Model News

2/6

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APRIL, 1962

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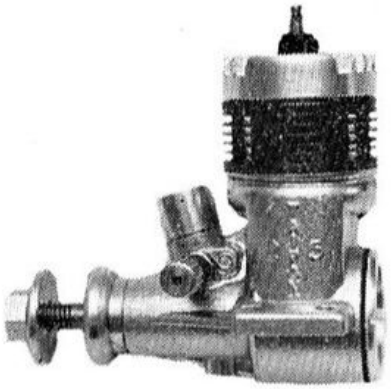

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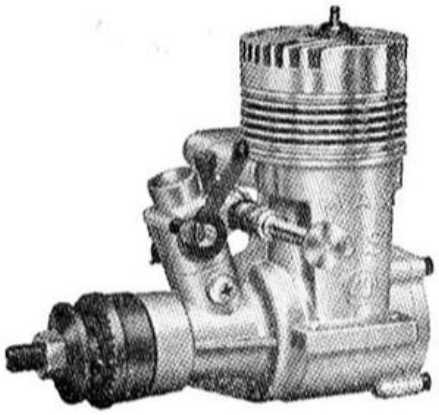

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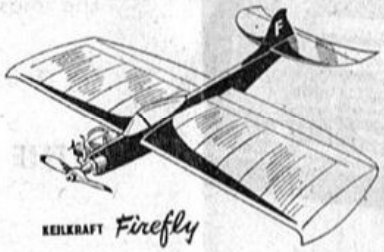

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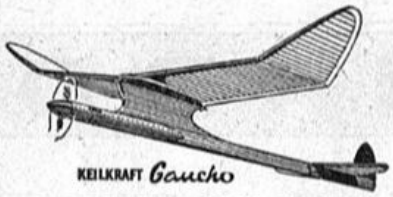

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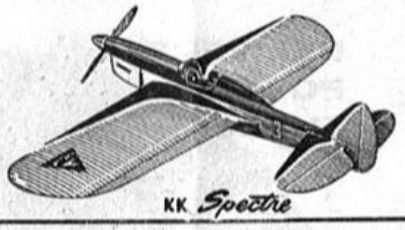

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MODEL NEWS

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News and Views . . .

It's with deep regret we announce the passing of Alan King shortly after Easter last year. Although late, I now hand you over to our Federal Secretary:

"Owing to the untimely passing of one of Australia's greatest modelling ambassadors, the family of the late Alan King needs our support. For those who did not know Alan King, it can be said that Australia is proud to have been associated with Alan because of his high qualities of living standards, his desire to help others, and his ability is recognised throughout the world. Alan gained the glorious honour of a world title, thus placing Australia on the select channels of modelling countries.

"The Executive of the M.A.A.A. wish to launch the 'Alan King Memorial Fund', and we appeal to all members and affiliated State organisations to assist in this most worthy cause. Alan King has left a wife and baby daughter who, I can assure you, are battling to make ends meet. Expenses during Alan's illness were great, and any ready cash that was accumulated by the Kings was used to assist Alan.

"Would each State please explore every avenue of possible support in this venture and would you kindly forward your donations to the undersigned at your earliest? Mrs. King is a New Zealander and her present intention is to go home to her parents.

"Let us all combine together to help Mrs. King and her baby daughter Geraldine."

(Signed).—W. S. GRABOWSKY,
Fed. Sec. M.A.A.A.

It's been a long time since the last issue of Model News. I've been criticised, accused of being a robber, blamed for the fall-off in model sales and activity, only to be told by several that I'm a damned fool to start again after the money it has cost me. Make no mistake about it, it's cost me plenty, and then fellas won't send pictures or plans because they don't get paid!

Even if it still costs me dough I intend (with the help of several stickers) to keep it going. If Australian news is of no interest to you, and if you don't give a hang what's going on in your own country, here's what to do.

First of all, compare it with overseas publications which cater for 20 times as many modellers, keeping in mind that once the work is done it's

COVER STORY

Keith Hearne launching his Multi R/C Model on its winning "Across the Bay" Flight. Later, being congratulated by second place getter John Marquette. Since this winning flight, Keith has gone on to win Australia's first world record with an altitude of nearly 5,000 feet. Well done, Keith!

★ ★

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no harder to print 80,000 instead of 4,000 copies. Be sure to count the number of pages and then compare it with other magazines, not forgetting the colour cover; I suggest a Saturday morning when the local hobby shop is crowded would be a suitable time. After you've finished your little turn, retire to a corner, read what interests you, return the mag. to the rack with the comment, "There's nothing in it". Should one member of your club be dumb enough to buy one, make sure everybody reads it (I know one club of 80 members and they buy one copy; I have their letter to prove it).

You can really go to town now, criticise the articles and plans—they are only copies of overseas designs. Now's the time to get real patriotic; you've already torn the magazine to pieces; now start on the Australian manufacturers, Gordon Burford's motors, Southern Model's kits, John Marquette's Silvertone Radio Equipment. These are things I have overheard (naturally they didn't know who I was).

The facts are these: The magazine has been produced for your benefit, not mine; it's just that I like to do something for the hobby. If Gordon Burford was more interested in money than the modellers' requirements, he would be doing only specialised engineering pobs, a far more lucrative undertaking. Southern Models have put ou several kits to satisfy a few enthusiasts even though they can't recoup their expenses; it's their contribution to our hobby. John Marquette's Silvertone R/C equipment was designed and manufactured to cater for our urgent need for reliable tone equipment when this type of gear was almost unprocurable. If John was more interested in money than models he would be back building houses, not trying to look after unappreciative modellers.

This is our own contribution. What's yours?

If you want Model News to prosper, get your local shop to advertise — every little bit helps. Send in notes and pictures of your area, plans and designs, gadgets, R/C gen., etc. Remember, the more Model News that are sold the better magazine we will be able to produce. Now that's off my chest, let's move on to some new items.

It's so long since Model News was published—and there's been so many new lines—I don't know where to start. **Gordon Burford** has put out several motors in the last year, the most notable of which is the new **Taipan 2.5 cc. Glow.** This little powerhouse is like all **Burford Motors,** dead easy to start and a really hot performer; turns a 7in. x 6in. at better than 15,000. This one will sell like hot cakes at only £4/19/6 complete with plug.

There will be three versions of this model a standard sports type, an R/C model with multi-speed throttle, and also a special racing version. This latter incorporates a special High Comp. Head, pressure feed and a special high performance Needle Valve—Venture System.

John Marquette, our Radio Editor, after a recent trip to Adelaide where he saw the prototype being tested, was most impressed. He reports the standard version was turning a 7 x 6 Nylon at 15,300 r.p.m. and a 6 x 9 Tornado speed prop. at 16,000 plus on a 10 per cent. Nitro fuel; also, hot or cold, it gave a one flick start. The special gave performance figures 1,000 r.p.m. up on the standard.

The prices—for the standard £4/19/6 and the special and R/C £5/19/6.

Gordon has also produced a new 1.5 cc. diesel with spring recoil start; also a new 2.5 cc. B.R. diesel. This is also a very good performer and suitable for all types of models. There is also a new .45 for large stunt and R/C. Last but by no means least is the new 2.5 cc. marine diesel. This is a beautiful unit and one of the easiest starting motors we have seen. If you're interested in boats, look this motor over first. Retailers note.—All the above motors are available from **Austral Hobbies, 44 Hotham Parade, Artarmon, N.S.W.** This progressive wholesale firm also has just been appointed N.S.W. distributors for **O.S. Motors;** also plenty of stocks of the complete **E.D. range.** They are also agents for the famous **Aero Flyte products.** Best shot is to write for a complete list; you'll find their prices most competitive. Another item they manufacture is a kit of the well-known **"Cicada".** This is the best R/C kit I have ever seen—completely prefabbed, good balsa, even supply heavy silk for covering, not to mention fibre engine mount, heavy dural for U.C. Have a look yourself! Almost forgot, they've got plenty of E.D. Super Furies, the best little ½A motor yet and present Australian record holder.

Southern Model Supplies are still living up to their reputation as Australia's No. 1 Kit manufacturers. Latest of the line is the highly successful **Invader** for R/C. The kit is highly prefabbed from first class materials, construction is simple and rugged—could be built by the very beginner. A word of warning: "Don't put anything bigger than a 1.5 c.c. motor up front unless you are a really experienced pilot—they're hot with a 2.5. I know!"

Basil Healey had one fitted with elevators, rudder and motor control from Bonner Vane-comps. Fabulous to fly until it stuck on down elevator. Reminds me, I still owe Basil for a new Silvertone I bent on that flight.

Southern Models have 4 new designs coming out soon. Tell you about them next issue.

While on the subject of Radio, I must tell you about some of the gadgets I saw in **Melbourne** at the **Model Dockyard, 216 Swanston Street.** The most notable item was the **Top Flite** Tricycle Steerable Undercarriage kits for Multi Models, in stock at the moment. Though manufactured primarily for the Orian conversion it

(Continued on Page 29

The 15th Australian Nationals

HELD AT ECHUCA, VICTORIA, FROM 28th DECEMBER to 4th JANUARY

The 15th Australian National Championships were this year run by the Victorian Model Aeronautical Association at Echuca. This is a town of approximately 6,000 population, situated on the banks of the Murray River, some 140 miles west of Albury. It is a town rich in history, as it was once the starting point for the old paddle steamers which used to ply the Murray in the days before gasolene engines. Even today the old wharf, where the steamers tied up, is still standing and, beached on the banks of the river, there can still be seen a few hulks of the vessels which were once the pride of the Murray.

Tuesday the 27th saw the arrival of many interstate competitors and there was much activity on the local camping area, not to mention the swarms of modellers who had booked at four of the local hotels and proceeded to spread models around until the place looked like an overgrown hobby shop. This has been the biggest "Nats" we have ever had with over 230 individual competitors, some of them travelling terrific distances. Terry Phillipson and company travelled 1,700 miles from Rockhampton in Queensland, but the greatest travellers yet were Doug Murray and Noel Mitchell and company, from Perth, a mere 2,300 miles each way (makes my 1,000 each way look like a Sunday drive).

On the first evening, modellers were running in all directions in search of mates whom they hadn't seen for a year or more; makes the social side difficult to organise when accommodation is so scattered. Thursday, the 28th, commenced with processing on the showground. This was carried on until late at night and successfully disposed of the first day.

The Championships lasted eight days — one day for processing models for rules specifications, four days for control line events and three for the free flight contests. Over this period the 30 different events were successfully run off. Generally the weather was kind sunwise but not too generous windwise. This meant many flyaways in the free flight contests. Fortunately the officials had decreed a 5.30 a.m. start for some of the free flight events, which was a good thing under such thermal conditions. Most of the 15 free flight events, which included 3 radio control contests, were of a good standard, as were the models competing in them.

The next day we drove out to sample the flying ground. This was approximately 5 miles out of town and consisted of a paddock one mile long and threequarters of a mile wide. It was absolutely flat, with not a tree to be seen but, unfortunately, due to the dry season, just about completely devoid of grass, with only an odd Safron Thistle to upset a take-off.

During this first pre-contest flying session, we were all sitting around watching Tom Prosser do the pattern with his 8 channel "Gee String" (he had two of this design, an 8 and a 10 channel), when one Doug Murray from Western Australia arrived. Here would be one of the most

casual flyers I have ever struck. He placed his model on the ground, stepped back all of 5 yards, collapsed the aerial of his R.E.P. transmitter to 9in., and proceeded to run through all the controls. "She's right," he said, and proceeded to fuel up the O.S. 49 in his "Gee String" for flight. He started up, pointed the model into wind and took off quite normally and then it happened—at about 15 feet altitude he stood the model up on one wing tip and executed a pylon turn which brought it straight back over us at about 10 feet altitude and by this time doing about 50 m.p.h. An Immelman turn at the down wind end of his run completed his first beat-up of the field. The rest of the flight was not quite so hair-raising as he did most of his manoeuvres a little higher—usually about 30 feet up.

Rolls and loops commenced at this altitude did not seem to worry Doug, although they were enough to make us freeze to the spot. His sense of timing and judgment of altitude were outstanding. After witnessing this type of flying, single channel seemed like a reversal to the Stone Age. During the next 2 days prior to the contest flying commencing much flying was done early in the morning and late in the evening to avoid the heat of the day when temperatures really soared over the century. During this period of the day many flyers were to be found in the river, taking advantage of the free baths adjacent to the camping area.

At all the pre-contest flying the writer noticed a predominance of single channel and multi models, but very few intermediate type models. The sole examples of these were a Tasmanian, Owen Badcock, with a "Cicada" powered by an O.S. 29 with

1. **Well-known and popular team race flyer, Les Squires, Victoria, with his Class III Bush Fire model O.S. 35. Les holds B class record.**
2. **John Eyre, N.S.W., starting the Enya 0.9 in his Whirlwind R/C model, Silvertone equipped.**
3. **Arthur Cooper, N.S.W., with his scramble model, eventually placed third.**
4. **Huge S.E. 5A Scale F/F powered by a K & B .19. Anyone that contemplated F/F scale should see this one fly. Very stable.**
5. **Ivor Stowe, N.S.W., and his remarkable scramble model. I think he is trying to prove how hopeless they can look and still fly. Placed second.**
6. **Tom Prosser readjusting his Gee String prior to placing third in Multi.**
7. **Unquestionably the best Multi model Radio flyer in this country, Doug Murray, of Perth, about to start the O S. 49. His ancient Astro Model, reptone equipped, Bonner Servos.**
8. **Les Fahey, F/F Scale winner, and neatly finished turbulent model made a spectacular flight.**

9. Brian Potter, Tamworth, and high performance F/F model, assisted by Jim Palmer, right. Brian d'td., cheating himself of a place.
10. Smallest Radio Model at the Nats. Peewee powered midget with full transistorised Pioneer receiver from Rockhampton, Qld.
11. Last year's cham. of champs., Kev. Green, S.A., about to launch his F.A.I. model.
12. Bob Greenhill, Vic., and nicely finished A/2 sailplane. Misses out this year.
13. Monty Tyrrell drowning his sorrows in Fosters after pranging the Merco out of his team racer, background.

rudder, elevator and motor control, Noel Mitchell from Western Australia with the same in a Southern Models Invader, and Basil Healey's much re-hashed Houdini with rudder, trip elevator and motor control.

The first radio event to be decided was Multi and this was really an impressive line-up of almost entirely American designed models. Listed below are some of the flyers and their models.

Barry Angus, Vic., "Smog Hog"; Tony Farnan, Vic. "Orion"; Bob Hyde, Vic., "Stormer"; Doug. Murray, W.A., "Gee String"; Jim Palmer, N.S.W., "Smog Hog"; Tom Prosser, N.S.W., "Gee String"; Joe Sims, Qld., Modified "Orion"; Jack Bone, Vic., "Astro Hog".

Flying in this event was really top class but N.S.W. lost valuable points in the interstate point score when Jim Palmer demonstrated what happens to a Smog Hog when the elevator servo gives out. Tom Prosser also had bad luck during this round when his motor cut during the spin and he could not complete the pattern. Top points in round one went to Tony Farnan, of Victoria, whose O.S. 49 powered Orion did quite a tidy pattern. Once again Jack Bone, flying an Astro Hog, was among the top scorers with a very smooth pattern, spoilt by poor invented circles. Doug Murray from West Australia also had back luck in this round when his motor cut doing the stall, leaving him no alternative but to land.

Round 2 saw a concerted effort by Tom Prosser to gain as many points as possible to try and whittle down the big lead established by Tony Farnan, but it was too much and Tom only finished third. Doug Murray also completed a full pattern this time but found the big lead established in the first round by the other competitors was too much and finished fifth. After the competition the contest director requested various flyers to put on demonstration flights for the large crowd which had assembled to watch the proceedings. By far the most spectacular flight would have been when Tom Prosser and Doug Murray flew at the same time. (Tom's multi rig is on 40 megs.) Their formation loops and Immelmans were a very impressive sight, as were the high speed down wind runs when they played "Tag". Tom's only complaint was that he didn't mind following Doug provided he stayed above 30 feet. Unfortunately for Tom, a lot of Doug's flying is done at this low altitude, which rather left Tom cold and about 50 feet too high.

Results of Multi were as follows: 1, T. Farnan, O.S. 10, O.S. 49; 2, J. Bone, O.S. 10, K & B 45; 3, T. Prosser, Kraft 10 Glo, K & B 45.

The single function radio event was not held until two days after multi, which gave most competitors ample time to prepare their models. The line-up for this event provided the greatest variety of models that I have seen for a long time. The largest by far was Geoff Tuck's "Bertha", spanning some 8 feet, and the smallest was a Mini Reptone equipped 36 inch model of Keith Hearne's. In between ranged a collection of Cicadas, Houdinis, Rebels, Invaders, a Viking, and a few own design models.

