

AERO MODELLER

NOVEMBER 1960



**FULL REPORT ON
CONTROL-LINE
CHAMPIONSHIPS**

2/-

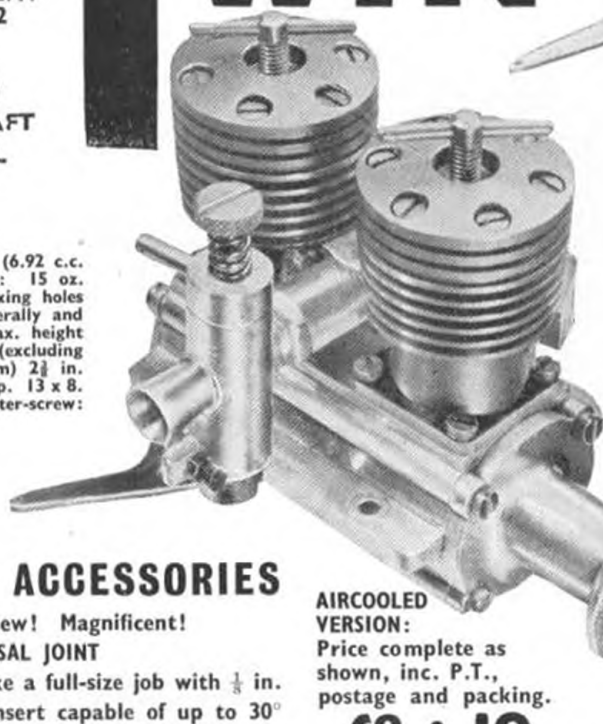
TAPLIN TWIN

BRITISH PATENT
No. 747732

THREE
BEARING
CRANKSHAFT
ALL BALL
RACES

VITAL STATISTICS:

Capacity: 7 c.c. (6.92 c.c. actual). Weight: 15 oz.
Engine bearers: Fixing holes $1\frac{1}{4}$ in. centres laterally and longitudinally. Max. height $3\frac{1}{2}$ in. max. width (excluding throttle toggle arm) $2\frac{1}{2}$ in. Recommended prop. 13×8 . Recommended water-screw: $2\frac{1}{2} \times 2\frac{1}{2}$ (2-blader).



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THREE
BEARING
CRANKSHAFT
ALL
BALLRACES

IN eighteen months since its introduction the TAPLIN TWIN has made modelling history. Its air-cooled version was the power unit for two RADIO CONTROLLED WORLD RECORDS, has been used for countless models ranging from prize-winning scale controllers to high performance R/C designs, and enjoys a worldwide reputation to the extent that American model magazines describe in-line twins as "taplinised". The watercooled version has swept the board in the model boat world, where it is nothing out of the ordinary for almost the whole of an entry to be TAPLIN TWIN POWERED. If you have not yet bought a twin of your own, here are a few special features to help you to decide: Wide speed range (500/7,000 r.p.m.); barrel type carburettor (infinite adjustment just like "full-size") quiet running; no vibration; clock or anti-clock running; handsome with anodised heads and spinner; easy starter; simple synchronisation. Recommended fuel: Mercury Marine Diesel Fuel.

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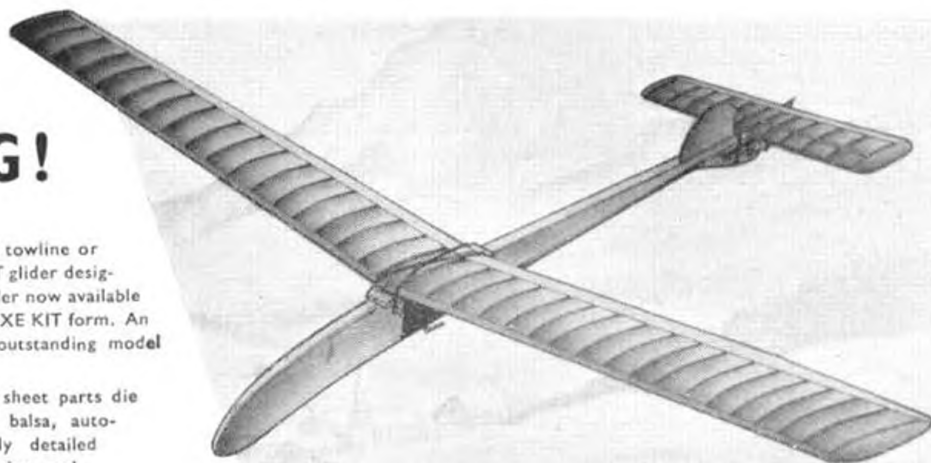
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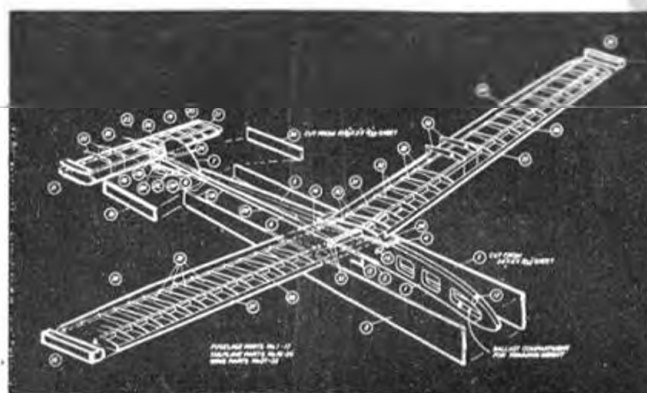


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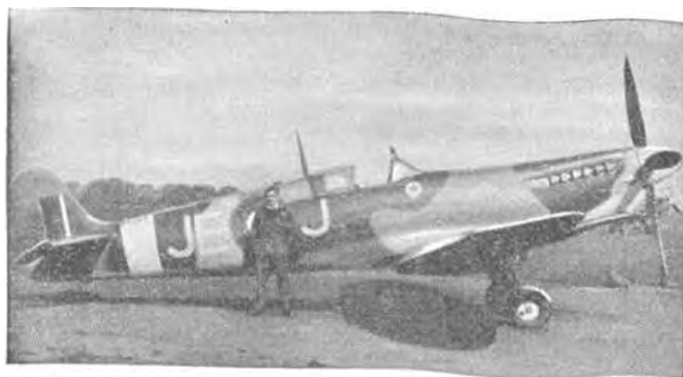


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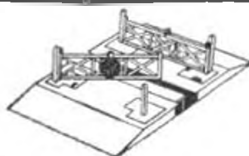
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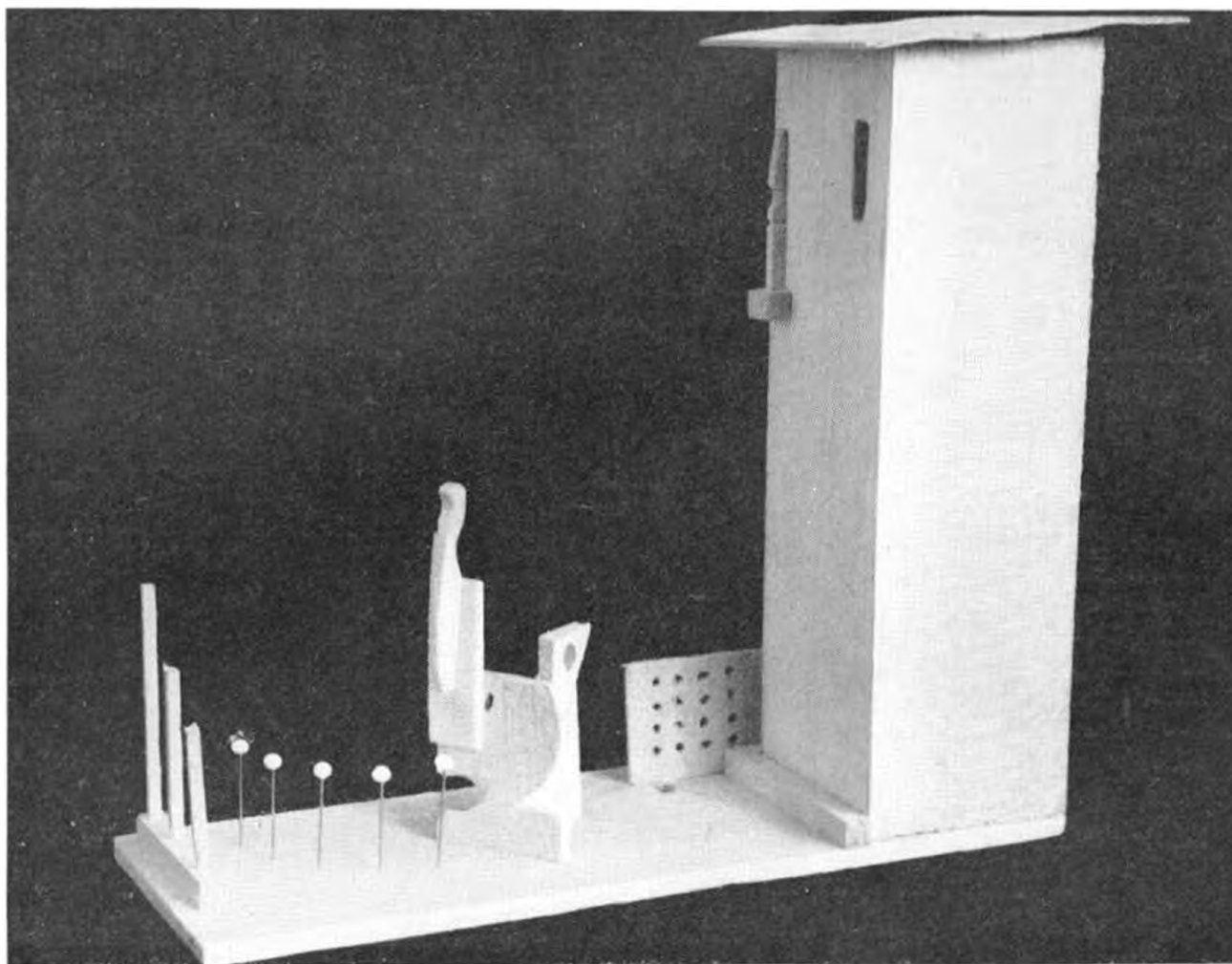


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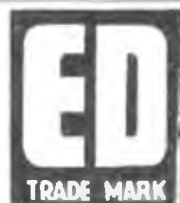
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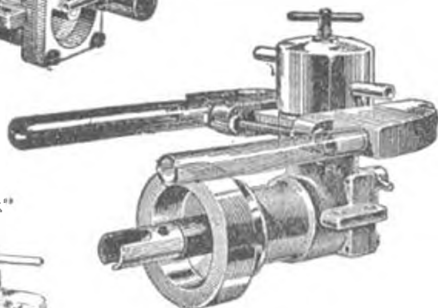
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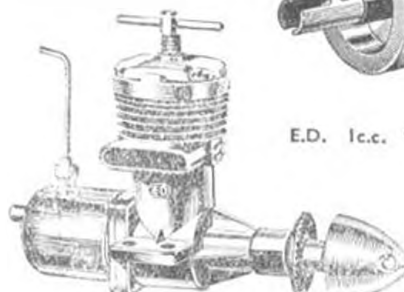
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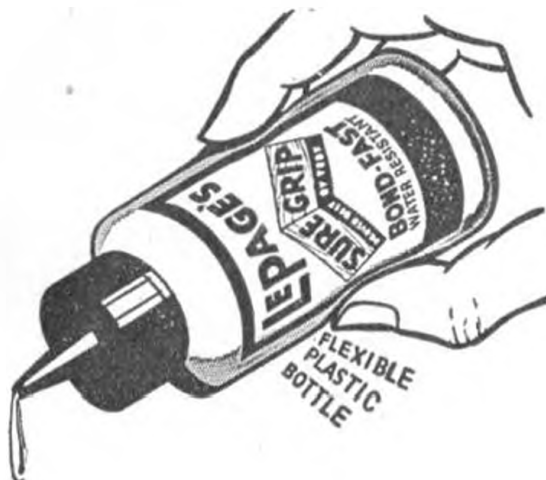
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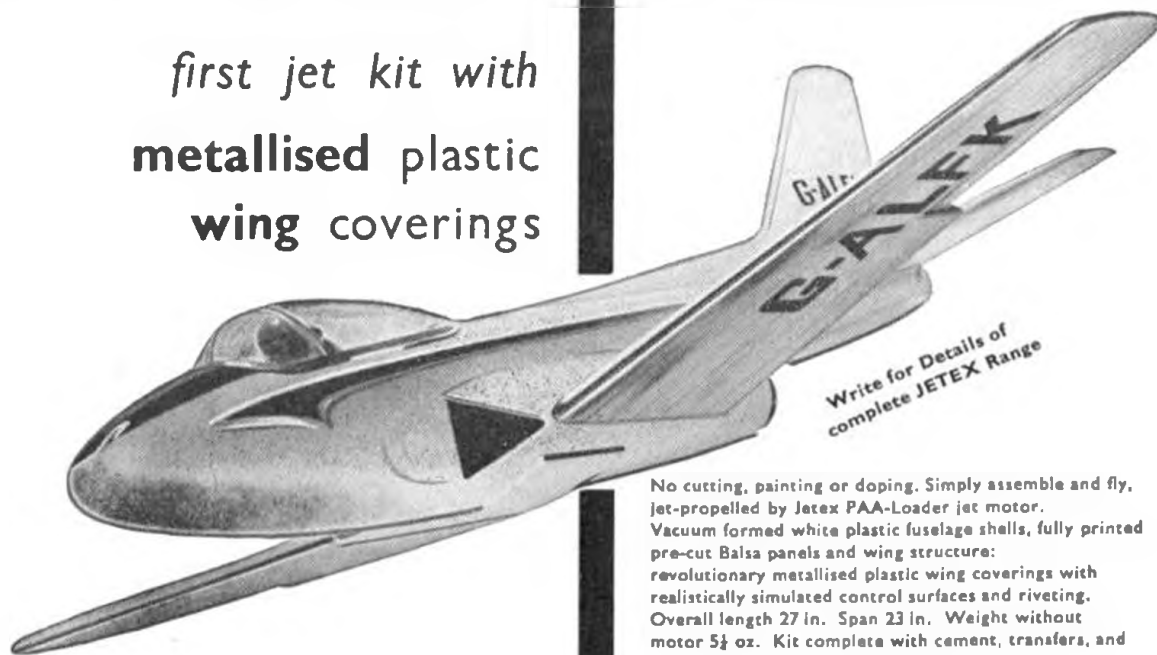


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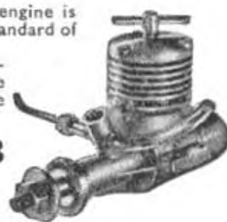
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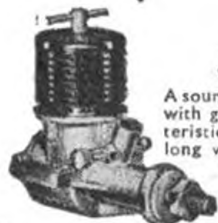
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A tragedy of errors

IT IS NOT THE policy of the AEROMODELLER to complain without cause, nor do we consider it our duty to publicise discord if the matter is purely domestic and can be settled through proper means at committee level. But the disagreements and misunderstandings at Budaörs are matters of International concern and need to be brought to the attention of all free and fair thinking modellers.

The magnificent World Championships organised by the Hungarian Aero Club, with a degree of efficiency that will set a standard for all future events, were marred by the ineptitude of the F.A.I. models commission (C.I.A.M.) and the jury appointed from its members to supervise the organisation and conduct of the contests. Never before have the administrative weaknesses of the secretariat been so exposed, or so much had feeling created by inadequate issue of rules and rule changes. The jury lost sight of the original purpose of the new swivel lug handles, tolerated flagrant whipping during the winning speed flight on the grounds that there is no specific rule to prevent such aid (is the device on the pylon a yoke, or a joke?) and denied approval of Monoline handles.

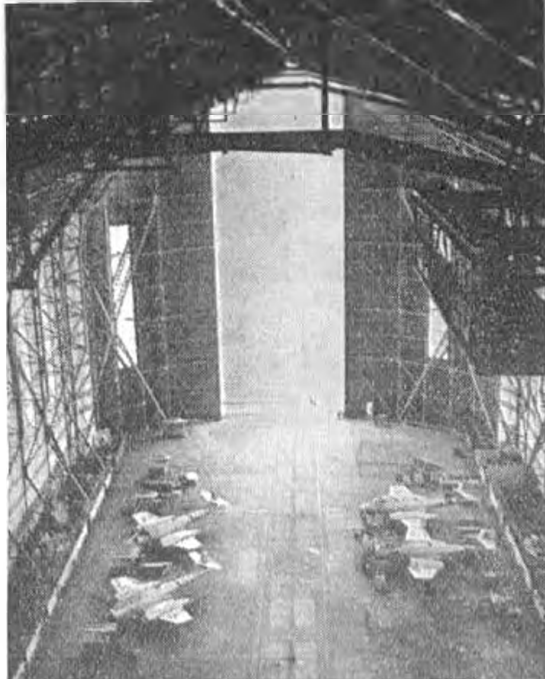
First misunderstanding over rules came when the jury announced enforcement of the swivel type speed handle for team racing. A British objection at the team managers meeting was rebuffed. Yet when in written protest, the British and Finnish teams pointed out the error of classification in that the handle was detailed under section 4.6.4. for speed only, there was no change of decision or admission of error. Instead, the Director-General of the F.A.I. suggested that the teams make new handles overnight and try to use them for team racing. No definite answer could be given to requests concerning what might happen to anyone unable to make a handle, and such indecision left many participants wondering how much they could rely on the Sporting Code as a rule book. *The only time this swivel handle has ever been described for team racing was in the Belgian magazine Model Avia, a sketch from which was reproduced in our April issue, followed by a correction from the British F.A.I. delegate in June edition.* How then, could team race pilots be expected to meet a non-existent rule?

Next came what will always be known as the "Monoline Affair".

In September, 1955, the C.I.A.M. displayed considerable foresight in announcing cable thickness for single as well as dual line control. Now, five years later, and only 11 months after the approval of the Monoline handle at the '59 C.I.A.M. meeting, (following which amendment to 4.6.4. was issued excusing single cables from the rule defining attachment at the handle axis) the Budaörs jury saw fit to contradict all the published reports of American, British, Czech and Finnish C.I.A.M. representatives and inform the American team that Monoline handles would not be eligible! It was even suggested that the team (then holding 1, 2, 3 placing need we add) modify to bellcrank control!

This took place about six hours after the start of the Championships. Why had their models been accepted, processed and allowed to fly with the Monoline handle? Why no objection before the contest? Enough demonstration had been made in the three days of practice enjoyed by the U.S. team to indicate their intention to fly Monoline. Clearly the objection was the work of someone with jealous intent. It became a political matter which debased the standards of the meeting and was given full treatment in the Hungarian National Press. Far from bringing discredit to the American and Czechs (who quickly produced their home constructed Monoline models in support of the single cable pleas) the publicity served to emphasise the ineffective administration of the C.I.A.M., which now has to go over the whole business once more this October, this time we trust with proper announcement of their deliberations.

How or why there would be any question of approval is beyond



Long way down! Cat walkview from "Santa Cruz" airship hangar at Rio de Janeiro shows another ideal indoor flying site.



Editorial
Director
D. J. Laidlaw-Dickson

Advertisement
Director
C. S. Rushbrooke

Editor

R. G. MOULTON

Editorial and Advertisement offices:
38 CLARENDON ROAD, WATFORD, HERTS.
TELEPHONE: WATFORD 32351 (Monday-Friday)

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ON THE COVER

World Championship finalist Zygfrid Sultsz Javellin launches his F-02 design which is detailed on page 594.

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RADIO CONTROL MODELS AND

ELECTRONICS

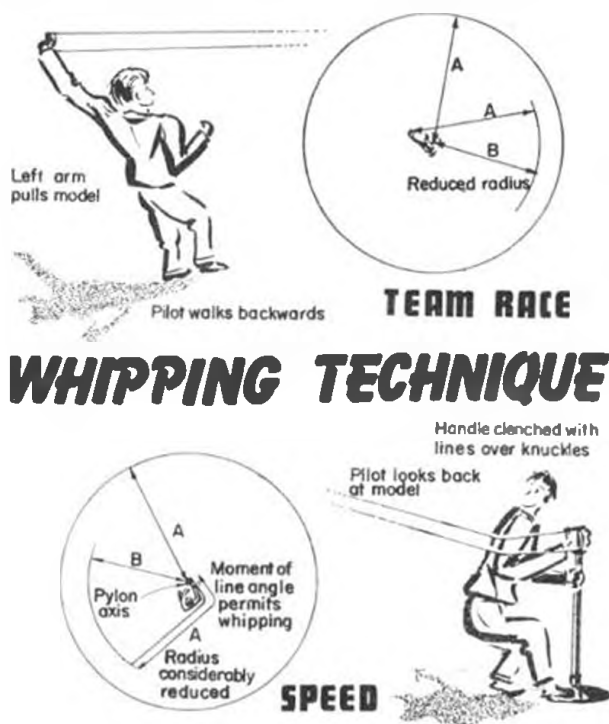
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our comprehension. If only we could make each of the objectors in turn show how he can do any other than fly a Monoline controlled model in a fair and sporting manner, we might be happier; but frankly we doubt if any of them have any control-line experience, or can even pretend to express the views of control-line fliers.

Protests were flying in all directions at Budaörs and we consider it to the credit of the U.S.A. that they refused to raise objections (despite encouragement from several Nations) to the conduct of their opposition. Instead they chose to rely on the good sense of impartial judgment that one might have expected.

Alas, they must have returned home disappointed and disillusioned men. What impressions of the C.I.A.M. in action these so expert representatives of the largest modelling Nation must have gained at Budaörs could only have confirmed the often expressed opinion that insular European thought dominates the F.A.I. models commission.

Why, if rules subject to misunderstanding were bandied back and forth to the considerable embarrassment of the hard working Hungarian hosts, did the so observant jury not eliminate team race pilots responsible for mid-air collisions, or guilty of left handed whipping? And what of Rossi's last flight, with the lines wrapped over his arm to shorten the radius and allow body whipping to the value of a good 10 k.p.h.? Our cine evidence of this, and a Wisniewski flight will be titled "Sinner and Saint".



We hate to make any such suggestion; but the blind eye turned to these flagrant breaches of the decent modeller's code of sportsmanship, and the attentive effort to discredit Monoline, gave one the firm impression of a partisan view.

It was in the team race final that the last straw of our own patience was broken with a feeling of livid fury never before experienced in all our years of modelling and reporting. To hear that Kjell Rosenlund was disqualified for putting *one foot* over the line during a pit stop in his brilliant winning flight, was too gross an injustice, especially when the circumstances of the

Yeldham-Taylor team retirement in the same race were so obvious to all except apparently the jury. British feeling of this awful anti-climax waxed so strong that the only possible action to square the account was to lodge an immediate protest against Bernard's collision with the British model, so matching rule for rule, though with no animosity toward the Belgian team for whom we have the greatest respect.

The result? Negative! No reply or acknowledgement of protest, and Bernard was announced as the only finalist in the results! We know that Nery Bernard was a most unhappy victor. One can only draw the conclusion that Rosenlund, clearly the season's champion among team race fliers, lacks favour in certain quarters. His "misdemeanour" should be the subject of an investigation and honour reinstated under the terms of article 4.10.12.-3 in the "Sporting" Code with a re-fly. Perhaps if Nery will come again to enjoy the British Nationals and Kjell is still in Britain, these keenest of pals will have the opportunity of deciding the honours together with the Gordon Yeldham—Chas. Taylor team without interference.

Enough now, we could ride this hobby horse for pages and might then be accused of conducting a rebel cause. We must remember that we have adequate representation on the C.I.A.M. and through our representative we should demand that the tangled web be unravelled through proper attention to secretarial duties and issue of commission deliberations. The Sporting code must be re-written under expert guidance of people experienced in expressing rules, then it will regain the respect of all sincere aeromodellers who are at present so dissatisfied with ambiguities.

For the record, the appointed jury at Budaörs was: A. Roussel (Belgium), A. Degen (Switzerland) and A. Reti (Hungary). Arnold Degen did not attend, and his replacement was not announced. The American team was notified of jury decision concerning Monoline by the F.A.I. Director-General, H. Gillman.

Rest of the news

Hitting the National Press headlines in Britain, Rolls Royce MAC Secretary called in the assistance of three Services, the Army, the Civil Defence and the Fire Brigade to try and rescue his wayward R/C model from an 80 ft. elm tree near Elvaston Castle, Derby. None were successful,—so he called in a firm of steeplejacks who brought the model back to earth safe and sound. Much more serious has been the attention given to yet another power cable fatality, this time in the Lincoln area where E. H. Patchett of Ruskington was electrocuted after the control lines of his "Perseus" had contacted a 6,600 volt cable, 26 feet above ground.

It seems that familiarity has bred contempt, for Mr. Patchett and his friend had been flying models in the same field for a number of years.

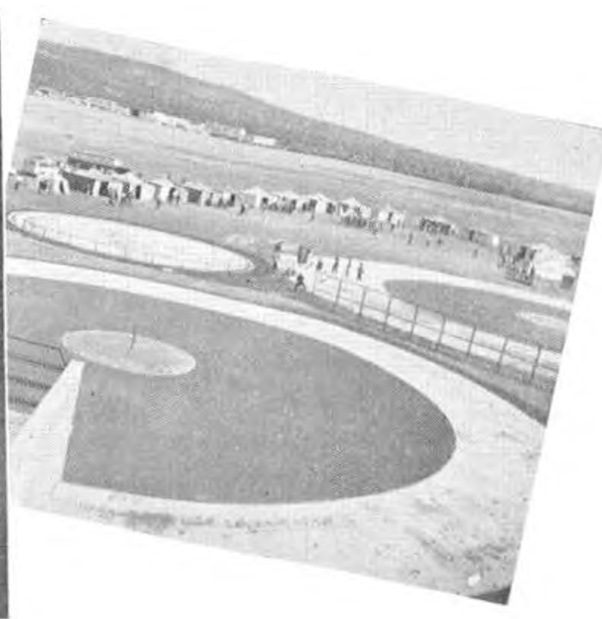
This is the third consecutive issue in which we say "Take care—fly safely—avoid power lines."

Museum closes

We know that a large number of our readers make for the National Aeronautical Collection of the Science Museum when in London, and for this reason warn intending visitors that from October 3rd the Collection is closed pending a move to the central block where we hope to see a larger and improved display during 1961.

Still going strong!

Lest many of his regular clients in all parts of the world may have thought that Bud Morgan might be leaving the mail order business he has been running for the past 15 years, we hasten to assure readers that Bud is very much "in supply" and it was entirely our fault that his advertisement was omitted from last issue.



1960 World C/L Championships

BRITISH TEAM WINS TEAM RACING HONOURS AT BUDAÖRS, SEPT 8—11th

TO HUNGARY WENT the honour of running the first of the combined Aerobatic, Speed and Team Race World Championships and the response of 18 visiting teams plus observers from Norway, China and Yugoslavia must have rewarded the hosts with considerable satisfaction. The Hungarian Aero Club, the MOKI Institute and innumerable individual modellers had obviously worked very hard to ensure success, and, in spite of the peculiar situations which arose from C.I.A.M. indecision (see p. 572) it would be a most sour modeller indeed who could not say that this was a memorable meeting, filled to the brim with excitement and demanding the most expert standards in each of the three events. The "Peoples Democracies" were, for the first time in any Championships, fully represented and they must have profited greatly in the experience of meeting Western counterparts, especially those from the U.S.A.

