

8th WORLD R/C CHAMPS

FOR AEROBATICS

Gorizia, Italy
September 11-17



THE 8th World Radio Control Championships for aerobatics (F.A.I. Class F3A) was a cliff-hanger to the end. It was also the largest ever of the series which began, in Switzerland, in 1960, this time drawing 78 competitors from 27 countries. Newcomers were Israel, Portugal and Spain.

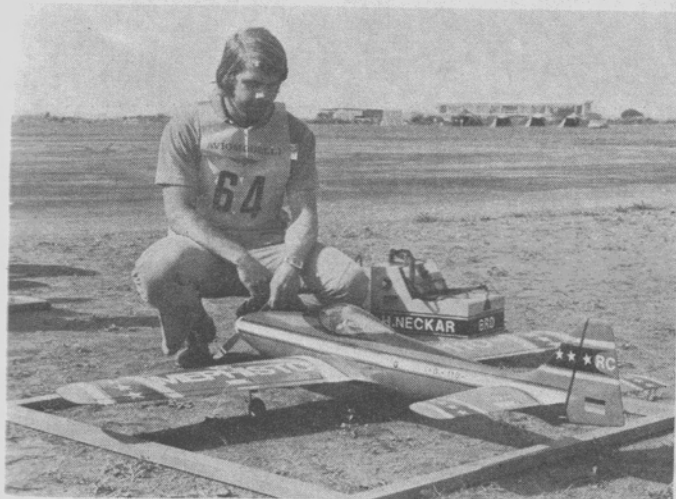
'Sunny Italy' certainly lived up to its name for at least the first three days of the event, thereafter clouding over – at times very dark indeed.

Practice day is always the time to study the flying form and to seek out interesting model design innovations, of which there were an interesting crop this time. Talking point of the meeting was certainly Bruno Giezendanner's (winner at Bremen 1969 and Doylestown 1971) innovative new design which featured a variable geometry wing. The model, called *Salamandre* uses a shoulder wing position, with mainwheels in the fuselage, retracting backwards through 90 degrees into the fuselage sides, while the noseleg unit operates as normal. Wings are extended during take-off and for some manoeuvres, but are swept back for the rolls, slow, four-point and triple, the improvement of which, was the object of this very complicated exercise. In view of the disastrous effect on these manoeuvres during the four rounds of contest flying, however, it is difficult to see that the exercise achieved anything except to cost Bruno points. On the other hand, it is equally difficult to accept that such an experienced flier, twice world champion, would throw away the chance of a hat-trick by using an unsatisfactory model and we can only conclude that Bruno was unable to use whatever advantage to design had to offer, and that his flying was very much 'off'. His scores certainly prove

Top: triumphant Tsugutaka Yoshioka (on left) with mechanic brother, after the last flight of the entire championship, which clinched his individual win. Model, called *Sabre Liner* used Enya 60III motor and Japanese Digicon 6 radio. Above left: Wolfgang Matt, placed 2nd as at Doylestown with *Super Star* – most popular design at champs. Used rear induction HP-61 motor and Simprop radio. Above: just a single error cost Hanno Pretner the World Championship. Placed 3rd with *Super Sicroly* design. Webra-Austria motor used in Simprop equipped own design. Above right: youthful Harald Necker looked a likely winner, but finally placed 4th for West Germany. Model is very smooth flier – has all flying stab, HP-61 motor and Graupner Varioprop 12 radio employed. Far right: Norman Page of U.S.A. placed 5th using Mach 1 design probably the fastest at champs. Northfield-Ross 60 motor used and Pro-Line radio.



Japanese win resounding victories in both individual and team categories



the latter point. Naturally there was a great deal of discussion as to whether variable geometry is legal according to F.A.I. rules, but Bruno Geizendanner was nevertheless allowed to fly. The *Salamandre* had one other 'new' feature – an all-flying tailplane, and was not alone since several other models also used this layout, including one of the eventual leaders, Harald Neckar of West Germany.

Neckar, in fact, was one of those who impressed us during practice flying, together with the Japanese, all of whose models were very fast indeed. It quickly became apparent that the engine has become a much more important component in the



aerobatic model 'system'. All the American team were using prototypes of a new Bill Wisniewski designed .60 motor to be made by Northfield-Ross which, with muffler, was surprisingly quiet.

British team members Mike Birch, Dave Hardaker and Dennis Hammant had settled in well, making flights early in the day which for practice and subsequent competition days began at 7 a.m. – a daunting prospect for judges!

Two flight lines were to be used for the competition, each competitor flying twice for each set of five judges.

From the total of four flights, each competitor's poorest score would then be dropped and the remainder totalled to select five finalists for a two-round sudden death fly-off which would determine the final positions for the top five. The fly-off, on a single flight line, was to be judged by a full panel of ten judges, all of whose scores would count (no deletion of highest and lowest scores). Team results were to be calculated on the basis of the four full rounds of competition.

Round One. Thursday was a bad one for many of the top 'names'. Bruno Geizendanner, the champion, was in trouble with the variable geometry *Salamandre* with three rolls which were so barrelled that the model exited going almost vertically down – he claimed interference and aborted the flight . . .



and his brother Emil also had no luck when the noseleg of his *Marabu* collapsed on take-off. Norman Page, leader of the U.S.A. team ran out of time and Wolfgang Matt the Super Star designer, 2nd at Doylestown, almost scraped a wing tip on take-off.

