

# WORLD CHAMPIONSHIPS

by **BILL DEAN**



Forward-finned FAI airplane by Austria's Ernst Blanche does neat VTO on its 2.46 ED Diesel.

**Held in West Germany, September 3-5, the finals embraced all three free flight events for the first time. Both Wakefield and Nordic were taken by Germany, FAI gas by Great Britain. Competing: 224 entries and 23 nations.**



Wakefield winner, Gustav Samann of Germany, won the seven-man fly-off. Design previously had won three of the German Nationals.

VTO take-off, with accent on the V, made five perfects for Britain's Michael Gaster who then went on to beat two others in three-way fly-off.

► This year's World Championships for Wakefield, Gas and A.2 Gliders were held at Mainz-Finthen Airfield, Western Germany (September 3-5), with the U. S. Air Forces in Europe acting as host and the meeting being run jointly by the German Aero Club of Frankfurt and the American Academy of Model Aeronautics. As may be expected, running all three FF events in a group for the first time resulted in a mighty big contest. In fact, all previous Internats were overshadowed, there being a total of 224 entries from no less than 23 countries. Czechoslovakian teams flew in all events and even Russia sent along a couple of observers.

Top honors for '55 went to Germany—with Gustav Samann winning Wakefield in a seven-man fly-off against Sweden, Italy, Yugoslavia and Czechoslovakia—and A.2 Glider champ Rudolf Lindner repeating his last year's success with basically the same design. Britain triumphed in Gas this time—with Michael Gaster beating the Argentine and Canadian opposition in a

Master of towline technique was Germany's Rudolph Lindner, repeat winner. Kept ship top of launch for one minute on the fifth flight.





Pepsi in hand, Russian observer watches '54 winner Alan King set Wakefield. Alan jinxed.



The 1953 Nordic winning model, Hans Hansen, from Denmark, nice launching shot. Tied 9-10.



Long way from home was contest director Pete Sotich of Chicago Prop Nutz. Quiet moment rare.



Top man for America in Wakefield, Bob Champine 20 seconds from five perfects, 11-12 tie.



Otis Goss was top U.S. man in FAI. He had several maximums, then 178 and 148. Not enough.



Old payloadeer Herb Kothe surprised by taking 7th in Nordic, real feat since Europe sharp.

three-man fly-off—and also took second in Glider, with Bob Gilroy just a scant six seconds behind the winning score of 886. Team trophies went to Sweden in Wakefield, Britain in Power and Italy in Glider.

What happened to the American boys? Well, their best showing was seventh in Glider, ninth in Power and 11/12th in Wakefield, out of fields of 80, 74 and 70 respectively. The U.S. teams flew good ships but had their share of bad breaks, especially in Wakefield. If it's any consolation, several winners of previous Championships also fared badly this year—Hans Hansen ('53 A.2) placing 9/10th, Oscar Czepa ('51 A.2) 52nd and Alan King ('54 Wakefield) down in 63rd—which just goes to show that, as long as we have thermals and downdrafts, there's nothing more unpredictable than model plane contests.

This year's events were run on similar lines to the procedure

adopted at Cranfield in '53 and continued at the Long Island contest last year. That is, each two-hour round was split into four 30-minute periods, with only one member of each team being allowed to fly in any one period—thus ensuring that each team encountered *all* weather conditions prevailing during each round. Flying started bright and early each day at 0800 and except for two half-hour breaks for full-scale aerobatic displays on the second and third days, continued right on for ten hours!

