The Australian

Motor Cycle Bicycle & Radio

INCORPORATING "THE AUSTRALIAN MOTOR CAR."

Registered at the G.P.O., Melbourne, for transmission by Post as a Newspaper

Vol. 10 No. 14 **Wednesday, February 4, 1925** **Price SIXPENCE**

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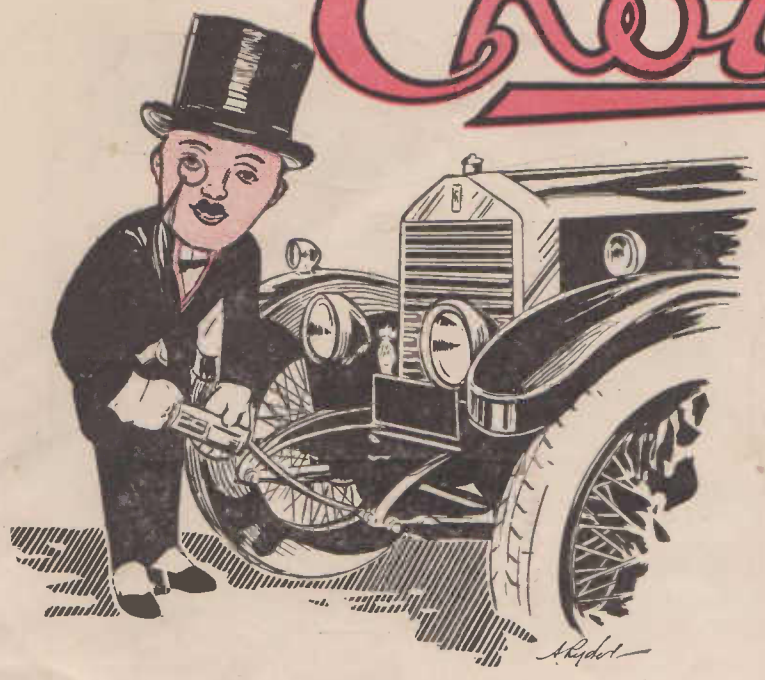

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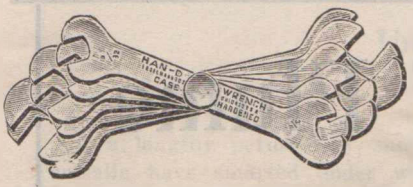

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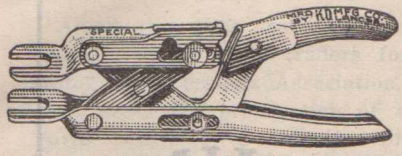

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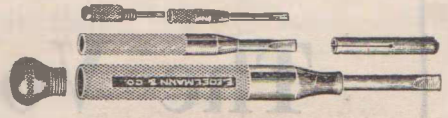
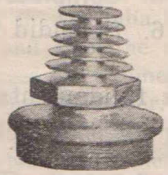
Indian half-gallon tins are popular for their size, as they can be easily packed in side car when touring, and hold sufficient for a fill-up on the road. 4/9 tin.



Screwdrivers.

Combination screwdriver, 4 in 1. Nicely finished, mottled surface, nickel-plated, and very fine material. 4/6.



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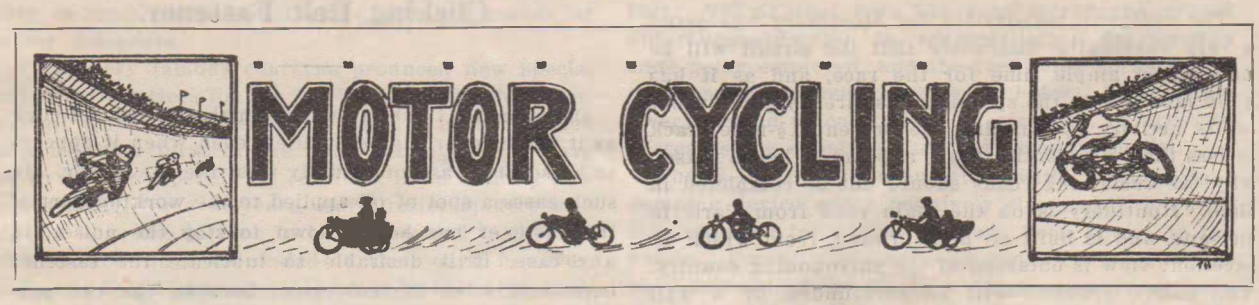

The Tariff on Motor Cycles

United Movement for a Reduction.