It was to the far travelled Americans that team awards for both Aerobatics and Speed were justifiably due. Our own British contingent were well ahead in Team Racing, having 3rd, 4th and 15th placings to secure a well earned team prize in the form of a magnificent new trophy donated by the Hungarians, and Belgo-Italian individual awards, closely disputed by Sweden and the U.S.A. made clear the superiority of Western capability. But make no mistake in thinking this was a political clash. For the camaraderie and goodwill the association of competitors from extremities of the World displayed both on the contest circles and in the tent lined pit area made a mockery of racial and political differences. No closer friendliness could be imagined than that between the Czechs and the Americans. No keener or more zealous group of enthusiasts have we ever seen to top the lads from the U.S.S.R., and most certainly one could never wish for more kindly and hospitable hosts than the Hungarians themselves. It was a great meeting, and a triumph of organisation.

Imagine Croydon airport, devoid of its international air traffic and devoted to Aero Club light trainers, glider tugs and parachuting aircraft based on the main hangars. The majestic control tower is empty, but its ground floor rooms are made over to a

modelling institute and local clubs for aeromodellers, who have the use of the airfield. Close to the tower are two circles, smoothly surfaced in Tarmac and to international standards as originally laid out at Etterbeek by the Belgian F.P.A.B., with an additional circuit for model racing cars. There one has the picture, for Budaörs is exactly parallel to Croydon (except that it has been put to good use) in every way. Distance from town, pre-war status as a major airport, grass surface and ample apron area all tally exactly. What an object lesson for our Ministry of Aviation!

Circles are equipped with a public address system to contact the pilots and spectators are protected with a tall safety barrier. All created for this occasion; but now permanent and of inestimable value to the advancement of Budapest aeromodelling.

Adding to the smoothness of the organisation was the use of the original reception hall and restaurant area in the control tower building as a meal room for the 250 or more persons involved in the events. Seated beneath the enormous photo montage depicting the sights of a 1939 World (the modern DC-3 over the Empire State building was one) which encircled the 22 Nation gathering, one was tempted to wonder who else might have gazed upon these same decorations in the 21 years or more of their existence. The fortunes of Hungary since those gay pre-war years are visibly reflected in damage to Budapest, yet to be restored and in the faces of her people. One might well have been eating over a historical spot where aerial invasion, or liberation began. But now the past was behind, and thanks to construction of a larger airfield at Ferihegy, Budaörs is the domain for air enthusiasts.

In the wood company of Henry J. Nicholls who had been invited to act as a Stunt Judge, we travelled via delayed B.F.A. Viscount to Zurich (the Comet, alas, was unserviceable) and made a remarkable 7 minute plane switch to Malev Il-14 (which had awaited the pleasure of our company) for an immediate departure eastwards along the Danube. Thus in 4 hours and 40 minutes from take off at London we were welcomed at Ferihegy by Aero Club Secretary, and old friends from the Hungarian teams at past

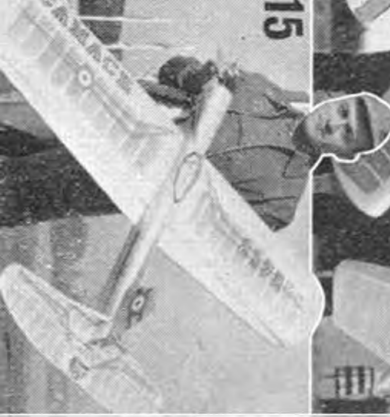
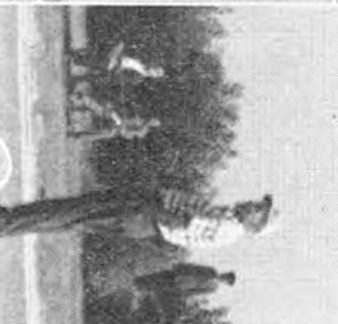
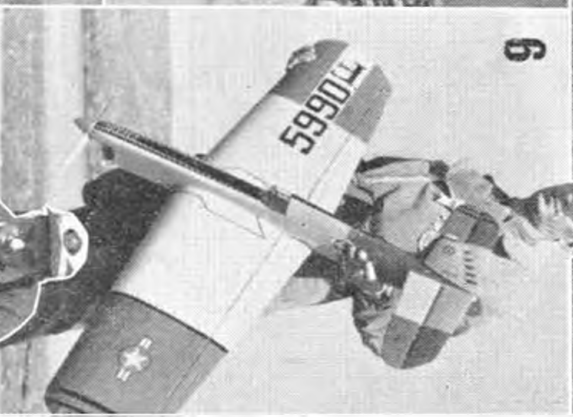
meetings who had been advised of our arrival time. Such a welcome is not easily forgotten, and it was to be typical of the hospitality throughout our stay.

Meanwhile, the British team, captained by Dick Edmonds and his little book to note the misdeeds of his crew, were picked up in the early hours by Belgian coach at Outend, to begin their long overland journey in the company of the Equipe Belge and supporters. Some 57 hours later they poured

Continued on page 576

Pick of the Aerobatic Flyers: (1) Sirotkin, top U.S.S.R. stunt entry used McCoy 35 in thick winged lightweight model. (2) Still from Texas with his Stuka, made finest flight of the meeting, Fox 25, 47 in. span 29 ozs. placed 2nd. (3) Australian Horrocks and wife Betty with Glochief 29, Nobler placed 13th, had a great time. (4) Doring placed 16th with modified Nobler called Ajax, K and B 45, 11 by 6 prop. (5) Dr. Egervary was 5th using O/D Veco 35 model with balloon tank. (6) Macon of Belgium, another Nobler flyer with vivid red, white and blue decor, Fox 35, placed 7th. (7) Gabris's new "Master" design with bubble hood from Czechoslovakia has MVVS 35 engine. (8) Warburton, placed 9th, British Nobler, Fox 29X, beside Thunderbird from Monaco. (9) Finest looking model of the meeting was Wooley's Argus in light green, red, dark green and gold, 525 sq. ins., Y. & O 10 by 5 prop. Fox 29 with extension shaft, 44 ozs. placed 4th. (10) Bob Palmer with latest Thunderbird, Veco 35, placed 3rd also seen in (11) flying nonchalantly through eights and inverted flight without looking at model. (12) Kujawa and Walicki from Poland using new Gorski 4.79 c.c. Sokol diesels in unusual entries. (13) Ordogh of Hungary placed 11th using MOKI 35 engine in attractively decorated model. (14) Ultimate winner, Grondal of Belgium with Fox 35 Nobler finished in blue and white. (15) First round leader, Compostella of Italy, finally placed 10th with strut braced tail design, Fox 35

HEADING: Shows British team receiving diploma and trophy for their first place in team racing. Also the general poster advertising the meeting and a view of the circuits on Budaörs Aerodrome



Continued from page 574

Into the Hungarian Aero Club with models for swift and efficient processing, last of the teams to arrive, and faced with little practice-time on the morrow before the contests started. Engines were engraved, tanks certified, areas expertly planimeted, and parts rubber stamped, then off to Budaors for the evening meal and introduction to the place which was to be headquarters for the next three days.

The evening at the first Team Managers meeting, competitors were informed that in team racing, the swivel lug handle was obligatory. Dick Edmonds objected but Director-General Gillman of the F.A.I. told him that last October's C.I.A.M. meeting had decided that the handle applied to speed and team race models. During the next day, written protest was lodged by the British and Finnish Managers against the use of the handle for other than speed but no decisive answer was given, and to avoid further discord, the lads arranged to borrow American Darril Dolgner's handle when they flew, Darril having doubly prepared himself since he was once officially informed that bubble canopies are illegal for racers!

All competitors were admirably housed in three Budapest Hotels and coach transport called between 6.30 and 7 a.m. to convey everyone to the airfield for breakfast. This early start gave late arrivals the chance to practice, and since the first day was scheduled for Stunt and Speed, this meant immediate action for the British aerobatic team who needed to find best motor settings. Climate was warm, dry and with only a slight variable breeze. The altitude of 387 ft. a.s.l. offered no problems.

But first, the opening ceremony. All teams paraded behind their flag bearers, and in one impressive column, moved off with very mixed approaches to the brass band accompaniment to parade in line before the welcoming committee. It was a great occasion for much shutter clicking, and at times, the fascinated crowd of East Zone journalists around Bob Watts of the U.S.A. team, who was producing instantaneous prints from his Polaroid camera, made an interesting diversion whilst a skilled linguist, Mrs. Long, repeated the speeches in about seven languages.

Formalities concluded, the battle was on, and straight into the fray by sheer bad luck of the draw went two of the great names from the States, Bob Palmer on the one circle, Bob Lauderdale on the other.

There was hardly a trace of wind and this, plus the need to "break the ice", obviously upset the Californian's pattern. Large loops with lots of backtracking to tighten the lines, a much displaced clover-leaf and a lack of finesse gave much encouragement to Palmer's competitors,

and disappointed those who expected so much more. Across the barrier in the speed circuit, Lauderdale readied his elliptical winged model with *Jubilee Super Tigre* (modified, with .010 in. extra cutaway of shaft port leading edge) and was soon away to demonstrate the first flight with Monoline in the contest. It was a nice smooth run, worthy of such an expert who holds the World Speed record at 170.25 m.p.h. Some suggested he was flying high, a view obviously not upheld by the officials who recorded 222 km/h against Bob's name to set last year's *Criterium* winning speed as a target for the rest to shoot at. The succession of speed and stunt flight in adjacent circles was at a rate guaranteed to confuse even the most clear headed of observers, and since your scribe has never claimed the ability of watching more than one thing at a time, let alone describe them simultaneously, we shall deal with the speed circuit first.

Speed

A special glass fronted control tower between the circles (as at Etterbeek, Brussels) housed the timekeepers and height marshal. So efficient was the set-up that the speed in km/h was known and announced to spectators before the flier had vacated the circle. After Lauderdale's excellent ice-breaker however, their trade was less exciting despite the appearance of the only woman entrant, Elvira Purice of Rumania with her neat light blue finished model and Rumanian 2.5 c.c. diesel which made a smooth run at 154 km/h. A number of fliers were obviously off settings for the day, including surprisingly, local man Imre Toth who had a rich run and did not use the pylon. The attempts began to mount up, but along came Italy's Ugo Rossi and we were treated to a perfect demonstration of pylon flying, the handle pointed at the *Nuova Diabla* and its modified *Super Tigre*, the altitude a constant 3 ft. for the entire run. The speed was a respectable 219 km/h, lower than expected: but with good excuse for the air had suddenly cooled.

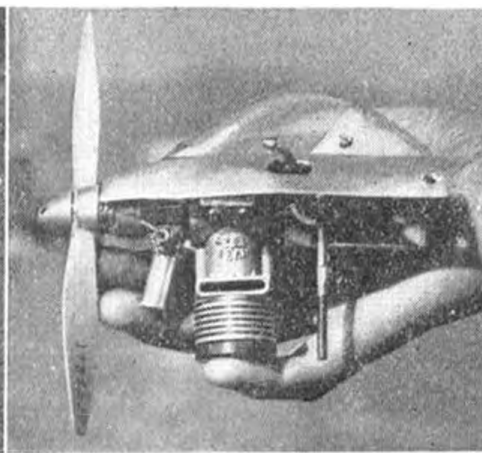
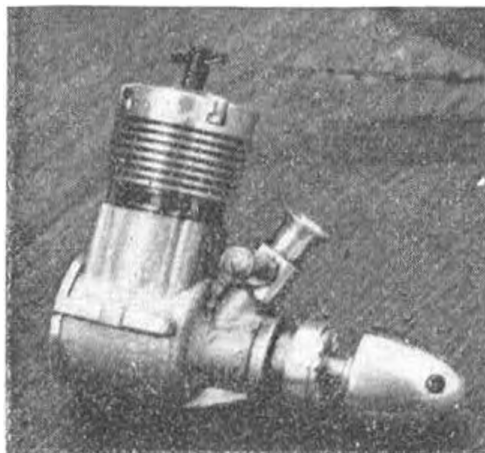
Czech MVVS engines and *Super Tigres* of various marks dominated the entry in terms of numbers, apart from the home built by Gaevsky of the U.S.S.R. and Wisniewski, plus the Hungarian MOKI 15's. It was remarkable to see how many were using the MVVS. Ziegler from Germany and Jaaskelainen of Finland failed to get a complete run in both attempts this first round with theirs, but the two Russians, Vasilchenko and Natalenko who had modified versions, each fed by chickenhopper type tank, had reasonable speeds of 192 and 196 km/h respectively. Employing the technique of whipping up to bring the motor "in" then slipping into the pylon yoke, the majority of fliers displayed no trace of manual assistance in the form of whipping until Toth gave his game away on a second attempt and pulled his model right into the

ground. Fortunately such incidents were few. Cesare Rossi tripped his dolly on take-off and retrieved a much blackened head *Tigre* which was off form on the second attempt.

The Czechs were making no mistakes and seemed to be markedly consistent with all three models by Pech, Koci and Sladky turning in 213 km/h, though in this first round, Sladky had his MVVS go lean to slow on the last lap for an official 208. Slick and efficient as they should be after so many years of experience at the game, these Czechs wasted no time getting into the pylon though many agreed with us that they had something "in hand" for an all-out effort later. Lauderdale was firmly in the lead, and the U.S. team was obviously determined to make its mark from the start as Jim Nightingale took the circuit for a flight checked at 220 km/h out of the pylon, and therefore an attempt. The Wisniewski 15 was rich, and Jim obviously not satisfied. Before the second run was made, one had an opportunity to study the fuel technique, used for all the U.S. flights. After the abortive attempt, the engine was run for a bladder tankfull on normal fuel, with high Nitro content, this was a "flush" to remove residues from the contest brew prepared by Wisniewski. He told us his mix was 55 per cent. Nitro Methane, 15 per cent. Methanol, 10 per cent. each of Bakers AA Castor oil, Steen "C" Polyoxide and Nitro Benzene. The blend was made immediately before the flight, a clear constituent being added from a light protected bottle, and exposure to sunlight on waste fuel changed its colour to black! Bill tells us that after 5 minutes, the fuel is of no use. California "Moonshine" or whatever it may be, the fuel certainly produces results for on his next run Nightingale made 227 km/h, and Wisniewski started his run with 5 laps at well over the 150 m.p.h. (241 km/h) to go apparently rich and return a flying Kilometre at 230 km/h. This pushed the U.S.A. well into the three leading places, but a look in their tent revealed that the effort had made its toll in engines. Two of the Wisniewski pistons had collapsed crowns (.030 in. thick) and one had lost a section of skirt below the transfer ports. Re-lapping of spares was in progress but as the meeting progressed the piston collapses matched the number of flights. *Some fuel!*

For the second flight, Lauderdale used a second model with the Craig Asher Howler 15 specially loaned to him for the occasion. Unfortunately, although well up to the power of any engine present, it was needle sensitive and a lean run of 174 km/h cooked it to the extent of providing an interesting airflow pattern in scorch marks aft of the plug hole. Only Ugo Rossi could split the American lead with a fine 227 km/h flight, and while

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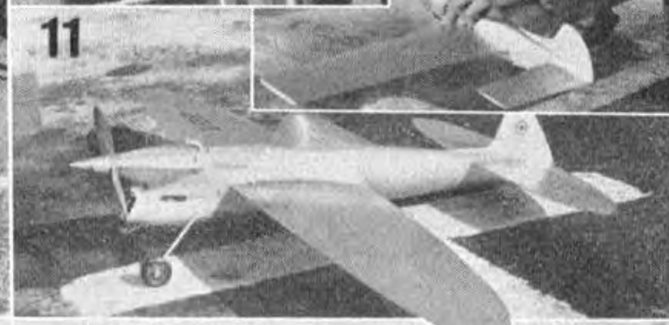


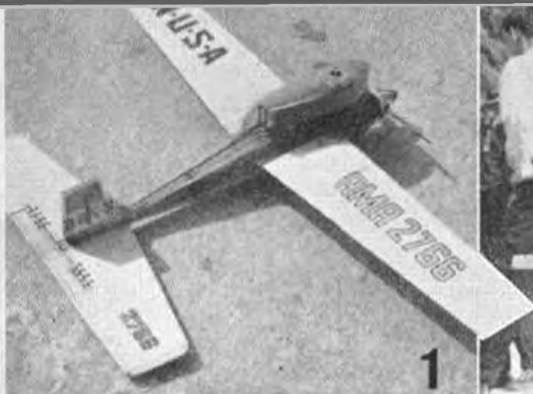
Team Race Motors: Left: Russian T/R diesel bears a likeness to certain well known British engine! Right: neat Czech unit with MVVS diesel, tank and bubble hood all fitted to alloy pan with single screw fixing.

Pick of Team Racers: (1) Manager Dick Edmonds and mechanic Gordon Yeldham await the start of the final with latter's monowheel entry using Steward Special engine. (2) Ken Long cleans down his *Tigress* after his best 4:57 heat with ETA 15. (3) Swift processing, for Russian team in this case, note *Tigress* similarity in foreground model. (4) Rumanian Fanica's Schlosser entry takes the pull test. (5) Allrounder, Bugl of Austria entered all three classes with own design



engines, here with team racer (6) Krasznoruckij of U.S.S.R. managed to get disqualified in both qualifying heats, with 7 others. (7) Happy in victory which was not theirs for long are the expert Swedish team of Bjork and Rosenlund (with fiancée) and Oliver Tiger powered Miss F.A.I. design. (8) Simon of Hungary. (9) Lietzmann and Nery Bernard of Belgium, fastest at 4:35. (10) American father-son team Chris and Phil Edwards. (11) Macon's Belgian entry with Oliver Tiger, all silver was 12th. (12) From Monaco Aubertin Jnr. had a new line in fuselages for the ETA 15 (13) Leading Czech entry with all fibreglass models was Klemm using MVVS diesels. (14) From France, Bador with the new Micron engine,





Pick of the Speed Entries:
 (1) Unpainted fiberglass fuselage of Nightingale's Monoline design. (2) Pech of Czech holds for a line check after 152 m.p.h. World Record flight using Monoline. (3) Vasilchenko of U.S.S.R. watches Ugo and Cesare Rossi prepare their "New Devil" also seen in (4) a modified version of the design in APS. (5) Bob Lauderdale with the Howler model also seen in (6) with scorch marks on the helmet cowl. (7) Bill Wisniewski "flushes" his 15 after a contest run at a mere 20,000 r.p.m., model seen in inset. (8) showing large fin area also drawn on page 580 (9) Natalenko of the U.S.S.R. with MVVS powered model placed 12th. (10) Stefano of Italy ably supported Rossi brothers with another "New Devil". (11) Naturally grained laminations made Krizsma's Hungarian model pretty for the MOKI engine. (12) Rumanian diesel (similar to Webra Mach 1) in E. Purice's entry. (13) Rosselli of France with Super Tigre model in bright orange finish. (14) R. Beck was leading Hungarian in speed, placed 9th.



Continued from page 576

this was going on, the Americans were being informed that their Monoline handles were not eligible by F.A.I. Director General, H. Gillman. "I can categorically deny that the letter is not correct" was the reply to the U.S. claim that their F.A.I. Delegate, Dr. W. Good had written Lauderdale and others that the handle had been approved. The wrangle went on, and was not even resolved by a meeting that evening of Model Commission Delegates who decided to refer the matter to their October meeting, and at this, the Czechs who had been hovering around unwilling to make any more flights, produced home made Monoline type handles for Pech and Sladky. It made no difference to their speeds, for all three Czechs returned a consistent 213! R. Beck of Hungary on whom much of the organisation has depended beat his bogey of 214 which he has stuck at for several years, with the best MOKI speed of 215 for 7th place after the second round, and Italy swung into 2nd team place after Cesare Rossi made 213 km/h to support his brother's 227 and Stefano's 220, all with identical *Nuovo Diabli's* in traditional Italian red tissue finish.

The next day was a rest period for the speedsters before the last morning of flying on the Sunday. It gave the Czechs time to sort out their Monolines for both Pech and Sladky upped their speeds to 227 and 219, the latter fighting the model all the way in a desperate flight: but nothing to compare with Zbynek Pech's after-contest record flight of 152 m.p.h. on .011 in. line! After that pylon chase, Pech must have been pounds lighter! It was a tremendous effort. Nightingale had rough luck in the last round, a plug blowing to spoil the first attempt, then the overstressed engine quit on his second run at a certain 240 km/h, and that was it. Bill Wisniewski was preparing a re-piston engine all morning, had a fine start but waited too long before slipping his wrist in the pylon, and collected a zero, so the issue was settled, with the Czechs now second. We deliberately leave the fastest recorded flight of 236 km/h (146 m.p.h.) by Ugo Rossi till last, for it was a flight that many would prefer not to have seen. No-one would doubt that the model engine combination was the most efficient on the field, and bearing in mind the dual cables, the Rossi-Tigre was surely in a class of its own for power. But to ensure success, Rossi whipped with his arm as sketched on p. 573, and while everyone tut-tutted, no-one did anything to complain. Ugo had started well, the motor coming up to peak quickly when his brother and and Jaures Garofali hurled Italian epithets across the circuit, meaning of which was never in doubt. Then came the Ugo Rossi "special", — a system of whipping up to speed and literally falling across the pylon with the lines and model trailing from near his shoulder. Why it was allowed we shall never know (Italian F.A.I. Delegate said there was nothing in the rules to prevent such action) and if it is ever respected by the modellers, we shall be most surprised. A protest against the flight was made by G. Britain; but was not answered.

Aerobatics

While speed had a rest day interval, the Stunt event carried on, and on . . . Five judges, H. J. Nicholls (G.B.), A. Ermakov (U.S.S.R.), I. Bard (Hungary), M. Contini (Italy) and M. Bienvenu (Belgium) were literally tied to table and chair (with parasol) for the entire meeting in a parade of 129 flights. It was a tough job for them to retain their marking standards, and perhaps their scores reflected tiredness at the close of each day. The system of discarding highest

and lowest scores, then averaging the middle three seems alright in theory; but after this meeting the general view, to which we agree is that *all* scores should count, and that *experienced* judges be employed. We were told that one judge had never acted as such in his own country, and this is simply not good enough for a World Champs. However, can one dispute the opinions of five responsible persons? It seems unfair, yet from general observation, the order given by the *best flight scores* would have been our personal positioning of the top four. After Palmer's first flight, our comments on the first round were as follows:— Brian Horrocks had a lovely engine run, seemed a shade off form in the eights but good as he ever is. Grondal crossed his reverse wingover, made large loops bordering on the 45 deg. line angle. Novaro from Monaco had an 850 grammes lightweight with Micron 10, the wings visibly flexed in loops (and broke off later!). Day had his motor dry up in the cloverleaf, losing those points. Steve Wooley of the Vienna Skysharks (U.S.A.) flew better than anyone else with the finest clover yet seen. Still and Warburton, similar in styles were good as one another. Ray Brown's tight loops were not appreciated, he was overdoing this technique and jerky on the overhead eight. Dr. Egervary flew very well, rivaling Wooley, possibly better. Compostella from Italy aggressive, fast, accurate and should be high pointed. Subsequent issue of points gave the order:— Compostella 1018, Egervary 1015, Grondal 1008, Wooley 997, Macon 994, Still 993, Sirotkin 989 and Warburton 982.

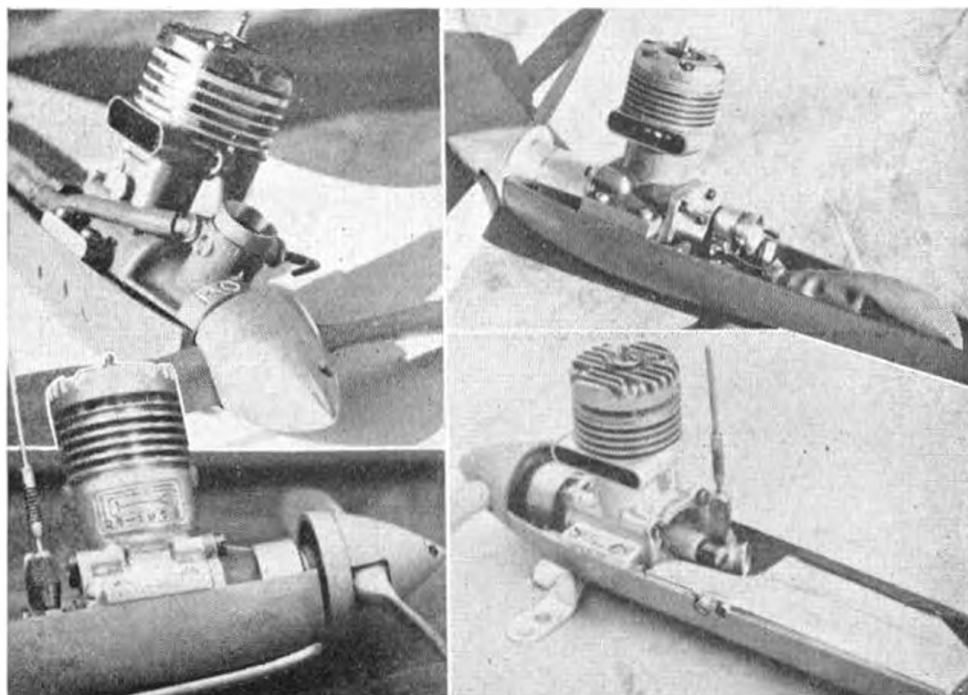
Maybe we had not seen Grondal's flight from the judge's angle, and certainly we missed Macon, so these were noted for special observation on the second day. Before closure on the first day, Bob Palmer had managed to get in his second flight for a 1,016 score that showed he was well in the running. Indeed, he was of the few to show *great* improvement over first round scores, our notes reading as follows: Wooley over time for take-off and shaky on level flight, superb eights but the overheads did not intersect overhead. Oswald of Germany stunts with a U-Reely — and manages well! Grondal again crossed his reverse wingover but had fine square pull-outs, slow, circular loops this time, horizontal eights a little "lazy", inconsistent on his level flight height. Macon had an identical style, but with less finesse, wander in loops. Warburton for Britain, a really fine flight dangerously near 7 minutes flying time but, oh, calamity! No reverse wingover, a sure loss of 50 points or more. Herber from Czechoslovakia has an all-moving tail — with all-moving level flight but snappy for the triangles. Rumanian Silix hit the ground in a horizontal eight. Doring's K & B 45 seems no more useful than Brian Horrocks' Glochief 29 in a Nobler. Bador's small but pretty Micron 2-5 diesel model outclassed by the big stuff — a true sign of the times. Gabris, once a Criterium winner, still shaky on his loops after all these years! Roy Brown opens out a bit, much improved but still not quite "with it", a feeling hard to describe but well known to stunt flyers. Tubby Day has real tank trouble, the motor cuts in the fourth loop. Don Still makes a beauty of a flight, precise in every way, slight loop wander and the vertical eights on different centre-lines seem only faults. Dr. Egervary not quite as good as before, mainly faulty on triangles and cloverleaf.

From general observation we would have expected all three Americans in top placings, Wooley the better, with Grondal and Dr. Egervary close in fourth and fifth. Warburton might have been

Continued overleaf

(15) Contrary to announcement, a speed trophy was awarded to the Americans. Phil Edwards, acting team manager, receives it from Antal Reti of Hungarian Aero Club. Fine cup was donated by Hungary, also another for team racing.

