

WORLD CHAMPIONSHIP TECHNICALITIES

BEFORE WE GET involved in this first part of our summary of interesting model detail seen at the World Power Championships, it is worthwhile reflecting on the model specifications for the class. They were instituted to take effect at the 1958 contest, and this was the second time of use at such a Championships although of course they are used by many countries for National events.

Maximum cylinder capacity: 2.5 c.c. Load per c.c. of cylinder capacity: 300 grammes (10-6 oz.). Load per unit of area: Maximum 50 gr./dm2 (16-4 oz./sq. ft.). Minimum 20 gr./dm2 (6:56 oz./sq. ft.). rginerun: 15 seconds.

Whereas the 1958 contest (also held at Cranfield) was in blustery conditions, the 1960 event enjoyed perfect weather during the main five rounds. Subsequent fly-off rounds were punctuated by rain showers, yet at no time was there a strong wind and only a long dethermaliser time took a model outside of the aerodrome (for efficient recovery by the South Midland Area modellers, some 40 strong, under the direction of Dick Edmonds). Only one model was lost during the contest, that of Ed. Miller (U.S.A.) due to a 41 minute d/t fuse and an 8:40 flight

During the 4th and 5th rounds there was evidence of thermal activity. Some good models were genuinely downdraughted in the fifth round, and this eliminated

Canadian John Scott's chances. The other modeller who deserved a final place was Tom Smith with Japanese Suzuki's model. He made 7 max's but the first two were marginal overruns through no fault of Tom's. Scott and Smith would then have made the 15 strong fly-off we forecast during processing—even so, our prediction that at least 25 per cent. of the entry would place equal first was realised to the nearest whole man, and that one out of every four provided a few surprises. Congratulations are due to Norway and New Zealand for their high placings with 2 men each in the fly-off; to the proxies who worked so hard and flew so well; to the Hungarians for the finest finished team of models that really deserved to repeat team victory, and to the most efficient and slickest scoreboard yet, devised and operated by our own "Rushy" with Mrs. R. and Eddie Cosh toiling over figures to produce results so quickly.

So much for generalities—what was there to see among the World's best Power models (so good that to score

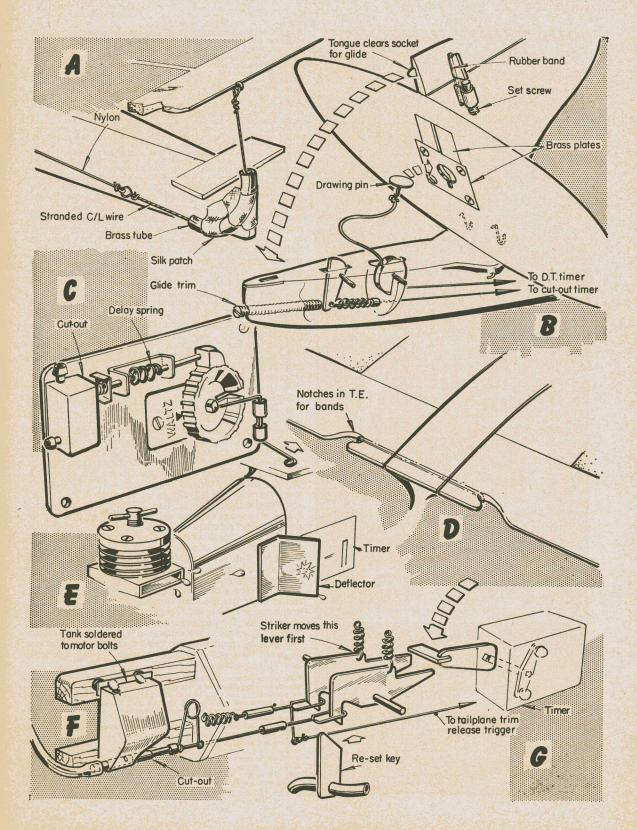
SKETCH DETAILS opposite give valuable tips to be gained from inspection of the International talent at Cranfield. A is Sandy Pinenoff's (Finland) method of connecting a clockwork d/t timer to the tail. On his other model he used a coil of C/L wire as a guide. B is the tail of Bond Baker's (Austraila) 1.5 c.c. model with screw settings, two tail positions plus d/t and neat use of drawing pin head to engage d/t line. C on Pimenoff's converted Walz timer (a popular choice) was a delay spring to allow time for the d/t lever to come up through the slot in winding knob and so not lock-up. D Cuts in wing trailing edge of Hans Beck's (Germany) model hold bands for separate wing halves.

