AUSTRALIAN model HOBBIES

1/6

MARCH. 1950

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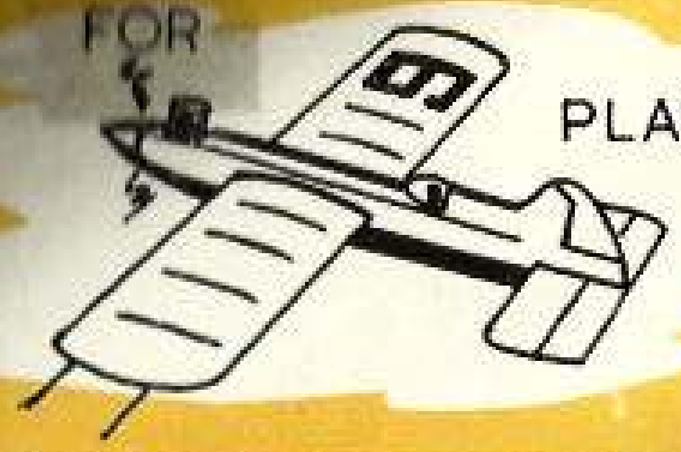

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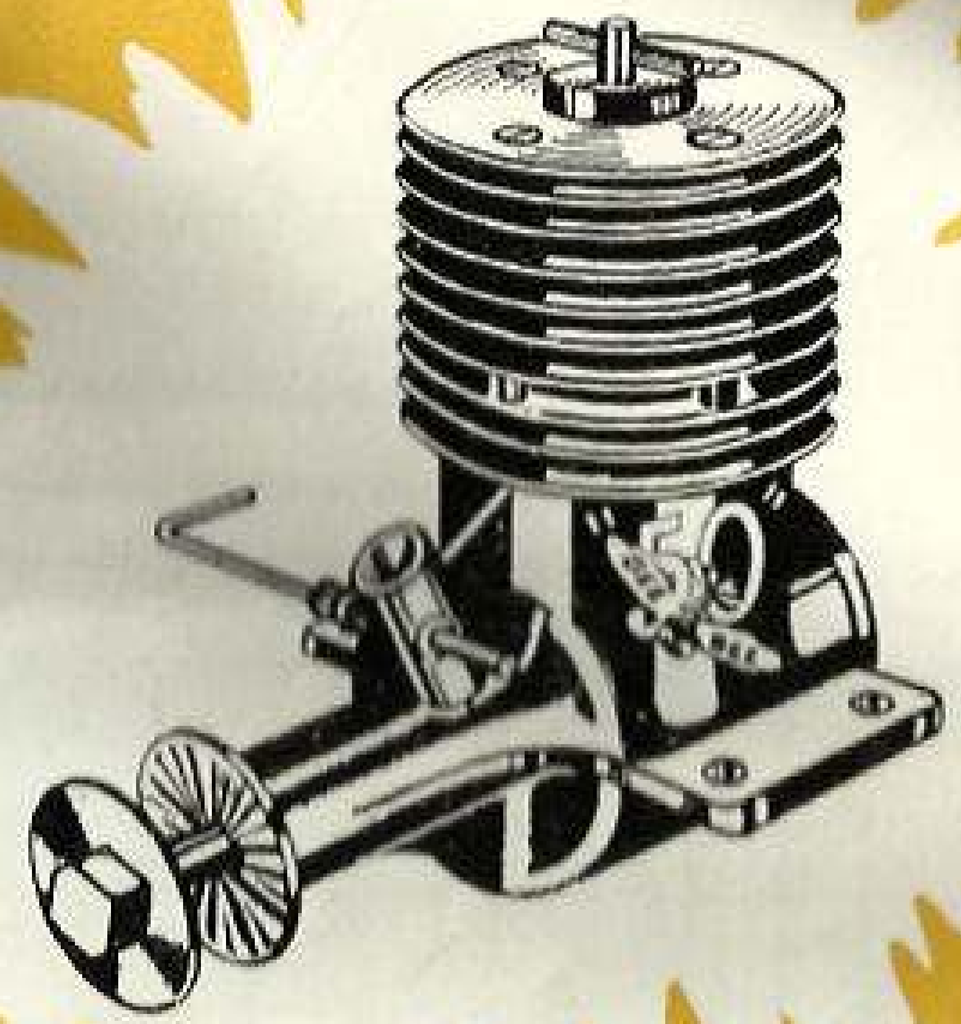

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AUSTRALIAN Model HOBBIES

VOLUME I, No. 4. MARCH, 1950

Editor: W. WILTON-EVANS. Assistant Editor: W. G. FENNER. Art Editor: M. J. ROBINSON.

Editorial Address: 3 PERCIVAL STREET, GLENELG, SOUTH AUSTRALIA

EDITORIAL

Despite our promises and good intentions regarding the monthly publication of Australian Model Hobbies, this issue, promised for January, is two months late.

No effort has been spared to make it the best yet, and the staff of A.M.H. feel pleased with the result and think that they have at last produced an Australian Model Magazine equal to overseas publications.

Although A.M.H. does not carry the flashy advertisements of American or British magazines, the actual content is greater than most of these. Over thirty full pages of plans, news, photos, articles, etc.

Model hobbies in Australia are becoming more and more popular, particular model aircraft and speedcars. A new 70 foot car track has recently been completed in Melbourne and a small one in Adelaide and the organisation behind model speedcar racing is particularly good. Model aircraft, always one of the most popular sporting hobbies, is gaining ground and during Easter this year the Australian National Championships will be held in Melbourne. Teams from all States will be competing.

This progress of our hobbies is good to see and A.M.H. hopes that it can help in their advancement.

COVER PHOTO.—An embarrassing moment for Roy Sands. His car spun around and he sits facing the oncoming cars. A most uncomfortable situation.

Tony Shennon launching his original design model powered with an Elfin 18 diesel. Tony is one of a keen group, "The Rockhampton Aeromodellers."

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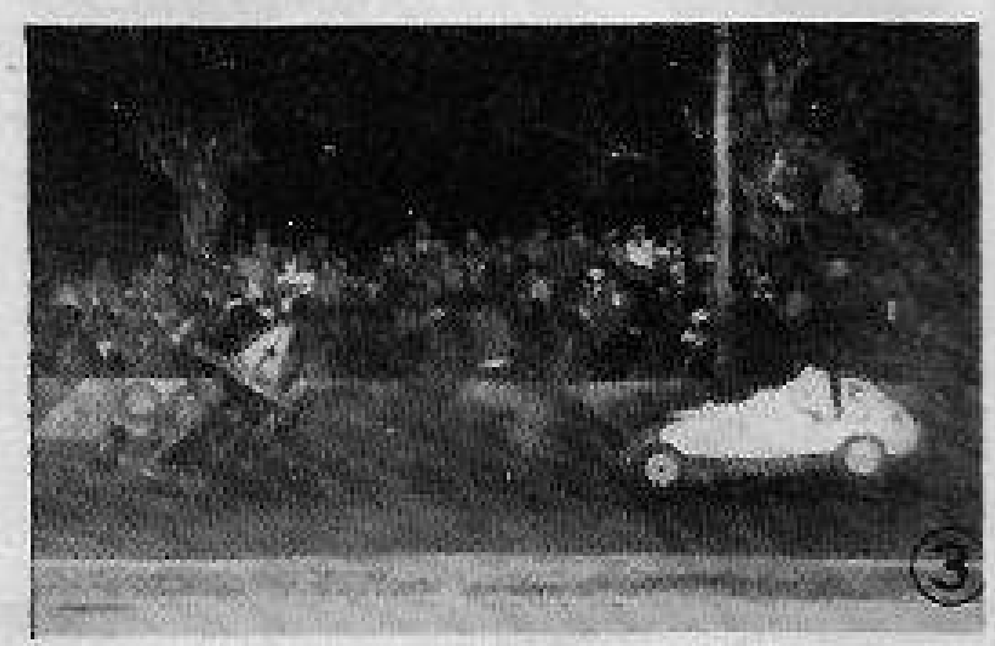
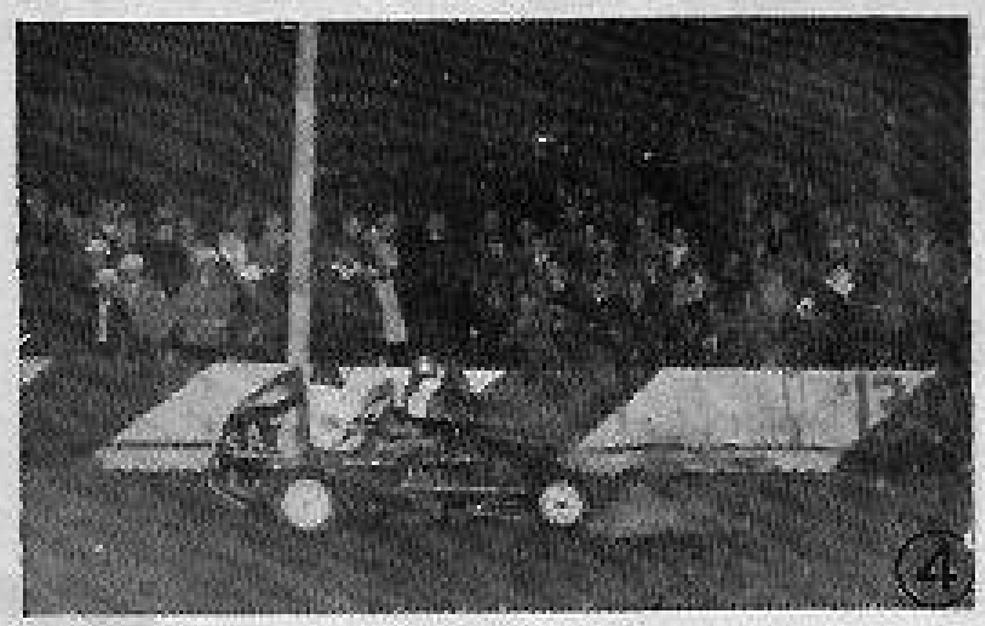
PHOTOS BY RON PEDERICK

CRASH!

BUT THEY WALK AWAY....





DIRT track speedcar racing is certainly a most spectacular form of car racing. Each week during the summer months thousands of people throughout Australia witness incidents such as those depicted on these pages.

In Australia we have a mixed programme on our speedways consisting of speed cars, motor cycles, and sidecars, whereas in America cars are the main interest, and in England the bikes rule supreme. Tracks are now operating in all States on the mainland, and the speed cars are fast challenging the pride of place held on programmes by the solo bikes.

The added colour of the brightly painted cars, and the interest in their various types of motors, which range from the famous JAP 8/80 twin cylinder motor cycle engine to the large Ford V8 car engine, is proving to be an advantage to the speed cars over the solo bikes, which invariably appear the same to the spectator (solo enthusiasts will no doubt differ in opinion).

The sight of a dozen and sometimes even more of these high powered cars racing around the small quarter mile and third mile dirt covered circuits, throwing dirt, belching smoke and frantically jostling for a position of advantage, has no equal in motor sports.

As must be the case when split second timing and judgment are the masters, mistakes occur and things go wrong. It is on these occasions that the unexpected happens, and with the spectators on their toes many of them pilot their favourite speed car driver through each little skid, swerve, bump and crash from their position on the grounds or in the grandstand.

Occasionally, of course, there is the rare accident when the drivers are badly hurt. It is not this that the spectators enjoy, but the skirmishes, bumps, and rolls and the disintegration of the safety fences when the cars plunge through and the drivers walk away, in many cases racing later in the night.

In not one of the spectacular crashes shown on these pages were the drivers of the cars hurt.

Photo No. 1 shows Cyril Anderson, of Victoria, driving a V8 60 Edelbrock, almost over the top of the safety fence, and photo No. 5 is of Cyril where he landed after running along the top of the safety fence. This incident occurred during a 15 lap race. The big V8 car driven by Jack O'Dea (No. 56) in the lead with Cyril close behind with the pace on. O'Dea went into the corner with his front wheels on the rails; a few yards behind, a little further out on the track, came Harley Hammond. Cyril Anderson was driving hard and kept his foot down in an attempt to go around the back of Hammond. The heavy car carried on and mounted the fence, doing a wall of death drive around the fence until, when almost over the top, it struck a light post and was thrown back down on to the track. Although Cyril's car was badly damaged and, as can be seen in the photo, his crash helmet ripped from his head, he was unhurt, and after a short rest was walking around the track.

Photo No. 2 shows an incident on the new tricky Rowley Park circuit in South Australiia. This is only a fifth of a mile track and has four pronounced corners, which makes racing unpredictable, anything can happen, and often does. The cars in the photo are driven by Wally Watson and Tut Hogan. Wal is one of the few pre-war South Australian drivers who has returned

5

6

to the game. He was driving fast into the fourth corner when his car spun round and was hit amidships by Tut Hogan. Both cars were immediately covered in dust and the crowd waited and were glad to see, when the dust cleared, both drivers sort themselves out and again walk away unhurt.

Photo No. 3 shows Roy Sands as his car's front axle is folding and about to roll over on its back against the fence. The car was very badly damaged. Sands went into the corner with No. 5, driven by Ray Huppatz, on his outside. Halfway round the bend the rear of Sands' car hit No. 5 and Sands was thrown on his back. Officials, the fire truck and ambulance men rushed to the scene. The car was rolled right way up, the crowd hushed, but again the driver was unhurt, and the race went on.

The corner photo shows two cars, in not very spectacular positions, but the few seconds before this photo was taken, fast and furious slides, spins and bumps had taken place. Harley Hammond (No. 7) and the other car sandwiched between him and the fence, both spun completely around and bumped whilst driving at high speed around a corner. With these two cars spinning the rest of the field had to pick their way through, which resulted in some anxious moments for spectator and driver alike.

The next shot shows Cyril Anderson, of Victoria, beneath his car after running around the fence. Notice the driver's helmet by the official's foot, torn from Anderson's head as he hit the ground.

Photos 6 and 7 show two incidents in an exciting happening. Sam Elsworthy in No. 23, travelling too fast, over-slides into Sammy Bright. The bump was heavy and No. 23 almost rolled over the other car, but luckily after bouncing high in the air Sam Elsworthy's car came back down on four wheels. Sam struggled to regain control and then shot off down the straight after Bright. He had only travelled a few yards when flames started to stream from the engine of No. 23. This was one time when things were too hot for Elsworthy. He undid his safety belt and climbed up on to the back of the car, waited until the speed had dropped a little, and then he jumped. He is a big man and appeared to hit the ground very hard, but up he got and walked away, and the race continued.

Thrills, the unexpected, and the spectacle of speed car racing is always there.

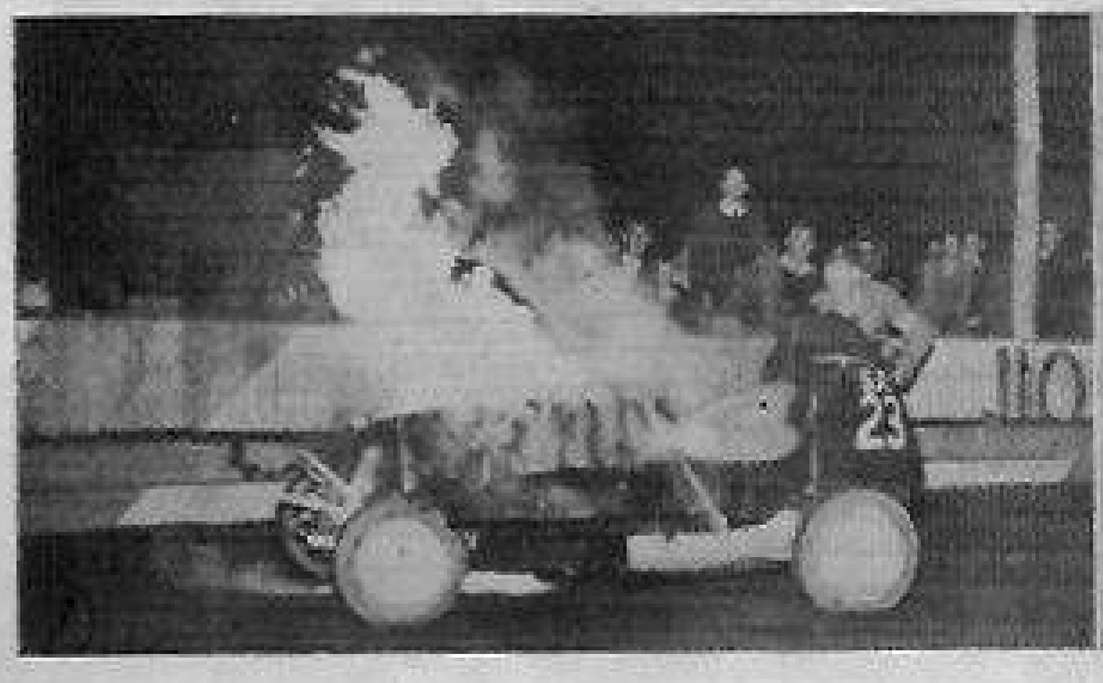
Our last photo shows ace Victorian driver Stud Beasely in his Edelbrock V8 60 crashing broadside on into our old friend Sam Elsworthy, in No. 3, and this time things were much too cold, for No. 3's motor stopped cold halfway round a bend when Beasely was right behind. He immediately tried to spin his car away, but too little time was left, resulting in a broken axle for Beasely.

Occasionally one comes into contact with people who contend that speedway racing is an elaborate circus-type of performance, owing its success to a clever showmanship technique, and that it is a complete farce so far as the competitive element is concerned.

Speedway certainly does owe much to its colourful showmen, but nothing is farther from the truth when its critics allege that the result are known before the riders or drivers come on to the track.

Speedway can be one of the most highly paid sports, and one of the most dangerous when things go awry.

A speedway driver or rider at the top cannot relax his grip. He has no let-up. He must try to win every race, and the strain that comes with that outlook must be considerable. So next time you hear some grandstand expert claiming that a race was worked to keep the ace on top, or some such thing, let him or her know that you are a speedway *enthusiast*.