For a lengthy period now, motor cycle traders in Australia have smarted under what they considered "class legislation" as regards the difference in tariff charges on motor cycles and motor cars. As is probably well known, British motor cycles imported into Australia are charged with a 20 per cent. ad valorem duty, and foreign 30 per cent., while on motor car chasses importers have to pay 5 per cent. and 7½ per cent. ad valorem, respectively.

About this time last year the majority of Melbourne's motor cycle traders formed The Victorian Motor Cycle Traders Association, one of the chief objects being the preparation of an application to the Tariff Board for a reduction of the duty on motor cycles to at least the same rates as for motor cars, and during the interim the matter has not been lost sight of, considerable time being devoted to considering the "pros and cons" and collection of data in support of the application.

The Adelaide motor cycle traders have recently been just as active, and are co-operating with the Victorian Association. Matters have now "come to a head," and a deputation of those interested interviewed the Tariff Board yesterday, and the decision of this body is eagerly awaited by all traders and motor cyclists.

The appeal was based on the grounds principally that the motor cycle is the poor man's motor car, and the differential rates between cars and motor cycles are inequitable; that the number of machines locally assembled is negligible; that the advantages of the protective tariff have not been availed of to any degree by traders in Australia, and that the large body of motor cycle users should not be penalised for a business that is not being commercially furthered to any great extent; that the complete manufacture of motor cycles in Australia has been proved financially impossible; and that the motor cycle is being more universally used for commercial purposes every day by the smaller class of trader, who cannot afford a larger vehicle, and he is thus being duty-taxed to a greater degree than his big brother trader.

These are some of the chief contentions justifying the appeal. The traders have also intimated that any advantages that may accrue from the movement will be passed on to the public in full by way of reduced motor cycle prices.

It is sincerely hoped by the motor cycling community and prospective machine purchasers that some benefits will accrue from this agitation.

ROAD AND TRACK CIRCUIT FOR GRAND PRIX.

Next year's French Grand Prix race, organised by the U.M.F., will be held at Montlhery track, which is only twenty miles from Paris.

It will not be entirely a track race, for a road circuit is now being constructed around the present track and linked up with it, thus giving a course about seven miles round, which will comprise a two-mile straightaway, the east bend of the present track, a hairpin turn, several twisty portions, and one slight gradient.

The company responsible for Montlhery has given a very substantial guarantee that the circuit will be finished in ample time for the race, and as it has 3500 laborers on the spot and has already given proof of its activity by building the present 1½-mile track in less than six months, there appears to be no reason why the remaining roads should not be completed in time. Montlhery is on the main road from Paris to Orleans, and is built on high ground, from which an excellent view is obtained of the surrounding country. The entire grounds will be surrounded by a wall eight feet high about ten miles in circumference.

In all probability the Motor Cycle Grand Prix will be held on Sunday, July 19, and will constitute the first of a series of motor races which will terminate the following Sunday with the French Grand Prix for cars. Motor cyclists are strongly in favor of the Sunday afternoon for their race, but this time has already been reserved for the French Touring Car Grand Prix. Although the motor cycle movement is not developed in France to anything like the same extent as in England, it is more than probable that the race for two-wheelers will attract more spectators than the touring car event.