E Sludge stopper on Gerald Hormann's (Austria) E.D. Hornet model keeps timer clean. F is Vladimir Hajek's (Czech) tank on engine bolts with integral cutout valve, tripped by G, a double lever device for re-setting tail incidence on the glide just before stopping MVVS diesel. Re-set key pushes up under fuselage. Model will be detailed in this year's Aeromodeller

Heading shows the five top men after their 7th-round regularity test at Cranfield. Left to right: John Sheppard (New Zealand), Sandy Pimenoff (Finland), Larry Conover (U.S.A.), Giovanni Guerra (Italy) and Rolf Hagel (Sweden) — you'd look tired too after all that effort!!

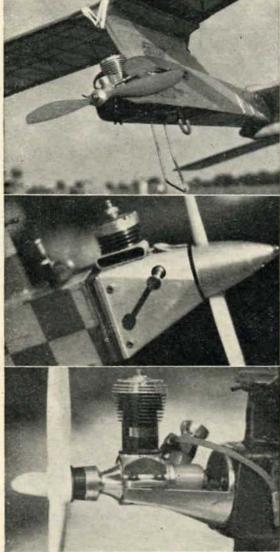
Top team, and justifiably so for their models op team, and justifiably so for the indeed were the epitome of quality construction and their performance of such high average in an event where every second counted. Hungarians Gyula Simon, Erno Frigyes, Manager Reszo Bekind, and Andras Mezzner. All decoration beautifully applied in coloured tissue strips





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(continued from page 534)





MORE DETAILS seen at Cranfield, H is Birger Bulukin's (Norway) triangular turbulator system on wing leading edge, made of acetate. He was a finalist. J Also from Norway was Torbjorn Johannessen's tail unit, with an aluminium rod as d/t guide and limit, triple hooks at rear for spacing the rubber band and fuse and a guide peg arrangement to stop the tail from slewing. K was seen on Rene Grappi's (Swiss) 1.5 c.c. models, simple yet so effective warp stopping doubled gussets at every rib. L by German Hans Schilling is a tongue-less wing fix. We noted increase of dihedral at times: but it was a shock absorber in d/t landings! Depends on tight bands and good wing seat. M From Austria, Ferdinand Niedermayr had an adjustable thrust alloy engine plate in what was otherwise an A/2 type model with very small tailplane. N is Larry Conover's (U.S.A.) safety first arrangement on the Tatone tick-off timer. He has spring to permanently tension timer to start position, locked off by pin with flag, other safety device by him is O, where fuse is also used if timer fails to release lever and band. Fuse snuffs out in tube. Larry says this is most important feature of Lucky Lindy—to get it down!

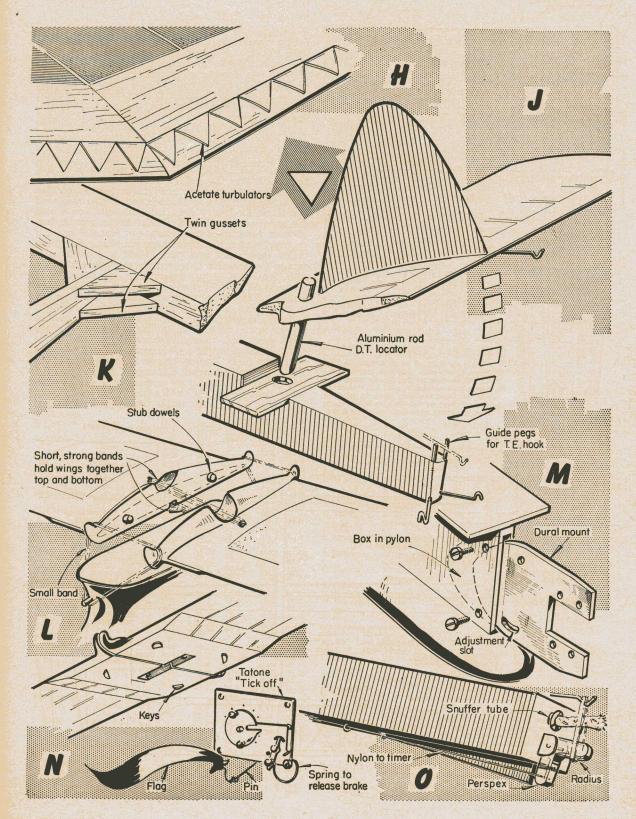
14 minutes was only enough for 36th place!)? The answer to that one is "plenty", and since it was a Power event, we should first deal with engines. Numerically, the Oliver Tiger retains the popular vote for this class of model: but if one is to take the numbers used by finalists as a percentage of those entered, it does not show so well as in previous years. Four, out of the 13 finalists used Tigers and the great majority were re-worked examples. Rolf Hagel was the lone Tiger operator among the top five, though Sandy Pimenoff also used his Tiger powered Ascender during some of the rounds.

