. Second down: Chris Olsen's latest — "Upheaval", has nose wheel U/C as well as his "Uproar". We await detail from Chris as to the success of the Trike U-C layout. Next: New kit from Veron is Viscount 54 has 54 in. span for 1.49 c.c. to 5 c.c. depending on radio installed (single or multi). Kit extensively prefabricated. Bottom: Latest from Graupner is low wing Piaggio P.149, beautiful scale subject for R/C. Prototype had three channel Bellaphon/Polyton 3 gear

So there it is, the writing is on the wall, it is up to you rudder wagglers, now go to it, improve your flying.

In last month's "Over the Waves, we mentioned briefly Bob Dunham's amazing radio control speed run, made at the F.A.S.T. Club's 2nd Annual contest, and more information is now available. The actual model for the attempt was a "Bitza", using Bob's Volkswagen wing and pencil slim *Regulus* fuselage. Only control surfaces used for the 123.62 m.p.h. run were ailerons and elevator trim. Wing area is 640 sq. ins. and weight a.u. 91 ozs., power McCoy 60. Interesting feature is that the model's take off was approximately 10 ft. and Bob found that at such high speeds it would fly on the fuselage side area in a true knife edge! Incidentally, Bob had to borrow a receiver and transmitter (Orbit 4) for the flight, back orders just will not allow him one for himself.

Also mentioned last month was Hal DeBolt's *Sonic Cruiser*, of which we have now seen some pictures. The model has a span of 66 ins., for a wing area of 860 sq. ins. The prototype weighs 5½ lbs. with 10 channel equipment for use as a multi channel trainer.

The New South Wales (Australia) R.C.M.C. have developed an interesting construction method, using thin cardboard and it is not surprising that the model for the system is called the flying "Carton". This "quicky," which took 12 hours to construct, has 60 ins. wing span and weighs 3½ lbs.

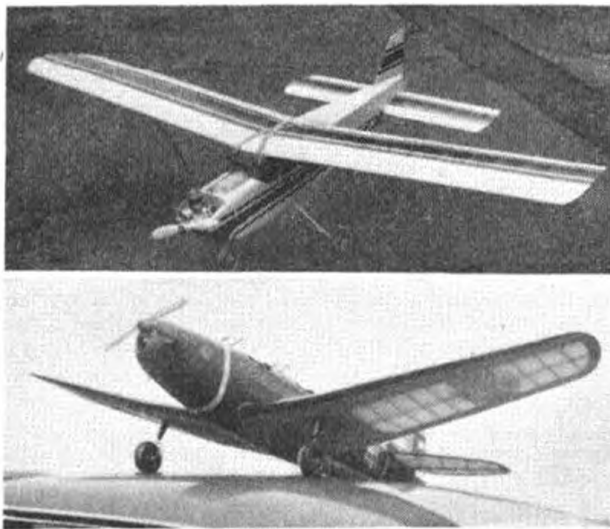
A form is turned on a lathe for the fuselage, then four layers of cardboard are wrapped around this, bonded with carpenter's glue. When the glue has set, the form is removed and several formers inserted. A thin tinplate structure to hold the engine, nose wheel and tank is positioned over the cardboard nose with rubber bands.

The wing is made by cutting out a sheet of cardboard about double the actual chord and the same length as the span. The spar and ribs are glued in, and then the extra width folded over and stapled at the trailing edge.

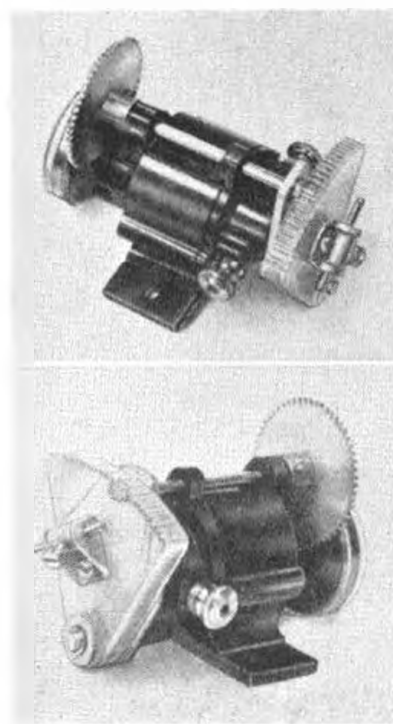
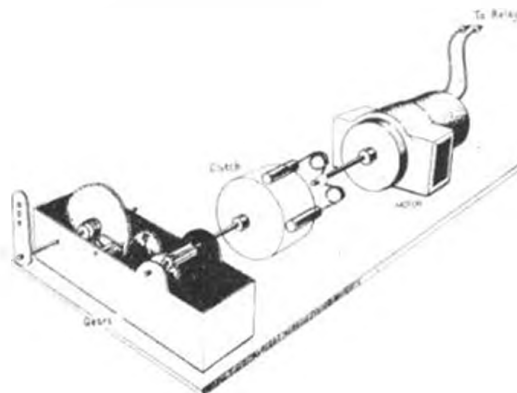
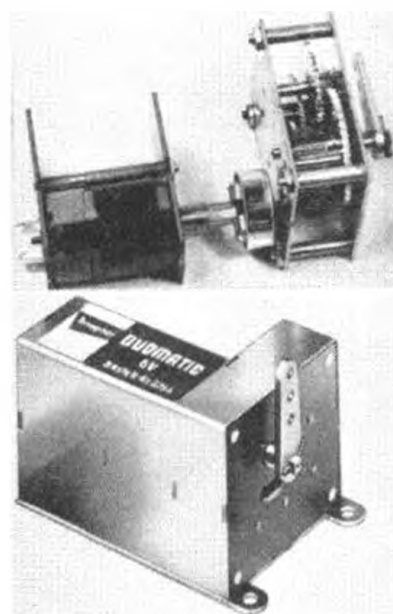
The *Carton* suffered some rough landings during test flights, but came through them with little damage.

The model was flown with F.D. Racer power and Shawtone (Kraft type) receiver plus Bonner Vari-comp. on rudder, and while not exactly the most beautiful machine, it would be no great trouble to produce a real beauty using this construction method.

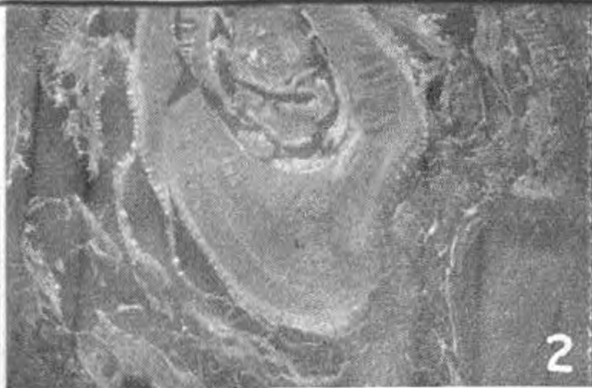
Famous power flyers turn to radio control! Below upper shows Arthur Collinson's "Charger" in livery of one of the American prototypes. Has K & B 15 power. Lower is Silvio Lanfranchi's multi channel PT 19. Doubtless these two modellers will attack R/C with the same competence they have shown in free flight power



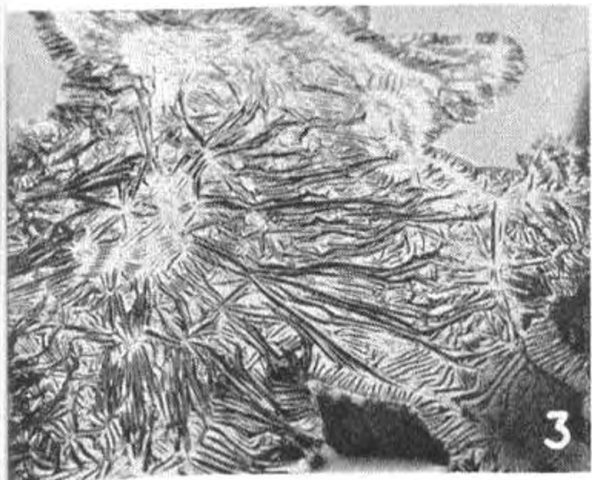
The Graupner Duomatic is a new clutch servo to be distributed in this country by A. A. Hales Ltd. Our friends from Radio Control Models & Electronics have many kind words to say for it. Current drain on 2.4 volts is 120 m/A and 4.8 volts is 260 m/A. Maximum load for 4.8 volts is nearly 4 lb. and transit time .42 secs. Diagrammatic sketch is taken from our German contemporary "Modell" and shows the principle of the original Duomatic, attributed to Alfred Grote of Hamm, Germany. Price will be in the region of £5 5s.



Henry J. Nicholls Ltd. are now marketing the Fred Rising centrifugal clutch servo shown right. Built around the familiar Mighty Midget motor, the servo has fully enclosed clutch and moulded final gear quadrant. Gear ratio is approximately 100 to 1. Current drain on 2.4 volts is 240 m/A, 3.6 volts—360 m/A, 4.8 volts—52 amp. Maximum load on 2.4 volts is 2 oz., 3.6 volts—16 oz., and 4.8 volts—20 oz. Fastest transit time (4.8 volts) is .10 secs. Price will be announced later. Both this servo and the Duomatic have been extensively tested by the staff of our companion magazine *Radio Control Models & Electronics* and test reports will be published in the May edition of that magazine



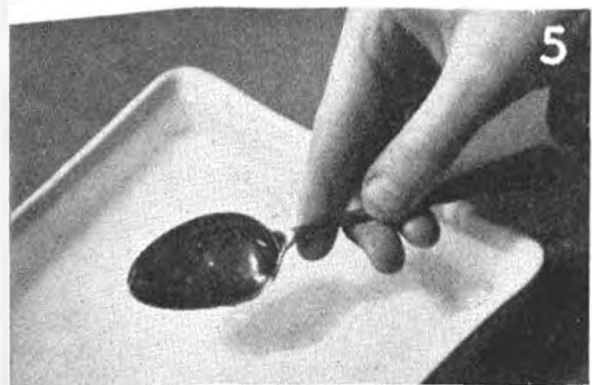
2. Curdled effect of acetone collodion poured on to water
3. What happens when dope alone is poured on to water and allowed to set



4. First clean the surface of the water by drawing a piece of newsprint across it



5. Pour the mixture on to the water with the spoon just above the surface



IT IS NOW UNIVERSALLY agreed that for really successful flights with indoor models, whether R.T.P. or free-flight, Microfilm covering is a "must". When properly made, microfilm should look like cellophane, but should differ slightly from it in consistency. Cellophane is quite "dead" having no elasticity, whereas microfilm should have a slight amount of "give" or resilience; not too much, however, or the covering might balloon out of shape when the model is in flight. Cellophane has a perfectly dry and almost brittle feel about it, but microfilm should be very slightly tacky — just enough to cling momentarily if the finger tip is pressed against it. Too much of this quality and the film becomes positively sticky; while if it is too dry it will not be possible to attach it to the frame work of the model by the simple method of locking the balsa wood and pressing it against the film.

Materials Needed

1. A couple of fluid ounces either of clear dope or flexible Collodion. The latter costs about 8d. per ounce from any chemist.
2. A few ounces of amyl acetate. (With dope, ordinary thinners would do.)
3. One or two ounces of castor oil.
4. A few feet of soft wire, about 18 s.w.g.
5. One or more flat dishes, at least two inches deep, free of soap or detergents which would affect the surface tension of the water they are to hold, and three inches larger all the way round than the particular unit of the model for which the microfilm is needed.

General Method

Fill the dish with lukewarm water and clear all foreign matter from the surface by drawing across it a piece of newsprint. A teaspoonful of the microfilm mixture is then poured on to the water from as near the surface as possible. If the dish is long and narrow, the spoon can be drawn down the centre as the liquid is poured smoothly out. The solution spreads rapidly over the surface, crinkles a little round the edges, and sets in anything from one to ten minutes according to the mixture. Collodion is usually quicker than dope.

To remove the film from the water, bend a length of soft wire into a loop or rectangle, an inch or so smaller than the area of the film all the way round, and with the ends of the wire bent into a strong handle at one end. Lower the frame gently on to the surface of the film, and with a moistened finger-tip, roll the edge of the film up and over the wire all the way round. Slide the frame and film sideways from the water, and hang up to dry.

The Mixture for Microfilm

Dope or collodion alone would not spread properly over the water surface. They would go milky in colour, and dry out wrinkled and hard. Amyl acetate is added to prevent this "blushing" effect and to thin the solutions, making it easier for them to spread, while a few drops of castor oil smooths out the spreading motion and imparts a certain elasticity to the resulting film.

Heading picture shows Phil Read launching a typical indoor model at a recent meeting. Model, by the way, is the usual ultralight job which is Phil's speciality—heavyweight appearance is caused by camera blur or model shake!

MAKING MICROFILM

The advent of the first world championships for indoor models in this country makes this "standard work" on microfilm, by the Rev. F. Callon, originally published some five years ago in *AEROMODELLER* particularly topical

Collodion

First of all a word of warning. There are two sorts of collodion available: Collodion BPC, containing acetone, benzine and amyl acetate (it is sometimes called simply "Acetone collodion"), and flexible collodion, or collodion BP which contains ether and castor oil. Photo 2 shows you what happens when acetone collodion is poured on to water; it breaks up into a sloppy, curdled mess, and does not improve much with the addition of castor oil and amyl acetate. So make sure that the collodion you buy is flexible collodion, with BP on the bottle.

For experimental purposes, a full teaspoon contains about one-quarter of a fluid ounce. An old one-ounce dope jar, well cleaned out with thinners, will do for mixing the ingredients, and since we do not want to waste materials it is best to take one teaspoonful where the formula stipulates an ounce, and divide the number of drops specified by four.

A good film, though rather on the flimsy side, was obtained from the formulae.

Flexible collodion	...	...	...	...	1 ounce
Castor oil	...	...	...	...	10 drops
Amyl acetate	...	...	...	...	30 drops

This will serve for a basis for experiments.

Dope Microfilm

The consistency of the dope used for microfilm should be watery rather than treacly. With same dopes used in the present experiments, it was found necessary to add an equal quantity of amyl acetate before the mixture became really workable. A much greater percentage of castor oil is needed with dope than with collodion. The amount recommended is one teaspoonful to two ounces of dope or banana oil, but quite a good film was obtained by using much more than this, namely:

Dope	...	...	...	...	1 ounce
Amyl acetate	...	...	...	...	1 ounce
Castor oil	...	...	...	...	$\frac{1}{2}$ ounce

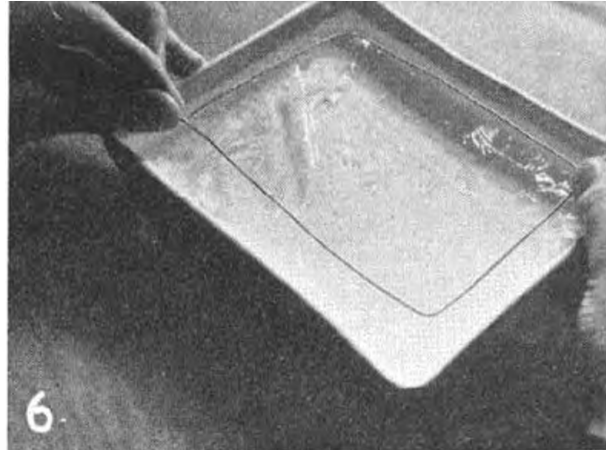
In teaspoons that would reduce to one spoonful each of the first two and measures half-a-teaspoonful of castor oil. Rather a flabby film resulted when equal quantities of all three were tried, but not too sticky for all that.

Final Observations

A teaspoonful of the correct mixture should spread evenly over an area of at least 15 inches by twelve inches. If a thicker film is required, do not alter the mixture, but pour on more for a given area, i.e., use a bigger spoon or a smaller dish. If the film sticks to the sides of the dish trim it carefully away with a razor-blade dipped in water before attempting to curl the film on to the wire frame.

It sometimes happens that the film is prevented from spreading properly by an irregular crinkly edge which forms almost at once after the mixture is poured out, and which encircles a liquid pool of the solution. If this happens, the crinkly edge should be quickly picked up out of the water on a piece of stick, when the rest of the solution will at once spread out to the edges of the dish leaving a smooth unbroken surface.