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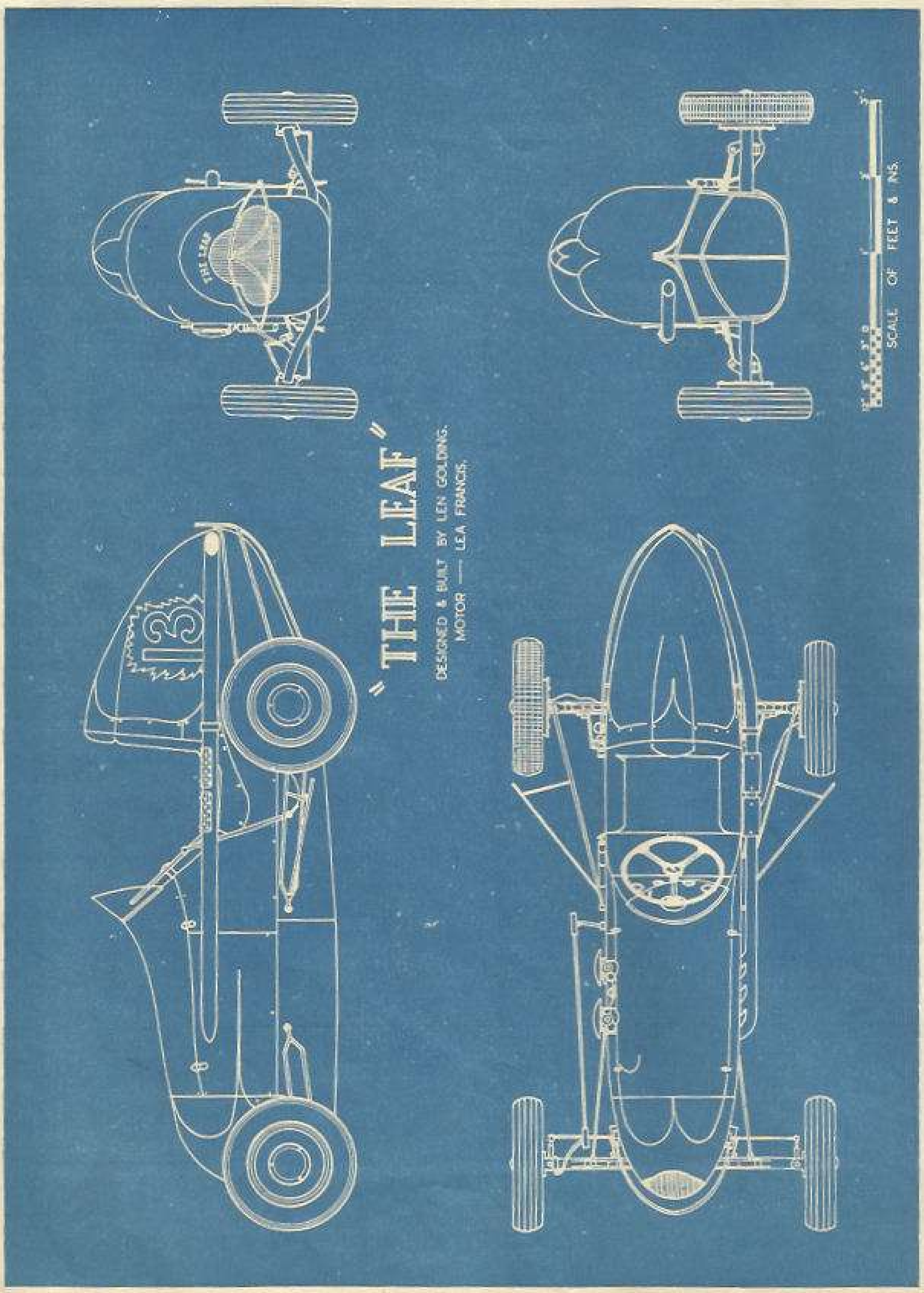

"THE LEAF"
DESIGNED & BUILT BY LEN GOLDING.
MOTOR — LEA FRANCIS.
SCALE OF FEET

"THE LEAF"

★ No. 13 THE "LEA FRANCIS" SPEEDCAR ★

The Lea Francis speedcar engine, especially developed in England to race on American speedways, where the famous Offanhauser dominates speedcar racing, has made its appearance in Australia as the power plant in a car recently constructed by Len Golding, with help from Harley Hammond, ace speedcar driver who hopes to drive the "Leaf" on Australian speedways.

Len Golding's long association with road and track racing, combined with Harley's advice, has meant the building of a car with the "know how" so necessary in the design of a speedcar for top-line racing.

Harley Hammond, South Australia's leading speedcar driver, was to pilot the car in the grinding circle, and one of the first interstate appearances was to be an attempt to qualify for, and compete in, the World's Derby, which is to be raced at the Sydney Showground early this year.

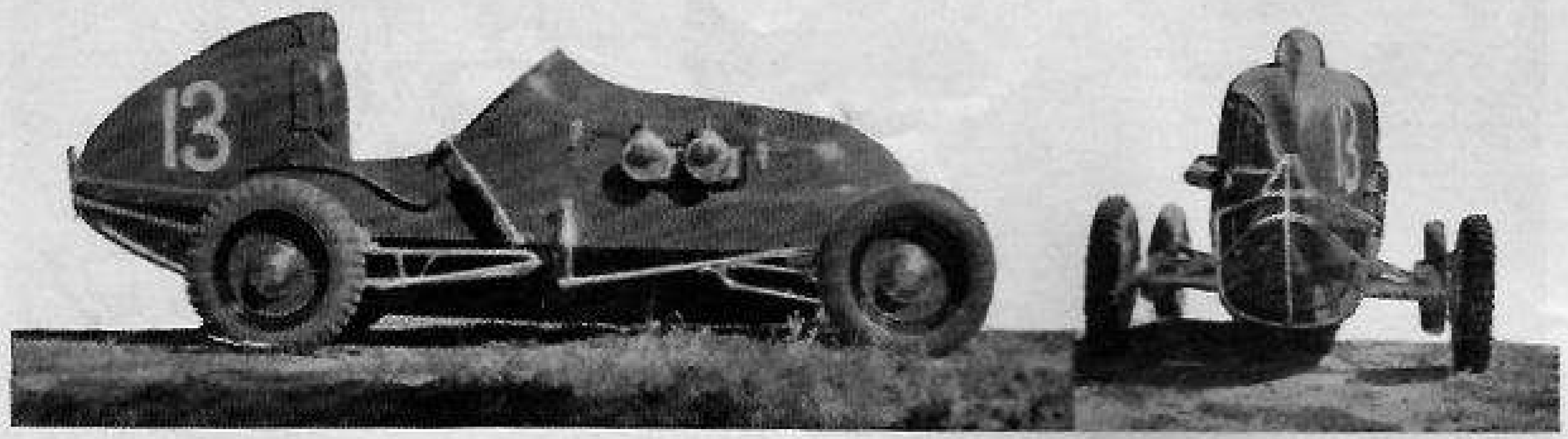
Unfortunately, because of a peculiar lack of harmony among various racing drivers' associations, Harley cannot at present drive the "Leaf" on the New South Wales track. This position may have changed by the time this appears in print, which, if so, a step forward will have been made toward complete Australia-wide co-operation between racing drivers so necessary for the advancement of this fine sport.

Until such time as Hammond is available, Len Golding will drive himself, making his first appearance at the new exciting Rowley Park Speedway in mid-February. Although Len has made only few appearances on the dirt tracks in a speedcar, he did on these occasions acquit himself well at the wheel of Harley Hammond's last Ford "A," gaining a place on each occasion.

A.M.H. recently had the opportunity to thoroughly examine and photograph the Lea Francis. From photographs and measurements of the actual car the true scale drawings presented with this article were prepared. The photographs clearly show the interesting features of the motor and the construction of the car.

The motor is produced by Lea Francis Cars Limited of Coventry, England, and is being exported in con-

★ DESIGNED AND BUILT BY LEN GOLDING ★



siderable numbers to the United States for use in midget speedcars. It is a development of the standard high performance motor fitted to the famous range of sporting cars produced by this firm. The cost to land the bare Lea Francis engine in Australia was just over £900, which must surely make Len Golding's car one of the most expensive yet built here.

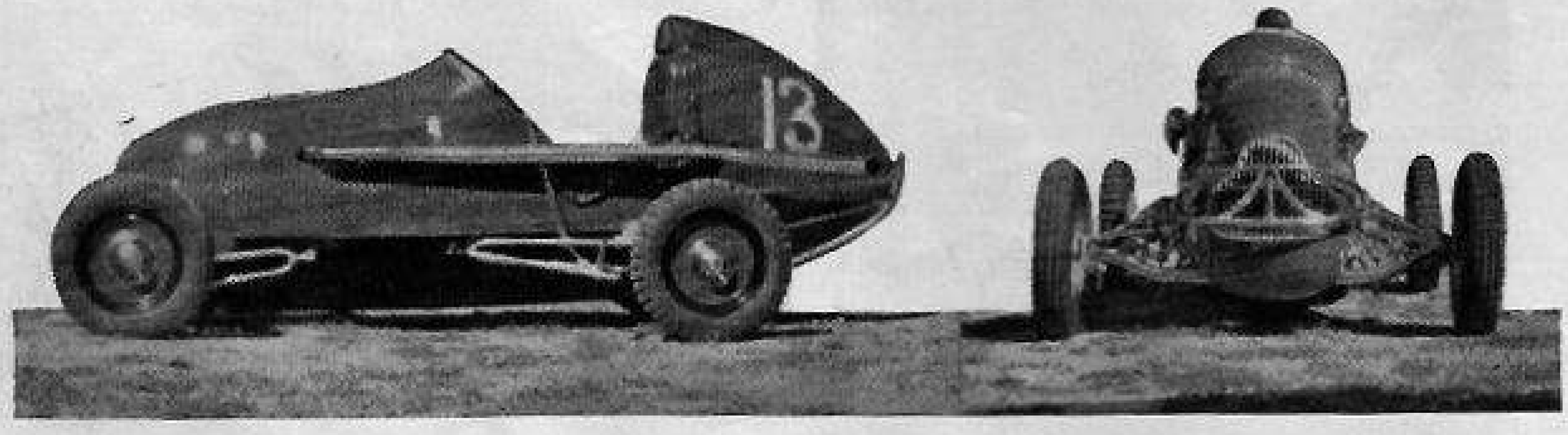
The engine of Lea Francis design and manufacture is a four cylinder unit incorporating their patented overhead valve gear. It has hemispherical combustion chambers with 90 degree overhead valves operated by rockers and very light, short push-rods from twin camshafts. The engine is fed by twin S.U. horizontal carburettors. To bring the engine up to maximum allowable capacity it has been enlarged to 1,674 cubic centremetres (102 cubic inches). Bore $2\frac{7}{8}$ inches, stroke 3 15-16 inches. The compression ratio is increased to 15 to 1, necessitating the use of a fuel similar to that used in the high compression Jap dirt track motor cycles. Methonal 90%, Benzol 9% in 1% Castor Oil. Power output is 125 b.h.p. at 6,500 r.p.m., and the gearing is arranged so that the maximum speed is 88 mile per hour at 6,000 r.p.m. with no wheel spin. The weight of the motor is higher than expected, but its ruggedness explains this, and should make it worthwhile. The main bearings are 2 inches in diameter, which is more in keeping with a truck than a medium-sized car engine. A water pump is fitted which allows a low mounted radiator and still give positive circulation of water through the block without the risk of trouble so often experienced when only thermo-syphon is used.

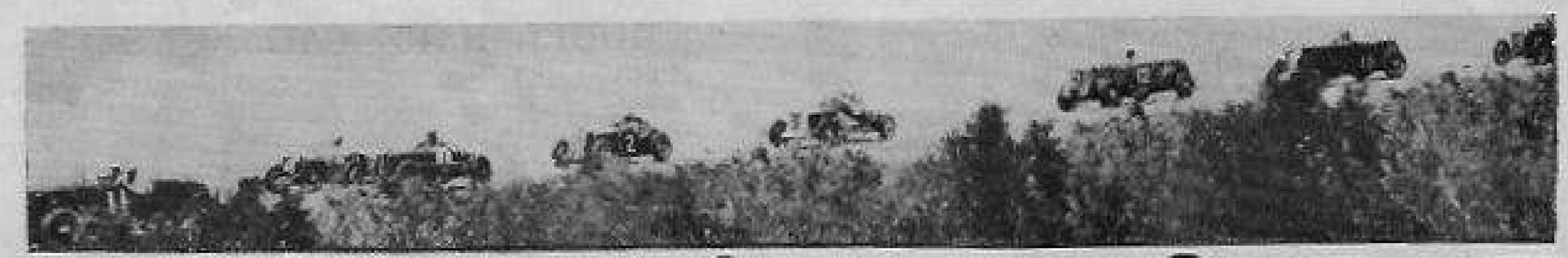
Another feature is the dry sump lubrication, but this has proved rather costly on two occasions when the motor has seized because of blockages in the oil lines caused by paint used by the manufacturers in finishing the inside of the sump peeling off and lodging in the oil lines. No gearbox is fitted, only an in-out dog clutch, which means the car must be pushed off and then forced into gear with motor running. This is of course a disadvantage in standing start handicap races, but is designed for rolling start scratch events. The chassis is tubular formed in one piece from two inch diameter high tensile steel. Morris 8-40 front axles and hubs are employed with Ford A steering assembly. The front axle is formed from 2 inch diameter high tensile steel tubing.

Len Golding briefly outlined his wishes on body styling to Les Manders, who Len gave a free hand in the design and construction of the body. The result has been an extremely attractive well proportioned job which is finished in major red with black lining and the finished body of the "Leaf" is an outstanding example of what can be achieved in speedcar looks.

Thirteen, the devil's number, was the choice for this unique car, and a maple leaf emblem surrounds the number.

All speedway enthusiasts should be anxious to see Len Golding's "Leaf" on their local circuits and will certainly note the high pitched whine of the Lea Francis engine when it appears.





Model Speed Cars

Tracks for the racing of model speed cars are now established in N.S.W., Victoria, a small track in S.A., and clubs are active using improvised running areas in Brisbane, Toowoomba and other places.

Most of these clubs welcome interested hobbyists who build model cars or would like to do so. On the following page is given a list of the clubs known to A.M.H. and suggest that you contact one of them for further information of their activities.

The increasing popularity of speedcars on the dirt track speedways throughout Australia has resulted in greatly increased interest in speedcar modelling, in many cases by speedway mechanics, drivers, and most certainly by some of the thousands of spectators who witness speedway meetings each week.

Car modelling has taken several forms, some small solid true-scale cars from balsawood, some rubber powered, others using diesel motors or the larger electrical ignition or glo-plug motors, are built.

Cars which are powered with engines are made up from aluminium castings for the larger ignition type, while some of the smaller cars have plywood chassis, balsa block and aluminium sheet body. Previous issues of A.M.H. describe the construction of a small car.

The plans presented in this issue of the "Leaf," Lea Francis engined car are detailed and true scale so that the enthusiast who likes to build an exact scale model, either solid or for track work, has all the necessary information.

A new form of power for small models, the "Jetex" model jet motor, is easily adaptable to model cars, and is capable of pushing a small balsa car along at really high speeds. A suggestion for the winter nights when Club meetings held indoors need livening up a little, try racing two or three jet powered cars, tethered to a pole, around the clubroom floor. They will provide some interesting evenings, and once they catch on some weird designs will probably be developed to make the most of the jet motor.

Another type of car for the beginner is the propeller (airscrew) driven car similar to the airscrew driven hydroplane on page 10. This does away with the difficulty of arranging transmission to the wheels and is capable of good speeds.

A future issue of A.M.H. will publish plans for airscrew and jet driven cars.

Bill MacKinnon, N.S.W., holding the car with which he won the Victorian Proto Class Championship. (Left.)

Bits and pieces being collected by Sid Yeats after his car had fallen to pieces during a run in the Vic. Champs.

MODEL CAR CLUB NEWS

QUEENSLAND MODEL RACE CAR CLUB
Secretary, Mr. H. Gill, 71 Vulture Street, West End, Brisbane.

VICTORIA—RIVERSIDE MINIATURE CAR CLUB
Secretary, J. Flynn, 19 Lord Street, Carnegie, S.E.9, Victoria.

VICTORIAN MODEL RACE CAR CLUB
Secretary, B. M. Cozens, 16 Darling Street, South Yarra, S.E.1, Victoria.

NEW SOUTH WALES—MINIATURE RACE CAR ASSOCIATION OF AUSTRALIA
Secretary, H. W. Ferguson, 26 Deacon Street, Auburn, N.S.W.

SOUTH AUSTRALIA—ADELAIDE MODEL CAR CLUB
C/o Mr. A. N. F. Baker, Corunna Avenue, Colonel Light Gardens.

THE LATEST ! !

FROM

Currey's

Model Aerodrome

In a few short years our model aircraft department has grown from a few odds and ends to a fine assortment of Kits and Accessories by Hearns, M.A.I., Aristocrat, Kiel Kraft, Veron, etc., and our range of motors includes over twenty types.
Being Aeromodellers ourselves, we must have the latest, and this we always endeavour to pass on to the interested aeromodeller at reasonable prices.

Our experience is your guarantee of good buying ! ! ! !

Send a stamped addressed envelope for price list:

CURREY'S MODEL AERODROME,
459 Newcastle Street, West Perth

MODEL RACE CAR NEWS

The Victorian Model Speedcar Championships were held at the Victorian Model Race Car Club's track, situated near Como Park, on Australia Day.

In spite of the very hot weather the racing was good, and the meeting most successful.

The V.M.R.C.C. President, Ken Deganhart, and the Secretary, Colin Grant, were mainly responsible for the excellent organisation. Throughout the day Jack Rowles acted as commentator on the public address system and kept the crowd informed of the progress of the racing.

One of the most spectacular happenings of the day was when Syd Yeats' car came to pieces whilst travelling at high speed. The upper body came off first, followed by the back axle and wheels; the remainder of the car continued to lap the track at 68 m.p.h.

Two interstate cars competed. One, operated by its owner, Bill MacKinnon, of N.S.W., won the proto class with a speed of 87.8 m.p.h. Second placegetter, a car owned by R. Boardman, also of N.S.W., was raced proxy by Charlie Ballem, at a speed only .1 m.p.h. slower than MacKinnon's car. Both cars are Dooling powered.

Trophies were presented to the winners by the Mayor of Prahran.

No car raced at a speed of less than 50 m.p.h.

The fastest speed of the day for a home-built car and motor was 84.7 m.p.h. by Murray Hunters' car.

RESULTS OF THE VICTORIAN MODEL SPEEDCAR CHAMPIONSHIPS

SPUR GEAR PROTO

Car Type	Engine	Contestant	m.p.h.	Placing
Invader	McCoy	Tom Connell	73.09	First
Original	Marlborough	Jack Rowles	71.06	Second
Original	Marlborough	Ken Deganhart	63.71	Third
		SPUR GEAR		
McCoy	Dooling	Charlie Ballem	96.0	First
Original	Original	Murray Hunter	84.7	Second
Original	McCoy	Don Rowan	81.8	Third
		PROTO		
Arrow	Dooling	W. MacKinnon N.S.W.	87.8	First
Lightning (Run proxy by C. Ballem)	Dooling	R. Boardman N.S.W.	87.7	Second
Original	McCoy	Charlie Ballem	81.1	Third
Invader	Hornet	B. Cameron	79.5	Fourth

MODEL CAR MAIL BOX

West Melbourne, Victoria.

Dear Sir,

I have enclosed photos of a McCoy racing car, which was originally powered with a McCoy 49 or 60.

It is entirely made of aluminium. Wheels are 4" in diameter.

Yours faithfully,
KEVIN CASS.

(Unfortunately the photos were not suitable for reproduction.—Ed.)

Nailsworth, South Australia.

Dear Sir,

I wish to draw your attention to an incorrect statement in your November-December issue.

The statement reads "At the top of this page is illustrated a balsawood model of the Guyford Special, built by Joe Gibbie."

I built the model of the Guyford which is now in Gibbie's possession.

Yours sincerely,
RONALD T. MILL.

(A.M.H. regrets that Mr. Mill was not credited with the building of the model of the Guyford, described in our last issue, and we apologise for our mistake. A.M.H. also received a letter from Mr. R. B. Smith informing us of our mistake.—Editor.)

Courtesy of "Air Log"

AUSTRALIAN M/A NATIONAIS

The heading photo shows the trophies which were presented for the last Australian Model Aeroplane National Championships, and this year many more will be won by leading Australian aeromodellers who will be taking part in the Third National Contests which are being held on the four Easter holidays.

Teams from all States and possibly New Zealand will compete for top honours in the following contests:

EVENTS FOR THE 1950 3rd AUSTRALIAN NATIONAL CONTESTS

The following rules are announced as this issue of A.M.H. goes to press.

FRIDAY, 7th APRIL—AT RESERVOIR FLYING FIELD:

5—Hand-launched Open Rubber for juniors under 18 years old.

6—Towline Sailplanes. F.A.I. rules.

7—Hand-launched Gliders (chuck), six throws, high time wins.

21—Precision Payload, special rules.

SATURDAY, 8th APRIL—INDOOR FLYING:

Event 1—Hand-launched stick.

2—R.O.G., fuselage maximum wing area 150 square inches.

Event 3—Australian Wakefield Trophy, competed for by a six-man team from each State. This or the Anthony Horden will act as eliminations for the Australian team for the International Wakefield, to be flown in one of the Nordic countries later in the year.

Evening: National Conference.

SUNDAY, 9th APRIL—FREE FLIGHT AT RESERVOIR:

4—R.O.G. Rubber Powered Models to F.A.I. rules.

19—Power Models, engine capacity up to 3.5 c.c. R.O.G.