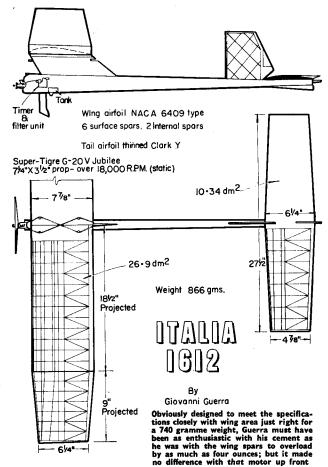
The other diesel which reached the end of the contest was the ETA 15, and we know for a fact that neither John Sheppard's nor Pimenoff's were modified in any way. The high proportion of ETA finalists among those entered is a credit to the manufacturers. Johannesen of Norway had a novel ETA 15 on his third model which crashed in practice, featuring a drum valve and crankcase bleed cut-out valve.

With three of the top men using diesel out of an entry of 44 electing to use this type of ignition, and the other two finalists using glowplug out of 10 such entries, it could be said that percentage-wise, glow held sway and showed general superiority. This should be qualified by stating that the majority of the glow engines used, especially those placed highest, could not be bought in the shops.

For sheer r.p.m., the latest model Super Tigre G 20 V Giubilee as employed by Giovanni Guerra was the engine of the meeting. Wisely propped with a 71 x 31 wooden screw to take full advantage of the high b.h.p. peak, the Tigre was running to over 20,000 r.p.m. in the air. Using a pressure tapping off the crankshaft port (now considerably enlarged in a bigger shaft) the engine increased its speed with the duration of its run. The fact that it was in one of the heaviest loaded models in the field, with a variable climb pattern indicating need for more trimming attention leads one to wonder what such an engine might have done without the overload of no less than 4 ounces unnecessary weight! This Jubilee model Tigre has the shaft housing in unit with the main crankcase and features, among other enlightening design changes, a flat topped baffle-less piston, generous transfer (two passage) timing to almost fully overlap exhaust, and a smooth but thick cylinder head. Guerra stops his by a powerful metal plunger valve in the feed line. (Continued on page 538).

Left, top to bottom: Guerra's fantastic power unit. Prop hides some of the involved plumbing for pressurised fuel system. Note heavy gauge leg for d/t landings and coupled tank vents behind. Next is Larry Conover's metal cowled and modified 0.5. Max 15-11 with blanked-off tank vents aft of cylinder; note only slight downthrust used, and use of spinner for streamlining. Latest Cox Olympic in Woody Blanchard's modle had a drum valve, running in a steel sleeve encased in nylon. Engine takes on the aspect of a musical instrument, and certainly now has good suction. Bottom is a standard Cox Olympic as used by Austrian Ossie Czepa with tank as close as possible to the engine, timer in between does not make the fuel line any longer. Bottom timer is another latone, for dethermalising, and round spot is cover for the weight box in the "chin". Note also the curved and dihedralled wing tongue for the thin all-sheet sparless wing airfoil, and the metal engine mounts. All-in this was most ingenious model of the World Champs