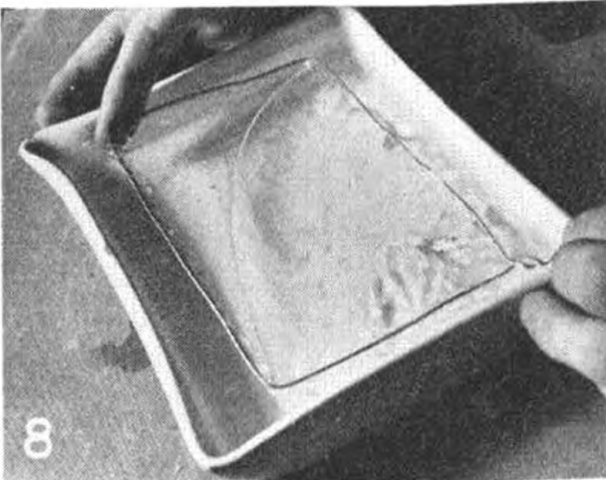
NOW TURN PAGE FOR AN INDOOR DESIGN



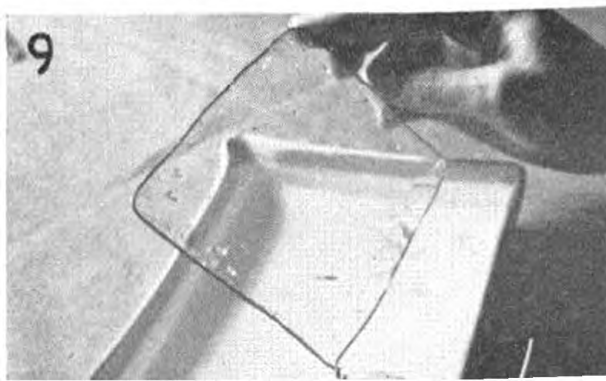
6. As soon as the film has set, carefully lower the wire frame until it is just touching it
7. Curl the edge of the film round over the wire all the way round, using a moistened finger



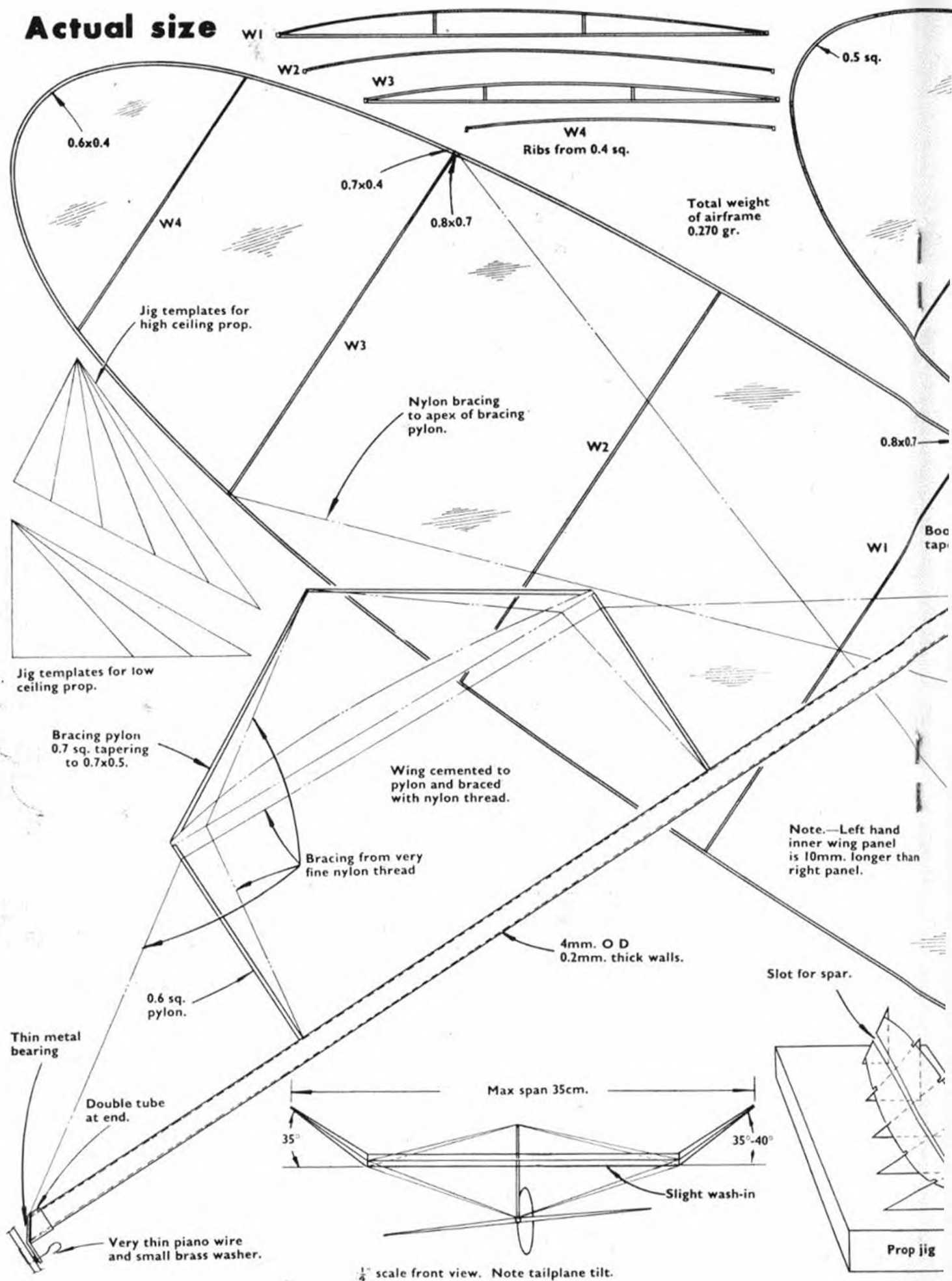
8. Holding one corner of the frame steady by the handle, gently lift the opposite corner from the water, and so slide out the whole

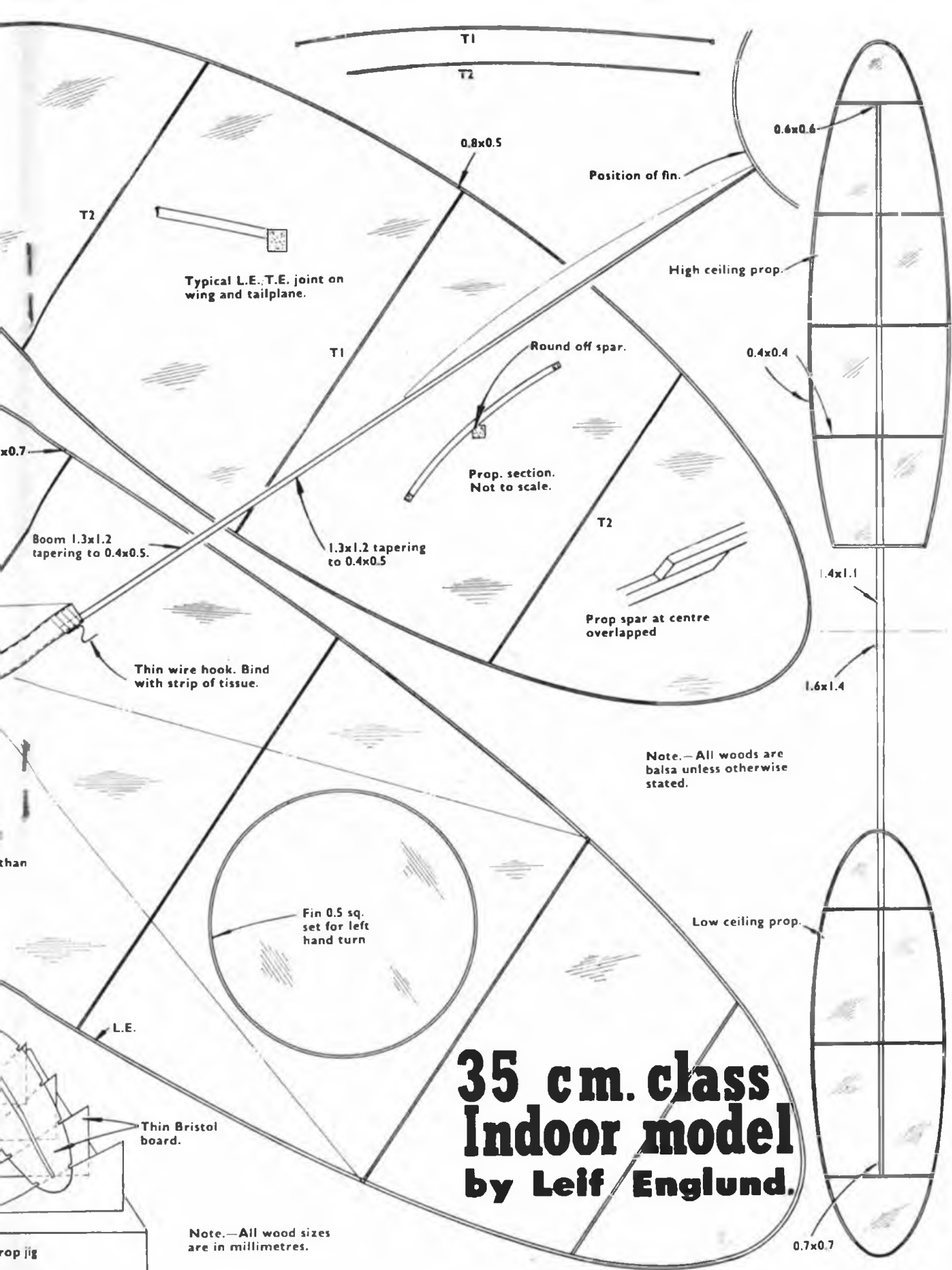


9. Carefully shake off the surplus moisture and hang up to dry by the hook on the handle



Actual size



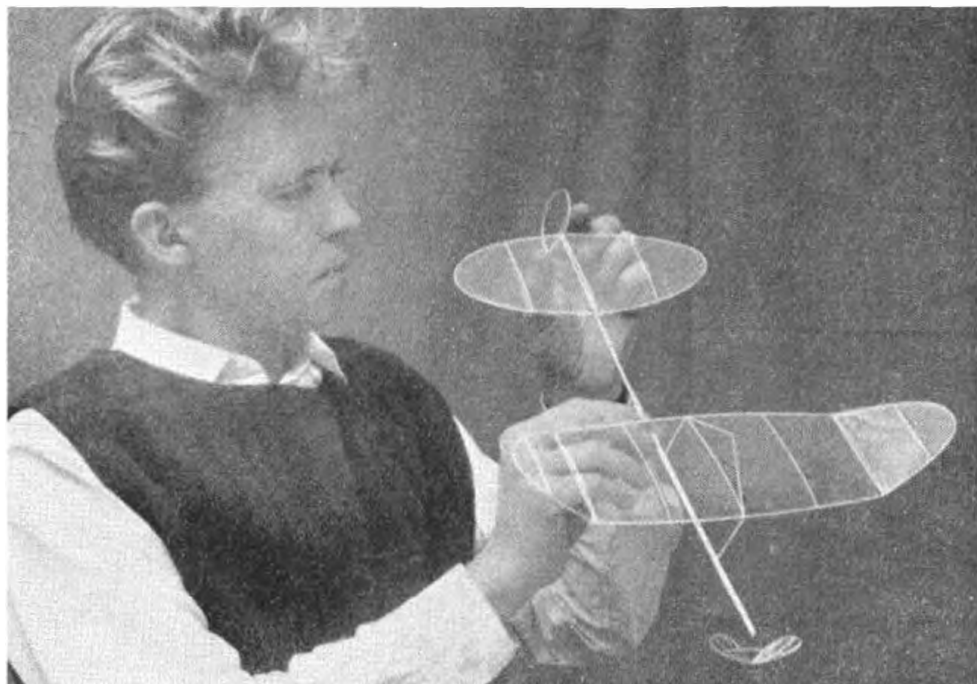


35 cm. class Indoor model by Leif Englund.

Note.—All wood sizes are in millimetres.

Leif Englund's 35 c.m. span INDOOR MODEL

← Drawn full-size
on previous
pages



WINNER OF THE 1960 New Year's day indoor contest held in Helsinki, Finland, this 35 c.m. class model forms an ideal introduction to the fascinating art of microfilm covered modelling. The designer can truly be said to be a European Champion, for he has been a perennial winner of Finnish events and also won his class in the Hungarian Internationals at Debrecen. All dimensions have been retained in the original metric in view of the difficulty in converting to odd thousandths of inches, and in fact, as far as materials are concerned, it is a case of *very* careful selection of 1/32nd sheet which must then be stripped and sanded to the specified proportions. Since weight is the critical factor, the dimensions are shown only as a guide. The modeller must use his own judgment, cutting weight to the barest milligram, commensurate with the required strength of the component. The model drawn is the third in the series and had a total weight of 0.27 grammes of which the prop was 0.045 grammes. Bracing is by nylon fibre, extracted

from American shirts—if we see a few limp collars around the indoor meetings we shall quite understand the reason!

Best duration of 14:26 was made with the larger prop blades and a 33 c.m. loop of hand cut Pirelli. Propeller pitch is used to obtain flight trim, with rudder offset to suit the radius of left turn available in the hall and surface angels trimmed by bending the solid tail boom. Leif always winds his rubber isolated from the airframe. When full turns have been applied the motor is first attached to the prop hook, then the rear fuselage hook. The prop is made over a jig as sketched, first bending the outline and in place, then ribs 2, 3, 4 are set before adding the prop spar (in halves). Add Rib 1 after removing the blade from the jig, then join blades with an overlap of spars at the centre and fit a fine gauge (about 24/36 s.w.g.) wire shaft through the joint between booms. A small brass washer on the rear face of the prop acts as a bearing.

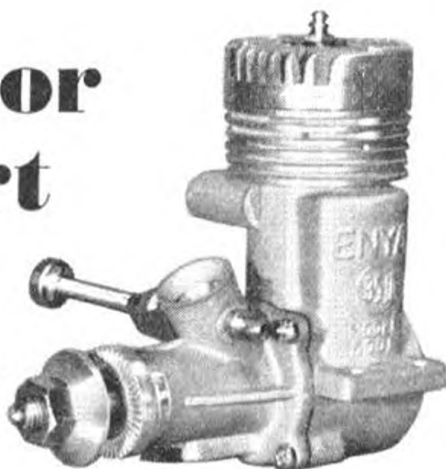
Russian Alphabet

So many modellers are tackling Soviet subjects, ranging from the Mig 15 to Tu 104 that we thought this alphabet, reproduced from the Russian modelling magazine would prove specially useful in the interests of accuracy with the unfamiliar shapes of letter characters.

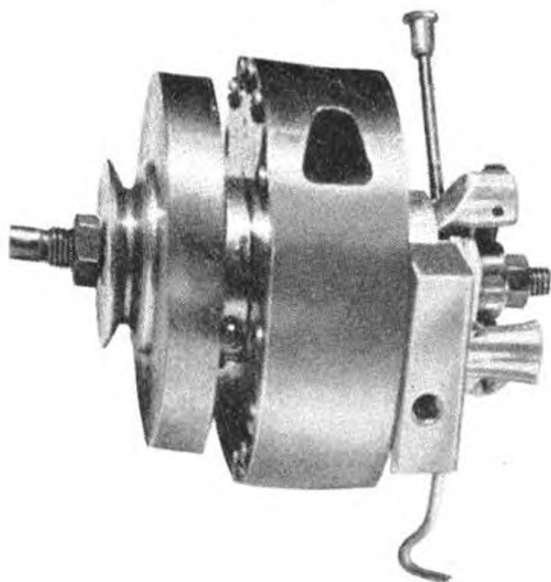
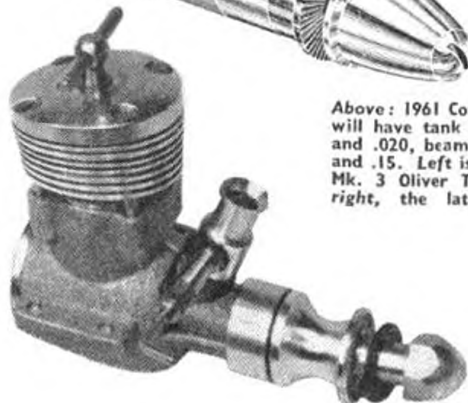


Motor Mart

1961 models
begin to make
their appearance



Above: 1961 Cox Tee Dee engines will have tank mounts for .010 and .020, beam mounts for .049 and .15. Left is the "improved" Mk. 3 Oliver Tiger 2.5 and at right, the latest Enya 35-11

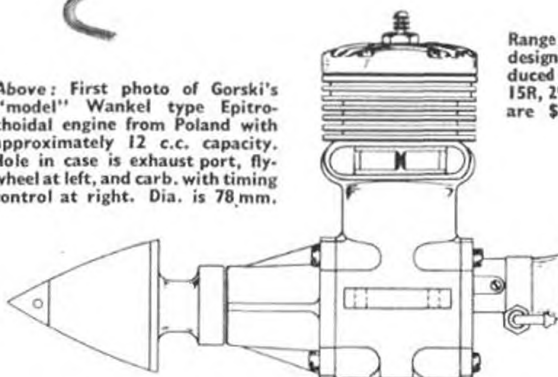
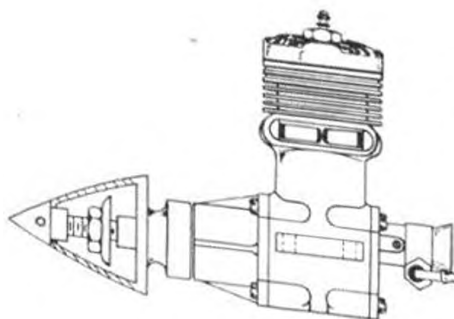


THE NINETEEN SIXTY ONE-DERS is the advertising catchphrase for the L. M. Cox series of new Tee-Dee glowplug engines which we were able to briefly mention last month. As the illustrations at top left show, they have front rotary induction with triple peripheral jets as have been previously employed on Cox engines, and provision is made for pressure nipple tapping in the front housing. Both the .010 and .020 sizes will have incorporated tank mounts and the .049 and .15 flat beam mounts. We are surprised not to see a change to nut from screw fitting for the prop in the case of the 2.5 c.c. "15". Now Cox have indisputable claim to the world's smallest production glow engine in the .010; we wonder how long it will be before indoor R/C becomes the rage! At £4 6s. 6d. each they'll make expensive cuff links even though right for size.