20—Power Models, engine capacity over 3.5 c.c. R.O.G. Power loading 8 ounces per c.c. Ratio system timing. Average of three flights. Maximum flight time, 5 minutes.

22—Anthony Horden, Wakefield contest.

23—Radio Control, S.M.A.E. Rules.

MONDAY, 10th APRIL—CONTROLINE FLYING:

8—Junior Stunt (under 18 years old).

9—Open Stunt.

10—Diesel Speed, up to 2.5 c.c. S.M.A.E. rules.

11—Diesel Speed, above 2.5 to 5 c.c. S.M.A.E. Rules.

12-13-14-15—Class A, B, C and D Speed. Current A.M.A. rules.

16—Jet Speed. A.M.A. rules.

17—Flying Scale, rules as for 1948 Nationals.

18—Team Speed Championship, distance 10 miles. One team and a reserve from each State. F.A.S.T. Club rules.

Evening: Presentation Dinner.

F.A.I. rules call for a wing loading of 3.93 ounces per square foot of total supporting surfaces (wing plus tail). Minimum fuselage cross section area to be equal to the area of the total supporting surfaces divided by 80 for rubber models, and 100 for sailplanes. The allowable towline length for sailplanes is 100 metres (328 ft.). This length may include one metre of rubber.

Copies of the full rules should be in the hands of each State secretary and clubs can contact them for full information.

MODEL AIRCRAFT ORGANISATION IN AUSTRALIA

MODEL AERONAUTICAL ASSOCIATION OF AUSTRALIA

R. A. Rose, Esq., Hon. Secretary, Victorian Model Aeronautical Association, Railway Avenue, Laverton, Victoria.

B. N. Felstead, Esq., South Aust. Associated Aeromodellers, 71 Watson Avenue, Toorak Gardens, South Australia.

H. Butler, Esq., Hon. Secretary, Model Aeronautical Association of Queensland, c/o Commercial Bank of Aust. Ltd., 29 Melbourne Street, South Brisbane, Queensland.

D. G. Reynolds, Esq., Tasmanian Aeromodellers Association, 10 Knocklofty Terrace, West Hobart, Tasmania.

R. Ashton, Esq., Hon. Secretary, Model Aeronautical Association of W.A., 51 Tyrell Street, Nedlands, Perth, Western Australia.

E. J. Leighton, Esq. (pending election of 1950 office bearers), Acting Asst. Secretary, Model Aeronautical Association of New South Wales, 81 Austral Street, Malabar, New South Wales.

POWER UNITS
E.D. MK.II
E.D. COMP SPEC.
K FALCON.
K KESTREL.
MILLS MK.I & II
FROG 180 & 160
ALLBON ARROW

BOLT TO SECURE COWL

TANK POSITION

¼" DIA. SPINNER

¼" PLYWOOD MOTOR MOUNT

BALSA BLOCK

NACELLE OF BLOCK BALSA CARVED TO SHAPE

1" x ¾" ALUMINIUM BOLTED TO MOTOR MOUNT AND HULL

BALSA BLOCK

A B C D E F

FIN OPTIONAL.

HULL BUILT UP OF ⅛" BALSA OR PLYWOOD.

PLYWOOD REINFORCEMENT FOR BOLTING NACELLE SUPPORTS TO HULL.

USE WIDE BLADE 10" DIAMETER PROPELLOR WITH 6" PITCH FOR TESTING.

LINE CONNECTION POINTS

DECKING ⅛" SHEET WITH GRAIN RUNNING LENGTHWISE.

COCKPIT FAIRING CARVED FROM SOFT BALSA BLOCK

BOTTOM COVERED WITH HARD ⅛" SHEET BALSA GRAIN RUNNING CROSSWISE

NACELLE DETAIL

① CUT SIDES FROM ⅛" SHEET

② ADD FORMERS C, D, E & F AND CEMENT FIRMLY.

③ HOLD FRONT TOGETHER WITH RUBBER BANDS AND CEMENT IN FORMERS A & B ALSO PLYWOOD REINFORCEMENT.

④ ADD MOTOR BRACES, NOSE BLOCK, & BOTTOM.

⑤ ADD TOP DECKING AND COCKPIT ALSO PROPELLOR WELL.

⑥ SECURE MOTOR MOUNT AND BUILD NACELLE AROUND SAME, HOLLOWING OUT WHERE NECESSARY FOR FITTING TANK ETC.

⑦ COVER ENTIRE MODEL WITH MODEL AIRCRAFT TISSUE & GIVE 6 COATS OF AIRCRAFT DOPE FINISH WITH ENAMEL.

LINE HOOK-UP ARRANGEMENT

AUSTRALIAN Model HOBBIES

"SKIPPY" HYDRO-GLIDER

HYDROGLIDER

AIRSCREW DRIVEN MODEL

for 2 c.c. Diesels

Plan one-fifth full size.

An airscrew powered boat is nothing new, but still attracts a great deal of comment when seen on the water.

The main feature of this type of propulsion is the simplicity of installation and operation. No transmission is needed and an ordinary model acroplane propeller does a good job.

Begin the construction by carefully choosing the wood for each component. The sides must be very hard balsa—if you have previously worked millimeter plywood it can be substituted for balsa for the entire construction. The bulkheads hard, the bottom hard, the top decking medium, and the cockpit built up from soft block balsa. The entire hull is made from ¼" sheet balsa.

The plan gives step by step instructions and if followed carefully no trouble should be experienced, as the craft is very simple to build. A full size plan is necessary. This can either be scaled up from the plan given or purchased.

CONSTRUCTION

Hull.—Cut the sides from very hard ¼" balsawood sheet, allowing extra length to make up for the curve of the side. Also cut out the bulkheads. Check with the assembly diagrams in left hand bottom corner of plan. The four rear bulkheads and stern are cemented into place first and allowed to dry thoroughly. Whilst this is drying form the motor nacelle braces. The plan calls for aluminium, but almost any metal strip will do the job so long as it is rigid. The actual motor mount is cut in one piece from hard 5-plywood of ¼" to ⅜" thickness. Cut this out to suit the type of motor to be used. When the partly completed hull is quite dry pull the two sides together at the front with rubber bands and cement the front bulkhead and solid nose block in place, and add all remaining bulkheads. Cement the three-ply motor nacelle bracing reinforcement pieces in place. Leave until dry and then bolt on the nacelle bracings. Then the plywood motor mount to the bracing struts. Put lock nuts on the bolts and cover with cement so as to prevent vibration from loosening them after decking has been fixed in position. When satisfied with this assembly cover top and bottom of the hull with ⅛" sheet balsa—or 1 mm. plywood. The curved "well" for the airscrew is covered in with 1-16" sheet balsa—or 1 mm. ply—grain running fore and aft.

Cockpit.—This can be varied in shape to suit the builder and is carved from soft balsawood block. Carve to shape and give it four coats of model aeroplane dope all over before fixing on to hull. Fix a celluloid windscreen in position after model has been covered with aeroplane tissue—if plywood construction has been used tissue covering is not necessary.

Engine Nacelle.—The nacelle is built up around the plywood motor mount with soft blocks of balsa hollowed out. As this is symmetrical they can be turned in a wood lathe if available. The bottom block is cemented to the ply mount and the top half is held in place with a bolt as shown on the plan. A small tank for fuel is made up from shim brass to fit in the nacelle. Motor mount and blocks must be made oilproof and this can be done by coating several times with cement and then giving two coats of a good synthetic enamel.

Finishing.—Sandpaper the entire hull and motor nacelle and cover with model aeroplane silk tissue. To do this cut the tissue to the approximate shape of the part to be covered and lay in place on the hull, then brush over the issue with aero dope. The dope will go through the tissue and stick it to the wood. Use ample dope and then smooth down with your hand whilst the dope is still wet. A little practice will enable you to cover the most complicated of curves.

By rubbing the tissue firmly with the hand whilst the dope is still quite wet small wrinkles can be rubbed out and the tissue smoothed.

(The construction as described here is for a model made from balsawood and other model aircraft type materials and the finishing described is for a balsawood model. If the model is built of plywood the tissue covering and doping is not done.)

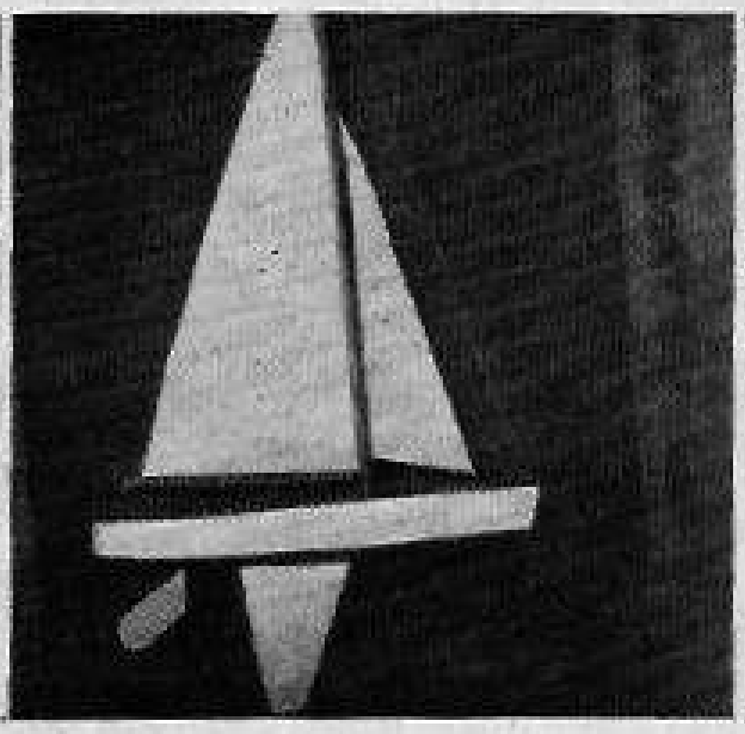
Give the model several coats of model aeroplane dope, sandpapering lightly between coats, and finish off with a good quality enamel.

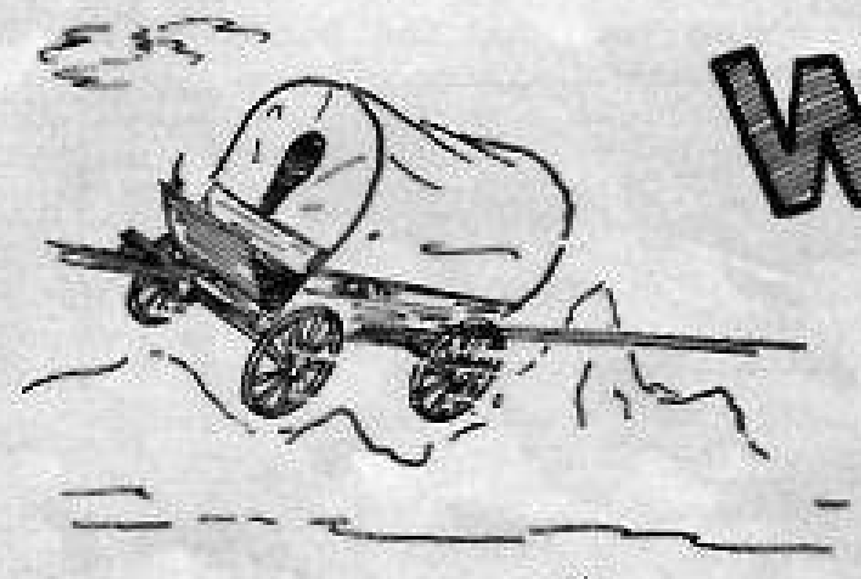
The tethering points will depend upon the centre of gravity of the boat, and a little experimenting may be necessary to find the best points to attach the lines.

Power for the model can be any of the smaller diesel motors, such as Mills 249, E.D. Mk 11 or 111, Kestrel 19 or Falcon 25.

A.M.H. will be pleased to receive photos of the Hydroglider built by readers.

Below—Photos of the "Albatross" all balsa yacht, built by Bryan Beecher, of Bairnsdale, Vic. The plans of the Albatross appeared in a previous issue of A.M.H.





WAGGONS IN THE SKY

Words by 'Slim' Evans

THE DE WAGON

Plan one-fifth full size.

This controliner is an advanced stunt model following very closely the design of Harold DeBolt's famous Stunt-wagon. Several months ago a Stunt-wagon kit was received from DeBolt, and when it appeared on the flying field the model was immediately outstanding, and although many thought it to be a very tricky model to fly, the Stunt-wagon soon proved, in the hands of even novices, that it was easy to stunt.

Our modified wagon has a performance equal to the model from which it was derived.

Some criticism has been offered against the Stunt-wagon type model with the extremely short tail-plane moment arm and lack of resemblance to a full size aircraft, but surely the object in mind is to construct a model which is easy to stunt, and unless you are a polished stunt flyer capable of doing all possible manoeuvres, the easier the model can be made to do the stunts the sooner the flyer will master them, and then he can turn to the semi-scale type stunter with confidence.

Construction methods used by Harold DeBolt in the Stunt-wagon have been incorporated with few modifications in our version, because of the confidence gained from flying these models for several months, proving their resistance to even major crashes which wreck most other stunt models.

All necessary information is given on the plan, which should be studied until completely understood, then construction commenced.

FUSELAGE:

The top and bottom of the fuselage are made from medium hard good quality balsa block. The sides from hard $\frac{1}{8}$ inch sheet. Carefully carve the top and bottom blocks to the required shape and hollow out as indicated. The $\frac{1}{8}$ inch sides are parallel, with half of the wing section cut from their top edge. Commence assembly by reinforcing the $\frac{1}{8}$ inch sheet sides as shown on the plan. Check to see that plywood bulkhead fits to bottom block and cement it in place, followed by the motor mounts and gussets behind bulkhead. Allow this to dry. Cement rear of reinforced sheet sides together, holding with pins. Now place these sides over the bulkhead which has previously been cemented to the block balsa bottom. Check the position of the motor mounts, and carve away inside of sides so they fit in over the motor mounts. When this has been done pin and cement the sides to the block bottom. Hold the front together with rubber bands whilst drying. Use ample cement on all construction. Cover entire area about motor mounts with several coats of glue. Set this aside and construct a normal wedge fuel tank whilst drying. Leave fuselage construction at this point and build up wing.

WING:

A large leading edge carved from $\frac{3}{4}$ inch by $\frac{3}{4}$ inch is a feature of this wing and it can be built up by laminating three pieces of $\frac{1}{4}$ inch by $\frac{3}{4}$ inch strips. By making a laminated leading edge it is possible to stagger the joins which are necessary when only three foot wood is available. The alternative is to carve the leading edge from solid $\frac{3}{4}$ inch square. When leading edge has been carved to shape and notched to take ribs, set aside and carefully cut out ribs from $\frac{1}{8}$ inch quarter-grained balsa. Strip the necessary size from hard 3-32 inch wood. Cement and pin the wing ribs in the leading edge notches, holding in hand whilst doing so. Sight along the trailing edge and line up the ribs, then cement and pin the lower sheet of the trailing edge to the ribs. Now place the wing on a flat surface and correctly align with small wedges of balsa so that wing is perfectly true. This MUST be done before the cement hardens. Leave wing pinned down under the correct alignment until cement is quite dry, then it can be lifted. Top covering of trailing edge, leading edge sheet covering, lower side of centre section covered, wing tips added and control plate mounting built in. Mount control plate on pivot bolt, fix lead out wires and control rod in place. Check for free functioning, then cover top of wing centre section, and add capping strips to top and bottom of ribs. Cut slot in lower centre section covering to allow for free working of control rod. Fix securely two ounces of lead in the outboard wing tip. THIS MUST BE ADDED. Check construction of wing and sandpaper thoroughly. When satisfied, cover with silk tissue and give four coats of good flexible dope. When wing is covered and doped, cement it to the block balsa fuselage top. Check for alignment and set aside to dry.

TAILPLANE:

Tailplane is built up from medium hard $\frac{1}{8}$ inch sheet balsa. Cut the stabiliser from one piece. The elevators are two separate pieces cemented to a $\frac{1}{4}$ inch hard wood dowel. Elevator is joined to the stabiliser with strong thread hinges formed in the manner shown in the plan. Put a drop of castor oil in the centre of each hinge so as to prevent it from becoming brittle when the tailplane is covered and doped. Bend the elevator horn to shape from 1-16 inch diameter piano wire. Bind with fine wire and solder a short piece of 1-16 inch inside diameter copper tubing to the bottom of the elevator horn to act as bearing for the control rod. Mount completed tailplane on the block fuselage top with the wing. Allow to dry and then connect up

Continued on page 32

HARD BALSA LEADING EDGE

PIECE OF ¼" CEMENTED TO SIDE TO ENABLE NOSE TO BE CARVED AWAY. TO FIT SPINNER

FIX 2 OZ. OF LEAD IN OUTB'D WING TIP

HARD 3/32" SHEET

COVER COMPLETE MODEL WITH SILK TISSUE

PIVOT POINT IN PORT WING

PLAN OF UNDER-SIDE OF PORT WING.

CAPPING STRIPS ¼" X 3/32"

RIBS OF 1/16" HARD BALSA

MODEL FLIES ANTICLOCKWISE

HARD 3/32" SHEET

HARDWOOD DOWEL

POWER — "G B 50" "YULON" "K VULTURE" OR SIMILAR 'GLO' OR 'DIESEL'

PIVOT POINT

BLOCK BALSA

WING AND TAIL PLANE ATTACHED TO TOP SECTION BEFORE ASSEMBLY TO ENABLE CHECKING OF CONTROL

16 S.W.G. STEEL WIRE CONTROL HORN CONTROL ROD BEARING ¼" COPPER TUBE BOUND AND SOLDERED TO WIRE.

DURAL CONTROL PLATE

CEMENT

⅛" WITH GRAIN VERTICAL

HARDWOOD

USING STRONG THREAD SEW IN FIGURE EIGHT MANNER AS SHOWN TO FORM ELEVATOR HINGES.

CEMENT PLYWOOD TO 1/16" SHEET SIDES AS SHOWN WITH GRAIN VERTICAL.

FIN LINED UP WITH FUSELAGE SIDE

¼" SHEET BALSA

NOTE POSITION OF FIN SHADED

FRONT VIEW

PLYWOOD

BLOCK BALSA

WING RIBS CUT FROM HARD 1/16" SHEET

CEMENT PIECE OF ¼" SHEET BALSA ON INSIDE OF 1/16" SHEET SIDE TO FAIR FUSELAGE INTO SPINNER.