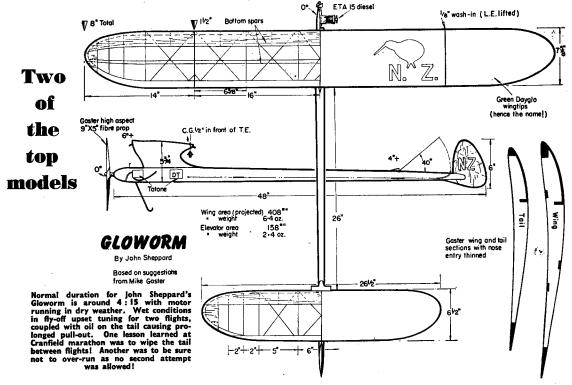




When one realises that thousands of miles space the three U.S.A. team members in their normal modelling activity, and that at each of their zone finals the standard of flying was high enough to qualify any of many flyers, the expert status of the Americans is better appreciated. We know that the full range of internationally accepted engines, the Olivers, K. & B.'s, Webra's, Enya's, etc., were used in these finals, yet all three of the U.S. team arrived equipped with personally modified O.S. Max 15 series 11's, a coincidence which illustrates widespread U.S. appreciation of the engine. All were working on a pressure system with tappings off the rear covers. Conover and Blanchard stopping by plunger in the fuel line, and Miller using a squirt of neat fuel into the intake from a separate timer actuated fuel line to stop the Max by flooding. His better (and oldest) engine may well have been the most powerful on the field. Few would recognise it as an O.S. since the transfer passage had adopted Monrovian proportions (or Mansfieldesque if preferred) rather like a miniature Dooling. Ed Miller makes these mods with Plastic Steel, a two part cold setting plastic which is universally available (7s. 6d. in G.B. hardware stores) being made by Dev Con of Nassau B.W.I. Unfortunately, this engine which had been checked at 16,400 r.p.m. on a Topflite 8 x 4, broke either

a rod or wrist pin during early a.m. practice.

Larry Conover's O.S. Max with the internals cleaned up was not so far behind, holding 16,200 r.p.m. on the same prop, and Woody Blanchard's sounded just as healthy though model misbehaviour in the first round made him (and Conover) change to the 2nd model. In Woody's case, this meant a change of engine type, and one of extreme interest at present for it was a drum valve prototype of the Cox Olympic. Fitted with a nylon rear cover for the steel intake timing drum bearing it



certainly overcomes the lack of suction shortcoming of its forebears. As the contest went on, Woody Blanchard was kicking himself for not using the Cox/Gawn combination from the start.

Though not among the top five, the Kriszma Record, used in both plain and ball-bearing shaft variants was represented by two examples in the final. Produced by Kriszma in Budapest, the plain bearing version is probably the best available such motor today. The ball-race type is capable of matching the established modified Olivers and ETA's in expert hands, as Frigyes and Sulisz showed, the latter being specially unfortunate to lose his place through an over-run during the 9th fly-off round.

One other engine deserves mention, though now old news, and that is the Czech M.V.V.S. 2.5 G used by Jiri Cerny. With plain suction feed this engine which is normally associated with C/L speed models, frequently

ENGINES	34	Oliver Tiger	7	OS Max 15
EUGIUE2	ž	Cox Olympic	Ż	Webra Mach I
	7	ETA 15	3	M.V.V.S./D
USED BY	3	Enya 15	2	M.V.V.S./G
	2	Zeiss	1	PAW 1.49
THE PA	2	E.D. Fury 1.49	- 1	Super Tigre 1.5
THE 54	1	A.M. 15	4	Webra Record 1.49
	2	Super Tigre G20V	5	Super Tigre G20D
ENTRANTS	- 1	Taifun Hurricane	- 1	Super Tigre G30
LITTIMATE	1	Sugden Special	1	Schilling Special 2 D-A.

demonstrated how it would take a model higher than its M.V.V.S. diesel equivalent. One is left to ponder whether with pressure feed and smaller prop it might have gained the same attention as the Super Tigre and O.S.

To summarise; it was the much modified or exceptional glowplug engine which succeeded, while "over the counter" diesels held their own, though in lower proportion to the numbers entered.

Next month we shall discuss model design trends, with more three-views of outstanding entries.