During the first round of this event it became obvious that the N.S.W. flyers had an immense advantage over the Victorians in that they were much more experienced in R.O.G. type take-offs. A strong changeable wind and the uneven ground really stacked the odds in favour of our Riverstone bred flyers in this event and it took Tom Prosser to show just how smooth a pattern can be flown with a 2 channel outfit in a much streamlined Cicada. It was during this event the R.C.M.C. Club Monitor picked up a stray whistle on one occasion. This turned out to be a transmitter on which somebody had left the motor cycle battery powered converter running and hence was transmitting a carrier complete with high pitched whistle from the converter. This set-up is very popular with the single channel flyers in the South as they nearly all use hand held transmitters and carry the battery in a pack slung over their shoulder. During this event John Marquette gave us a demonstration of the perfect take-off and landing as the flight consisted of nothing else. So strong was the wind that his O.S. 15 powered Cicada gained only about 50 yards in 3 minutes.

Final results in this round were: 1, T. Prosser, Modified 2 channel Silvertone Glo Chief 19; 2, K. Hollingworth, Silvertone, O.S. 15; 3, J. Eyre, Silvertone, O.S. 15.

Keith Hollingworth, flying a Cicada, sneaked up on most unwary competitors in this event by putting in two flights in which almost nothing could be criticised and gained himself a very worthy second place. It was two days later before the final radio event, Intermediate, was flown, and it was during this period that we witnessed quite a good deal of exciting sport flying with both Multi and Single channel models.

Tom Prosser started to write off some of the seven radio models that he brought at the rate of one a day, and Doug Murray picked an argument with a fence on landing and damaged the tail of his Gee String. Undeterred, he transferred the gear into an Orion which he had brought with him and carried on flying. The following day he had the misfortune to suffer from stuck on aileron and this looked like the untimely demise of a good model, but at about 10 feet altitude Doug hit it with opposite rudder and up elevator, making a beautiful pancake landing which did no more damage than if the model had been dropped from about 5 feet on to the ground.

Once more Doug transferred the gear into his old and trusty Astro-Hog. This model is reputed to have flown over 350 flights — Doug stopped counting when he reached 300 and only estimates at the rest. After flying the other two models, Doug likened flying the Astro Hog unto driving a double-decker bus around the sky. He found it much slower to fly but just as manoeuvreable. It was on one of these days that Geoff Tuck bet Doug Murray that he was not game to fly the Astro Hog from the control line ground one evening. Doug retaliated by betting Geoff that he wasn't game to fly his Bertha from the same ground, so that night all and sundry gathered to see the fun.

At this stage I think a description of the control line area is warranted. It was a normal football oval with a bicycle racing track round the perimeter. It was flanked by a grandstand, various pavilions, tall trees and strung around the outside of the track were wires to the lights which

illuminated the bike track. Down wind from the oval were tennis courts, thence heavy timber and finally, a quarter of a mile away, the Murray River. From this uninviting area Geoff Tuck was first away with his Bertha and was doing quite well until he got high enough to be in the uninterrupted wind, when he discovered that Bertha was progressing backwards. Fortunately he managed to land on one of the tennis courts without damaging his model.

Doug took off smartly with the Astro Hog and did a couple of fast circuits of the oval at low altitude before climbing out to perform the usual aerobatics at a safer altitude. The landing on this flight presented problems as it was necessary to drop very quickly after clearing the obstacles surrounding the oval. Doug made his approach under power and after clearing the wires on the edge of the oval he throttled right back and touched down in the centre. Geoff Tuck attempted another flight, but unfortunately by this time the wind had increased in strength and he finished in the trees close to the river bank.

For the Intermediate event, Tom Prosser was the favourite with a Fox 29 powered rocket. This model had rudder elevator, ailerons and motor control all worked off a single tone. It functioned quite well until a soldered joint came adrift in the aileron push rod linkage and prematurely terminated a flight—almost as good as down elevator (I will have to think about a stuck-on Eileron Club; it seems to be catching!).

Basil arrived at the flying of the Intermediate contest a little late with no intention of flying as he had not a true Intermediate model and considered himself at a severe handicap. However, a quick look around revealed that almost everybody was flying single channel models without even motor control. A hasty trip back to camp and he was in the contest with his trusty old Cicada, suitably fed on a high Nitro-content fuel. That fuel certainly made all the diffierence—it doubled the rate of climb and made it possible to commence all manoeuvres at the bottom of a spiral At the end of the first round he was leading the point score. Noel Fell, Vic., had fitted a Glo Chief 19 in his Viking in lieu of the O.S. 15 which he had in it for Single Function. The difference in performance was amazing. On one flight he completed almost all the manoeuvres in the book except inverted and figure eights, all on rudder only. He tells me that Cuban eights can be done if you enter the first one fast enough. Whew!

John Eyre was acquitting himself nicely in this event with his Houdini, which was performing Immelmans and Reversals beautifully, all of which was topped off by a landing 6 feet from the marker.

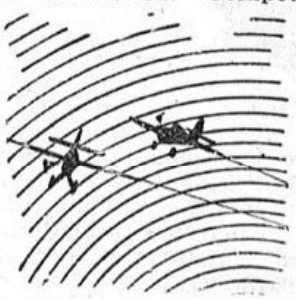
Noel Mitchell from West. Australia was overshooting on landing and he dropped a bit of height with down elevator—a repeat operation at 10 feet altitude resulting in a beautiful spot landing but no quality of landing points. It was a vertical arrival.

It was during this event that we noticed many competitors drop out when their receivers stopped working in the heat. The all-transistorised receivers were the main offenders and seemed to drop out at about 90 deg. F., although most manufacturers claim temperature stability up to 130 deg. F. It must be remembered that much higher than outside temperatures can be experienced in the enclosed cabin of a model. This left most flyers in a predicament—take the wing off to cool down the receiver and you were likely to get dust in it, or leave the wing on and allow it to cook.

The final results were: 1, John Eyre (N.S.W.), Silvertone O.S. 15; 2, Noel Fell (Vic.), O.S. 4A Glo Chief 19; 3, Basil Healy (N.S.W.), Silvertone Glo Chief 19.

TEAM RACING

As with all the other events at the Nationals, the team race was well organised and left little to be desired. Competition was very keen with as many as 40 entrants in "B" Class alone. For the first time at the Nationals we had a ½A Team Race and everyone expected the Australian Record holder, H. Flanagan and L. Toft's model, to take the honours, flown by Russ Hammond and Ken Lloyd. However, this was not to be, due to a line break. Most promising of all models was Brian Eather's Oliver Cub powered entry. This was very fast and was clocking 84 m.p.h. in practice, but was pranged before the event.



F.A.I. TEAM RACE

Last year's winners, L. Toft and H. Flanagan, again lost out. Proxy flown by the ½A crew. Conditions were very bad for motors and no one could get any speed or laps. In the morning most motors that had a normal lappage of 40-42 were only doing about 26; in fact, one Oliver powered model dropped to as low as 22 laps. This explains the slow times in the results for all team races. By far the best model was Brian Eather's entry from N.S.W. This is undoubtedly the best F.A.I. model in the country and is immediately recognisable by the butterfly tail. It also uses a mono wheel, which adds to its speed (as did last year's winner). Brian used Etas and Olivers in practice and finally won using an Eta 15D. This model is also the present Australian Record holder.

"B" BLASS TEAM RACE

This had about the best entry ever and some beautifully finished models. Athol Holtham pranged in practice the evening before the event, retired to the workshop and appeared next morning as though nothing had happened. As usual, the model was well finished and extremely light. It utilises a built-up wing, silk covered with a maximum thickness of ⅝in. Les Squires, the present record holder, still using his famous Grass Fire with an O.S. Max 3 running on straight fuel. He was no match for the winners, Jack Ohme and

(Continued on Page 30)

Pilots Man Your Planes

(By MONTY TYRRELL)

One finds, when wandering around the flying fields these days, control line exponents who are sick and tired of the same old stunts, team, rat racing, speed and so on. Therefore, something is needed to give the bored spindizzies a shot in the arm. I agree it's comparatively easy to think of something, but the question is to think of something feasible, i.e., a challenge to the building and designing aspects as well as the flying.

In point of fact there has been a challenge right on the very doorstep, but too few are taking it on, unfortunately. This challenge is carrier deck flying and I honestly feel those who have not tried it fall into two classes. One, those who are too lazy to sit down and nut out something that is different; or two, those who feel the intricacies of a carrier model are beyond their capabilities. It is the latter category we are endeavouring to help through the pages of Model News and, at the same time, promote a control line event that does lift things out of the rut somewhat.

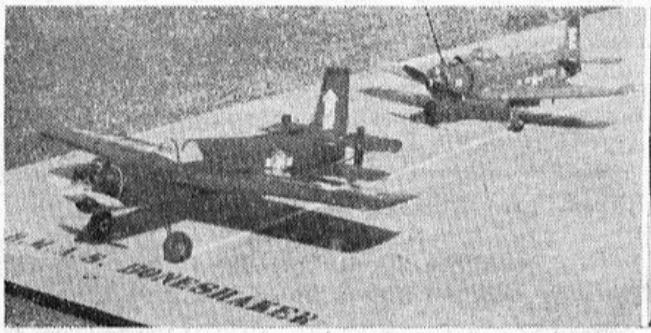
Control line carrier flying is not new. It started in the U.S.A. several years ago and, indeed, had been tried in Australia before that. However, a circle marked out on the ground sufficed for this early attempt and none of the planes had motor control. The first real attempts were made by the Model Flying Club in Sydney, who had a deck many years ago (wonder what's become of it?). After a lull the event was resurrected by the Victorian Eastern Suburbs Club, under the guidance of Jack Bone. His deck is still in use in Victoria and it is hoped sufficient interest can be aroused to warrant another.

It must be admitted a deck makes things a lot better but it is quite easy to fly a worthwhile contest without one. It is realised a deck is outside the scope of most suburban clubs. A good day's fun has often been enjoyed with a marked out deck, the only apparatus being the arrester system. A watchful set of judges can ascertain whether a flight was official or not. So, drag out the multi-speed engines at the next meeting, utilise a line marker on the grass, get some tent spikes with loops, etc., and you are in business.

Personally, I feel a worthwhile carrier model is the next best challenge to building and flying after radio. It combines the beauty and realism of scale, the straining for speed and the application of some flight theory and aerodynamic for successful low speed flying. As well as that there is more to flying one under different speeds with flaps, etc., to any other control line model and the carrier model leaves all others far behind in the field of gadgetry if the builder is so inclined.

We won't enlarge on the rules here but we can safely state a carrier model is not limited to the sixty foot lines the rules call for. You can get away with as low as 52½ feet and as high as 70 feet. By starting in corners and traversing the deck in different arcs it's quite easy. Eric Beilby, from Leongatha, showed this when he shocked the bigger motorfliers with an OS 15 ship. The only points he lost were virtually scale points. However, his ship was designed for the job, a good motor-plane combination, using nothing but an exhaust restrictor. For take-off procedure see diagram 1. If your appetite is whetted now we'll enlarge on things and give a few hints on suitable ways to go about things.

Firstly, a motor control device is necessary whether commercial or home made. These days there are lots of reliable multi-speed motors on the market, e.g., the Glo-Chief 19, Merco 29 and



On the H.M.A.S. Boneshaker, John McCarthy's Grumman Guardian (O.S. .35 M.S.) and Monty Tyrrell's Douglas Skyrai'der (Merco .35 M.S.). Right: A close-up of Monty's model, a typical scale carrier model.

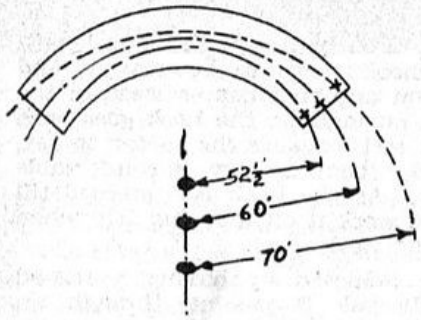
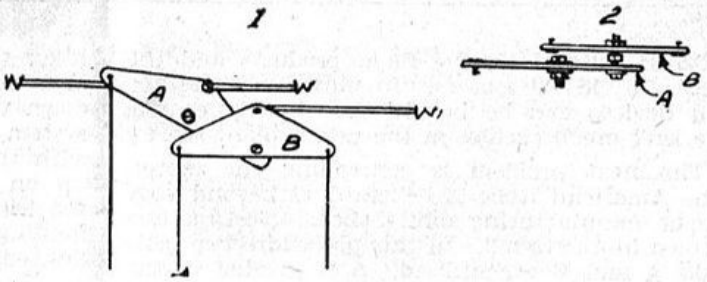


DIAGRAM 1
SHOWING STARTING AND FLYING POSITIONS FOR VARIOUS LINE LENGTH.



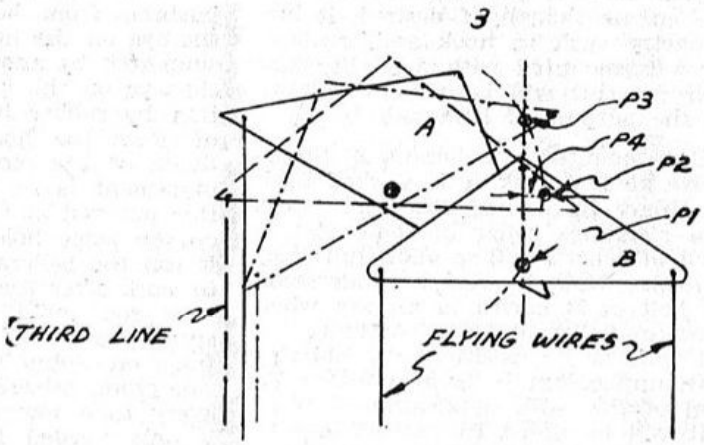


DIAGRAM 2
SHOWING BELLCRANK "B" PIVOTING ON BELLCRANK "A". (1) HORIZONTAL VIEW OF MOUNTING (2) ENTIRE MOVEMENT OF B's PIVOT (3) AT POSITIONS P2 AND P3 BELLCRANK "B" IS OMITTED FOR CLARITY.

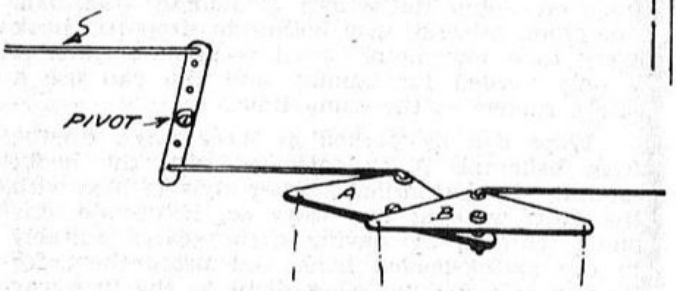
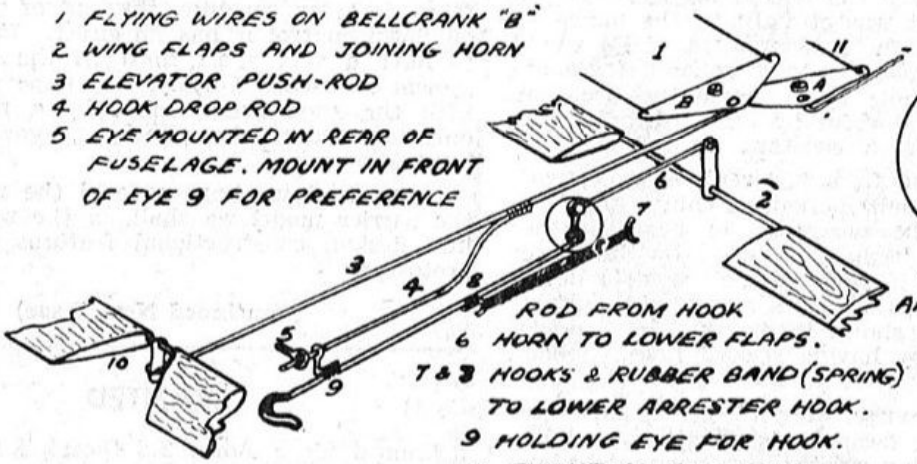


DIAGRAM 3
CONVERTING PUSH ACTION TO A PULL ACTION. ALTERNATIVELY MOUNT UNIT INVERTED WITH THIRD LINE AT REAR.

1 FLYING WIRES ON BELLCRANK "B"
2 WING FLAPS AND JOINING HORN
3 ELEVATOR PUSH-ROD
4 HOOK DROP ROD
5 EYE MOUNTED IN REAR OF FUSELAGE. MOUNT IN FRONT OF EYE 9 FOR PREFERENCE



HOOK HORN AND MOUNTING

8 ROD FROM HOOK
6 HORN TO LOWER FLAPS.
7 & 8 HOOK'S & RUBBER BAND (SPRING) TO LOWER ARRESTER HOOK.
9 HOLDING EYE FOR HOOK.
10 ELEVATORS AND HORN
11 THIRD LINE ON BELLCRANK "A" FOR MOTOR CONTROL

SHOWING INDEPENDANT CONTROL OF HOOK AND FLAPS USING SHARP BURST OF FULL DOWN ELEVATOR. TRIM ROD 4 SO HOOK DROPS AT END OF ELEVATOR TRAVEL.

V.M. TYRRELL
13.4.61

35, OS 35, 29 and 15, the Enya products and the Merco and OS .40 motors. In most instances the speed devices can be bought for the egines. So, there isn't much excuse on the power plant score.