PLYWOOD DISC

COCKPIT CANOPY MOULDED OR OUTLINED IN PERSPEX

¼" SHEET FIN

TANK

LEADS OUT FROM PORT WING

STBD

PORT

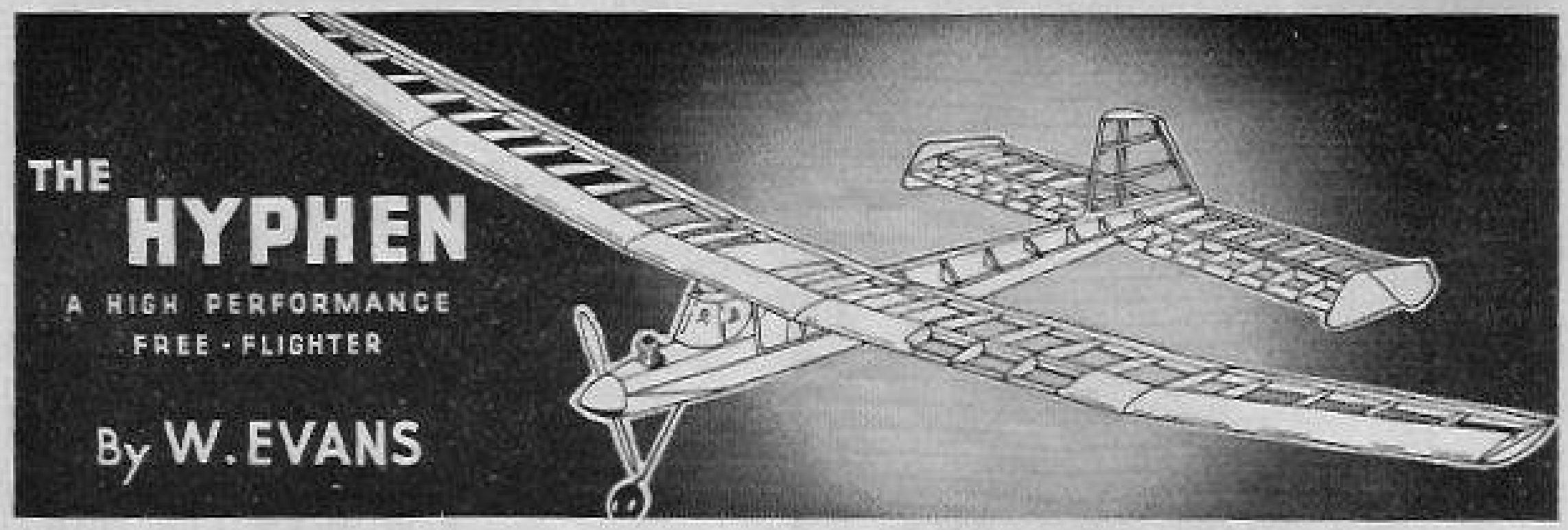
DETAIL OF PIVOT POINT

U/C WIRE TAKEN THROUGH MOTOR MOUNTS AND BOUND AND CEMENTED

ALL RIBS 1/16"

AUSTRALIAN Model HOBBIES

De Wagon



THE Hyphen is the outcome of my attempt to gain the utmost from a model under the rules set down for the 3rd Australian National Championship. (Weight must be 8 ounces per cubic centimetre engine displacement. Motor run unlimited. Maximum flight time 5 minutes. Winner to be the highest ratio of motor run divided into total flight time.)

Two free-flight classes will be flown. One for motors up to and including 3.5 c.c., and the other for motors over 3.5 c.c. The Hyphen is suitable for both classes, providing, if a 3.5 motor is to be used, it is one of the latest diesels such as the Amco 3.5 or the E.D. 3.46 and the weight kept down to the required 28 ounces.

The model was designed with one of the new 5 c.c. diesel or glo-plug motors in mind, such as the Yulon 30, Gee Bee 50, ETA 29, or Frog 500, which are all available in Australia.

The free-flight events at this year's Nationals will be most keenly contested and to be among the high times the model and the flyer will have to be good.

The minimum weight allowed for a 5 c.c. motor is 40 ounces, so the model can be rugged, and the most advantageous compromise is a model of ample wing area. Ruggedness is a necessity for consistent competition work, and particular attention must be paid to wing, tailplane and motor mountings, making certain that they can always be fitted in identical positions each time the model is flown.

CONSTRUCTION:

Scale up or purchase a full size Hyphen plan. All details are given on the plan and it should be studied until all stages of construction are understood.

WING.—The construction is quite simple, and when completed is a sturdy job. Cut out an aluminium template of the wing rib, and use this to cut out all wing ribs from medium quarter grained balsa. When ribs have been cut out notch the template for the mainspars, and then use this to notch the wing ribs. Cut sufficient full size ribs to build entire wing, including tapered tips. The tip ribs are formed by cutting the rear from full size rib to the required cord width and then cut from the top of rib to the leading edge of rib, resulting in a modified section with no undercamber for the tip ribs, giving a section with a later stalling angle, which helps maintain lateral stability when the model approaches stalling speed.

Commence wing assembly by pinning down the 1" x ¼" hard balsa leading edge and 1-16" x 1½" hard trailing edge on the full size plan and then cement the ribs into position. Allow to dry and then add the very hard ⅛" x 3-16" top mainspar, also the top trailing edge covering. Next add the top leading edge covering, using medium straight grained 1-16" balsa. Allow ample time for this to dry before lifting wing from bench. Cover underside of leading edge back to mainspar with wood identical to that used to cover top. The wing is formed in five sections, centre section, outer panels and wing tips. The dihedral on the wing is eight inches on each side. Four inches on the outer panel and four inches beneath the wing tip. Centre section is flat. The rear of the two main spars is boxed with medium ⅛" with the grain vertical. This boxing is cemented between each rib. After boxing is completed, cut some ¼" x 1-16" hard balsa for capping strips, and cap all ribs top and bottom. DO NOT force cap strips into place, as this may warp the wing structure. Cut to correct length, NOT OVERSIZE. Trim each panel so as they all fit to dihedral angles. Mount up wing on table at correct dihedral angles, using suitable sized blocks and cement all sections together. Leave pinned down over night to make certain cement is quite dry. Cut plywood braces to strengthen all wing joints. These dihedral braces should be the full depth of the main spar. If desired the wing can be crossbraced between each rib diagonally with hard ⅛" x ¼". NOTE extra spar

Andy Vidale built this "Hyphen," his first contest free flighter. Powered with a Red Special 5 c.c. diesel and carrying two torch batteries to bring it up to 40 ounces, it performed well. The centre of gravity was 50% back from leading edge. Quarter-inch negative incidence was added to the tail and ⅛ inch positive incidence to the wing. Andy's Hyphen was lost with a 20 second motor run on its second day's flying.

★ ★ ★ ★ ★ ★

behind leading in centre section. This is ¼" x ½" cemented between each rib before the sheet covering is fixed in position. Cover centre of centre section as shown on plan with hard 1-16" balsa. Entire wing is covered with silk tissue and given four coats of dope. Finish with one coat of thinned red fuelproof lacquer. Underside of tips finished with high gloss silver.

TAILPLANE.—Construction of tailplane is similar to wing, excepting that only the centre section is wood covered. Form end-plates (rudders) from hard ⅛" sheet to the shape shown with the grain running in the direction indicated. Cover both sides with silk tissue and cement to tailplane after it has been covered. If available, cover outside of end-plates with bright aluminium foil.

FUSELAGE.—Although slightly unorthodox the fuselage construction is strong and one does not have to set it aside to dry from time to time as the method employed allows continuous building. Step by step construction is given on the plan.

The fuselage bottom is a three-sided box formed from medium hard balsa. Should wood of the necessary length not be available, join sheets together with a square splice and stagger the joins. As the plan gives all details, fuselage building is not detailed in the text. Bulkheads "B", "C", and "D" are not shown on the plan, as once the fuselage is to the stage where these are necessary their size and shape will be obvious. The motor mount is cut from a piece of 5-16" aircraft 5-plywood. The undercarriage is fitted to the motor mount as shown on the plan. Cement a piece of 1" square ⅛" three-ply on the inside of the noseblock where the undercarriage wire goes through it, and solder a ½" diameter washer to the undercarriage leg on the outside of this noseblock, and cover with several coats of cement. Fit a 2½" airwheel. Keep undercarriage as short as possible according to type of propeller being used.

A parachute type dethermaliser is suggested, and the form of mounting is the simplest possible. A streamlined box is built up from 1-16" balsa to house the parachute, which should be at least 18" in diameter. This box is fixed to the chute attachment line and falls from the model when released. The chute is attached to the tailplane retaining rubber. The chute box is held in place by an extra rubber band going right over the box. The band is burnt through by a saltpetre fuse (made by soaking thick string in a concentrated solution of potassium nitrate. Rate of burning depends on concentration and type of string). A small piece of mica protects box from burning. Cement mica to box with water glass (sodium silicate—egg preserver).

Several of these models are being built in South Australia for the Nationals, and Hyphens should be seen in action at Reservoir Flying Field next Easter.

FLYING.—DO NOT attempt to adjust the Hyphen to a tight spiral climb. Not only is a tight spiral a wasteful type of climb, but this model will not perform with such adjustment. Trim the model to climb in a very slight right turn so as the model turns through only ONE QUARTER OF A TURN in the climb with a motor run of from 10 to 15 seconds. When the motor cuts the model should glide to the right in a tighter turn, resulting from the lack of torque. Drag bars of ½" x ½" x 3" balsa or ½" pinned or cemented to the desired wing tip may aid in adjusting the model. Be cautious when using rudder. The model should balance at 75% of the cord although do not weight the model to achieve this unless a long way out, as good performance has been obtained with similar models with considerable variation in the centre of gravity. Test glide the model first and unless considerable changes of incidence are necessary to gain a good glide do not wory about the centre of gravity at the preliminary testing.

The Supa Hatchet, with which I won the Free Flight Gas event in the last Australian Nationals, is a direct ancestor of the Hyphen, and although this year the competition will be harder to overcome, the Hypher should acquit itself well. This will be my entry, powered with one of the new Gee Bee 50's.

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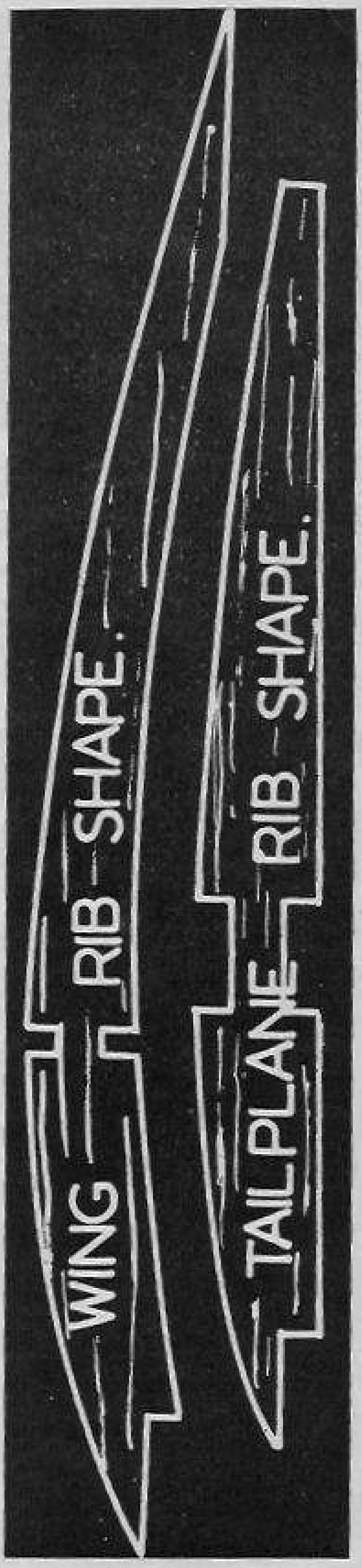
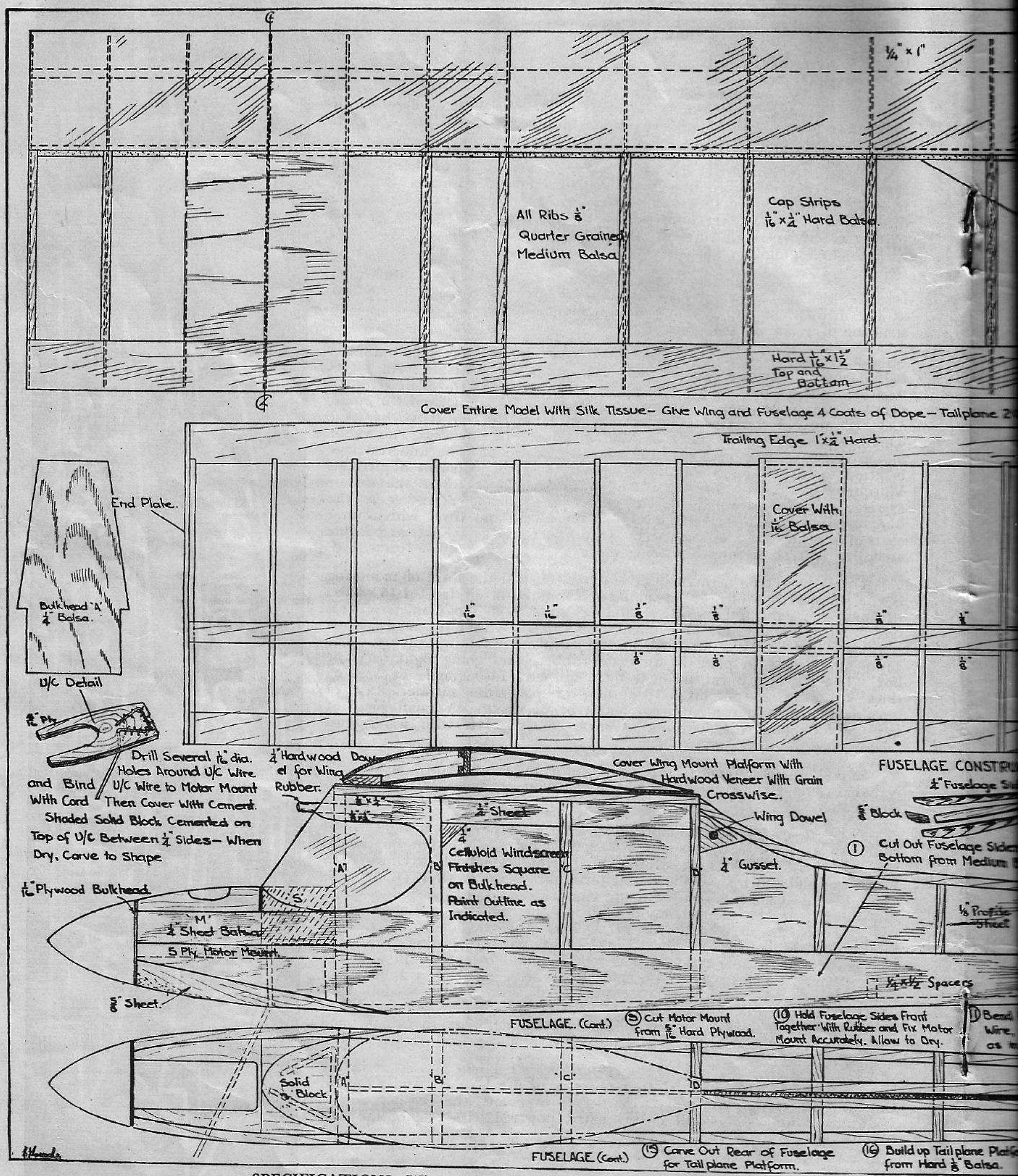
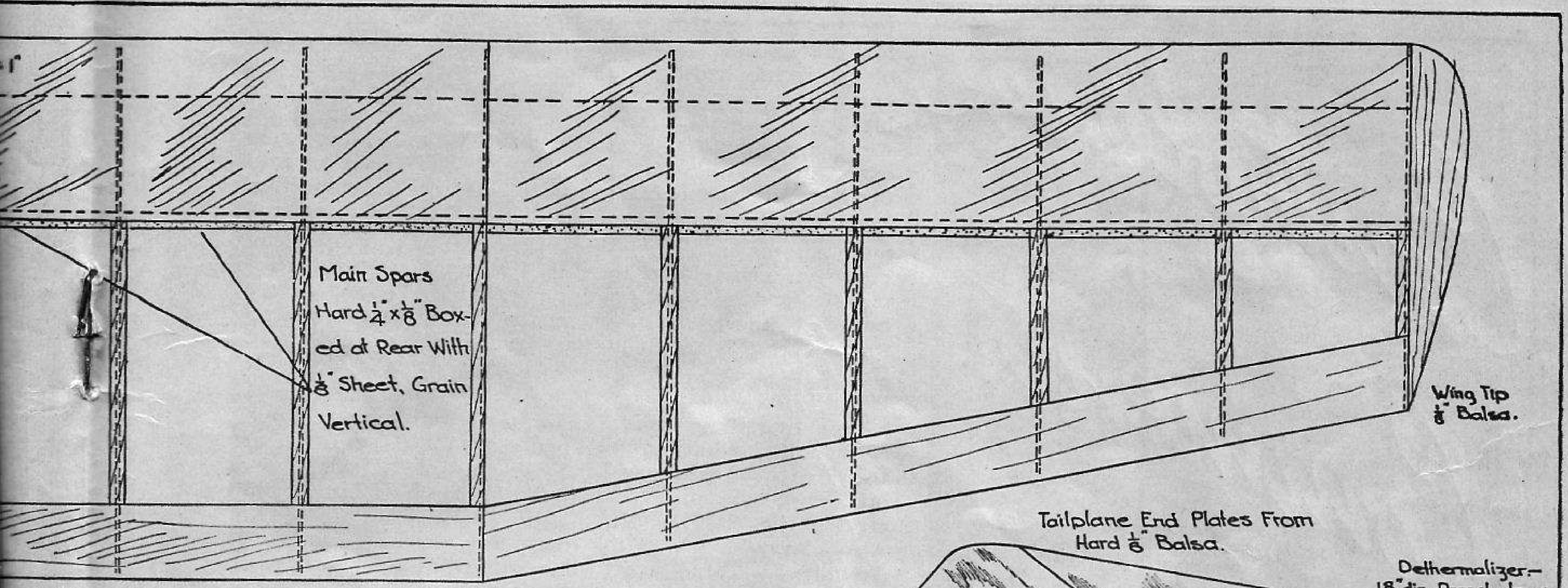
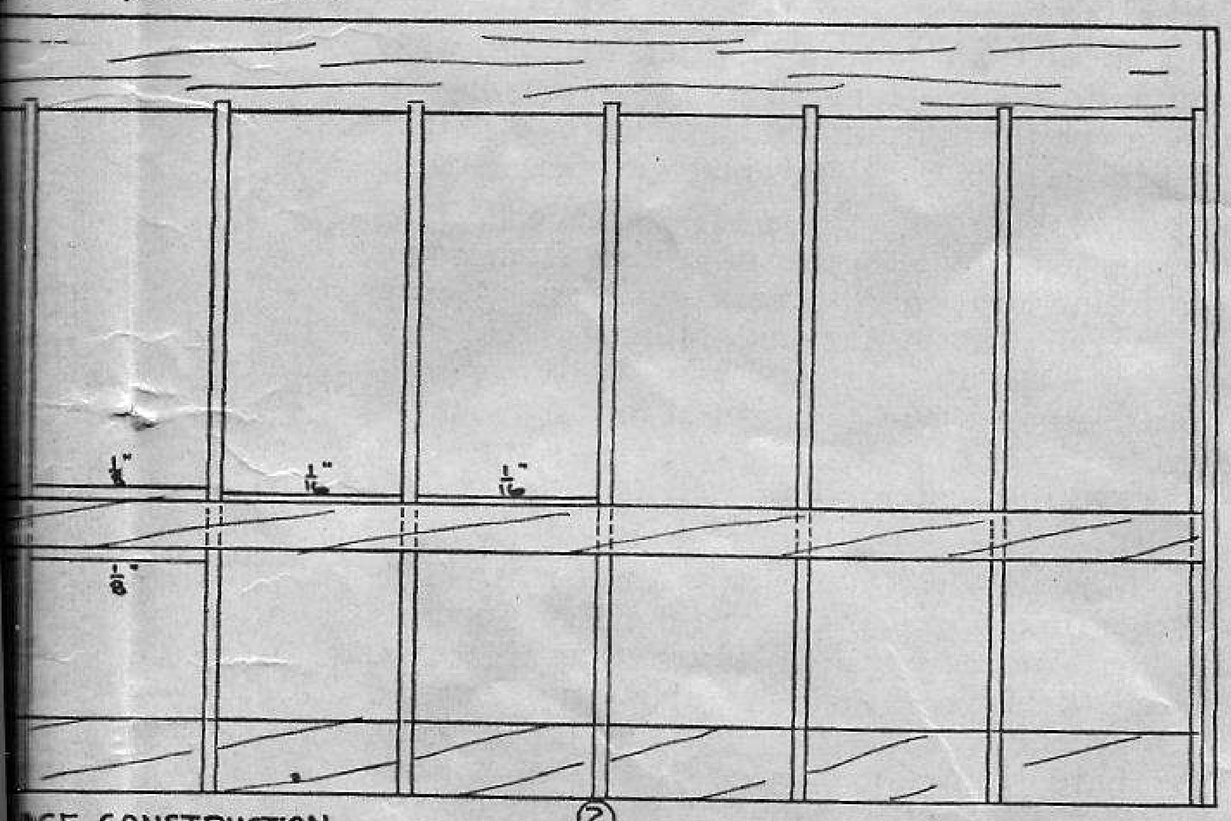




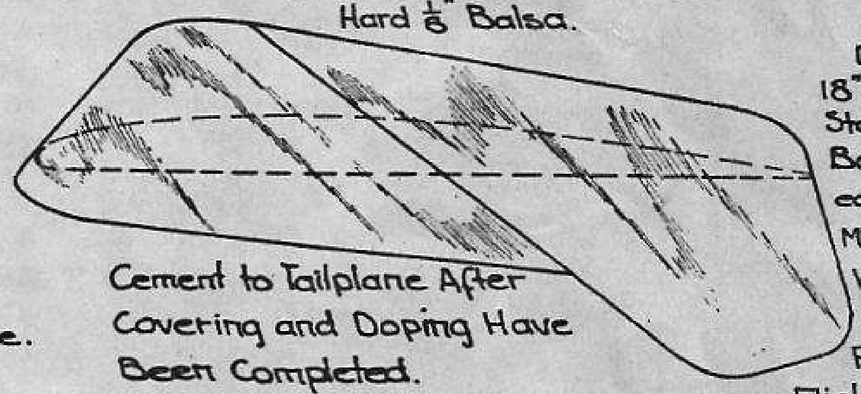
SPECIFICATIONS: Wing span, 80 in.; wing cord, 9 in.; wing area, 666 in.; dihedral, 4 in. on firs 240 sq. in.; fuselage length from back of spinner, 42¼ in.; power, 5 c.c. diesel or glo motor; weig



e – Tailplane 2 Coats.