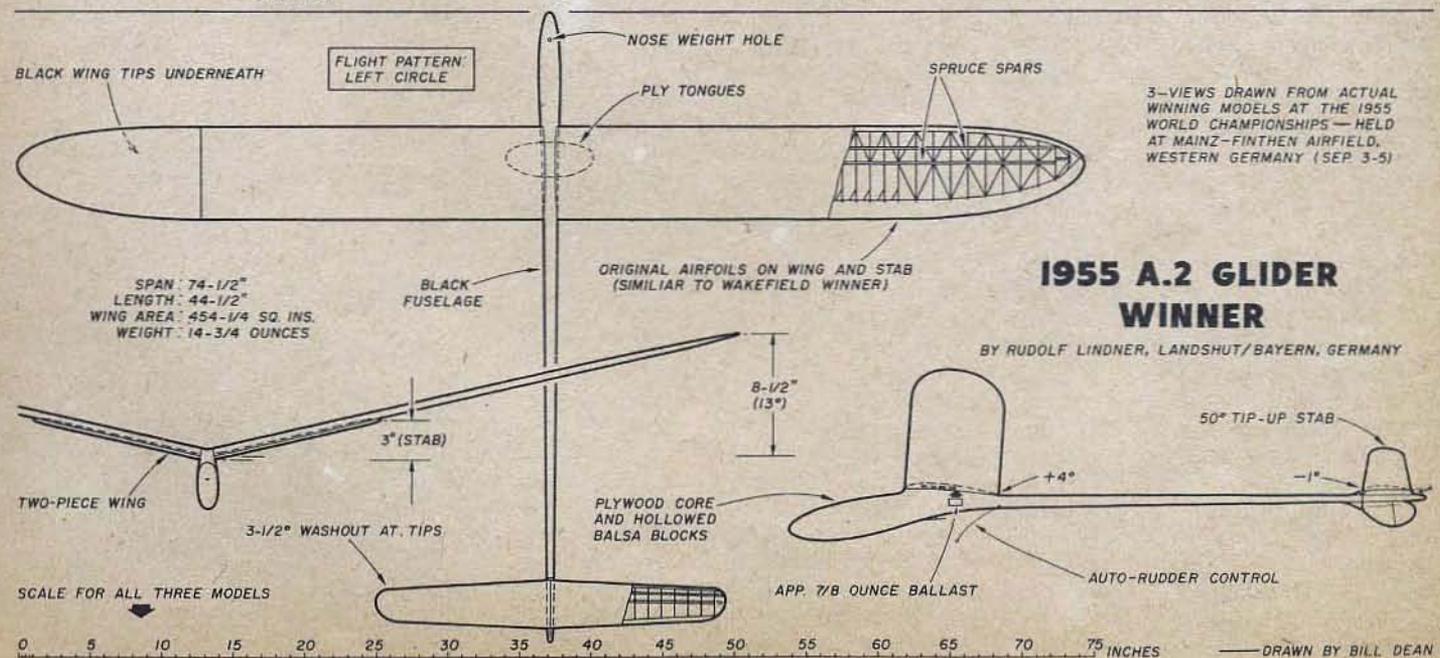
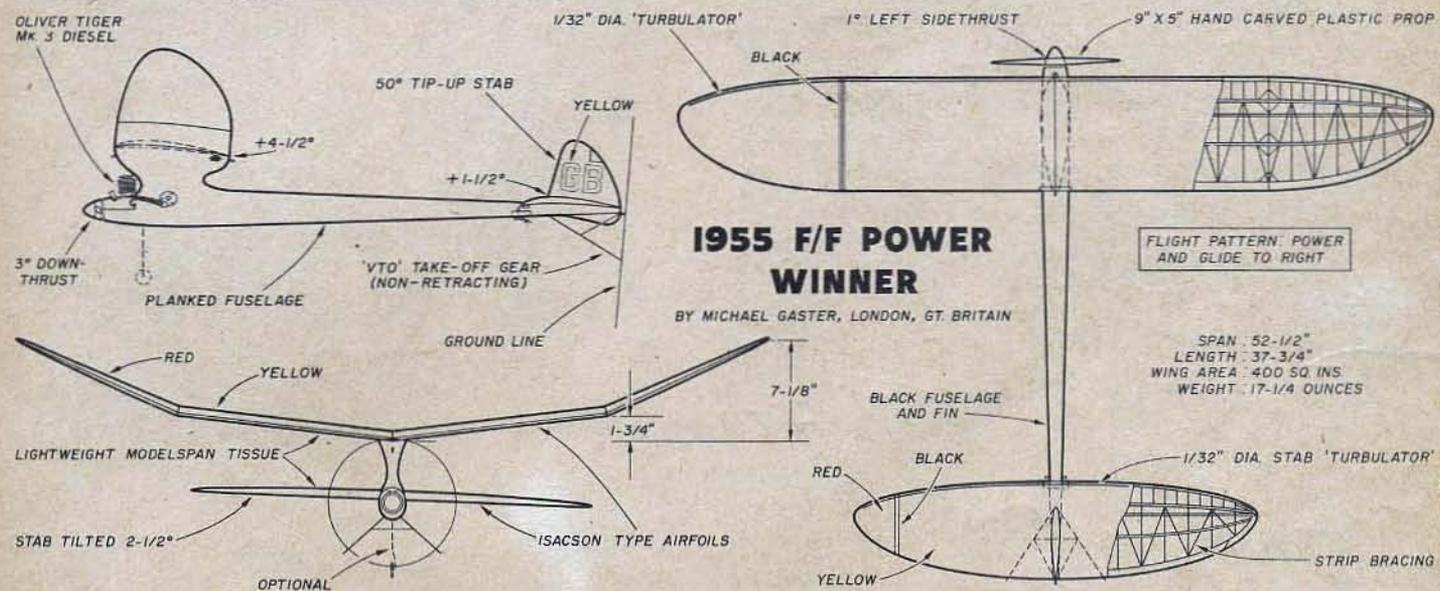
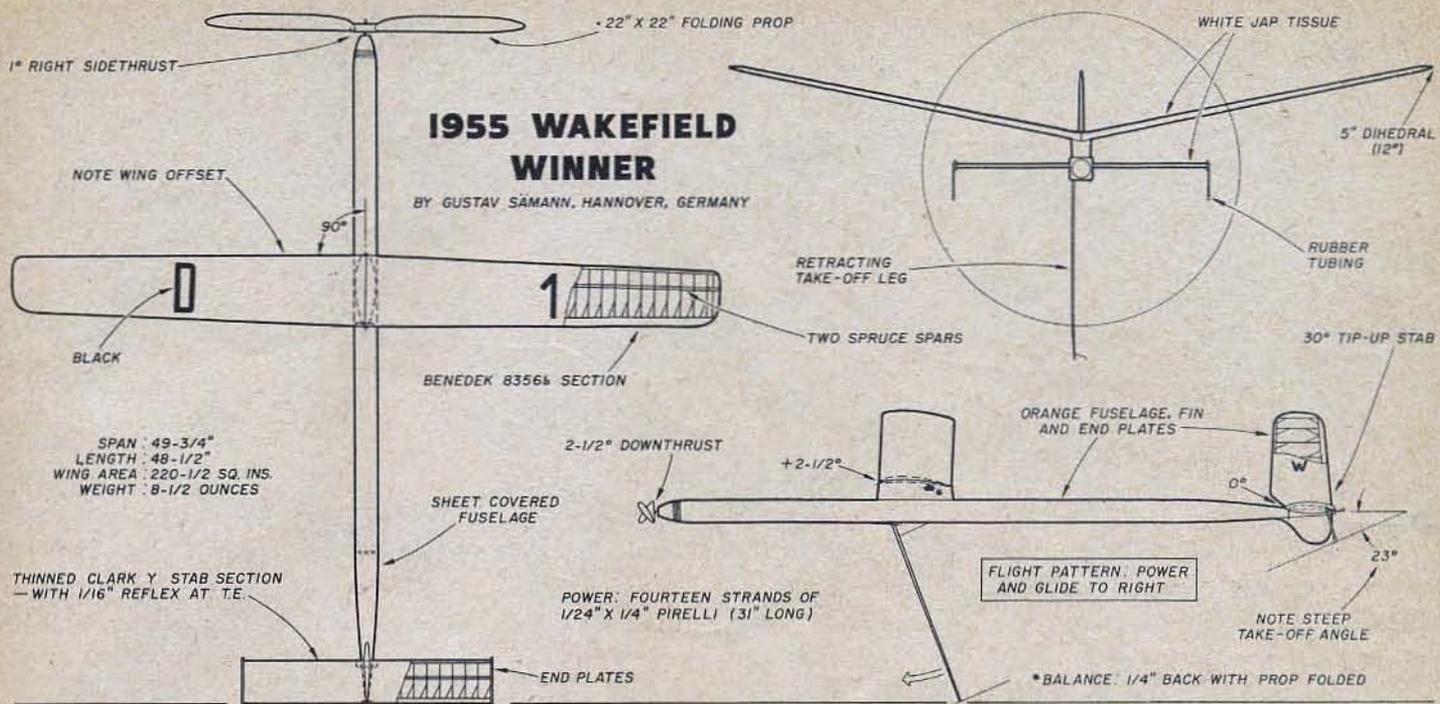
Apart from a few showers on the first day, weather conditions were nearly perfect, there being plenty of thermals about and only the lightest of breezes. With 180 seconds counting as a maximum, there were a tremendous number of five-flight totals of 900 (or near 900) seconds. Well over a third of all the flights made were maximums, so you had to be good to get a place near the top of