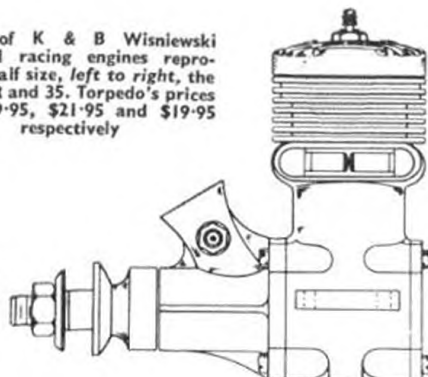
We have an example of the "improved" Oliver Tiger Mk. 3 on the bench. Differences for '61 are a thickening of the front bearing housing and webs, increased diameter of the shaft housing, and a shaft in EN 36 fully hardened and ground. All of which makes for a stiffer shaft assembly, and preliminary checks, long before reaching the run-in stage indicate high potential, in fact this standard engine is equal to earlier "reworked" versions. Similarly, the Tiger Cub is showing well in running-in checks, preparatory for full analysis.

Series —II versions of the Enya engines have been available in the .09, 15D and 15 glow sizes, and are now joined by the Enya 35—11 which is obviously aimed at the combat and stunt market. With a bore of 20.4 mm. and 17.9 mm. stroke, the over-square proportions coupled with large bore induction and apparent provision for pressure tapping under the shaft bearing give promise of high output from this new product of a highly respected designer/manufacture.

Above: First photo of Gorski's "model" Wankel type Epitrochoidal engine from Poland with approximately 12 c.c. capacity. Hole in case is exhaust port, fly-wheel at left, and carb. with timing control at right. Dia. is 78 mm.

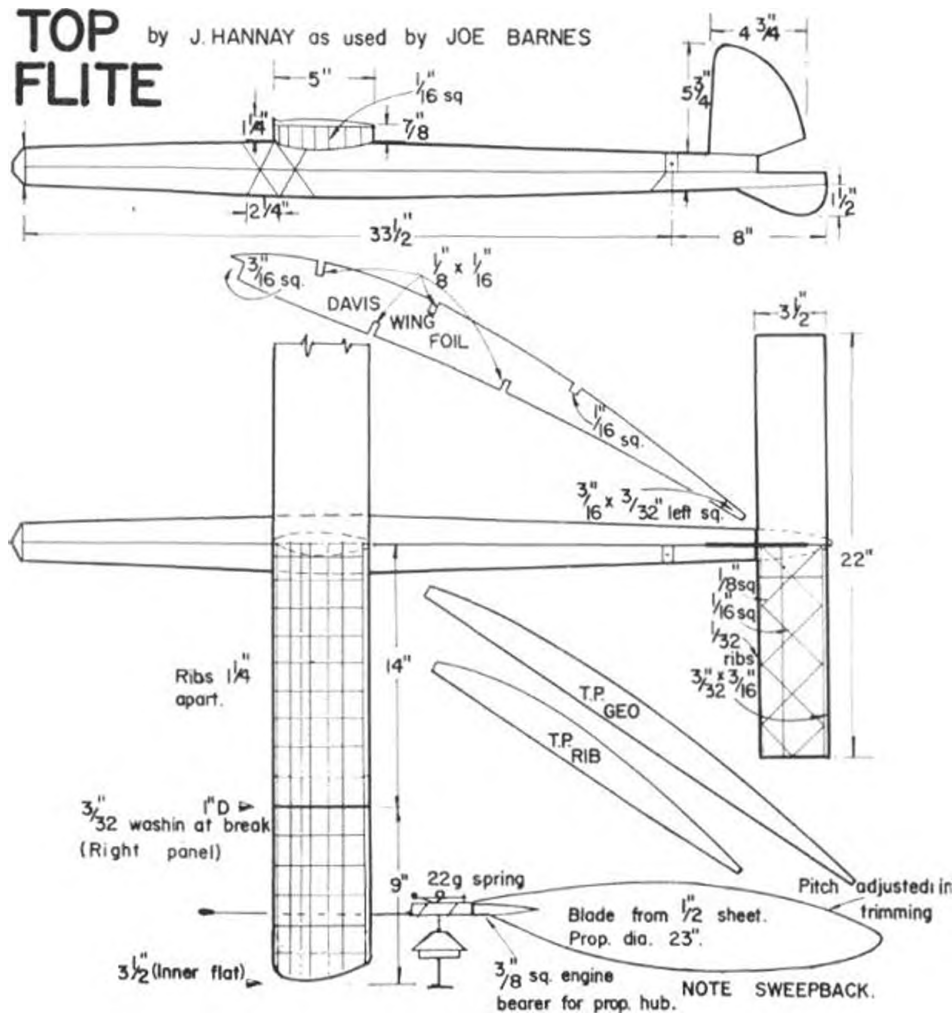


Range of K & B Wisniewski designed racing engines reproduced half size, left to right, the 15R, 29R and 35. Torpedo's prices are \$19.95, \$21.95 and \$19.95 respectively



TOP FLITE

by J. HANNAY as used by JOE BARNES



Five more contest designs

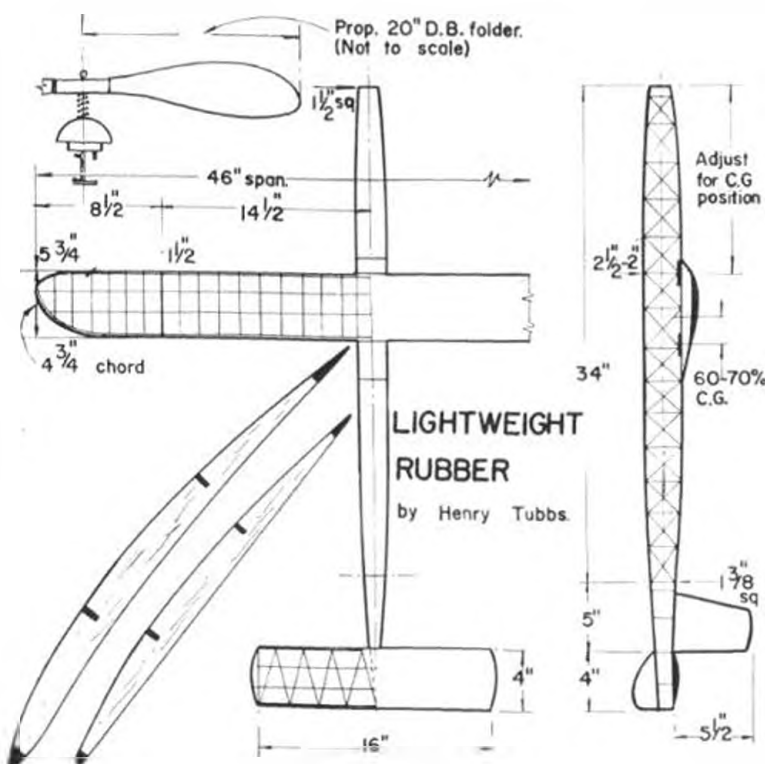
CONTINUING our feature from last month we offer another set of small three views as a source of inspiration for those about to "design" their own models for the coming season. This time we do have a couple of rubber types and each is a non-specification approach to the "open" contest.

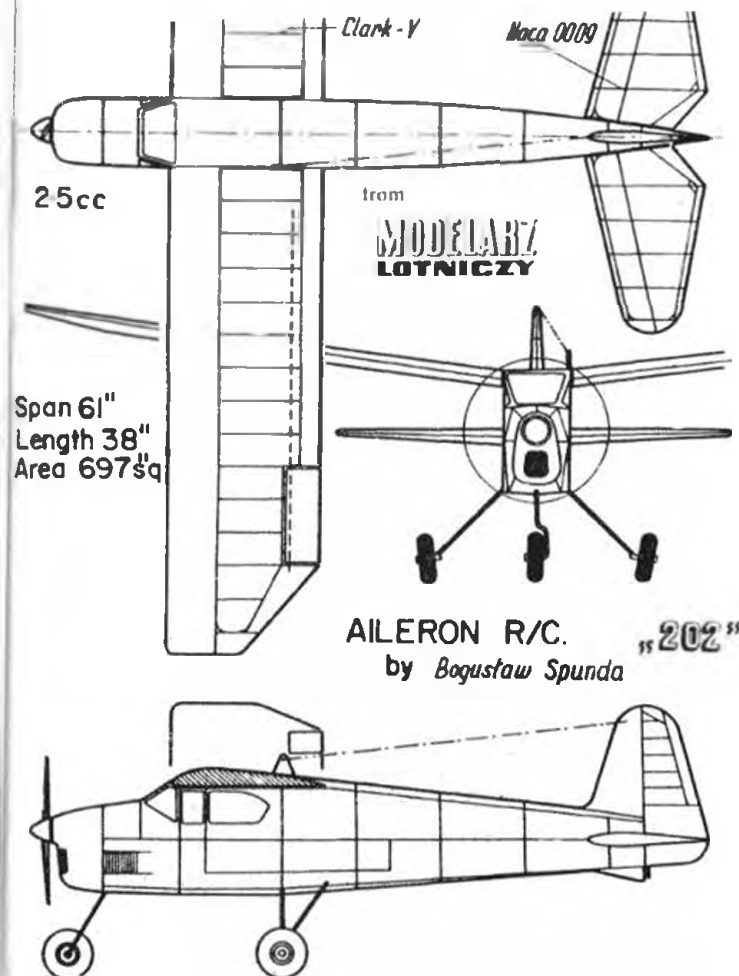
The view has often been expressed that specification events tend to get so rule-tangled that in the end they strangle any enthusiasm for the class. That may well depend on one's point of view as to whether the rules present an unnecessary hindrance, or come as a challenge to design; but the fact remains that the "open" model has never lost popularity and always provides the greater design variety.

TOPFLITE, as presented above, and can be seen illustrated on page 182, is Joe Barnes' version of Liverpool clubmate John Hannay's design which came first at the 1960 Woodford Rally. Joe's version has a single blade as opposed to the original two-blade featherer and despite general opinion on single blade featherers, Joe finds his ideal for turbulent air flying Model was in the Nats fly-off, placing sixth, was first at the Scottish Gala and has other local successes to its credit. Pattern is a fast climb, trimmed by setting prop blade angle. Wing area of 240 sq. in. makes it slightly larger than a Wakefield. Longerons dimensions are 1/4-in. square.

Henry Tubbs of Baildon has been at the rubber game too long to offer anything other than a near conventional approach with lots of "know-how" incorporated. Total weight is 5 1/2 ounces including 2 1/2 ounces of Pirelli made into 12 strands for the 20-in. double-bladed folding prop. Component weights are: Wing, 1/2 ounce. Fuselage with fin and tailplane, 1/2 ounce. Propeller assembly, 1/2 ounce, plus bobbin bands and wing mount which count for another 1/2 ounce.

We are indebted to "Northern Area News" for each of the above drawings and descriptions.

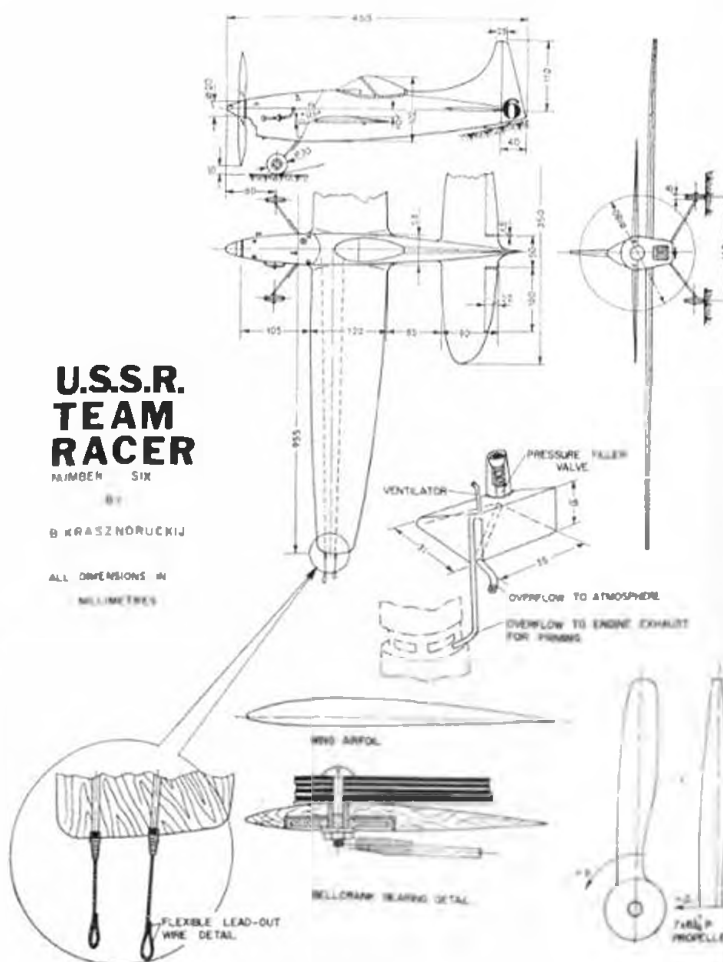




U.S.S.R. TEAM RACER

NUMBER SIX

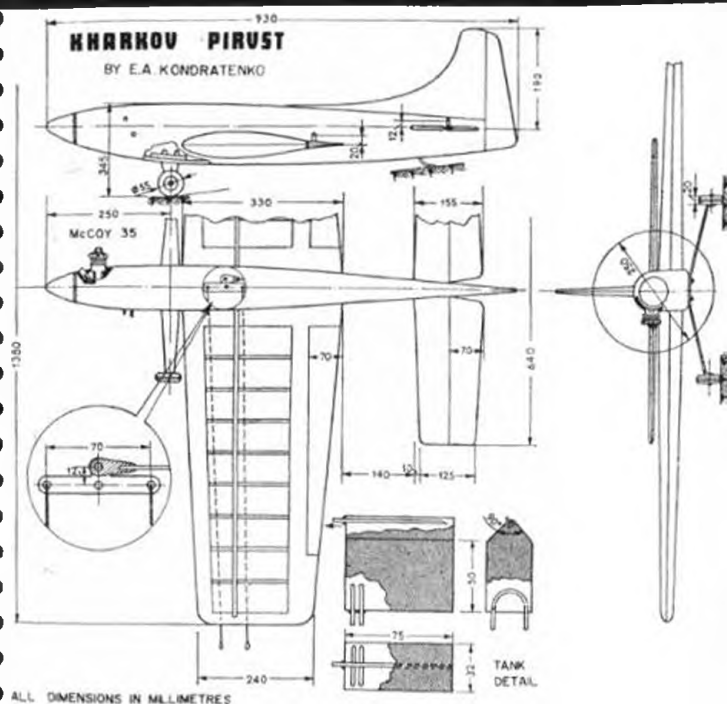
BY KRASZNORUCKIJ

ALL DIMENSIONS IN
MILLIMETRES

Not since Howard Boys tried the system on his scale Topsy Junior Radio Controlled model back in the early 'fifties have we heard of any other experiments in this direction. Yet the great majority of "multi" flyers use aileron control exclusively for directional changes. Spunda's "202" for single channel has small surface area, rather reminiscent of the Ryan NYP controls which were always said to be inadequate as ailerons, but ideal as trimmers — which was after all, what Lindbergh needed. Maybe it's what single control R/C needs ???