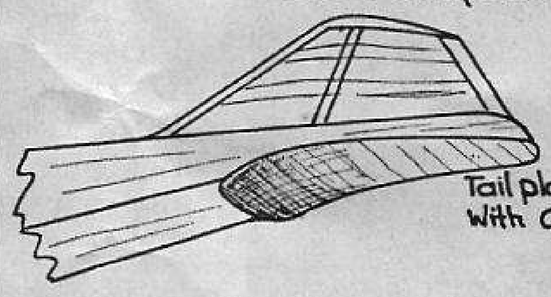
Tailplane End Plates From Hard 1/8" Balsa.



Cement to Tailplane After Covering and Doping Have Been Completed.

End Plate.

Dethermalizer – 18" dia. Parachute is Stowed in Chute-Box. Chute is tethered to Tail plane Mounting Rubber With 3 Feet of Cord Box is Held in Place During Flight With Extra Rubber Band Which is Burnt Through By Salt Petre Time Fuse to Release Box Which is Fixed to Cord. Proted Box With Piece of Mica to Prevent Burning

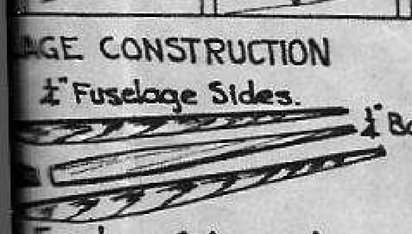


Tail plane Platform Hard 1/8" Sheet With Grain Crosswise

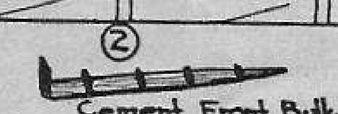
1/16" x 1/4" Hard Cap Strips.

Rudder Cross Section.

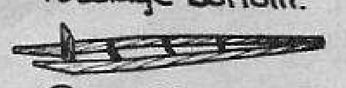
GE CONSTRUCTION



Fuselage Sides and from Medium Balsa.



Cement Front Bulkhead "A" and 4 - 1/4" x 1/2" Spacers to Fuselage Bottom.



③ Add 1/4" Sides.

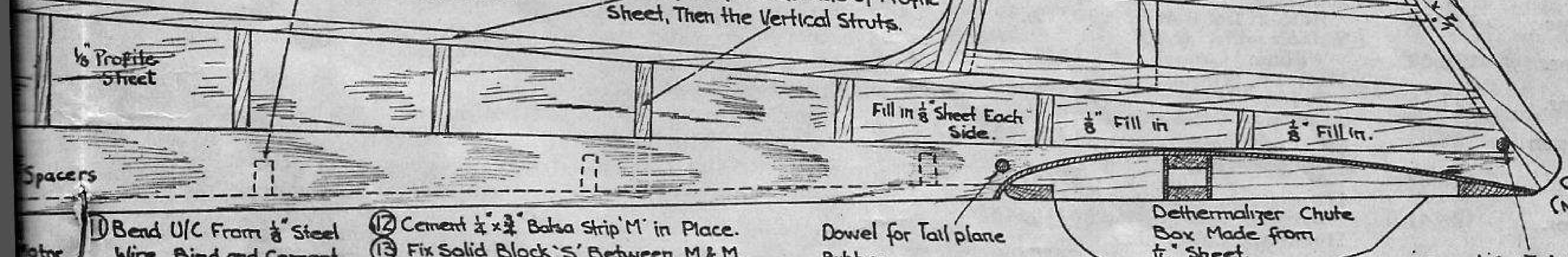
Cut Side Profile from Med. 1/8" Balsa and Cement to Centre of 3

⑤ Add Bulkheads B, C, D,

⑥ Fill Between tops of A, B, C, D, With 1/4" x 5/8"

⑦ Build up Wing Platform.

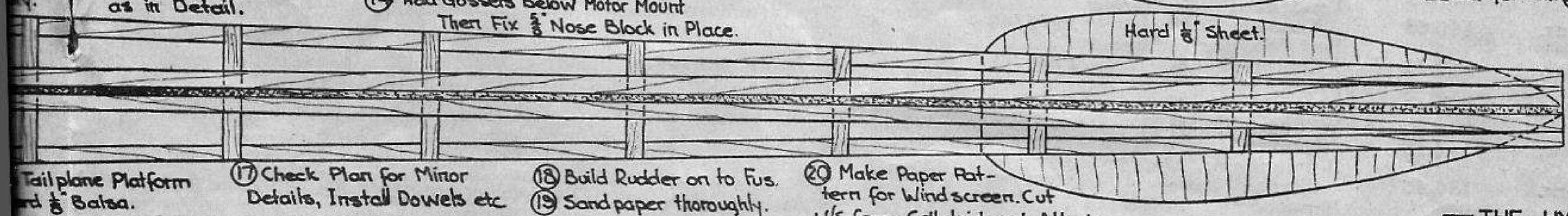
⑧ Add 1/4" x 1/4" Strips Each Side of Profile Sheet, Then the Vertical Struts.



Dethermalizer Chute Box Made from 1/16" Sheet.

Dowel for Tail plane Rubber

Dowel for Tail plane Rubber.



① Bend U/C From 1/8" Steel Wire, Bind and Cement as in Detail.

⑫ Cement 1/4" x 3/4" Balsa Strip 'M' in Place.

⑬ Fix Solid Block 'S' Between M. & M.

⑭ Add Gussets Below Motor Mount Then Fix 5/8" Nose Block in Place.

Tail plane Platform rd 1/8" Balsa.

⑰ Check Plan for Minor Details, Install Dowels etc.

⑱ Build Rudder on to Fus.

⑲ Sand paper thoroughly.

⑳ Make Paper Pattern for Wind screen. Cut W/S from Celluloid and Attach.

— THE HYPHEN —

in. on first panel plus 4 in. on tip (total, 8 in.); stabiliser span, 30 in.; stab cord, 8 in.; stab area, motor; weight, 40 ounces, or power 3.5 diesel, weight 28 ounces. Scale: 9-32 in. to the inch.

Controline speed records in the United States of America offer the readers of American magazines a continuous puzzle as to just what are the top speeds officially recognised by the Academy of Model Aeronautics—the controlling body for model aviation in the U.S.A.—and so below we have listed the official controline speed records as standing at the end of December, 1949.

Class	Age	Speed	Held by	Date Est.
"A"	Jnr.	113.64	Warren Tomme Little Rock, Arkansas	19/6/49
"A"	Snr.	118.37	Eugene Stiles Alameda, California	16/10/49
"A"	Open	128.52	Harold De Bolt Williamsville, N.Y.	30/10/49
"B"	Jnr.	118.08	William Cannon Morrison, Virginia	26/5/49
"B"	Snr.	137.88	Eugene Stiles Alameda, California	23/10/49
"B"	Open	138.41	Lew Mahieu Long Beach, California	1/10/49
"C"	Jnr.	128.61	Warren J. Tomme Little Rock, Arkansas	25/8/49
"C"	Snr.	136.41	Mark Brown Stockton, California	30/10/49
"C"	Open	150.63	Lew Mahieu Long Beach, California	16/10/49
"D"	Jnr.	140.63	Kenneth Kimmel Fort Wayne, Indiana	26/6/49
"D"	Snr.	159.23	George Fong Bronx, N.Y.	11/9/49
"D"	Open	152.48	Harold De Bolt Williamsville, N.Y.	16/10/49
Jet	Jnr.	137.35	Herbert L. Davis Birmingham, Ala.	15/5/49
Jet	Snr.	136.36	Charles Butler Minneapolis, Minnesota	9/7/49
Jet	Open	145.16	Harold Bunting Greensboro, N.C.	4/7/49

All the above speeds are the U.S.A. *National* records as at the beginning of this year.

A great deal of natter concerning the best fuel to use for this or that motor, or the compression ratio is low or too high, can be heard almost any time a group of controline bods get together. I am no fuel expert, and, like many others, imagine the brew I use is a bit better than someone else's, or I want someone else's for I am sure that his is better than mine, but from experience I feel that very little *knowledge* goes into the blending of model fuels by the average aeromodeller.

The erratic running of a lot of the converted glo-plug motors could probably be overcome if the compression ratio was matched to the fuel. Many fuels being used on the field are quite murky or have sediment in the bottom of the bottle. Some chaps filter their fuel several times after this sediment has formed and get rid of it. But what is it that is filtered out? Is it a desirable part of the oil?

Providing the compression ratio of your motor is high enough, the addition of 5 per cent. to 10 per cent. of Butyl Alcohol will usually make Castrol "R" or castor oil completely missable in Methyl Alcohol, but it increases the flash point of the fuel. Adding Butyl Alcohol would help if the compression ratio is too high. Acetone is also a worthwhile additive, as it increases the missibility of water in the alcohol.

SPARK IGNITION

The use of methyl alcohol in ignition motors with a compression ratio below 11 or 12 to 1 is not going to give as good a power output as a mixture of ethyl alcohol and benzol, which should perform better with C/R up to 10½ to 1.

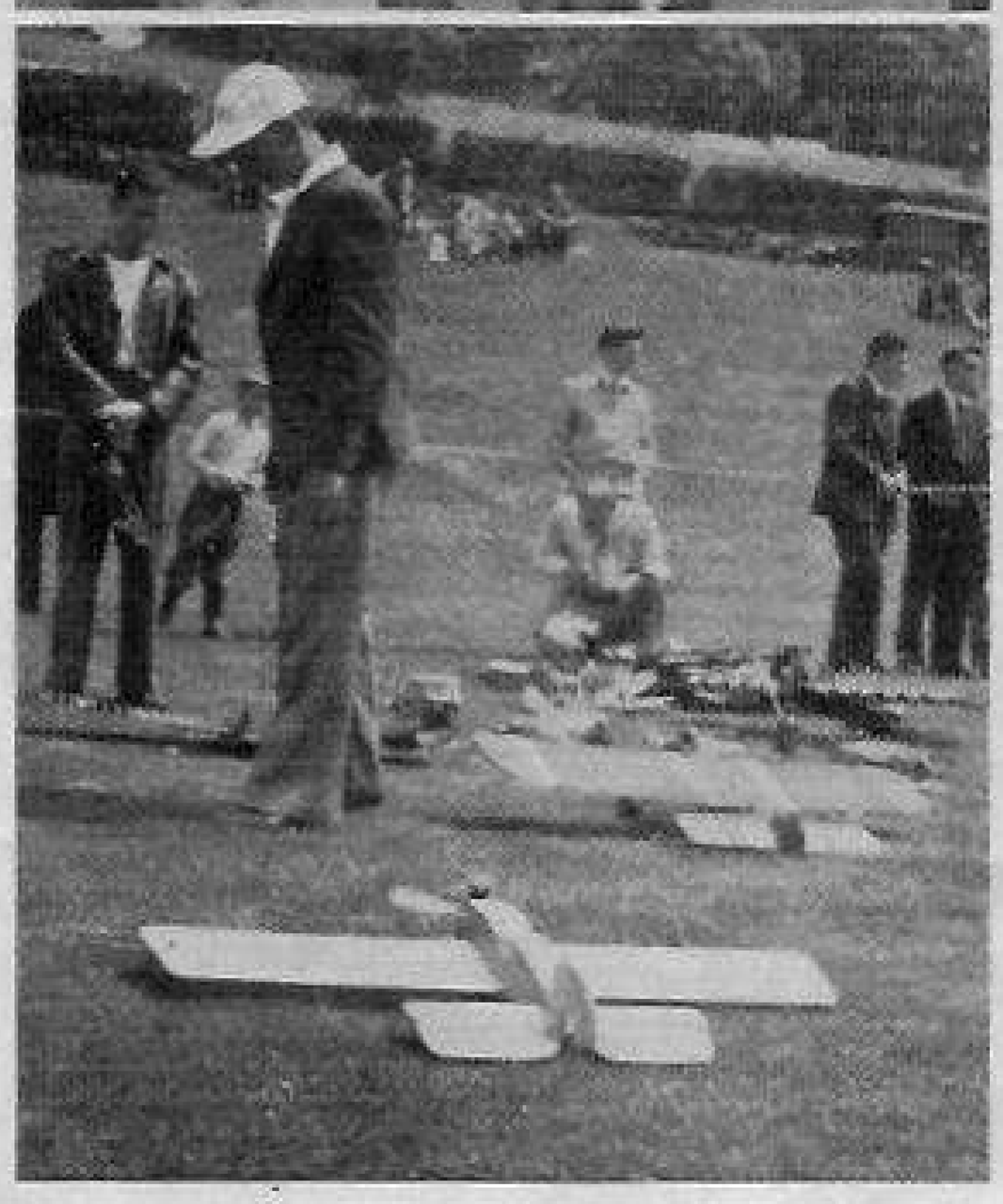
Adelaide again had the pleasure of a visit from some Victorian controline top liners, Reg Cooper and Monty (Zilch again) Tyrell. Both Reg and Monty were flying models powered with 10 c.c. Anderson Spitfires, and the opportunity arose when they could compare these big motors with the 5 c.c. diesels as to which was best for stunt and gave the better power weight ratio.

The two Spitfire powered jobs and a diesel powered Stuntwagon were timed over ¼-mile as a speed run. The diesel recorded a time 4 m.p.h. slower than Reg Cooper's model and a few miles per hour faster than Monty's. All models were flying on their regular stunt props. The ease with which a model is flown through a stunt routine is a hard thing to assess, but the Spitfire powered models had trouble doing the fourth of the consecutive inside and outside loops. Both sides of the argument of Super Zilch versus Stuntwagon and Spitfire versus diesel are convinced they are right, so, until the Nationals prove which is the better, we say each has its virtues—but we know the diesel is better? (who dropped that brick).

Some local and overseas flyers are building their stunt jobs with a longer wing on the inside of the circle in an attempt to keep the model from turning in on the lines. Is this really effective, or does the added drag of the longer wing do the exact opposite to what is being attempted? The added wing area gives a rolling effect upwards, whilst the added drag of that wing gives a turning effect inwards. Does one counteract the other to an advantage or disadvantage?

Balloon tanks—made from an ordinary rubber balloon—perhaps are the answer to poor fuel feed. Although this type of tank has been known for many years it has never been popular because of its messiness, but recently some have been in action on the flying field and appear to work well and are no problem to make. All of the air must be sucked out before filling balloon with fuel.

Combat flying with balloons or streamers attached to the models appears to be the way of spending a hectic, but exciting and satisfying flying period. Try it, the quickest thinking game on earth—or else.



State Championships 1949

VICTORIA

Tony Farnam has proved himself the leading stunt controline flyer in Victoria, by easily winning the State Championships last December.

The meeting was held at Como Park under quite good weather conditions. Bob Rose, Jim Fullarton, and Jack Phillipson controlled the meet and did the judging in the stunt circle.

Stunt flying was not of a very high standard and the only consistent flying was done by Tony Farnam, Reg Cooper and a young chap with a small diesel.

Ted Gregory—present Australian champion—was flying a diesel powered model, but folded his wing early in the day. Later he tried his hand with a diesel powered Stuntwagon and showed that with a little brushing up on his stunt routine he will be among the top at this year's Nationals. Ted intends flying a stunt model of his own design, which will be powered with a 10 c.c. Barker motor.

Monty Tyrell again turned on a good crash. Monty must surely be the hardest worked model builder in Australia, and has now turned from the immoral Zilch to the Go-Devil, and says this should crash well.

A scaled up Mercury Monitor powered by an Anderson Spitfire was flown by Reg Cooper, gaining third place.

Jack Black's performance was very disappointing, mainly because of motor trouble, which is most unusual, for Jack's motors—which he makes himself—are well known for their reliability. But in spite of this Jack gained second place.

The speed circle was active throughout the day, but no outstanding speeds were recorded, one of the best being 91 m.p.h. by Norm Bell flying an "Eta" 29 powered Little Rocket.

Crowd control was poor all day, and at times it appeared the ropes were meant to keep the spectators on the inside of the flying area. Club members and their friends were largely to blame, for no effort was made to chase the spectators behind the ropes. This is one of the most important "MUSTS" at controline meetings.

The system of calling the manoeuvres to the flyer through a loud speaker placed a few feet away from the centre of the circle was used and proved quite successful.

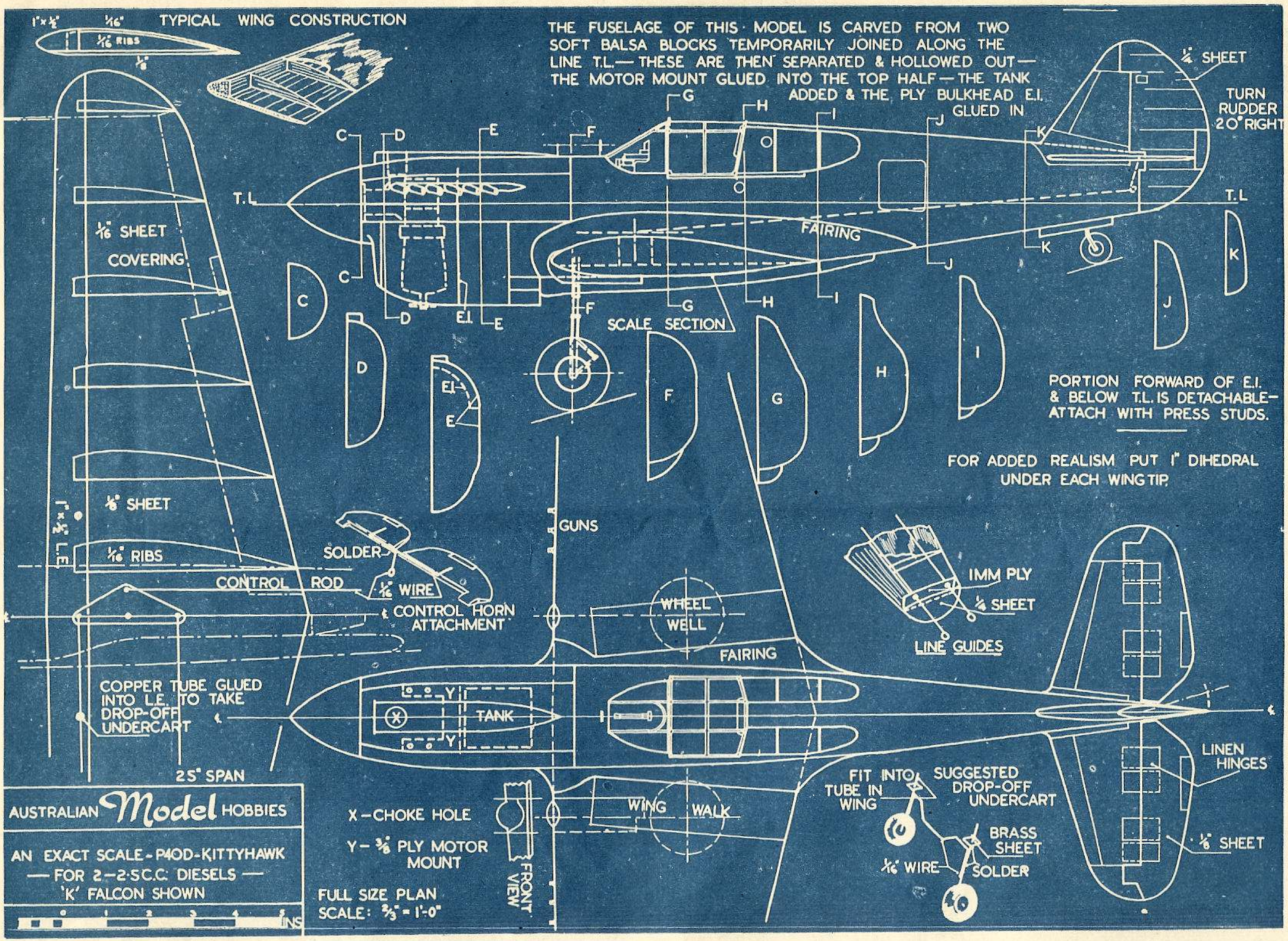
SOUTH AUSTRALIA

Two Victorians, Reg Cooper and Monty Tyrell, competed, along with about 40 S.A. entries.