the list. For example, with a total score in Wakefield only 20 seconds below the maximum possible, U.S. Team Manager Bob Champine found himself in 11/12th place!

After some hectic midnight oil burning on the eve of the contest by the processing officials (ably led by Contest (Continued on page 47)

Only woman in event was Odette deBare, Belgium, who tied 21-22 against 70 Wakefields.





fairing. Top off with the canopy and strip the fuselage as called out. Mark the assembly with decal numerals and letters also, a squadron marking. Cement the tail strut in place. The wing panels are silver doped with the top surface finished off in yellow. A red strip is painted across the wing as shown. Place the star decals on both upper and lower surfaces.

At this point fasten the lower wing in place, using several rubber bands to tie securely. A 10 lb. tension should suffice. Mount the upper panel in place, bolting to the cabane struts, using 4-40 nuts and bolts. All fuselage rigging is 1/32 in. steel wire. With the wing in proper alignment, fasten the "N" struts in place, also using 4-40 bolts. Stretch some fine rubber bands to simulate flying wires. Check the wing again for proper alignment and note proper balance point.

The balance of work is limited to a block balsa cowl and, when completed, is fastened to the plywood firewall with wood screws through its aluminum fitting. For realism, we mounted a three-bladed X-Cell 10-6 propeller. Use fuelproof dopes, 40 ft. lines did a fine job.

## World Championships

(Continued from page 10)

Director Pete Sotich of the Chicago Prop Nutz), the first event, for A.2 Gliders, got off to a somewhat bleak start under grey showery skies on September 3. Only a handful of the 80 entries (from 21 countries) made maximums in this round, but the skies soon cleared and, in subsequent rounds, plenty of 180's were going up on the score board.

When it came to the fifth and final round, Germany's Rudolf Lindner was leading with four perfect flights. However, it was still very much anyone's contest since there were plenty of modelers close on his heels—and the thermals were rapidly weakening. Britain's Bob Gilroy and Sweden's Rolf Hagel soon moved up into first and second places with flight totals of 880 and 877 seconds. Thomann of Switzerland could have topped them both with a maximum but only made 130, so that pushed him out of the picture.

It now meant that Lindner had to put up 161 seconds to beat Gilroy and, when he finally came out for his last flight in the last quarter of the final round, the tension was terrific. By this time, there was little thermal activity and Lindner prowled unhappily up and down the towing area, trying to sniff out a thermal—while giving a perfect study of a modeler "who wished he'd flown much earlier in the round." After ten nerve racking minutes of this, he finally got his model up on the line. Not feeling a thermal, he then proceeded to keep it up there like a kite for at least a full minute by running around the field. Comes a slight tug on the line and he let it slide off the hook into the thermal he's been looking for. Only a weak one, but enough to give him a flight of 166, bring his total up to 886 and win the A.2 Championships for the second year running. A wonderful example of the delayed-release towing technique at which the Continental glider experts excel—and to us it looked like a must requirement for future A.2 team fliers.

Lindner's winning model had V dihedral, a pod-and-boom fuselage, dihedralled stab and a small underfin. His '54 winner had the same actual wings, but a straight T.E. stab, stick fuselage with small nose-fin, plus longer tail moment and nose. Gilroy's second place model was unusual for its ultra short (1 1/4 in.) nose. Tip dihedral

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was featured, the fuselage was slab-sided and both surfaces were constant chord. Hagel's third place model also had tip dihedral, a slim pod-and-boom fuselage and the stab was mounted atop a small fin.

Herbert Kothe flew an original diamond fuselage A.2 to seventh place for the U.S.A., with a total of 828 seconds, which included three maximums. Sad to relate, the remaining U.S. fliers—Jerry Kolb, Hank Cole and Joe Harris—were way down the list (team was 14th out of 23 countries). Hank's model was the most interesting American entry—had sheeted wings and fuselage, very high A/R surfaces and long tail moment and nose.

Although the removal of the minimum cross-section rule in '53 naturally resulted in many stick type fuselages, there still appears to be a good following for the more substantial built-up or pod types. We saw a good sprinkling of such gimmicks as end-plates on wings and stabs, wingtip and nose fins, leading edge turbulators and unusual wing plan shapes.

Designs were so varied, it was difficult to pick out any definite trends, but as regards dihedral, tip and poly seem most popular. Stabs were frequently set in front of or behind the fin, while auto-rudders (either towline or pin-release) and tip-up stab D/T's were pretty well standard. Thin, under-cambered birdlike sections, as on Lindner's model, were fairly popular and in some cases this resulted in sheeted wings to maintain rigidity.