The next problem is controlling the motor. If the American Roberts bellcrank is beyond your purse or manufacturing ability, the simplest method is shown in diagram 2. In this procedure two bellcranks A and B are utilised. A is pivoted in the model in the usual fashion and its main function is to work the engine though, if desired, it can work other gadgetry such as hook and/or flaps. You will note it is mounted with a slight skew and the reason for this will become evident as we enlarge on the purpose of bellcrank B.

Bellcrank B is mounted to bellcrank A, therefore it can move as bellcrank A is worked back and forth to achieve its desired function. It is recommended a clearance collar of some sort is on the pivot bolt of bellcrank B to allow full freedom to all controls. Now, it must be understood that the pivot bolt of B moves in an arc when work is applied to bellcrank A. Therefore, at rest, B's pivot bolt is on position P1, halfway through a work application it is at position P2 and at the end of the work application it is at position P3. It will be noted P1 and P3 are in line with each other and P2 is closer toward the tail of the model. This movement of pivot causes: (1) A slight application of up elevator halfway through the work of bellcrank A (if the elevator horn is underneath the stabiliser); or (2) A slight application of down elevator halfway through the work of bellcrank A (if the elevator horn is on top of the stabiliser). This is caused through the pushrod moving back in sympathy with the pivot, through a distance equal to P4. (The difference between the lines through P1 and P3 to P2 along the longitudinal axis of the model).

Unless the horn on the stabiliser is fairly long, the movement will be most pronounced and this could be dangerous. Therefore, use a relatively long horn and in all instances apply suitable control to counteract this movement.

We can now see the reason for the skew on bellcrank A. If it was straight in the model in the usual fashion the measurement of P4 would be larger still, causing a very uncomfortable attitude on the handle to overcome the situation. This is all brought about by the pushrod to the elevators remaining a constant length.

As the pushrod from bellcrank A works with a push (and not pull) action, as things are illustrated, it may be necessary to have another horn along it if deemed necessary by the motor used. Therefore, if your engine's control device utilises a pulling action, rig a crank, with suitable throws to suit, as shown in diagram 3. You can vary your ratio by having several holes in each arm as shown.

You can, of course, work the hook, flaps, etc., off bellcrank A if desired. It can be rigged like an elevator by being pivoted in a horizontal plane at one end (similar to a hinge) and having a SHORT horn to allow a steep drop. Whether the horn is on the top or bottom depends on your system. As our illustrations stand it would have to be on the bottom to get a motion the same as down elevator. See diagram 4. While agreeing this is simple, I don't personally favour it for two reasons. Firstly, due to the long length and weight, the hook tends to bounce up and down with vibration and that causes wear in the system. Secondly, on landing, the hook goes back with the plane at rest, causing the motor to rev. up on high speed. That is very uncomfortable for the deck crew. As the hook isn't needed till landing I prefer to work it off a spring trip when desired, or a timing device.

This is easily achieved by having a second pushrod from bellcrank B passing through an the eye on the hook. The hook swings into posi- supported by another eye just in front or behind the eye on the hook. The hook swings int position by rubber band power. With a quick blip of down the hook drops when desired and the flying of the model is not affected because the movement is so sharp and short. By trimming this pushrod at the hook end and having it start on the same hole as the elevator rod, or outside it (on the bellcrank B), it's easy to adjust things to work after the halfway down mark is reached. This rod could also be used to swing over a spring-loaded rudder. This has been done successfully on John McCarthy's Grumman Guardian. Therefore, as said, why bother to drop the hook every time low motor speed is applied when it is only needed for landing and you can use a safety rudder at the same time.

Flaps can be worked in three ways. Firstly, from bellcrank A as described with the hook; secondly, in the normal stunter style fashion with the flaps working two ways or, if desired, one only. Thirdly, by having them geared suitably to the spring-loaded hook and using them for landing only and not slow flight as the first way would bring about. The first method needs no further comment. In the second instance, the standard procedure would be superfluous, but a few words on the one way only wouldn't go astray. This can be achieved by having a slotted flap horn (or slotted bellcrank B where the FLAP rod fits). The flaps have some sort of stop to prevent them going higher than the horizontal position and a slight spring-loading to keep them there. Therefore, on control, the flap rod pushes them down on reaching the end of the slot, and on down control it has no effect. It is desirable to have a very short horn on the flaps if this system is used. Thirdly, the flaps are kept up with the hook being linked by a pushrod, and only come down when the hook comes down. See illustration.

Now that we have covered the mechanics of the carrier model we shall, in the next issue, go into design, constructional features and suitable prototypes.

(Continued Next Issue)

MODEL MOTOR FUELS

I have been associated commercially with the production of model aircraft fuels for many years, and find fuel development is a particularly interesting part of model flying.

Being a modeller myself I realise model builders like to experiment - to brew up their own formulae in an effort to get something better than is available in the model shops - but since the specialised range of highly developed fuels have become available commercially the wiser course seems to be to use these as a basis for "home brews", rather than start from scratch.

Unfortunately there is very little reliable information available to assist the average model flyer who is restricted to those ingredients which are readily available in Australia.

Nitro-Methane - the "cure all" for U. S. modellers who operate glo motors - is difficult to obtain in Australia and is expensive. Therefore, we must look to other additives to either replace Nitro-Methane or to reduce the need for large quantities, yet to maintain performance.

Probably the most often used is Nitro Benzene (Oil of Mirbane), but it is an unpleasant chemical, which must be handled only by persons knowing its dangers. If left on the skin for any length of time bad blistering can result.

NO GLO FUEL is harmless and should always be treated with caution. Never use indoors, and always avoid breathing the vapours or exhaust fumes.

The general rule for high performance glo fuels, particularly for Team Speed Racing is to formulate a fuel from ingredients which have :-

(a) High volatility.
(b) High calorific value.
(c) High latent heat characteristics.
(d) Anti-knock (detonation properties at high R. P. M.

FACT AND FALLACY ABOUT MODEL MOTOR FUELS

Some of these properties are difficult to combine, a compromise must be sought, and here is where the success of blending a model fuel is to be found.

Methyl Alcohol leads as far as latent heat is concerned, but requires a low fuel air ratio to burn at the optimum (8 air to 1 alcohol), which of course means poor lappage. Petrol on the other hand has an air fuel ratio of 16-1 but burns quite hot, has poor latent heat values and generally is considered not suitable. Other Alcohols such as Ethyl or even Iso-propyl have been suggested and may have their uses, but Methyl Alcohol blended with Benzol will in most cases outperform the lower strata alcohols. Benzol is rather unique as it has quite a useful calorific value, yet it is highly volatile and resist detonation.

Nitro Benzine has a specific gravity of 1. 2, which suggest a good deal of power can be obtained from its use.

Much of that written in model magazines regarding fuels, is the result of a particular individuals experience and very often does not prove true, technically, or in general usage, being more the personal ability of the modeller to build and fly a model more so than outstanding performance of the fuel. An instance of this is the water content in alcohol. Some overseas experts state that every effort must be made to obtain dry alcohol, where-as in fact all of the Team Speed winners at this year's Nationals used Airspeed No. 5 and added distilled water to the fuel according to the humidity and temperature of the day. Nitro Methane was used in conjunction with the water, which appears to allow a higher Nitro content to be used effectively.

B. P. Airspeed No. 3 or 5 are particularly useful as a blending fuel mixed in various proportions with a standard "home brew" to pep up the performance according to the type of flying to be done. Even for stunt work this is worthwhile as it will increase the duration of flight, and give more consistant running. More fuel details in future issues.

Bill Evans

SHOP TALK

by Duke Fox

HOW TO MODIFY YOUR MOTOR FOR IMPROVED PERFORMANCE

I truly believe that Fox builds the finest model airplane motors that you can buy anywhere. But as long as model builders compete with each other, there will be those who want a little more power, a little smoother operation, or a little more of whatever performance factor it takes to give their models that winning margin. This is good, and I look with favor on hand working of motors at home. In order to avoid a lot of useless effort and ruined parts, I will outline the most productive avenues of reworking.

The first thing, of course, is to decide just what it is you are trying to improve. Motor design involves a series of compromises, and quite often we can make a substantial gain in one characteristic if we are willing to sacrifice something on others. For instance, delaying the intake timing will reduce the power with big propellers, but will give a little more power with small propellers at very high speeds. Increasing the area past the venturi and carburetor will pass more air through and produce more power, but it does adversely affect fuel suction, which in turn gives a less steady run. With certain baffle changes we can make the motor substantially less sensitive to needle valve adjustments—at the expense of fuel economy.

The usual tools for motor modification are as follows: Handy grinder with an assortment of mounted grinding wheels and buffs. A set of small Swiss pattern files. A sheet of fine emery cloth, and a sheet of crocus cloth. A small quantity of polishing compound, such as Lustrox M, screw driver, and pointed nose pliers.

INTAKE-Increasing the Venturi area makes it possible for the air to enter at a lower velocity. This permits a higher crankcase pressure to be obtained on the opening stroke. A mild rework on suction would consist of increasing the intake diameter perhaps 1/64. More than this normally would make the motor impractical to operate on suction, and require some form of pressure fuel feed. With a pressure fuel system, the size of the opening is limited only by the mechanical limitations. The procedure is as follows:

Completely disassemble motor. Drill the intake TO the bearing but NOT THROUGH the bearing, with the larger size drill that you have selected. With your Swiss pattern files, go down to the bearing proper and elongate it to form a rectangular intersection. It is important that the opening side and the closing side of the bearing be kept straight and parallel. Do not widen too much, as the widening also alters the crankshaft timing. You can either replace the standard needle valve body or streamline it with a file. In radical cases there are substitute types of valves that have no throat obstruction at all.

CRANKSHAFT
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CRANKSHAFT MODIFICATION: First alter the shape of the intake port by grinding it lengthwise to match the main bearing, and widening it on both sides to whatever amount gives the desired crankshaft timing. A motor that is expected to operate in the 10,000 RPM range should close at about 45° after TDC. A motor that is expected to operate in the 15,000 RPM range should close at about 51° or 52° past TDC. A full race motor that is expected to operate at 20,000 RPM or more should close at 61° or 62° past TDC. If you do a very careful job of opening the venturi, these closing degrees can be reduced by 2° or 3°. The opening time on a crankshaft port is not nearly as critical as the closing time. Opening times between 20° and 60° past bottom dead center is a satisfactory range. The inside of the crankshaft should be ground smooth to gain some on the diameter and to reduce the likelihood of fatigue crack starting. An experienced racing fan will know just how much he can grind out of the crankshaft before it becomes so thin it will break.

On motors with a bushing main, the fit of the crankshaft and the bushing is of utmost importance. Experience indicates that you should have about .005 bearing clearance per inch of bearing diameter. A small motor with ¼" diameter main, such as our .049 and .07, would be fitted with about .001 clearance. A ½" diameter main would be fitted with about .0025 clearance. At these diameters there will be noticeable fuel leakage. However, this is the point at which maximum performance seems to be obtained. Experience has shown that a properly-fitted bushing will have as little running friction as a needle bearing or ball bearings. However, starting friction is greater. It is extremely important that the bushing itself is well-fitted and supports the crankshaft just forward of the crank throw. A barrel-mouth bushing will cause the crankshaft to bind under load and turn with difficulty. In extreme cases the binding can be so much that the motor actually will not run.

You will certainly want to remove any sprues or fins left from casting the inside of the bypass. Also, it is good practice to check clearance between the connecting rod and the case. Sometimes a motor will seem to have adequate clearance when you turn it over by hand, but will bind under deflection caused by load.

In many motors, particularly those having thick liners, a performance gain can be made by streamlining the by-pass. This is a grinding and polishing operation shown in the sketch. In

many cases, attempts have been made to improve engine performance by filling any space that may occur in the bypass above the port. It is our belief that this reflex area gives a better flow entry into the bypass port proper. Also, the practice of packing the crankcase by using filler blocks or other methods does not seem to help.

In some motors there are holes cut in the piston, and the bypassing is done through the window in the piston and a matching port in the cylinder liner. This type of design has both good points and bad points. However, in the Fox motors the piston is made so tight that the drilling of any window in it will unduly weaken the piston, and failure will quite likely occur.

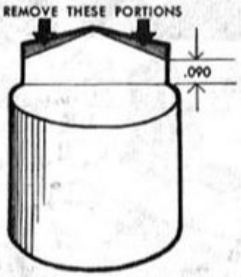
Sometimes a motor is free-ported. That is, the length of the piston skirt is reduced so that the crankcase is opened to the exhaust port at TDC. In our experience, the only time that this does any good is when the intake is hopelessly restricted.

CONNECTING RODS: For high-speed work we recommend that you handwork the center section to an oval, streamlined form. This removes perhaps another 10% of the weight and eliminates all corners and places where fatigue failure might start. Also, it is good practice on high-speed work to drill a small oil hole at the top and bottom of the rod. On the Fox 15, discard the die-cast rod and use the optional racing rod.

PISTON: Experience has shown that — other things being equal — the lighter the piston, the smoother and faster a motor will run. With the exception of the ultralight pistons available for the 29x and 15, very careful handworking of the piston can remove a little more iron from the interior of the piston. This in turn helps the smoothness and the speed of the motor. Be careful, however, because any radical removal of material will often cause the piston to warp.

A great deal of experimenting has gone into the location of the cylinder ports on our various motors. It is generally not recommended that any changes be made in the dimensions, except perhaps to compensate for manufacturing inaccuracies.

PISTON BAFFLE: To a large extent, running characteristics of the model airplane motor is determined by the shape of the piston baffle. A broader tolerance to needle valve adjustments can be obtained on the Black Head and the Needle Bearing series Combat Specials without any loss in power if the baffle is filed in accordance with the sketch shown here. Also, for improved low speed on R/C, the cone-point shape on the 15 baffle can be exaggerated slightly. We do not recommend any changes at all on our Stunt Motor head shape.



Much experimenting has determined the shape of our cylinder head, and it is a mistake to assume that a hemispherical head will give you any increase in performance. You should limit your work on the head to merely polishing the surfaces and making sure that the head in no way binds on the cylinder when it is installed. If there are no other complications, the more compression ratio, the more power. There are some disadvantages to high compression. Glow plugs tend to fail quicker. The piston, wrist pin, rod and crankshaft deflect more, causing binding and friction. Our high-performance motors are built in such a way that they can take moderate increases in compression with no great problems. A radical increase in compression will almost invariably result in troubles.

After you have modified all your parts and are ready to reassemble your motor, do it carefully and do not force any part. If a part does not fit its mate easily, polish the surface with crocus cloth to remove any burr or interference. The motor should be assembled completely without having to force anything. After the head and rear cover screws are pulled down, the motor should still turn over easily. If there is any bind, refit the parts and eliminate the source of distortion.

Much has been said about chroming model motor parts. Our feeling is this: A crankshaft that has been very carefully polished, fitted and modified can be made to last quite a bit longer with a hard chrome plate on it. Likewise, a cylinder that has been very carefully modified and has proved successful can have its life extended by a hard chrome finish. We have had no success in chroming pistons, because these are meehanite and the surface texture is impaired by the chrome plate. Frankly, chroming cylinders seems rather pointless, since the cylinder will outlast 3 or 4 pistons anyway. Likewise, a crankshaft will outlast 2 or 3 bushings if it has a bushing-type main. Chrome plate is of three separate and distinct types. Polish chrome, such as is used on an automobile bumper, has no value in a model airplane motor. Porous chrome, which is a gray mat finish, done by a very few specialty shops, is of considerable value on your wearing parts if you can arrange to have it done. The cost in all likelihood is many times greater than the total cost of your motor. Hard chrome plate, generally available in the larger cities and particularly in shops specializing in aircraft parts. This is the type of plating that you would ordinarily use on your cylinder and crankshaft.

Now that you have your motor reworked and assembled, do not undo all your handiwork with improper mounting. In the interest of lightness, a model airplane motor is thin. Mounting screws pulling it down on a twisted motor mount can actually deflect a case enough to cause the motor to bind. If you use a metal pan or metal motor mounts of any form, blue them in as in good machinist practice. If you install your motor on hardwood motor mounts, you are not likely to introduce any binds; but as a precaution, remove the plug and turn the motor over both before and after the mounting screws are pulled down.

Good luck! We hope you have a lot of pleasure getting those extra RPMs that seem to be hidden in every motor.

TOP FUELS...

..for better engine performance!

Acclaimed by Experts (who know)

Your new AIRSPEED red label cement and Jet Gloss Dope are the best I have ever used. Pleased to see a local product top the field.

Ken Green.

59/60 National Champion.

My Enya really went well with your No. 5 Airspeed fuel. I won the Nats class II Team Speed event this year. Your new Airspeed Cement is tops too. Pleased to hear Enya supplies will be better in future, as I want to try the new models. Mine have had a lot of work.

Norm Moore

AIRSPEED No. 5 fuel certain help with my Class III Term Speed win at the Nationals. No more home brews for me. Airspeed only in future. Like the new Airspeed cement too, it at least equals anything I have tried.

Allan Taylor

Leading Vic. modeller.

I won the class II F/F and was 2nd. in F/F. I. The motor was a Cox Tee Dee in both cases and I used your AIRSPEED No. 7 fuel. Next year I want to make an effort in the Team Speed Events so I will want some of the new Enyas.

Westly Penfold

58/59 National Champion

No doubt your new No. 5 Airspeed fuel really works.

At this years Nationals I won the Advertiser Trophy and 2nd. in both Class II and III T/s events. I used No. 5 in all events and the motors were Enyas.