Speed entries were quite good and although some well built models arrived on the field no times were recorded, but several lads are putting in some hard work on speed models for the Nationals. The stunt event was quite a good show, but the favourite, Gordon Burford, failed to make the grade because of crashes. Rex Meyers and Reg Cooper both recorded the same number of points to tie for first place.

Wooden barricades erected around the flying area made fairly good crowd control possible, and the only offenders were the modellers themselves.

Top—Tony Farnam, winner of the 1949 Victorian Controline Stunt Championship. His model is an original design powered with an Anderson Spitfire.
Centre—Rex Myers, S.A., who tied with Reg Cooper, Vic., for first place in the S.A. Controline Stunt Championship. Rex flew a Gee Bee powered Stuntwagon and Reg an original design powered by a Spitfire.
Bottom—Models and modellers at the Vic. Champs. Foreground, Ted Gregory's Gee Bee powered stunter. Tony Farnam, the hat. An Ohlson 60 powered Stuntwagon. In the background, Jack Black, S.A.


TYPICAL WING CONSTRUCTION
1"×½" 1/16"
1/16 RIBS
THE FUSELAGE OF THIS MODEL IS CARVED FROM TWO SOFT BALSA BLOCKS TEMPORARILY JOINED ALONG THE LINE T.L.— THESE ARE THEN SEPARATED & HOLLOWED OUT— THE MOTOR MOUNT GLUED INTO THE TOP HALF — THE TANK ADDED & THE PLY BULKHEAD E.I. GLUED IN
¼ SHEET
TURN RUDDER 20° RIGHT
T.L
FAIRING
SCALE SECTION
1/16 SHEET COVERING
⅛ SHEET
1"×¾" L.E.
⅛ RIBS
SOLDER
CONTROL ROD
1/16 WIRE
CONTROL HORN ATTACHMENT
COPPER TUBE GLUED INTO L.E. TO TAKE DROP-OFF UNDERCART
25" SPAN
GUNS
WHEEL WELL
FAIRING
TANK
X — CHOKE HOLE
Y — ⅜ PLY MOTOR MOUNT
FRONT VIEW
FULL SIZE PLAN
SCALE: ⅜" = 1'-0"
WING WALK
PORTION FORWARD OF E.I. & BELOW T.L. IS DETACHABLE— ATTACH WITH PRESS STUDS.
FOR ADDED REALISM PUT 1" DIHEDRAL UNDER EACH WING TIP.
IMM PLY
⅛ SHEET
LINE GUIDES
FIT INTO TUBE IN WING
SUGGESTED DROP-OFF UNDERCART
BRASS SHEET
1/16 WIRE
SOLDER
LINEN HINGES
⅛ SHEET
AUSTRALIAN Model HOBBIES
AN EXACT SCALE - P40D - KITTYHAWK — FOR 2—2·5 C.C. DIESELS — 'K' FALCON SHOWN
0 1 2 3 4 5 INS

KITTYHAWK

SCALE TEAM SPEEDSTER FOR MEDIUM SIZED DIESEL OR GLO MOTORS

Here's a model for the newcomer with little experience or the T/S enthusiast.

The "Kittyhawk" is well known to Australians as it was used in considerable numbers by the R.A.A.F. in the Pacific and the Middle East. It was a medium performance fighter developed by the Curtiss concern in the U.S.A.

An underslung radiator makes the Kittyhawk an ideal choice for it allows complete cowling of the smaller motors. The Amco 3.5 c.c. racing diesel would be an ideal choice if fairly high speeds are desired, but speeds of over 55 m.p.h. are possible with 2 to 2.5 c.c. diesels.

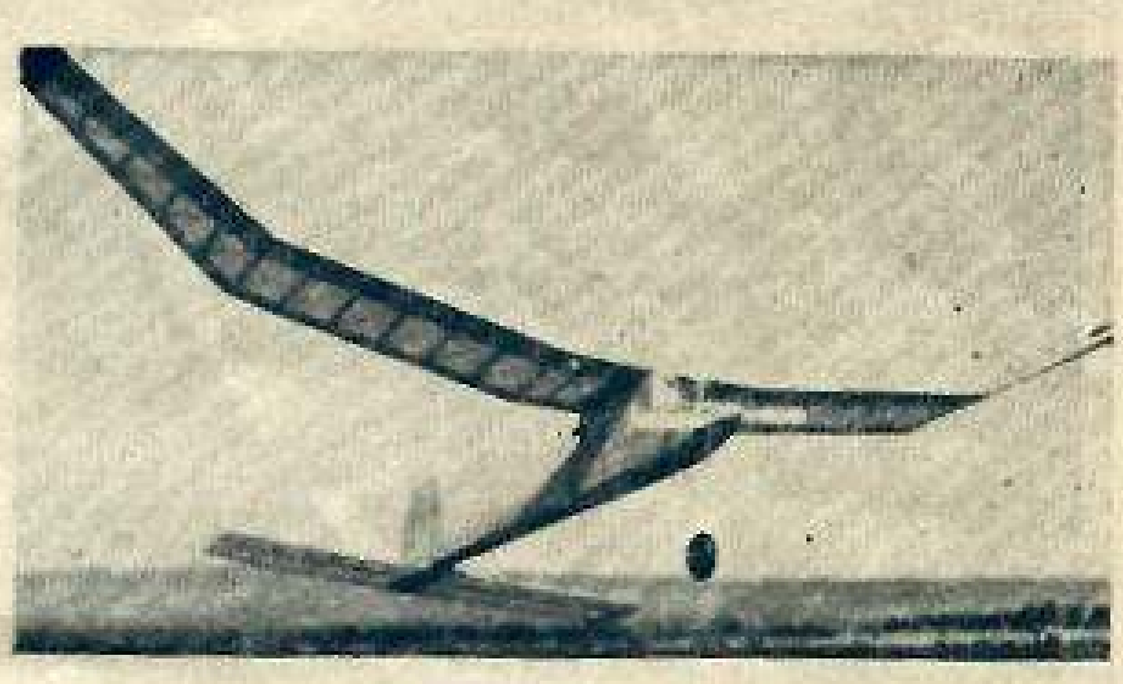
Construction has been kept as simple as possible and results in a rugged job which will take quite a lot of knocking about.

Should this be your first model, *and it would be a good choice as such*, take your time and study the plan well until all points of construction are understood.

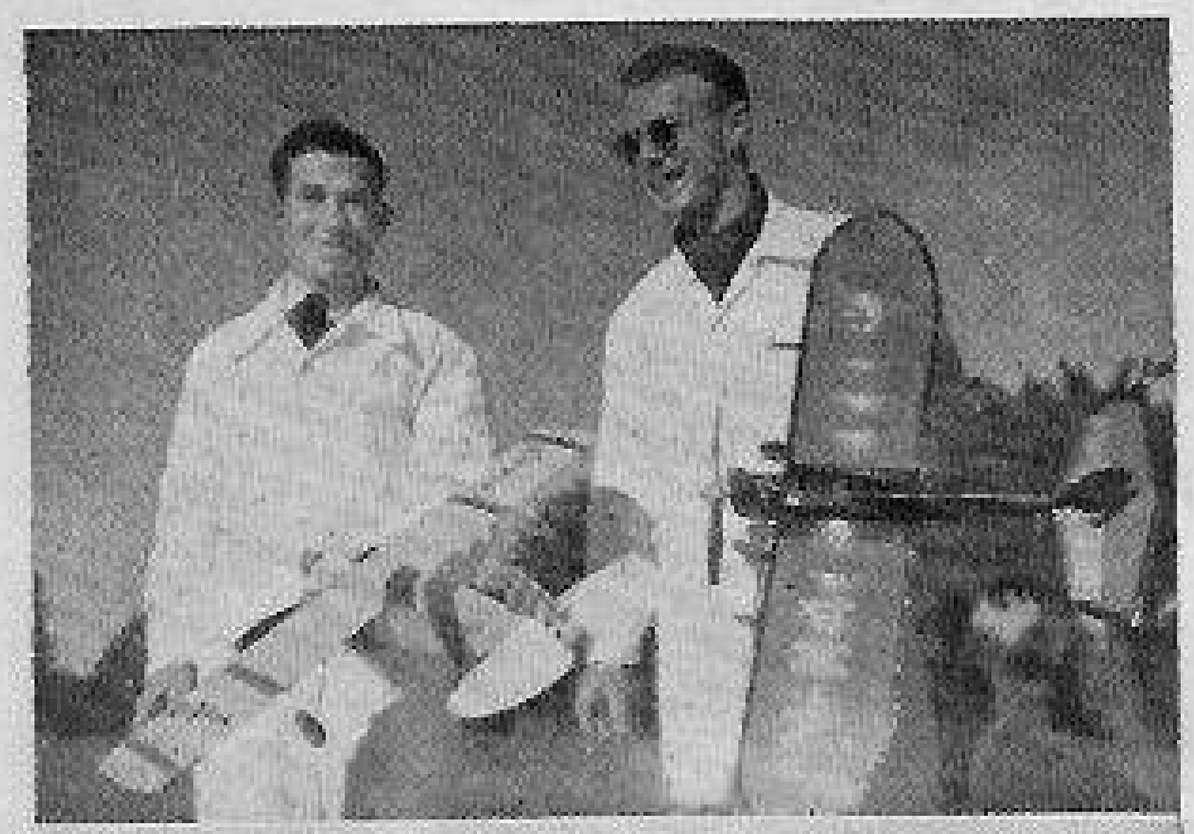
CONSTRUCTION

Select two blocks of medium soft balsa to form the top and bottom of the fuselage. Lightly cement these two blocks together with a piece of heavy paper between them—this simplifies the parting of the blocks for hollowing after the outside shape has been carved. Mark the side view on to the block and carve to shape. Do the same with the top view, resulting in a square cross sectioned fuselage shape. Now careuflly carve the block to the correct cross sections, constantly checking with those given on the plan. When carving is as accurate as possible, finish off with sandpaper, and then part the blocks and hollow out the inside to the wall thicknesses shown on plan. Cut away the front of fuselage so that the motor mount can be fitted. Leave fuselage at this stage and construct the wing.

Wing construction is very simple and strong. The leading edge is carved from ¼" sheet balsa medium soft. Cement two pieces of 1-16" hard balsa together and cut out the wing shape. Cement the leading edge of ¼" balsa on to this. Cut out the wing ribs and butt them behind the leading edge. Allow to dry and sand to shape. Mount the control plate and cement the wing into the fuselage. Mount the tailplane and fix the control rod to the elevator horn and the control plate. Check this assembly for smooth working and when satisfied cement the other half of fuselage in place. Bind the two halves of fuselage together with Durex tape until cement is dry. Carve rudder to shape and fix in place. Sandpaper entire model until quite smooth and then cover with silk tissue. To cover the model, cut pieces of tissue to approximate shape and dope on to model. Rub down the tissue with your hand whilst the dope is wet, rubbing out any small wrinkles, then give whole model three coats of dope and finish with a good synthetic enamel, either in peace-time silver or war-time camouflage. Undercarriage shown on the plan is a drop-off type, but if the model is to be flown in team speed events the present rules call for a fixed undercarriage. Fly the Kittyhawk on 45 to 52½ foot lines according to the power output of the motor.



The Hyphen, built by Andrew Vidale, landing on its first test flight. Full plans of this model are on pages 16 and 17.



Top—Oldtimer Les Annesley and Don Simpson (right). Les and Don are holding models of their own design powered with home-made 5 c.c. diesels.

No. 2—A scene at the last Nats. Ashton Marshall running up his Dooling; Len Pedricks operating the starter. In the background is Len Stevens, winner of class "D" speed, and Mrs. Marden, wife of speed expert Bill.

No. 3—Edge Adams' scale free flighter, a Bellanca Skyrocket, powered by a Whirlwind.

No. 4—Norm Fielder and "Zilchtoo" Cottee (right) with Neil Cottee's Super Zilch.

OPPOSITE PAGE—Top: A scene during the S.A. Stunt Champs. Lenny Buck urging his Banshee away. The outsize in rubber models, Bowdens Bigstuff, built by a Toowoomba modeller.

Between: Jack Black with Lenny Buck. Jim Mulcahy, popular Brisbane topliner. Hartley Young with his Supa Hatchet.

Bottom: Keith Hearns' new Tempest powered stunter. Bob Monck, Neil Evans, Mal Sharpe and Wally Reeve, Glenelg F/C members at the S.A. Champs. Russ Watson. Will casts his Banshee to the winds.

CLUB NEWS

Dalby

A club has recently been formed in this district with Bob Harvey-Hall as Secretary. One of our members, Byron Christmas, recently lost his Dizzy Diesel which has been performing well.

Townsville

Practically no free flight power models are flown up here because it is too easy to lose them in the terrific thermals. Rod Burge has recently completed the D.H. Chipmunk which appeared in A.M.H. and it is powered with a Falcon 2 c.c. diesel. Wing flaps are fitted to an ED Mk III stunt model designed and flown by Mr. Oribin, of Cairns. A. A. Dean is flying an original stunt model powered with a "Hope" 29 (Hope is a Japanese motor?) which pulls the 200 square inch model around at 48 m.p.h.

(The photos from this correspondent have been held over for a future issue.—Ed.)

Maryborough

The Maryborough Modellers' Club caters for all types of modelling, but the main interest is in car and aero-modelling. Strange as it may seem, we lack suitable areas for free flight and so our main interest is con-troline. We have one "brickbat," and that is the

QUEENSLAND

M.A.A.Q. recently conducted their annual elections and the office bearers for 1950 are: President, Russel Watson-Will; Secretary, Peter Weaver; Treasurer, Harry Butler; Contest Secretary, W. Weekes; Recorders, J. Unwin and Jim Mulcahey; Assistant Secretary, Dick Rogerson. During 1950 the emphasis will be on contest work and a complete programme will be arranged for the year. A recent contest sponsored by Tallerman and Co. was won by Ken Luff with an ED powered Low C of I.A model.

NEWSREEL

Northern Queensland clubs are very dissatisfied with the V.M.A.A. because of the short notice given of the date of the Wakefield.

(We regret the mistake concerning Watson and note the other points in your letter.—Ed.)

Toowoomba

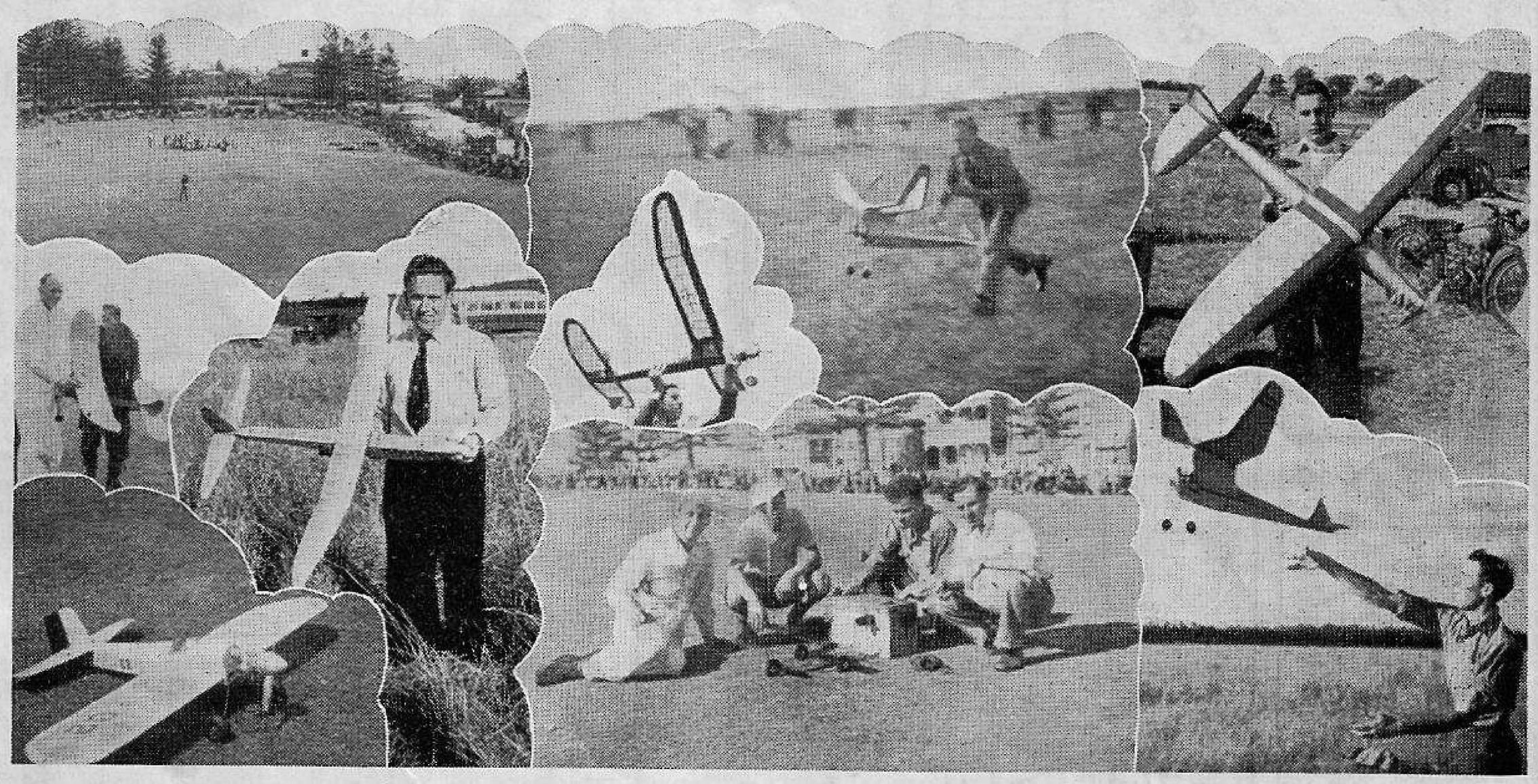
This area is quite active and rccently arranged a gala day for all types of models. Modellers from Brisbane and other clubs attended what was a most successful day. Neal Hart is responsible for a lot of hard work in this area.

Glenelg

Interest in free flight and stunt controline seems to have given way to speed controline, and we see Wally Reeve with little bits of stick which he calls indoor models.