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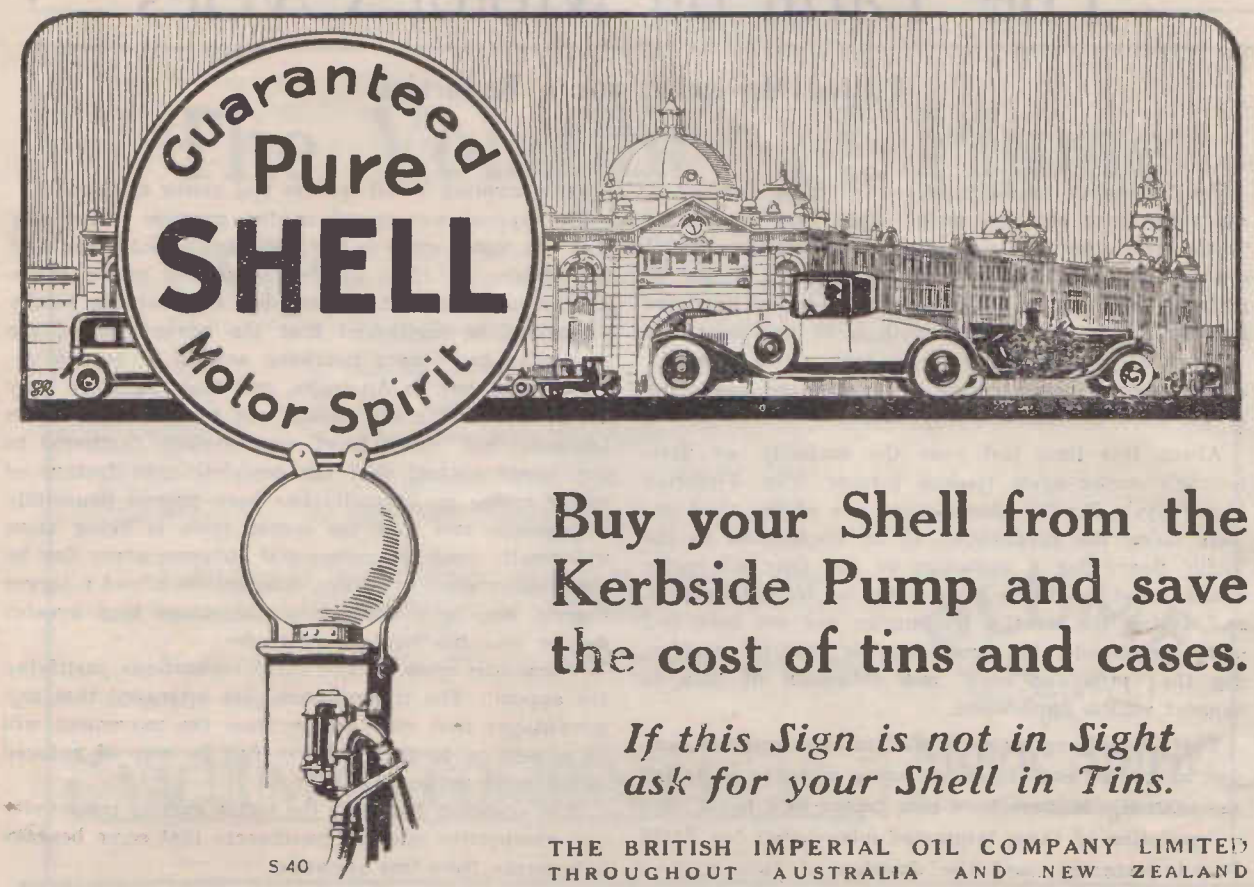
Clicking Belt Fastener.

Occasionally the belt fastener makes a decided click as it passes over the belt pulley, even when it appears to be so fitted as not actually to strike the pulley. In such cases a spot of oil applied to the working part of the fastener has been known to stop the noise. In any case, it it desirable to lubricate the fastener occasionally, as the movement between the two portions of it is quite considerable.



Buy your Shell from the Kerbside Pump and save the cost of tins and cases.

If this Sign is not in Sight ask for your Shell in Tins.

THE BRITISH IMPERIAL OIL COMPANY LIMITED
THROUGHOUT AUSTRALIA AND NEW ZEALAND

Modern Carburetter Design

Progress in the Development of One of the Most Important Components of The Motor Cycle.

As the engine is said to be the heart of a motor cycle, so, by extending the anatomical metaphor, the carburetter may be called the lungs of the power unit. As such it has vital duties to perform, and the tremendous steps made in high-efficiency engine design during the year have made it necessary for carburetter manufacturers to keep their experimental departments busy to meet the increasingly exacting demands of engine designers.

Three very famous concerns produced new special racing carburetters for the 1924 Tourist Trophy races, and all three instruments have either been included in a modified form in the 1925 catalogues, or have led to further experiments resulting in an entirely new sports model for next year. Carburetter makers who did not have the fortune to be represented in the Isle of Man races have not rested on their oars, however, and many detail improvements are to be found on their well-tried instruments of latest pattern. A review of the present position is interesting.

Amac Modifications.

For many years the chief feature of the Amac instrument has been the submerged jet which controls the fuel supply. This jet is accessible and easily changed, and it alone controls the amount of fuel that can pass, the six holes in the sprayer being arranged merely to split up the supply so as to give an even mixture. Air and throttle slides are of the piston type, the air slide being dovetailed into the throttle barrel. In practice the Amac has a wonderful degree of automaticity, so that the air lever is seldom required except for starting purposes. Given a jet rather on the large side, the air slide may at a pinch be neglected. Nevertheless the Amac, with a correct jet setting, to give good consumption and all-round results, will require a small amount of manipulation of the air lever at wider throttle openings. For 1925 a modification has been introduced in connection with the jet-holder in order to prevent the slightest possibility of leakage at this point, while a slight alteration has been made to the shape of the sprayer so as to give even greater efficiency than before.