Jack Orlme

My Enya was unlucky not to make the final at this years Nats. In the 70 lap heat it was timed at 97.2 m. p. h. and did 68 laps, but a faulty gloplug robbed me of the extra two laps needed, however there is always next year. I used your No. 5 Airspeed Fuel. It works.

Clive Whatley.

A top N. S. W. modeller.

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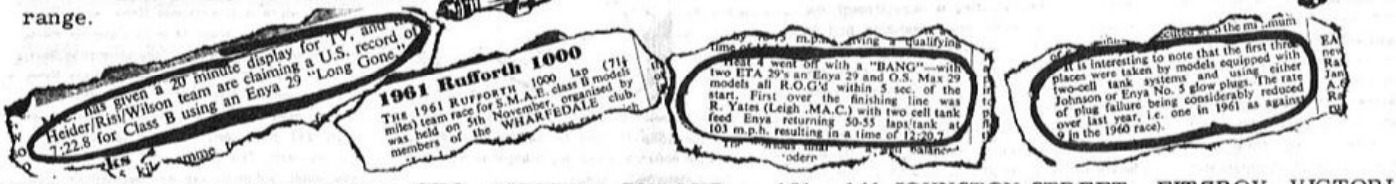

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N.S.W. State Champs.

Once again during the Easter Holidays, the N.S.W.A.A. held the State championships at Camden Aerodrome.

Actually, to be more specific, the champs. were based at the 'drome, where camping facilities were provided and the Control Line flying was conducted. Free Flight and R/C this year were, due to the increasing light aircraft and glider traffic, carried on at a field some two miles distant from the airfield. This arrangement at first thought was considered generally as being a bit unsatisfactory, but actually in practice it worked very well, resulting in this being the smoothest running contest we have so far conducted.

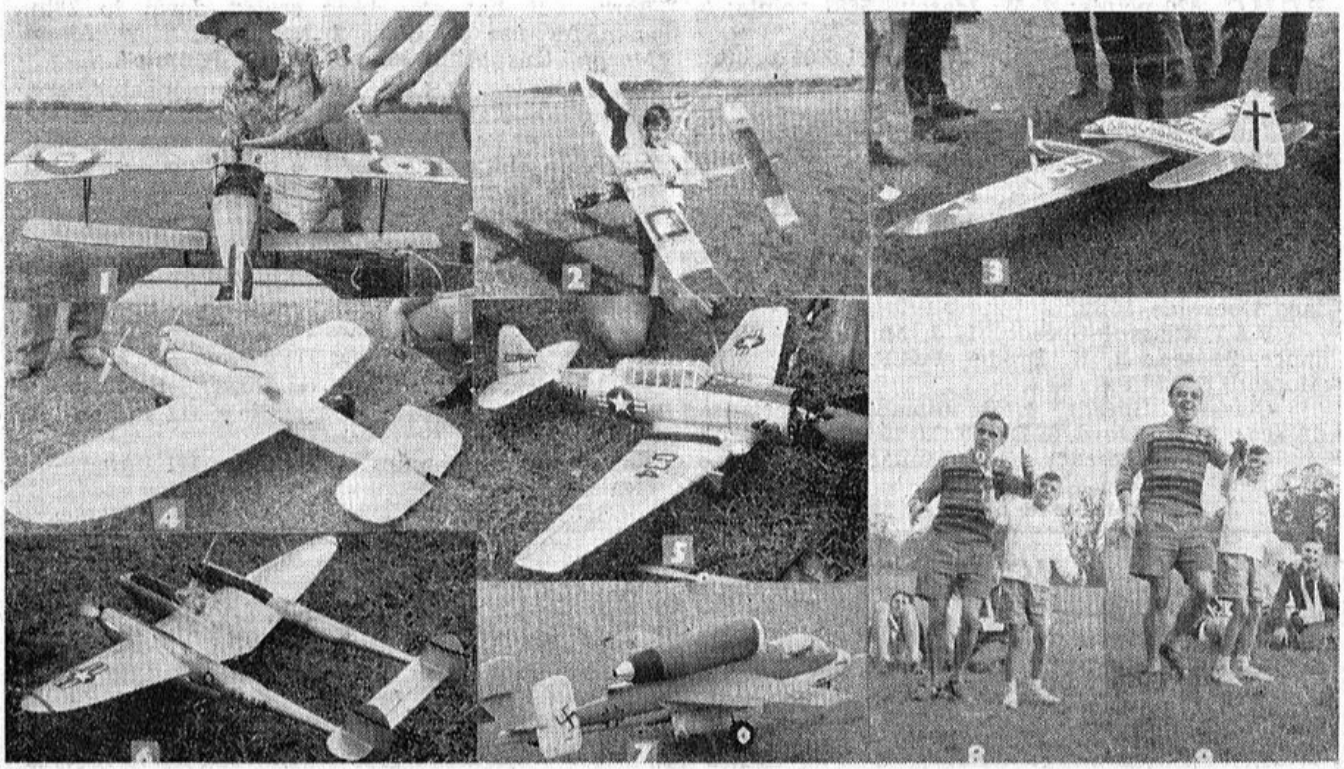
The field used was quite large, level and treeless and surrounded by many hundreds of acres of excellent recovery area. This fortunately was not needed by the R/C boys, but of course this made things easier for the F/F types.

The take-off area was prepared by a working bee on Saturday morning before the Multi event was started. This was done by the competitors all hopping in with a couple of mowers and in very quick time a very good take-off surface was made ready.

Multi this year was a bit of aflop, not because the standard of flying was low but because of the models used. There were no Multi Channel jobs as all the boys who have this type of equipment were either tied up with their jobs, or their gear was unserviceable.

Intermediate type (multi control off single channel) made up the flight line. Of these, the most promising looking model was an own design

1. **Noel Shennan starting his Nieuport II on his flight. Highly detailed model. Placed second.**
2. **Tarn Stowe holding Dad's "Beast" powered by an E.D. 2.46 and an E.D. Super Fury on a Pylon Mount. Every time this model's flown, Ivor's hand is in hospital for a month.**
3. **Not entered in the contest but a real show stealer is this well-used twin stunter by Neil Whymark of the Liverpool Club. During Monday's lunch break it really drew every eye. Religious motif earned Neil the nickname of the "Mad Saint", but he is still probably the best stunt flyer we've seen, second only to Norm Sutcliffe.**
4. **Twin 119's Power. This Model by Barnes.**
5. **After overcoming considerable motor trouble, this model was written off by a broken "up" line. A Jonah had it beaten all the way.**
6. **If there were prizes for keen effort then this would have romped home. It is a first attempt by a Junior, with a finish to make the oldies hang their heads in shame. Flew well. Watch out next year!**
7. **"Volksjaeger" (People's Fighter) Pulse Jet Powered Scale was the most ambitious and original effort. High wing loading and weak undercarriage doomed it to stay on the ground.**
8. **Sad news! There will soon be two Stowes to plague our contests. Rumour has it that the new shed is to house all the pots this combo. intends to take from us.**
9. **Proud Poppa. Learner's Corner, Doonside's Club Field.**



shoulder wing type by Wally Marcin. A slightly unreliable elevator escapement, however, prevented Wally from really wringing this model out.

In the final wash-up the results of this event were: 1, J. Marquette, Cicade, Silvertone Glo Chief 19; 2, W. Marcin, own design, Silvertone Glo Chief 19; 3, C. W. Eyre, Houdini, Silvertone O.S. 15.

Single Control provided a much better picture. Here was seen some of the finest and most precise flying ever in this country. Basil Healy, who won the event, flew an almost faultless pattern for both rounds. His model behaved beautifully and his flying technique was such that his flights were really a pleasure to watch.

Second place was filled by J. Marquette, whose score was only 58 points behind the winner, and Keith Hollingworth was third and scored only 15 points less than Marquette. This will give some idea how keen the competition was and how exciting these flights were to witness. Details of Single Control placegetters are: 1, B. Healy, Cicada, Silvertone Glo Chief 19; 2, J. Marquette, Cicada, Silvertone Glo Chief 19; 3, K. Hollingworth, Cicada, Silvertone, O.S. 15.

OFFICIAL RESULTS

A2 Sailplane: 1, G. Robb, M.F.F.C., 696 sec.; 2, R. Murray, Canberra, 567 sec.; 3, B. Lee, P.G.F.C., 534 sec.

Wakefield: 1, K. Murray, M.F.F.C., 667.6 sec.; 2, A. Cooper, Doonside, 628.9 sec.; 3, A. Butler, M.F.F.C., 509 sec.

Wakefield Junior Rubber: 1, T. Stowe, Doonside, 10.6 sec.

F.A.I. Power: 1, A. Butler, M.F.F.C., 776.6 sec.; 2, A. Kynoch, Doonbats, 745 sec.; B. Alcock, M.F.F.C., 674 sec.

Junior ½A Team Race: 1, J. Wallace, Doonside, 12.42½ min.; 2, M. Newman, E.D.M.F.C.; 3, D. Lumo, P.G.F.C.

Radio-Multi Channel: 1, J. Marquette, R.C.M.C., 620 points; 2, W. Marcin, 568¾ points; 3, C. W. Eyre, R.C.M.C., 316½.

Open Stunt: 1, P. Turner, Ryde, 1,059½ points; 2, A. Phillips, Ryde, 699; 3, G. Lynch, Ryde Mac, 691½.

Junior Stunt: 1, G. Lynch, Ryde Mac, 691½ points; 2, A. Brand, Ryde, 678½; 3, A. Brady, Ryde, 668¼.

Junior Combat: 1, R. Hill, Olds.; 2, G. Williams, E.D.M.F.C.; 3, S. Burnett, Epping.

Open ½A Team Race: 1, R. Write, E.D.M.F.C., 12.32 min.; 2, G. Parker, P.G.F.C., 13.29; 3, J. Wallace, Doonside, 15.32.

F.A.I. Class I Speed: 1, J. McLennan, Freelance, 24 sec.; 2, N. Brodie, P.G.F.C., 25.1; 3, J. Morgan, E.D.M.F.C., 31.1.

Class II Speed: 1, R. Blombery, Freelance, 19 sec.; 2, R. Lloyd, E.D.M.F.C., 23.

Class III Speed: 1, J. Finneran, Freelance, 15.5 sec.

(Continued on Page 34)

CROW BAR

(By Basil Healey)

A hot 49in .span ratio model for 1.5 and 2.5 cc. Motors.

The prototype of this model was designed during the winter of 1957 and was originally powered by an Elfin 1.49. Since then no less than five have been built by various members of the Doonside-Blacktown Club, all of which have performed with creditable success in contests. As a point of interest the writer's model was consistently beaten by another "Crow Bar" in contests throughout 1958, until he changed the power plant for a less-worn-out one. For open contests with no power loading, the model has been fitted with a 2.5 c.c. glow motor, but the trimming became a little hectic and is not recommended if a consistent flight pattern is required.

The model is quite docile to handle when fitted with a 1.5 c.c. diesel and in most cases flew straight off the board with little or no trim tab off-set required, and usually less than 1/16in. variation in the wing incidence as shown on the drawing. The flight pattern is right power, right glide and the transition from power to glide is usually quite good with little loss of height. The "wash-in" in the starboard wing has the effect of holding that wing up on the climb whilst creating drag to act in conjunction with the tilted tail plane to achieve a reasonable size glide circle. No side or down thrust has been necessary on any of the models built so far, so I do not think that you will have any worries in that respect.

As an indication of the adaptability of this model it has been successfully scaled up to 72in. span for use in Class III Power with no less than a Dooling 29, this version being known as the "Post Hole Digger" (big brother to the "Crow Bar"). It has also been scaled down to 36in. span for use in Class I Power with an Albon Merlin, this being known as a "Jemmie".

In every N.S.W. State championships and Australian Nationals since 1957, one member of the "Crow Bar" family has either won or been placed in one or more of the power classes, which is a fair enough recommendation of the model's capabilities.

1957 Nats.: 2nd Class II Power.—A. Cooper.

1958 N.S.W. State Champs.: 2nd Class I Power.—. Healey.

1958 Nats.: 2nd, Class III Power.—B. Healey.

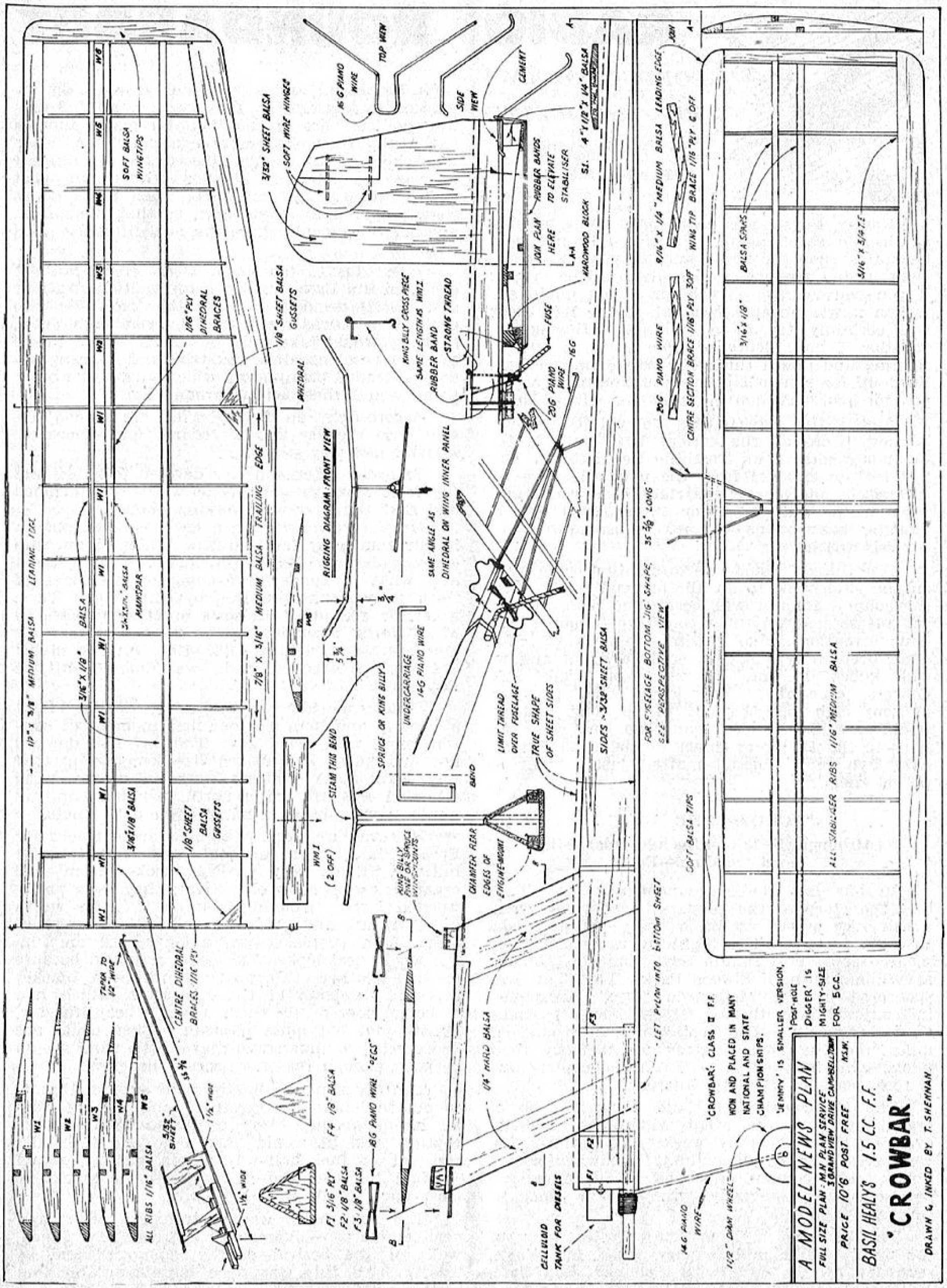
1959 Nats.: 3rd, Class III Power.—B. Healey.

1960 Nats.: 1st, Class III Power.—B. Healey.

1960 State Champs.: 1st, Class III Power.—B. Healey.

1961 State Champs.: 1st, Class III Power.—B. Healey.

1961 Nats.: 9rd. Class III Power.—B. Healey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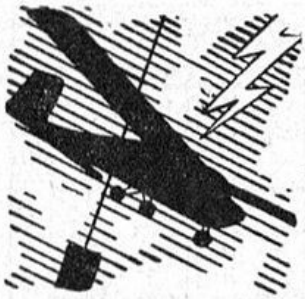
RIGGING DIAGRAM: FRONT VIEW
SIDES 3/32" SHEET BALSA
CELLULOID TANK FOR DIESELS
SOFT BALSA WINGTIPS
ALL RIBS 1/16" BALSA
LEADING EDGE
TRAILING EDGE



RADIO ROUNDABOUT

CONDUCTED BY

JOHN MARQUETTE

45 Pymble Avenue,

Pymble, N.S.W.

Howdy, Boys! Nice to be back doing business at the old stand again. Ye boss tells me we're back this time for keeps and we're going to get right in and give you a mag. that will be so good if you had to pay ten bob for it you would still reckon it was cheap. Well, we at the R/C Dept. will certainly try to do our bit. During our vacation I had plenty of time to do a spot of figuring and now I think the programme we have lined up for you will please you and satisfy your yen for gen. (Pardon me, that one slipped in.)