Eastern Suburbs

Here indoor is most talked about, no doubt due to the influence of Boyd Felstead, who is an extreme indoor enthusiast. If the indoor events are abandoned at the Nationals some screaming will come from this group.



Rockhampton

Our club held their annual contest late last year and modellers from Cairns, Mackay, Maryborough and Childers attended what was a most successful meet.

WESTERN AUSTRALIA

Our Annual Championships took place on February 19 and 26. The controline was on the Perth Oval, an all day show, and a great deal of work was put into it by Rod Ashton, George Papas, Colin Pearce and Ken Salter.

One of the local lads, Don Hall, has built a Hornet type motor and great expectations may not be overconfidence. The standard of the stunt flying here is now, we think, up to that of the eastern States (and southern we presume.—Ed.). The Currey brothers are putting in some hard work on power models these days.

SOUTH AUSTRALIA

Prospect

Interest in rubber is reviving and team racing becoming popular here. Bill Saville is back with the club as Secretary after 12 months in the Northern Territory. Mr. MacDonald was recently elected President.

Woodville

Brian Horrocks continues to amaze people with a 1.9 Kestrel powered stunter which will do EVERYTHING. Glen Coates has a Stuntwagon powered with an ED Mk IV which goes well. Bill Fisher has gained the upper hand in the tussle he has been having with his big 10 c.c. stunter.

S.A.A.A.

A flying meeting was recently organised at Rowley Park Speedway under floodlights during the speedway meeting. This proved quite successful and the speedway spectators appreciated the diversion whilst the track was being graded.

So far about 20 of our members have made arrangements to compete in the National Contests in Melbourne at Easter.

NEW SOUTH WALES

M.A.A. of N.S.W.

During the past months the M.A.A. of N.S.W. has suffered a great deal of domestic trouble, which has resulted in the abandonment of the 1949 State Champs and as yet no details of the State Wakefield Eliminations are available. Nevertheless, there is considerable activity in the Wakefield line. Bob Rowe had the misfortune

Continued on page 32

1/16 End ribs

Scale 1" = 1'
(Except where noted)

0 ½ 1 2 3 4 5

3/4 1" 1/16 Sheet.

1/8 Sq.

1/8 Sq. Wing runners

3 3/4

1½'

2'

18"

Full size outline.
2 reqd. 1/16 Quarter-grain.

Removable tail plug

1½"

1"

1/8 x 1/16

1½" 2" 2" 2" 2' 2' 2' 2' 2' 2' 2' 1½" 1½"

Plywood face. 1"

4½"

7/8

3/4"

1½" 1½"

1"

16 S.W.G.

3/4"

1" dia.

2 3/4"

1½"

Position on Stab.

13/16

37 5/8" Overall

11/16

1/4" O.D. Dural tube

2 1/8"

4 5/16"

Dihedral (not to Scale)

Nose detail

1/32 x 3/32 Cap strips

1/32 Sheet. Top only

13½"

4 3/4"

1½"

6"

3"

15 S.W.G. Shaft.

3/8 x 1/8

AUSTRALIA'S MOST OUTSTANDING WAKEFIELD DESIGN

By ALLAN LIM JOON

The original design was laid down and built way back in 1941.

Ted Gregory and myself built similar models together and both showed outstanding promise. The features being ease of construction, no "bugs", plus good performance under power and in the glide.

I won with it the Victorian Wakefield in 1942, plus innumerable club contests with the Elsternwick Club. It was also instrumental in winning the Shaw Cup five times for me.

In 1947 Ted won the Victorian Wakefield in a howling gale.

In 1948 I flew my two-year-old model to win the Wakefield event at the Sydney Nationals. A month after returning to Melbourne I won the Milner Trophy, competing against "floaters."

In 1949 Jimmy Fullarton won the interstate Wake. with a model of almost identical design except for spinner.

I was placed third in this event, with Ted Gregory second—and we were all flying practically identical models!

A new model was built and sent to England for the International event and I would like to quote from a letter from Tangney, my proxy, who said: "Your model outglided the English models by far and I would not be frightened to fly this model in any contest. It was only that terrific downdraft on the last flight that kept us out of the first few places."

A few months ago I gave Norm. Bell a copy of these plans. Norm. was not a recognised "rubber man," but with the model he won the Victorian weight rule championships last November—the first contest he entered it in!

NOTES ON CONSTRUCTION:

Wing gussets should be used on all spars at dihedral breaks.

WING WEIGHT:

Two coats of light dope—1 oz.

Fuselage: The undercarriage is of the retractable type and is too well known to describe here.

FUSE WEIGHT:

Three light coats dope—1¾ ozs.

Tail Assembly: The Stabiliser is cemented to the removable tail plug and the rudders cemented to the end ribs.

A dethermaliser of the "pop up tail" type should be fitted.

TAIL ASSY. WEIGHT:

Plug, stab., rudder and one coat dope—⅜ oz.

PROP AND NOSE BLOCK:

Carve prop from the blank drawn and then round off tip to semi-circular shape. Use your own favourite hinge and counterweight ideas. The tensioner spring is 20 gauge. Use countersunk screw as stop.

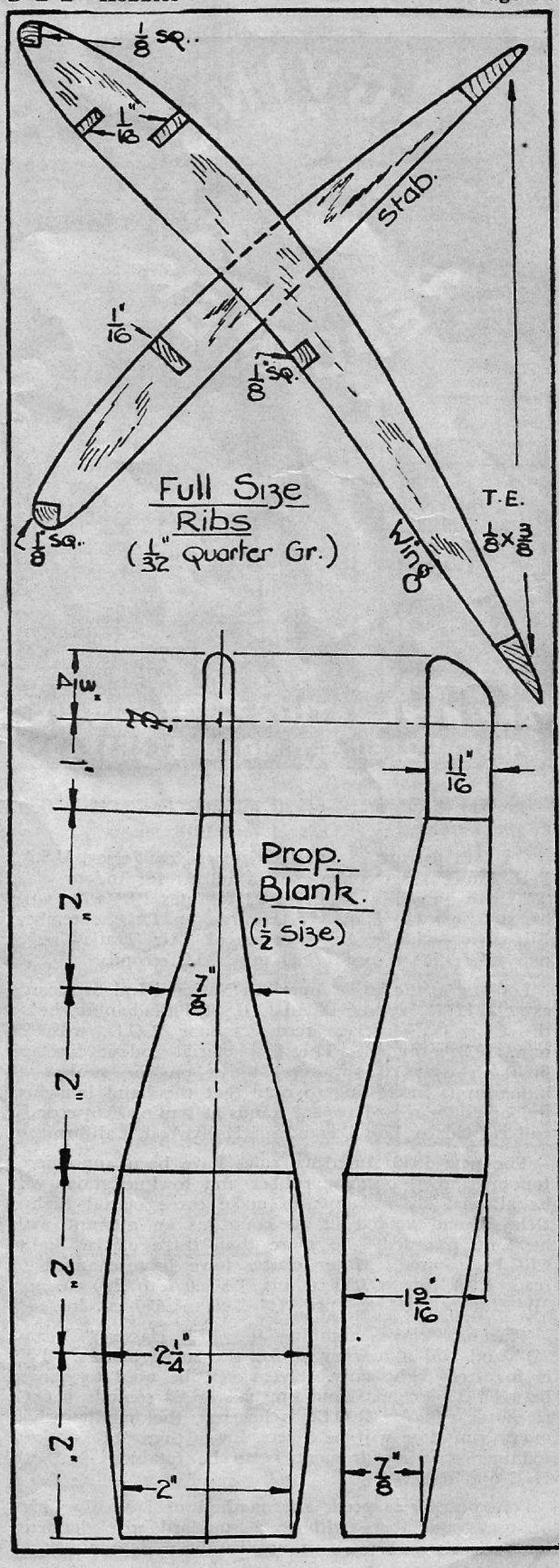
PROP AND NOSE BLOCK WEIGHT (1½ ozs.):

Rubber weight, 3½ ozs. (18 strands ¼ x 1-30 catons x 46" long). A 50-55 sec. motor run should be got with about 850 turns, resulting in flight of about 2.30 to 2.45 without thermals.

FLYING NOTES:

Balance model 50% of cord and circle left in glide and to the right under power.

The dimensions given across the fuselage are from outside longeron to datum or C. The other dimensions may be scaled off plan.



The mythical mark of 30 minutes has at last been attained indoor.

On 14th August last, at Lakehurst, New Jersey, U.S.A., Pete Andrews set a new world record for indoor class "C" with an official flight of 32 minutes 19.8 secs., with his stick model. Shortly afterwards, on 25th September, Bill Tyler—who is Art Director of "Air Trails"—set a new class "D" record of 30 min. 37.2 seconds.

Looking at the latest American National Indoor records as at 1/12/49, we see David Call, of Philadelphia, holds the Class "C" fuselage record indoor R.O.G. with 24 min. 35.2 seconds. The first official indoor fuselage flight of over 20 minutes. Whilst on the subject of indoor it is interesting to note that the hand launched indoor glider record (open) stands at 1 min. 13.6 seconds, and is held by Bob Dagand, of Hollywood, California.

The new 1950 American rules have been announced. Indoor rubber, outdoor rubber and towline glider will be allowed six attempts to make three official flights. Delayed and voided flights count as an attempt with no time recorded. No more than three official flights will be allowed. Motor classes have been changed to read: ½ "A" up to .050 cu. ins., "A" .051 to .200 cu. ins., "B" .201 to .300 cu. ins., "C" .301 to .650 cu. ins.

The new classes combine the 1949 classes "C" and "D" and add a new event for the small motors. This is for free flight only. Flyers will be able to choose between 15 seconds handlaunched or 20 seconds R.O.G. If motor run for R.O.G. is lowered, the handlaunched motor run time will be 5 secs. lower than R.O.G. time. Landing gear requirement is to be retained for both H/L and R.O.G.

For controline speed, any method of launching may be used, and there will be a standard wire diameter for each class. Sizes have not yet been determined.

Team racing rules are now being compiled and will be announced as soon as available.

Radio controlled models are not allowed to be entered in regular outdoor free flight events.

The Flying Bisons of Buffalo, N.Y., have a new type of indoor event, in their local armoury. This is a miniature Goodyear Event for engines up to .075 cu. inch capacity, line length is 25 ft. 3 ins. and the models are timed for eight laps, time being started upon release of model.

The June Pierce Memorial Event will be flown in 1950. One of the most active leaders in the American model game, June died during the 1949 U.S. Nationals.

Frankie Cummings, of Los Angeles, has flown his class "C" indoor job for a few seconds under the 30 minutes and held the record until Pete Andrews cracked the 30 minutes. Frank's model weighed only .0326 ounces (without rubber). The 17-inch prop is turned over only by a loop of 1-16" x 1-30" brown rubber.

Frank Zaic is busy preparing a new Year Book. These books were very popular before the war, and those who did not have the good fortune to see them will have a lot of pleasure in store when the new book arrives.

The New Zealand Nationals were held over the New Year holidays and the full results will be made available when recieved.

Hook Brothers of the Zombies Club (England) have designed a radio control unit which is outstanding among the U.K. gear. Ron Warring has recently completed a three foot six inches span radio controlled job with the all up weight of 15 ounces.

Silvia Lanzo, daughter of Chester Lanzo, well-known American aeromodeller, beat the boys at the 1949 Plymouth meet in the novice indoor event and came out high point girl winner. Silvia, who is 13 years old, seems to be showing Poppa.

From latest reports speed controline flying has lost out to stunt and free flight in the U.S.A. The main reason being that only the specialised few are capable of approaching the high speeds now being achieved, whilst the average modeller can hit top form in the other events.

WE RECENTLY NOTICED

IN THE AMERICAN MAGAZINE "AIR TRAILS"

AMERICAN AIR LEADERSHIP

Sirs.—There are many planes copied by foreign countries of our famous planes. They are too numerous to mention! When it comes to a good showdown, the U.S. will take any foreign country in air power. If this is not so, correct me—and also, how come we have the top A.F., best planes, best pilots, best engines, and best records?—Pfc. Bruce K. Newton, U.S.A.F., Sheppard A.F.B., Wichita Falls, Tex.

BRITAIN'S POWERFUL JETS

The much-talked-of jet fighter that can climb 10,000 feet a minute apparently is a reality—but it belongs to Great Britain, not the United States. Performing at the annual British aircraft show and exhibition in September, a Rolls-Royce Avon-powered Gloster Meteor climbed 40,000 feet in a fraction over four minutes. This was just a few days after a climbing race at the U.S. National Air Races in which Navy Banshees took 10 minutes to climb to the same height.

The Avon engine definitely is the most powerful in the world at present. It is officially rated at 7,500 lbs. static thrust, 2,300 lbs. more than the nearest comparable U.S. engine, the General Electric J-47, which is rated at 5,200 lbs. although it actually delivers about 5,600 lbs. A number of British jets also employ a jet-pipe re-heat system (known as the "afterburner" in America) that they claim increases the power of a turbojet engine by as much as 50 per cent. Reports from other countries indicate that the average increase in power from re-heating has not yet gone beyond about 33 1-3rd per cent. Without a doubt, Britain still has a wide lead in the vital field of jet engine development.

MAIL BOX

FREE FLIGHT WEIGHT RULING

Seacliff, S.A.

Sirs,

Mr. A. G. Hull suggested in the last issue of A.M.H. that free flight ruling would be better if power loading was dropped and wing loading introduced again.

He suggests 16 ounces per square foot wing area. This to me is ridiculous, as the smaller models in particular—which today predominate—would become absolute bricks, and although I do not deny that models with high wing loadings can be made perform if the power is available, the resultant high speed model would be tricky to adjust, and more liable to damage.

My opinion is that the 5 oz. per c.c. ruling is the best yet, and should stay, as it gives fairly even competition for all classes, and leaves plenty of scope for individual design.

WALLY REEVE.

LEADING AMERICAN MODELLER SAYS . . . .

Los Angeles, U.S.A.

Sirs,

I have just received your very fine magazine. I enjoyed the contents very much. Your coverage of the different hobbies makes interesting reading for the modellers.

I was the Editor for Western Modeller magazine for some time, but we had the misfortune to be burned to the ground some time back. Due to other work that I have, I will not be able to edit the magazine when it again becomes a reality.

Any news that I think will be of value to your publication will be sent right along. If you are interested in pictures along with the news, that, too, can be arranged.

JIM SAFTIG.

(Comments on our magazine by such a well-known modeller as Jim Saftig are greatly appreciated, and we are looking forward to some hot news from him. Jim is the designer of the "Zilch"" controliners which are very popular in Australia, as they are in the U.S.A.. and England.—Ed.)

REGARDING TEAM SPEED

Brisbane, Queensland.

Sirs,

May I voice a criticism on the Team Racing article in the last issue of A.M.H.

If an unlimited size fuel tank was allowed and a specified number refuelling stops made, this would almost certainly allow the modeller who has a racing engine to win. A restricted amount of fuel, however, woud force these hot motors to refuel more often and allow the models powered with the slower motors, with their lower fuel consumption, to make up lost ground.

The existing American rules call for any sport or racing type that looks like a real plane. It is only natural that the universally popular "Goodyear" type are used as a pattern for the teams racing, as it is the nearest approach yet to full scale pylon racing.

The suggestion about cord lines appears to be a good one. However, it would be interesting to know what size cord would be necessary to hold a 25 ounce model at 90 m.p.h. safely. Would the flyers suffer to be handicapped by these drag producing lines?

I suggest that two classes of team speed be had, as there are many motors available in Australia in the 2.5 c.c. and under class.

—ARMCHAIR FLYER.

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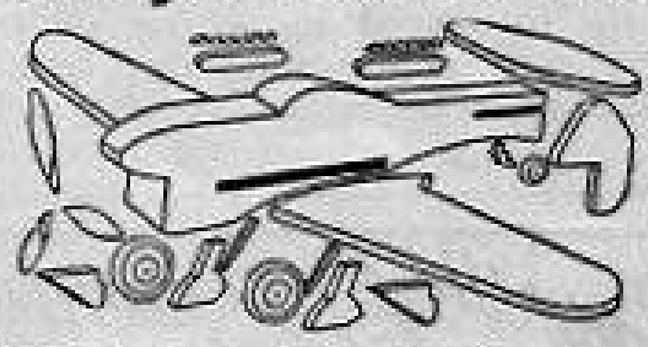

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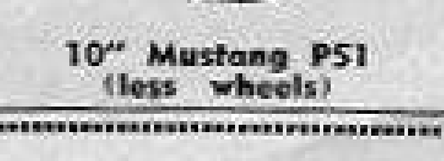


10" Mustang P51 (less wheels)

BEGINNERS SECTION

WHAT DOES IT MEAN ?

When beginning aeromodelling it is a good thing for the beginner to understand just what each part of the model does and various things are for.

PROPELLER.—As most people know, this pulls the aircraft through the air, and is actually two small wings revolving, creating lift and pulling the model forward.

PITCH.—This applies to the propeller and is the angle at which the blades are set. This is measured as the distance the propeller would screw itself forward in one complete revolution if it was moving through the air as a screw through wood. Actually the aircraft does not travel forward a distance equal to the pitch for each revolution as a propeller is never 100% efficient.

SLIP.—This is the difference between the pitch of the propeller and the actual distance travelled forward by the aircraft in one revolution of the propeller and is usually expressed as a percentage.

WING or MAINPLANE.—This is the surface from which lift enabling the plane to fly is obtained.

LEADING EDGE.—The front edge of the wing.

TRAILING EDGE.—The rear edge of the wing.

DIHEDRAL.—This is the angle made with the horizontal by raising the wing tips, and is responsible for lateral stability of the model. That is, prevents the model from rolling over sideways.

SWEEPBACK.—Is when the leading edges of a wing slant backwards like the point of an arrow.

INCIDENCE.—Is the angle the wing makes fore and aft with the datum line of the fuselage. An increase in incidence gives more lift to the wing.

WASH-OUT.—Applies to the wing when the trailing edge near the tip is warped up giving similar effect to an aileron. This gives the wing tips later stalling characteristics and adds to lateral stability when the model stalls.

WASH-IN.—Opposite to wash-out. Both are at times used as adjustments when trimming a model to counteract torque of the motor or to turn the model.

CENTRE OF PRESSURE.—An imaginary point through which the wing lift acts.

ANGLE OF ATTACK.—The angle at which the air flow strikes the wing.

STALLING.—This happens when the angle of attack is too great and the airflow breaks away from the wing in turbulent burbles. Similar to the difference when a sheet of wood is moved slowly through water thin edge first and when it is moved rapidly flatways.

TORQUE.—Is the rolling tendency as a resultant force opposite to the rotation of the propeller.

THRUST LINE.—A line at right angle to the propeller running through the shaft and along which the thrust acts.

DOWNTHRUST.—When the propeller is inclined downwards to prevent the model from stalling whilst the propeller is turning.

UPTHRUST.—Opposite to down thrust.

SIDETHRUST.—The inclining of the propeller to left or right to make the model turn whilst the propeller is turning. This is used to get turn under power and not in the glide or to hold off turn under power, when extra turn is required in the glide.

CENTRE OF GRAVITY.—The point at which the model balances.

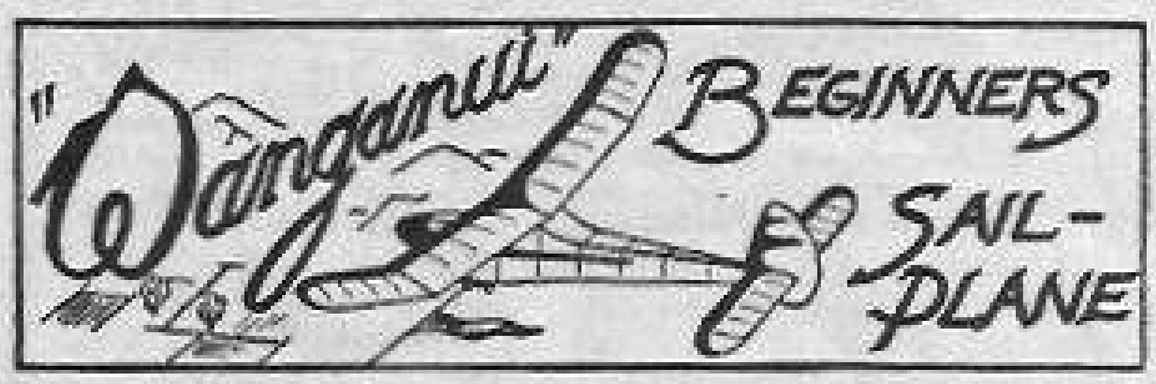
CENTRE OF LATERAL AREA.—A point around which the side area of the model is equally distributed.