B. & B. Designs.

Various types of instrument are produced by the long-established firm of Brown and Barlow. Perhaps the best known is that in which a needle is attached to the throttle slide and moves with it, thus increasing the jet orifice as the throttle is opened. This again may be described as almost automatic in action, so much so that for 1925 a slightly modified form will be shown with single-lever control. The needle is adjustable for height, thus providing an equivalent to a change of jets. In the two-lever model a small air slide is dovetailed into the throttle. An adjustable pilot-jet for slow running can be fitted. Another well-known B. and B. type is somewhat similar in construction, though the needle is absent and the jet chamber is covered by a gauze disc to split up the fuel. Yet another type has been introduced, which differs considerably in construction, a flat throttle slide being employed, and the fuel being sprayed into the chamber through a ring of holes. The second lever, instead of controlling an air slide, enlarges or decreases the supply of fuel fed through the jet.

The 3-jet Binks carburetter, with its ingenious damping device which positively closes each jet until it is required for action, has long been known to the public. Recently an improved Binks carburetter has been introduced, which in a large measure reduces the time required for tuning and gives perfectly smooth acceleration through the whole range. In this case the main jet has no dampers and lies behind the throttle barrel: the top of the jet, however, is well above the petrol level, and after the first and second jets have been brought into action the main jet begins to "dribble," thus slightly enriching the mixture before the air speed becomes sufficient to bring it fully into action. Both these 3-jet carburetters are normally supplied with an extra air valve on the engine side of the throttle, useful for tuning up or for allowing pure air to be sucked into the engine when the machine is descending hills with the throttle shut.

Binks 2-jet Types.

A 2-jet carburetter having the main jet shrouded by a small air slide has gained a considerable degree of popularity on touring machines, and a sports type, with carefully streamlined passages, has been highly successful in speed events. Several motor cycle manufacturers have standardised this type with the inlet type formed integrally with the carburetter and arranged to screw into the cylinder head casting, thus providing a very smooth gas flow. For sheer speed work the Binks "mouse-trap" with its expanding choke tube has been so successful that a modified type has been produced for sports machines.

Now probably more popular in the car world, the Cox Atmos single-lever carburetter is nevertheless still made in motor cycle sizes. The jet, adjustable by means of a screw-down needle, is placed in a small subsidiary choke tube leading into the main air passage at right-angles. Besides the jet control there are two main adjustments available, a marked vernier adjustment controlling the air which passes

over the mouth of the small venturi (this adjustment chiefly affecting acceleration), and also a slow-running adjustment consisting of a telescopic extension tube to the small choke. An interesting feature is the large gauze filter within the float chamber and surrounding the float. Through this filter it is practically impossible for impurities such as would choke a jet to pass, and owing to the large surface of gauze it requires cleaning very seldom. The throttle barrel is closed by a clock spring.

The Degory carburetter, in a form suitable for motor cycles, is remarkably simple in construction having a float chamber surrounding the jet so that it is unaffected by tilting. The jet itself feeds to an annular ring surrounding the choke tube, and from this ring to the choke passage through a series of holes, so that the mixture is evenly distributed. On either side of the choke tube lies a piston valve, that nearest the engine controlling the throttle opening, whilst that nearest the intake controls the amount of air passing.

One of the simplest and most satisfactory single-lever carburetters yet devised is the Mills. In principle it consists of an adjustable taper needle which rises and falls with the throttle piston. There is, of course, more in the design than this, for a diffuser passage is led to a submerged jet, which, governed by engine suction, enables a richer mixture to be supplied when the engine is pulling slowly than when it is running fast and light. The jet needle is easily removed and replaced by another needle with a taper suited to any particular requirements and an external adjustment for the height of the needle is provided by a quick-thread screw passing through the carburetter cap. Another feature of the Mills consists of a float chamber arranged below the mixing chamber, so as to be concentric with the jet. Besides being a very compact construction, this ensures the petrol level being practically unaltered when the carburetter is tilted. The latest Mills instruments are constructed of bronze instead of aluminium.