Our team leader, Mike Birch, made no such mistakes with a good flight which for a time put him in 2nd place, and the 'Lunch-time scoreboard' still listed him as 3rd, proving that the 'Feltham Flash' was well in there. Dave Hardaker did not fare so well, and Dennis Hammant suffered an engine flame-out at the Cuban Eight which left him well down. One of the very pleasant surprises of Round One was the flying of Phil Soden who, as many contest fliers in this country may recall, emigrated to Canada from the Birmingham area a couple of years ago. Our loss is certainly Canada's gain for Phil won himself a place in the Canadian team and certainly justified his selection when, at the end of the first round he was sitting pretty at joint 2nd place with Yoshioka of Japan, behind Hanno Pretner of Austria. Positions of the top 15 at the end of Round One were:

1 Pretner	4055	9 Bertolani	3565
2 Soden	3765	9 Cappuyns	3565
3 Yoshioka	3765	11 Whitley	3550
4 Kristensen	3745	12 Martin	3535
5 Matt	3685	13 Matke	3525
6 Yoshiki	3660	14 Pasqualini	3465
7 Okumura	3650	15 Weixelbaumer	3460
8 Birch	3600		

The other two members of the Japanese team, both in the top ten, whose efforts went towards securing the team trophy. Far left is Yoshiaki Takahashi, whose 'Cinnamon' design used Enya 60 motor, Sankyo radio. Placed . . . Left: Tetsuji Okumura with . . . Placed 'Fuji', used O.S. 60 FGP and Digican radio.



Left: the British contingent in happy mood, left to right Dave Hardaker 17th, Dennis Hammant, Team Manager Ed. Johnson and Mike Birch, our top man at 11th place. Model is Hammant's large Capricorn - also used and designed by Birch.

Below: Canada fielded a very competitive team, left to right: Danish ex-patriot Ivan Kristensen (15th), Phil Soden who hovered in the top three for the first rounds until finally dropping to 6th, and Warren Hitchcox, 26th. Placed 5th in team standings. Soden emigrated from Birmingham some time ago.

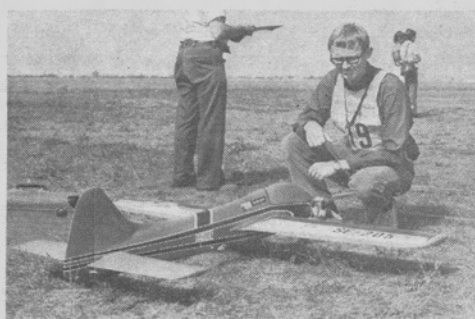


Above: top local man was Italy's Ruggero Pasqualini who placed 13th. Proline radio used and Super Tigre G.60 motor. Below: Konrad Weixelbaumer of Austria placed 19th using Super Sicrolly designed by fellow team member Hanno Pretner. HP-61 motor and Graupner-Grundig Varioprop 12 radio.

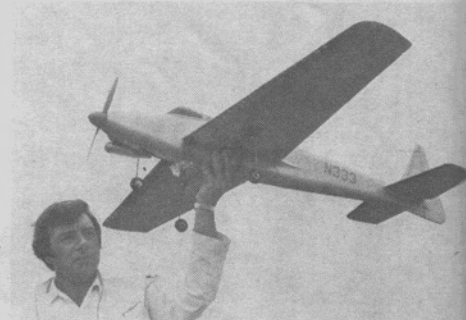


Left: Kurt Matke, reigning National R/C Champion of West Germany was, surprisingly, lowest placed of the three West Germans at 22nd. Olympia Flipper design, kitted in Germany used Graupner Varioprop 12 radio and Webra 61 motor.

Right: Bengt Lundstrom was 33rd for Sweden using very deep fuselage design. Strip ailerons were glued solid at wing root, servo used to warp - avoiding drag. Far right: single entry from Portugal. Bernardo Mendes de Almeida, with Tiger Tail design. Some may remember him competing in our Nationals a couple of years back!



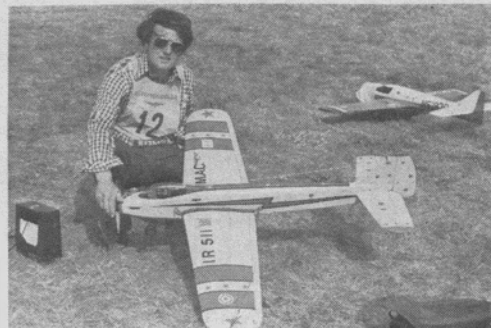
Left: control line stunt style influence is apparent in Jan Brink's big Novi Arrow. Model used Skyleader radio, Webra motor. Placed 63rd for South Africa. Right: great showman of the U.S. team, Jim Martin placed 11th with Banshee design. Northfield-Ross 60 motor and Proline radio.





The Australians . . . far left, Barry Angus . . . (on right of picture) with team manager Bob Allen (centre). Model is Kraft equipped H.P. 61 powered 'Northerner'. Left: Brian Green of Australia with 'Whistler III' design. Also Kraft equipped. Placed . . .

Right: Emil Geizendanner of Switzerland with Marabu design, placed 34th. Used Webra 61 motor and Swiss Digi-Fly radio. Far right: top Irishman, at 58th place was John Beasley, flying Rich Brand designed Panzer D.20 design. Webra Black-head 61 motor and Skyleader radio used.



Far left: the French challenge rather faded this year. Top Frenchman was Guy Hardy at 36th place with Flipper III design. Rossi 60 motor and Simprop radio. Left: Jan Van Vliet has represented Holland at most World R/C Championships. Placed 30th this time.

Right: Naphtali Horowitz was first ever Israeli to contest World R/C Champs. Placed 70th using Veco-Lee 61 powered Royal radio equipped Chipopo II design. Far right: Gyoza Stefel was one of three Hungarian entrants. Used Super Star design to place 59th. Used German Micro-Prop radio and Moki M5 10 c.c. motor.



Left: Graziano Pagni of Italy with Morris Daddo design. Used Super Tigre G.60 motor, Proline radio to place 23rd. Below: Mexico's Alejandro Elizondo with 'Mixi-Cobra' design, placed 53rd.



Below: Dennis Hamant, much the worse for two engine failures during first two rounds, works over two identical big Capricorn models, Skyleader radio.