Outstanding Engines: Top left: the Rossi Tigre special with amendments to intake, porting and exhaust. Top right: Wisniewski 15 with pen bladder tank covered by balloon, lower two photographs show the Russian Gaevski engine with chicken hopper type tank

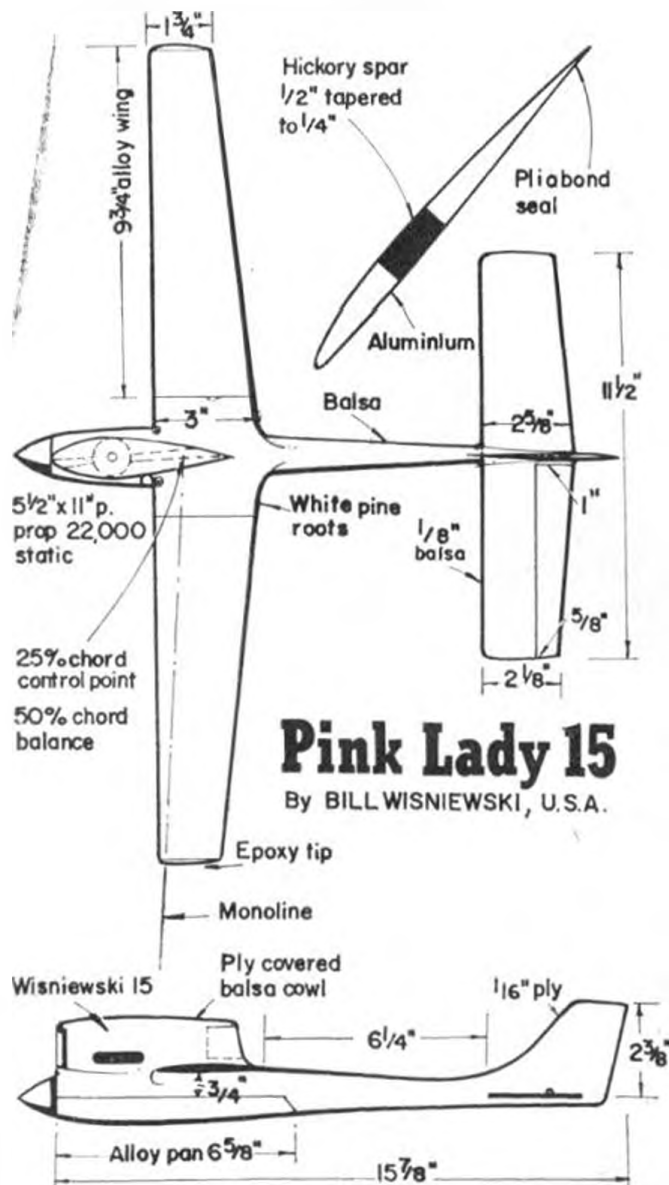


Continued from page 579

there but for that lost wingover. Subsequent issue of points for the round gave the order: Grondal 1,023, Palmer 1,016, Still 1,004, Wooley 1,001, Egervary 980 and Leitzmann of Belgium 979; for interest, adding 50 to Warburton's score would have made him close second with 1,022. Compostella, whom we had missed was way down after his first round.

We elected to watch for Leitzmann this time and to study Grondal again for the final flights which spread over to the third and last day.

There was no doubting that Leitzmann was good, for in his third flight he further improved: but was certainly no match for the leaders. The Belgian style with Fox/Noblers is toward smooth, large manoeuvres, and a positional error in superimposing loops or other consecutive shapes is most obvious. Grondal also flew well, split the circle on the same line for the wingover, and left a general impression that he would score better than before; but so too would all the Americans, especially Still, who gave a faultless display, quite the best of the whole meeting with hardly a point to drop on anything. Wooley's level flight had a wing wobble, otherwise he would be equally rated. Our scoring would have been for Still, Wooley, Grondal and Palmer in that order over first four places for the round. Actual order in points scored was: Still 1,062, Grondal 1,048, Wooley 1,042, and Palmer 1,040.6. Ordogh improved to fourth position in the round with a 996. The percentage difference from second to fourth place was so marginal, and their advantage over the rest of the field so great that to judge their exact order demanded the skills of a Solomon—Don Still gave one the impression of best positioning and pattern shapes and he would earn our accolade.



When all was done, we were treated to blind flying by Bob Palmer, and wingovers with the wheels on the ground for 180 deg. of the circle by Don Still; but the highlight of all was formation flying by these two, 18 inches above one another, inverted, at 3' altitude!

Team Racing

Unlike the three-day Aerobatic marathon and two-day Speed event, all heats for the Team Racers were concluded within the second day of the meeting. Each team had two races, and ten three times were to qualify for a decisive final. Observation by the Hungarian officials was strict, there being two lap scorers and timers per model, height judges, and a circle referee on the microphone to first warn, then disqualify for blatant whipping. Result was that in the first three races, only one person gained a flight time! At each of the timekeeper's tables was a fiendish electrical device, massed with relays and rotary counters, and which was connected to large lap indicator dials at the far side of the circuit. Sometimes a pointer would stick, but generally these dials gave spectators a good picture of the race state.

First of the British team to fly was the Mike Smith-Dave Balch pair, and they were drawn against two of the Czechs who had been doing well in practice. Presenting a "new look" in racers, more like a long range maritime reconnaissance aircraft than a racer, the fibreglass, MVVS equipped Czech models were a threat. However, we were underestimating the Rivers boys, for once the race was on, and even with the first tankful going through an undercompressed engine, the red British racer was a match for the others, finishing in 5:38 with hopes of being better next time. The best Czech team time was 5:24, and with everyone complaining that they could not achieve home speeds, a startling result was not expected. Simon of Hungary and Szkipcenko of the U.S.S.R. had a very close race, each holding the same relative air position for lap after lap, and landing simultaneously, the second pit stop eventually making a 15 secs. difference; but then the Russian's time was 5:36 — more than one would have estimated after such pace. Then in an inspiring effort, the Swedish team of Bjork and Rosenlund reeled off a 4:39 flight that was a marvel for many to see. Airspeed was a constant 96 m.p.h., lappage 30, 37 and 37, the piloting and groundwork beyond criticism. There was, however, much talk of the left-handed pilots who extended their arms and whipped discreetly as our sketch on page 573 illustrates. We happened to be near the Referee when voices were raised in complaint, and were flattered to hear someone say "Everyone should be made to fly like the English", but must admit it came as a surprise for they were exclaiming Mike Smith as a criterion!

Next British team to enter the fray was the Ken Long-Les Davy pair with the ETA 15 Tigress. They had a first time start and a full lap lead before anyone else was airborne and flying at around 92 m.p.h., were well away. A near calamity happened when the model bounced high at the first pit stop, just in time for Ken Long to grab it down again and though vital seconds were lost, the 4:57 time placed him in handsome second place. Bernard had a bad run, the Oliver being undercompressed throughout in spite of adjustments for a 6:18, so Britain had a grand chance of at least one in the final.

After an alarm when a Czech built Super-Aero 45 Ambulance plane disappeared over the airfield hedge with both props slowly churning on the starters—to be anxiously chased by a Yak 18, which made a scramble take-off only to find the Ambulance safely scraping back home with engines running, the Taylor-Yeldham team went into the circle with their "Steward Special" (a prototype of a new A.M. engine) all-black racer. The issue was never in doubt, though 33 laps per tank was not giving much of a safety margin, and with that most skilled of all pilots, Chas. Taylor, putting the model right into Gordon Yeldham's hands on each stop, the time of 4:45 was admirable. Britain was now 2nd and 3rd. We could relax a little to watch others, only to see Austrian Bugl have a shaft run that did his O.D. motor little good, and just before lunch to watch the keen American father-son team of Phil and Chris Edwards have to refuel one lap from the end of a fast race which still came out as 5:38. That Cox shook a lot of cynics.

After lunch, the British order of flying was reversed and first in were Taylor and Yeldham, drawn against Bernard and the Cantelli-Amerio Italian team. First away at the call to start, the black British racer was overtaking at the rate of once every third lap as Bernard's Tiger was burping, then the Italian and Belgian models collided, the Italian's prop stopping as it gouged a lump out of Bernard's belly duct. This was accepted by all as an accident, yet when on the pit stop, the British model ran into the Italians as Chas. Taylor brought it round over the white line. Chas. was disqualified for leaving the pilot's circle! Ah well—one of those things: but in the meantime Bernard had landed and in the confusion, Leitzmann did not re-start thinking there would be a re-run. There was, but without our team and without the Italians after a few runs, so Nery Bernard had a nice solo of 4:35 to put him on top. No one could better this time, for the Davy-Long team were delayed at both stops by having their "regular" stopping point occupied and the seconds lost made their time 5:05. Balch had a false start for his second heat, then a prop change, so the positions were set with the order of Bernard, Rosenlund and Yeldham for the final on the next day.

These second heats were not without their moments. Darril Dolgner had his Rivers catch fire, he blew that out and left a blaze on the

3-VIEW DRAWING. Shows the Wisniewski design, 22½ in span, weight 14 ozs., most interesting features are the use of large tailplane area for stability and the rearward balance point, combination of which make the model fly in a "groove"

armac as he shifted the model. Not content with that, on the next stop his model ran into the prohibited area. It was not for Darril to give up, he laid out all of his 6 feet across the circuit, grabbed the all-British model recovery rod (taken for the occasion and which Pete Wright smartly passed across for the American to use), groped for the model amid tumultuous cheers in all of 18 languages, got it back and finished in 9:30. It could be said to be the race of the day!

In the final, Yeldham gained a lap lead at the start. The order at the 22nd lap was Rosenlund 14 laps ahead of Yeldham, who was 3 1/2 of a laps ahead of Bernard, but calamity happened when at this moment Bernard's model came down on top of Yeldham's with such force that the British model was knocked into the ground. We knew immediately that we had no chance with a stop so early on a 33 lap model. Gordon strove to re-bend the u/c, started and released to see the model head straight out of reach in the circle. *We'd 'ad it*, as they say. Our cine shows how Chas. was almost bent double for two laps waiting for Bernard to overtake and obviously Nery couldn't, and having to fly right handed, might not have had his customary skill of control. Rosenlund gained with every lap, and was six ahead at the second stop. The blue Swedish model rolled a couple of feet inside the white line, so Kjell quickly put one foot over, kept the other well back, reached, grabbed, went to the line and was away fast as one can read this. The man was unbeatable. His time was 4:48 with perfect piloting. Bernard's was 5:06. Yet *someone* complained to the time-keeper, who noted Kjell's foot over the line. It was recorded and after all the congratulations, photographs and a radio interview, Referee and Manager of the meeting, Gombocz, most unhappily had to tell Rosenlund that acting on information, he had no option but to disqualify for infringement of the rule. Kjell freely admitted putting one foot over—did that constitute an infringement? Others had done it during the meeting; and he had no more entered the circuit than if he had reached out with an arm. The Hungarians were as dismal over this as the Swedes, one could only think that influential prompting had raised the matter. G. Britain lodged a protest against Bernard's collision under the terms of 4.10.14 purely to see justice done.

With National flag raising and National Anthems playing, a most impressive prize giving ceremony concluded a memorable meeting. The afternoon was taken up with a fine air display of flag bearing Po-2's towing banners and gliders, Zlin Trener 6's bursting balloons and aerobating, Yak 11's and 18's aerobating and parachuting from Li-2's and An-2's. It was the ideal finale, allowing tempers to cool down and for the wonderful camaraderie (which extended considerably further that evening after a magnificent banquet), to manifest itself with exchanges of engines, fuels, props and even models, so cementing new found friendships and giving those with few facilities the opportunity of learning how we in the West are so fortunate in our hobby.—R. G. MOULTON.

TEAM RACING—(Heat Times)

1. Bernard—Lietzmann	Belgium	6:18	4:35
2. Bjork—Rosenlund	Sweden	4:39	4:49
3. Yeldham—Taylor	Gt. Britain	4:45	—
4. Davy—Long	Gt. Britain	4:57	5:05
5. Kun—Azor	Hungary	5:00	5:03
6. Beck—Frigyos	Hungary	5:19	5:01
7. Szekircenko—Konratenko	U.S.S.R.	5:36	5:03
8. Rossi—Stevanato	Italy	5:46	5:04
9. Klemm—Gurtler	Czechoslovakia	5:09	5:51
10. Bugl—Billes	Austria	—	5:18
11. Draxek—Trnka	Czechoslovakia	5:24	5:19
12. Macon—Grondal	Belgium	6:07	5:28
13. Szirotkin—Skurskij	U.S.S.R.	5:30	9:01
14. Edwards—Edwards	U.S.A.	5:38	6:02
15. Smith—Balch	Gt. Britain	5:38	6:54
16. Veronesi—Lavazza	Italy	5:49	5:53
17. Soderberg—Rosenlund	Sweden	—	5:52
18. Simon—Kelen	Hungary	5:53	5:59
19. Roggl—Kirchert	Austria	6:03	6:20
20. Votypka—Komurka	Czechoslovakia	6:56	6:09
21. Post—Lutkat	Germany	—	6:12
22. Enquist—Kjelberg	Sweden	6:28	6:21
23. Schnorrenberg—Lenzen	Germany	7:05	6:23
24. Oswald—Malik	Germany	—	6:46
25. Paunov—Topalov	Bulgaria	6:50	7:06
26. Dolgner—Burke	U.S.A.	6:55	9:30
27. Aubartin—Follete	Monaco	7:42	6:56
28. Rosello—Fabre	France	7:02	—
29. Vlasov—Tinev	Bulgaria	7:06	7:17
30. Cantelli—Amerio	Italy	—	7:10
31. Watts—Adams	U.S.A.	7:27.8	7:31
32. Fanica—Georgescu	Rumania	7:41	7:48
33. Bador—Souliac	France	—	8:22
34. S. Purice—F. Purice	Rumania	9:54	9:42

Non-qualified:—

Mirceev—Racskov, Bulgaria; Niemi—Jaaskelainen, Finland; Goyvaerts—Pierre, Belgium; Schnurer—Neusburger, Austria; Georgesou—Lupulescu, Rumania; Hoglund—Ruokolahti, Finland; Babicev—Krasznoruckij, U.S.S.R.; Justin—Raatikainen, Finland.

TEAM RESULTS

1. Gt. Britain	920	4. Sweden	1012
2. Hungary	954	5. Italy	1083
3. Czechoslovakia	997	6. Germany	1161
7. U.S.A.	1200		

AEROBATICS

		Total	Best Flight
1. Grondal L.	Belgium	2071.2	1048
2. Still R.	U.S.A.	2066.6	1062
3. Palmer B.	U.S.A.	2056.3	1040
4. Woolley S.	U.S.A.	2043.0	1042
5. Dr. Egervary G.	Hungary	1996.2	1015
6. Lietzmann G.	Belgium	1965.6	986
7. Macon G.	Belgium	1965.2	994
8. Sirotkin	U.S.S.R.	1963.9	989
9. Warburton F. L.	Gt. Britain	1954.2	982
10. Compostella L.	Italy	1952.0	1018
11. Ordogh L.	Hungary	1950.6	996
12. Seeger K.	Germany	1945.3	959
13. Horrocks B. J.	Australia	1931.9	985
14. Brown R.	Gt. Britain	1912.6	956
15. Trnka J.	Czechoslovakia	1893.9	969
16. Doring U.	Germany	1892.9	949
17. Gabris J.	Czechoslovakia	1883.9	942
18. Herber M.	Czechoslovakia	1859.2	939
19. Kondratenko E. A.	U.S.S.R.	1842.3	921
20. Masznyi G.	Hungary	1837.3	926
21. Contini F.	Italy	1819.6	921
22. Ruokolahti P.	Finland	1817.9	916
23. Souliac M.	France	1805.3	916
24. Orsini C.	Italy	1802.3	845
25. Sundell O.	Finland	1800.2	860
26. Oswald G.	Germany	1764.6	893
27. Tautyko A. N.	U.S.S.R.	1757.1	891
28. Day D. J.	Gt. Britain	1750.3	849
29. Soderberg C.	Sweden	1737.3	840
30. Bador B.	France	1574.6	787
31. Bugl P.	Austria	1536.6	843
32. Rogl F.	Austria	1434.2	732
33. Glaser A.	Austria	1402.2	767
34. Raulio H.	Finland	1245.2	669
35. Bartoli C.	Monaco	1230.9	715
36. Kulawa S.	Poland	1223.6	626
37. Fabre L.	France	1044.6	531
38. Walicki J.	Poland	996.3	526
39. Novaro H.	Monaco	986.6	598
40. Csoma G.	Rumania	941.9	488
41. Nowakowazski J.	Poland	825.6	462
42. Arton G.	Rumania	756.9	443
43. Silek K.	Rumania	630.9	324

TEAM RESULTS

1. U.S.A.	6,265.9	9. Finland	4,863.3
2. Belgium	6,002.0	10. France	4,424.5
3. Hungary	5,784.1	11. Austria	4,375.0
4. Czechoslovakia	5,636.7	12. Poland	3,045.3
5. Germany	5,602.8	13. Rumania	2,329.7
6. Italy	5,573.9	14. Monaco	2,217.5
7. U.S.S.R.	5,564.1	15. Australia	1,931.9
8. Gt. Britain	5,517.1	16. Sweden	1,637.3

2.5 c.c. Speed (K.P.H.)

	km/h	km/h	km/h
1. Rossi U.	219	227	236
2. Wisniewski W.	230	219	0
3. Pech Z.	213	213	227
4. Nightingale J.	227	213	0
5. Koci J.	213	213	224
6. Lauderdale B.	222	174	204
7. Stefano O.	220	213	0
8. Sladky J.	208	213	219
9. Beck R.	215	208	0
10. Rossi C.	0	213	211
11. Krizma G.	209	208	209
12. Natalenko V. T.	196	200	204
13. Vasilchenko M.	192	202	200
14. Toth I.	0	202	192
15. Gaevsky O. K.	200	0	197
16. Jaaskelainen K.	0	0	195
17. Kjelberg O.	0	181	188
18. Martinelle B.	180	180	162
19. Roselli G.	0	171	179
20. Ziegler G.	165	175	0
21. Racskov K.	162	0	173
22. Vlasov A.	167	171	0
23. Tinev S.	153	169	160
24. Purice E.	154	147	135
25. Bugl P.	0	154	0
26. Rakosi T.	128	134	150
27. Enquist C. E.	0	148	0
28. Marcu V.	0	0	124

TEAM RESULTS

	km/h		km/h
1. U.S.A.	679	7. Bulgaria	513
2. Czechoslovakia	672	8. Rumania	428
3. Italy	669	9. Finland	195
4. Hungary	626	10. France	179
5. U.S.S.R.	606	11. Germany	175
6. Sweden	516	12. Austria	154

FOR SOME TIME now, members of the North Western Area S.M.A.E. have been concerned over the apparent lack of competitor support for payload flying in this country. A few years ago this was not the case, either the Bulova watches then donated by Pan American, or the novelty of the event, attracted considerable interest in this class of model flying. As many of those taking part were experienced contest fliers, the latter reason seems the more probable.

This would lead one to assume that the novelty has worn off, again incorrect, as there are, spread throughout the country, small groups of devotees some of whom

JOE BARNES voices popular opinion with an appeal for British rule changes in

have been flying payload since its introduction into this country. Many of these fliers have developed their models, and handling, to an amazing degree. John O'Donnell has been putting up creditable times in F.A.I. contests with his 2.5 Payloader, and Arthur Collinson's and George Fuller's Nats. winners could outperform many open class models. These extensively flown, finely trimmed jobs, and the sad, but spectacular fate of many rushed, half trimmed models, have each done their share to dissuade many from having a try. The main deterrent is, without doubt, the ever present flying field problem and R.O.G. difficulties.

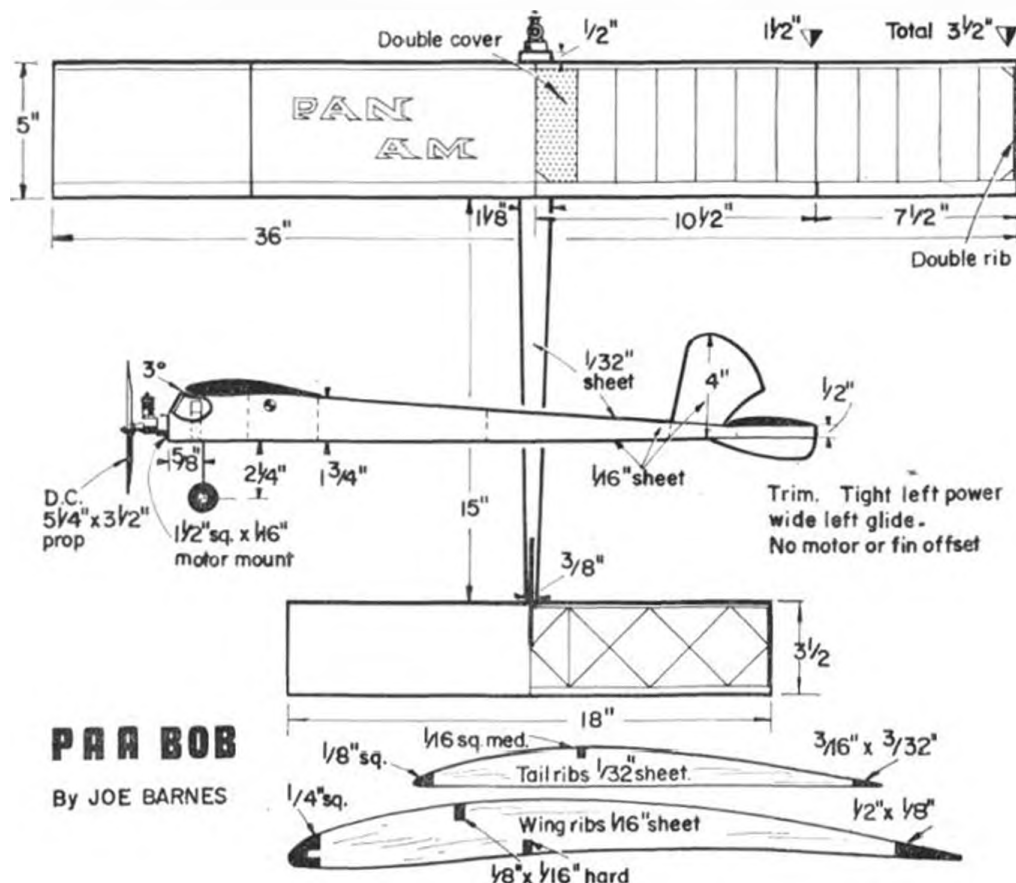
These excuses, for that is all they are, do not seem to have affected payload flying in the United States, where support for these classes is well maintained. Support has increased, even in spite of, or probably because of, rule changes nearly every year.

There we may well have the answer, for, in this country we are still flying contests to rules which have been



long discarded by Pan American. Many feel that the S.M.A.E. has allowed the class to stagnate, especially at the Nats. by keeping the International Class going with only the same score or so of entrants flying the same models, year after year. One of the most important items in this class is the motor, and there is no need to emphasise the amount of money one can hang on the front of these models. This alone is a deterrent for the beginner and the modeller looking for an extra class to enjoy.

Next logical step is downwards, in both engine and model size. This brings us to .049 (.8 c.c.) payload. These models proved very popular, especially when one could use a 1 c.c. motor with extra ballast. The only disadvantage again is that with the advent of the Thermal Hopper and the staggering claims made for the works tuned Holland Hornets, motor prices and availability



Heading shows Bud Wolfe's Pee Wee Cargo model lifting 17 1/2 ounces, with 3-bladed prop at the '60 U.S. Nationals. To the right is Don Burke (his brother was in U.S. World Champs C/L team) launching his PAA load design at the same meeting. Below, right: Also from the U.S. Nats is Don Monson's single-bladed pusher biplane entry in Clipper Cargo which flew well as the inset picture illustrates

At left: Details of Joe Barnes' own design for the .020 class drawn to one-eighth scale for the benefit of those who want to try their hand. Over at top right is Dave Yates' successful model for the class, made for PAA duration, but is a Cargo carrying winner. This .020 engine size demands careful engine setting and maintenance. Dave recommends shutting off air supply to the carb to stop the Pee Wee, and also to have a plate carrying soldered nuts behind firewall to allow offset adjustments

PAA BOB

By JOE BARNES

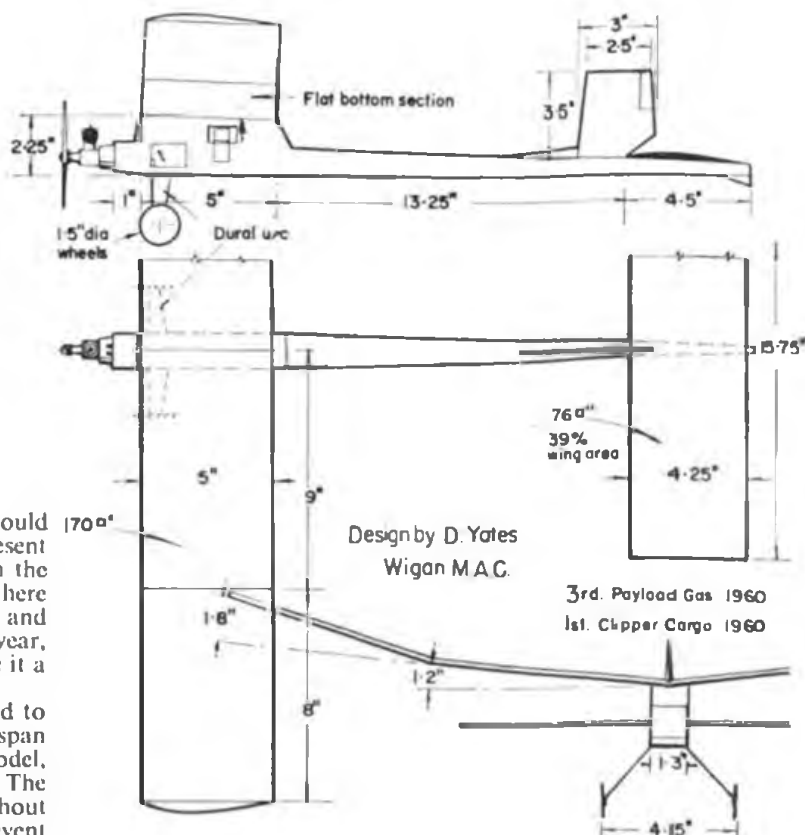


again put off prospective recruits.

What we are really seeking is a model which would appeal to these recruits, also the enthusiast at present flying sports power models. We have this model in the Pee Wee Payload and Clipper Cargo classes, and there is no question of trying it out as it has been tried and acclaimed at the Scottish Pan American Rally this year, (a rally really worth travelling to, as many who give it a try find out, and join the annual pilgrimage).

Advantages of the Pee Wee class have been found to be its size, even the Cargo jobs have only the wingspan of the average rubber or small contest power model, and the fact that the engine can hardly be tuned. The cost comes right down as it is possible to manage without a timer by employing an eye-dropper tank. The event may look at first like a one motor benefit, but one only has to stand at a team race circle or an F.A.I. power comp. to realise that many other events can be classed this way!

The answer to the lethargic state of payload seems to be to stabilise on Pee Wee payload and cargo. This isn't as unfair on those flying payload at present as it seems the hot 2.5's can be left in their F.A.I. class models where they probably spend the year anyway, and there is a move already afoot to make good use of any .049's. As evidence of the versatility of these Pee Wee jobs, Dave Yates' third placer in payload won Clipper Cargo,



at Scotland, when loaded. The model that won payload in the American Nationals this year had its prop. taken off and a Jetex unit fastened to the nose to place fourth in Senior Jet. Other advantages are that these models have proved easy to trim, ideal for the beginner, even the contest flier could find an odd corner in his box to take one, they have proved ideal for small field flying and the risk of objection to the noise is lessened.

How about it Rally organisers? It is too late to do anything on a national scale this season, but it is well worth including the class at many of the winter rallies and in next season's programmes.