Russian team racer, above right, was the one which had greatest potential for the USSR team at Budapest, but unfortunately its team was a trifle over enthusiastic and was disqualified in both heats! "Boris", the owner/mechanic, was a gay spark and was particularly liked by the British team. His model has a novel tank and quite attractive profile. With more engine development, the USSR team racers will be tough competitors in 1961.

Typical of the Russian stunts, Kondratenko's design illustrates to perfection their thick wing, burly fuselage and tall fin approach. Beautifully decorated with coloured tissue lettering across the wing, it flies at about 55 m.p.h. using no more than a 4-in. pitch prop to obtain high r.p.m. from the elderly McCoy. Note the wide track undercarriage for ground stability in take-off and landing. Model was 19th at the 1960 Championships in Budapest with a best flight of 921 points.





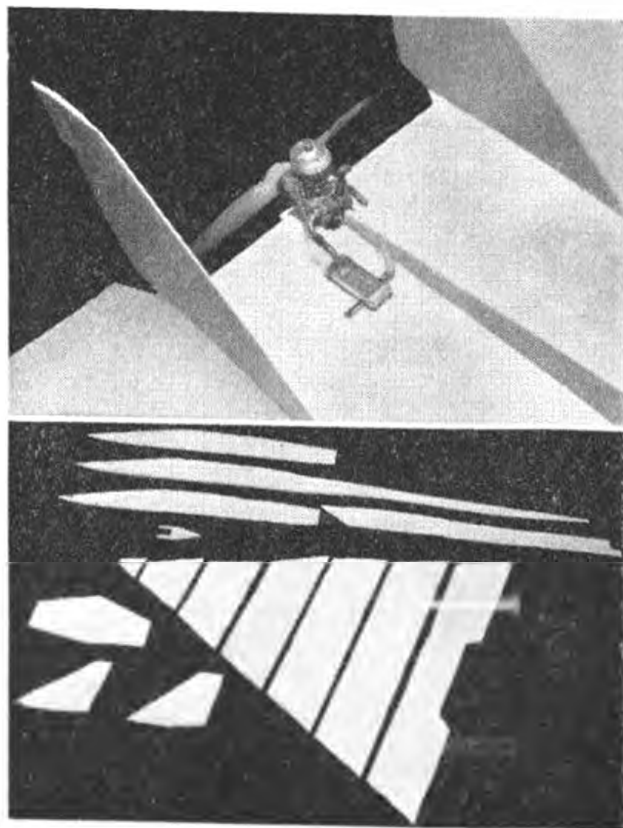
B-70 VALKYRIE

A close-up of Valkyrie spans two generations of Linns! On the left Jack Linn launches his, whilst on right Bob holds his up in plan—a "father and son" team that makes formidable opposition in the States.



ULTRA MODERN "LOW BUDGET" ALL SHEET SEMI SCALE DELTA FOR 8c.c. BY BOB LINN

Below: Close-up of engine mounting, and part⁸, laid out for the all sheet wing and fuselage.]



THE MOST EXPENSIVE aircraft ever to be constructed, costing far more than its weight in gold, the North American B 70 Valkyrie is intended to travel at speeds in the order of Mach 3 at altitudes of 70,000 ft. and it has been proposed to use a machine of this type as a launching platform for Dyna-Soar, Samos, Midas and Discoverer space vehicles. (There's scope for experiment by intending builders of this model!)

In complete contrast, the all sheet semi-scale model offered by Bob Linn will burden not even the tightest budget. The little craft has been specially designed to give hours of fun for a very small initial outlay both in money and time. To those for whom the most important requirement is a model that will take a great deal of punishment and still retain its good flying characteristics, Valkyrie fills the bill. This is one of a series of Bob's B-70's. At the moment he is working on a multi-channel R/C variant having had so much success with his first rudder-only, Veco 19 version.

First step is to glue the fuselage centre member pieces in the rough shape shown on the drawings. It is a good idea to pre-glue all edges before making the butt joints. While this is drying, the wing pieces may be cut out; try to select wood of similar grain and bend characteristics, checking each offcut end to see if it will make one of the other pieces. After all the wing pieces have been cut, assemble them on a large, flat surface and butt join edges with PVA glue. Be certain the edges blend smoothly before starting gluing operations. If possible leave the wing to dry overnight.

When the fuselage pieces have set, the fuselage profile may be traced with carbon paper but be specially careful to lay out the airfoil curve as shown on the drawings as this is very important. Cut out the fuselage including the foreplane slot and the cut that separates upper and

lower fuselage with the airfoil curve. Check to be sure that this cut is not bevelled so the pieces will sit on the wing at 90 degrees angle.

When the wing is dry, sand it on both sides to smooth the joints between sheets, radius the edges and mark a centre line down both faces and cut the slots for the fins. Cement the upper fuselage to the wing surfaces, over the centre line using plenty of pins to keep the wing tight to the fuselage to form the airfoil. After this has dried, add the lower fuselage.

Cut the foreplane and rudders from sheet, sand to shape and add dihedral to the foreplane as shown.

Regardless of engine used, weight must be added to the nose to bring the centre of gravity to the desired position. The best way is to insert the weight in the centre shell before finally cementing the side halves; however, if the builder wishes, he may add it afterwards externally through a hole in the top. Glue the foreplane in place; add the fuselage side pieces, then carve and sand the fuselage to shape with squarish edges.

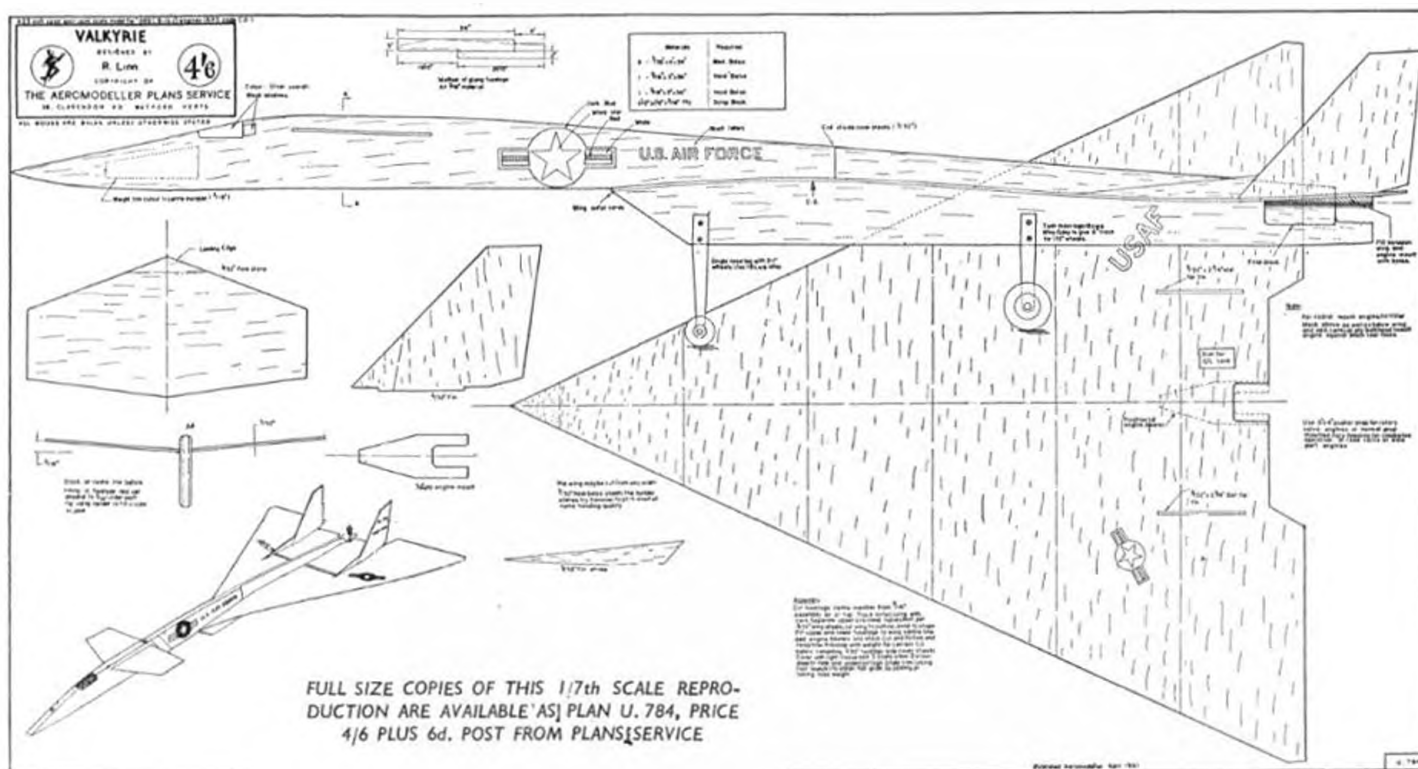
After the wing-fuselage joint is dry the final work on the wing can be completed. Add the fins, making sure they are parallel to the fuselage centre line. Fit engine mount and block bracing.

Covering with lightweight tissue is a good idea as not only does it make the wing easier to paint but it helps to keep the airfoil in shape, strengthens the surface, and prevents fuel soakage. Install the engine using either beam or radial method depending on what ever power plant is selected.

Engines recommended are those that will run backwards, as pusher props are sometimes hard to come by, those with reed valves (Cox, Cobra etc.) or side port (Mills .75) will run in either direction and will take a normal prop fitted front first and run in a clockwise direction. If a separate commercial tank is used the outlet in some cases must be changed to allow the engine to feed fuel in a climbing attitude, a control line tank, slotted through the wing was fine on the prototypes.



After completion and weight has been added to nose to bring the C.G. to point marked on drawings, you are now ready to begin flight tests. Make a number of glides from overhead hand launch. This model must be heaved quite hard to give it flying speed. Don't be afraid to throw it, as good forward speed is very essential. Correct the nose up or down glide by adding or subtracting weight from the nose. After glide tests are satisfactory, prepare for power flights. For the first flight use zero thrust adjustments. If you are using a really hot engine, try about 3/4 power for the first flight. The B-70 can be made to turn either direction by a very small movement of the edge of both rudders or movement of the engine. A few words of warning, remember this is a pusher installation, be sure the air from the prop is blowing the right way before launching! Landing gear is purely optional for those who want to see an inspiring fast climb after speedy ground-run, and if anyone tries to tell you that all-balsa-sheet models have inferior performance, just make sure he is around when your B-70 is *Much*-busting the air at the club ground.



ENGINE ANALYSIS

IMA

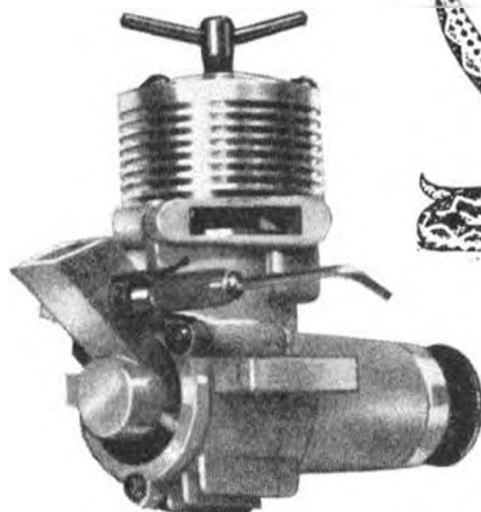


"Viper"

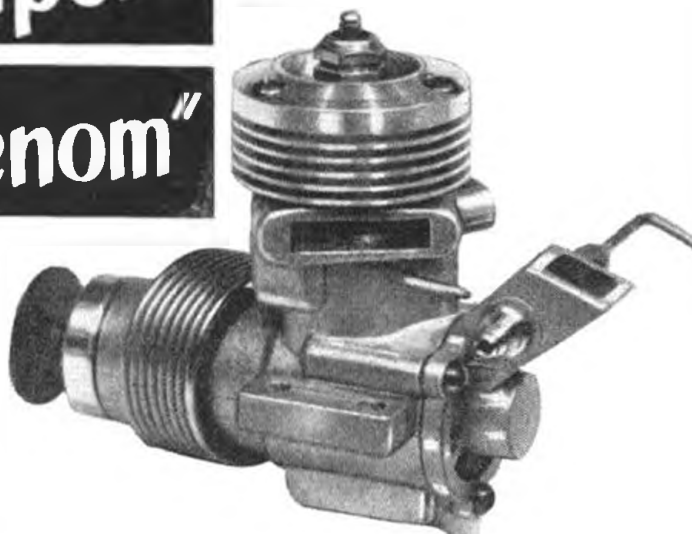
"Venom"

No. 81

By R. H. Warring



These two shots of the new Frog Viper and Venom engines display their robust workman-like appearance and several attractive styling features that will appeal. The glowplug Venom carries in addition an efficient built-in starter, now becoming increasingly popular for "general purpose" engines.



VIPER

OBVIOUSLY INTENDED AS a "racing" replacement of the "150", this new Frog diesel adopts the same bore and stroke as the original engine, but everything else about it is different. It is, in fact, an entirely new engine throughout, originality also extending to the appearance, with angled exhaust faces, crankcase finning and square section rear induction tube, feeding a rear-rotor drum valve. Structurally the engine also incorporates a number of noteworthy features, such as the use of a threaded insert in the top of the cylinder jacket for the compression screw and the employment of lightweight $\frac{1}{4}$ in. bore ball races for the main bearings.

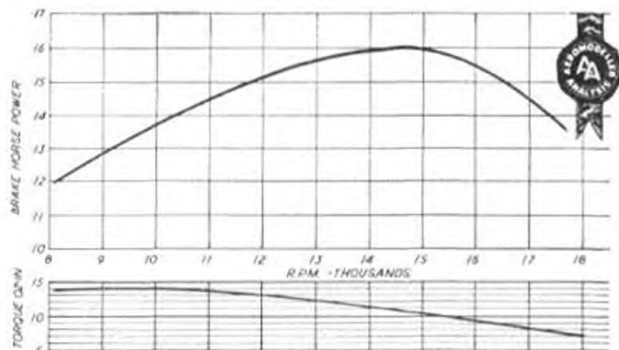
On the general handling side the engine comes up to all expectations. Controls are essentially non-critical, the needle valve extremely so, and starting is positive, following finger choking, on almost any needle setting. If it dies abruptly, it merely means that the needle has been closed too much. If it continues to run slowly and roughly, merely that the needle wants closing down half a turn or so—assuming that the compression is somewhere about right.

The speed range is considerable. From around 6,000 r.p.m. on an 11-inch diameter propeller, up to 19,000 r.p.m. plus on a Frog nylon 6 x 4, starting and adjusting remain non-critical, and running is consistent and smooth.

Nitrated fuels are not necessary for high speed running, nor did they appear to give any appreciable improvement in performance. The needle, being at the rear of the engine offers no hazard to adjust. The screw insert in the head gives the compression screw rather a stiff feel for adjustment, but this one readily gets used to and the setting is held positively. About the only complaint in handling, in fact, is that in common with all high-performance diesels, the cylinder does get extremely hot, especially during high speed runs.

As to performance, the "Viper" appears to be right up to the best in the 1.5 c.c. class. Accepting the .15 H.P. figure as "good" and one which the racing engines should top, the "Viper" achieves .15 B.H.P. just short of 12,000 r.p.m. and beats this figure over roughly the next 5,000 r.p.m. Peak B.H.P., as measured on test, was .16, reached at 14,800. Running was particularly smooth at all speeds above about 13,000 r.p.m. and the "Viper" obviously liked turning over fast, proof of the drum valve to cope with high speed induction and the general timing and porting of the design. The ball races no doubt contribute to the relatively high peak r.p.m. figure achieved and the ability to continue running smoothly at much higher speeds on light propeller loads. Hand starting was used throughout on propeller-r.p.m. tests down to 6-inch diameter sizes with no marked signs of viciousness.

The extreme insensitivity of the needle valve control does tend to make it a little difficult to establish "optimum" settings for high speed runs—mainly because movement of the needle a few notches either way has little apparent effect. This is not so important from the point of view of power performance as fuel consumption, when establishing a "minimum lean" setting requires a little familiarisation. For team race work, $\frac{1}{4}$ -A lappage can vary between about 40 and 64 laps with very little difference in speed. If the setting is lean enough, the half distance can just be beaten. With a very lean setting it should be possible to beat 60 laps, although for immediate re-start it is then advisable to open up the needle



SPECIFICATION

Displacement: 1.48 c.c. (.09 cu. in.)
 Bore: .500 in.
 Stroke: .460 in.
 Bore/stroke ratio: 1.09:1
 Bare weight: 4½ ounces
 Max power: .161 B.H.P. at 14,800
 Max torque: 14 ounce-inches at 9,500
 Power rating: .109 B.H.P. per c.c.
 Power/weight ratio: .039 B.H.P. per ounce
Material specification:
 Crankcase: light alloy pressure die-casting, vapour-blast finish
 Cylinder: case hardened mild steel
 Piston: Cast iron

Contra piston: mild steel
 Crankshaft: case hardened steel
 Bearings: Two Muller lightweight precision ball races (¼ in. base)
 Induction: Rotary drum valve (rear mounted)
 Cylinder jacket: turned dural (threaded insert for compression screw)
 Propeller driver: turned dural
 Spraybar: brass
 Propeller shaft: 3 BS steel screw
Manufacturers:
 International Model Aircraft Ltd.
 Retail price: 80s. 3d.