Among the departments we will feature will be news from all the various R/C clubs in the Commonwealth, news from the Newsletters. This will feature extracts from the newsletters we receive from lots of overseas clubs, technical topics, wherein we will endeavour to give you lots of circuits, descriptions of new items and do-it-yourself articles, etc.

One thing I would like to mention while we're on the subject is, to do all this and really make the column hum, I will need your help. Would you please send anything you have—circuits, brilliant inventions, club gossip — anything? You don't need to type it, just scribble it out and we will knock it into shape. You Club P.R. Officers, especially. You know what goes on in your club but the rest of us don't and we would sure like to. You can send your contributions to the Editor or direct to me at 45 Pymble Ave., Pymble; it doesn't matter, just so long as we get them.

"ACROSS THE BAY"

(Although it's 12 months ago, this is still good reading.—Ed.)

In our last Radio Roundabout, Geoff Tuck told the story of the preparations for an event, which has proved to be a real epic in Model Aviation history. The flight by radio controlled models across Port Phillip Bay, from Shelly Beach at Williamstown to Elwood Park. The flight was sponsored by the Melbourne "Sun" Newspaper, in conjunction with the Model Aircraft Radio Control Society. The distance was around 5½ miles and the models were controlled by their pilots, who followed in a T.A.A. helicopter, and it took place on Sunday, February 19.

The Melbourne "Sun" did a terrific job of organising ,gave the event widespread publicity over a period of many weeks and performed a very great service of building goodwill for our hobby. This column, on behalf of all aeromodellers, says, very sincerely, "thanks very much, it was really appreciated".

The first we in New South Wales knew of the flight was in mid-January, when Ian Watts, secretary of the M.A.R.C.S., phoned Bill Eyre, Russ Hammond and myself and gave us an invitation to participate. This was a wonderful gesture on the part of the Victorian boys, and we felt really honoured, more especially too, since the scheduled time only allowed for six aircraft to make an attempt. It shows the grand spirit that exists amongst modellers when these chaps were prepared to stand down so that fliers from another State could share the field fifty-fifty with them.

Russ, due to too much work, could not get away, so Bill Eyre, his son Johnny, Richard Shaw and myself decided to make the trip. We also decided, as it was really the Victorian boys' show, that we would take only one model. We tossed to see whose model it would be and I, using my double-headed penny, won, which meant the other three would then act as ground staff.

Accordingly, on Friday, 17th, we loaded our gear into the car and set course for Melbourne, arriving next day at noon.

Saturday afternoon was devoted to a few test flights to make sure the model was nicely trimmed and that the gear was working okay.

On Saturday evening, a barbecue was put on in our honour by Ian and Mrs. Watts. I am sure every radio modeller in Melbourne was present and what a wonderful evening it was—bags of thick juicy steaks prepared by Chef. Geoff Tuck, a terrific spread of all sorts of other goodies by Mrs. Watts, a sufficiency of good Victorian ale and bags of modelling talk. Boy, what a night! We were treated so well, we almost felt like Royalty.

Sunday morning we were all on the job bright and early and here was our first moment of concern since we started out. The day had dawned hot and gusty and looked like keeping up that way. To make matters worse also, the wind direction was from the north, which meant we would have a beam wind of around 25 knots.

However, we pressed on and made tracks for Elwood Park, where all the crowd were to meet initially. Some very anxious looks from the organisers greeted us on arrival; they were pretty worried boys. Wouldn't you be if, after weeks of organising and publicity, and with a crowd of some 15,000 people coming along to see the fun, the whole deal looked like being scrubbed because of the weather. To make things even blacker was the viewpoint of the spectators, which had to be considered. To them it was a beautiful day, a little hot but quite pleasant. They could not be expected to understand that a little wind should be good enough reason to scrub the event.

The decision was finally made around 11 a.m. to put the show on, regardless, and this we were all happy about. Every contestant, without exception, said he would have a go and if he did run out of fuel half-way across, well, it would be just too bad and in any case he would at least have a ride in a helicopter.

The next move was to transfer bodies, and gear, across to Williamstown by road, have lunch, wait for the arrival of the "chopper" and be briefed. All this was done quite smoothly and

right on 1 p.m. the first model was launched. This was an 8ft. Wing Span Own Design Machine by Keith Hearn, powered by an O.S. 35 and with a 10 Channel O.S. Radio Rig.

Because of the soft sand and small area at Shelley Beach, all models had to be hand launched. Keith's model, after being hurled into the air, took off perfectly and headed on a nice straight course at a steady rate of climb. The next thing heard was the roar of the "chopper", then a swirling cloud of sand and away went Keith in pursuit of his model. Because of the strong wind blowing, we recognised Keith's strategy when we noticed he had a set course of about 060 degrees, when his track was actually about due east. Then we were a little puzzled, for when he was about a mile out he altered course and headed straight for the finishing line. The obvious reason for this was soon confirmed by an R.T. message from the "chopper". Although the wind was blowing like the devil on the ground, there was not a breath over a couple of hundred feet. What a break this was; it had saved the day! Now we could all have a crack at the crossing, knowing that we had a fair chance of getting over on our existing fuel loads.

Thirteen point two minutes after take-off we got it over the radio that Keith had crossed the finishing line and was coming in for a landing. Then a few minutes later we got the news that he had landed and the "chopper" was on the way back for another tryer.

Next man up was Ian Watts with a Smog Hog, K & B 45 powered and 8 Channel O.S. Radio Gear. Ian made a nice crossing and looked like beating Keith's time with the smaller model and the big 45 in the nose, but it was not to be, for with only 500 feet to go, the aileron hinges gave out and the model spun into the drink with a goodly splash. Almost before the ripples had stopped, one of the several speed boats, who were enacting the role of Air Sea Rescue Launches, had retrieved the model. This was some comfort to Ian, but he was an awfully disappointed boy to get so close and just not make it.

Third man was Jack Bone, also a Smog Hog, K & B 45, and O.S. 8 Combination. Jack's flight was almost a duplication of Ian Watts'. He also ditched to be rescued by the A.S.R. Launches.

Next to go was yours truly. The model was a Cicada with an O.S. 15 and Advance Silvertone Radio Gear. This was a pretty elementary sort of model to attempt such a flight as this. For, with only rudder and throttle control off a single channel radio, I confess at this stage my morale was a little low. Especially since three multi rigs had already made an attempt and only one succeeded. Then you can imagine my shame when, after launching, the model just did not gain height and gradually descended, plonking down in six inches of water.

Les Heap saved the situation by quickly starting up and taking over. His model, an own design Taipan 2.5 and O.S. 4A R/C, carried on for about a quarter mile, and then something went wrong, for she suddenly went into a spiral and ditched.

1. **The Ansett-A.N.A. Helicopter from which the models were flown.**
2. **Keith Hearn in the Helicopter in hot pursuit of his model. The 'copter door was removed and the aerial of the transmitter our parallel to the motor.**
3. **Jack Bone's K & B .45 Powered Smog Hog getting away. Jack ditched 500 yards from shore base after motor died following a long slow run approach.**
4. **General view of the set-up on the beach with the 'Copter in the background.**
5. **Dick Shaw preparing to launch John Marquette's well-known "Cicada", Silvertone equipped. Placed second.**
6. **Anthony Walsham's Taplin Twin Powered Wave Guide ditched some minutes after take-off.**

By this time we had dried out the Cicada and when the "chopper" landed, had the motor running ready for another attempt. Johnny Eyre, my launcher, really hurled her and away she went, losing height, but about a foot from the water she picked up and started to climb. Actually, I was very proud of my little O.S. 15 for from here on, right till the last drop of fuel was used, she sang on, never missing a beat and that is quite a performance when you consider the Cicada has a 62in. span and this one, fully loaded, weighed in at 5¼ lb.

After a wild dash for the Copter, we took off in pursuit, picked up the model about a quarter mile out and set course for Elwood. This was a terrific experience. I have done lots of conventional flying, but this was my first crack in one of these new fangled Whirly Birds. It was a big temptation to forget the model and just sit back and enjoy the view. Another quite strange experience, too, is to fly a model from above with the water and all the boats buzzing around far below. However, these temptations were soon overcome and we settled down to the serious task of keeping on course. Everything worked perfectly, the model flew almost hands off, needing only an occasional touch of right rudder to correct a slight left turn tendency. The pilot had mentioned our maximum height was not to exceed 500 feet, so we arranged that he should tell me when we reached 350 feet, when I would go to low throttle and descend to 250 feet. Here he would again tell me our height and once again I would go to high speed and climb. This system worked perfectly and we carried on right across at a steady 24 knots. We cross the shore line at 300 feet and finally the finishing line 15 minutes after take-off. The "chopper" landed, let me out, and feeling very pleased about everything, I started on the job of bringing the model in for a landing. Now here is where the real trouble started. As soon as the machine crossed over land she hit the daddy of all thermals, and no matter what I did, it just went up and up and up, finally disappearing out of sight overhead at least 5,000 feet up. It was recovered later that evening by fishermen, floating in the bay some six miles away.

From the Elwood side no further excitement occurred. The last two competitors, Anthony Walsham with a Taplin Twin powered Wave Guide, O.S. 4A R/C and Ken Bowden, Rhoma, Enya 15D, O.S. 5 Channel, were both unfortunate to prang in on take-off.

So that is the story of "Across the Bay", but before closing, here is a reprint of an item which appeared in the "Sun" on February 23, headed: "The Last Little Bit." It goes on to say:

"A million to one chance came off in Port Phillip Bay when a fisherman found the 14 inch undercarriage to a model plane floating off Beaumaris. The rest of the plane was found on Sunday night about three miles off Sandringham. It was caught in a thermal current on Sunday during the Young 'Sun's' 'Across the Bay' Model Aircraft Flight.

"It was 48 hours later and nearly four miles from the spot when Mr. Ted Savage, of Beaumaris, found the tiny undercarriage.

"The lost plane belongs to John Marquette, of N.S.W., second place getter in the 'Across the Bay" flight.

"Mr. Savage was fishing a mile off Beaumaris Beach on Tuesday night when he noticed two little rubber wheels floating in the water. He picked them up and took them to a friend, Mr. Ken Bowden, who has a Hobby Shop in Beaumaris, and was a competitor in the flight. He soon recognised it as the undercarriage of Marquette's plane."

NATIONAL MATTER

(Items heard and overheard during the Nationals.)

"You see, there was this character flying his model and it got out of range, so he borrowed somebody else's transmitter which picked it up O.K., but instead of bringing it down and investigating why it went out of range he just went on flying. It went out of range again and he had borrowed the transmitter and remarken h ehad borrowed the transmitter and remarked that it hadn't much range!!! Some hide!

From a control line flyer: "Stunt seems dead after seeing these multi boys perform."

Heard at the Multi: "Watch this take-off; I'm going to do a 'Doug Murray'." Looks as though as long as its low, precise and doesn't crash, it'll be a "Doug Murray' 'in future, and why not!

Victorian Multi Channel Flyers are going back to single in addition to multi in an effort to teach some of their bods how to take off and fly. On the other hand, multi is easier to fly than single or intermediate, so the clue for beginners is to start with multi.

Watch for the mad rush on Radio Controlled Records this year. Following Keith Hearn's official World Height Record, incidentally the first official world record Australia has ever held, the push button men are setting for Distance, Height and Duration records and one character has even designed a missile and bought the gear for an attack on the world R/C Speed Record. In the meantime, I just want to learn to fly like Doug Murray!

The "Monitor" used during the R/C illustrated the style and number of signals being given by the hot flyers. Simultaneous control was given only on rare instances, although alternate fast pulses seemed to be more popular. Multi at the Nats was like a control line stunt contest. They call your name and you fly, and if you do a shaky manoeuvre or your motor stops on any flight, then you don't get a place. There was no radio tuning or failure whatsoever in this event, and the standard of all flyers was consistent and far above anything yet seen in this country. All competitors but two used Japanese multi gear with the new ball bearing .49 being well to the fore.

At the New Year's Eve Party . . . a rendition of a song, "My Orion Won't Come Back", sung to the tune of "My Boomerang Won't Come Back", with words composed by some young Victorians, not even members of a Radio Club. Very clever!

After the Nationals, the "Riverina Herald" published a full account of the presentation dinner and results, but some atrocious spelling mistakes occurred:

Single Function Radio—**Simple** Function Radio.

John Marquette—**John Markett** (as she are spoke.—Ed.).

John Eyre—**John Hare.**

G.H.W. RECEIVER

(By RON WILSON)

This article is submitted as a matter of interest for the keen experimenter and is not intended as a construction item.

This Receiver is a further development of the Graupner Circuit popularised by Eric Hill, so if it has to have a name, let's call it the "G.H.W. Receiver".

We have, in the Brisbane area, flown the original "Hills" Receiver with a great deal of success, but with the advent of Transistor hearing aids, we found that the popular 33 volt battery was having long shelf life before we purchased them and this knowledge, coupled with the considerable weight, led me to try some circuit variations with the idea of 22½ volt operation.

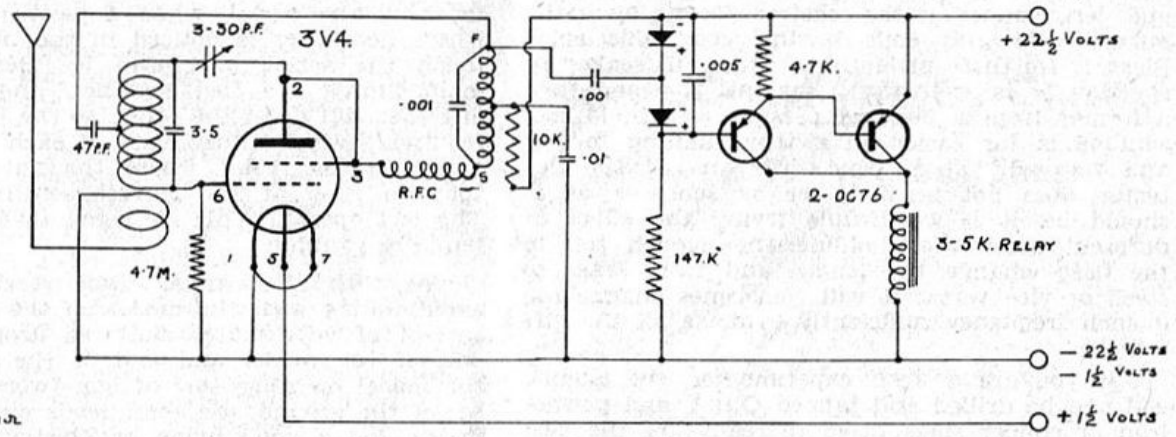
A transistor was then added for operation of the relay, the original two valves being retained. The straight 2 valve set will give nearly 2½ mills. current rise on 22½ volts, so the relay coil was replaced by a 1 to 2K resistor connected between the plate and screen of the relay valve. The transistor was then direct coupled to the valve by connecting Emitter to screen, Base to plate and Collector to one side of the relay coil, the other side of the relay coil now going to 22½ v. negative.

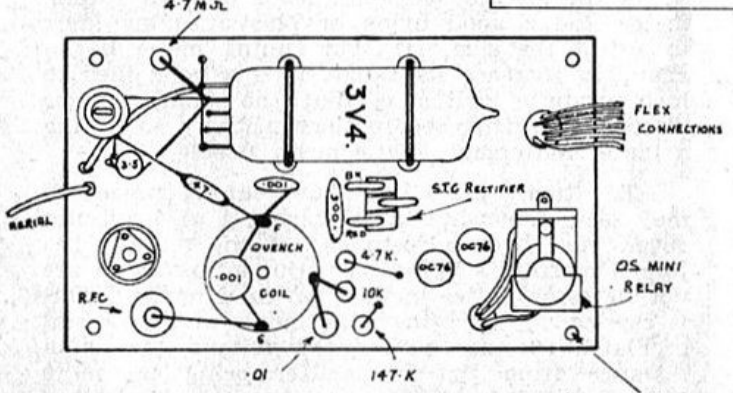
This arrangement works very well, as the voltage drop across the resistor on signal sends the plate and consequently the base of the transistor negative to the Emitter, causing the transistor to conduct closing the relay. There is a considerable increase in effective range as the transistor operates in a saturated condition, the current only being limited by the resistance of the relay coil, so at a distance where the relay current would be starting to fall off, the transistor is only becoming less saturated and there is no change in relay current. For satisfactory operation, the dropping resistor to the quench coil should be changed from 22K to 10K, maintaining efficient detection in the first stage.

Jim Herlihen has produced a very small receiver, using the above circuitry with a 3V4, DL66 and OC76, and it was due to his efforts at packing the components into exceptionally small spaces that I decided to go a stage further and eliminiate the second valve and use a printed circuit base if possible and, after some thought and bread board layouts, the enclosed circuit resulted. I have now used the receiver on sufficient flights under as adverse temperature conditions as normally encountered to be quite satisfied as to its sensitivity and stability and am confident that it is a good reliable unit.