COMPLETE SUMMARY OF PROCESSING INFORMATION

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	,		Sq. Dec	imetres		-			Sq. Decimetres			
Engine	Actual weight (grms.)	Permis- sible area	Wing	Tail area	Total area		Engine	Actual weight (grms.)	Permis- sible area	Wing	Tail area	Total area
JAPAN						AUSTRIA		•				
H. Suzuki Enya 15 H. Ono Enya 15	755.5 800	37.8 40 .	28.9 28.1	5.84 3.9	34.74 32.00	G. Hormann	Cox Olympic E.D. Fury	841 507	42 25.35	29.35 18.28	11.24 6.18	40.59 24.96
NEW ZEALAND	800	₩.	20.1	3.7	32.00	F. Niedermayer		818	40.9	35.6	5.1	40.7
J. Sheppard ETA 15	747	37.35	26.84	9.96	36.8	•	Webra Mach I	832	41.6	35.5	5.1	40.6
ETA 15	749.3	37.5	25	9.4	34.5	O. Czepa	Cox Olympic Webra 1.49	809 459	40.45	30.7	7.1	37.8
J. Winn Cox 15 Cox 15	784.5 769	39.2 38.45	27.08 28.04	11.14	38.22 38.54	FRANCE	Webra 1.47	707	22.9	18.3	3.4	21.7
R. Hewitson Oliver	1044	52.2	33.9	12.6	46.5		Oliver	859	42.95	28.35	12.24	40.59
Oliver	817	46.75	27.62	9.25	36.87		Oliver	888	44.4	28.31	12.24	40.55
AUSTRALIA K. Green OS Max 15	796,6	39.8	27.2	10,7	37.9	R. Guilloteau	S/Tigre G.30 S/Tigre G.20D	813 868	40.65 43.4	27.24 30.22	9,3 9,46	36.54 39.68
OS Max 15	942	37.0 47.1	29.6	11.5	37.9 41.1	G. Guidici		774	38.7	28	9.8	37.86 37.8
R. Baker Oliver	812	40.6	25.67	10.85	36.52		Oliver	779	38.9	28	9.8	37.8
FINLAND	771	20.05	20.00		20.46	IRELAND	Oliver	010	40.5	24.00	0.50	24.5
S. Pimenoff Oliver ETA 15	771 749	38.25 37.45	28.96 28.3	9.5 8.85	38.46 37.15	J. O'Sullivan	PAW J.49	810 509	40.5 25.45	26.98 18.94	9.52 6.5	36.5 25.44
O. Niemi Oliver	748	37.4	27.93	7.82	35.75	J. Thompson	Oliver	739.5	36.98	24.92	10.65	35.57
Oliver	764	38.22	27.6	8.01	35.65	•	Oliver	746	37.32	26.37	10.48	36.85
I. Jokinen Oliver	798 825	39.9	28.92	8.35	37.27	A. Morelli		764.5	38.2	27.86	10.22	38.08
Oliver	023	41.2	27.00	7.65	32.6	HUNGARY	Oliver	764	38.2	27.72	10.4	38.12
S. Gerstrom Zeiss III	768.5	38.43	27.41	9.41	36.82	A. Meczner	Kriszma	790	39.5	27.9	9.06	36.96
A.M. 15	464	23.2	18.06	5.04	23.1	E Cutana	Kriszma	751	37.5	27.75	9.15	36.9
H. Sorensen Zeiss III ED S/Fury 1.49	771 464	38.55 23.2	30.4 17.64	8.09 5.07	38.49 22.71	E. Frigyes	Kriszma Kriszma	886.5 911	44.3 45.5	27.46 27.16	10.25 9.6	37.71 36.76
N. Christensen Oliver	1057	52.8	26.68	10.64	37.32	G. Simon		786.5	39.3	28.15	9.18	37.3
Oliver	832	41.6	27.1	11.9	39.0	ITAL W	Kriszma	786.5	39.3	27.76	9.32	37.08
CZECHOSLOVAKIA R. Cerny Oliver	759	39,45	26.7	7.4	34.1	ITALY S. Rizzo	S/Tigre G20D	784.5	39.2	26.64	10.28	36.92