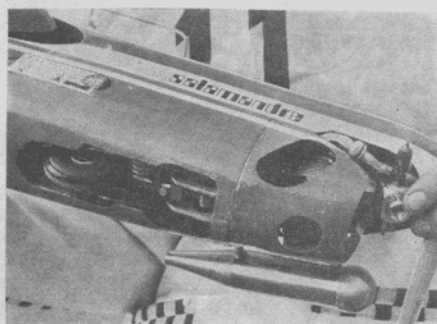


Left: someone has to be last . . . this time it was Feliciano Prat of Mexico. Nicely finished model ended up in bits.

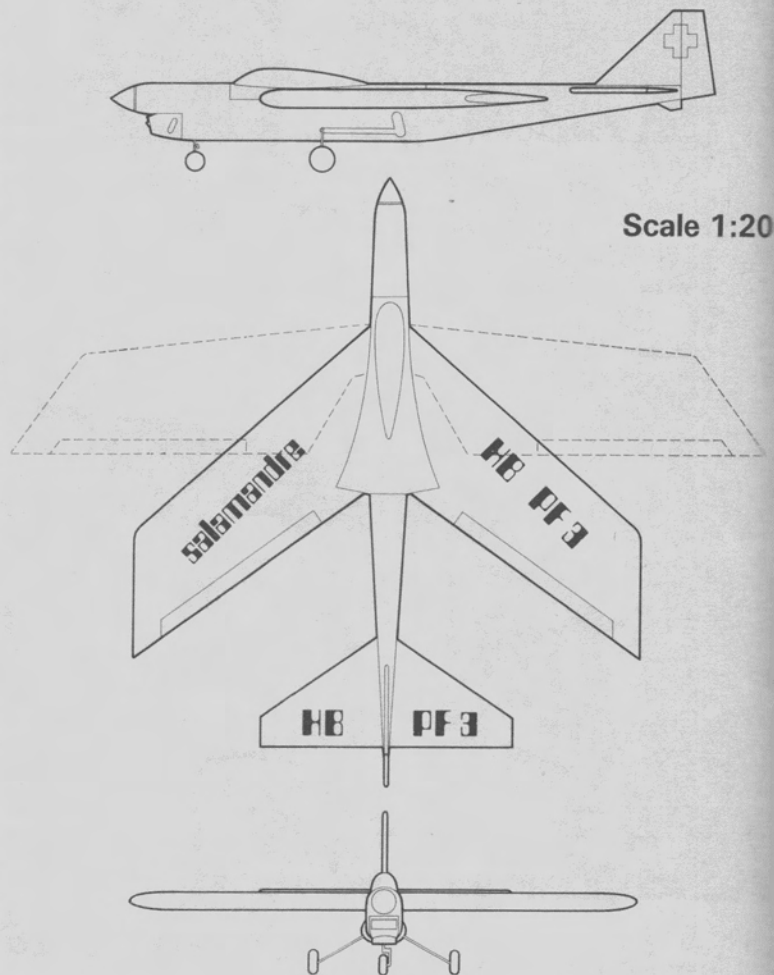
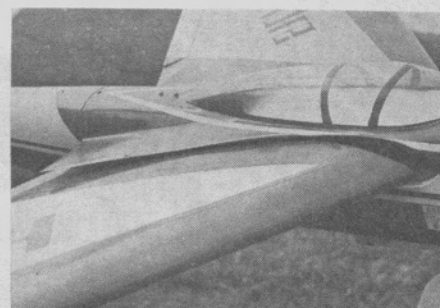
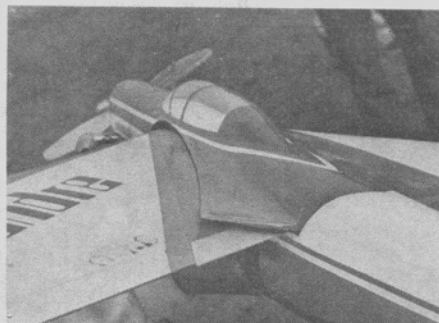
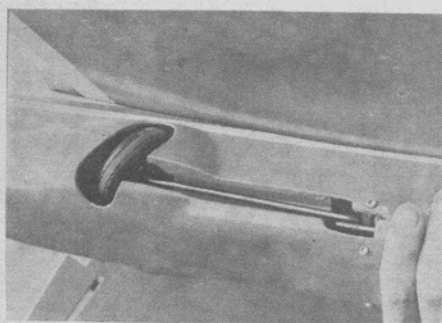




Above: twice World Champion Bruno Geizendanner of Switzerland with radical and apparently unsuccessful variable geometry design, seen with wings in the swept back position used for rolling manoeuvres.



Details of the Geizendanner Salamandre design. At left the engine cowl and noseleg installation, bottom left, the backward retracting mainleg, while below two views of the wing fairings showing gaps when the wings are in the swept position.



With two flight lines in operation, however, first round scores tell a rather distorted story. In **Round Two** we watched Dave Hardaker make a good clean flight, although he almost lost his motor which sagged momentarily in the outside loops and he finished the flight with only a single second to spare on the stop watch! Birch's performance in this round was also nice to watch – precise and deliberate with liberal use of throttle. He must have lost points for commencing his rolling manoeuvres late (a common fault throughout the championship) and for a slightly diving straight inverted flight, but it good enough to draw in a better score than his first flight. Dennis Hammant's cup of gall overflowed this round when he experienced a second consecutive engine cut although he at least managed to get further through the pattern this time, while David Hardaker began to find his form with an improved score. Impressive were Pretner again whose rolling manoeuvres are really outstanding and Matt, with Phil Soden

deservedly close behind them. Round Two positions went like this:

1 Pretner	8135	6 Okumura	7520
2 Matt	7755	7 Martin	7380
3 Soden	7725	8 Birch	7360
4 Yoshioka	7660	9 Pasqualini	7330
5 Kristensen	7400	10 Cappuyns	7325
11 Matt	7310	14 Whitley	7225
12 Takahashi	7275	15 Page	7140
13 Neckar	7245		

Round Three, which commenced late on Thursday afternoon benefited from virtually windless air conditions, which Soden and Takahashi of Japan put to good use with two truly brilliant performances. In fact, the Japanese received what amounted almost to a standing ovation when his model touched down smack in the middle of the centre circle . . . the flying was that good!