PROPELLER—R.P.M. FIGURES

dia. x pitch	r.p.m.
9 x 6 Frog nylon	8,000
8 x 4 Frog nylon	11,400
7 x 6 Frog nylon	13,200
7 x 4 Frog nylon	15,000
6 x 4 Frog nylon	19,000 +
9 x 4 Top Flite	9,100
8 x 6 Top Flite	9,000
8 x 4 Top Flite	11,700
7 x 6 Top Flite	12,200
7 x 4 Top Flite	13,700
9 x 4 K-K nylon	9,500
8 x 6 K-K nylon	8,900
8 x 4 K-K nylon	11,000
7 x 6 K-K nylon	11,300
7 x 4 K-K nylon	15,000
9 x 4 Trucut	8,700
8 x 4 Trucut	11,500
7 x 4 Trucut	14,900
7 x 6 Trucut	10,400
6 x 9 Trucut	11,000

*This 7 x 4 propeller is new and will not agree with original 7 x 4 figures published, the original test propeller being of incorrect pitch.
 Fuel used: Frog Powamix diesel fuel.

two or three notches and run out the remainder of the course on this slightly richer mixture.

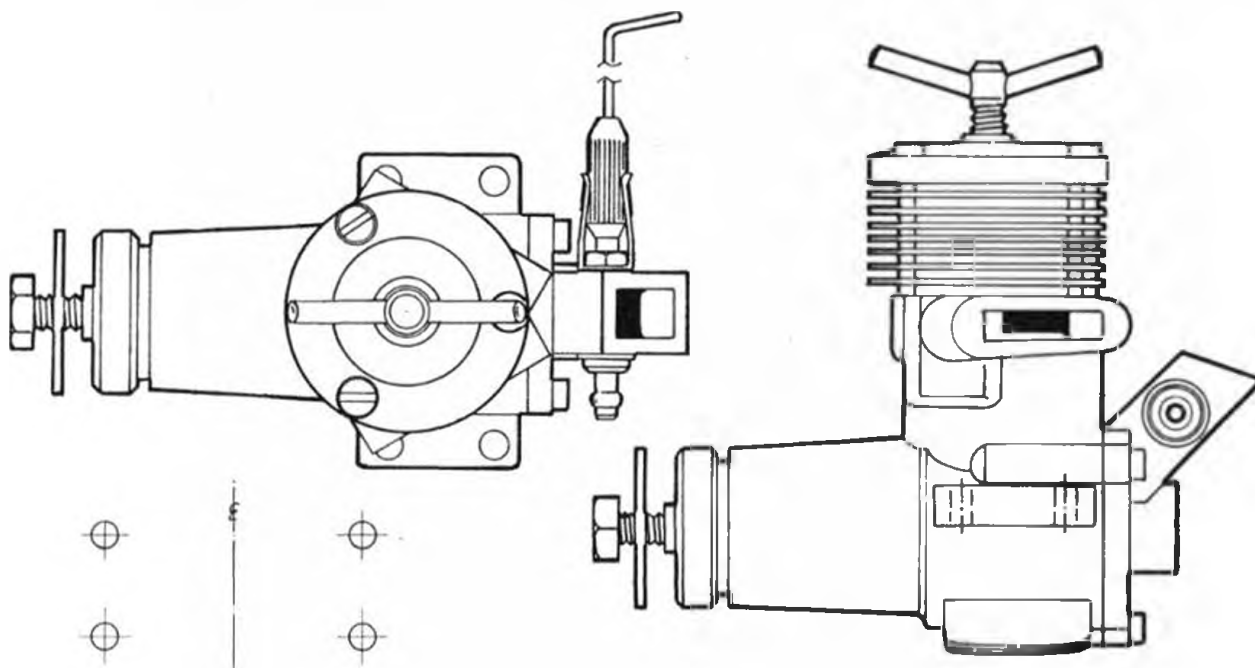
Performance-wise the "Viper" has just one "bug" that we could find. It suffers from excessive vibration over a speed range of between about 11,000 and 12,000 r.p.m. Propellers which give a static r.p.m. figure within this range will smooth out in the air, as r.p.m. increases with the load coming off the propeller; but those giving a static r.p.m. some 1,000 to 1,500 r.p.m. lower could well build up to "critical speed" in the air and produce a badly vibrating model—a condition that could be intolerable on a radio controlled job, for instance. Operating the "Viper" for maximum performance, both the static r.p.m. and flight operating r.p.m. would normally be above the critical speed range and so this problem of vibration would not apply. For free flight a 7 x 4 or 8 x 3 propeller, for example, would give something like 13,500 r.p.m. static, when running is very smooth, speeding up to 15,000 r.p.m. in the air for peak power output. A 6 x 9 for control line speed, although giving about 11,000 r.p.m. static and vibrating at this speed, would probably speed up to 13,500 r.p.m. in the air, again in a region of smooth running. On the other hand a 9 x 4 or 8 x 6 propeller, giving about 9,000 r.p.m. and smooth static running could well speed up to 11-12,000 r.p.m. in the air and yield bad vibration.

Perhaps we are elaborating too much on this particular point. The obvious application for the "Viper" is at

13,000 operating r.p.m. plus and the top end performance is at least up to the best racing standards in 1.5 c.c. size. At such speeds the "Viper" is delightfully smooth running and consistent. And for sports flying under "docile" conditions, the low speed performance permits a 9 x 6, 9 x 4 or even a 10 x 3½ to be swung with ease and smoothness—and really develop high thrust.

Design-wise the pressure die-cast light alloy crankcase unit incorporates a large diameter bearing length into which are press-fitted Muller precision lightweight ¼ in. ballraces taking the plain ¼ in. diameter hardened steel crankshaft. The front of the crankshaft terminates into a taper immediately in front of the front race, and on to this is fitted the dural propeller driver. The propeller shaft itself is simply a 3 BA. steel screw screwing into the crankshaft, virtually eliminating any possibility of crankshaft breakage—only the screw is likely to break in a crash landing and this is readily replaced.

The lower cylinder jacket, integral with the crankcase, incorporates three cast-in transfer passages and elemental exhaust stubs, one each side and each angled backwards



Displacement: 1.48 c.c. (.09 cu. in.)
Bore: .500 in.
Stroke: .460 in.
Bore/stroke ratio: 1.09:1
Bare weight: 3½ ounces
Max. power: .075 B.H.P. at 10,000 r.p.m.
Max torque: 9 ounce-inches at 7,500 r.p.m.
Power rating: .05 B.H.P. per c.c.
Power/weight ratio: .02 B.H.P. per ounce
Material specification:
Crankcase: light alloy pressure die casting
Cylinder: case-hardened mild steel

Crankcase: case-hardened steel
Propeller shaft: 3BA steel screw
Piston: cast iron
Cylinder jacket (integral head): turned dural
Glow plug: A.M. 2 volt
Bearings: plain
Induction: rear induction via drum valve
Spraybar: brass
Starter spring: 7 turns 1 in. diameter 16 s.w.g. steel wire
Manufacturers:
International Model Aircraft Ltd.
Retail price: 58s.

PROPELLER—R.P.M. FIGURES		
<i>dia. x pitch</i>		<i>r.p.m.</i>
9 x 6 Frog		6,600
8 x 4 Frog		8,500
7 x 6 Frog		10,000
7 x 4 Frog		10,400
6 x 4 Frog		13,800
7 x 4 Top Flite		10,000
8 x 4 Top Flite		9,300
7 x 6 Top Flite		9,250
7 x 4 K-K nylon		10,600
7 x 6 K-K nylon		9,000
8 x 4 K-K nylon		9,400
8 x 4 Trucut		9,300
7 x 4 Trucut		10,700

Fuel: Frog Redgelow

jacket). The compression ratio is high and of the order of 11:1. The only other internal difference is that the "Venom" is a plain bearing engine. The large diameter front bearing housing is cored out and supported by webs, so that the section is not solid and heavy, and the shaft runs in a plain bearing reamed and honed in the casting material. The remaining features in common also apply to the timing, which is identical.

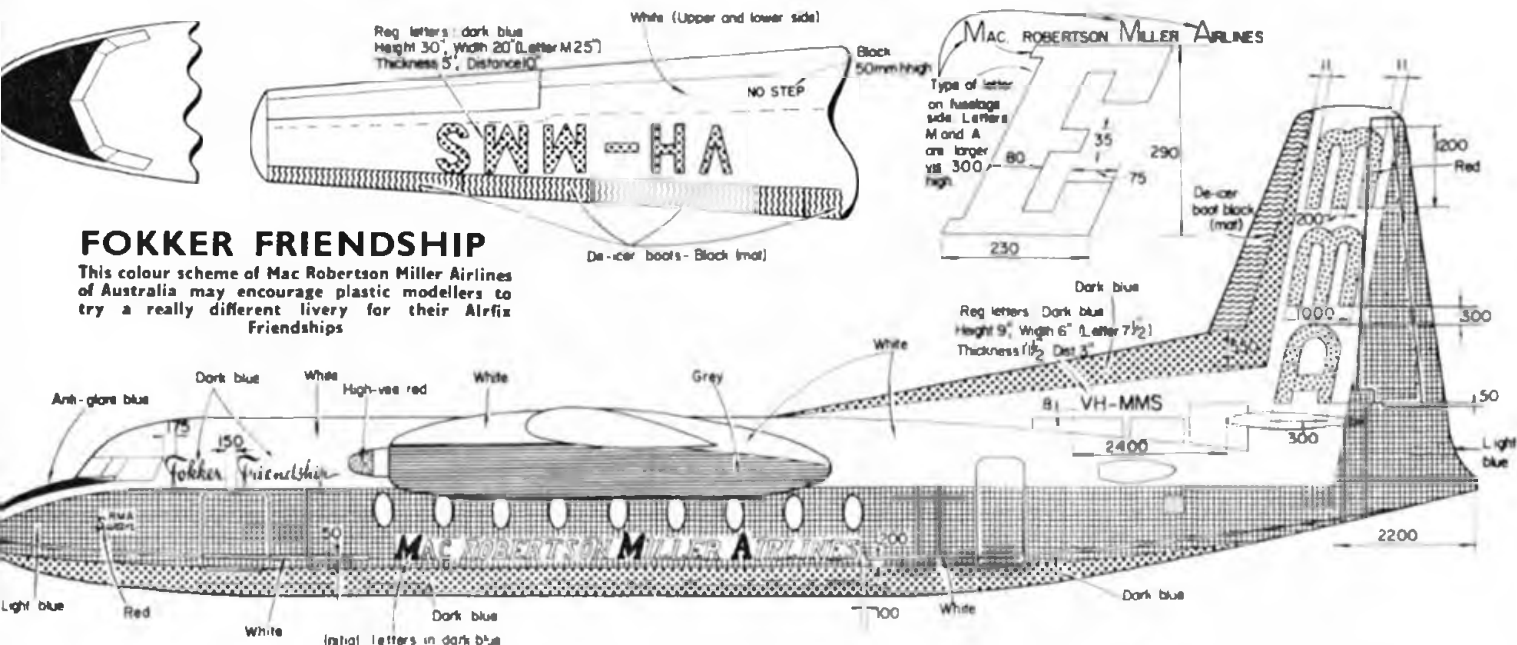
The "Venom" likes to be a little on the wet side for starting, when it will fire and run on almost any needle valve setting. Only if the needle is closed too much will it die out completely. Response to needle valve is just as non-critical as with the diesel and, with only this control to worry about, it should ideally suit beginners—especially as they have the spring start to assist them as well. About the only way to make starting difficult—apart from having the cylinder completely dry—is to thoroughly flood it so that the plug can no longer glow. Naturally a good healthy glow from the plug makes for easiest starting, but we found that the "Venom" would still start—requiring a few more flicks than the usual "once and away"—with a badly flattened battery which would probably have given no response at all on the majority of glow engines.

Running is smooth and consistent at all load-speeds up to about 10,000 r.p.m. For some reason or another it does not appear to want to go much faster and even on really small sizes of propellers, the increase in speed is not very great—e.g., only just approaching 14,000

r.p.m. on a 6 x 4 Frog nylon. Nor is it all that happy at these higher speeds. On the other hand, it runs perfectly well and consistently on propeller loads down to 6-7,000 r.p.m., favouring the selection of larger diameter sizes than would normally be used for 1.5 c.c. glow motors. An 8 x 4 or even a 9 x 4, would make a good free flight sports propeller, for example, with an 8 x 4 also probably being a good choice for control line. There would appear little to be gained in using smaller sizes. This ability to "slog" on large props. makes the "Venom" ideal for sports flying.

All the initial tests were run on Frog Redglow fuel (currently 25 per cent. castor, 70 per cent. methanol and 5 per cent. amyl nitrate). In view of the high compression ratio, it was thought worthwhile checking if any improvement was realised on a nitromethane fuel, but on 15 per cent. nitro there was, again, no noticeable improvement.

We can only conclude, therefore, that this is a docile engine, best left as it is and run on straightforward, standard fuel to realise fully the advantages of its easy handling qualities. The makers themselves make no claim for the "Venom" being a "performance" engine and have aimed at producing a good, sturdy, reliable and easy-starting sports engine for beginners or "Sunday flying". In this way they appear to have succeeded—and also succeeded in adopting a spring starter which should last the life of the engine without any trouble.





PART I OF A NEW SERIES BY JIM BAGULEY

THERE HAS BEEN a tendency, in this country at least for gliders to be flown as a "second string" to another branch of modelling, e.g. rubber or power. However, the standard of flying is now becoming such that there are people beginning to specialise in glider.

A glider, although easier to trim is more *exacting* to fly successfully.

Not only does one have to select the time to fly, as with rubber and power models but one also has to select, as a major factor, the air one releases the model into if one is to meet with consistent success.

10 years ago a glider could be expected to do 3½ min. from the 328 ft. line when unassisted by thermals, and apart from certain Scandinavians using steel lines and the beginning of thermal seeking knowledge, the usual method of flying was "get it to the top, let it off without stalling it, and hope for a thermal."

Now, a glider can be expected to do 2½ to 3 min. from a 164 ft. line when unassisted by thermals, only slight lift being needed to make the 3 min. maximum, and lift hunting is now an art in itself. From the above it can be seen that a low sinking speed is desirable but is not the full story, as stability of the correct order on both tow and glide is essential.

The model must be able to be towed to overhead position and held there in all weathers; being quite docile in wind yet not necessitating too fast a running speed in calm in order to prevent premature release. The model must also have a good stall recovery if stalled off accidentally and must be able to withstand all types of weather conditions.

The concept of using two different types of models,

calm air and rough weather is now outdated. Scandinavian gliders probably have the slowest sinking speeds in the World yet also have to withstand rough weather as a matter of course. Earlier gliders in this country were dictated by stability requirements rather than by still air performance due to our usually inherently rough weather but it has been proven that both requirements can be satisfied.

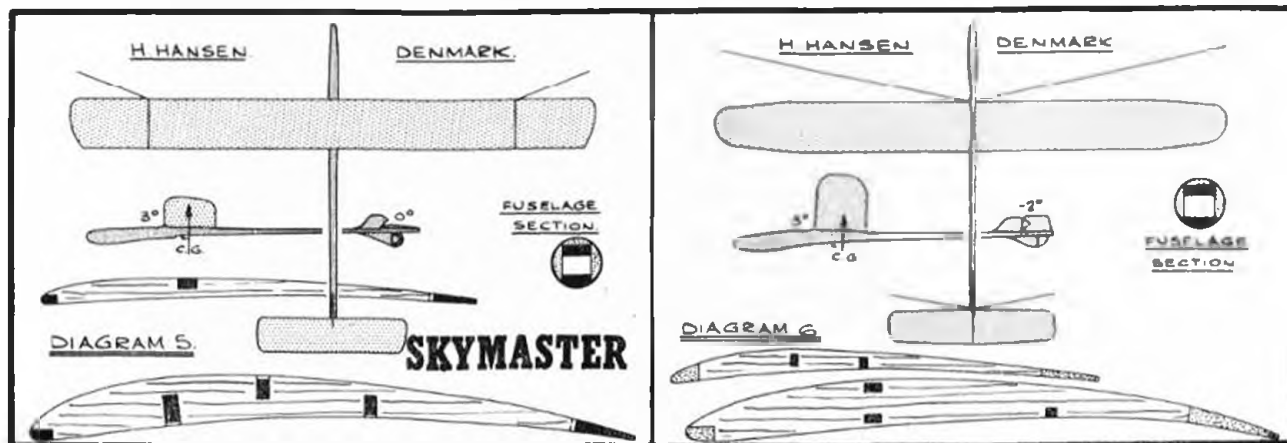
Over the last ten years many drastic changes have produced freaks, initially, but by moderation they have left a desirable and permanent impression e.g. short nose, high aspect ratio, long moment arm, stick fuselages (due to dropping of cross sectional area requirements), drooped trailing edge airfoils etc.