M.V.V.S./D	755	37.75	27	8.1	35.1		S/Tigre G20D	780	39	25.2	10.64	35.84
J. Cerny M.V.V.S./glow	767	38.35	26.96	10.46	37.42	E. Padovano	S/Tigre G20D	793	39.67	27.67	11.7	39.37
M.V.V.S./glow V. Hajek M.V.V.S./D	783 771	39.15 38.5	28.14 27.43	10.58 8.13	38.72 35.5	G. Guerra	S/Tigre G20D S/Tigre G20V-G	795.5 846	39.78 42.3	24.66 26.9	12.66 10.34	37.32 37.24
M.V.V.S./D	763	38.5	29.59	8.22	37.8		S/Tigre G20V-G		43.3	26.9	10.04	36.94
SWITZERLAND						SWEDEN						
R. Schenker Oliver	824 846	41.2 42.3	28.8 28.4	9.07 7.26	37.9 35.7	M. Hagberg M. Ericsen		771 829	38.55 41.45	26.9 26.96	11.36 10.5	38.26 37.46
E. Eng Webra 1.49	455	22.75	17.5	4.65	22.15	ri. Ericsen	Oliver	803	40.15	26.25	10.5	36.75
Webra 1.49	499	22.75	17.44	4.63	22.15	R. Hagel	Oliver	751	37.55	28.56	6.94	35,5
R. Grappi Taifun Hurricar Webra Record	ne 495 475	29.75	17.51	4.74	22.25	11.6.4	S/Tigre I.5	457	22.85	17.92	3.93	21.35
NORWAY WEBTA RECORD	7/3	23.78	17.51	4.86	22.37	U.S.A. W. Blanchard	Olympic (Drum) 781.5	39.08	29.56	9.52	39.08
G. Dalseg Oliver	786	39.3	25.5	9.94	35.46		OS Max II	803	40.15	28.04	9.6	37,64
D.A B. Bulukin D.A	804 788	40.22	27.4 29.5	10 8.48	37.4 37.98	L. Conover	OS Max II	768	38.4	30.1	7.8	37.9
B. Bulukin D.A Oliver	788 808	39.4 40.4	30.0	8.48 8.48	37.98 38.48	E. Miller	OS Max II	773.5 808	38.67 40.4	29.6 30.25	7.8 9.65	37.4 40.0
T. Johannsen Oliver	767	38.35	28.0	9.4	37.4		OS Max II	809.5	40.5	30.25	9.65	40.0
Webra Mach 1	763	38.2	27.5	10.2	37.72	CANADA						
POLAND						K. Bonsfield	Cox Olympic Cox Olympic	757 776	37.85 38.8	25.5 22.85	9.72 10.88	34.22 33.74
Z. Sulisz Kriszma 2.5	778	38.9	29.7	9.12	38.8	K. Groves		7/6 750	38.8 37.5	27.4	9.0	36.40
Kriszma 2.5 J. Faleki Kriszma 2.5	779 764.5	38.9 38.2	30.8 29.6	8.95 8.53	38. 8 38.20		Webra Mach I	762	38.1	27.61	8.88	36.49
Kriszma 2.5	770	38.5	29.8	8.58	38.38	J. Scott	Oliver	761.5	38 37	28.5	7.6	36.1
GERMANY				_		GREAT BRIT		741.5	3/	28.37	7.5	35.8
T. Schwend Webra Mach I	806.5	40.3	27.68	12.3	39.98		ETA 15	759	37.9	26.52	9.9	36,42
Oliver	871.5 618	43.5	27.5	11.7	39.2	1 6:	ETA 15	774	38.7	26.52	9.9	36.42
H. G. Schilling O/D 2 c.c Enva 15D	775	30.9 38.75	23.04 28.78	6.42 8.54	29.96 37.32	J. Simeons	ETA 15	797 802	39.8 40.1	23.86 23.86	10.16 10.16	34 34
H. Beck Webra Mach I	772.5	38.6	28.4	8.1	36.5	A. Young	Oliver	745	37.2	28.0	8.8	36.8
Webra Mach 1	767	38.4	28.4	1.8	36.5	-	Oliver	740	37	28	8.8	36.8
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