Meanwhile the Americans, long-time dominators of the World Champs aerobatic event were faring less well than ever before for although all were improving with each successive

round, others were improving also. Big Jim Whitley for instance, very much the 'senior citizen' of their team flies very well, but seemed to suffer the same problem we recall at Doylestown, positioning manoeuvres too high and too far out. Also, it appears the over-large manoeuvres (and some of Jim's looping manoeuvres were the largest we've seen) tend to lose reference with resultant downgrading. Jim Martin is undoubtedly the showman of the U.S. team. His Banshee mid-wing design, used by a number of other competitors is very fast and will knife edge from horizon to horizon - as he forcibly demonstrated - then will knife edge through a 180 degree turn and knife edge all the way back! For Jim though, Round Three was one of real frustration. After what may have been his best flight of four, he landed and then went searching in the grass for the spinner cap which had fallen off in flight, giving himself away in the process. Until then, no one had noticed... in F.A.I. competition, bits are not supposed to fall off models during flight and Jim took a big fat zero. Jim Whitley too was less than happy, having missed his spin.

Things didn't click right for Mike Birch either resulting in a fairly untidy string of manoeuvres which produced his lowest score of the competition. But for Dennis Hammant, bingo, a whole engine run and a score which would help the British team standing. Harald Neckar, whose practice performance had impressed, now began to show his worth with a score well over the 4,000 mark, unlike Yoshioka who produced his worst performance of the contest during this round, dropping him well below his two fellow team members Takahashi and Okamura in a scoring line-up that looked like this:

1 Pretner	12,280	9 Page	11,260
2 Soden	11,740	10 Pasqualini	11,040
3 Matt	11,620	11 Yoshioka	10,995
4 Takahashi	11,515	12 Weixelbaumer	10,960
5 Neckar	11,375	13 Bertolani	10,920
6 Okumura	11,370	14 Birch	10,825
7 Cappuyns	11,350	15 Werion	10,650
8 Kristensen	11,325		

All three of the British team found their best form in Round Four, Birch again the best, almost topping the 4,000 point mark. This last round saw many determined do-or-die efforts with resultant noticeable all-round improvement in flying standard, as those with the most remote of chances piled on the pressure in a last-minute bid for a score which would spring them into the top five for the Sunday morning fly-off. Among these was Yoshioka whose flight, which we unfortunately missed, must have been tremendous - it was certainly the high pointer of the entire Championship. Norman Page of U.S.A. consolidated his position with another 4,000 plus score after his Round Three sparkler while both Matt and Neckar scored high.

The result was a considerable switching of positions and while Hanno Pretner remained at the top of the pile, never having dropped below 4,000 points during the entire four rounds, Phil Soden had a disappointing flight which cost him a fly-off place.

From this last round effort emerged Hanno Pretner, who led for four whole rounds, Harald Neckar of West Germany, Yoshioka of Japan, Wolfgang Matt and Norman Page doing the biggest leapfrog in score among the five to give U.S.A. a chance at the 'King Baudion of the Belgians' individual winner trophy. (Such royal patronage seems rarely remembered in

RESULTS

Name	Country	Rnd 1	Rnd 2	Rnd 3	Rnd 4	Total	1st	2nd	Total
1. Yoshioka	Japan	3765	3895	(3335)	4470	12130	13920	14520	28440
2. Matt	Leichenstein	(3685)	4070	3865	4170	12105	13640	14310	27950
3. Pretner	Austria	(4055)	4080	4145	4195	12420	13395	14540	27935
4. Neckar	West Germany	(3320)	3925	4130	4110	12165	14235	13620	27855
5. Page	U.S.A.	(3300)	3840	4120	4095	12055	13880	13640	27520