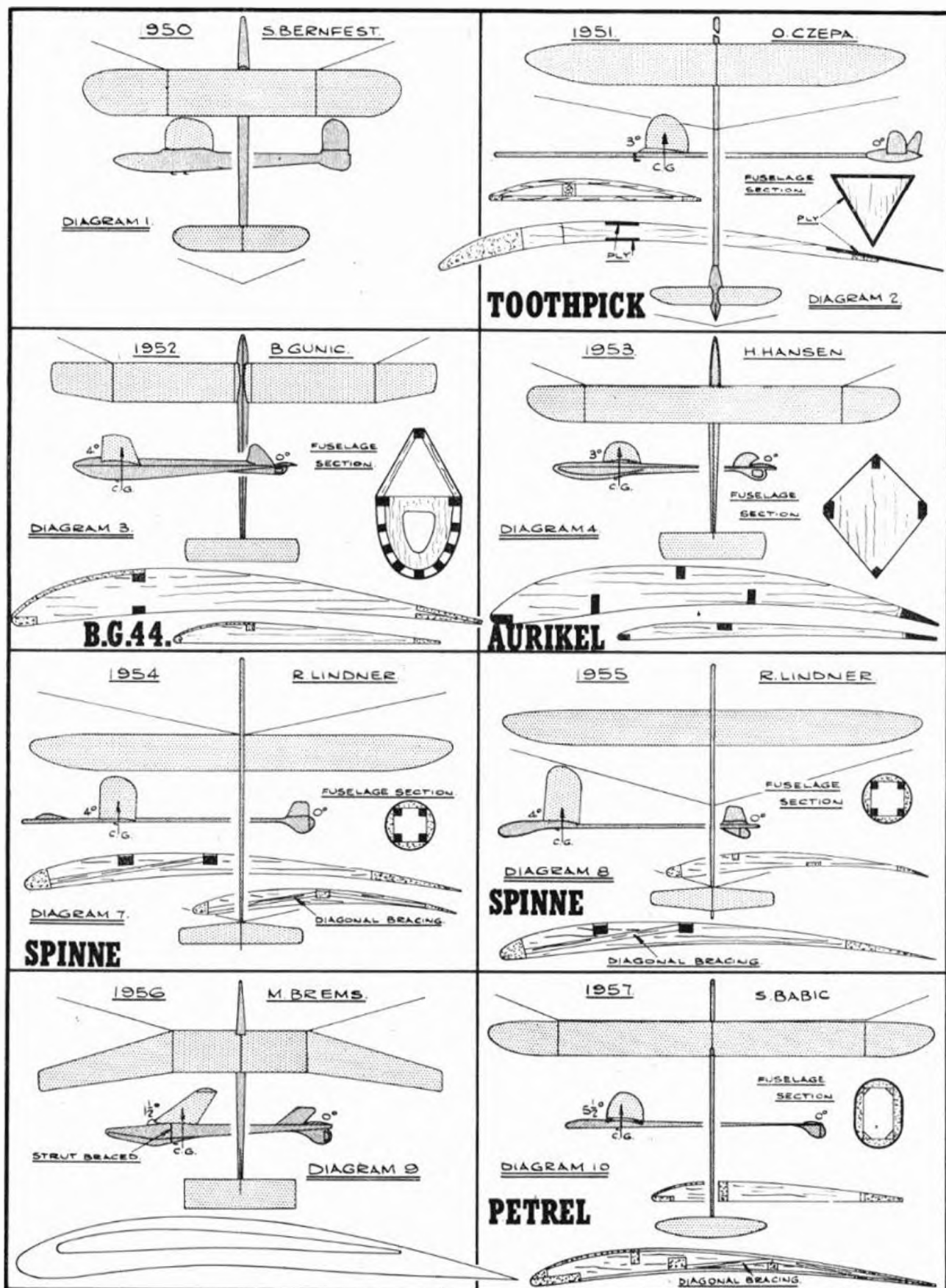
For open contests, the writer prefers large gliders usually 8-10 ft. span. Ten years ago large gliders had a big advantage over their smaller brothers in that the standard of design was the same and they gained much on efficiency in that they were operating under turbulent boundary layer conditions while a smaller model was not necessarily so doing.

As most serious glider fliers use the A/2 because it is the World Championship specification glider, quite apart from the preceding reasons, this article will mainly be devoted to the International class.

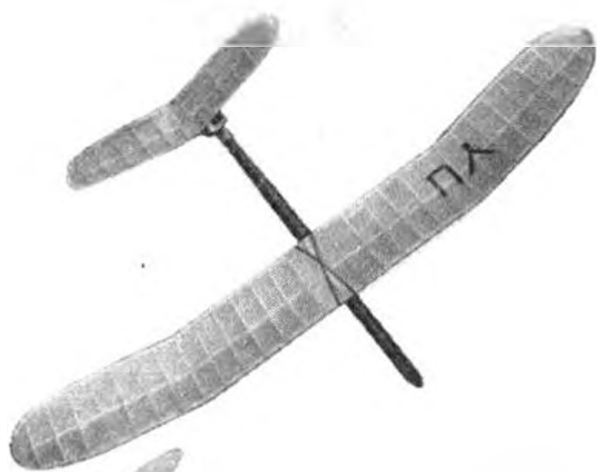
It should be borne in mind, however, that the greatest single factor of importance is to tow into lift. If you can do this every time with any well trimmed, reasonable, model you will win if the lift you find is strong enough!

Firstly the World Championship Winners, from 1950 to 1957 and two other outstanding models are drawn on these pages, and described with photos on pages 210/211.

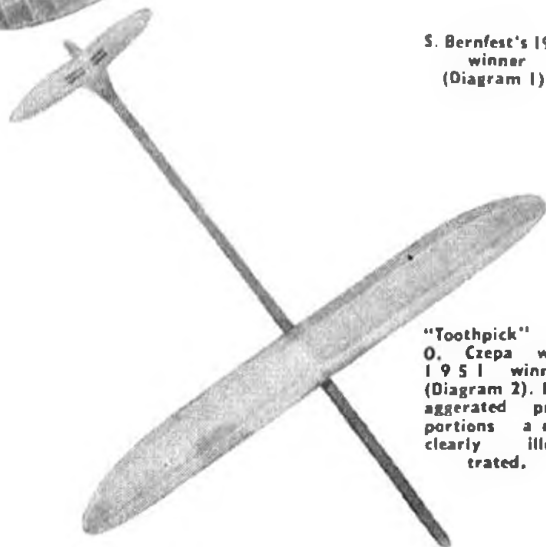




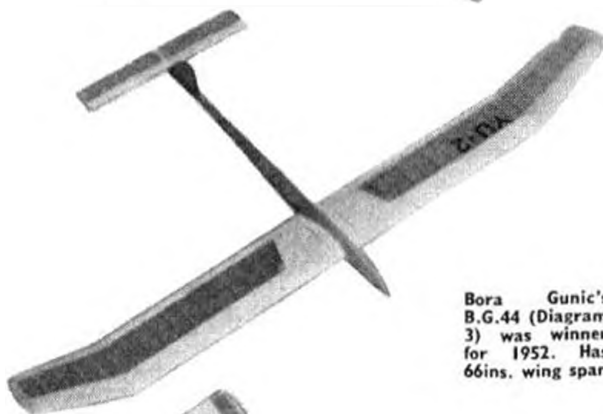
ALL DRAWINGS ARE TO A COMMON SCALE FOR SIZE COMPARISON



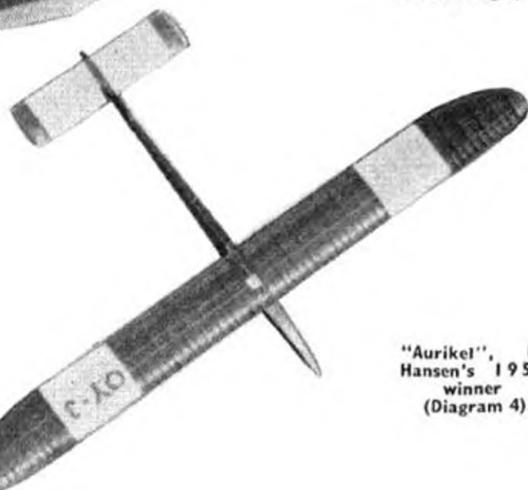
S. Bernfest's 1950
winner
(Diagram 1).



"Toothpick" by
O. Czepa was
1951 winner
(Diagram 2). Ex-
aggerated pro-
portions are
clearly illus-
trated.



Bora Gunic's
B.G.44 (Diagram
3) was winner
for 1952. Has
66ins. wing span



"Aurikel", H.
Hansen's 1953
winner
(Diagram 4).

1950 World Glider Championship Winner by S. Bernfest—Yugoslavia.
Diagram 1.

This model was typical of many of the time, its one unusual feature being a vee dihedral tailplane.

It won a contest run in thermal conditions under the three—5 minute flight rules, using 328 feet of towline where anyone could win. Support for this statement can be found in the following year's results, when in practically still air, all of its three flights were within 3 seconds of 3 minutes. In the 1950 contest at Trollhatten, Sweden, winning flight times were 360, 200, 360.

1951 World Glider Championship Winner by O. Czepa—Austria.—
"Toothpick."

Diagram 2.

In 1951 the Aeromodelling World was shaken by this model. Here was a freak which worked very well. This was still in the thermal happy days before lift hunting became a science, but, the contest was virtually devoid of lift. We are, therefore, led to the opinion that it was a model designed for still air conditions especially since Austrian weather is apparently usually calm. However, there was wind during the contest so the model was also capable of standing up to gusts.

The model was a product of logical thought. The wing construction was a good practical solution to a thin section and a fairly low aspect ratio. The fuselage construction was light, considering the choice of material available, as it used a cross sectional shape of great simplicity and rigidity and provided a good mounting for the wing. The cross sectional area imposed at that time was put to good use as fin area!

The design was the first, of any note, to employ a very long moment arm and small tailplane area for the express purpose of concentrating area in the inevitably more efficient wing.

The tailplane was merely used as a stabiliser, unlike modern A2's where it is, to a certain extent, used for load carrying.

A tow hook at an extreme forward position was also the result as the increase of wing lift when towing was far greater by proportion than was the increase of tail lift, resulting in the necessity for an appreciable nose down moment. The tow hook was probably too far forward as apparently the model did not make full line height.

Aspect ratio was quite moderate, unlike modern A2's which tend to have a very high aspect ratio for greater efficiency. Czepa tried to overcome efficiency loss caused by tip vortices with use of the classic method of ellipticising tips (but which causes considerable loss of efficiency on a low aspect ratio).

Summarising, an original, thought provoking model at the time, which deserved to win. Flight times in the contest at Lesce-Bled, Yugoslavia were, 300, 271, 300, total 871 secs.

1952 World Glider Championship Winner by B. Gunic—Yugoslavia—
"BG-44."

Diagram 3.

This was a beautifully proportioned, clean model which was way ahead of its time and could still hold its own in a British contest with ease despite the hindrance of the cross sectional area of the fuselage.

The use of similar airfoils, despite the tailplane being flat under-surfaced, with proportions correct and 50 per cent. C.G. with 4 deg. longitudinal dihedral gave stability of the correct order and a towhook close to the C.G. It was stated to have a 4½ min. still air duration from a 328 ft. line which seemed to be borne out in the contest it deserved to win, although probably Hacklingers slightly less practical design was its equal.

The duration on 164 ft. line would probably have been around 2:25 which would be no disgrace now, even after 8 years! Times at the Graz, Austria Contest times were 264, 284, 300, total 848 secs.

1953 World Glider Championship Winner by H. Hansen—Denmark—
"Aurikel."

Diagram 4.

Hans Hansen has turned out some very good glider designs, the first of which to become famous was the 1953 World Championship Winner.

The contest did not really prove anything as it took place before thermal hunting had become an art and the contest was thermal prone. Time has proved the principles underlying the model design to be sound.

It was very much like any other Danish model of the time in appearance and proportions and also reminiscent of Bora Gunic's winner of the year before, which, incidentally was 4th in 1953.

Hardwood was used extensively resulting in an overweight model (16 ozs.) which also approached the lower area limit!

Very little, but, apparently sufficient dihedral was used.

The really striking feature of this model was the airfoil which started almost as great a revision of thought as did Czepa's *Toothpick*! Initially, this feature, the drooped trailing edge, was not the product of logical thought, but the discovery, through an accidental trailing edge warp in building by a Danish modeller, that the airfoils they were currently using at the time benefited greatly by it!

The normal way for it to be incorporated is by putting the maximum under camber at least 60 per cent. back whereby the trailing edge naturally assumes a fairly great angle. Times in the contest at Lesce-Bled, Yugoslavia were 300, 300, 300, total 900 secs.

Hans Hansen's Later Developments—"Skymaster."

Diagram 5.

Hansen's next offering is the "Skymaster" which was sold in Denmark as a full sized plan.

In the writer's opinion this logical development of *Aurikel* is Hansen's best. Once more, extensive hardwood is used but the design has been simplified and is a far more practical contest design. More area would seem to be placed on the wingtips to bring the design up

to the area allowed. Advantage has been taken of the dropping of the cross sectional area ruling.

The layout and proportions are very similar to *Aurikel* but the wing airfoil appears to be slimmed, and this allied with the increase of wing tip area brings the design well into line with common practice.

In the writer's opinion the tip shape evolved here is far more efficient than the elliptical type, reasons for this being given in a later section. **Hans Hansen's Latest**

Diagram 5.

Something would seem to be owed by this design to Borge Hansen's *Pjerri*, or vice versa, the similarity being too striking to be accidental. Hans Hansen's placed 8th in the 1957 World Championships and Borge Hansen's placed 12th in 1951, 4th in 1952, 10th in 1953 and 4th in 1956.

From still air Scandinavian contests it would not seem to be suitable for such contests but for windy weather, certainly it should have great stability reserve with 5 deg. longitudinal dihedral and a short moment arm; this apparently is not overdone. The wing section would appear to be Benedek's latest B.8556b from a group of sections renowned for their longitudinal stability. Once more, note vee dihedralled wings and tailplane.

1954 and 1955 World Glider Championship Winners by R. Linder Germany "Spinne".

Diagrams 7 and 8.

In 1954 when Linder won the world glider Championships for the first time we were just leaving the era of thermal "tow up and hope" type of flying. On this occasion it did not matter as the contest was a howling gale.

The model was in current vogue with high aspect ratio wing, thin, similar airfoils not highly cambered, long moment arm, tailplane around 80 sq. ins., C.G. at 56 per cent. and with very light surfaces. A hybrid balsa and hardwood construction was used in typical continental fashion, the fuselage being of special note in using the balsa sheet and hardwood longerons method of easily obtaining a circular sectioned fuselage.

A remarkable amount of dihedral was used on the wings (approx. 9 in.) which were vee dihedralled, as was the tailplane. Possibly a reason for such dihedral was to overcome any towing disadvantages of straight dihedral but it also allowed a tight, stable turn on the glide.

The 1954 model certainly took immediate advantage of the drop of cross sectional area ruling as it could hardly have been slimmer, but the 1955 model had a podded nose apparently to satisfy critics, but the addition of side area at this position was allegedly needed.

Lindner also brought home the fact that lift hunting was here to stay, especially with his technique of using check models in 1955 to ascertain the lift condition of various parts of the flying field.

His lack of success in 1956 would almost seem, from the nature of his mistakes to have been due to boredom from winning twice!

Close association with Hacklinger probably influenced his model design greatly and it was probably equal to any A2 at the time. Times for the 1954 contest at Odense Denmark were 145, 31, 180, 30, 180, total 566 and for 1955 at Finthen, W. Germany, 180, 180, 180, 180, 166, total 886 seconds.

1956 World Glider Championship Winner by M. Brems Belgium.

Diagram 9.

The greatest shock ever to A2 enthusiasts was probably that provided by Marcel Brems' A2 in 1956.

Possibly the win was a fluke. Certainly the model was not the best there for sheer lack of sinking speed, also the conditions were decidedly thermal loaded. However, two flights fell not far short of maximums, the others being maximums, which shows great consistency and that is what matters!