MOTOR MOMENT ARM.—The distance from the propeller to the centre of gravity.

TAILPLANE MOMENT ARM.—The distance from the centre of pressure of the tailplane to the centre of gravity.

LIFT MOMENT.—The distance measured horizontally from the "C of G" to a point vertically below the centre of pressure of the wing.

Further explanations will be given in future issues.



The "Wanganui" is a model capable of contest performance and yet is still simple to build and fly. The choice of a sailplane for your first built-up model is a wise one as difficult parts to construct—propeller, undercarriage, etc.—are eliminated, and the flying of the model simplified for there is no winding up worries or difficult adjustment necessary to overcome the forces exerted by the revolving propeller or the higher speed at which a rubber powered model flies.

Great care should be taken to enlarge the plan to full size. All you have to do is to enlarge all measurements four times.

The angle at which the wing is inclined upwards to the front relative to the tailplane is important (this is known as incidence).

Materials required for the model should only cost a couple of shillings from your local supplier, who should be happy to select the types of wood necessary:

1 sheet hard straight grained $\frac{1}{16}$" sheet balsa.
1 sheet medium quarter grained 1-16" sheet balsa.
1 soft block $1\frac{1}{2}$" x $1\frac{1}{4}$" (noseblock).
1 tube of cement.
1 bottle of dope.
1 sheet of silk tissue.
1 coil of cane $\frac{1}{8}$" diameter (reed).

Cellophane scrap, and piece of steel wire for hooks.

Begin construction with the fuselage. Cover your plan with a piece of greaseproof paper and then pin down the outline of the fuselage over the plan using $\frac{1}{8}$" square wood. Do not push the pins through the wood unless necessary. Place them either side of the wood strip (longerons are the four main strips running from nose to tail). Now fill in the vertical struts and cross-braces and cement into place. Allow this fuselage side to dry and then pin down another set of longerons over the top of the first, and build the second half exactly the same as the first. Be careful not to cement the two sides together so as they cannot be parted. When the second side is dry carefully lift the two sides from the

paper—should they stick, slide a razor blade beneath them and the paper.

To join these sides together, first cut a rectangle from a piece of fairly heavy cardboard to the size of the maximum cross-section of the fuselage (centre of cabin). Slide this jig over the two fuselage sides and cement the cross strut immediately behind it into place and then pull the fuselage together at the rear and cement well. Allow this to dry completely before adding other crossbraces and struts. Carve the noseblock to shape and cement in place, holding the fuselage front together with rubber bands, and then cement all other struts in place. When completed and quite dry remove the cardboard and the fuselage should be quite true.

Carve the solid balsa noseblock to shape and cement on to the front of fuselage. Cover with silk tissue and tighten the tissue with three coats of "dope." Then add the cellophane windows.

WING

Make a template the shape of the rib section from a scrap of aluminium sheet (any thin metal is suitable or 1-16" plywood) and use it to cut out the wing ribs. Cut the required number and then pin them together and trim the spar notches. Strip the leading and trailing edges from sheet balsa with a razor blade and straight edge or a "balsa stripper" (a balsa stripper is an essential tool and can be bought from your local model shop for a couple of shillings).

To assemble the wing, first pin down the leading and trailing edges over the plan and then cement the ribs to them. Next add the mainspar. The wing tips are formed from $\frac{1}{8}$" cane, but the beginner can leave the wing tips square for simplicity if desired.

Stabiliser (Tail) is built up in the same manner as the wing.

COVERING

Several types of covering tissue are available in Australia, but we recommend silk or rag tissue. The coloured Swedish tissue sold by most model shops is nowhere near as good, although for the beginner it has the advantage of tightening when water doped. If too much water is used on this coloured tissue the colour will run and therefore the best way to apply water is to carefully rub over the tissue with wet cotton wool. When the water has dried out, dope with cellulose dope.

Silk and rag tissue are very similar and closely related to American Silkspan, excepting that the lighter grades of silk tissue do not tighten up when water doped. A fairly heavy cellulose dope is necessary to tighten it.

To attach the tissue use dope. Cut the tissue to approximate shape of the part to be covered, place over the structure, then with a small brush run over the tissue around the edge of the framework and smooth down with a finger so that the dope is forced through the tissue and sticks it to the wood. Stretch out the tissue as tight as possible in all directions. Should it be necessary any part can be loosened off by applying more dope and pulled tighter or a crease corrected. When satisfied with the covering apply several coats of cellulose dope to tighten the tissue.

The wing and tail are fixed to the fuselage with rubber bands and when held by the wing tips level with the main spar the model should balance horizontally. Add weight to the nose until this is so. Your "Wanganui" is now ready for testing. When thrown from the hand with wings parallel to the ground, the nose pointed at a spot some 30 feet in front of the launcher and into the wind the model should glide smoothly to the ground. If this happens the model can then be tested on a towline, but should the glide

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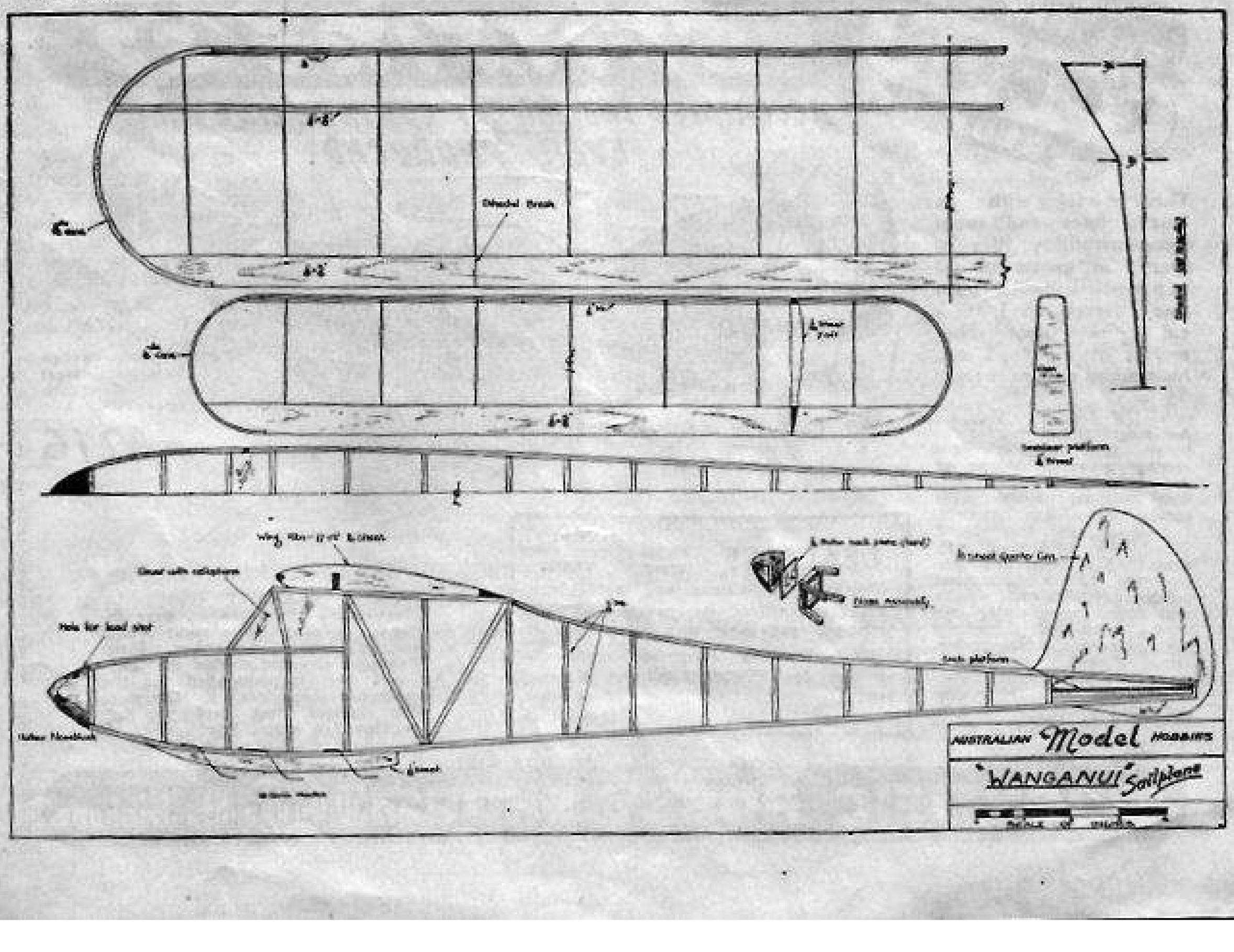

Wanganui—(cont.)

be poor, either too steep towards the ground or the model stall (points its nose sharply upward and then falls back on its tail and then into a nose dive) adjustments will have to be made. First check the balance and see that it is correct and if so then the incidence of the wing or tail will have to be altered. To correct a steep glide to the ground lift the back of the tail by adding pieces of balsa. If this becomes excessive raise the front of the wing. Correct a stall by raising the trailing edge of the wing in a similar manner. Continue these adjustments until a long, smooth floating glide is obtained, then try the model on a towline.

The towline used is a length of heavy thread with a small wire loop at the end. Tie a piece of tissue six inches square to the towline 12 inches down from the wire loop. This helps to disengage the line and also to mark the line end when lying on the ground between flights. The model is towed into the air like a kite and released by giving the towline a light tug when the maximum height is reached.

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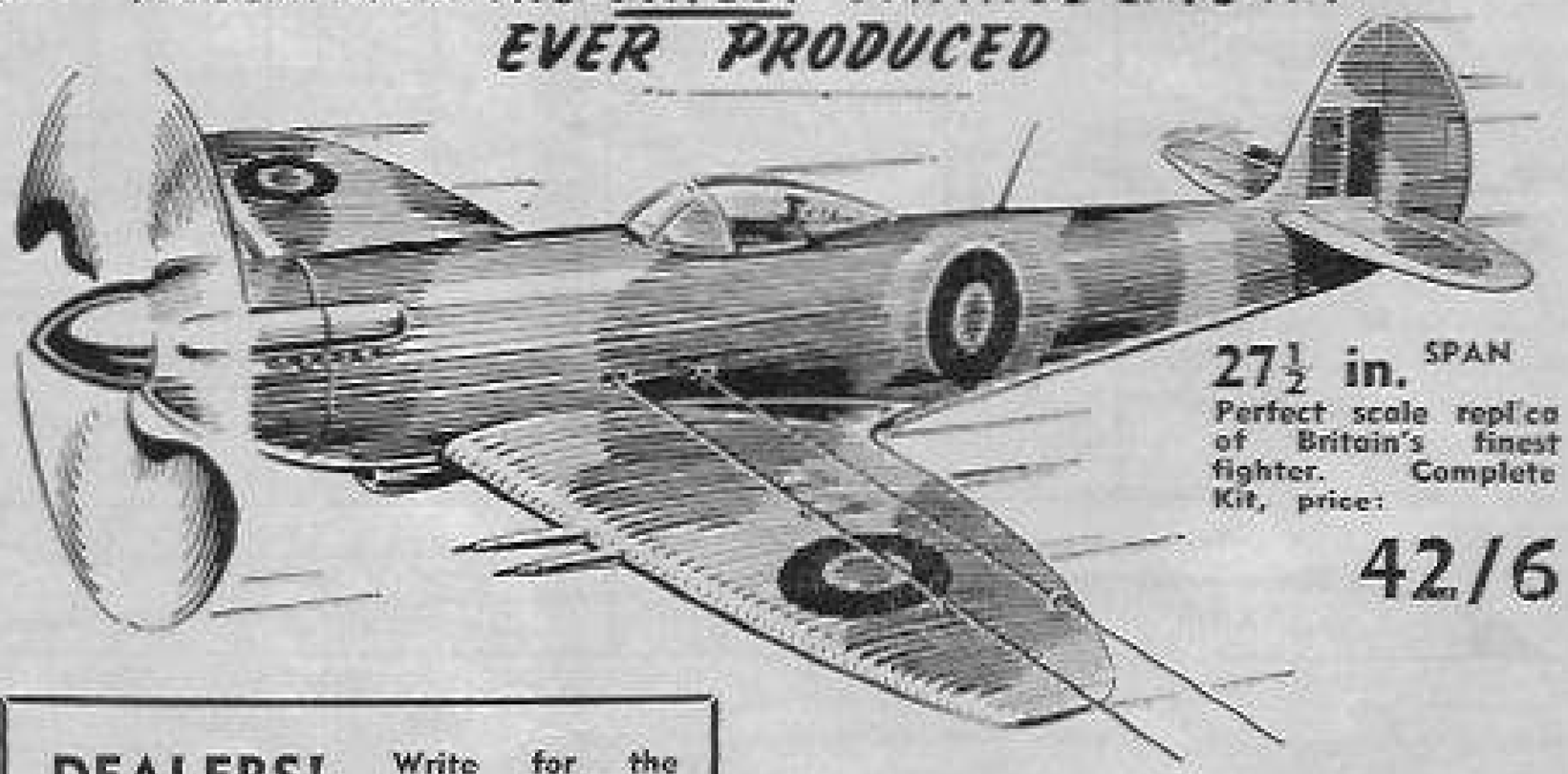

This model with its classic lines and super manoeuvrability flies at speeds in excess of 60 m.p.h. Suitable for small diesels of 1 to 3 c.c. and Glow Plug motors of 1.5 to 5 c.c. Maximum engine weight 5½ ozs.

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Outstanding American motors for disposal: Ohlson 60, new test run only twice; complete with Aero-spark coil; £10 complete. McCoy 29 racing motor, only been bench ran, £8. McCoy 60 racing motor, brand new; has never been run, £20. Herkimer O.K. Cub, new, never been run, £5. Also two Gee Bee Stuntmotas, £6 each; and Mills 1.3, £5. Models to suit these motors also available. Enquiries to R. Watson Wills, 134 Albert Street, Brisbane, Queensland.

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Atwood Triumph 49, Gloplug motor. This is one of the latest American motors and operates well on gloplug. Motor has been test run only. Complete with extra Arden glo-plug. Best offer.—W. Evans, 4 High Street, Glenelg, S.A.

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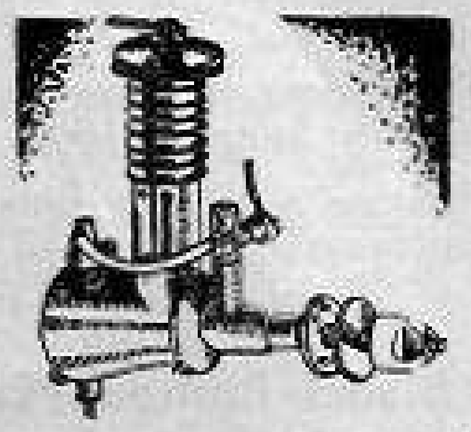
FROG



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De Wagon—(cont.)

control rod and adjust until working perfectly. Unit construction such as this allows complete installation and checking of the control system before being built into the plane.

ASSEMBLY:

Check the internal construction of the fuselage and securely mount the fuel tank in the indicated position, making sure that the wedge is on the outside of the circle, and then cement fuselage top, wing, and tailplane in place. Check alignment and pin until dry. Now sandpaper fuselage smooth and then cover with silk tissue. Cover entire tailplane and give all three coats of dope. Sandpaper lightly between coats. Finish the model in your favourite colours with any good quality fuel proof finish.

IMPORTANT:

The model MUST balance forward of the rear edge of the leading edge sheet covering. REPEAT MUST. Most of these models emanating from South Australia are powered with either the Gee Bee "Stunt-motor" or Gee Bee 50's, but any good five c.c. motor of similar power would be quite suitable. Fly the model on 55 to 60 feet lines according to the power output of the motor. Hold your arm at full length when flying the model and use as little wrist movement as possible, for ample control can be had by simply raising and lowering your arm. Wrist movement tends to over-control. Always perform your stunts in the down-wind half of the circle. Use .012 steel lines.

Club News—(cont.)

to lose his Wakefield O.O.S. on 50 turns. Arthur Meader has a job which is most consistent. It is a Korda wing on a box fuz and has twin rudders. Both Arthur Lonergan and Butler are working on new Wakefields, as are Lance Hopkins and Col Pittard.

"Zilchtoo" Neil Cottee is still flying the big stunters. Speed controline is in the hands of a small bunch happy when trying to stop hot speed jobs from winding the lines around them. Wally Judd, Clive Wheatly, Neil Cottee and Lance Hopkins have teamed together as a group, and one of their possessions is a Dynajet "Red Head." Members of the North Shore Club, Col Durance and Gordon Hughes, are both flying Elfin Free Flighters which are in the threat class. John M-J has fitted two wheels to a two-stroke motor and calls it an Ambassador, which is to be his means of transport to Melbourne for the Nationals. Clive Wheatley is mass producing Lil' Duper Zilches for his McCoy 36, and is considered the main threat for N.S.W. in the Stunt Event. Another hopeful is Don "Foxy" Neville, who has a "spid" model with a jungle juice burner Fox 59. Perhaps we can hound him a bit.

TASMANIA

(Unfortunately our Tasmanian correspondence was mislaid, and we will appreciate news from Tassie for our next issue.—Ed.)

VICTORIA

Norm Bell informs that the V.M.A.A. is having difficulty in obtaining suitable grounds for the control-line events of the Nationals and at present it appears that these events will be held on one of the larger suburban ovals. Indoor possibilities are much worse and as yet no hall suitable for indoor flying is available, but every effort is being made to obtain one.

Norm has been getting some good performances from some of his National entries. His Elfin powered Pippirike (A.M.H. plan) recently did 24 min. of a 5 second run. Allan King has turned to a streamlined Wakefield this year and has it going very well.

John Martin's
on the
Lower Ground Floor

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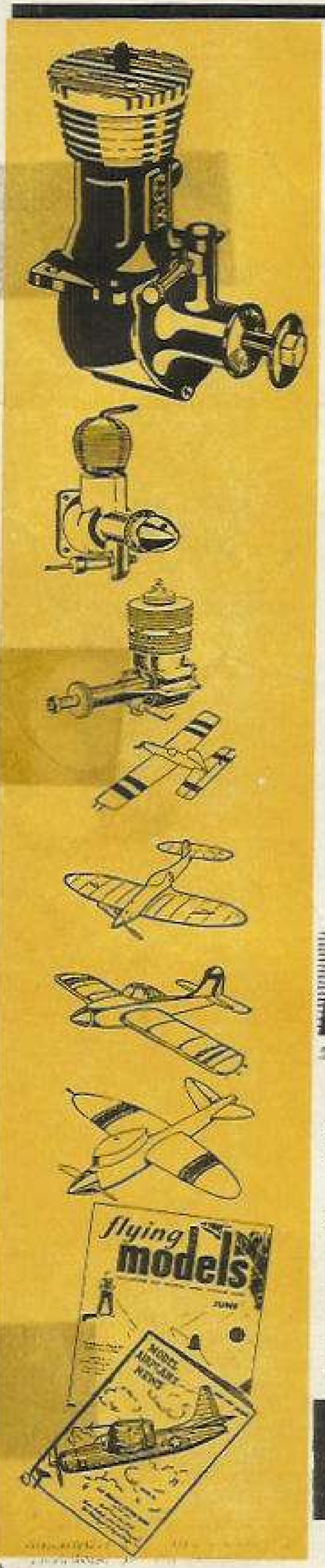

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