A carburetter which for many years has retained its salient feature, a miniature choke surrounding the jet, is the Senspray. This choke is employed to atomise the fuel as it issues from the jet. The Senspray is unique amongst two-lever carburetters on account of its barrel throttle and small shell air slide. A simple adjustment of the sprayer can produce sensitive, semi-automatic, or almost automatic action of the instrument. The carburetter has a wide range of flexibility.

Having several unique features, the Wex carburetter has obtained no small degree of popularity in the last few years. A flat throttle slide opens up the main passage, passing as it does so across the narrow faces of a peculiar jet arrangement. Each of the two jets is hooded by flat plates, the fuel being permitted to pass into the mixing chamber through long and very narrow slots between the plates. A new model has been introduced with a small auxiliary air slide for providing fine adjustments. Both main and pilot-jets have independent gauze filters and are of the submerged type, so that a well of fuel is available for starting and slow running.

Our Next Number

WILL BE PUBLISHED ON

Wednesday, February 11th

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AT THE MOTORDROME.

THE WEATHER NEARLY WON.

Doubtful weather on Saturday night last probably affected the attendance at the 'Drome, but notwithstanding this, a crowd of ten to twelve thousand paid for admission, and again enjoyed a fine night's sport. The complete success of the evening was again spoilt somewhat by the false starts and other troubles in connection with the motor-paced bicycle races, notably in the match between Corry and Opperman, the former pulling up on several occasions, and eventually being disqualified by the L.V.W. for one month. This was, of course, unsatisfactory to many of the onlookers, who were attracted there in the hopes of seeing a ding-dong match between these two popular riders.

The impression amongst many of the regular fans is that too much of the programme is being devoted to the paced matches and races; they evidently want more of the "fast stuff."

Considerable discontent is also apparent in the ranks of the motor cycle riders; the slower brigade complain they are handicapped "out of it," while the back-markers are objecting to the big handicaps awarded some of the former. On paper, this sounds as though both ends are being equitably treated when each objects to the handicap of the other, but in effect it happens that in one race one particular class has the advantage, yet in another race the position is reversed. Is inconsistent handicapping the whole cause of the trouble, or is it the indifferent performances of riders and machines? Our idea is that both sides are at fault, and to relieve the position we suggest that the management revert to the class races, when more riders will be encouraged to compete, handicapping will be easier, and all concerned more satisfied. The consequent closer finishes would also be more entertaining and thrilling for the spectators. For riding unevenly, and encroaching above the "line," J. Stewart was disqualified for two weeks. This penalty may serve as a warning to one or two others who are regularly offending in this respect, to the detriment and danger of other competitors.

Cyril Connolly, whose non-selection to ride in the Under 400 c.c. Championship at Ascot caused so much comment.

Except for these minor defects, the organisation and management seems complete. Even the antiquated scoring board was very efficiently operated. The amplified megaphone was again given a test, and seemed a great improvement on its former trial, and was of great assistance in announcing the results.

MOTOR CYCLE RACE RESULTS.

Garden City Handicap.

(For machines under 500 c.c. Six laps. £20, £7/10/-, £5.)

FIRST HEAT.

Deaney, D., New Imp. (225 yds.) 1
Hepburn, R., A.J.S. (75 yds.) 2
Staig, A., New Imp. (475 yds.) 3

Time, 1 min. 37 3-5 secs. Won by 100 yds.

SECOND HEAT.

J. Stewart, A.J.S. (200 yds.) 1
C. Etchell, Norton (550 yds.) 2
L. Gough, Douglas (Scr.) 3

Time, 1 min. 36 3-5 secs. Won by 1 ft.; 20 yds. between second and third.

FINAL.

C. Etchell, Norton (550 yds.) 1
D. Deaney, New Imp. (225 yds.) 2
R. Hepburn, A.J.S. (75 yds.) 3

Time, 1 min. 36 2-5 secs. Won by 10 yds. with the same distance between second and third. In this race Stewart rode badly, and considerably interfered with the back-markers, otherwise the result might have been different.

Carrington Stakes.

(For side car machines, all powers. Six laps. £20, £7/10/-, £5.)

FIRST HEAT.

S. J. Gower, Harley (Scr.) 1
J. Disney, Matchless (225 yds.) .. ..
A. Bruce, A.J.S. (350 yds.) .. ..

(Dead heat for second place.)

Time, 1 min. 59 3-5 secs. Won by 45 yds.

SECOND HEAT.