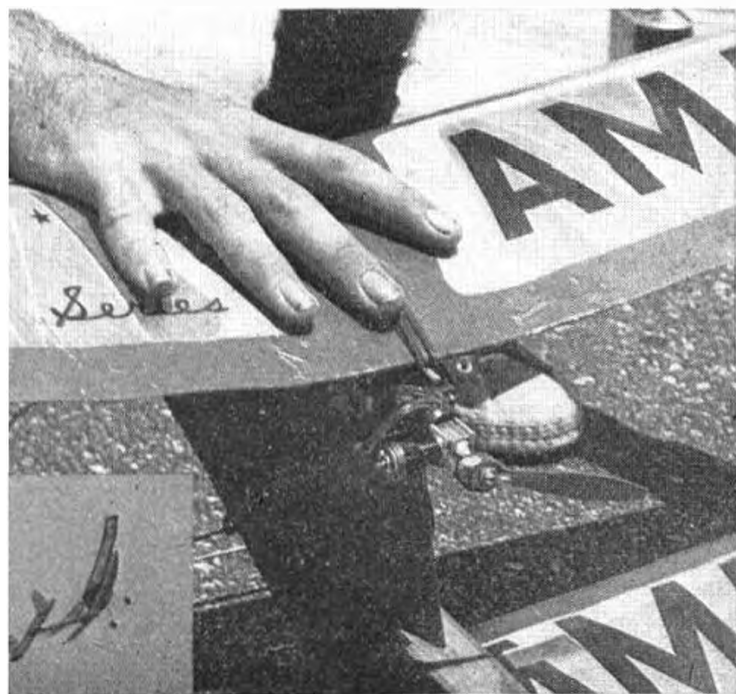
Harry English's article in May issue on this same subject quoted the existing rules and regulations, incidentally R. Angell used the design in that article to place second at the P.A.A. Rally.

The following are a few points offered to would-be designers by the N.W. Area modellers.

Design. There are many approaches, from the small high climbing job to the slower model with a good glide, but keep it straightforward, at first anyway, and keep the flying surfaces light, multi-spar wings seem favoured.

Undercarriages. Use 16swg. wire for payloaders but dural seems to be the thing for cargo. Dave Yates proved this. Experiments are on with wheels on a common axle for the latter class, and tricycle u/c's seem to allow the model to gain too much speed on the ground and they rear up and stall on unsticking, but there is room again for experiment. Wheels should be no less than 1 in. diameter.

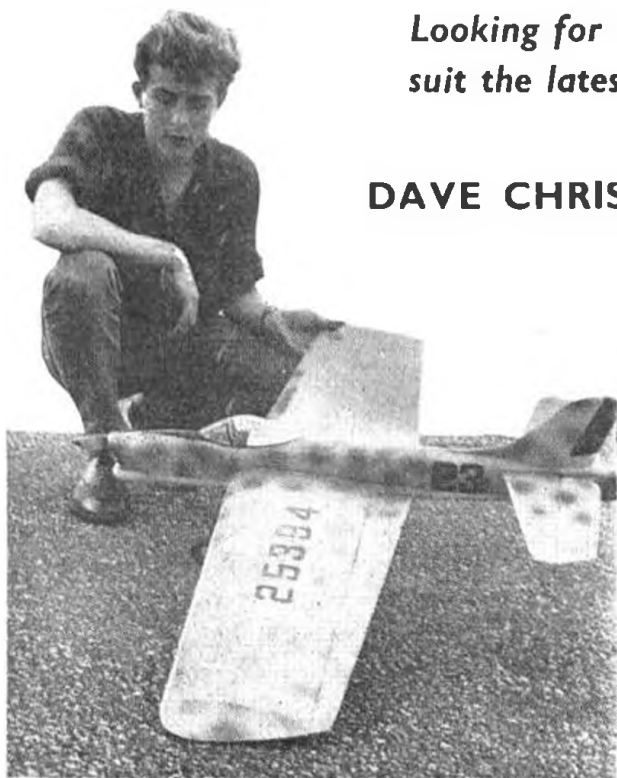
Power. Ideas vary a lot on props, not much success being had with the supposedly fabulous Cox 3-blader. At present the D.C. 5½ in. by 3½ in. seems best for R.O.G. and the Pee Wee prop. for hand launch. Nitrex 15 is used for trimming and general knockabout work, but Super Nitrex for comps. Batteries have not proved to be a worry, the answer seems to be two Bell Batteries (ex-W/D, 1s. 6d. each) connected together in parallel, they last very well indeed. What are your views reader?



Looking for a realistic stunter to suit the latest '19 and 3.5cc engines?

DAVE CHRISTOPHER'S **SKUA**

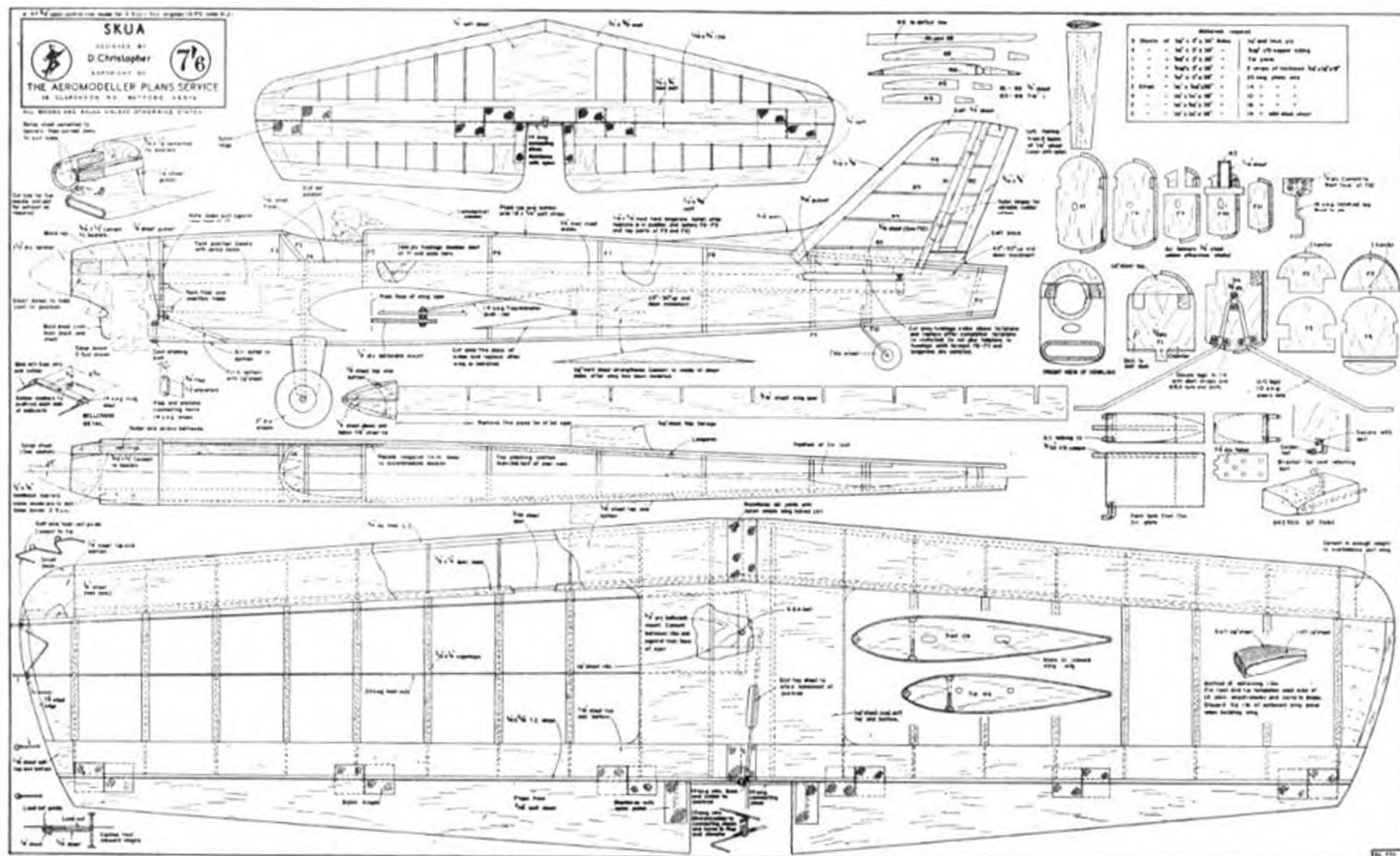
is a $47\frac{3}{8}$ " span answer that will also take the 25's & 29's



TEN YEARS AGO rival camps in control-line development in this country were centred upon Weston-super-Mare and West Essex. In the intervening years, interest has waned from the original enthusiasm for control-line stunt in these quarters, but we are happy to report that 1960 has seen a big revival in the Somerset community, particularly in the field of combat and precision aerobatics.

At the British Nationals, Dave Christopher from Weston made a considerable impact through his most attractive Skua design, entered for the Gold Trophy. Jet-like lines coupled with a mottle camouflage finish made his model one of the most attractive on the field and but for Dave's (as yet) limited experience among the expert acrobatic flyers, the model might well have placed very high. Originally created for the American #19 size

FULL-SIZE COPIES OF THIS 1/7th SCALE REPRODUCTION ARE AVAILABLE THROUGH A.P.S. AS PLAN CL 771, PRICE 7/6 PLUS 6d. POSTAGE



engine, it is also suited well to the 3-5 c.c. motors, particularly the new Rivers Silver Arrow which is detailed on the plan.

Construction

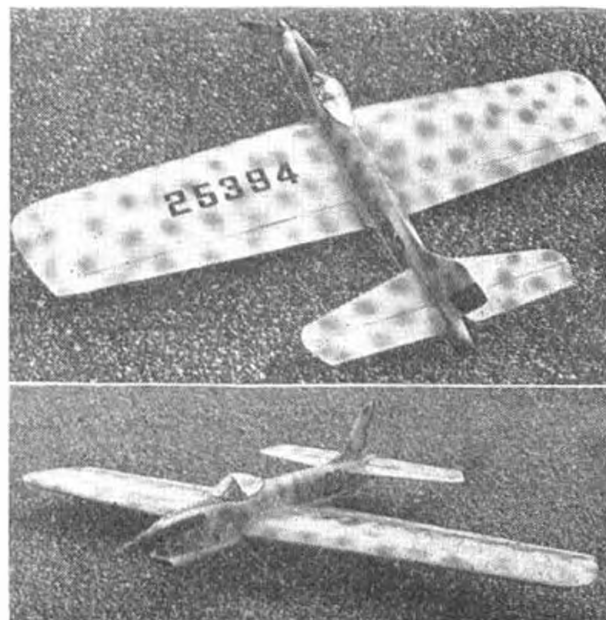
Skua closely follows the current trend of design for precision aerobatics with coupled flaps and elevator and fairly long nose for smoothness of manoeuvre. It also offers an intermediate size between 2.5 c.c. and the larger 5 c.c. types.

Fuselage construction is commenced by cutting engine bearers to length, and making up the 10 s.w.g. undercarriage which is bolted to the $\frac{1}{4}$ -in. ply former F4. Similarly, F1, and the tailwheel brace are cut from $\frac{1}{4}$ -in. ply, and pre-cemented as well as checked for engine bearer spacing. Fuselage sides are cut from $\frac{1}{4}$ -in. medium sheet with 1 mm. ply doublers cemented on to the inside faces, then bearers added. Join sides with F1, F4, F9 and F10 (lower sections) with tailwheel brace added, and F11. Note, rear end of fuselage is left open for jet pipe effect. After fitting the tank, with its centre line on the same level as the needle valve, put the fuselage to one side and build the tailplane.

This is a simple structure using $\frac{1}{4}$ -in. strip of different widths for most parts. Elevators are built separately, and a 14 s.w.g. wire connecting piece, with control horn soldered centrally, links them. Nylon hinges are preferable. Completed tailplane can be cemented to fuselage but first see notes on plan concerning the removal and later replacement of the fuselage sides in this area. Add the $\frac{1}{4} \times \frac{1}{8}$ longerons, F7 and F8.

Wing construction is started by cutting one $\frac{3}{8}$ -in. wing spar and pinning vertically over one of the wing plans. Make ten ribs from $\frac{1}{8}$ -in. sheet by the "sandwich" method detailed on the plan, and cement and press them into place on the spar. A $\frac{1}{4}$ -in. sq. L.E. is added and also the upper $\frac{1}{4} \times \frac{1}{4}$ in. spar cap. When dry structure is removed from plan and the lower spar cap attached together with $\frac{1}{8}$ -in. sheet top and bottom at the T.E. Don't forget the $\frac{1}{4} \times \frac{3}{8}$ -in. T.E. strips. L.E. is covered with $\frac{1}{8}$ sheet, top and bottom, and various pieces of $\frac{1}{8}$ -in. and $\frac{1}{4}$ -in. sheet cemented to the wing tip. Capstrips $\frac{1}{8}$ -in. \times $\frac{1}{4}$ -in. cover ribs, above and below. The other wing half is built in exactly the same way, and when complete is cemented to the first half, with no dihedral. Nylon strips are used to reinforce all wing joints.

The bellcrank is mounted on $\frac{1}{4}$ -in. ply, and when bolted in place and lead-out wires have been cut, bent and attached, this ply mount can be cemented into the wing, between the root ribs and butting against rear face of spar. Push-rod from 14 s.w.g. wire is cut to length enough to reach the elevator and connected to the bellcrank, and flaps, which are made from $\frac{3}{8}$ -in. sheet



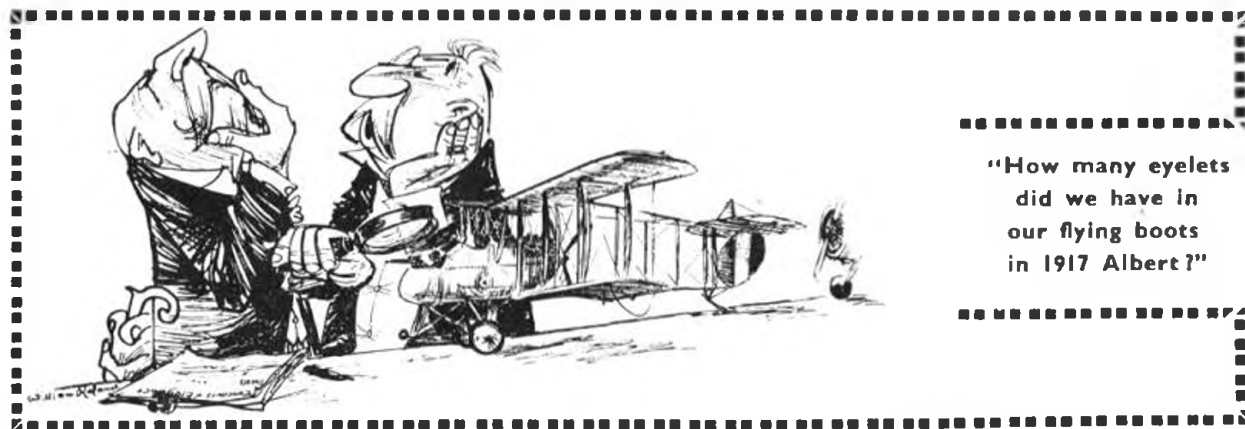
Mottle camouflage and semi-scale lines made this a photogenic study at the 1960 National Championships and other rallies where Skua and Dave Christopher have been making their name fast

and hinged with nylon strips. Interconnection of flaps is made by 14 s.w.g. wire. Note that the control horn is soldered centrally and braced by 16 s.w.g. Wing centre section is then covered with $\frac{1}{8}$ -in. sheet, top and bottom. Then, removing parts of the fuselage sides at wing root, fit the wing. With the bellcrank and flaps in neutral positions, the linkage is made by binding and soldering a small length of 16 s.w.g. wire, to the push rod as sketched then connect push rod to elevator with all neutral.

The fin is now made and attached to the fuselage by means of the two pieces of $\frac{1}{4}$ -in. sheet that are cemented to R3, and the tailplane (refer to F10 drawing). Add all remaining formers. Top and bottom open areas of fuselage are planked with $\frac{1}{4} \times \frac{1}{4}$ -in. soft strip. Note break in plank-ing if a cockpit with depth is required.

Apart from the cowl, made from block and sheet, and U/C fairings, structure of the model is complete. Covering should be nylon or silk, for robustness and a weight of up to 32 ounces tolerable for top performance.

The Skua will "square" and fly in all conditions. It rates good appearance points and is smooth in level flight. What more could one want for a 3 $\frac{1}{2}$ c.c. stunter?

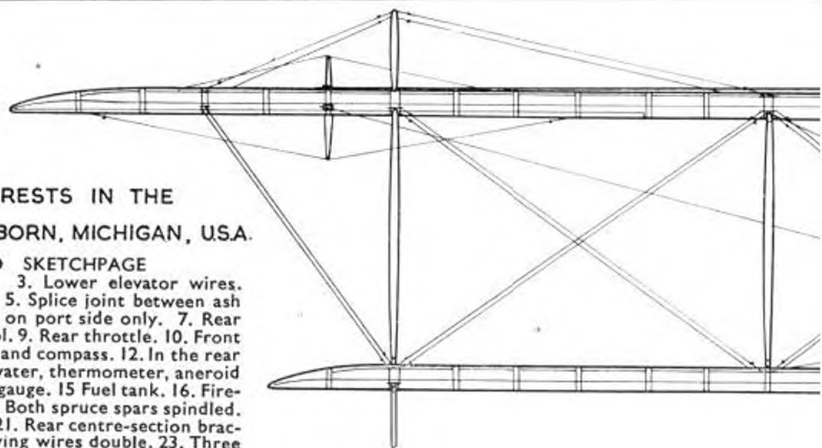
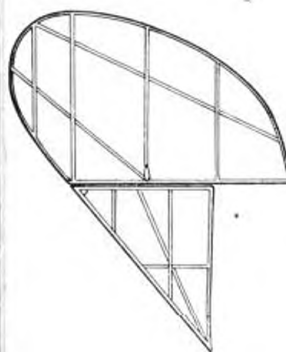


"How many eyelets
did we have in
our flying boots
in 1917 Albert?"

THE MACHINE ILLUSTRATED RESTS IN THE
HENRY FORD MUSEUM, DEARBORN, MICHIGAN, U.S.A.

KEY TO DRAWING AND SKETCHPAGE

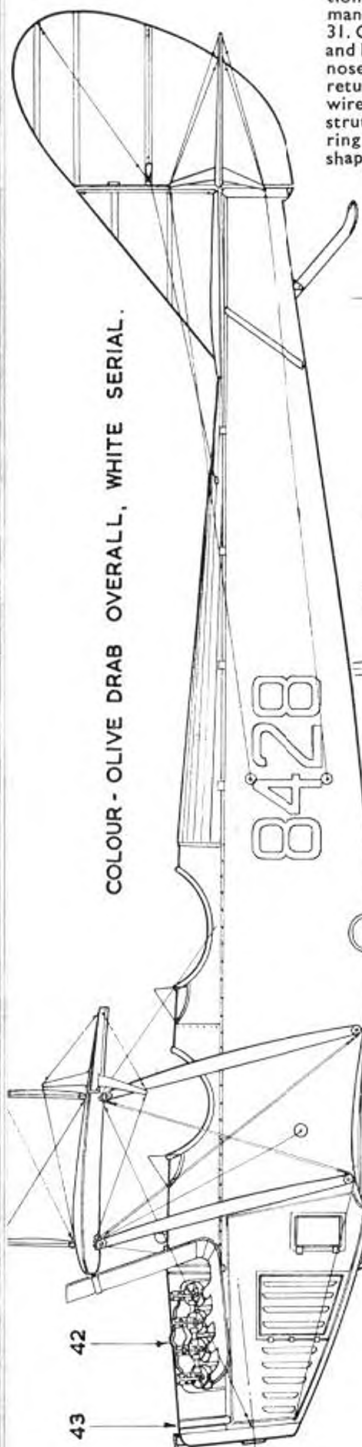
1. Aileron quadrant. 2. Rudder wires. 3. Lower elevator wires. 4. Attachment for removable turtledeck. 5. Splice joint between ash longeron forward and spruce aft. 6. Step on port side only. 7. Rear fuel cock control. 8. Front fuel cock control. 9. Rear throttle. 10. Front throttle. 11. In the front cockpit: oil gauge and compass. 12. In the rear cockpit: Tachometer, oil gauge, compass, water, thermometer, aneroid and clock. 13. Shelf with compass. 14. Fuel gauge. 15. Fuel tank. 16. Firewall. 17. Wing walk on port side only. 18. Both spruce spars spindled. 19. Solid compression ribs. 20. Steel tube. 21. Rear centre-section bracing to this station on some models. 22. Flying wires double. 23. Three mounting lugs on each side. Water pipe to radiator via pump at rear of crankcase. 24. Rubber hose connection. 25. Exhaust valve spring. 26. Pushrod inside pulltube. 27. Pushrod brace and return spring. 28. Ignition leads to outer cylinders run in conduit strapped to induction manifold. 29. Plug at rear of port cylinders, front of starboard cylinders. 30. Cylinders staggered, starboard ahead of port. 31. Cap strips on upper and lower edges of ribs. 32. Ply covering to top of leading edge, but two nose ribs on early models. 33. Spindled leading edge. 34. Aileron return wire. 35. Incidence wires between all interplane struts — all wires stranded steel. 36. Diagonal bracing between front centre-section struts. 37. Stiffening ridges in aluminium panel. 38. Ground tethering ring. 39. Position of port exhaust. 40. Axle guide slot. 41. Top cowling shaped to fit over induction manifold. 42. Leather cowling straps fore and aft. 43. Ply floor boards. 44. Fuel filler. 45. Radiator filler.



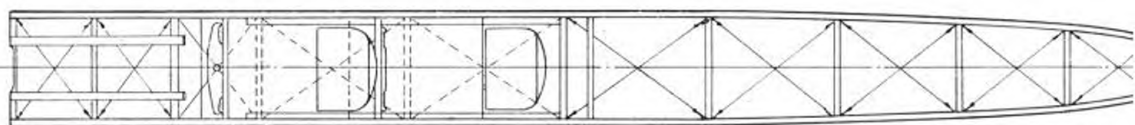
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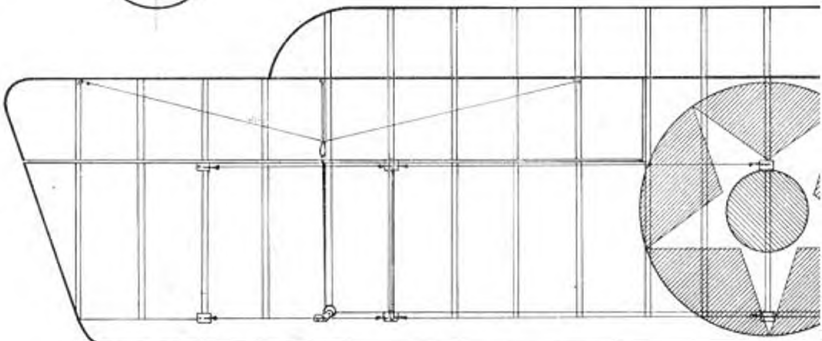
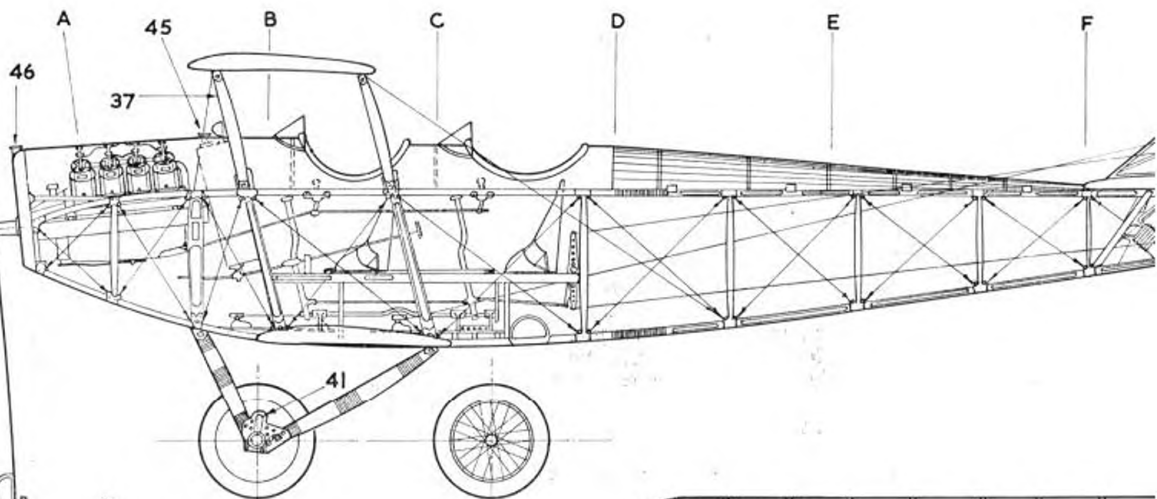
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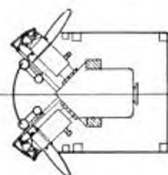
COLOUR - OLIVE DRAB OVERALL, WHITE SERIAL.



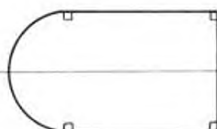
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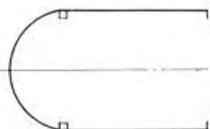
PLY NOSE FORMER



A



B



FAMOUS BIPLANES NO. 27

By G. A. G. COX

CURTISS JN-4D



WHEN THE United States entered the war in 1917 she lagged behind the major European countries in aeronautical design. Nevertheless, as in the second World War America, with her enormous productive capacity was regarded as the "arsenal of democracy," and a British purchasing commission was sent there as quickly as possible to place contracts for military equipment, including aircraft. There were few indigenous designs to choose from, but one aircraft stood out as being practical and suitable for fast mass production. This was the Curtiss JN military tractor, the American counterpart of the Avro 504K, destined to enjoy the same everlasting fame.

British design

All the early Curtiss machines were designated alphabetically, the JN being basically the "J" with incorporated features of the "N". The popular name "Jenny" was inevitable. Although built and tested in America, the Curtiss "J" was a British design. While on a visit to this country Glenn Curtiss met B. Douglas Thomas, then assistant chief engineer at Sopwith's, and offered him the job of designing a tractor aeroplane around his OX-5 engine (until now America had favoured the pusher arrangement). Thomas agreed and set to work on design in a tent at his home, dispatching the drawings as they were done to Curtiss in America. In 1914 when Thomas went to the United States he found the Type J partly constructed and the design of the "N" well under way. While with Curtiss, B. D. Thomas shared in the design of the "America" flying boats, but later joined another Englishman, W. T. Thomas, vice-president of the Thomas-Morse Aircraft Corporation. As chief design engineer for this company, B. D. Thomas was responsible for the successful S-4 scout fighter and the M-3 fighter.

Like most great aeroplanes, the Curtiss JN was the subject of very many modifications. The first variant to appear in this country was the JN-3, 85 of which were built in the United States and Canada for the R.N.A.S. The other model used by the R.F.C. and R.N.A.S. was the JN-4A, 170 being delivered to training squadrons

in the United Kingdom. This model could be recognised by its pronounced dihedral and ailerons on both wings. The JN-4A also had the tilted engine which was characteristic of the later -4D. On both the JN-3 and JN-4A the trailing edges were straight from tip to tip. Easily the most famous of the Jennies was the JN-4D, thousands of which were produced by Curtiss and several contractors for the U.S. Signal Corps Air Service. This was distinguishable by its scant dihedral, marked down-thrust and centre-section cutaway. Later versions were the JN-4D-2 with no downthrust, the -4H with a 150 h.p. Hispano engine, and the -6H series of gunnery and day-bombardment trainers, also with Hisso engines.