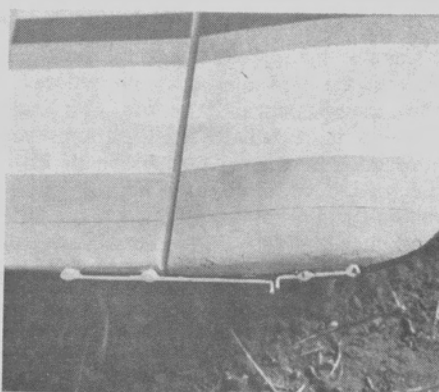
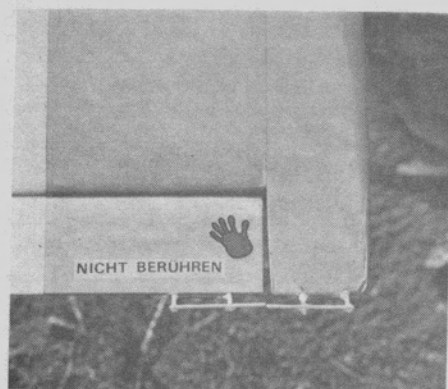
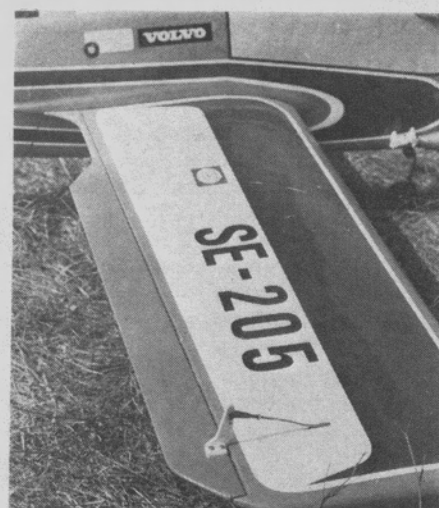
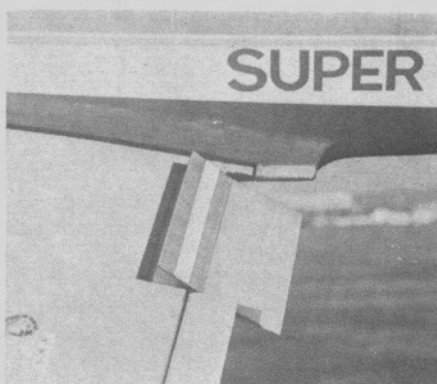
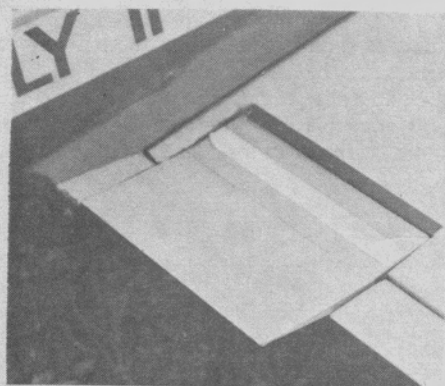
Name	Country	Rnd 1	Rnd 2	Rnd 3	Rnd 4	Total	1st	2nd	Total
6. Soden	Canada	(3765)	3960	4015	3865	11840			
7. Takahashi	Japan	3660	(3645)	4240	3940	11840			
8. Whitley	U.S.A.	(3550)	3675	3865	4170	11710			
9. Okumura	Japan	(3650)	3870	3850	3980	11700			
10. Cappuyns	Belgium	(3565)	3760	4025	3830	11615			
11. Birch	Great Britain	3600	3760	(3445)	3990	11350			
12. Martin	U.S.A.	3535	3845	(-)	3970	11350			
13. Pasqualini	Italy	(3465)	3865	3710	3760	11335			
14. Kristensen	Canada	3745	3655	3925	(3620)	11325			
15. Schaden	Austria	(3180)	3485	3665	3960	11110			
16. Werion	Belgium	(3430)	3610	3610	3875	11095			
17. Hardaker	Great Britain	(3070)	3555	3550	3940	11045			
18. Kosche	West Germany	(3155)	3505	3530	3975	11010			
19. Weixelbaumer	Austria	3460	3645	3855	(760)	10960			
20. Bertolani	Italy	3565	3555	3800	(3515)	10920			
21. Bruls	Holland	(3000)	3665	3865	3295	10825			
22. Matke	West Germany	3525	3785	(3415)	3500	10810			
23. Pagni	Italy	(3055)	3310	3310	3525	10565			
24. Marincowitz	South Africa	(2665)	3170	3700	3525	10395			
25. Van Ctompel	Belgium	3300	3235	(490)	3575	10110			
26. Hammant	Great Britain	(795)	2735	3525	3795	10055			
27. Hitchcox	Canada	3305	3605	(-)	3145	10055			
28. B. Giezendamer	Switzerland	3260	3250	3445	(2885)	9955			
29. Holm	Sweden	(2970)	3170	3040	3740	9950			
30. Van Vliet	Holland	(3020)	3205	3090	3445	9740			
31. Feiner	Mexico	3265	(3125)	3310	3160	9735			
32. Markun	Yugoslavia	3285	3030	3405	(2905)	9720			
33. Lundstrom	Sweden	3225	(1290)	3820	2665	9710			
34. E. Giezendanner	Switzerland	(-)	2990	3065	3490	9545			
35. Ridderstrom	Sweden	(-)	3190	2990	3350	9510			
36. Aker	Norway	(2645)	3175	2950	3365	9490			
37. Hardy	France	2635	(2425)	3645	3210	9490			
38. Stephansen	Norway	(2720)	3105	3195	3190	9400			
39. N. Matt	Leichenstein	(2195)	2935	3140	3220	9295			
40. Angus	Australia	(2450)	2780	3185	3330	9295			
41. Meir	Leichenstein	3265	(2805)	2930	2940	9135			
42. Tromp	Holland	(2495)	2675	2810	3555	9040			
43. Hedegaard	Denmark	(1895)	2965	2990	3050	9005			
44. Olivier	South Africa	3040	(1115)	2745	3220	9005			
45. Couson	France	(2300)	2915	2825	3120	8860			
46. Green	Australia	2345	(2260)	3285	3190	8820			
47. Tracy	Australia	(2610)	2890	3130	2745	8765			
48. Mersch	Luxemburg	2720	(2575)	3090	2795	8605			
49. Havel	Czechoslovakia	2755	2915	(2720)	2735	8405			
50. Michaelovik	Czechoslovakia	2740	2765	2680	(2585)	8185			
51. Fioen	Norway	2565	(2245)	2935	2670	8170			