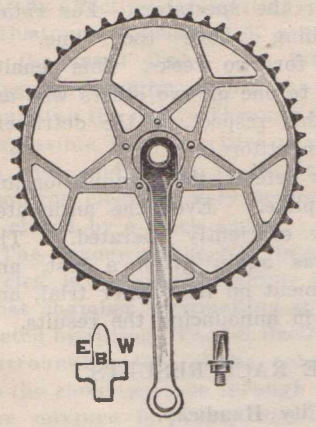
C. H. Disney, Indian (Scr.) 1
R. Hipwell, Douglas (175 yds.) 2
F. T. Curtis, Harley (75 yds.) 3

Time, 1 min. 55 secs. Won by 2 yds.

FINAL.

F. T. Curtis, Harley (75 yds.) 1
R. Hipwell, Douglas (175 yds.) 2
C. H. Disney, Indian (Scr.) 3

Time, 1 min. 52 4-5 secs. Won by 5 yds., with about 40 yds. between second and third.



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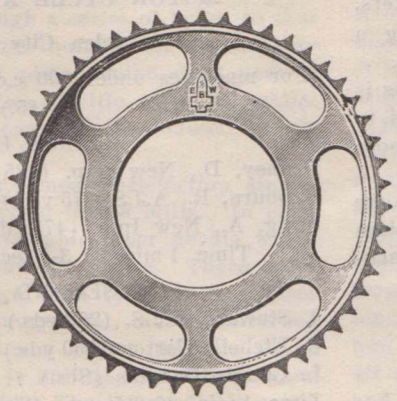
Supplied in an immense variety of styles and all usual sizes and numbers of teeth. Every set includes a pair of toughened steel cotters.



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Of specially selected steel to our own specification. Produced by our own unique cold forging process, ensuring toughness and freedom from wear.

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Before you buy your mount for 1925, be it cycle or motor cycle, see that WILLIAMS fittings have been incorporated. It is an acid test of quality, and a guarantee of your riding satisfaction.

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Price List and Catalogue "A.M."

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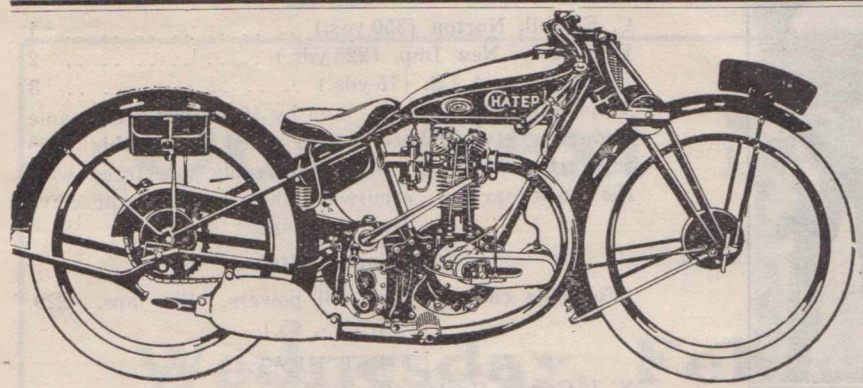

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Low riding position, low centre of gravity, terrific speed capability, perfect cornering, and low petrol consumption.

An ideal mount for the sporting tourist or speedman. Every machine suitable for sidecar use. Before deciding, *See Us.*

We have also a complete range of CALTHORPE machines from 1½-h.p., guaranteed to give perfect satisfaction in every detail. Prices from £45. *Write or Call for Full Particulars.*

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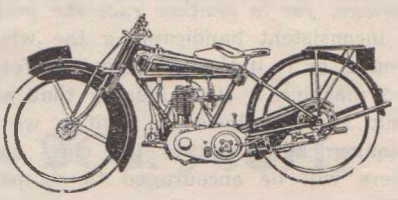


2¾ Calthorpe

2¾ h.p. One-Mile Dash.

(Three Laps. Flying start. 1st, £10; 2nd, £5.)

Starters were: D. Deaney, New Imp.; E. Simcock, A.J.S.; S. Hodges, A.J.S.; R. Hepburn, A.J.S.

R. Hepburn 1
S. Hodges 2
E. Simcock 3

Time, 49 2-5 secs. Won by 40 yds.

One-Mile Dash.

(Three laps. Flying start. 1st, £10; 2nd, £5.)

Paul Anderson (U.S.A.), Indian, and Ralph Hepburn (U.S.A.), Douglas, were the only starters. Hepburn led most of the way till the last lap, when Anderson drew level and gradually got round to the front, winning by about a yard. Time, 47 1-5 secs.