Altogether, something like 9,000 Jennies were built before the end of the war, when the American aircraft industry collapsed with the cancellation of war contracts, and after the armistice many hundreds of brand new engines and airframes were piled up at storage depots, waiting for a buyer. It would be untrue to say that they could not be given away, but they were remarkably cheap. For a time a brand-new aircraft could be bought for as little as fifty dollars. Little wonder that the Jenny earned immortal fame as a "barnstormer's" machine and that the OX-5 became the mainspring of a new toy which was to re-establish America's status in the air age. For the adventurous young man with a fair degree of mechanical aptitude there was an exciting and profitable living to be made all over the North American continent. There were thousands of people who had never seen an aeroplane, millions who had never flown in one who would be willing to part with five dollars for a five or ten minute flight. All one needed was a safe, rugged machine which could land and take off from an average-size field (for airfields were practically non-existent then), a machine which could be maintained and repaired without elaborate equipment. The Jenny was ideal.

Some idea of the punishment the Jenny would take, may be had by reading "We" by Charles Lindbergh, in which he tells of his experiences as a barnstormer in the early 'twenties. Wrecked undercarriages and broken propellers were quite commonplace, and simply meant a delay until replacements arrived from the government surplus depot, but often structural repairs had to be carried out in the field. Once Lindbergh tried to take off along the main street of a small town, which meant passing between two telegraph poles 47 feet apart. "We pushed the ship over to the middle of the street and I attempted to take off. The poles were about 50 feet ahead and just before passing between them there was a rough spot in the street. One of the wheels got in a rut and I missed by three inches of the right wing tip. The pole swung the plane round and the nose crashed through the wall of a hardware store, knocking pots, pans and

Continued on p. 590

Above: A Canadian squadron's JN-4 with strut connected double ailerons and no downthrust on the engine.—Imperial War Museum Photo Q 61527

Left: Upper ailerons only on this "Jenny", albeit somewhat bent! Also has short exhausts, no downthrust and an unusual four-blade airscrew.—I.W.M. Photo Q 56058





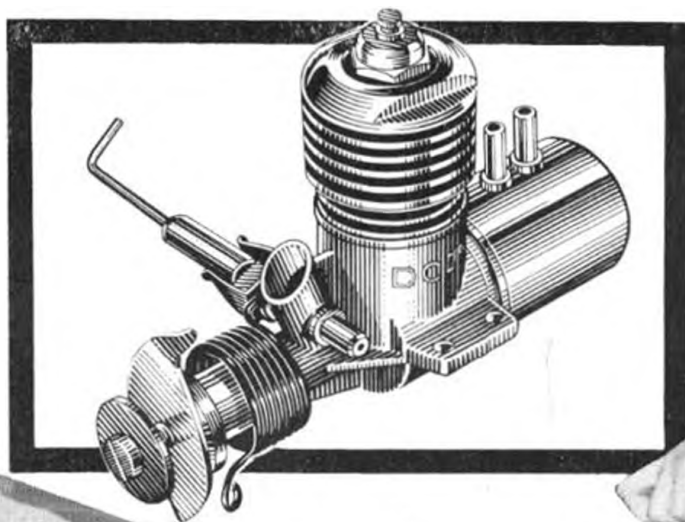
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SPECIAL QUICKSTART FEATURES

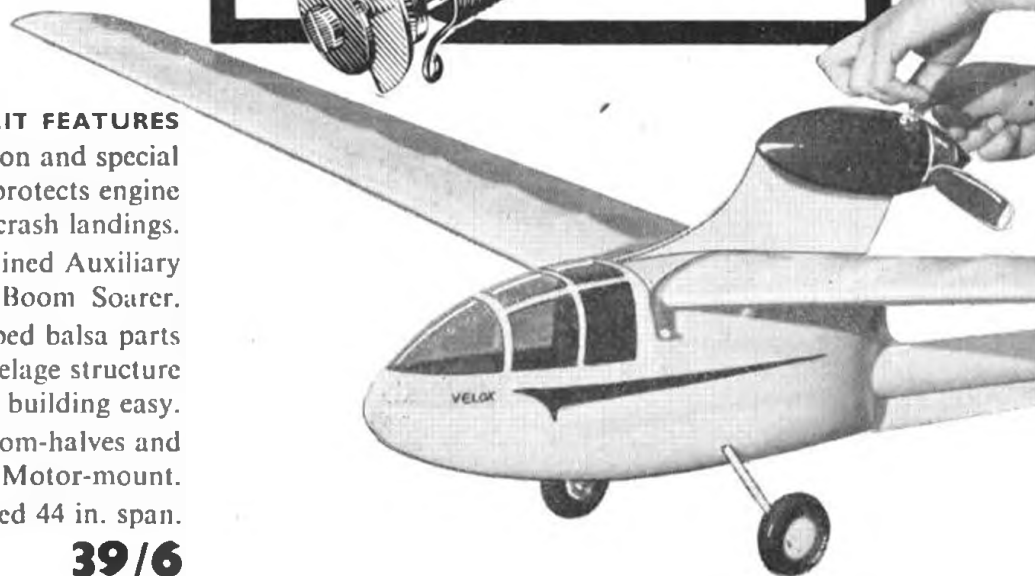
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- ★ Precision engineered throughout.
- ★ Amazingly low cost—Bantam only **34/10**



SPECIAL VELOX KIT FEATURES

- ★ Position and special pod housing protects engine even in crash landings.
- ★ Ultra-streamlined Auxiliary Powered Pod-and-Boom Soarer.
- ★ Pre-shaped balsa parts and Kwik-fix fuselage structure makes building easy.
- ★ Spindled Boom-halves and Motor-mount.
- ★ Perfectly designed 44 in. span.

39/6

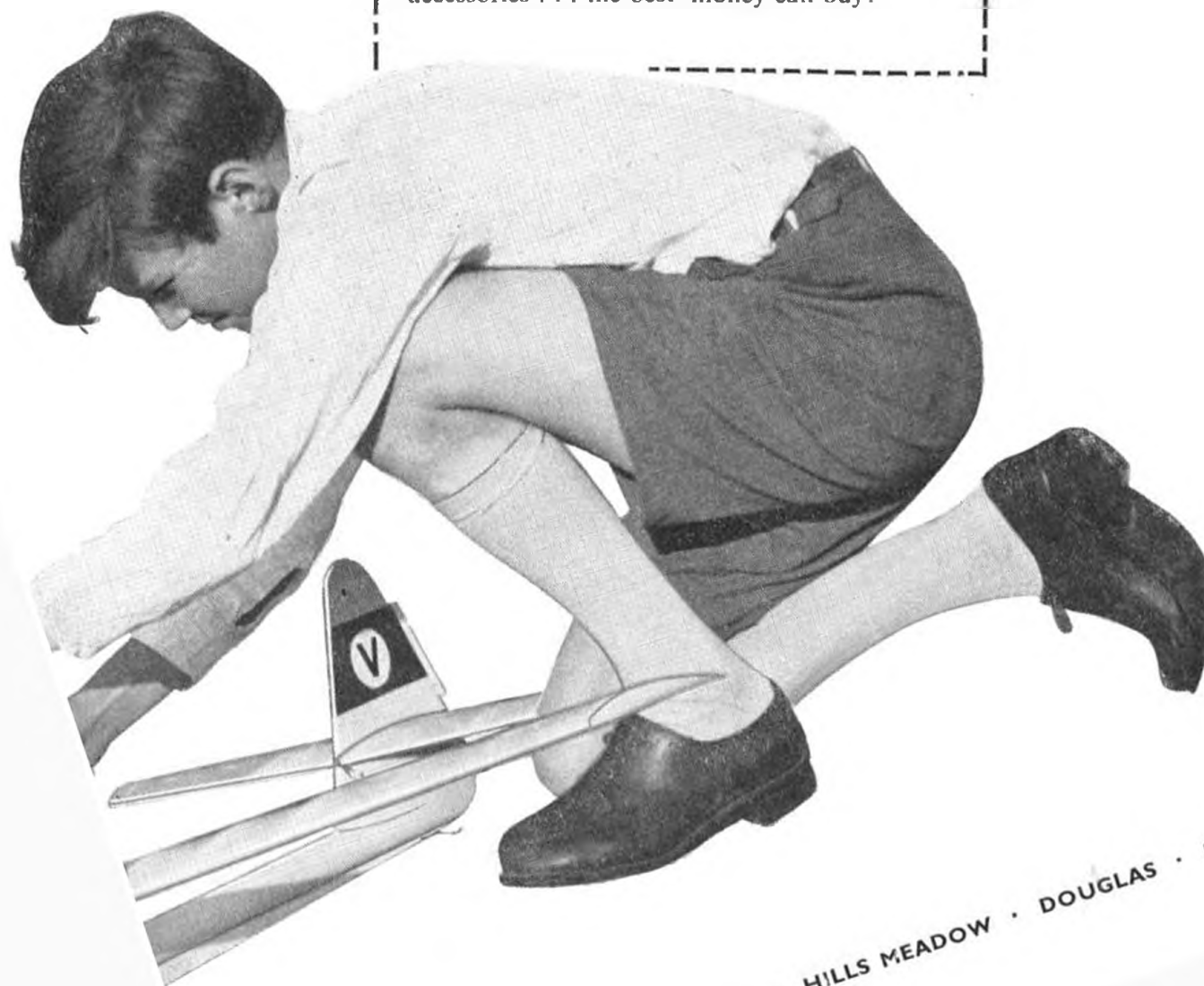


I Combined op!

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ASK ALSO for the specially-designed Veron
pusher-prop at 3/3 and the Quickstart
accessories . . . the best money can buy!



DAVIES-CHARLTON LIMITED • HILLS MEADOW • DOUGLAS • ISLE OF MAN

Famous Biplanes

continued from page 587

This superb example of modelling is a true scale replica (1/16th full-size) of 32 5/8 in. span, made by Les Klean of Illinois, U.S.A. Every detail is faithfully reproduced, including that on the engine. The model will go into the Smithsonian Institution on permanent exhibition.

Below: Clear undoped wings on this JN-4A show marked dihedral with upper and lower ailerons, downthrust and a straight trailing edge across the centre section as other notable points.

I.W.M. Photo Q 66939



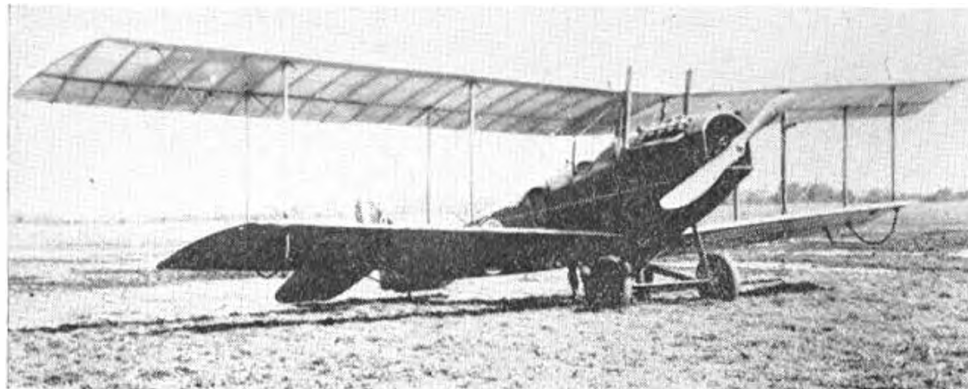
pitchforks all over the interior. The greatest damage to the plane was a broken propeller, although from that time on it always carried left rudder." On another occasion Lindbergh had cleared a take-off strip in the sagebrush in Texas, but when attempting to rise—"As soon as we picked up a little extra flying speed, another clump of sagebrush would slow the ship down again until, after we had gone about two hundreds yards, a large Spanish dagger plant passed through the front spar of the lower left wing. After being cut off by the internal bracing wires, it remained firmly planted in the centre of the outer bay." The gap in the front spar was 14 in. long, and the fabric was torn, so Lindbergh's partner went off to obtain repair materials. He returned with a can of dope, two lengths of crating board, some nails and screws, a can of glue, several balls of chalkline, and some fabric. "We borrowed a butcher knife, a needle and thread, and an axe from the rancher and set in to make the Canuck (JN-4C) airworthy once more. We hewed the crating down roughly to size, cut it into proper lengths with an old hacksaw blade from our toolkit, and finished it off with the butcher knife. In a short time we had constructed a second box splice similar to the one at Pensacola, but a few feet farther out on the spar."

Just as the Jenny stimulated the "airmindedness" which was to carry the United States to the forefront in commercial aviation, so did the cheap and plentiful Curtiss OX-5 engine make possible the rapid expansion of the light aircraft industry. Curtiss, Waco, Travel Air and a host of other manufacturers designed small private planes around this sturdy engine, but it was now an OX-5 with a difference. In its original form it was

designed for a life of only 50 hours, and what it gained in cheapness and simplicity it made up for with many vices. Its multiplicity of pipes with rubber hose joints was often subject to leaks; the contact breaker was too troublesome for comfort; the valve rocker assembly, with the exhaust pushrod inside the induction pulltube suffered from excessive wear, particularly of valve guides, and required hand-oiling. The situation of the carburettor was a fault in the original because the vaporised fuel had to travel a circuitous four and a half feet before it reached the cylinder. Nevertheless the wartime OX-5 served its purpose admirably, and when modified for civilian use became an efficient power plant.

Construction

The construction of the Curtiss Jenny was necessarily strong and straightforward. The fuselage was of ash and spruce, wire-braced, with the longerons spindled between the truss posts for lightness. There was one ply former in the nose, and the engine bearers were simple uniform lengths of ash. The top decking as far aft as the rear cockpit was aluminium, as were the nose panels; the only panel with compound curves necessitating pressing or beating was the "bonnet" which was shaped to fit snugly round the induction manifold. The wings had spindled spruce spars and solid compression ribs; models earlier than the -4D had two nose ribs between the main ribs instead of the ply leading edge covering. All struts except the steel tube tailplane braces were of streamlined spruce, and all wires were stranded steel cable. While the airframe construction was simple, the rigging was rather complex with the kingpost bracing of the overhanging upper wing.

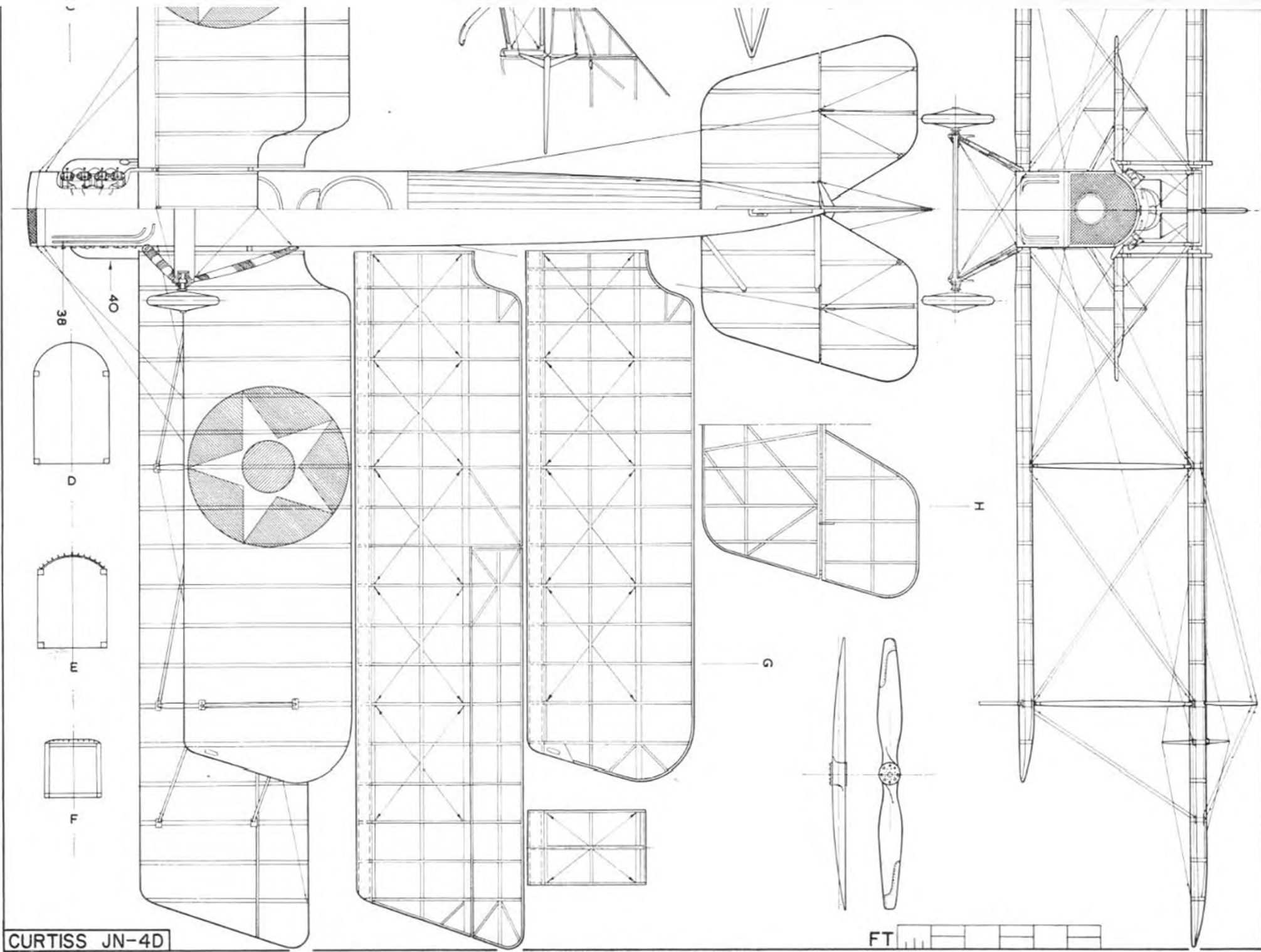


Specification

Power Plant: Curtiss OX-5
eight cylinder vee,
water-cooled 90 h.p.
engine.
Span Upper: 43 ft. 7 1/2 ins.
Lower: 33 ft. 11 1/2 ins.
Length: 27 ft. 4 ins.
Height: 9 ft. 10 1/2 ins.
Dihedral: 1 degree.
Max. Speed: 75 m.p.h.
Min Speed: 45 m.p.h.
Weight Empty: 1,430 lbs.
Weight Loaded: 1,920 lbs.
Time to 2,000 ft.: 10 mins.

SKETCHPAGE

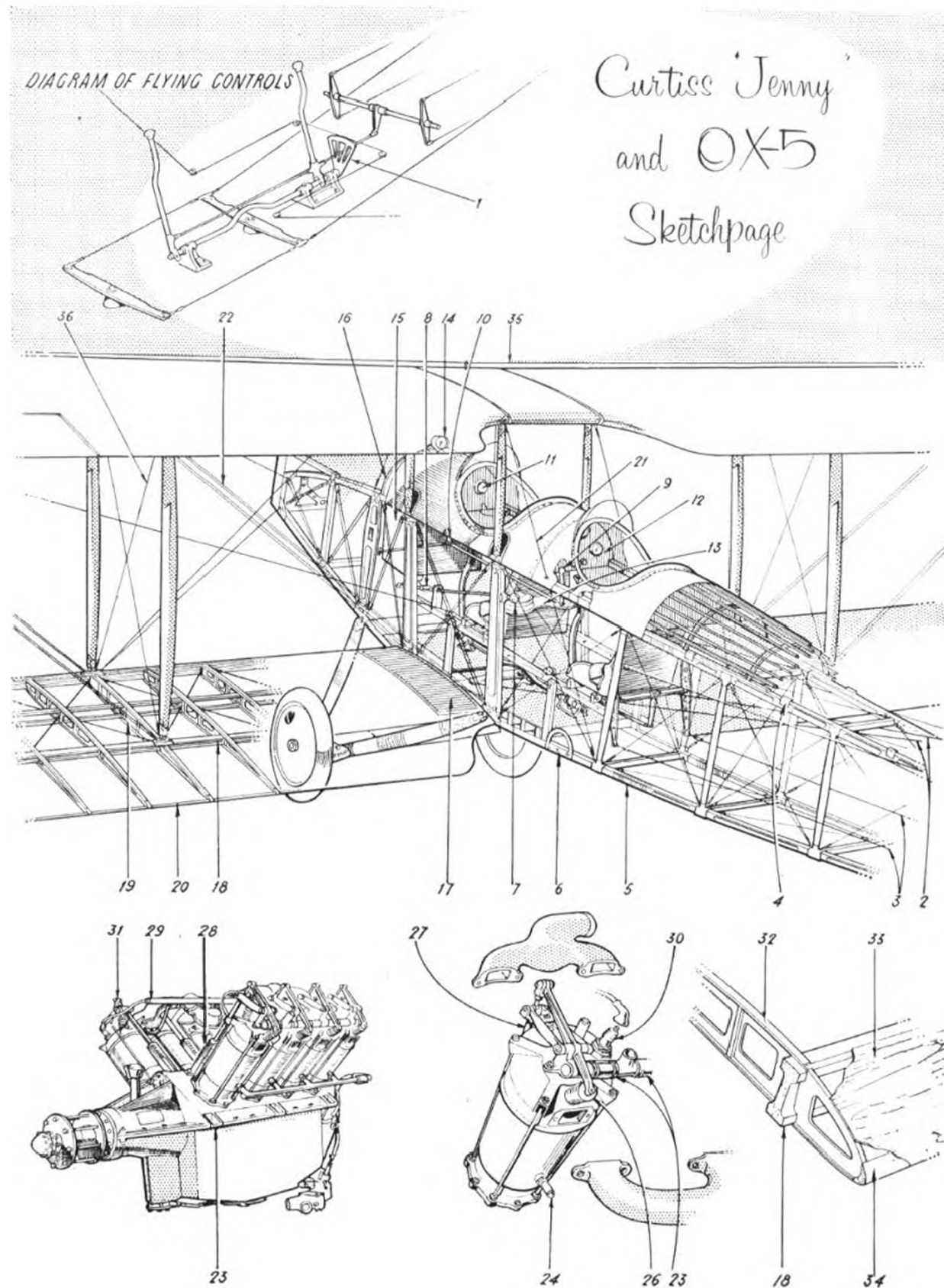
details on p. 592



CURTISS JN-4D

FT

FAMOUS BIPLANES (cont.)



A 15½ in. flyweight for Jetex 50 designed by Ron Armstrong

UNIQUE FASCINATING and relatively cheap as Jetex flying is today, the following given to this branch of the hobby is far less than would be expected. Few Jetex models are to be seen on the flying fields, particularly contest duration designs; but as it is our policy to cater for all modellers and their individual interests, we introduce to our plans range this month a design that will most certainly satisfy the needs of the contest minded Jetex flyers, dwindling though they may be.

The original model, built in 1954 for the Belfast M.F.C.'s Annual Boxing Day competition, started off life with a flight of 1:35 on a 10-sec. motor run. A second much lighter version was built and proved very successful by taking first place at the P.A.A. Festival in 1955, with an aggregate ratio of 19:1. The most recent success has been first place in the S.M.A.E. Jetex Cup, 1957, with an aggregate ratio of 27:1, being lost on its last flight.

The fuselage is constructed from med. hard $\frac{1}{8} \times \frac{1}{8}$ in. strip, the $\frac{1}{8}$ in. being tapered to $\frac{1}{16}$ in. at the rear. Motor pylon is of $\frac{1}{8}$ in. sheet and is cemented perfectly upright onto the fuselage nose. A small piece of $\frac{1}{8}$ in. ply is cut $\frac{1}{8}$ in. wide to fit onto pylon top. Positions of screws are marked, and the ply has two fine holes drilled through. The ply is then cemented in position on the pylon. One piece of thin asbestos sheet covers the pylon and fuselage nose; this is achieved by cementing sheet to one side of pylon/nose, folding over and cementing down on the other side. A second layer of asbestos should be cemented onto the pylon top, before clip is finally screwed down, as considerable heat is generated by the latest Jetex fuels. A point worth mentioning here, is that the 50C motor will only fit correctly into the clip after the gas deflector ring has been removed. This will slide off after the application of a little penetrating oil. Note that the "lip" of clip is towards the rear and not forward as usual. It is also bent downwards slightly and provides a more positive method of retaining the motor in the clip. The $\frac{1}{8} \times \frac{1}{8}$ in. strip wing mount is cemented to the



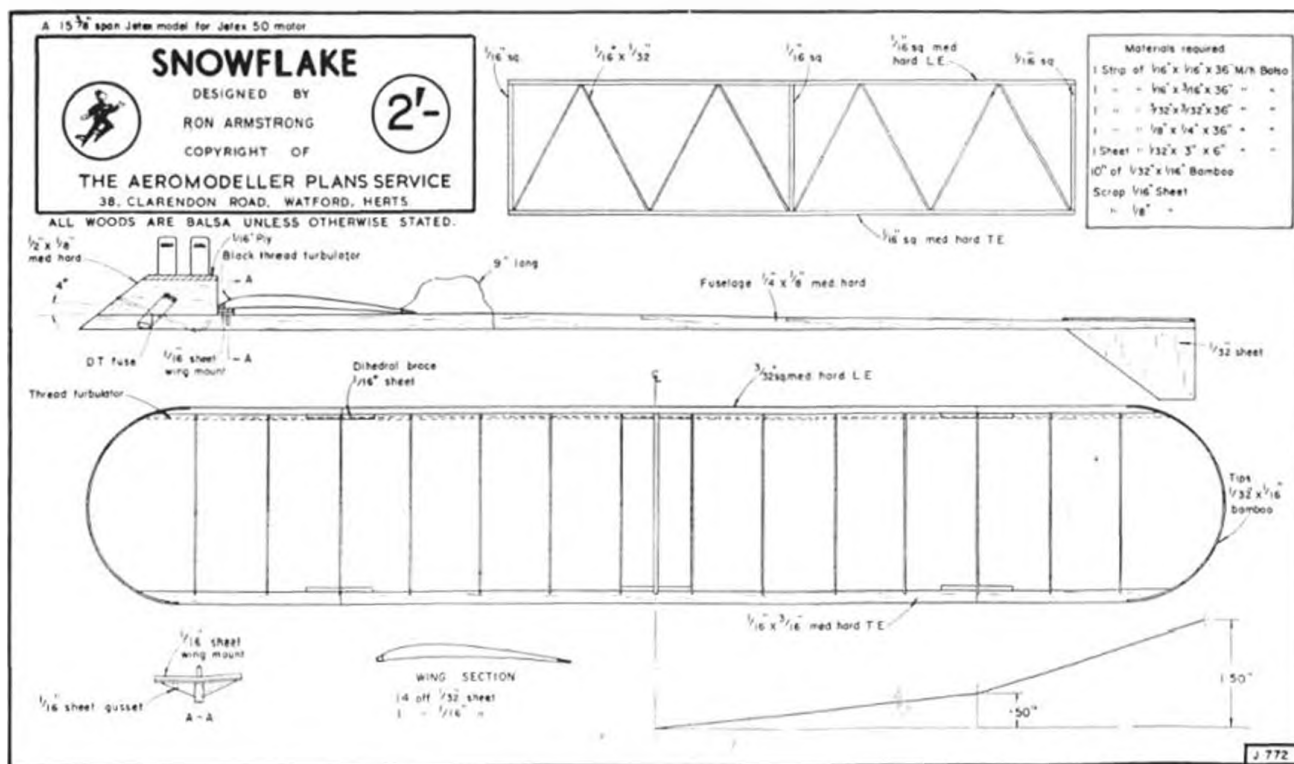
fuselage and gently cracked down the middle. Gussets from $\frac{1}{8} \times \frac{1}{8}$ in. strip when cemented in place should then give wing mount correct dihedral angle. The complete fuselage can now be sanded and rounded off to a streamline section and the $\frac{1}{8}$ in. fin added.