Name	Country	Rnd 1	Rnd 2	Rnd 3	Rnd 4	Total	1st	2nd	Total
52. Bohm	Yugoslavia	2435	(2255)	2920	2745	8100			
53. Elizondo	Mexico	2445	(1290)	2800	2790	8035			
54. Bertemes	Luxemburg	2630	2760	(-)	2535	7925			
55. Takacs	Hungary	(2295)	2530	2540	2825	7895			
56. Chabert	France	(-)	3175	1260	3360	7795			
57. Harder	Denmark	2435	(2400)	2605	2755	7795			
58. Beasley	Ireland	2350	2580	(2185)	2850	7780			
59. Stefel	Hungary	2115	(2025)	2880	2630	7625			
60. Behm	Luxemburg	2200	2670	2745	(2075)	7615			
61. Buick	Ireland	(2305)	2605	2385	2575	7565			
62. Mohai	Hungary	(2070)	2585	2350	2570	7505			
63. Brink	South Africa	(455)	2955	730	3565	7250			
64. Ragoni	Switzerland	680	(-)	3105	3170	6955			
65. Karlev	Bulgaria	(1645)	2205	2045	2580	6830			
66. Stavrev	Bulgaria	(1905)	2490	1935	2275	6700			
67. Sabat	Spain	2360	2100	1800	(200)	6260			
68. Rojo Ara	Spain	1765	(1590)	1860	2405	6030			
69. Husek	Czechoslovakia	(130)	2180	450	2655	5285			
70. Horowitz	Israel	(-)	1380	1580	2305	5265			
71. Menary	Ireland	1495	1445	(-)	1595	4535			
72. Mendes de Almeida	Portugal	800	1670	(700)	1960	4450			
73. Papaspyrou	Greece	1380	(-)	1690	1340	4410			
74. Toft	Denmark	435	2320	(70)	1615	4370			
75. Merse	Yugoslavia	(560)	2580	790	925	4295			
76. Romojaro	Spain	1055	1665	(-)	1495	4215			
77. Donchev	Bulgaria	1380	1680	385	(-)	3443			
78. Prat	Mexico	220	2940	170	(-)	3330			

TEAM PLACINGS

1. Japan	35,670	15. Switzerland	26,455
2. U.S.A.	35,115	16. France	26,145
3. Austria	34,490	17. Luxemburg	24,145
4. West Germany	33,985	18. Hungary	23,025
5. Canada	33,220	19. Yugoslavia	22,015
6. Belgium	32,820	20. Czechoslovakia	21,875
7. Italy	32,810	21. Denmark	21,170
8. Great Britain	32,450	22. Mexico	21,100
9. Leichtenstein	30,535	23. Ireland	19,880
10. Holland	29,605	24. Bulgaria	16,975
11. Sweden	29,170	25. Spain	16,505
12. Norway	27,060	26. Israel	5,265
13. Australia	26,880	27. Portugal	4,450
14. South Africa	26,650		

World Champs in detail



Top left: two views of flaps on Hanno Pretner's Super Sicrolly design in retracted and extended positions. Flap emerges above and below the wing to create drag as well as lift for steeper landing approach. Left: two more details of Pretner's model showing wire reference tags applied to ailerons (far left) and elevator to give instant indication of trim state of model. Shows immediately if trim levers have been moved. Above: detail of warping aileron used on Lundstrom's model glued solid at root to avoid drag.

the heat of the competition.)

When these five assembled for the **crucial two rounds** early Sunday morning, they were watched by the largest and most critical audience of the whole competition.

The pressure was on and first on the firing line was 21-year-old Harald Neckar, whose sleek slim fuselage model with all-flying tail broke ground and immediately sucked up the wheels. The pressure showed too because although the flight was a real pleasure to watch, there were imperfections in the Double Immelmann and the rolling manoeuvres. The tenseness of the situation also affected Hanno Pretner and his mechanic father too. The flight by no means reflected the outstanding form of earlier rounds, drifting towards the judges in the outside loops, non-vertical entry to the Top Hat and finally resulting in disaster when Pretner Senior, nominated the start of the Landing Pattern as the Super Sicrolly was running downwind. The subsequent 180 degree turn into wind resulted in a zero score for the manoeuvre. It was a mistake which cost Hanno the Championship and Hans Pretner was visibly upset.

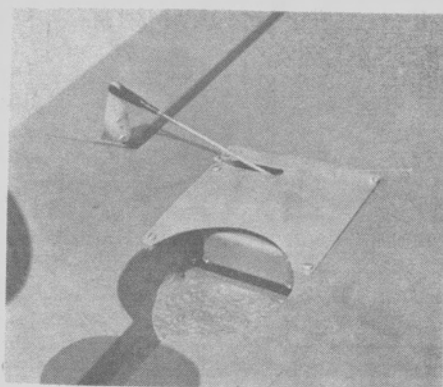
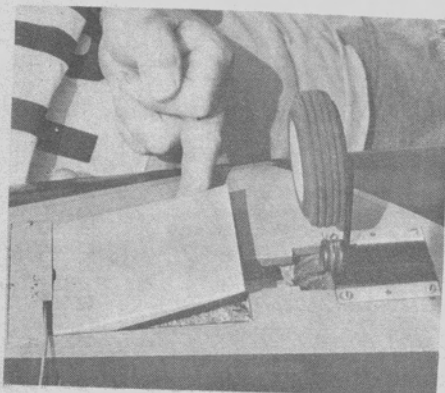
Next came Wolfgang Matt, whose flight, although without serious errors did not click – his Cuban Eight was a long way out – and scored accordingly.

If these three were nervous, then Norman Page's nerves must have been on the ragged edge when his Mach 1 finally took off – even with an electric starter, the engine had been reluctant to fire up and he zipped through the pattern to make up time, lost points for climbing away across the Top Hat and set the seal with a less than perfect spin.

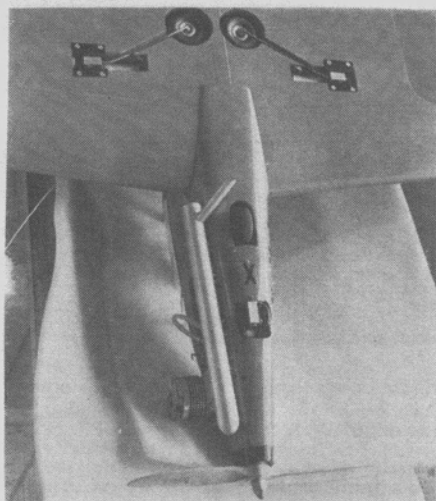
Last in the round was Yoshioka who immediately almost blew the Figure M. His rolling manoeuvres were rather undulating and the depth of field in positioning rather inconsistent. His score was therefore something of a surprise for some in a line-up that looked like this:

1 Neckar	14,235	4 Matt	13,640
2 Yoshioka	13,920	5 Pretner	13,395
3 Page	13,880		

So now it all hung on one more round in which Harald Neckar, first off again lost heading in his slow roll. His four-pointer came out poor too. Pretner, next up, made no such

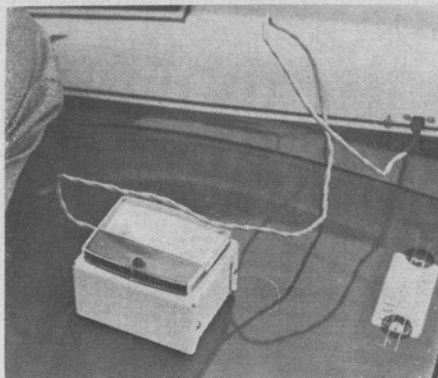


Far left: interesting wheel well doors seen on Australian Brian Green's Whistler design are arranged to close behind wheel after extension as well as after retraction sequence. Left: fellow Aussie Jeff Tracy used a servo to drive each aileron in effort to eliminate linkage slop problem.

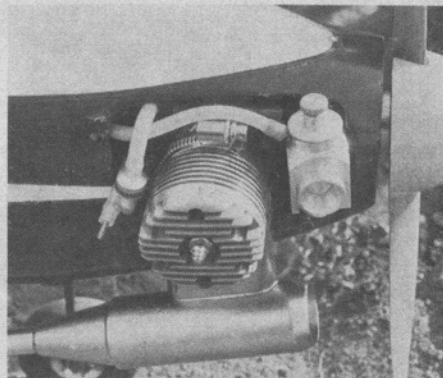


Undercarriage and muffler installation on Poju Stephansen's (Norway) model. Long muffler was very effective. Rom-Air retracts used as also by many others.

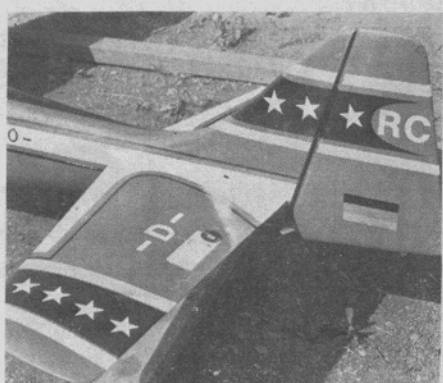
Below: Norman Page used this interesting battery discharger to drain flight pack batteries to uniform level for each flight. Made by Proline for the radio by same manufacturer.



Below: hefty, big bore, pressure regulated carburettor seen on Enya 60III of Yoshioka's winning model. Burned 45 per cent nitromethane fuel.



Right: natty flight link caddy used by Harald Neckar of West Germany. All flying stabilizer of Neckar's model seen far right.



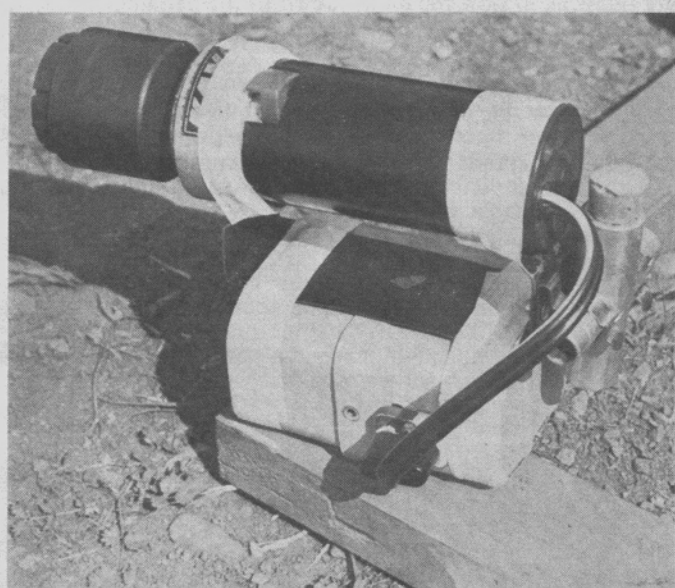
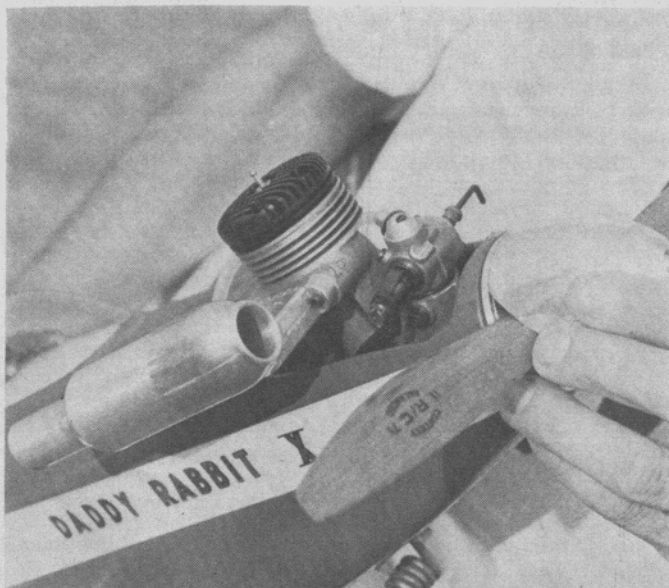
mistakes and, showing that a setback would not get him down produced a superb performance from beginning to end – the high pointer of the fly-off.

Wolfgang Matt's flight was also excellent throughout, little short of Pretner on points. Norman Page's flight was one he'll certainly never forget. What looked like a truly perfect entry into the first stall turn of the Figure M (the model really was stalled) suddenly turned into a disaster, the flight finally capped with a spiral instead of a spin at flight's end, ruining his chances.