Motordrome Invitation Handicap.

(For machines under 600 c.c. Six laps. 1st, £25; 2nd, £10; 3rd, £5.)

R. Hepburn, Douglas (125 yds.) 1
L. Gough, Douglas (275 yds.) 2
P. Anderson, Indian (Scr.) 3

Time, 1 min. 32 3-5 secs. Won by about 100 yds. Anderson was gradually overhauling the leaders when his petrol pipe broke, and he just finished over the line ahead of Disney and secured third money.

Paced cycle results are included as usual under our Cycling Section.

A Harley rider coming to grief on a freak hill climb.

MOTOR CYCLE CLUB.

Geelong's First Annual Meeting.

The first annual meeting of the Geelong Motor Cycle Club was held recently in the Mechanics' Class Room. There was a splendid attendance, including a number of new members. Owing to the fact that some months ago the president (Mr. N. Dunstan) left Geelong, the chair was occupied by the vice-president (Mr. E. Clarke).

The statements of receipts and expenditure, and the committee's report revealed a most satisfactory state of affairs. The former showed a credit balance of £19/14/7. On the revenue side, nomination fees (£13) and subscriptions (£18/10/-) were the outstanding items, while the expenses in all amounted only to £18/16/10.

The report set out that during the year club runs had been held to Aspendale, Portarlington, Queenscliff, Ocean Grove, Anakie Gorge, Shelford and Barwon Heads. Early in the year the club was unfortunate in that bad weather caused the cancellation of a number of runs, while a similar fate happened on Boxing Day, when heavy rain prevented the run to the V.M.C.'s meeting at Aspendale. The club assisted the Police and Firemen's Carnival in aid of the hospital in October last by conducting several novelty events, which were much appreciated by the public. The winners handed back the prize money in order to assist the object of the carnival. A smoke social was held in the Anglers' Club Rooms in November. Several runs were arranged, being in charge of various members in turn, and all proved very successful. Messrs. Johns, Pilgrim and Clarke took the first three runs. The desirability of holding further socials in the coming year was recommended. With deep regret the committee recorded the death of a member (Mr. Arthur Kempton), who was killed while training at Kyneton last May.

Mr. Geo. Hinchcliffe had generously donated £5/5/- for a trophy for the highest aggregate for the year. Points will be given as follow:—Attendance at run, 1 point; each event competed in, 1 point; win, 3 points; second, 2 points; third, 1 point.

Mr. John's run was to Ocean Grove, where a good day on the beach was spent, and an excellent programme carried out. Mr. Pilgrim's run was to Inverleigh, Shelford and Teesdale. He presented a gold medal for a hill climb at Shelford. This was won by Mr. R. Dean. Mr. Clarke's run was to the Friendly Society's Oval, in conjunction with the Harley Club.

The chairman referred with satisfaction to the state of the club. To have such a credit balance at the end of the first year was a splendid achievement. Credit was due to the secretary (Mr. Geo. Deans), the treasurer (Mr. A. Hickinbotham), and the captain (Mr. A. Coghlan). The chairman expressed regret that the president (Mr. N. Dunstan) had left the district. While in Geelong he had rendered valuable service to the club.

Amidst applause, Mr. R. Dean stepped forward and

RENOLD CHAINS

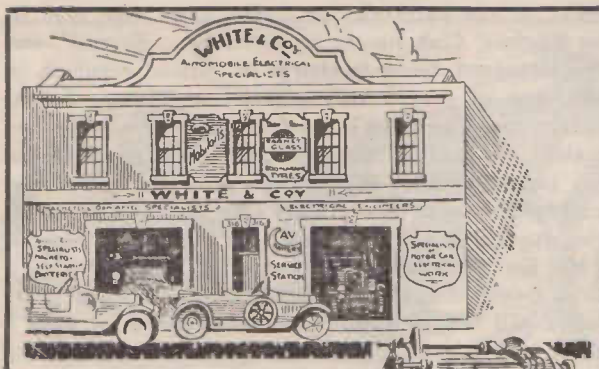
Made like a watch, and yet their strength is prodigious. Consider this performance in the Tourist Trophy Motor Cycle Races, Isle of Man, 1924—

Of the total number of machines starting in all the races, more than three-quarters were fitted with Renold Chains. Of the total number finishing, more than four-fifths were fitted with Renold Chains No machines equipped with Renold Chains experienced any chain trouble whatever.