The model itself was goodness knows how many years old and the design went right back to when A2's were first thought of! It employed an undercambered tailplane, but there the modern innovations ended. The wing section, Eiffel 431, was abandoned by rubber model fliers years before. The fuselage was still complying to the cross sectional area ruling. The wings were externally braced and would probably have made a very good tailless model with their section and sweepback!

However, the lesson learnt was useful and the writer is willing to bet that in the right hands, the design could still knock up an impressive record in British contests. Times at the Florence, Italy, contest were 145, 180, 180, 180, 168, total 853.

1957 World Glider Championship Winner by S. Babic Yugoslavia—"Petrel".

Diagram 10.

This was another clean, good looking classic like Gunic's model in its time; note, again Yugoslavian. It also had a near miss in 1959 with four consecutive maxes.

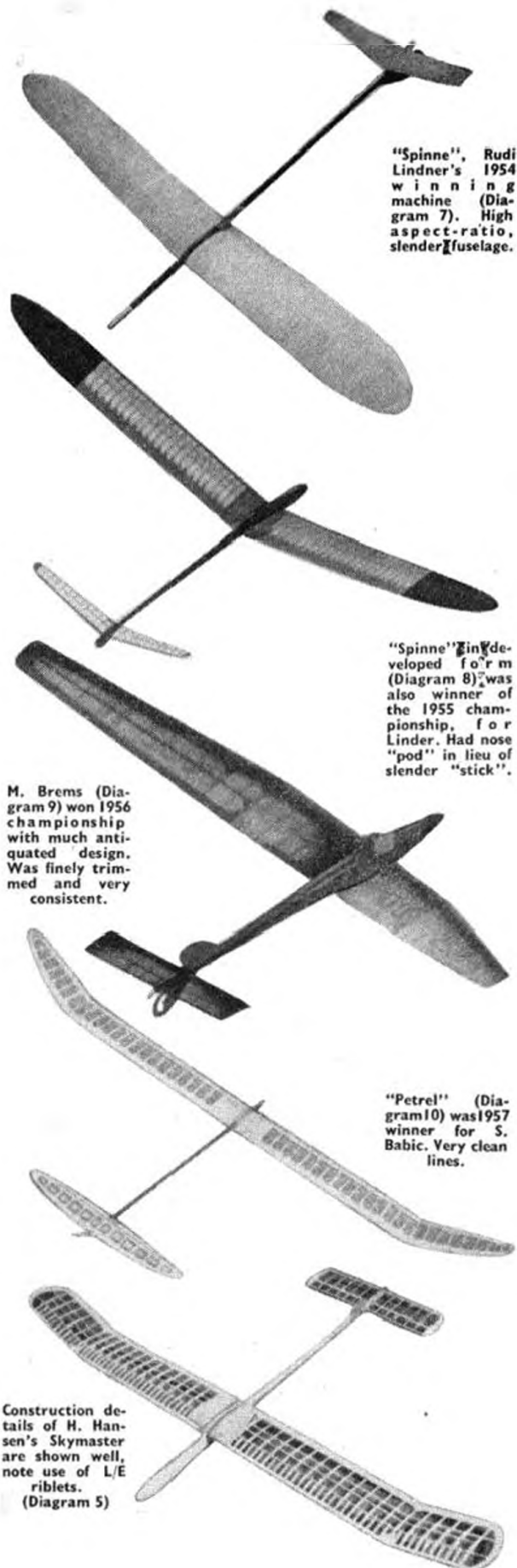
It was, however, a rather "knife edge" layout and the designer admits that if launched straight it may stall all the way down!

Consider the layout.

The tailplane was very small (under 60 sq. ins.). The moment arm was normal at 4j chords. The flat undersurfaced tailplane and thin undercambered wing section did not exactly give similar characteristics. The C.G. consequently had to be fairly well forward (45 per cent.) but even this was apparently not sufficient. One can see no point in taking tailplane area reduction to this limit when reliability may have to be sacrificed.

Lift hunting was by now generally accepted and there were apparently plenty of thermals. The model was sensibly constructed although surprisingly devoid of hardwood! Times for the Mlada Boleslav, Czechoslovakia contest, 180, 180, 180, 180, total 900 seconds, the only perfect score.

TO BE CONTINUED



"Spinne", Rudi Lindner's 1954 winning machine (Diagram 7). High aspect-ratio, slender fuselage.

"Spinne" in developed form (Diagram 8) was also winner of the 1955 championship, for Linder. Had nose "pod" in lieu of slender "stick".

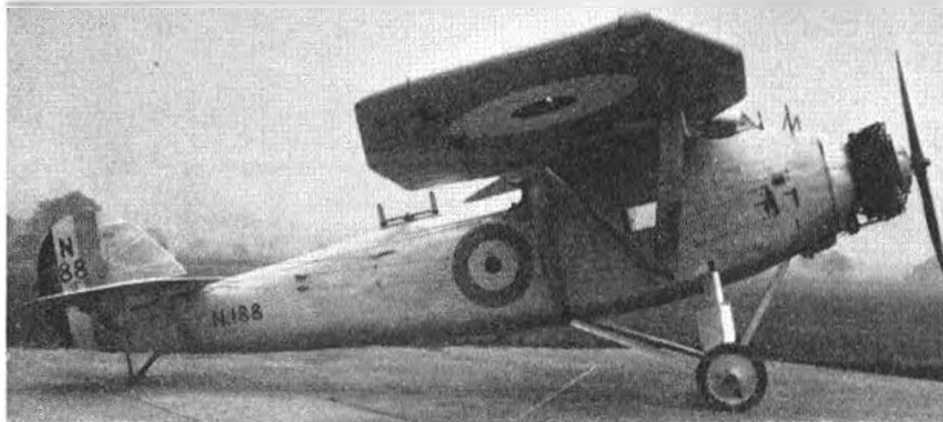
M. Brems (Diagram 9) won 1956 championship with much antiquated design. Was finely trimmed and very consistent.

"Petrel" (Diagram 10) was 1957 winner for S. Babic. Very clean lines.

Construction details of H. Hansen's Skymaster are shown well, note use of L/E riblets. (Diagram 5)

AIRCRAFT DESCRIBED

NUMBER 108

BLACKBURN
AIREDALE

AMONG THE MORE CONSTANT requests we receive on the subject of scale drawings is that for types which are ideal for flying scale application, though not necessarily famous. This one should be the answer to many a scale modeller's prayer as it fits modelling proportions almost ideally. The Airedale was built in 1926 as a three-seat Fleet spotter for the Armstrong-Siddeley Jaguar engine of 385 horsepower driving a metal airscrew. From photos we deduce that no less than 10 important modifications were applied during the course of development, and though two airframes were built, N 188 and N 189, the maximum speed of 105 knots (claimed) and handling characteristics could not have been good enough to merit a production order.

Initially, the N 188 airframe had a plain cross axle as can be seen in the view above (rear three-quarter) and no front cowl on the engine. Later the axle was divided and braced by Vee struts as seen in the side view of N 188 at top right, and on N 189 below it. Additional vertical tail area was added to N 189, underneath the tailplane tips and a pressed metal airscrew used instead of the Leitner-Watts adjustable pitch steel propeller on N 188.

Made to carry a crew of pilot, second pilot/observer and rear gunner, the high wing design embodied several

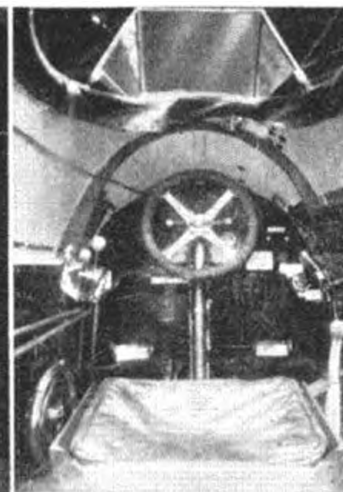
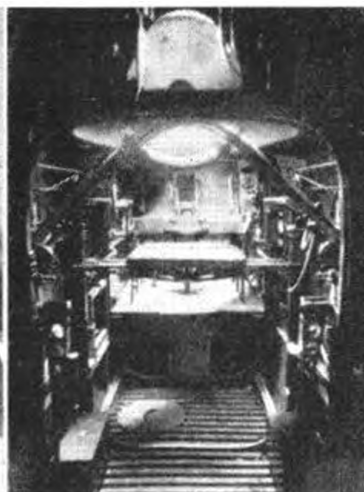
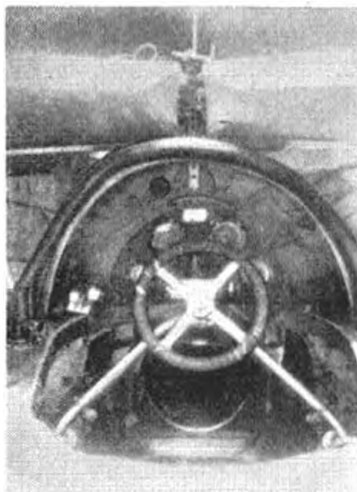
unusual features. Thick section was employed for low speed control in deck landings, and while the wings were strut-braced, provision was made for the wings to fold back flat alongside the fuselage, and not edge-on as had been the case with previous designs.

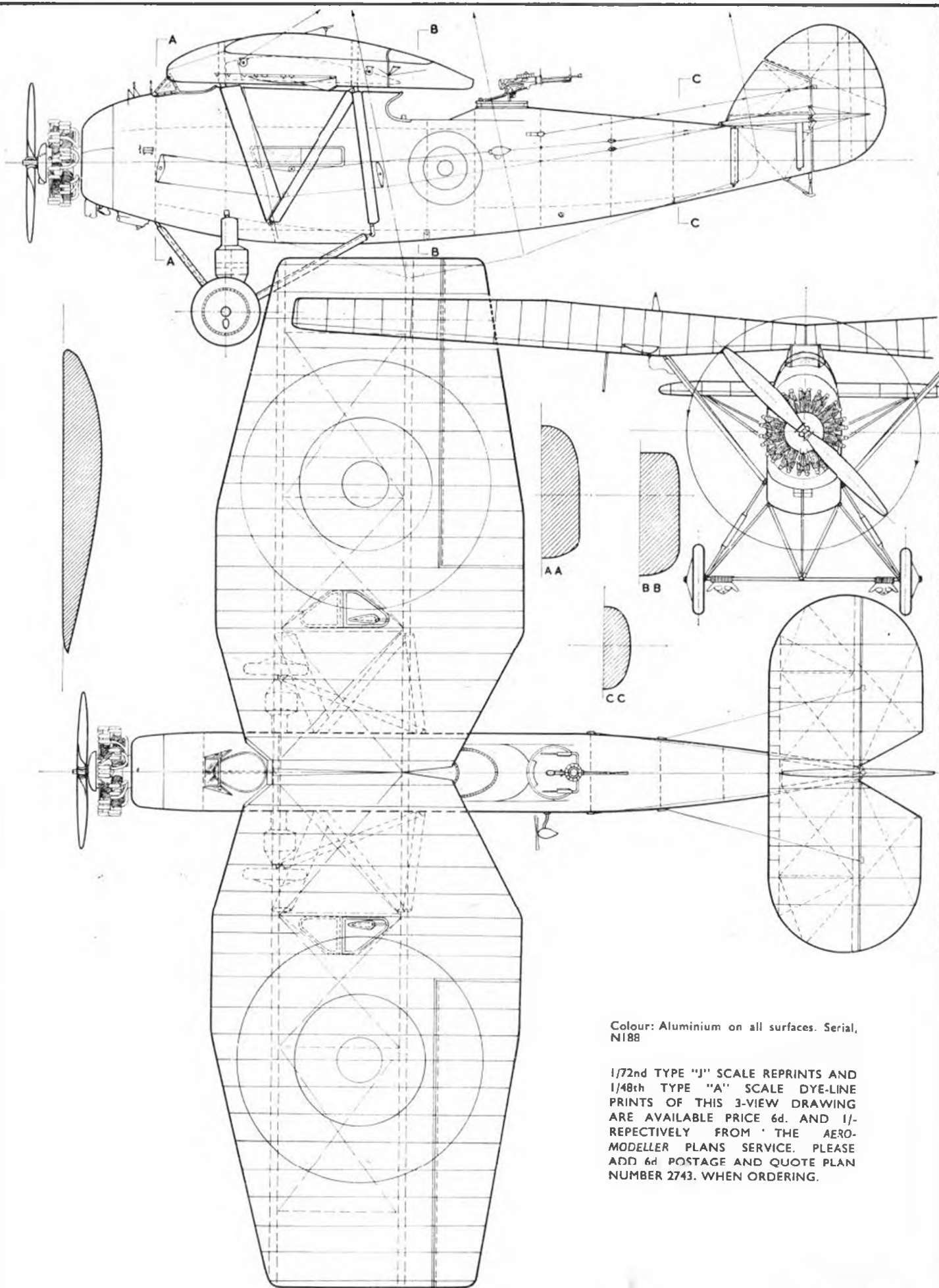
Pilot position was primarily arranged to obtain an exceptionally good field of view, both in the forward direction from the lofty front "perch" and aft from the second pilot's position in the Vee of the wing trailing edge. One could walk the length of the fuselage between crew positions and other observation windows were provided on each fuselage side under the centre section.

For its year it was a clean design, undoubtedly underpowered, and still displayed that peculiar trait for exposed cable runs to controls from the cockpit. One is tempted to wonder what drag penalties those wires incurred! For modelling purposes, the power/weight situation is reversed, and we would warn builders not to attempt to overpower the Airedale or it will be decidedly loophappy.

In one aspect, at least, the Airedale was outsize, and that is for its wing roundel proportions — no less than 10 ft. 6 in. in diameter. Other pertinent dimensions were: Span 43 ft. 2 in. Length 36 ft. 6 in. Maximum wing chord 13 ft. Height 12 ft. 6 in.

Top: Side view, N188 Mk. 5, showing adjustable pitch prop. Scarf ring and split axle drag strut from nose. Below is N189 with pressed prop, underfins and even larger roundels under wings. (I.W.M. Photo MH5385.) Left is N188 Mk. 3 with cross axle, bomb racks under belly and tail wound to full positive. At right are the cockpits. First the rear Pilot/Observer position with yoke supported control wheel for easier access; this can also be seen in centre view (looking aft) where gunner's seat is behind that for the pilot. Extreme right is the front cockpit showing gun triggers on control wheel





Colour: Aluminium on all surfaces. Serial, N188

1/72nd TYPE "J" SCALE REPRINTS AND 1/48th TYPE "A" SCALE DYE-LINE PRINTS OF THIS 3-VIEW DRAWING ARE AVAILABLE PRICE 6d. AND 1/- RESPECTIVELY FROM 'THE AERO-MODELLER PLANS SERVICE. PLEASE ADD 6d POSTAGE AND QUOTE PLAN NUMBER 2743. WHEN ORDERING.

CLUB NEWS

East Anglia

The CAMBRIDGE M.A.C. was visited by Keil Kraft designer Neville Willis, who gave an interesting talk on his approach to modelling. The meeting was open to the public and very well attended with the result that the club has several new members. The club is running a training scheme for beginners with a small C/L model D.C. Bantam-powered, to teach them to fly.

Southern

On February 12 SOUTHAMPTON M.A.C. held a club meeting at Beaulieu. Quite a mixed bag of models were produced, the majority of which were stunt, combat, unorthodox and sports models, but all eyes were on C. Black's crescent wing control line pusher and also R. Caton's Dyna Jet-powered speed model.

HORLEY CLUB'S flying field is under water at the moment, but the combat boys are still flying regularly and most of them have gained a lot of experience, becoming quite aggressive, especially Pete Green, who flies a Silver Arrow/Peacemaker.

Northern

The annual dinner of the BLACKBURN AIRCRAFT (WELFARE) M.F.C. was enjoyed by all who attended. Entertainment, apart from eating and drinking, was by a 35 mm. colour slide show of Club, Area, and National activities taken during the last season, an 8 mm. colour film of the S.B.A.C. show at Farnborough, and the club's own production entitled "Across the Pond". This film is in colour and sound and lasts for 15 minutes and was filmed in and around Brough and the River Humber. The main theme is of four intrepid modellers who travel afar to compete in a model contest, and triumph against all odds and uphold the name of British Aeromodelling!!

BAILDON M.F.C. meets fortnightly and has 35 members, a large proportion being active flyers. At the Northern Area Winter Rally, held in very calm damp conditions with little lift, H. Tubbs and T. Stoker had a good day, Tubbs placing second in the Rubber fly-off (12:00+5:02) and Stoker, newly introduced to the class, managed third place with 12:00+4:39; also third in Open Glider with 7:55. True tall story of the month concerns one of their members who at the Winter Rally lost his power model out of sight overhead due to timer failure. He gave it up for lost. Driving home in the evening, he noticed a model in a field — yes, you have guessed, it was his, without a scratch on it.