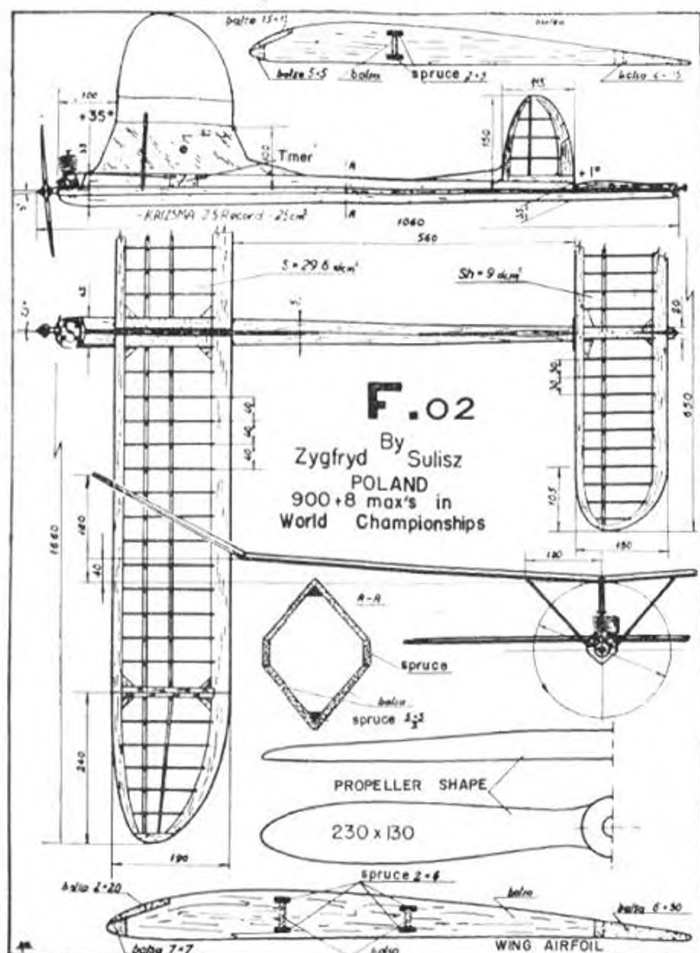
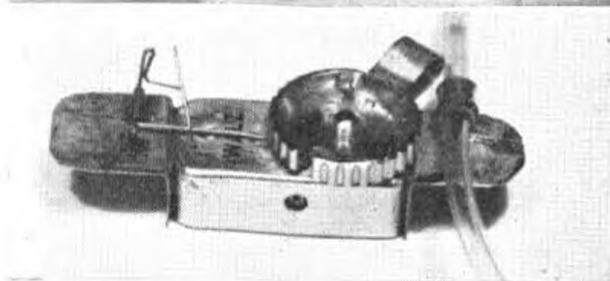
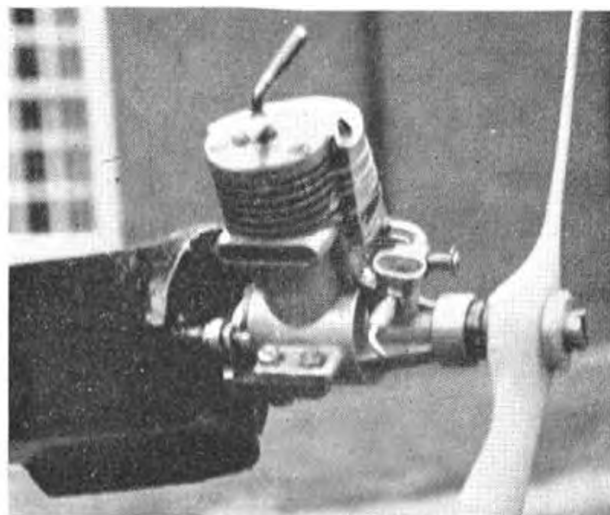
The wing and tailplane are so simple as to require very little explanation. For the modern modeller who has yet to use bamboo in a model, we would say that the wing tips can be made from stripped down garden canes.

As regards covering, the wing and tailplane are covered with lightweight Modelspan, watershrunk and given one coat of 50 per cent. dope/thinner. Both these parts must be pinned down to prevent warps.

The original model was trimmed to fly in a tight left-hand spiral by warping the tailplane and using *no* sidethrust on the motor, however, by warping the rudder and *using* sidethrust (easily obtainable by bending the motor clip "prongs" inward or out, as the case may be), variations in flight pattern can be obtained.

Assembling the model for flight, the wing is secured to the fuselage by one rubber band crossed underneath the fuselage and around the motor pylon as shown on plan. D/t fuse fits under the band around fuselage and presses against the asbestos sheet. When band is burnt through, the wing falls away from fuselage but is retained by a thread of cotton.





WORLD CHAMPIONSHIP TECHNICALITIES

LAST MONTH WE dealt with the power units to be seen at the Championships at Cranfield for free flight models and now we turn to model design features. With the scale drawing and full size airfoils of Sandy Pimenoff's "No 18", we complete our set of 3-views for the five equal winners for the 1960 individual championship title, and also add to these top five, Zygfryd Sulisz's sixth place "F-02" which, but for an overrun on his ninth round flight in the fly-off, might well have still been in the running.

Naturally any discussion of design trends must initially centre on these leading models, especially those which survived the 17 round marathon.

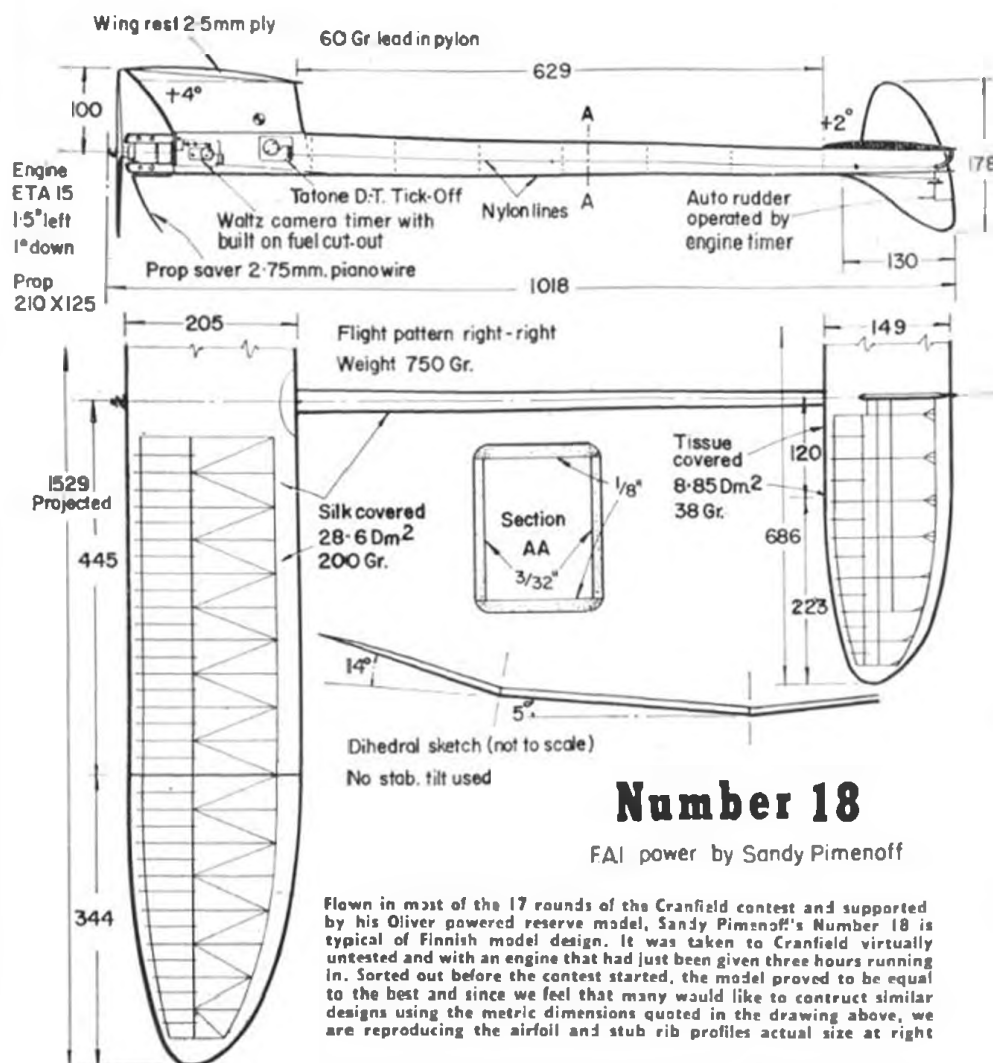
What are the common factors among them? Only Pimenoff's could be called a new model since it had hardly been flown before being brought to Cranfield although it was based on his well established series and supported by a well-worn reserve model used occasionally during the contest. All the leaders owe their places to design familiarity and trim experience. They are all dedicated modellers; for example, Conover flew intensively before leaving U.S.A. in all weather conditions, including pouring rain, in order to fully understand all flight characteristics. The result was that his model D/T'd every time at 3:15, often at very great height.

All the leaders used the accepted pylon style design with long tail moments, Guerra having the exception with a large area fin due only to its short moment position. He, Pimenoff and Hagel must have carried ballast in the nose to obtain very short nose moments or else they employed very light tail units; Guerra also had a comparatively short tail moment and there were times during his fast flight patterns that one might have thought his model could have been improved with a little more longitudinal stability.

No two of these leading models had like airfoils but a significant similarity can be found in the low leading edge position of the Gaster airfoil on Sheppard's "Gloworm", Hagel's "Mister Max" (drawn in June issue), Pimenoff's "No 18" and Conover's "Lucky Lindy". Larry Conover swears by his airfoil with its flat base and sharp entry and should know more than a little about it, having worked with Alexander Lippisch for several years on research studies. He says that not only does the airfoil simplify trimming but it also offers a warp free structure and with the use of similar sections for wing and tail has allowed him to employ a small tail surface, with remarkably low rate of sink. Pimenoff has something much after the same style but with undercamber and Hagel's novel laminar style of lower surface has aroused much attention. (refer June issue.)

There is another interesting similarity between Conover's and Hagel's models in that they each employ the three fin trim system whereby the centre fin in the

Photographs at top left illustrate two interesting mechanical devices used by many of the entrants at Cranfield. Top is the Czechoslovakian MYVS-58 diesel with the fuel tank actually attached to the cylinder head and the shut-off valve part of the needle valve assembly. This same tank system was employed by the Polish modellers as well as the Czechs and is used to minimise any change of engine speed due to manoeuvres in the climb. Second photo is John Scott's Canadian modification of the Japanese Walz timer. A slot in the winding knob is used to trigger the autorudder arm on the left hand timer extension lug and a loop shaped lever on the opposite side of the knob crimps the fuel tube on the right hand lug. John supplies modified timers for about \$3.



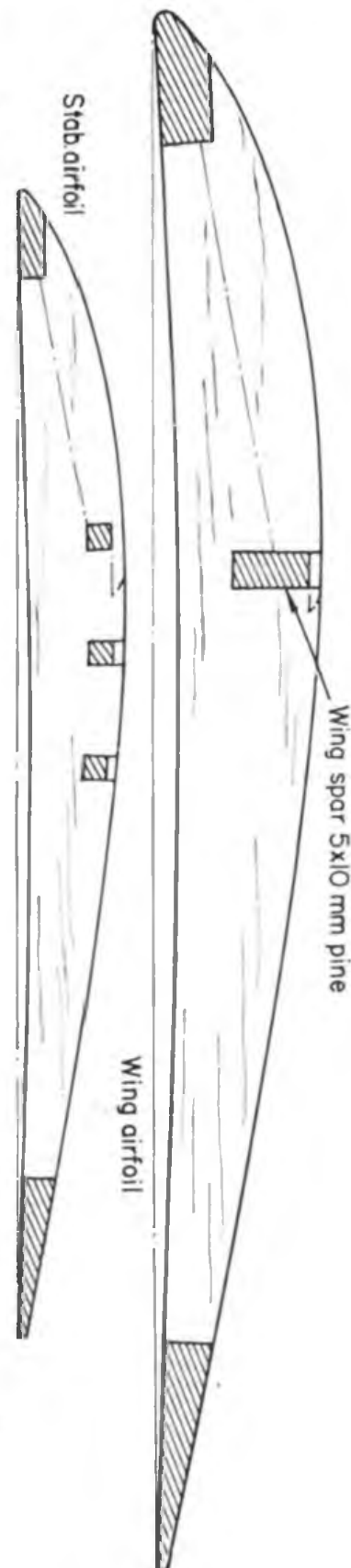
slipstream area is known as a power rudder, carrying a trim tab for climb setting. Conover also has an inset aileron on the right wing for wash-in adjustment on an otherwise flat wing and has another tailplane tab in the right panel. Of the leading models, only Pimenoff apparently used a timer actuated auto-rudder.

One can learn little from casual study of models when there are so many to observe at a championship meeting and the secrets of trim success are sometimes not even known to the owner! The obvious need in Great Britain is for us to have more contest time to obtain experience in F.A.I. power events and the sooner more contests are arranged, the better it will be for our standards.

Sulisz, flying for Poland, with a Czech. (Hajek) style design, a Hungarian engine, and as our cover shows, a javelin launch good for many feet of altitude, was a truly international entry. He is this year's Polish free flight champion and uses simple airfoils with two piece, strut braced wings, high mounted over the diamond section fuselage.

Apart from Blanchard's "Gawn" with the engine half way up the pylon, Czepa's and Young's high thrust line models and Baker's ultra high thrust design, there was very little evidence at Cranfield of any spectacular new trend. In construction there is a popular move towards more use of hardwood for spars, an enforced feature in some European countries the advantage of which has been appreciated elsewhere, and, in general, there has been a cleaning up of design with external timers and other devices a thing of the past.

Bringing the model down is considered of equal importance to achieving a good climb, and the universal use of clockwork timers, 90 per cent. of which have been modified for special applications and many of which were used for dethermalising, illustrates that at long last the old accurate timer bogey is overcome, although there are still occasions for mysterious frustration as proxy flier Tom Smith found to his cost in the vital first round. *Next month* we shall be presenting more details in 3-views of leading models.



HIGHLIGHTS

of the

U.S. NATS

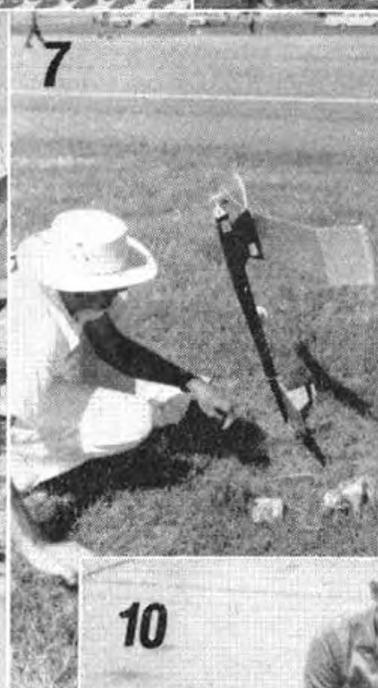
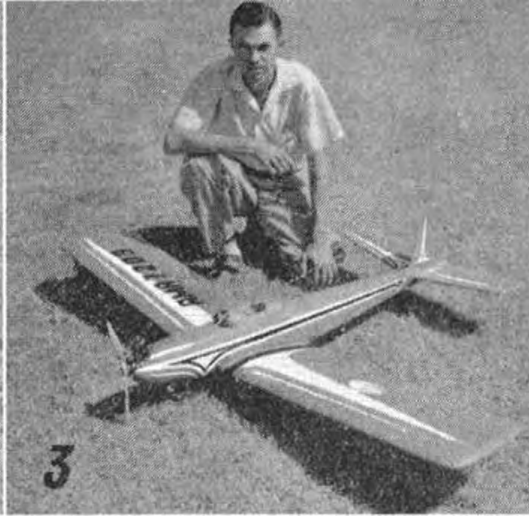


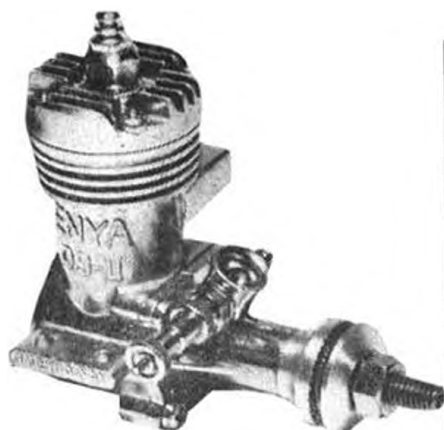
HELD AT THE Naval Air Station, Dallas, Texas, over the week July 25th-31st, this enormous championships meeting attracted 1,100 contestants from fifty States, plus Canada, Mexico, Argentina and Peru. Very high temperatures averaging over 100 deg. F. made it a hard slog for the ultimate Grand National Champion, Bob Siffleet (member of last year's U.S. A/2 team) and congratulations are due to this intense modeller for his energy. Highlights among the results are Joe Bilgri's 25:27 in Open indoor; Bill Wisniewski's 143.25 m.p.h. in Class A Speed; Bob Lauderdale's 162.8 m.p.h. in Class C Speed; the popularity of the McCoy 60 for the carrier event and the Holland Hornet for 1A, and Class A free flight with the .051 version; Otis Goss won F.A.I. power (sweet victory after his long duel with Larry Conover for a place on the 1960 power team) he uses an Oliver Tiger; the use of geared props (7 x 4) on Cox .020 Pee Wee engines for Clipper Cargo to lift 55 oz. total over three flights, and of course the swing from low wing designs in radio control as reported in our issue last month.

Among the outstanding models seen at this meeting are those pictured on these pages, including remarkable helicopter developments by Ken Norris whom we had the pleasure of putting in touch with the British expert F. G. Boreham with obviously beneficial results.

Above: Top photographs show Ken Norris's remarkable radio-controlled semi-scale Sikorsky S-64 called the Hexi-copter with two Cox .049s, which failed to make qualifying flights in R/C scale but will soon be perfected. 99-inch diameter rotor is controlled by trim tabs seen in second view, set by Micromax 60:1 servos. 8-inch tail rotor is independently servo-driven and nose section of 59-inch fuselage carries 8-channel Atlas Rx for full range of controls. We hope to publish more details later. Below left is Tommy Meyer's F/F scale winning Loening Amphibian from A.P.S. plans with Monogram plastic engine around O.K. Cub, spoked wheels and beautiful finish. Tommy is the son of "Little Toot" designer, George Meyer from Pensacola. At right, Bud Atkinson of Kansas City hand launching his Corben Ace in open FF scale

Opposite page: (1) Open section Proto speed winners Shelton and Harris used O.D. engine to make 126.4 m.p.h. with their "Regal Raider" (7 1/2 x 8 prop, Monoline). (2) Bob Wischer with R/C scale Cessna L.19, 54-inch span with Fox 15 single channel WAG equipment placed fifth. (3) Dale Root with new design, 6 lb. with latest relayless Orbit 10, tricycle U/C, K & B 45, fuselage air brakes and swept forward reworked, nylon prop for variable pitch control. (4) Vice-Admiral Robert Pirie presents the Grand National Championship Trophy to Bob Siffleet, a worthy Champion at a hot meeting. (5) General view of the hangar made available for the modellers with work benches for overnight repairs and sleeping. (6) Speed Maestro Bill Wisniewski prepares his "Pink Lady" fleet using his own engines, placed first in Class A with 143.25 m.p.h.; Monoline. (7) Major Comontofski VTO's his "Ramrod" powered by .049 Cox was one of the U.S.A.F. team. (8) Glen Lee entered a twin rotor profile flying banana in the helicopter event but was unplaced. (9) Al Greer assembles a new fibreglass fuselage radio model which he is marketing, will take .35 - .45 size engines, this one has conventional construction 66-inch wings. (10) Claude McCullough's remarkable McCoy 60-powered 11 1/2 lb. scale Martin Mauler with 10-channel Bramco gear, Bonner servos; has droppable torpedos and bombs, also flaps and conventional controls.





SPECIFICATION

Displacement: 1.60 c.c. (.0978 cu. in.).
 Bore: .500 in.
 Stroke: .498 in.
 Bore/stroke ratio: 1.0.
 Bare weight: 3½ oz.
 Max. power: .115 B.H.P. at 12,800 r.p.m.
 Max. torque: 11 oz.-ins. at 8,000 r.p.m.
 Power rating: .072 B.H.P. per c.c.
 Power weight ratio: 1.033 B.H.P. per oz.
Material Specification:
 Crankcase unit: Light alloy pressure die-casting.
 Cylinder: Cast iron.
 Piston: Cast iron.
 Front bearing: Bronze, in light alloy die-cast housing.
 Propeller driver: Dural.
 Propeller shaft thread: .191 in. diameter ($\frac{1}{16}$ in. nominal).
 Spraybar: Nickel plated brass.
 Glow plug: Japanese (2-volt).
 Manufacturers: Enya Manufacturing Ltd.,
 553 Arai-machi, Nakamo-ku, Tokyo, Japan.

PROPELLER—R.P.M. FIGURES

diameter x pitch	r.p.m.
7 x 4 Frog nylon	12,000
8 x 4 Frog nylon	10,000
8 x 6 Frog nylon	7,000
6 x 4 Frog nylon	15,000
9 x 4 Trucut	7,800
8 x 4 Trucut	10,500
7 x 5 Trucut	10,500
7 x 4 Trucut	12,200
7 x 3 Trucut	13,300
6 x 4 Trucut	13,300
6 x 4 Topflite	14,800
7 x 4 Topflite	11,800
7 x 6 Topflite	10,400
8 x 4 Topflite	10,600
9 x 4 Topflite	8,200

Fuel: Straight methanol/castor oil blend.
 Note: Performance is improved slightly (4-5 per cent.) with an A-M glow plug, as compared with the Japanese standard plug on straight fuels.

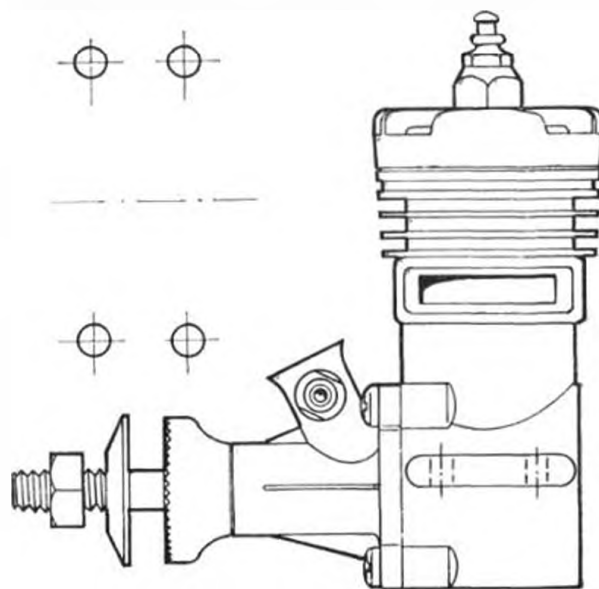
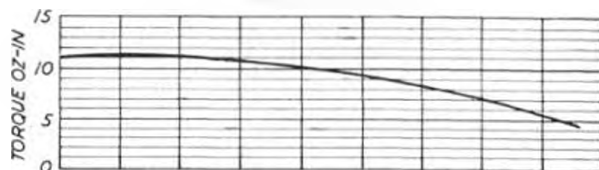
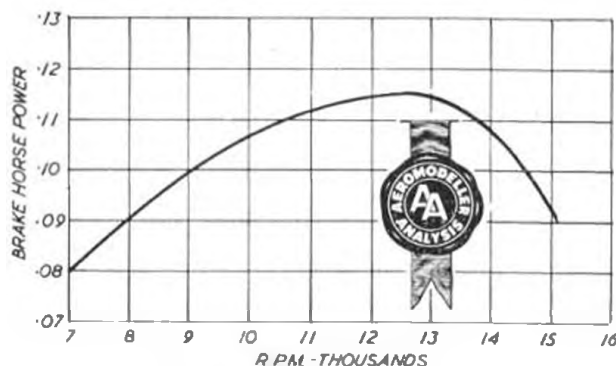
Engine Analysis No. 76

Two Japanese .09 engines
 tested on straight fuel by R. H. Warring

The **ENYA 09-11**

ON PERFORMANCE we can say that this was one of the nicest glow engines we have had to handle for some time. Peak power output was not exceptional on our example—showing as .115 B.H.P. at 12,800 r.p.m. on test, but this was on undoped fuel and no doubt could be boosted, if necessary by 15-20 per cent. nitromethane addition. For popular applications, however, plain glow fuels are quite suitable—and far more economic. This is not a racing engine but a very good general-purpose design characterised by most consistent operation and a ruggedness which should ensure long life.

Starting characteristics are extremely good, even with the smallest sizes of propellers, with absence of kick-back and quick response to either finger choking or direct priming, whichever is the more convenient. The needle valve is not at all critical and adjustments for optimum mixture are readily made without fear of the engine stopping. Load-speeds down below 7,000 r.p.m. are



accommodated with the same smooth running, and at the other end 16,000 r.p.m. can be exceeded on 5-inch diameter propellers with the engine sounding really happy. A 7 x 4 seems a useful size of propeller.

The typical Enya layout features a detachable front end—the front bearing housing carrying the shaft being secured to the crankcase by four screws, but the cylinder is unusual for a glow motor of this size, consisting of a really rugged cast iron liner with $\frac{3}{32}$ in. thick walls locating in the die-cast crankcase unit. Only the exhaust port is cut through the cylinder wall, the transfer passages being crescent sections milled on the inside of the cylinder finishing in a step overlapping the diametrically opposed exhaust port by some 70 per cent. (exhaust port depth). The rigidity of this cylinder no doubt contributes a lot to the wonderfully consistent performance.

The crankcase unit itself is an intricate die-casting, extending the full height of the engine (less head) yet weighs only $\frac{1}{4}$ ounce. A stub exhaust is cast integral on the left hand side, and the casting is machined to take the cylinder liner, which seats on a ridge at the bottom. The head seats directly without a gasket and is a further die casting, faced on the underside and contoured to clear the piston deflector. It is held down by four screws of generous diameter, but short length and appears to provide a perfectly adequate assembly. Provision is made for radial mounting in the form of four blind holes in the back of the crankcase unit. Mounting in this manner would, however, appear to be awkward as these holes would have to be tapped to take mounting screws and the screws fitted and tightened up from behind the firewall. Orthodox beam mounting is thus logical.

The front bearing unit is another pressure die-casting, incorporating the forward slanting intake tube. It is fitted with a bronze main bearing, extremely well finished, to carry the .295 in. diameter hardened steel crankshaft. Crankpin diameter is 5 mm. and the crank web is machined away to provide counterbalance. Bearing length and crankpin are finished by grinding. A copious oil leak from the front of the bearing was noticeable when running, but the bearing was not at all slack and the only adverse effect was a "dirty" slipstream. The dural propeller driver forces on the taper length of the shaft which steps down to a .191 in. diameter (American) thread. The front washer is also turned from dural. The complete bearing unit is compact, neat and quite light, total weight being only a bare fraction over one ounce. Lightening is even carried out on the front end of the crankshaft (threaded length) as well as the hollow crankpin and taking the central hole well down along the length of the shaft. The rectangular intake port is relatively narrow and barely detracts from the strength of the shaft.