So finally, and appropriately to the flight that settled it all. If one were tempted to query his first score total, there could be no questioning the second – the swept wing model came

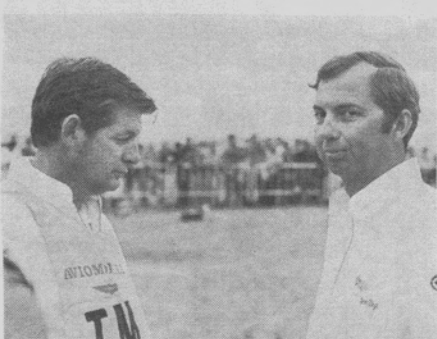
through like an express train on each low scintillating pass, the Enya 60III burning 45 per cent nitro. The score, within 20 points of Pretner's second, was deserved and with it Tsugutaka Yoshioka gave Japan the entire championship, the Japanese team, all three within the top ten having already secured top team position. We find it highly appropriate that the last single flight of the entire championship was the one that secured the individual trophy!

Left: interesting new engines seen at Gorizia were the Bill Wisniewski designed .60 prototypes by Northfield-Ross used by the Aemicans. This one in Jim Whitley's model uses Super Tigre throttle. Below: natty starter unit by Charlie Marincowitz of South Africa has batteries mounted under Kavan starter-plug spanner on clip.





Fly-off Butterflies!



Top left: the Japanese contingent await the commencement of the fly-off. Yoshioka at extreme left of picture. Top centre: cool and calm Wolfgang Matt with brother Gunter take it easy in the chill morning air. Above: Pretner Senior warms Hanno Pretner's hands prior to fly-off. Far left: Harald Neckar on right in track suit. Left: Norman Page (on right) talks it over quietly with team manager Ron (Tiger Tail) Chidgey.

Afterthoughts

Of the five finalists, it would be fair to say that anyone could have taken the championship 'on his day' – they were that closely matched. All were very likeable individuals. None showed quite the form seen in the first four rounds of the contest, each making mistakes, some more dramatic than others – Yoshioka made the least.

Overall, the standard of flying was by far the best ever seen at a World R/C Championship perhaps appropriate since it is likely to be the last flown to the current aerobatic schedule. The high standard in turn leads to a strange form of boredom resulting from such a repetitive high standard – a rough flight was something of a relief for spectators!

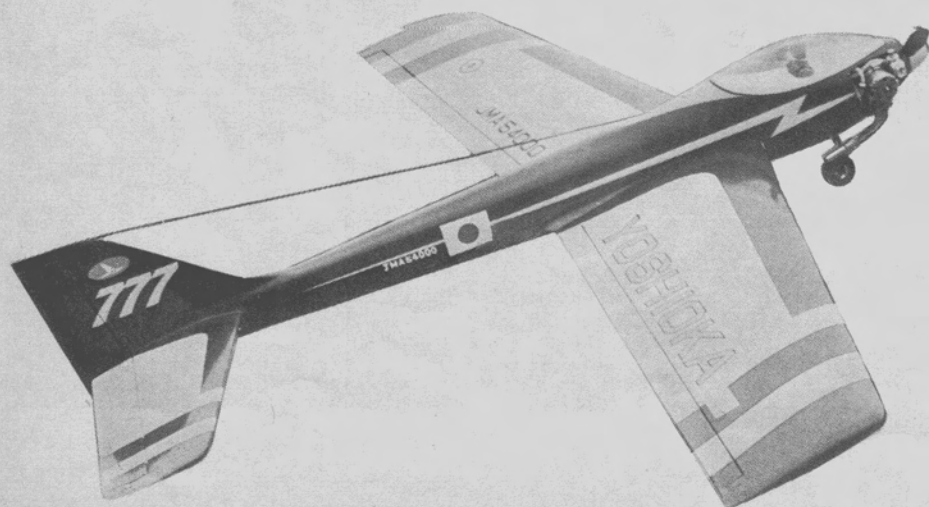
Of model design, the 'fish'-shaped model was certainly dominant, with Wolfgang Matt's Super Star by far the most popular. Model design and development seems to have been taken one step further with the appearance of such innovations as all-flying tailplanes. Hanno Pretner's model used flaps which extend both above and below the wing to achieve a balance of lift and drag to slow the model down for the landing approach which is noticeably steeper than non-flap models. The flaps are also depressed for the spin.

As noted earlier, the engine has become a much more important factor in the system which has taken the 'European grand style' of aerobatic flying one stage further. To achieve the very high speeds which most of the top models now travel

at, fuels contain generous amounts of additive. All the Japanese burned 45 per cent nitro fuel – a nitromethane content previously regarded as the kind of thing reserved for Formula One pylon racing. Some of the Americans were burning 30 per cent nitro. Throttle response is much improved with nitro additive and all the top five had superb throttle responses. The extra power is used particularly in the rolling manoeuvres which seem to stretch almost from horizon to horizon. The 'in' joke of the championship, that it required two visas to do a four-point roll, was not that inaccurate since Yugoslavia was just across the road from the airfield! One of the results was a notable prolonging of the rolling manoeuvres. Many competitors among the leaders prolonged the rolls far beyond the nominal five seconds quoted in the F.A.I. Sporting Code. The result is impressive and does indeed prove real pilot ability, but it's not what the rules call for and it appeared that judges ignored the point.

Finally, a comment on the fly-off system introduced for the event. It does work and is a spectator pleaser. However, it is very wrong to settle the first five places simply on the basis of the fly-off performances. These should be added to the scores of the preliminary rounds.

In all, a vintage World Championship, one to remember with pleasure. The clean sweep by the Japanese proves that the event is still very open – in R/C Aerobatics, it's the pilot that matters. May it always remain so.



A new style in World R/C Championship winning models. Will Tsugutaka Yoshioka's swept wing, stylish 'Sabre Liner' spark off new trends in aerobatic model design? We hope to present the plans in R.C.M.&E. before too long.