The drawing gives most of the information necessary, but I have not given any tuning coil details. As you know, with variations in former sizes and with gauges, coils can be mainly a case of cut and try for the occasional builder, but the wide range of adjustment possible by the tuning slug usually permits the required band to be found. The 3.5 p.f. condenser across the tuning coil is smaller than that usually specified and is the size I use for 40.68 M/c.

I prefer to keep coil inductance as high as possible and would recommend that for 27 M/c the same condenser is retained and the coil wire gauge reduced and extra turns added to still tune the band. For 40.68 M/c I use as many turns





COMPONENT SIDE NOT TO SCALE.

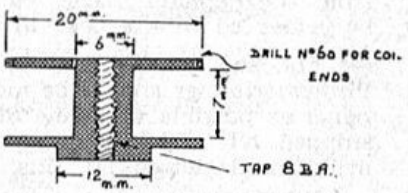
"ARALDITE" 8BA NUT AT EACH MOUNTING HOLE.

Aerial Coupling : 2 turns hook up wire, around grid end of tuning coil.

R.F.C.-T.V. Peaking Choke, 150 - 300 w.h.

Sensitivity Control Philips Trimmer with one ring removed from outer sleeve.

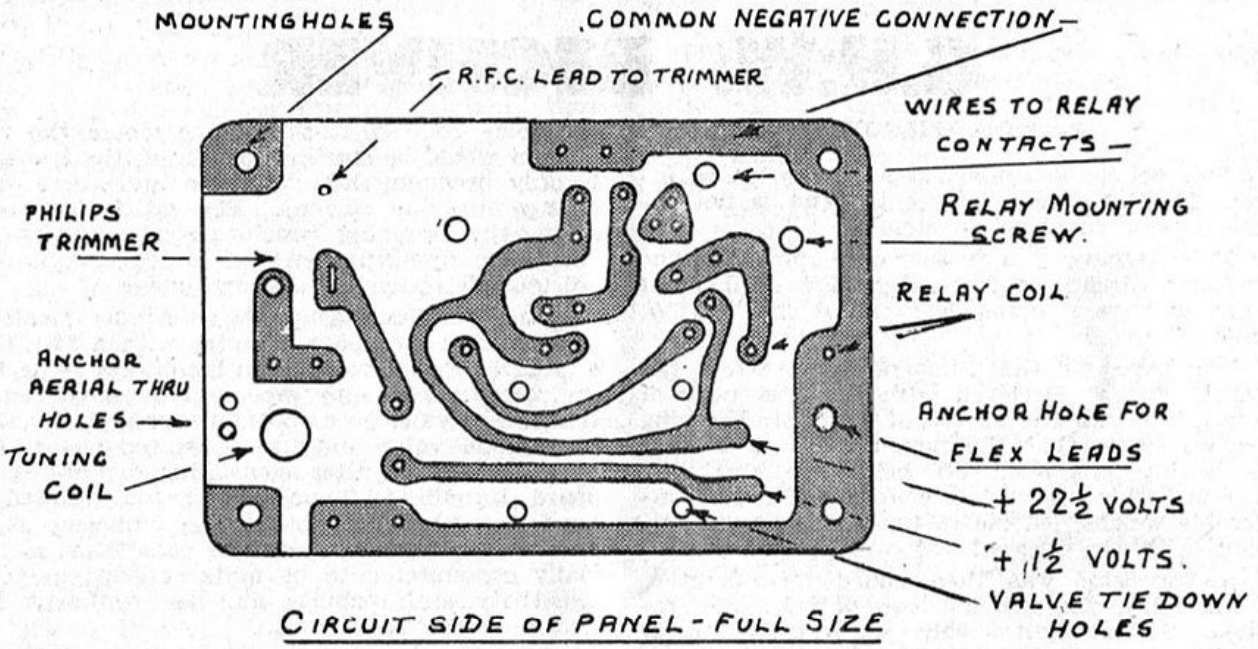
Overall dimensions in case, 3" x 2" x 1 1/8"



QUENCH COIL FORMER TWICE FULL SIZE

1200 TURNS 38 S.W.G. ENAMELLED CENTRE TAPPED

R.F.WILSON. 22.2.61



CIRCUIT SIDE OF PANEL - FULL SIZE

as possible with the tuning slug cut down to about 4 turns length, as I think that the normal core introduces losses that are best eliminated if possible.

There have been a number of articles in the "Aeromodeller" on the "Hills" Receiver, the coil details of which are suitable for the present receiver. I do, however, prefer the link coupling for the antenna and feel that this is a worthwhile variation from the original.

The quench coil is different from the "Hills", but here again, if space permits, the Hills former and winding can be used. This coil should not be made too lightheartedly as the final sensitivity and performance of the receiver depend upon the quench and grid coils having good effieciency. Please! No three-ply formers with coils soaked in shellac; it is well worth having someone turn a former from a piece of perspex or erinoid rod, winding is far easier on a true running former and you will get all the turns on. If the detector does not seem to be as sensitive as it should be, it is worthwhile trying the effect of different screws for holding the quench coil to the base—change the length and from brass to steel, or vice versa; it will sometimes change the quench frequency sufficiently to make all the difference.

If you are a keen experimenter, the quench coil can be drilled and tapped O.B.A. and powder iron or copper slugs fitted to really get the best from the detector. The coil former will have to be cemented to the base in this case.

For the printed circuit arrangement, the Philips trimmer should be mounted as close to the panel as possible with one of the side connections snipped off. The P.C. panel in the drawing is drilled and slotted for this.

When the receiver is operating correctly the position of the trimmer can be noted and if it is not screwed more than half-way down, the outer ring can be carefully removed from the moving sleeve. (If you can't get the standing current down to idle after doing this, you have bent the rings and you had best throw the sleeve away and start again). This alteration will allow the trimmer to be screwed almost fully into mesh, reducing its projection to equal that of the valve or relay. The spare screwed rod out of the centre of the trimmer can also be cut off as the trimmer will never have to be screwed **out** more than a fraction of a turn. With the amount of capacity variation per turn reduced, sensitivity control will be smoother and less critical.

Sensitivity setting is best done by watching the tuning meter and slowly screwing down the trimmer until a slight upward movement is noticed in the current reading, touching the aerial should cause the current to return to the idling value, now slowly unscrew the trimmer while repeatedly touching the aerial, when a position is reached where no flicker is noticed in the needle as you touch the aerial, you have it. Sensitivity and main tuning are tied together, and movements of either will upset the other, so the initial setting requires several adjustments of each so that you arrive at the point where the antenna coil is spot on tune at the correct sensitivity setting. The last operation always being to peak the antenna coil tuning.

As with all "carrier" type receivers, try to avoid tuning with the model on the ground with several of your mates clustered around the tail end of the model and end of the antenna, sit the model on some sort of box (wood) a foot or so off the ground, use short leads on your tuning meter and a good nylon or plastic tuning stick to adjust the slug. If your tuning meter has a shunt to increase its range, it is a good idea to incorporate a switch so that the shunt can be disconnected while setting the sensitivity, so getting a larger movement of the meter needle.

To "tone" users the above tuning procedure may seem somewhat laborious but 3 to 4 minutes covers my check adjustments of the receiver before a morning's flying as major adjustments are not necessary after installation in a model. This is carried out by using a harmonic of the crystal oscillated running on reduced voltage, maximum distance from the transmitter being no more than 8 to 10 feet. The prototype receiver, when

(Continued on Page 34)

NEWS AND VIEWS (Continued)

is adaptable to any model. The excellently presented kit contains chrome plated undercarriage legs, nylon nose wheel brackets and bushes, 2½in. wheel and complete brake set-up. Price: £6/5/- the set. Expensive, but an amazing box of bits and pieces.

For anyone interested in trains, they had a terrific range with engines at to over £100 each—a catalogue will only cost you 5d. postage. Long recognised as the R/C specialists, the **North Coast Hobby Centre, Lismore, N.S.W.**, has a terrific range of C.G. Transmitters and Receivers, O.S. Silvertone, Krafts up to ten channel relayless superhets, fabulous, also Bonner Duromites, Trasomites (for relayless) and the new Johnson .36 R.C. motor—a beauty.

O.S. Distributors, 2 Erasmus Street, Surrey Hills, Victoria, advise that the following are available through State wholesalers. Glow plugs No. 0 4/11, No. 3 9/3, No. 6 12/6, treaded scale airwheels 1¾in., 2in., 2½in., 3in. again available after 12 months. The new O.S. .49 R.C. ball bearing motor is a very smooth performer. Most notable at the Nats was its throttle response and slow idling without "flame out". Good value at £14/10/-. O.S. 8 and 10 channel multi certainly proved itse reliability at the Nats.

New Max Special: This engine is supplied with pressure attachments and racing jets as standard fittings and has a redesigned crankshaft made from special steel with racing porting. Peter Chinn has just finished doing a complete test on this motor and reports in recent correspondence that the unit is very flexible and recorded no less than .79 B.H.P. This, of course, makes it one of the most powerful 5 cc. engines available on the world market. Price is a reasonable £8/19/6.

Recent additions include the six volt Six Channel Receiver and matching crystal controlled six channel transmitter. The lightweight receiver will fit easily into 2½ c.c. powered R/C models and features a printed circuit mounted flat on the base of the metal case, which incidentally is thicker than usual and anodised gold. One of these outfits is being flown very successfully in a Cicada, using three Bonner Servos and already a number have been sold to enthusiasts in N.S.W. and Vic. Some Victorians are building Pylon Racing Models for the Six Channel Gear.

Potential top seller is the new miniaturised 4A II Receiver, selling at £14/12/6. This is probably the world's smallest valve receiver and weighs all up in a strong metal case only 1.8 oz. With a valve as a detector and transistors as amplifiers, the receiver cannot be upset by any extremes of temperature, and the first one to reach Australia has already gained third place in the single event at the Nationals. H.T. voltage is 22½ and L.T. 1½ volts, size 2¼in. x 1½in. x 1in.

Some weeks ago Ron De Chastel placed on the market his first batch of Model Engine Fuel blended and packed by himself under the label of "**Triple Star Fuel**". At present I have only two blends, straight Glo and straight Diesel, both packed in ½ pint screw-top cans and also in 1 pint screw-top cans. This is the first time 1 pint cans have been available. Brisbane prices are 4/6 for the ½ pint and 7/9 for the 1 pint. At a later date, Ron will introduce a racing blend to add to the range. He is using only the best available ingredients with proportions I have used and tested over the years. Both blends are a step ahead of the usual home brew.

Available from Gorries.

Ace Plan Service, of 176 King Street, Newtown, sent us copies of their "Corroboree" and "Smoothie Junior" stunt designs. There are very very well presented and neatly drawn. Anyone interested in a better class of stunter will find these ideal.

The "Corroboree" spans 51in., is fully flapped and takes all .29 to .35 inverted motors.

"Smoothie Junior" is a little easier to construct and spans 42in. for upright .19 to .29 motors (the new Glo Chief .19 would be ideal).

AUSTRALIAN STATE SECRETARIES:

N.S.W.A.A.—Mr. I. Stowe, Kildare Road, Blacktown, N.S.W.

V.M.A.A.—Mr. L. Edwards, 102 Willis Street, Hampton, Victoria.

S.A.A.A.—Mr. A. Larritt, 17A Bagot Avenue, Torrensville.

T.M.A.A.—Mr. S. Ralpt, 141 William Street, Devonport, Tasmania.

W.A.M.A.A.—Mr. N. Mitchell, 64 Deanmore Road, Scarborough.

N.T.M.A.—Mrs. J. Cunningham, c/- Handcrafts and Hobbies, Cavanagh Street, Darwin, Northern Territory.

Q.M.A.A.—Mr. A. W. Bettens, 108 Ridge Street, Greenslopes, Queensland.

(15th Aust. Nats. Continued)

Ray Silva, from S.A. Their team racer did not look anything special, but it certainly had the speed and laps. For those who like to fiddle with motors, their secret is an Enya 29, ball bearing crank case with an extended Venturi and an Enya 3B piston and cylinder liner hand-lapped. Again Brian Eather should have won this race, using a similar motor to Ray Silva. They were recording a good turn of speed and phenomenal laps of 84 per tankful. However, in the final, due to heat, they lost quite a bit of speed with the long range fuel. This still would not have beaten them as in the first pit stop they had 74 laps and as the motor was slow to start the mechanic richened it a little and failed to return the needle to its original running setting and landed at 62 laps, four from home. Otherwise they would have won with a new record.

"C" CLASS TEAM RACE

This Class provided more models than usual, but still falls well behind in popularity compared to the other Team Race events. The most notable model was Les Squires' Bush Fire, using a Max 3 .35. This was by far the fastest model but for some unexplained reason it failed to start for the first pit stop and Ken Taylor went on to win. From now on all team races (with the exception of the F.A.I.) will be flown 10 mile eliminations (2 heats) and 10 mile final.

Class II Speed was won at 131 m.p.h. by Jack Finnernan, of N.S.W., who, by the way, built the first model aeroplane to be powered by an engine in Australia, way back in the early 1930s. Still at it after all those years! The Class II and Class III showed, as usual, the American Dooling and McCoy motors still reign supreme for speed flying. In Class I the comparatively new Max 15 racing motor from Japan seems the goods, but the times put up suggest the men operating it are not obtaining the utmost from it as it would be the best of its type obtainable.

In the team racing circle the English Oliver Tiger 15 is still the engine to beat in Class I. It appears that way in Australia, anyway. Garbled reports, usually fantastic, do the rounds in this department but nobody has produced the goods yet. The Class II and III events were the usual clash of the Japanese Enya, Japanese Max and English Merco engines. The Class II final was an all-Japanese fly-off with the Enya scooping the pool for first and second and all three were represented in the Class III final, with the English Merco taking first place.

The stunt event showed the Australian flier still copies the American West Coast type model blindly, as do most of the fliers from other countries from what we can read in contemporary publications. It was therefore gratifying to see an original design (a semi-scale Piper Comanche with an English Merco motor) take first place.

The control line scale was also a very good event. Plans Services models again dominated, though third place was won by a model made from a German Graupner kit. Unlike the free flight boys, most used glo-motors, mainly the Japanese Max engines. The only diesel entry was a Viscount Airliner. So, even though it was only one plane, he made it up in quantity even if nothing else. Combat was the usual fast-flying wings with Max 35 engines howling in the noses of them. It was as wild as ever and the only merit in it seems to be the business the balsa dealers do because of it. However, it seems to be fun to be in and it would appear the safest place would be in the centre of the circle.

FREE FLIGHT EVENTS

The free flight field was as good as promised —an almost perfectly flat field; best part of two miles by two to any trees. Despite this fact, numerous models were lost—practically all of them d.t'd. The drift upstairs was a steady 20 to 30 and the thermals were such that timekeepers were seriously considering the use of ankle weights. The results in many events reflected the luck of the lift. Shaun O'Connor's win in Wakefield was not one of these—a well-deserved win — a compensation for his bad luck at Rosewood last year when all agreed he should have won.

What a comeback! Norm Bell, in his first big competition since returning to the game, scored five perfect Max's to clinch F.A.I. Power. Several newcomers had never heard of him, and one of Victoria's "older" modellers collected quite a bit of money after a bet on Norm's chances.

Probably the most exciting event was Class II power, where swift calculation by hard-working Johnny Pfeifer allowed an enthusiastic Grab to announce changes in the position by the minute. A worried Yogi Stowe realised that he needed the possible—180 on 5 seconds to place—and got it. That must be a combination of timekeeper error and sheer luck—or something. Max Nicol was there too—shades of the Camden Nats, 1951-52. When are these old guys going to realise it?

Chuck glider and Jetex went with the lift. Col Stones and Don Boughton were there, both making superlative throws with fantastically smooth pull-out, only to see the model fall down in 35-45 seconds. Seconds afterwards somebody would have a shocking throw that ended in a full loop with a stall at twenty feet — yes, you've guessed it—straight into a thermal and 90 seconds. Les Fahey was foolish enough to feel he needed a trimming flight—so was Ray Fairfield. Bad luck! Both models disappeared, being pursued by a frustrated hawk who just didn't realise chuck gliders can climb at that speed.

Class III Power saw the usually delicate fingered Basil leaning on the front end of his Dooling with a pair of 18in. stillsons. How else do you undo a prop. nut that's resisted even Prosser's powerful wrist? Bas's. ratio of 45 in two flights proves the old "post hole digger" is still with it.

Free flight scale and the wind temped some bods to stay in camp, but six models reached the

field and six flew. Most fantastic sight. Beside the perennial zilch Monty Tyrrell was the SE5 complete with .35 and all flying surfaces gued on. All the pundits licked their lips in prior appreciation of the biggest prang of the Nats. It didn't happen. Bob Greenhill was there too—frightening spectators with a model big enough to carry Hammond's number two son. Les Fahey's Druine took off unassisted on its first attempt and flew to a well deserved win.

THE NATIONALS FLYING SCALE CONTESTS

(By MONTY TYRRELL)

The Scale Planes at the 15th Nats were, by and large, some of the most interesting I have ever had the privilege of judging in conjunction with Derry Brown. The lack of large multi-engine planes may have been a poor thing to the casual spectator, but the models that were present were amongst the best I have ever seen.

The old rules really crucified multi-motors, so this would probably account for the lack of interest in them. The recently adopted rules will, in the future, put all models on a more equal footing as the rules way back favoured the multis in the days when they were prevalent (1956, etc.).