On the second day (September 4), weather conditions were even better than they had been for the A.2 and it was obvious right from the start that there were going to be plenty of high times recorded among the 74 contestants. Sure enough, the 180's were soon beginning to pile up and by the end of the fourth round, there



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were six men with four maximums to their credit—including Italy's Giorgio Vidossich and Britain's Pete Buskell, who placed third and fourth respectively at the '53 Championships.

As the final round got under way, the thermals were once again beginning to run out but, when all the times were in, three of the leading men—Argentine's Francisco Stajcer, Canada's Bryant Jones and Britain's Michael Gaster—had each managed to pull off yet another maximum, which meant that for the second time in Internats history the winner would have to be decided by a fly-off.

In accordance with the FAI rules, all three had to fly within three minutes of each other. To ensure that spectators kept well clear, the six-man motorcycle recovery squad roared round and round the three finalists like a bunch of redskins attacking the wagon train. This naturally unnerved everybody and held up the proceedings until some of the spectators brought the motorcyclists to heel! It was beginning to get dark by the time the three models finally got away—within a few seconds of each other.

Bryant Jones was eliminated right away, as his timer (which shall be nameless) let him down and gave an over-run. It was now a straight fight between Stajcer and Gaster—and the latter looked like the best bet as he made the greatest height of all three after his usual rocket-like VTO get-away. No official figures are available at the time of writing, but he beat the Argentine modeler by a safe margin to win the '55 contest—both models exceeding the 180 second mark appreciably.

This was 23-year old Michael Gaster's first time as a member of an Internats team, although he is a well known contest flier and holder of the British C FF record. His sleek built-in-pylon elliptical surfaced design has been undergoing continuous development for many years and this particular model was the 14th in the series. A British Oliver Tiger Diesel driving a 9 x 5 in. hand-carved plastic prop, supplied the power. For vertical take-offs, the model rested on two non-retracting wire legs, with the tail dowel providing the third point. It was definitely one of the best looking ships ever to win the Championships.

Stajcer's second place model was a simple slab-sider pylon, with constant chord wings and stab (51½ in. span), powered with a K & B Torp .15 (8 in. x 4 in. Tornado prop). Bryant Jones flew a beautifully functional high A/R model (65½ in. span) which, like the winning design, has been developed over many years of contest flying. He used an Oliver Tiger (Top Flite 9x4)—now more than ever the most wanted contest Diesel with FF fans.

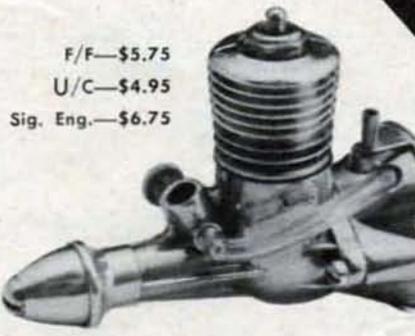
Top U.S. man was Otis Goss who placed ninth with 866 seconds. Like all in the American team he used a Torp .15. His model was a straightforward pylon type, with rather low A/R flying surfaces. Harry Gould, who did next best, had a similarly proportioned model with what appeared to be Zipper wings and stab. Bill Hartill (31st) flew an ultra-high A/R design which contrasted sharply with Ernie Shailor's blunt-tipped low A/R entry.

Conventional designs predominated at this year's Internats (with mainly moderate-height pylons) and Diesels were the most popular powerplants. Twin-finned jobs were not unusual and many wings were of quite high aspect ratio—close to A.2 glider proportions.

Among the more unusual types were Austrian Oscar Czepa forward-fin design (first seen at '53 contest), Australian Bond Baker's high thrust line, twin-fin ship and

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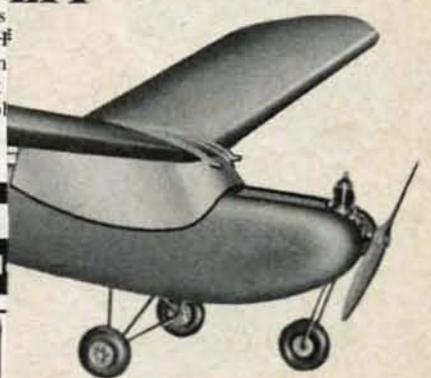
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Mexican Carlos de Cosio's raked forward wing original. Quite a lot of VTO designs appeared—including entries from Germany, Finland, Austria and Denmark. The only woman competitor in power was Maria Rudolph of Germany, who played near the top in eighth place.

The final contest for Wakefields took place on September 5—again under ideal weather conditions—with 70 entries from 19 countries. Maximum flights of 180 seconds were commonplace this year and totaled just under half of all the flights recorded!