A straight deflector is machined across the flat top on the transfer side of the cast iron piston. The .137 in. diameter gudgeon pin is hollow and fitted with aluminium end pads, it is fully floating, locating in the thicker section of the piston well above the centre, and the connecting rod appears to be a die-casting of generous proportions, with big and little end bearings reamed to size.

Everything about the Enya 09-11 is workmanlike, neat and extremely well finished. It is also a compact engine in size, which generally enhances its ruggedness.

and the OS PET 09



THE STANDARD of design development and workmanship in Japanese motors produced during the last decade, is extremely high and the O.S. "Pet" is certainly no exception to this rule. It is of exceptional high quality throughout, a nice motor to handle and achieving a peak power figure on test of .119 B.H.P. at 13,500—not outstanding in its way, but quite potent, nevertheless on straight fuel.

The model supplied was also fitted with a throttle control, consisting of a barrel-type throttle housed in a spherical extension member for the choke tube. This throttle unit is held in place by the spraybar and the barrel is operated by a simple lever. Speed control possible with the throttle proved to be remarkably good. From a load-speed of 11-12,000 r.p.m. at full throttle, speed could be lost progressively until a minimum idling speed

of 3,500-4,000 r.p.m. was reached, which low speed could be maintained indefinitely. From 15,000 r.p.m. load-speed, idling speed was reduced to 4,500-5,000 r.p.m. with the throttle fully closed.

Pickup was dependent on the time the engine had been running at low speed. The longer this time, the longer the engine took to settle back to full power again—maximum delay being of the order of several seconds after, say ten or twenty seconds slow speed running. There was also one throttle position which, if held, cut the motor. The barrel valve works on two openings—a large opening for normal running and a small hole for slow speed running. At intermediate throttle positions, the larger hole is progressively closed, but in one position the large hole is almost cut off and the small hole

(Continued on page 600)

SPECIFICATION		PROPELLER—R.P.M. FIGURES	
Displacement: 1.615 c.c. (.098 cu. in.).		diameter x pitch	r.p.m.
Bore: .529 in.		7 x 4 Frog nylon	11,800
Stroke: .448 in.		9 x 6	6,500
Bore/stroke ratio: 1.18 in.		8 x 4	9,800
Bare weight: $3\frac{1}{2}$ ounces (with throttle).		8 x 6	7,000
Max. power: .119 B.H.P. at 13,500 r.p.m.		6 x 4	15,500
Max. torque: 11 ounce-inches at 11,000 r.p.m.		6 x 4 Stant	13,500
Power rating: .074 B.H.P. per c.c.		7 x 4	11,000
Power/weight ratio: .034 B.H.P. per ounce.		8 x 4	9,600
Material specification:		9 x 4	7,000
Crankcase: Light alloy pressure die-casting.		9 x 4 Trucut	7,500
Back cover: Light alloy pressure die-casting.		8 x 6	7,800
Cylinder: Unhardened steel.		8 x 4	10,200
Cylinder head: Light alloy pressure die-casting.		7 x 5	10,800
Piston: Cast iron.		7 x 4	12,300
Gudgeon pin: Silver steel.		7 x 3	13,500
Crankshaft: Hardened steel.		6 x 4	14,000
Propeller driver: Steel.		6 x 3 Topflite	16,800
Crankshaft nut: 2 B.A.		6 x 4	15,500
Spraybar: Brass.		7 x 4	12,000
Throttle: Brass barrel in aluminium housing.		7 x 6	10,500
Glow plug: 2-volt (Japanese) with idling bar.		8 x 4	10,500
Manufacturers: Ogawa Model Mfg. Co. Ltd., Hiranobaba, Higashisumiyoshi, Osaka, Japan.		9 x 4	8,300
		Fuel: straight methanol/castor oil blend.	

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only just opening, and under this condition the mixture produced will not sustain running.

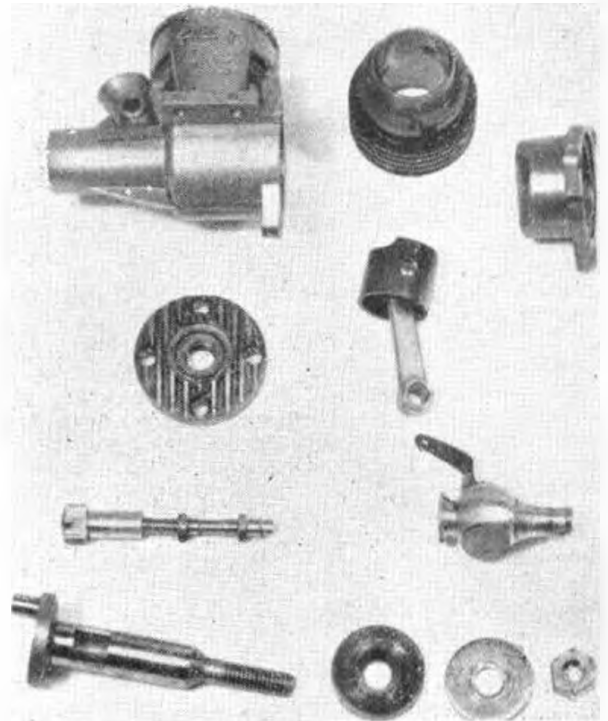
Starting characteristics, we did not find outstandingly good with the standard Jap. plug. Because of the shielding effect of the idling bar the plug appears to remain relatively cool when coupled up, although the element itself glows quite brightly. As a consequence, it was a little fussy about choking and priming for the right starting mixture. Starting was much improved by fitting an A-M glow plug which, incidentally, also gave a superior performance on straight fuels. From 11,400 r.p.m. load-speed on a 7 x 4 plastic propeller, the speed rose to 11,800 rpm., on the A-M plug.

We checked throttle operation with the A-M plug and found that it made very little difference. Steady low speed running could still be maintained but the "clearing time" when opened up to full throttle again was slightly longer.

Running was consistent at all load-speeds and, unlike many small glow motors, the O.S. "Pet" was also quite happy running slow driving large diameter propellers. It was taken down to 7,000 r.p.m. load-speed without any appreciable loss of torque. On the other hand, running was sweetest and the engine sounded most happy at speeds above 12,000 r.p.m. Ultimate speed reached on propeller loads was just under 17,000 r.p.m. Straight fuel was found to be quite satisfactory for even the highest speeds. Performance could, undoubtedly, be boosted by the addition of nitromethane, but no significant gain was achieved at load-speeds circa 12,000 r.p.m. on a spot test with a 10 per cent. nitrated fuel.

Constructionally, the O.S. "Pet" features an intricate pressure die-cast light alloy crankcase unit, embodying a stub exhaust on the right hand side. Both beam mounting and radial mounting lugs are incorporated, in the latter case replacing the three screws holding the back cover in position by three mounting screws. Main bearing is plain and exceptionally well finished, while the hardened steel crankshaft is 8 mm. diameter, tapering down to 2 B.A. threaded length (an unusual standard for a Japanese engine) and is drilled with a large intake hole. The intake port is cut square and also large. Shaft and crankpin are finished by grinding. The web is plain and of generous thickness with a 4 mm. diameter crankpin.

The cylinder is of unhardened steel, seating on the crankcase unit on a substantial flange. A rectangular transfer port is machined under and up into the flange at one side, corresponding with the transfer passage cast in the crankcase unit. The diametrically opposed rectangular exhaust port is cut through the cylinder walls above the flange. Not a great deal of metal is left sup-



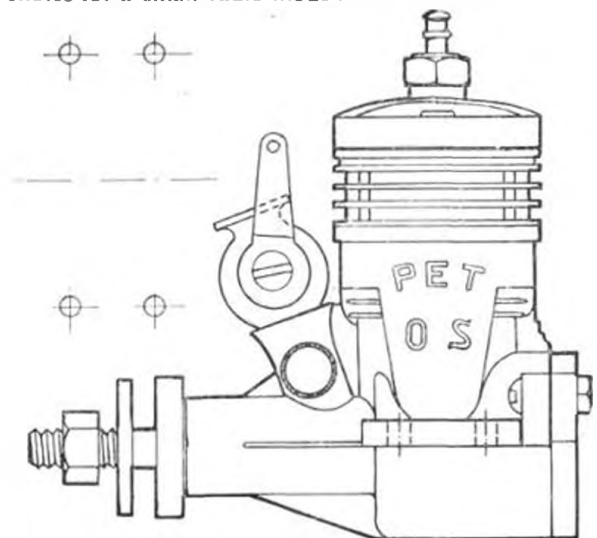
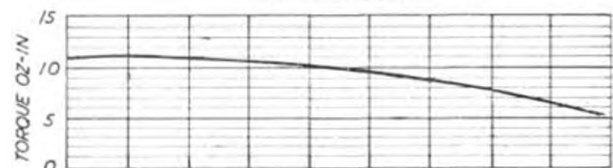
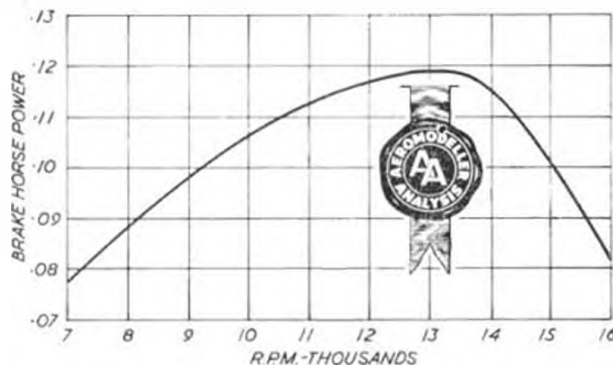
Dismantled view of O.S. "Pet" (without screws) shows simplicity of construction

porting the cylinder, but there was no evidence of weakness or distortion.

Cooling fins are machined on the upper part of the cylinder which is capped with a die-cast light alloy head. Two short screws hold the head to the cylinder and two long screws passing down into the crankcase (fore and aft positions) hold the cylinder unit in place. The head is not contoured and the glow plug is centrally mounted.

The cast iron piston is flat topped, but cut away and stepped at one side to act as a deflector. Piston-cylinder fit was slack, but not to the extent of lacking compression, and very little running-in time was necessary to achieve consistent performance. Running fits could not be criticised. The connecting rod is a forging with a bronze bushed big end and the 3 mm. silver steel gudgeon pin is fully floating.

We can only repeat that the O.S. "Pet" is a remarkably good engine in all respects. It would seem an excellent choice for a small radio model.



At the German Nats

In contrast with National Championships in other countries, only top representatives from the various areas of the country can qualify for the German Nationals, thus the event is of very high standard and as these six pictures illustrate, it produces a wealth of design talent not always restricted to convention.

Otger Schmolinske, who took these photographs, also tells us of a high standard in radio control flying and exciting demonstrations by the American World Championship team during the same meeting.



Popular in Germany is the class "L" model which is for power designs having a limit of 1 c.c. This one by Hartmut Nagel of Bad Segeberg placed third in the event using a Taifun "Hobby", the model is 44-in. span, appears to have light-weight structure and utilises the designer's own airfoil sections. Wing and tail are not far removed from A1 glider size, an affinity which is in part responsible for the popularity of the class. One wonders if a similar small power model class will be adopted soon for British events



Above: Interesting radio controlled flying wing glider by Lothar Wehmann of Essen. Is about 99 in. span and appears to have directional control through the tip mounted ailerons. There also appears to be a lack of dihedral in this design, making it quite an adventurous project



Top left: Winner in powered flying wing class was Werner Langfeld from Reutlingen with 68-in. span, Webra Mach 1 model, note the dethermalizer drag plates beneath the centre section

Above: Ultra high thrust line F.A.I. power design for the Webra Record 1.5 c.c. diesel, also features sheeted top surfaces to the wing centre panels, made by Erwin Schierle of Schwabisch Hall. Note how the design also uses a butterfly tailplane without any fin, directional control relying on the shallow tail dihedral and the forward fin effect of the motor mounting pylon. The model did not place, but flew well



Above: In second place (for the second year) for the A2 glider class was Helmut Klink of Reudsburg, well known for his detail construction utilising cross braced ribs and the typical German design features of dihedral on tailplane, underfin and drooped nose on the long fuselage. Left: Winner of the free flight scale model class was Arno Radl with an Avia Brigadier powered by a Cox .049 This 43-in. span model of the Czechoslovakian crop sprayer has to bear the modeller's own registration marks as well as German identification markings, drawings of the type appeared in the Model Aeronautical Press publication *Flying Scale Models*



Top: Competitor returns towards the "Schwarze Fichte" (Black Pine) slopes at the Coppa Bavaria. Centre: Rolf Claas was German Champ at the Wasserkuppe but only managed four max's at Coppa Bavaria where standards were terrific. Below him, Cobelli of Italy launches his vane-steered design with fishlike fuselage



HEAVY RAINS DID not dampen spirits at Homburg in the Saar for the Europa Cup 1960 which was contested by representatives from Italy, Austria, Switzerland, Germany, Sweden, Holland and Spain. Organised by Hubert Waldhauser, this event is rapidly expanding its attractions and many of the big names of 1960 were listed among the competitors. Guerra made a 2:10 flight after 4 maximums to spoil his run in power which went to A. Karlsson of Sweden with a perfect 900 seconds score. In Wakefield, C. Merseburger of Spain made 4 maximums and 2:32 beating many big names in the process while Paul Schmitter of Switzerland won tailless and C. Varetto, the A/2 Class with a high total of 864 seconds in view of the conditions. This "miniature Olympics" will probably get even more competitors, maybe some from Britain, if only people were told a little about it beforehand.

Another international contest which is attracting more customers is the *Coppa Bavaria* for magnet steered gliders and was held this year over August 20/21st on the Hesselberg slopes in Bavaria, Germany. Three teams came from Italy, two from Austria and ten from Germany making a total of 75 individual entrants. Wind was favourable, varying from 9 to 16 m.p.h. on to the face of the hill and the launching position was set about 70 yards above the lower ground level. No less than 208 maximums were recorded in the five rounds and ten modellers achieved perfect totals; incidentally a maximum there is five, not three minutes. Sixth round of seven minutes maximum duration was run—with six survivors and then came an unlimited fly-off won by Adolf Zichtl of Austria with no less than 14:57. His model was lightly loaded to fly slowly through the lift zone, and even after this almost fifteen minute flight his model was recovered only 450 yards from the launching point, it having made a total flight time of 46:57 in the contest. In the team event, those from Hof in Bavaria were top scorers, followed by the Prato team from Italy. All of which indicates the very high standard of magnet steered gliding on the Continent, something which has yet to be developed outside Germany, Austria and Italy. Incidentally the Coppa Bavaria programme must be recorded as being one of the most lavish and neatly produced of all those seen at international contests.

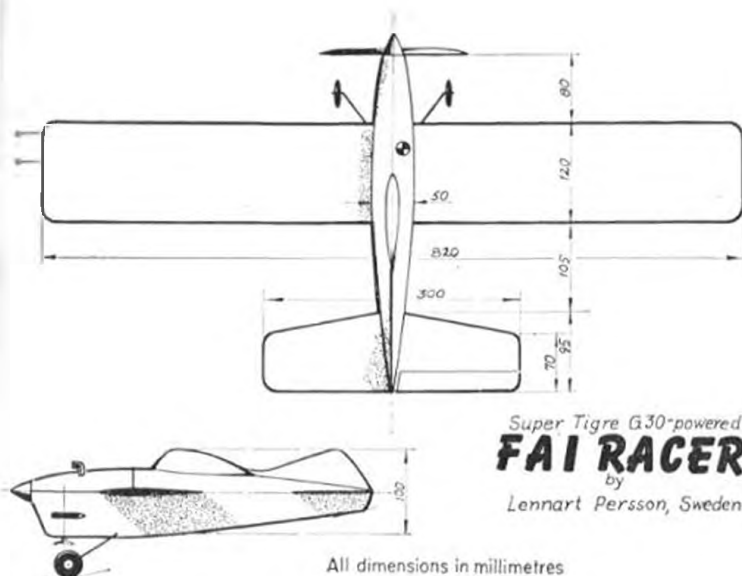
Next month we shall be reporting the international tailless model competition held in Holland but for those who seek advance information, the glider class was won by J. Osborne of Holland (the *Penumbra* designer, August 1959 issue) and the team prize also went to Holland, the only visiting team came from Germany.

News reaches us rather late from Spain of an international meeting between representatives of Portugal, U.S.A. and Spain, held in Madrid and by all accounts it wasn't as sunny as it might have been.

Events covered Wakefield, Power and A/2 (with many models showing influence of Gerry Ritz's design) plus combat, speed, team racing and control-line stunt. The American contingent was made up of servicemen from the U.S.A.F. bases. We had learned that interest in Spain was dropping back, perhaps internationals of this nature will help to keep the enthusiasm alive.

Very fine warm and calm weather made the Swedish free flight championships at Uppsala very pleasant on September 11th. The A/2 Champion out of 60 entrants is a newcomer, Inge Sundstedt of Borlange who made a perfect 900 seconds total with his modification of "Miss Max," the design by Rolf Hagel. Second place was held by Goran Abergh of Gamen with 876, flying a design by Gunnar Kalen. Surprisingly in free flight

Left: Rumanian George Constantinescu and his IL-18 "Moscow" control-liner. He must have had difficulty finding spinners that large!



All dimensions in millimetres

power, (42 entrants) there were no perfect scores and the World Champion from Sweden, Rolf Hagel of Malmo was beaten into second place by Sture Carlsson of Katrineholm in a very close contest by only one second! Their times were 871 and 870. In Wakefield there were 40 entrants with Ragnar Wilkesson of Enkoping making the only perfect score, second place going to Charles Moberg with 889 and third to the Winter Champion Bertil Flodell with 888. These very close times made the team championship placings interesting and for once the usually champion club from Gamen had to be satisfied with third place, top honours going to Katrineholm.

On the previous Sunday at a team contest, Bo Moder became the second Swede to make a double perfect maximum time in the A/2 class. Does this suggest we should start a "1,800" club among the glider fliers?

The airfield of Strejnic near Ploesti in Rumania was the scene of another national championships where 68 competitors flew in the World Championship classes for free flight and control-line. Subsequently the control-line winners became the Rumanian team to attend the World Championships reported elsewhere in this issue. Notable among the results was the fact that Elvira Purice of Bucharest topped speed times with 150 k.p.h. (flying diesel—the boys will have to chase her faster if they want to win!) and in the power class Ionel Georgescu was the only one to make 900 seconds although Stefan Purice fell short by only 1 second, with 899. High standards were reached in the A/2 glider class, Marin Stoicin made 4 maximums and 2:31 and to break the run of success for the Bucharest club members, Eugen Torok of Oradia won Wakefield with 828 seconds.

Over in Pakistan the Society of Model Engineers in Karachi were honoured by an inspection of their special display by Air Commodore A. Qadir, Director General of Civil Aviation, a number of AEROMODELLER and Model Maker plan designed models were on show and the Air Commodore expressed his interest in aeromodelling, promising to visit the Society again in future. Aeromodelling needs encouragement from official quarters in these parts in view of the difficulty that modellers have in importing their supplies and the international success of the Habib brothers in the World Glider Championships last year indicates Pakistan capabilities.

During the July 26/27th National Fete of Croatia, the

6th annual Vortex Cup was held at Varazdin, Yugoslavia, with competitions for A/2 gliders and team racing attended by local Yugoslavian modellers, a team from Hungary and one enthusiast from France. Victory went to Cedimir Vertus of Yugoslavia with 885 in A/2 glider and in team racing to the Hungarian Azor—Katora team with the best time of 5:01.

During the period August 12/14th, the Hungarian free flight championships were held in rough weather which cost the loss of no less than three of the power models flown by the successful Hungarian World Championship team, principal results were:

Wakefield: Gyula Krizsma ... 900 seconds.

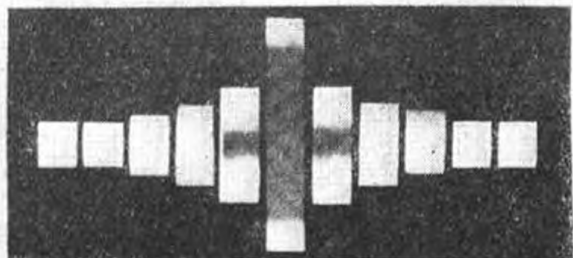
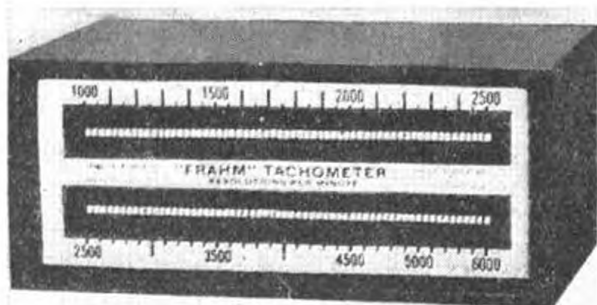
Power: Istvan Suto ... 890 seconds.

A/2 Erno Frigyes ... 867 seconds.

R/C Gliders: G. Benedek ... 12.7 points.

Left: Swedish team racer with Italian Super Tigre G.30 uses a Topflite 7 x 8 prop and has a celluloid fin. Below: From Australia, Ford Lloyd holds his scaled-up "Americano" of 7 ft. span with an O.S.35 ready for a zippy launch. Large free-flighters are a real thrill when they travel fast—and this one does! Below him are two pics of Canadian Frank Palmer's beautiful free flight Nieuport 28 Scout, a regular flyer at Calgary. Frank's Pfalz will be included in Plans Service from next issue





LARRY CONOVER INTRODUCED us to the finest Tachometer we have ever seen when he came to Cranfield. Produced by the James G. Biddle Co. of Philadelphia, the Frahm Resonant Reed immediate reading instruments can be obtained in a very wide variety of scales, typical unit is illustrated above, calibrated for 1,000 to 6,000 r.p.m. In the lower picture one can see how the reeds produce a curve from which the reading can be taken as the tachometer is contacted with the engine. The example illustrated sells at \$140 and the 6-24,000 instrument, being ideal for our purpose is \$170. They are guaranteed to .5 per cent. accuracy and, of course, place no load upon the engine to provide a very true reading.

When in Hungary we were given to understand that the Krizma Record engine is no longer in production so the few examples of this plain bearing motor which were put into circulation will be much cherished. The latest product by Krizma is the K-10 1-46 diesel from which 165 B.H.P. is claimed at 15,000 r.p.m. The engine has front rotary intake, 360 deg. porting and is similar in most aspects to the 2-5 c.c. K-6 and K-8. The French team at the World Championships were well equipped with the latest Micron 2-5 racing diesel, Series 60, which has enjoyed considerable success in French contests and is illustrated below, left. We understand that M. Maraget, who produced those delightful .9 c.c. and smaller diesels in the immediate post war years, is now working with Micron and responsible for the high standard of this new engine.



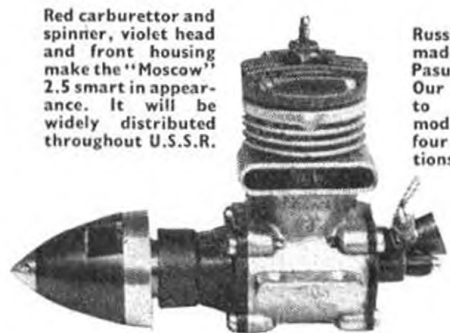
The Micron Meteor 2.5 Series 60 racing diesel introduced this year by the Paris company, who are pioneers in diesel production

From the Soviet team we were able to obtain an example of the new "Moscow" 2-5 racing engine, obviously based upon the M.V.V.S., but scheduled for production at the rate of 2,000 per year over the next five years. It is to be sold in department stores at the equivalent of £3 complete with moulded nylon airscrew and spinner.

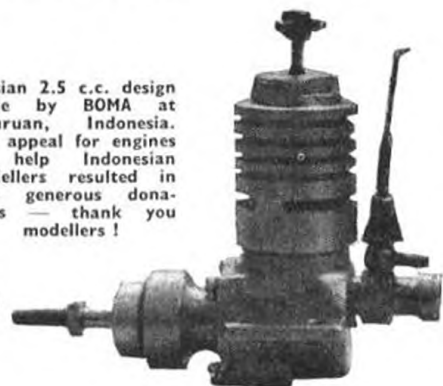
From Japan, Saburo Enya gives us details of his Mk. II versions of the 15D. An immediate distinction is the sloped forward intake on the revised crankcase, the loop-scavenging system being retained. There is also to be a throttle valve type (illustrated) for radio control.

Back at home, R.C. motors are much in demand and Bill Morley and Ron Checkfield of Merco are hard at work developing a .49 to satisfy those looking for more power for larger models, coupled with reliability in aerobatics. The new motor will depart from the style of the Merco 35 in having a ball race supported front rotary crankshaft and an alloy piston with rings. It will use the 35 type throttle and be adaptable for pressure feed which will probably be considered essential in future years, bearing in mind the large size of the tanks used. Bore of .880-in. and stroke .804-in. should offer a handsome power rating and knowing the standards of Merco manufacture we can expect something good towards the end of next spring. Allen-Mercury are now producing their very popular 15 diesel with a throttle valve in the intake which is simply a rotary blanking device with adjustable stop, but has the very desirable effect of reducing r.p.m. to an acceptable speed, ideal for model types such

Red carburetor and spinner, violet head and front housing make the "Moscow" 2.5 smart in appearance. It will be widely distributed throughout U.S.S.R.



Russian 2.5 c.c. design made by BOMA at Pasuruan, Indonesia. Our appeal for engines to help Indonesian modellers resulted in four generous donations — thank you modellers!



Motor Mart

Right: Latest Enya 15D-II will also be available in throttle version as at right. Main distinction is the angled carburetor intake

Left: The Frahm Tachometer using Resonant Reeds which can be obtained in units to provide readings down to stages of 25, is the ideal r.p.m. instrument in our view; is widely used for industrial purposes in the U.S.A. and places no load on the engine

Prototype above and production version below of the throttle A.M. 15 for radio control. An engine we can thoroughly recommend for single channel enthusiasts anxious for motor control in small models

as the Gasser. This new throttle 15 should become very popular. We have had the pleasure of testing the prototype which was most successful and the production version is further improved, so giving the single channel enthusiasts an opportunity to take full advantage of motor plus rudder control in relatively small models.

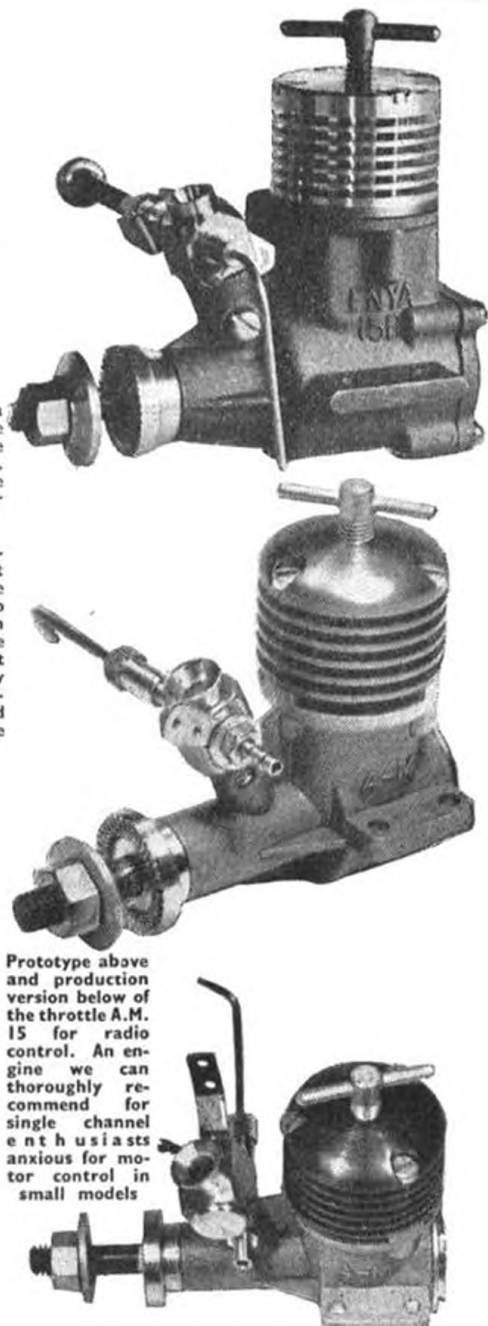


PHOTO ALBUM

A selection of original W.W.I. photographs from a well preserved album, presented to *Aeromodeller*



Above, an extremely rare air-to-air shot of a Fokker E.III Eindekker in mock attack on the photographer's aircraft. The Eindekker was being flown by a British pilot over England and had been captured intact. Flight assessments were made of most German types but air-to-air photographs rarely taken.