In the free flight contest it was gratifying to see every entry put in a qualifying flight for a change. All eight entrants flew off with no worries within a short space of time and in point of fact the contest was won on the flying and number of attempts score. As it is a flying scale event and not a pretty plane contest, same as control line, this was a good thing. The winning Turbulent (Les Fahey, N.S.W.) may not have been the most impressive plane in the event but he showed in no mean fashion it would fly, on its first attempt, and it proved all-round the winning plane of the day.

The potential winners did not have the operation success of Les, though in most factors their models had a slight edge in point details, etc. (The BE2 of Gern Kitchell and the RE8 of Des Piltz). In fairness to Les, these types of models definitely had more scope for that sort of thing. Therefore, they were second and third respectively.

Of the others, some deserve mention. The best flier was not eligible for competition points whatsoever! The Piper Super Cruiser of L. Smith, with its perfect R.O.G. and flight, was fantastic. It would have placed easily because of this factor except that the entrant didn't submit a plan for fidelity points. It deserves a special mention. The SE5 of G. Bradford suffered by not getting R.O.G. and attempt points, but its flight was the next best of the day and most impressive. The veteran Stosser of Col Stones is always a potential winner till flying time, but for some reason it falls down sadly in this section. Bob Greenhill's large Bulldog is a steady scorer in most departments but the acute lack of details keeps it out of the places. More attention to that would make it a potential threat in most contests.

For some reason Piltz, who has won the last two Victorian FF Scale Championships, didn't manage to get in the flight his models are capable of. Taken all round, it was the best plane of the contest and had it flown as he usually can fly them, it would have won by a comfortable margin. Still, that's the luck of the game.

On the control line ground all models, except for a scratching late in the piece, put in good qualifying flights also and, like the free flight, went through it in remarkably quick time. As the judges wished to go water skiing each day this was most considerate of all the scale contestants and we thank them sincerely.

Full credit must go the the winner, Alan Talbot. He virtually only had to fly to win. I have judged some superb models over the years by Australia's best builders; e.g., Max Newnham's Viscount, Jack Bone's Invader, Tony Shennan's Sopwith Tripe, etc.; but this Bristol F2B stood out alone. Even Cesar Milani would drool over it, if you want my personal opinion. The only fault to really pick with it—and this is said constructively—is it fell down somewhat in the fidelity points. This surprised Derry and myself, as the rest of the model, such as colour, details, construction and all that, were just superb. Same for the Aero Commander of Jeff Cole, of Vic. Its fidelity points were akin to the Bristol and, being the type of aircraft not lending itself to details (plus the stupid old rules which crucified a multi), it was just nosed out of a place. The Viscount was another crucified by the rules. It ran a close tie with the Cole plane, mainly due to lack of details and not getting a small bonus for extra motors.

The Nieuport of Noel Shennan, which came second, came a good second because if Talbot had stayed home it was in the next best box seat. A loop or two would have won the day for it. Until the planes had actually flown, Derry and I could not be really sure who would win as the models were fairly close due to the better fidelity points of the Nieuport. As they just flew around and around the Bristol got it. As for the Graupner kit job of B. McGregor, who came third, it got the top fidelity points of all the planes free flight included. It got good detail points also. As the multi-speed O.S. 15 it was equipped with enabled it to take off, rev. up, fly and land under power and off again, etc., it made up enough points to place where it did. It was a very creditable effort, as was the Aero Commander, for a comparatively junior builder.

Of the others, the Fokker D-7 kit job of J. Densham was the best flier of the contest. I can't help thinking that superb landing was a fluke. To land on grass, tail high, and taxi that far before dropping the tail, is the mark of an expert—or a fluke. It was the type of landing the star stunt fliers dream of. The only crash, the SE5 of John Morgan, shouldn't have happened 'cos a flier of John's experience should know better than to try stunting with a motor running like his was. Not a scale model, anyway. By the way, not too many saw the Walrus amphibian of Lindsay Edwards. He was unlucky enough to defab. it test flying. I think it would have been fairly

safe for a good place with its motor control unit, retracting undercarriage (which worked) and all that jazz.

Being suckers for work, Derry and I worked out and judged the models on two sets of rules. The official F.A.I. (Federation of Antiquated Ideas) Rules and the SAMS (Scale Aircraft Modelling Society) Rules. The only alteration from the official rules was that the Viscount would have been third under the SAMS rules. However, we had to submit the F.A.I. rules for the purposes of the Nats. results. But it did prove how away ahead the Bristol and Nieuport were, as with the usual run of scale models the singles and multis, under SAMS rules, usually finish pretty even. They were still away out in front and were an object lesson to the potential scale modeller.

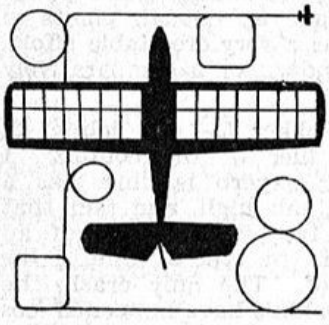
I know I'll be abused but nobody in Victoria could stack up against these two. The SAMS boys will have to take things more seriously after the groundwork they have put in on the rules side. Back to the workbench . . .!

Came the power scramble and what was left of seventy entrants strung out in a line 400 yds. long. Oh, the crashery! Oh, the prangery! Oh, the thermals! "Coop" Cooper desperately punching holes in the tissue to cut down the lift. Did he ever! No lift at all. Borrow another wing and get thermalised again, but timekeeper can't hold model in sight so "Coop" gets only 90 seconds for a 2½ minute flight. Everything was thermalised that could fly—even a Charybdis was thermalised and found two miles away. Did we say every model? Well, every model capable of flight was. Yogi Stowe's model the exception. It looked as thought it couldn't fly and proved it most of the time, but it stayed close to home. Seven minutes in an hour to take third place—compare the winner's time and you'll realise what a combination of wind, thermals, Scotch thistles (sorry, soffrum thistles; the field was covered with them), and tired men does to the performance. Looks like your record is safe for a long time yet, Kev.

C/L STUNT

Stunt had many new faces, and the poorest roll-up for years, so here's your chance to get into the event, fellers. Watch out for the .19 size models this year; it's cheaper.

Round I: Most notable in this round was the inability of most of the contestants to be airborne in 1 minute in order to qualify for bonus points. Also the fact that many of the flyers did not complete the pattern due to engine stoppages in flight. The standard of the early flyers was not of a high quality. The winner, Doug Harlow, and second place getter, B. Eather, both made excellent flights and deserved to be on top at the end of Round I.



Round II: As the results of the contest were to be decided on the total of two flights, contestants had to make two good flights to win. First off in round two was Doug Harlow. Doug did not seem to hold his first round form in this flight and was down on his previous score. Brian Eather was off next. In this flight Brian had the chance of taking first place. He would have needed to have flown better than his first flight though, but seemed to try a little too hard and, like Doug, dropped points in this round. Some of the other contestants raised their standard of flying and scored better this round. Among them was previous Nats. winner Tony Farnan, who would have scored higher but for running out of fuel and did not complete pattern. Tony flew his 3½-year-old T. Bird. This model has now had a first, second and third in three Nats. Another "old timer" was Monty Tyrrell, who flew an enlarged Chief and did some very nice manoeuvres at times, but seemed to fly just for the fun of it rather than as a serious contestant. Of all the manoeuvres executed, some of the best were by Ken Taylor with his Stuka, till he pranged, due to a lean engine run.

The standard of models flown was not up to previous years, except for the Thunderbird of Athol Holtham, who won the honours for Stunt Models, Ken Taylor's Stuka and Geof. Pentland's Chipmunk. These three models were beautifully built and finished and should set the standard for others to aim at.

Has Control Line reached the end of its "Golden Years' 'and Radio taken over Some of the C/L times at the Nats. seem to suggest this. Not one official record was broken, and look at the mob back at free flight also.

Jack Finneran has won Class II Speed six times in recent years and Graham Rice the Class I Speed event four times. Both hold the Australian records for these events.

Did you notice Class I Proto was won with 103 m.p.h. when you consider Class I Speed was only 106 m.p.h.? Same Max .15 Racing Engine was used in both wins, but pressure system broke down in the Speed run. 103 m.p.h., when timed off the ground with wheels, is still moving!

All-in-all, a memorable Nats. **The pleasure** of seeing new hands get to the top and old hands make comebacks; the **disappointment** shared with those who didn't get their desserts; **the heartbreak** watching Dave Anderson's model splatter in pocket size pieces and Kev. Green's beautiful Class III'er bend itself, and superlative A2 launches resulting in flights of less than 30 seconds. **The sportsmanship** where everybody determined to make that last free flight scale model—a Tiger Moth—qualify—and did. Somebody getting Wes Penfold's model away intime for him and watching Wes win the event with a 25.5 to 1; **the effort** of the Vic.'s who time-kept—Don Broughten, Bert Halmshaw in the sun all day—the recovery squad, Mrs. Munro and Mr. Mannion with frozen oranges, Wilton Evans and Derry Brown in there pitching; and Grab—the big, bad Grab, the inimitable, irreplaceable Grab — encouraging, cajoling, watching the clock and generally doing all the things he does which help to make the Nats.

Yes, we'll be in it again! Kev. Green, you might as well bring no models. Shaun O'Connor, get ready to relinquish that crown. Camden, here we come!

The presentation of the prizes was in the R.S.L. Hall at the conclusion of the series and donors and organisers supplied a splendid crop of

useful silverware, **not** trophies. During the evening Keith Hearn (Hearn's Hobbies) was given a special certificate for the World Altitude Record he recently set with a multi-channel radio model. This is also an Australian record, naturally, and as a point of interest is the first world record in aeromodelling to be held by an Australian.

The prizes were presented by the ex-mayor of Echuca (he was in office during the organising stages and was really behind the series for the town). The whole show was a sit-down dinner with comments on the Nationals being given by a senior delegate from each State after the meal, and then the hand-out.

During our pleasant, and most interesting, nine days in Echuca we saw many trade personalities and had a yarn with most of them. We also heard of a few others we couldn't pin down due to reasons mentioned. Most comments were very favourable and the retailers in particular said it was most impressive. Many of these trade people were actually competing though, of course, many were there for professional interest and the social side.

On the retail side we saw Terry Phillipson (Swains, Rockhampton); Reg Loats (H. & R. Loats, Werribee); Tony Farnan, Athol Holtham and Tony Walsham (Melb, Myer's Emporium Hobby Dept.); Ron Richards (Richards, Deniliquin); Vic Hobbs (Melb., Sports Depot); Jim Palmer (Lismore retailer); John McCarthy (Model Dockyard); Trevor Woolnough (McKinnon retailer); Russ Hammond (Coffs Harbour, N.S.W.); Brian Douglas (Shaw's, Echuca); Bill Eunson (Footscray Sports Depot); Josh Currell (Currell's, Echuca); Bob Hyde (Owen's, Ballarat). We even saw Josh Currell roped into use a stopwatch during a temporary shortage of officials!

In the manufacturing, agency and wholesaleing fields, we observed Bill Evans (Geo. Pizzey's, Melb.); Les Heap (Kiddicraft); John Marquette (Austral Hobbies, Sydney); Keith Hearn and John Elliott (Hearn's Hobbies); Bob Thompson (Aeroflyte, Adelaide); George Mallett Central Aircraft); Kevin Green (K. W. Green, Adelaide); Monty Tyrrell (Merco Motors, Melb.); Bob Lambert (East Asiatic Company); Geoff Pentland (Kookaburra Plans & Kits); Leo O'Reilly (M.N. Plans Distributor, Adelaide).

All-in-all, it was a most enlightening holiday as it demonstrated the great interest in aeromodelling in this country. The number plates of the cars around the town, all loaded down with models and bodies, would substantiate this opinion. The technical talks over the friendly drink were prevalent in every bar. It would appear the citizens of Echuca did not have to read the publicity to know what was going on in the town. We certainly hope the Model Plane Association lets us in on it next time.

Results:—

A/2 Sailplane: 1st, B. L. Amey (Vic.), 809 pts.; 2nd, K. W. Green (S.A.), 740 pts.; 3rd, N. N. Bell (Vic.), 694 p.

Wakefield Rubber: 1st, S. D. O'Connor (Vic.), 875 pts.; 2nd, R. Kenyon (Vic.), 849.5 pts.; 3rd B. L. Smith (Vic.), 754.5 pts.

F.A.I. Sailplane: 1st, S. O'Connor (Vic.), 677 pts.; 2nd, L. F. O'Reilly (S.A.), 625 pts.; 3rd, B. L. Amey (Vic.), 598 pts.

Power Ratio Class I: 1st, R. Lloyd (Vic.), 19.94; 2nd, W. Penfold (S.A.), 19.28; 3rd S. O'Connor (Vic.), 14.8.

Power Ratio Class II: 1st, W. Penfold (S.A.), 26.3; 2nd D. A. Ridgeway (Vic.), 25.5; 3rd, I. Stowe (N.S.W.), 25.1.

Power Ratio Class III: 1st, O'Connor and Allamby (Vic.), 16.1; 2nd, F. Lloyd (Vic.), 15.2; 3rd, B. Healy (N.S.W.), 15.0.

Jetex: 1st J. Smith (N.S.W.), 337; 2nd, C. Stones (Vic.), 221.6; 3rd, T. Carveri (Vic.), 213.

F/F Scale: 1st, L. Fahey (N.S.W.), 130.3; 2nd, B. Kitchell (Vic), 124.8; 3rd, D. Plitz (Vic.), 101.9.

Chuck Glider: 1st, S. O'Connor (Vic.), 207.1; 2nd, B. Eather (N.S.W.), 185.6; 3rd V. Hobbs (Vic.), 174.5.

One Hour Scramble: 1st, D. A. Williams (Vic.), 538 pts.; 2nd, A. Cooper (N.S.W.), 534 pts.; 3rd, I. Stowe (N.S.W.), 441 pts.

Multi Radio: 1st, T. Farnan (Vic.), 3,192½ pts.; 2nd, J. Bone (Vic.), 2,804 pts.; 3rd T. B. Prosser (N.S.W.), 2,701½ pts.

Single Radio: 1st, T. B. Prosser (N.S.W.), 1,067 pts.; 2nd, K. G. Hollingworth (N.S.W.), 1,043 pts.; 3rd, G. Tuck (Vic.), 971 pts.

Open Rubber (unofficial): 1st, S. O'Connor (Vic.), 783 pts.; 2nd N. Allamby (Vic.), 594 pts.; 3rd, R. Kenyon (Vic.), 574 pts.

Junior Rubber (unofficial): 1st, P. Kenyon (Vic.), 853 pts.; 2nd, J. Kenyon (Vic.), 805 pts.; 3rd, R. Wilkins (Vic.), 802 pts.

Junior Hurl Glider (unofficial): 1st, G. Boughton (Vic.), 212.4 sec.; 2nd, L. Teasdale (Vic.), 100.5 sec.; 3rd, B. Atkinson (Vic.), 94.8 sec.

Intermediate Radio (unofficial): 1st, J. Eyre (N.S.W.), 875 pts.; 2nd, N. Fell (Vic.), 797½ pts.; 3rd, B. Healy (N.S.W.), 784 pts.

Class III Team Speed: 1st, K. Taylor (Vic.), 8.34.3; 2nd, Oehme and Silva (S.A.), 9.37.5; 3rd, C. L. Squires (Vic.), 10.4.1.

F.A.I. Team Speed: 1st, B. Eather (N.S.W.) 5.55; 2nd, Oehme and Silva (S.A.), 7.19.2; 3rd, N. King (N.S.W.), —.

Proto Speed Class I: 1st, Holtham and Rice (Vic.), 37 sec.; 2nd, J. Morgan (N.S.W.), 44 sec.

Proto Speed Class II: 1st, J. Morgan (N.S.W.), 32.6 sec.; 2nd, Holtham and Rice (Vic.), 34.9 sec.; 3rd, A. Kimonides (Vic.) 36 sec.

Control Line Scale: 1st, A. Talbot (N.S.W.), 339 pts.; 2nd, N. Shennan (N.S.W.), 321.5 pts.; 3rd, B. McGregor (N.S.W.), 298.9 pts.

Combat (senior): 1st, A. Kerr (N.S.W.): 2nd, N. R. Mitchell (W.A.); 3rd, D. Brown (Vic.).

Combat (junior): 1st, H. J. Febres (Vic.); 2nd, B. McGregor (N.S.W.); 3rd, J. Hallowell (Vic.).

F.A.I. Power: 1st N. N. Bell (Vic.), 900 pts.; 2nd, R. W. Greeves (Vic.), 853 pts.; 3rd, R. Lloyd (Vic.), 823 p.

State Supremacy Points: V.M.A.A., 77 pts.; N.S.W.A.A., 46 pts.; S.A.A.A., 18 pts.; Q.M.A.A., 2 pts.; W.A.M.A.A., 2 pts.

Senior Champion of Champions: 1st, S. O'Connor (Vic.), 11½ pts.; 2nd, B. Eather (N.S.W.), 7 pts.; 3rd R. Lloyd (Vic.), 6 pts.

Junior Champion of Champions: 1st, J. Hallowell (Vic.), 4pts.