S.M.A.E. Contests

March 19th	KMAA Cup (Plugge)	Area
	F.A.I. Glider Eliminator	
	Gutteridge Trophy	
March 26th	F.A.I. Rubber Eliminator	Area
April 9th	C/L Speed — R.A.F. Debden	
	Astral Trophy (Plugge)	
	F.A.I. Power Eliminator	Area
	S.M.A.E. Cup	
	F.A.I. Glider Eliminator	
	Women's Cup	Centralised
	U/R Rubber/Glider	
	Jetex Trophy Jetex	
April 15th/16th	Indoor Practice — R.A.F. Cardington	Area
April 22nd/23rd	Radio Control and Control	
	Line TRIALS	
April 30th	Weston Cup (Plugge)	Area
	F.A.I. Rubber Eliminator	
	Halfax Trophy	
	F.A.I. Power Eliminator	

HALIFAX M.A.C. entered *en masse* for the Winter Rally at R.A.F. Rufforth. Unfortunately, all the competitors were dogged by misfortune. In Class B T/R hopes of success (and the model) were shattered when Alan Heptonstall had his lines bind, whilst their other entry, John Bullock, had a reverse shaft-run with his Frog500-powered job, following an 80 m.p.h. landing! In 1A T/R David Piggan, after establishing a 70-lap lead, crash-landed the model and was unable to continue. An incident which occurred recently pays tribute to the prowess of the Peacemaker. Whilst flying combat, Chris Ashworth had his Peacemaker completely severed from the lines. The model proceeded to complete several consecutive loops, landing 500 yards away. Only damage, a cracked trailing edge!

HEANOR AND D.M.F.C. recently held a Stunt and Combat competition. Stunt was won by M. Roe, flying a K.K. Spectre powered by an ETA 15. The schedule was the S.M.A.E. one minus the cloverleaf and hourglass figures. During the contest a Coy Lady, a Calamity Jane and a Graupner Champion were smashed. The Combat was won by A. Sisson (as usual), flying an Oliver-powered job.

HUDDERSFIELD M.F.C. are busy arranging a series of contests to decide a club all-round champion. Eight contests are to be run, one each month commencing March. Arrangements are also being made to visit Rufforth, and two Class "A" teams are in training with this and other meetings in mind. Tuesday meetings at the local model shop are becoming rather crowded, and despite all efforts, no offer of premises for a club headquarters has been made. Suitable flying ground also presents a problem, the choice being between a football pitch and the stamp-sized waste ground in the middle of Dalton estate.

The SHEFFIELD S.A. had their annual general meeting on January 27th. This year it was quite an occasion for amongst those present was the Lord Mayor of Sheffield, Alderman H. Slack. He was given the opportunity to say a few words on his pioneer days as an aeromodeller and held everyone spellbound for over half-an-hour with stories of compressed air engines made from old needle cases, split cane, oiled silk, and waterplanes capsizing and ending as submarines.

WHARFEDALE C/L Rally is now fixed for Sunday, June 4th, 1961, and that club would like to extend a cordial invitation to all C/L enthusiasts. Venue is R.A.F. Rufforth (Nr. York) and those who attend can be assured of plenty of good competition. Events include 1A, A and B T/Racing, Combat and Stunt. Pre-entry is requested (2/6 per entry) to L. Davy, "Sunnyside", Burnley-in-Wharfedale, Nr. Ilkley, Yorks. Enquiries welcomed. On the home front, they are pleased to be able to report yet another successful Northern Area Winter Rally. Wharfedale had successes in the three T/R events with the Edwards/Adams (ETA 29) Class B entry taking first place and the Long/Davy team (ETA 15) claiming first place in F.A.I. The last committee meeting gave November 5th, 1961, as provisional date for this year's Class B 1,000 lap race.

MEXBORO & D.M.A.C. attended the Northern Area Winter Rally and were delighted with the performance of newest member P. Thorpe who secured second place in the scramble event with his D.C. Bantam-powered *Dunne Biplane*. This model astounded the critics with its surprisingly reliable flight pattern. It was thought that Pete would have improved his time with a little more effort on his part, but afterwards explained his movements were somewhat restricted by his long woolly underpants. However, fellow club members would not have this and were not satisfied until they had had a peep!

North Western

Two members of the OLDHAM & D.M.A.C. did well at the recent Colne Rally in spite of cold weather. J. Mellor came third in the Radio competition with Junior 60; and in Power J. Shaw came second with O/D power model.

A multitude of new models are taking the air for the first time in LIVERPOOL & D.M.A.S. Outstanding new jobs are Alan Jones G.G. radio saucer which turns on a sixpence and Joe Barnes new rubber models with even higher performance than last year. A. Searle has a new A/2 under test which looks promising.

On January 21st CHEADLE D.M.A.C. held its annual dinner with the local A.T.C. C/O and his wife as guests. This was followed by a film show of the club activities in the 1960 season. A very pleasant evening. New members will be made most welcome at meetings held every Tuesday at the A.T.C.'s headquarters, Banks Street, Cheadle.

Contest-mindedness is growing in the STOCKPORT M.A.C. with four *Miss F.A.I.s* on the building boards. Club membership now stands at about twenty-six members, mostly control-line enthusiasts. Prizes were awarded at the annual club dinner, C. Taylor winning the Jarvis Trophy for Rubber, K. Maddocks won the Robinson and Club Trophy for Open Power and F.A.I. Team Race, and A. Long won the 1A Team Race Trophy. F. Holden (ex-Cheadle) is the new Comp. Sec. and fellow members have great hopes for him in the Gold Trophy this year. Maddocks and Dewhurst took third place in F.A.I. T/R at the Northern Gala (Rufforth) on January 22nd, and many thanks again to the Wharfedale boys for the well-organised Team Race events.

SOUTHPORT D.M.F.C. went to the Colne Winter Rally, enjoying two successes, D. Barber coming second in Power and R. Gordon second in Combat.

Four members of CHORLTON M.F.C. attended the January meeting of the S.M.A.E. North-West Area in Manchester, where they experienced the chilly phenomenon of F/F domination. They fail to understand how

Contest Calendar

April 9th	Dagenham Combat Rally S.M.A.E. (3.5 c.c.), "B" (35 cu. in. - 60 ft. lines) Combat, Stunt. Central Park, Dagenham.
April 30th	High Wycombe C/R Rally, A, B T/R, Stunt, Combat. R.A.F. Booker.
May 7th	Stockport Advertiser Rally, all classes except B T/R. A. V. Roe Aerodrome, Woodford, Cheshire.
June 4th	Wharfedale, C/L Rally. R.A.F. Rufforth.
June 10th	Scottish P.A.A.
June 11th	Midland Gala, Open F/F, Chuck Glider, 1A Power, XA, A, B T/R, Stunt <i>Concours d'Elegance</i> R/C, R.A.F. Wellesbourne.
July 2nd	Northern Heights Gala, all F/F classes, R/C Spot Landing, Combat, <i>Concours d'Elegance</i> . R.A.F. Halton (provisional).
August 6th	Scottish Gala.
August 20th	Devon Rally, Open F/F, 1A Power, Combat. Woodbury Common, (Corrected date)
August 27th	South Midland Area Gala.
September 10th	Northern Gala (New date).
October 1st	South Coast Gala. Venue to be announced.

a F/F expert can decide that a well-organised "B" T/R can be more dangerous than some of the lethal missiles flying in R/C and F/F comps. At the club A.G.M. of February 10th, Kevin McGee received the Senior and John Birks the Junior Champ. Trophies. At the moment they have only 15 paid-up members, so all prospective members get in touch with the Hon. Sec. Len Hart, 47 Firbank Road, Newall Green, Manchester 22.

London

PENGE & BECKENHAM M.A.C. is a new club looking for new members. Any keen aeromodellers are welcome, and should get in touch at 52 Mosslea Road, Penge, S.E.20, Tuesdays at 7 p.m.

At **WANSTEAD A.C.** annual general meeting on February 27th Norman Mears, who had recently won a hard-fought 1.5 c.c. combat competition was presented the "Best Progress" award, and later in the evening elected as the new club chairman. Mike Jupp recently purchased a modified version of the world record holding 5 c.c. *Doodling 29* as used by Ray Gibbs. Mike will be entering in the speed event at the Nationals this year along with many of the team racing fans of the club in 1/4 A, F.A.I. and B classes.

HAYES & D.M.A.C. members have been putting in some "Monoline" training with a "flying wing minus elevator"! A single 35-ft. length of laystrate was simply attached to the rear leadout and using normal C/L handle. "Control" was by raising or lowering the handle and believe it or not, this worked perfectly, although loops were not possible. Upwards of two dozen flights were made without doing more than superficial damage to the model, which featured a fibreglass fuselage, and used a tuned *Silver Streak* to turn a Mk. II Semo 7 x 8 nylon prop. The fact that the "thing" flew in a "Groove" with no elevator at all, has the speed boys thinking of very tiny elevators for their future speedships, which must obviously be of an inherently stable design to start with.

NORTHWOOD M.A.C. suffered a serious loss when both their president and assistant comp. secretary retired in the same week, both moving out of the district. In the elections that followed, due to lack of any other candidates, P. Tribe was elected President with a majority of one, and Pete "Fungus" Freebrei, after a close fight with Geoff Paige, became asst. comp. secretary.

ST. ALBANS M.A.C. recently held an engine-starting comp. Contestants had to run the length of the club room, fill the tank and start the engine. Carl Simeons won this comp. with the dazzling time of 3.8 secs. A raffle was drawn the same evening. Prizes were two engines, donated by a club member, and a bottle of sherry. Needless to say, the club funds, to which the profits were donated, are now in a much healthier state. Interest in control-line is now on the increase and members are extremely fortunate in having two officially recognised control-line areas.

CROYDON & D.M.A.S.'s seven-league boots have taken quite a thrashing recently as a result of the rash of rallies held in the wild North. Several carloads of bods and models went to Nelson, Rufforth and Chetwynd and apart from getting fogbound and nearly driving into a canal on the way to Nelson; becoming mixed up with the Monte Carlo rally en route from Rufforth; and sinking into the middle of a soggy and waterlogged Chetwynd, arrived back safely and not entirely empty-handed. Incidentally, anyone anxious to meet the club on a social level will be most welcome at their dinner at the Sussex Tavern, Streatham High Road, on March 24th at 7.30. Reservation (£1 per person) should be sent to P. Fraser, 66 The Causeway, Carshalton, Surrey, by March 20th.

With spring on the way, **CHINGFORD M.F.C.'s** thoughts are turning to the coming contest season. The combat types have accumulated a formidable stock of *Razor Blades* powered by similar stock of motors (this excludes Mr. Holland's Fox 35-powered

Blude). The growing radio fraternity is considering letting itself loose at some of this year's contests with a well varied collection of gear. It has even been suggested that the club may try and revive the long-dormant bug (Pete Smith variety) of Team racing.

The newly-formed **NORTHWOOD RADIO CONTROL CLUB** is going from strength to strength with a membership of twenty-three. Meetings take place fortnightly on Fridays at the Eastcote House and interested modellers in the area should contact J. D. Webb, Tel: PINner 9694.

Despite breezy weather recently, a number of **ENFIELD AND D.M.A.C.** members pay regular visits to their flying field. Most regular flying model is Brian Downham's A.M.25 *Tiger Moth*, which has a great liking for trees, giving Brian much practice in climbing. This model has been flying for several years now. A recent spectacle was Bob Moore's A.M.15 power job, which had been flying very successfully. The model climbed up quite fast only to turn over and continue rapidly accelerating this time in a downward direction—Bob's new model is a sports job!

South Eastern

GRAVESEND A.C. has been resurrected with a new constitution. Club meetings, which are fortnightly as from Saturday, February 11th, begin at 7.30 p.m. at the "Reindeer Hotel", Gravesend. At the present moment the minimum age limit is 16, but later on this may be reduced. Also the re-affiliation to the S.M.A.E. is to be applied for.

BEXHILL M.A.C. took part in a combat contest with the Eastbourne M.F.C. about 15 of its members attending. Scores were very close, the final score being 5-6, Eastbourne winning but only just. The name of the Club has changed from **BEXHILL AND D.M.C.** to **BEXHILL MODEL AERO CLUB**.

NORTH KENT NOMADS M.C. have enjoyed some very pleasant winter evenings, thanks mainly to their Social Secretary—Alan Smith, who also organised the Club Dinner and prize giving which went off very well and was enjoyed by the 70 people who attended. At their Annual General Meeting popularity of Chairman, Ray Parker, was shown when he was re-elected in some 14 seconds flat.

At **BRIGHTON D.M.A.C.'s** A.G.M. on February 12th, Mr. Ian Mullett accepted the post of President, which post has been vacant since the death of his father. It was announced at the meeting that the Club's Championship had been won by John West, as was the Jubilee Rose Bowl based on flight times over selected contests during the year.

South Midland

The radio controlled scale *Blohm and Foss 141*, built by H. Males of **LEITCH-WORTH M.A.S.**, was test flown on a cold and calm (yes they had one) Sunday morn. After frozen fingers had got the engine running, the model flew somewhat erratically, but subsequent trimming did give a steadier flight. The following week in a slight breeze the model was flown again. This time model aggressively attacked a brussels field, unfortunately coming off second best, having wing torn off. The builders' comments on this were entirely unpurged and one could gather that the crash was caused mainly through lack of tailplane area.

WELLINGBOROUGH M.A.C. had its annual dinner and social on January 13th, which was attended by 39 members and friends. President Frank Manning, offered one hour's flight in an Auster aircraft, as a prize in a contest at the dinner, the flight including a look at the flying field at Ditchford Lane.

HIGH WYCOMBE M.A.C. have recently begun publication of their first Club Magazine. This paper is called the *Mainspar*

and is getting off to a pretty good start. As their Hon. Sec. put it: 'The reason for this literary venture is to recapture the true club spirit, which has been sadly lacking of late.' (Imagine "Big Dick" Edmunds saying a mouthful like that!)

Although at present well occupied with the organisation of their rally, they still found time to hold a very enjoyable 500 lap team race on February 5th. Winner of the seniors event was "Dick" Edmunds, himself and Mick Smith ambled home to second place. The 1961 High Wycombe control-line Rally will take place on April 30th at R.A.F. Booker. As in other years the events include "A" and "B" Team Race, Combat and Stunt. This club likes to include 1/4 A T/R and Speed, but they have not the personnel or space to run these additional events, but despite this, it is hoped to make this year's even bigger and better than ever. Pre-entry is required at 2s. 6d. each entry and should be sent to J. Elphick, 102 Sulfeld Road, High Wycombe, Bucks., together with S.A.E. for return of heat times, etc. Last day of entry is Saturday, April 22nd. All entrants must be members of the S.M.A.E. or covered with a comparable insurance.

Midlands

Many fliers will remember last year's C.I. Stunt competition, organised by the **SMALL HEATH M.A.C.** and will be pleased to know that the competition will be run again this year, but date and venue have not yet been fixed. Midland Area Clubs only can be considered and invitations will be sent when all arrangements have been made. Keen interest has developed in "9 ft. Plus" R/C Slope Soarers, with B. Price's 8-channel semi-scale monster, performing well.

MARKET HARBOROUGH M.A.C. held its A.G.M. on January 19th, to which thirty-two of the thirty-nine members attended. Mr. V. Redfern was in the chair, and was unanimously elected, once more, as the chairman as it was felt that no one else had the necessary experience. Various topics were discussed including the constitution.

LEICESTER M.A.C.'s meetings at Braunstone Aerodrome, have been well attended although the first of the monthly combat competitions was held under bad conditions, the eventual winner being P. Moore. An assistant competition secretary has been appointed to deal mainly with control-line matters, the next event being a combat competition with a combined team from Loughborough on February 19th at Loughborough Airfield.

FORESTERS M.F.C.'s committee had a most interesting meeting with the committee of the other Nottingham Model Club—**Gee Dee M.F.C.**, during which very cordial relations were established especially with regard to their joint flying field. Rules were laid down so that the R.C. boys of Foresters and the control-line enthusiasts of Gee Dee do not get in each others' way. Foresters will be organising a stand at the Nottingham Model Engineering Exhibition to be held April 5th-8th inclusive and invite members to loan their models.

GEE DEE M.A.C. recently gave a talk on aeromodelling with models in various stages of construction, and also 8 mm. colour films to the West Bridgford Young Farmers' Club, who thoroughly enjoyed the evening (wonder if they were offered any flying fields by their pupils?).

North Eastern

Members of **THORNABY PATHFINDER M.F.C.** attended the Winter Rally at Rufforth, gaining a 2nd and 4th in F.A.I. T.R. They would like to thank members of Novocastria for their help. Members have bought many new engines and are busy tuning them for the forthcoming season and designing new models. Membership is improving and it is hoped to put on some displays locally in the near future.

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