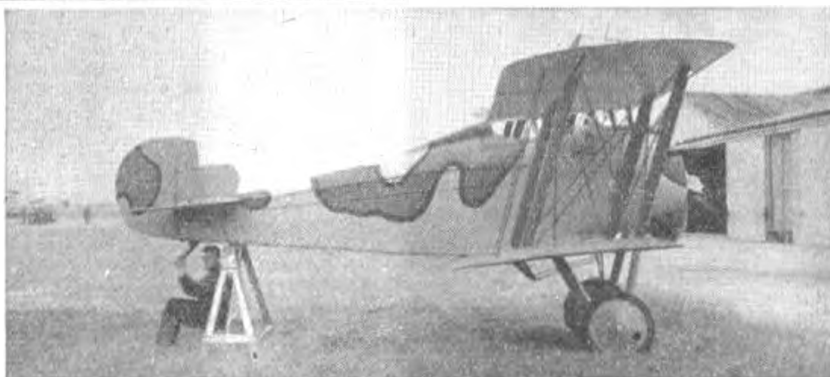


Above, probably the same aircraft as shown in the flying shot, a captured machine most fortunately photographed before a R.F.C. painter removed the crosses and replaced them with roundels, as on the Albatros D.II at right. This was an early version of the more famous Albatros D.III and V with squared off wing tips and lower wing of similar size to the upper. Unfortunately we have no information as to where and when the aircraft was captured, or the colour scheme. An unusual feature of the roundels is that only those on the upper surface have white rings outermost. Note how the vertical rudder strips overlap onto the fin.



A unique experimental camouflage scheme for WWI can be seen left and above, applied to a Sopwith Salamander. Disruptive camouflage schemes were usually only to be seen on French and Italian aircraft and even then they bore little resemblance to that shown here. Unusual features with this pattern are the use of three or four different colours and a dark outline around one of these. Roundels on upper surface are of different diameters, and are marked asymmetrically on the span, a system later used on Polish aircraft.

Two control horns per aileron suggest that the particular aircraft may be one of the early prototypes, E.5431, which has also worn the usual olive drab scheme for that time. Absence of serial, rudder stripes and fuselage roundel indicate that this experiment was not intended for eventual active service, but used to determine the effect of the scheme. The Salamander was much like the Snipe but with flat side fuselage.



Left, a view of a fairly well known captured DFW-C.5. Colour would appear to be olive drab overall apart from the natural doped fabric of fin and tailplane. Standard R.F.C. roundels with outermost white ring are carried. Plain red-white-blue roundels have been applied to the tailplane upper surfaces, and similar roundels appear to have been painted on the wheel discs. With so many roundels, this German aircraft was well protected from possible mistaken identity and attack by any trigger happy British pilot!

WHAT A FINE response this year to the Area Championship meeting at Wigsley on August 21st! Times which would have guaranteed a win in previous years were knocked sideways and to gain top place the Midland seven man contingent made no less than 102 minutes 12 seconds flying time. This team event may not have the publicity or glory of a Nationals but it certainly provides a barometer of contest prowess for the various areas of the country. Congratulations Midlands—especially to Ray Monks for his effort in all 3 categories.

Midland

So far this year LITTLEOVER M.A.C. have attended four rallies and managed to place at three, taking a fourth, first and fourth respectively. Their T/R models are now reaching the 90 m.p.h. mark.

A party from WEST BROMWICH M.A.C. visited Northern Heights in a "dormobile", only to return home at three o'clock in the afternoon due to a mistake in the hiring of the vehicle. This made competing in the combat event impossible, and the combat boys were highly put out. However, at the third of the Midland Area Championship contests the combat flyers took top honours for the second time this year at this series of competitions. Mike Kendrick was first, Dave Summers second and Les Newman third. At Cranfield things did not go at all well and all the combat entries from the club were eliminated in the first round. In spite of this they have gained three firsts, 2 seconds and 2 thirds in several combat events so far this season.

South Midland

LUTON & D.M.A.S. have outlined their winter programme. Outstanding items are (and were) a film show given by Sid Miller, on September 29th showing Nationals and World Champs. shots. October 27th will see the showing of colour slides and a discussion on full-size aircraft. On November 24th the A.G.M. will take place. Next year, in February, a bring and buy sale is due to be held, which, like all LUTON meetings and the above events takes place on alternate Thursdays at 8.0 p.m. at St. Matthews Hut, Bobden Street, Luton.

Southern

Fourteen members of the WEST HANTS A.A. in company with the radio boys of the BOURNEMOUTH M.A.S. made the trip to the Devon Rally on August 14th and made it worth their while when Jim Hitchcock and Alan Wits took 1st and 2nd place respectively in Combat. The club has had a busy season and in common with others has been giving both flying and static exhibitions at local fetes. Flying meetings are held every Sunday morning at Meyrick Park Bournemouth and new members would be made welcome.

Once more in company with Horsham M.A.C., WORTHING BALD EAGLES attended the South Midland Gala at Cranfield. Unfortunately 8 combat entrants were all plagued by the gremlins, but some managed to reach the third round. Basil Bumstead is now club combat champion, having won the event held on September 11th by a handsome margin. Next event due is a ½A T/R championship. On August 21st there was a friendly get-together on the Downs with Horsham M.A.C., Richard Wykes of that club losing his K.K. *Caprice* O.O.S., only to find the following Sunday that it had landed on the Horsham club's flying field at Coolham, 12 miles away!

EAST GRINSTEAD M.F.C.'s glider team, consisting of Les Fuzzard, Richard Vincent and Mike Smit, won its first contest at Ashdown Forest recently. They are now busily engaged in training juniors to make sure of a placing in the next contest. The club have given two more successful C/L displays at local fetes. A small contingent from the club visited Middle Wallop R/C contest on September 4th, but unfortunately had no models available to enter. Geoff Kemp has built an 8-channel R/C *Crusader*

Club News

for Merco 35 power, beautifully built and finished. First flight tests in a few weeks' time. Another R/C enthusiast has produced a clipped wing, 12 inch span version of the *Astro Hog* by flying it through an oak tree. For any one who is interested in trying this little modification we advise you that the easiest way is to fly just after dusk, when you cannot see if the model is coming or going.

Northern

Fourteen WHARFEDALE AND D.A. members were on the road to Cranfield for the South Midland Gala before first light on August 28th. The Long/Davy class "B" model was the nearest to getting in a final. Wharfedale prefer contests with semi-finals, and a lot more clubs agree, but admit it's a lot easier on the organisers having only one round, especially when they finish at about 8.00 p.m. Northern Gala on September 4th saw the club's turn at organising T/R events and both circles ran very smoothly with no major arguments or delays. They have some emulsion paint lined up for next year, so you will at least be able to see where you are if it rains again. "Move back to what line?" Wharfedale members will be interested to hear of any constructive criticism in order to improve next year's Northern.

NORTHERN GALA T/R RESULTS

Class ½A			
1.	D. W. Nixon...	Hinckley	10:20.8
2.	R. Sleight ...	Hayes	12:38.5
3.	A. Laurie ...	Novocastria	13:28.7
4.	Norton ...	Chorlton	15:6.2

Class A			
1.	Bill Haley ...	Thornaby	6:4.2
2.	Tom Pasco ...	Thornaby	6:26.5
3.	A. Wallace ...	Stanley	6:49.9

Class B			
1.	Bill Haley ...	Thornaby	8:15
2.	John K. Watson	Thornaby	8:48.2
3.	P. Orewell ...	West Essex	9:2.3
4.	J. Bowden ...	Chorlton	10:7.5

Best Heat Times			
½A	D. W. Nixon ...	Hinckley	4:38.4
A	John K. Watson	Thornaby	5:12.0
B	P. Orewell ...	West Essex	3:21.2

(semi-final)
HALIFAX M.A.C. Control Line Section after being somewhat in the doldrums as regards contests, decided to enter "en masse" the Northern Gala on September 4th at R.A.F. Rufforth. There were 7-½A entries, 6 F.A.I. entries, 4 Class B entries plus a few rubber entries from the ardent enthusiasts. One competitor in ½A, who shall be nameless, brought his model and equipment but actually forgot his engine! Two of the speed enthusiasts, Alan Heptonstall and Brian Hollingworth, raised a few eyebrows, (and blood pressures), by flying a hotted-up Fox .15 powered speed job, whilst other members of the club succeeded in rescuing the hired bus from the clutches of the club Hon. Sec. at the free-flight end of the airfield. In F.A.I. the ETA 15 appears to be ousting the Oliver Tiger for popularity, one member already possessing one and several are on order. In recent weeks one of the club members has been terrorizing both the human and bird population with a Merco .35 powered *Uproar*. On one occasion it flew out of range, flew a mile throttled back, bounced off a house roof and was recovered undamaged.

The finale to a C/L demonstration at a Garden Fete was a new Arrested Landing technique shown by John Chaney of the BLACKBURN (WELFARE) M.F.C. by flying his *Peacemaker* into the overhanging branches of an adjacent tree! A handful of members went to the Northern Gala at Rufforth but success didn't come their way even though Eric Coates' *Empress* A/2 was in pre-thunderstorm lift and was carried aloft even after d/t ing. Three club comps. have been staged in recent weeks with John

Harrison winning a C/L Balloon Bursting comp., Eric Coates a Radio Glider comp. where the wing area is factored to the duration (agg. 3 flights) to give small and large models an equal chance and John Chaney now having to polish the "Fred Buglass Open Sailplane" Trophy for a year. The top places in the clubs' Championship League, which was detailed in the October Club News, are held by Eric Coates—19 points, John Chaney—17 pts. and Dave Coope with 9 pts. The Club Champion will be decided after the C/L 30 min. Scramble comp.

London

On August 14th COSMO A.C. visited the Sidcup Gala at R.A.F. Kenley and several younger members entered the ½A and Combat, but were all unplaced mainly due to inexperience. The Club were pleased to note though, that ½A racers were equal to the best in the air. On August 27th they gave a C/L Demonstration at the B.O.C.M. (Erith) Ltd., Gala day, which was well received by the spectators, who thought the mid-air collision in combat most amusing. Incidentally this is the first prang in a demonstration this year, which says much for the boys' flying, especially the juniors. The most promising junior is young Howard who is only just 12 years old and is showing the seniors how to stunt with a 2.5 *Rivers Peacemaker*. His building is first class.

The trip to Cranfield was an eventful day for the DAGENHAM AND HORN-CHURCH clubs, even though they were not placed in any of the events. To start the day one member left his combat model on the pavement when catching the coach, two others changed from one pick-up point to another and were left behind. On the way home the coach had to be towed off the M1 with fuel pump failure when the replacement coach finally reached home it was nearly three in the morning. Cor, what a day! Some clubs do 'ave 'em!

The CROYDON glider gala held on September 11th at Chobham attracted an entry of 44, quite a few eight- and ten-footers were in evidence, but only Jim Baguley managed three "fours", losing two models in the process. As usual with Croydon contests, the gala was non profit-making (by intent!) and the kitty-sharers were as follows:

1.	J. Baguley ...	Hayes	12:00
2.	D. Giggie ...	C.M.	11:27
3.	D. Kay ...	Hayes	11:19

Their next event is on October 23rd for Power including .049.

Continuing HAYES AND D.M.A.C.'s most successful season in F.A.I. T.R. Mike Smith and Dave Balch got 1st and 3rd at Sidcup; three models went into a three-model final at Ramsgate, result being 1st Mike Smith, 2nd Dave Balch, 3rd Pete Kilner and Graham Rivers; and at Cranfield Graham Rivers got 3rd place. Needless to say, all used Mk. II Silver Streaks. Dave Balch shocked the manufacturers of modern 1.5 diesels at Sidcup by winning ½A T/R with his eight-year-old Elfin in 5 min. 5 sec. John Taylor and Dick McGladdery have upped the club 5 c.c. speed record by 6 m.p.h. to 130 m.p.h. with a Fox 29R Fibreglass pan model. The way this model travels it will not be long before the club 5 c.c. record is more than the 10 c.c. record (134 m.p.h. by McCoy 60-20).

BRIXTON CLUB meetings resume after a summer recess on September 13th, every Tuesday and Thursday. They are held at Rosendale Road School, Herne Hill, where once again the howl of Mac. 60s, etc., will shatter the evening calm. Interest still centres around the speed circle, some interesting models being under development. These include Monoline models powered by a 6 lb. static thrust Zanin pulse jet, a drum valve Cox Olympic and a Super Tigre G24. Mike Billington is regularly recording speeds of over 160 m.p.h. with his McCoy 60 model. The club hopes to have entries in every class at the coming S.M.A.E. pilot speed event at R.A.F. Kenley on October 30th.

NORTHWOOD M.A.C. combat members, although few in number, have been having outstanding success this year so far. Pete Tribe came 1st at Sidcup, Pete Perry 2nd at Ramsgate, and both of them with club-mate Dick Pratt and Ray Meakins of Kenton have, in fact, gained all the club's placings took the first four places at Cranfield "Razorblades" are still the most popular choice of combat model in the club and have in fact, gained all the club's placings this year.

RICHMOND AND DISTRICT GREN-LINS M.A.C. have been busy these summer months attending all the major rallies, but so far without a lot of success. At the Northern Heights Gala club member John Dumble secured the only trophy for the club by winning R.A.F. Flying Review Cup in the radio event. At the South Midland rally at Cranfield, Messrs. J. Dumble and P. Thornton came 3rd and 6th respectively in the S/C Radio event and John Perry came 14th in control line stunt.

At Cranfield the **ENFIELD** team came 3rd in Class "B" after the ETA had a shaft run in one of the heats two inches of prop keeping the model just airborne to run the tank out — the motor is now run in 1! The following week, two car-loads of members travelled up to York for the Northern Gala.

CRYSTAL PALACE M.A.C. is at present in the throes of Club Room difficulty, having been unable to secure the use of its former accommodation for the coming school year. Negotiations for a new Club Room are in hand and it is hoped to be able to announce the new venue in the next club report. However, in spite of this, preparations for the annual Club Dinner in December are going smoothly.

Western

WESTON CONTROLLINERS would like to thank members of the Northwood Club, who "put up" some of their competitors in the Cranfield Rally on the Saturday night. This rally was felt by all to be one of the best this season, even though the only success was in the stunt event where D. Christopher came second with his well-worn "Skua". The combat boys were all knocked

out earlier. The club has been able to use R.A.F. Locking for Sunday flying and as this is a very suitable flying ground, the turnout has been steadily increasing, with frequent visits from Bristol and Taunton modellers.

Several members of **GLEVUM M.A.C.** travelled down to Woodbury Common for the Devon Rally but were without luck this year. Keith Hickman, 2nd in the Glider last year, was again most successful member, placing 5th after a poor first flight made in the rain. Johnny Blackford in his first contest since completing National Service had trouble trimming his new "Heat Wave" for the Power event whilst Derek Harper lost his Torpedo 15 powered model on his first flight in the same contest. Elton Drew didn't lose a rubber model on the common for the first time in five years — the wings folded on a trimming flight! At the Area Rally held at Colerne on July 24th, the club had a field day in Power. Andy Gaunt placing 1st and Derek Harper 3rd (should we mention that there were only three entries!). The club Gala Day was held on September 11th and for once was blessed with reasonable weather, though the wind, whilst not strong, was in a very unco-operative direction, necessitating 3-minute maximums. Only nine members made entries despite the fact that club trophies were at stake. The best supported contest was for the Glevum Trophy Open Glider, Derek Harper coming out top with a total of 546 sec. followed by Andy Gaunt and Gerry Dwyer. The rubber with only four entries resulted in a win for Elton Drew with 538 sec. The Power event was somewhat of a fiasco — only one entrant. Nevertheless Andy Gaunt made his five flights to justify winning the Dowty Cup.

East Anglia

ANGLIA M.P.C. gave a display at a local fete where the public was entertained to 45 minutes of balloon bursting, combat and stunt, everything proceeding smoothly.

At the Area C/L gala held at Marlesham Heath on August 29th success was scored in "A" and "B" T/R and scale. The 1/4A entry being eliminated when the up-line jammed. Need any more be said?

East Midland

The day before the Cranfield Rally three of **PETERBOROUGH M.F.C.** members were called upon by the secretary to help give a display at a Red Cross Fete a few miles out of town. So having thrown a few models and gear in the back of the van and collected another bod who happened to be passing on his bike, they set off to give a display that no one knew anything about until about an hour before it was advertised. At very short notice the display went off well and was much appreciated. The next day 32 members piled off to Cranfield, 90 per cent. of these being spectators. Of the three that did enter, Jim Wright (F/F Comp. Sec.) came 2nd in Open Glider with a score of 8:50 secs. In Combat Ian Duffy reached the quarter-finals in which he was knocked out on ground time owing to the fact that nobody had noticed a loose backplate on his Rivers Silver Arrow. Mick Fountain (Pen) was knocked out in the second round after a hard-fought battle.

Five **LINCOLN** members made the trip to Cranfield for the South Midland Area Rally on September 4th. G. L. Roberts and D. Morley taking 3rd and 4th places respectively in Rubber; G. L. Roberts, being a keen rubber and contest power enthusiast, was highly delighted with his prize — a Veron Deltaceptor kit — maybe he'll turn it into a Wakefield!

North Western

OLDHAM AND D.M.A.C. members had an enjoyable day's outing when they visited the Northern Gala at R.A.F. Rufforth. While there, the club held its Scale Comp. and Jim Shaw's Dart-powered Piper Super Cruiser snagged a flying and disappeared O.O.S.! Jim Mellor, thyming Stuart Stansfield's

O/D Team Racer, had a hectic time on first trial flights, doing a loop on one of them.

All members of **STOCKPORT M.A.C.** wish to thank Wharfedale M.A.C. for the really exceptional friendliness and good fellowship with which they were greeted at the Northern Gala at Rufforth on September 4th, in the course of the Team Race events.

Ireland

Three members of **BELFAST M.F.C.** travelled to the Curragh on Sunday September 4th for the Irish Free flight Nationals. They arrived at 10.00 a.m. to a completely deserted field and began to test fly, and were not unduly surprised to find nobody there as they had experienced the same trouble with the M.A.C.I. two years before and were unable to obtain any information regarding prizes in spite of numerous letters to the General Secretary. Late in the afternoon two flyers known to the Belfast members arrived with the news that the competition had been postponed because the flyers from Cork were unable to attend, and would be held in three weeks time. This decision had been taken some time in the previous week but it had not been made public as several spectators had arrived during the day. Whether all club secretaries were informed was unknown.

Scotland

The **ANGUS & D.A.L.** challenged the West of Scotland Area this year to a free-flight competition. This was held on August 14th in conjunction with the Scottish Gala at Abbotstown. Weather was sunny and reasonably kind as regards wind strength, though the direction made recovery bad — Charlie Christie losing two models in two flights. The West came out of this battle on top, by forty-six seconds, with 51:34 to Angus & District's 50:48.

Wales

Like a number of clubs **CARDIFF** have not had a good season (tell me the old old story). Many Club and Area events have been impossible due to weather, and interest has flagged. On August 21st at Pengam, A. Hill (O. Tiger O/D) beat A. Jones (also O/D Tiger powered) in team race "A". Time for 100 laps was 11:43. Sunday 28th saw a good entry for Glider, but wind and the limits of the Flying ground at Ely dictated a 1:30 max. J. Phillips 7:30, R. Flaherty 7:13 and S. G. Morgan 7:05 were the first three. Roger Flaherty easily won the chuck glider his best 4 of 6 at 103 secs. beat his brother Brian by 30 secs.

Change of Secretary

GEE DEE M.A.C.

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THE CLUBMAN.

Contest Calendar

October 16th
Frog Senior Cup (U/R Power) } Decen-
C.M.A. Cup (U/R Glider) } tralised

October 23rd

Cambridge M.A.C. Meeting, Ivinghoe Beacon, all slope soaring classes. R/C pre-entry to R. I. Godden, "Mareid" High Street, Balsham, Cambs., two shillings not later than October 18th.
Croydon Gala* Chobham Common, open power (including separate 049 class).

October 30th

Blackheath Gala, Chobham Common, U/R rubber, power, glider. Further details from P. Crossley, 11 Broadfield Road, Calford, S.E.6.
S.M.A.E. pilotspeed event, R.A.F. Kenley.

November 20th

Croydon Gala* Chobham Common, Open Rubber.

* Signifies S.M.A.E. Sanction.

S.M.A.E. Results

WAKEFIELD & A/2 PRACTICE TRIALS
R.A.F. Wigsley July 16/17th 1960
Wakefield—20 entries.

1. Greaves D.	Leamington	13:44
2. Tubbs H.	Baildon	11:30
3. Roberts G. L.	Lincoln	10:58
4. Latter D.	C.M.	9:19
5. Boxall F. H.	Brighton	9:18

A/2—27 entries		
1. Tyrell B. L.	C.M.	11:12
2. Lawson P.	dailou	11:08
3. Robson A. M.	Teeside	10:53
4. Billings D.		10:40
5. O'Donnell J.	Whitefield	10:05
6. West J.	Brighton	10:04

MODEL ENGINEER CUP

(Area Centralised July 24th)

Team Glider—58 Teams		
1. Cheadle	28:57	
2. Baildon	25:21	
3. Birmingham	24:47	
4. Bournemouth	24:15	
5. Eng. Electric	24:12	
6. Timperley	23:42	

FLIGHT CUP

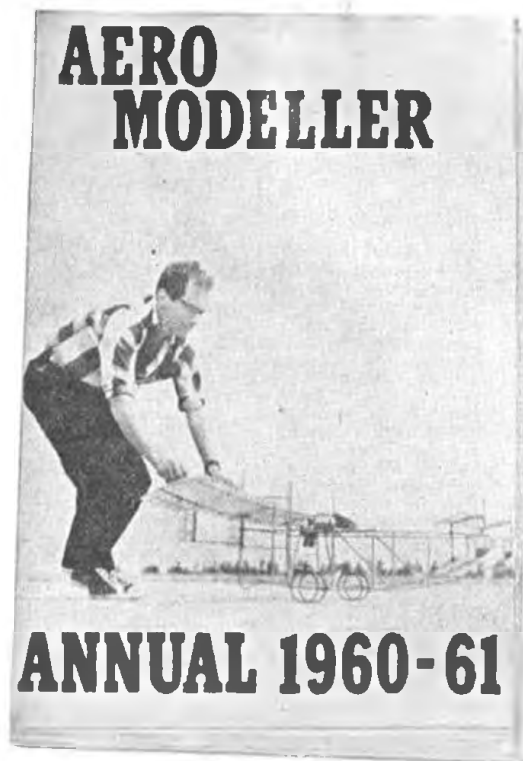
(Area Centralised July 24th)

U/R Rubber—70 entries		
1. Turner, M.	Cheadle	12:00 + 5:02
2. Poole, D.	Birmingham	12:00 + 4:43
3. Wisher, A.	Croydon	12:00 + 4:09
4. Greaves, D.	Leamington	12:00 + 3:12
5. Fuller G.		11:55
6. O'Donnell J.	Whitefield	11:20

AREA CHAMPIONSHIPS

R.A.F. Wigsley (Rubber, Glider, Power)
August 21st 1960

1. MIDLAND AREA	Total	102:12
2. NORTHERN AREA	Total	91:06
3. NORTH WESTERN	Total	89:21
4. EAST MIDLAND AREA	Total	81:50
5. SOUTH MIDLAND	Total	81:38



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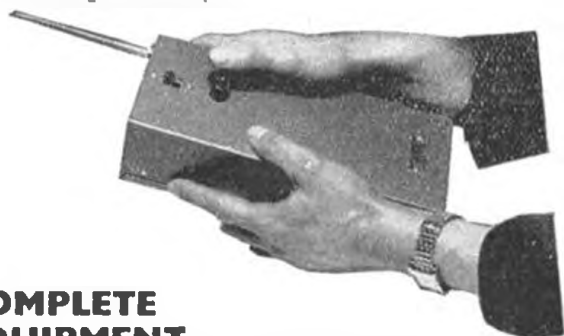
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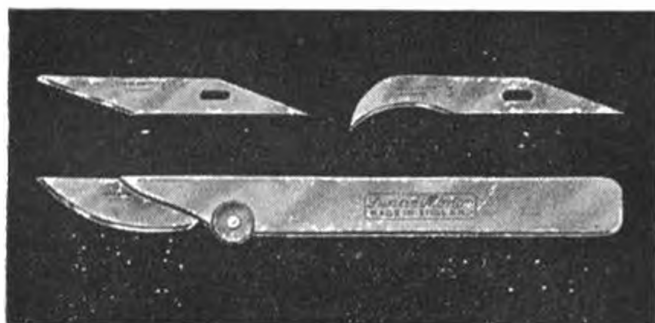
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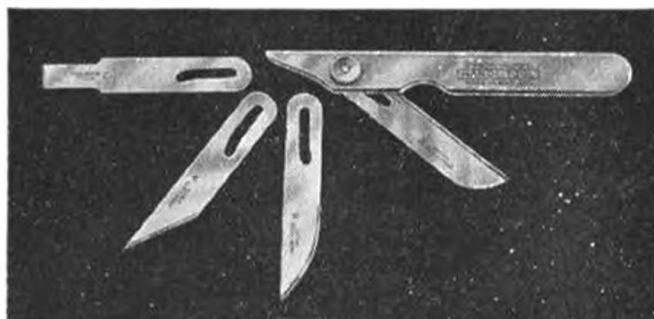
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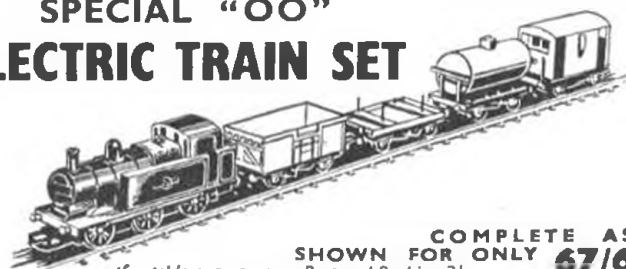
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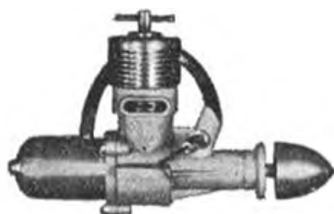
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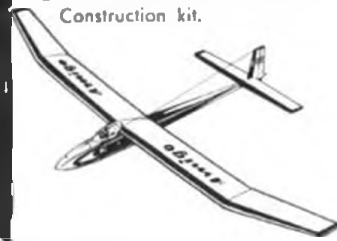
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