Stunt: 1st, D. Harlow (Vic.), 1,015.5; 2nd, B. Eather (N.S.W.), 965.75; 3rd, T. Farnan (Vic.) 745.2.

Stunt (junior): 1st, J. C. Hallowell (Vic.), 969.25; 2nd, B. D. Stretch (Vic.), 933.6; 3rd, N. R. Vains (Vic.), 823.3.

Class I F.A.I. Speed: 1st, G. Rice and A. Holtham (Vic.), 106 m.p.h.; 2nd, L. Trimmer (N.S.W.), 104 m.p.h.; 3rd L. Cantwell (N.S.W.), 102.2 m.p.h.

Class II F.A.I. Speed: 1st, J. Finneran (N.S.W.), 130.8 m.p.h.; 2nd, A. Kimonides (Vic.), 125.7 m.p.h.; 3rd, B. Blomberry (N.S.W.), 124.9 m.p.h.

Class III F.A.I. Speed: 1st, P. Ellis (Vic), 17.1 sec.

Class ½A Team Speed: 1st, Gleneig Team (Vic.), 12.52.5; 2nd, L. Neiht (Qld.), 15.14.2.

Class ½A Team Speed (junior): 1st K. Brooks (N.S.W.), 14.41.2; 2nd, L. Follet (Vic.), 18.27.2; 3rd, D. Hale (Vic.), 19.21.2.

Class II Team Speed: 1st, N. Moore (S.A.), 8 min. 36 sec.; 2nd, Oehme and Silva (S.A.), 8 min. 20.3 sec.; 3rd, Holtham and Ellis (Vic.) 8 min. 31.5 sec.

(Continued from Page 28)

tuned in this manner, gives a current change from idling at 7 m.a. to 6 m.a. at ½-mile ground range, with about 5 of the 6 m.a. as relay current.

The receiver is reasonably cheap to build and still allows scope for experimenting. The O.C. 76's could be probably replaced by the cheaper 2N217 without any loss in performance, and if you want to push the sensitivity a stage further another transistor can be added by wiring another 4.7K resistor in the Emitter Circuit of the second transistor and coupling the third transistor in the same manner as the second to the first.

No apparent increase in current rise will occur as the current is limited by the relay coil resistance, but the third transistor will be operating in a saturated condition so that the current rise in the second transistor can fall with increasing range without a decrease in relay current.

I have been unable to obtain a V15/201P or suitable substitute in Q'land to use as the second transistor and so dispense with the relay. The escapement battery positive would be connected to the 22½ V. positive and the collector of the V15/201P connected through the escapement to negative side of the escapement battery. The collector of the first transistor would now have to be connected to the 22½ V. negative via a 4.7K resistor. This would give a Receiver of very light weight and extra low drain of the 22½ volt battery.

The P.C. board shown could be still further reduced in size as this was a first attempt at this layout and improvements could easily be made.

Don't, however, be tempted to use the DL66 or DL68 series of valves to produce a super miniature receiver as they do not seem to be capable of supplying the small amount of power that is absorbed in the voltage doubler-rectifier circuit.

The 1AG4 is a possible, but the drain of a 3 V4 on a D.E.A.C. is only 80 m.a. so that a single 450 m.a. hour cell provides a comfortable day's flying. Thoroughly clean and tin the pins of the 3 V4 before tying to the panel and you will have no trouble with the connections.

Normal spark suppressors should be fitted across escapement coils.

(Continued from Page 22)

Proto Speed: 1, C. Weetly, Ryde, 37.1 sec.; 2, G. Parker, P.G.F.C., 38.9; 3, A. Kerr, Ryde, 39.

Jetex: 1, R. Summersby, Doonside, 183 sec.; 2, K. Murray, M.F.F.C., 74.5; 3. A. Butler, M.F.F.C., 62.5.

Hurl Glider: 1, D. Hegarty, M.F.F.C., 175 sec.; 2, I. Roach, Maitland, 168 5; 3, R. Murray, Canberra, 150.

Restricted F.A.I. Sailplane: 1, D. Hegarty, M.F.F.C., 248 sec.; 2, G. Robb, M.F.F.C., 224; 3. A. Brown, Orange, 31.

F.A.I. Team Race: 1, G. Barker, P.G.F.C., 6.27½ min; 2, J. Wallace, Doonside, 6.30½; 3, H. Flanagan and L. Toft, Coffs Harbour, 7.50.

Class III Team Race: 1, A. Coggins and R. Freestone, Skyhawks, 826.6 min.; 2, W. Cook, Olds, 838.6; 3, W. Shurmer, Doonside, 14.40.

Class II Team Race: 1, A. Kerr, Ryde, 1,146.3 min.; 2, D. Moleman, E.D.M.F.C., 1,147.3; 3, H. Wilkinson, Epping, 1,222.7.

Power Ratio Class I: 1, J. Lewis, Maitland, 16.0 ratio; 2, I. Roach, Maitland, 13.5; 3, D. Hegarty, M.F.F.C., 11.1.

Power Ratio Class II: 1, J. Lewis, Maitland, 17.2 ratio; 2, R. Towell, Doonside, 15.0; 3, B. Pope and B. Lee, P.G.F.C., 13.7.

Power Ration Class III: 1, B. Healy, Doonbats, 12.1 ratio; 2, F. A. Latham, 11.6; 3, I. Stowe, Doonside, 5.8.

Radio Control Single: 1, B. Healy, Doonbats, 997½ points; 2, J. Marquette, R.C.M.C., 938¾; 3, K. Hollingworth, R.C.M.C., 923½.

Open Combat: 1, B. Howard, E.D.M.F.C.; 2, D. Fowler, Skyhawks; 3, R. Tyler, Olds.

Control Line Scale: 1, A. Talbot, Doonbats, 136 points; 2, N. Shennan, M.F.F.C., 130; 3, R. Woodcock, Epping, 127.

Free Flight Scale: 1. A. Butler, M.F.F.C., 114 points; 2, G. Hughes, 109; 3, J. Kinny, Skyhawks, 71.

Power Scramble: 1, A. Cooper, Doonside, 1,290 sec.; 2, R. Rees, Newcastle, 1,135; 3, K. Murray, M.F.F.C., 1,126.

The Champion of Champions Trophy: Awarded to A. Butler, M.F.F.C.

Club Championship Trophy: Won by Metropolitan Free Flight Club with 29 points.

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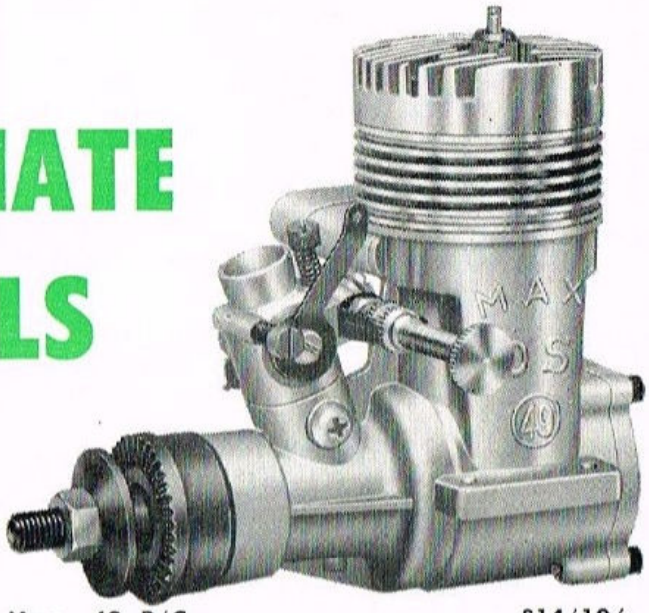

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- ★ Second F.A.I. Power
- ★ Third Single Radio
- ★ Third Senior Stunt
- ★ Third Class II T/R
- ★ Third Class II Proto
- ★ First Junior Combat
- ★ First Junior Stunt
- ★ Second Class III Power
- ★ Second Senior Combat
- ★ Second Junior Stunt
- ★ Second Junior Combat
- ★ Second Multi Radio
- ★ Second Class II Power
- ★ Third Class III T/R
- ★ Third Junior Combat

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Best Stunt Model, A. Holtham, Max II .35.

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Fifth N.S.W. State Championships

To be conducted by the N.S.W. Association of Aeromodellers in association with the Model Aeronautical Association of Australia.

To be held at

CAMDEN AERODROME

By sanction of the Dept. of Civil Aviation.

On Saturday, Sunday, Monday, March 21, 22, 23, 1962

Open to all Aeromodellers in Australia and Overseas holding current F.A.I. Licence.

(Tear off here)

ENTRY FORM

Junior Stunt	**Class II Team Race**	**Single Radio**
Open Stunt	**Chuck Glider**	**F.A.I. Power**
F.A.I. Speed	**F/F Scale**	**A/2 Sailplane**
Class II Speed	**Power Scramble**	**Wakefield**
Class III Speed	**F.A.I. Team Race**	**Open Rubber**
Class II Proto Speed	**Junior Combat**	**Open Power Duration**
Junior 1/2A Team Race	**C/L Scale**	**.020 Duration**
Open 1/2A Team race	**Multi Radio**	**Restricted Sailplane**

Cross out the events you do not intend to compete in.

Entry Fee: 5/-. Nomination Fee: 3/- per event.

Closing date for entries: Friday, 13th April, 1962. Postal entries postmarked 13th April, 1962, will be accepted.

Late entries: Double the above fees—accepted until midday 20th April, 1962.

Processing: All models, except scale, will be processed on Friday, 20th April, and must be submitted before 8 p.m.

The Management reserves the right to change any event at any time if circumstances so compel. Entry fees must accompany entry form and all monies shall be made payable to the N.S.W.A.A. and addressed to :—

The Secretary,
Box 3530, G.P.O.,
SYDNEY.

DECLARATION: I hereby agree to accept the Contest Director's and Appeals Committee's decisions as final and to comply with any requests made by the N.S.W.A.A.

Signed.....

I am entering in ..... events and enclose .....

Name ..... Date of Birth if Junior .....

Address .....

I am flying for ..... Club. My F.A.I. No. is .....

OFFICIAL USE ONLY

Amount Due	Amount Paid	Receipt No.	Financial to	Flight Cards

5th N.S.W. STATE CHAMPIONSHIP, 1962

CONDITIONS OF PARTICIPATION

(Notes for your guidance)

RULES: All events will be flown to the current M.A.A.A. Rules Book except as noted hereunder.

1/2A TEAM RACES: Maximum motor capacity 1.66 c.c. (.099 cu. ins.). Max. tank capacity 7.5 c.c. Min. line length 42 ft. Min. line diameter .006in. Must be steel wire. One heat only of 10 miles. All other specifications as for previous Class 1 T/R (75 sq. ins. min. wing area; 3in. x 1¾in. fuselage).

TEAM RACING: In all classes except F.A.I. there will be one qualifying flight and one heat only (of 10 miles), the four fastest times to enter the final.

COMBAT: There will be no reperchage heat in Open Combat. In Junior Combat a separate reperchage competition will be run for the first round losers only.

Lines for reserve models must be processed.

Heats will be re-run if the streamer blows off in the first three minutes after take-off. Such re-run will be immediately after the next heat or, if there is no succeeding, then not less than three minutes nor more than six minutes after the landing of the last model.

RESTRICTED SAILPLANE: No restrictions on design of model except:—

1. Model must weight less than 8 ozs. or more than 25 ozs.
2. 164 ft. max. line length.
3. 5 flights, 3 minute maximums.

PROTO SPEED CLASS II: Engine capacity 2.501 c.c. to 5 c.c. Min. line length 60ft. Min. diameter .018in. (single), .012in. two lines. Pull test 20g. at Contest Director's discretion. Pylon must be used for record purposes. Models must take off under their own power. Models will be timed for 1 miles (14 laps) from time of release. Model specifications as per Class II T/R except for tank capacity and type unrestricted.

F.A.I. TEAM RACE: Models must have a min. cross sectional area of 39 sq. cm.

SCALE F/F AND C/L: Models must be handed in for processing and judging immediately after they have completed a qualifying flight.

F.A.I. POWER: Motor run for this event will be 10 seconds max.

OPEN POWER DURATION: Total motor run for 5 flights shall be 35 seconds. A motor run in excess of 10 seconds or any less figure which brings the total to more than 35 seconds shall constitute an attempt. Each contestant shall be allowed two attempts to complete each flight. The highest aggregate shall decide the winner. In the event of two contestants achieving five maximums there shall be a sixth flight with the motor run reduced to six seconds. In the event of any further tie the motor run will be progressively reduced by one seconds until the tie is broken. There shall be only one attempt for the sixth and subsequent flights. There shall be no minimum motor run. It shall be an attempt when the model flies for less than 20 seconds.

CHUCK GLIDES: Maximum flight time 60 seconds.

POWER SCRAMBLE: All contestants in Power Scramble must present themselves on the field with a Time Keeper, Sweep Second Hand watch and pencil by 2.30 p.m. A Le Mans start will be used.

.020 DURATION: Maximum dimensions of model 36in. Minimum weight 4 ozs. plus 1 oz. Pilot. Max. motor capacity .020 cu. ins. Model to have a cabin giving at least ½in. x ½in. forward and side vision. A min. of two wheels shall be revolving during take off. Models must R.O.G. Min. flight time 40 secs. Max. 3 minutes. Max. motor run 20 seconds. 6 attempts permitted to make 3 flights.

GENERAL: No motors shall be run at all on Good Friday or before 9 a.m. on Easter Monday.

No motors shall be run in the camping area at any time. This condition shall be strictly and rigidly enforced.

Contestants may move in on Friday 20th April. Camp sites will be available at 5/- for tent space. It is regretted that electric power or provisions for meals cannot be arranged, but there will be a good canteen on the grounds supplying soft drinks, sweets, chips, etc. There are also many excellent restaurants in Camden, a distance of 2 miles.

Contestants are earnestly requested to keep the camping site and aerodrome tidy. The continuance of the concession by the D.C.A. in allowing us the use of Camden for our contests depends greatly on your tidiness. Please place all debris in the bins provided.

As usual a Hobby Shop will be set up to provide the items you have either broken or forgotten.

TROPHIES AND AWARDS: Trophies for 1st, 2nd and 3rd place-getters will be presented on the ground at the completion of flying on Monday, 23rd.

CHAMPION CLUB: There will be an award for the Club whose members score the highest points. The Club nominated on your entry form will receive the credit for any points won.

DEFINITION OF A JUNIOR: Any person whose 16th birthday falls on or before the 23rd April, 1962, will be judged as a senior, all other persons will be considered juniors.

PROGRAMME

FRIDAY, 20th:

Moving in and Processing. The Airfield is out of bounds until daylight on Saturday. No models will be accepted for processing after 8 p.m.

SATURDAY, 21st:

- 6-7 a.m. 1st round A/2 Sailplane, Wakefield.
- 7-8 a.m. 2nd round A/2 Sailplane, Wakefield.
- 6-8 a.m. 1st round Open and Junior Stunt.
- 8-9 a.m. Breakfast.
- 9-12 noon. Continuation 1st round and 2nd round Open and Junior Stunt.
- 9-12 noon. 1st round Multi Radio.
- 9-10 a.m. 3rd round A/2 Sailplane, Wakefield.
- 10-11 a.m. 4th round A/2 Sailplane, Wakefield.
- 11-12 noon. 5th round A/2 Sailplane, Wakefield.
- 9-9.30 a.m. Qualifying Flights Open 1/2 A Team Race.
- 9.30-12 noon. Open 1/2A Team Race.
- 12-1 p.m. Lunch.
- 1-5 p.m. Speed: F.A.I., Class II, III and Proto Speed Class II.
- 1-5 p.m. Restricted Sailplane rounds 1 to 5.
- 1-5 p.m. Open Rubber, rounds 1 to 5.
  NOTE: First two rounds of Open Rubber and Restricted Sailplane must be completed by 2.30 p.m.
- 1-5 p.m. Continuation 2nd round Open and Junior Stunt.
- 1-5 p.m. Junior Combat.
- 1-5 p.m. 2nd round Multi Radio.

SUNDAY:

- 9-10 a.m. Qualifying flights Junior 1/2A and Class II Team Race.
- 10-12 noon. Junior 1/2A Team Race and F.A.I. Team Race.
- 12-1 p.m. Lunch.
- 1-2 p.m. F.A.I. Team Race.
- 2-5 p.m. Class II Team Race.
- 1-5 p.m. C/L Scale.

MONDAY:

- 6-8 a.m. Free Flight Scale.
- 6-7 a.m. 1st round Open Duration and F.A.I. Power.
- 7-8 a.m. 2nd round Open Power Duration and F.A.I. Power.
- 8-9 a.m. Breakfast.
- 9-12.30 p.m. 1st and 2nd rounds Single Radio.
- 9-10 a.m. 3rd round Open Power Duration and F.A.I. Power.
- 10-11 a.m. 4th round Open Power Duration and F.A.I. Power.
- 11-12 noon 5th round Open Power Duration and F.A.I. Power.
- 9-12 noon. Open Combat.
- 12-1 p.m. Lunch
- 1-2.30 p.m. Chuck Glider.
- 1-2.30 p.m. .020 Duration.
- 1-2.30 p.m. Open Combat.
- 3-4 p.m. Power Scramble.
- 4.30 p.m. Presentation of Trophies.

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