At the end of the fifth round, there were seven contestants with five-flight maximums of 900 seconds, tying for first place. These were Ladislav Muzny of Czechoslovakia; Josef Altmann and Gustav Samann of Germany; Guido Fea and Vin-

cenzo Scardicchio of Italy; Anders Hakansson of Sweden and Emile Fresl of Yugoslavia. This all added up to the most exciting climax to any Wakefield contest to date.

All seven models got away safely in the fly-off, but by this time the light was failing fast and eventually all were clocked off out-of-sight, with Gustav Samann's entry putting up 315 seconds to secure Germany's second win at the Championships. Just 26 seconds behind him was Anders Hakansson of Sweden, whose country headed the team result in Wakefield. Next came Scardicchio, Altman, Fresl, Fea and Muzny—in that order.

Samann's winning model was a simple sheeted slabsider, with a slightly tapered V dihedral (pylon mounted) wing and a single-finned constant chord stab. He used Pirelli rubber and a double-bladed folding prop. An unusually long take-off leg gave the model a 24° ground angle. The design is well known in Germany, as it has already won three German Nats and numerous other major contests.

Hakansson's model also had a slabsider fuselage and a V dihedral wing. He used Dunlop rubber and a freewheeling prop—not a folder. Design points in common shared by the top seven models were that all had square or diamond fuselages, two-bladed props, single fins and peg leg take-off gears. With the exception of Samann and Hakansson, all used polyhedral wings. Apart from Hakansson, the others used two-bladed folding props and Pirelli rubber.

The U.S. Team did well in Wakefield, with Bob Champine in 11/12th place,

Herbert Kothe in 13th, Manuel Andrade in 18th and Gene Schaap in 20th. All four put up maxs in the first three rounds, after which the luck turned against them. In the team results, the U.S.A. placed third. Gene Schaap used a single-blade folding prop and the others had two-blade folders. Bob Champine's model featured a diamond fuselage and the remainder were square.

On the whole there were few really unusual Wakefields at the '55 contest, the strangest being Frenchman Marc Chevrolot's entry with its ultra-small butterfly stab. Australia's Alan King and Bond Baker flew two beautiful streamlined fuselage, twin-finned jobs, but both were out of luck—Alan wrecking his model when it hit another contestant on take-off in the final round. Hugh O'Donnell (second in '53) dropped 24 seconds on his only "less than maximum" flight to place 15th—which gives you an idea of just how hot the competition was at this year's Championships.

Finally, it's obvious that the present "flight maximum" should be put back to 300 seconds (still five flights), since 180 is much too low in the light of this year's experience. And take our tip—if you have a go at making the next FF team, the first thing to do is get a clockwork timer. Then, and only then, can you turn your attention to the next most important item—the engine. After all, having the hottest motor in the world does not mean a thing if you're never sure what engine run you'll get from flight to flight. Ask Bryant Jones—he'll tell you!

## Engine Review

(Continued from page 34)

as a competition engine. However, it will undoubtedly find a big welcome in the radio field where the effect of vibration upon relays, etc., is a serious headache, and also among the increasing army of scale enthusiasts where its greater realism and low frontal area per cu. in. are a gift for in-line engined prototypes. Apart from this it will surely find a place in the hearts of all true enthusiasts for its neatness and exquisite noise and simply for the fact that it is a twin. With the diversity of parts and accessories available which go to make up the Fury range of aircraft and marine engines, it will be a comparatively simple matter for ingenious people to make up multiples of the twin and in fact make in-line engines of the required number of cylinders to suit a particular scale model. There is a limit to what the crankshaft will transmit, but it would be intriguing to find out where that limit lies.

The construction of this new engine is very interesting and in particular its solution to the problem of avoiding the split conrod bearings of the car engine. This question of split bearings is probably the biggest reason for the delay in the appearance of low cost multis, as they add considerably to the amount of high precision work included in the production of a model engine. Another reason has been that until recently the piston and cylinder assembly have been considered the meat in the cost per unit so that a twin meant to the manufacturer the proposition of trying to make two engines for very little more than the price of one. The use of glow ignition with its less stringent requirements in the way of piston clearance, plus modern production methods, has eased this situation, and now that the ice has been broken it seems likely that the multi age is upon us at last.

The crankshaft of the Allyn engine is in two parts, the front portion being similar to any conventional shaft but lacking any valve port or crankpin. A prop driver in gold anodized aluminum of moderate proportions is