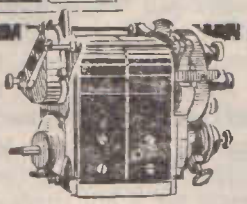
THERE'S A REASON.

FIT RENOLD——and ensure Satisfaction.

Hans Renold Ltd., Manchester. Australian Agents: Kemsley & Co. Pty. Ltd., Melbourne.



Expert Magneto Repairs Cost You Less.



You cannot afford to tamper with your magneto, or let any inexperienced mechanic attempt to readjust it. Further trouble only ensues. White's, who are the Pioneer Electrical Ignition Experts in Victoria, are equipped with every up-to-date machinery improvement and skilled mechanics, who will readjust, rewind, and repair your magneto at lowest cost. Work done for the trade.

Service Station C.A.V. Batteries. Starting and Lighting Sets on hand.

WHITE and Co.,

316-318 QUEEN STREET, MELBOURNE.

From Amateur to Expert.

Stott's course for **Motor Mechanics, Hire-car Drivers,** and **Owners,** gives instruction on up-to-date lines, and covering all makes of Motor Cars and Cycles.

Six Handsome, Well-bound Reference Books are included in the Course.

No better Course of Instruction on the Australian market. A reasonable fee, with easy terms of payment.

Ask for our free booklet, "Motor Mechanics," with particulars of the Course.

Stott's College

"The Home Study College,"

100 Russell St., Melb. — 70 Pitt St., Sydney
452 Queen St., Brisbane.

received from the chairman the gold medal won by him for the hill climb at Shelford, and donated by Mr. Pilgrim. In congratulating him, the chairman said it was the first medal given on behalf of the club.

Election of officers resulted:—President, Mr. A. Hickinbotham; vice-president, Mr. G. Wilmot; secretary, Mr. Geo. Deans; treasurer, Mr. M. A. Josephs; captain, Mr. E. Sharpe; vice-captain, Mr. N. Johns; handicappers, Messrs. N. Johns, C. Ovenden and A. Coghlan; timekeepers, Messrs. J. Pilgrim, A. Coghlan, L. Carter, and A. R. Bradshaw; auditors, Messrs. E. Clarke and N. F. Torre; additional committeemen, Messrs. A. Coghlan, E. Clarke, A. Cox and A. R. Bradshaw.

Members agreed to meet at the Anglers' Club Rooms in a month's time. A social evening will be held, and if successful, similar functions will be conducted monthly. Members will be able to assist the committee with suggestions concerning the affairs of the club, for business would be combined with pleasure.

—————:o:—————

ONE ROCKER FOR TWO O.H. VALVES.

Novel Points in Design of Beaufort Flat Twin.

Though primarily a maker of invalid carriages, both hand and motor-propelled, The Argson Engineering Co. Ltd. is experienced in the design of small engines, having produced the Beaufort two-stroke. A complete novelty in the form of a horizontal flat-twin four-stroke from this concern has many points of interest, and is a departure from conventional practice.

The little engine has a bore and stroke of 4.76 x 49.2 mm. (175 c.c.). The cylinders are of steel, with cast-iron detachable heads, but the most interesting feature is the overhead valve gear. One cam actuates the four valves, it being of the positive and negative type.

Each cylinder has one push rod, which is controlled by means of a long coil spring; each cylinder has only one rocker. The positive portion of the cam serves to open the exhaust valve, but the inlet is opened by the negative portion of the cam, which is recessed, allowing the cam lever to drop into it. The push rod flies back owing to the pressure of the strong spring behind it, and this spring, being stronger than the valve spring, causes the rocker to open the inlet valve.

The ignition is also an interesting feature, current being derived from a fly-wheel magneto and conveyed to the two cylinders by means of a distributor driven off the half-time shaft. The crank case casting comprises a timing gear case, a crank case proper, and an oil sump at the base.

Oil is delivered by a Lamplugh pump driven off the intermediate timing wheel shaft. The big ends have roller bearings, and are slipped in position over the crank shaft, the bearing being assembled afterwards. The main shaft, crankshaft, and timing wheel shaft run on ball bearings, and aluminium alloy pistons are employed. Gas is delivered by a Zenith carburetter.

At the present moment the engine develops 4 h.p. at 3500 r.p.m. Though primarily designed for driving a dynamo to derive current for a wireless set constructed for the War Office, there appears no reason why the Beaufort flat-twin engine should not be suitable for a light-weight motor cycle, more especially in view of its compact nature.

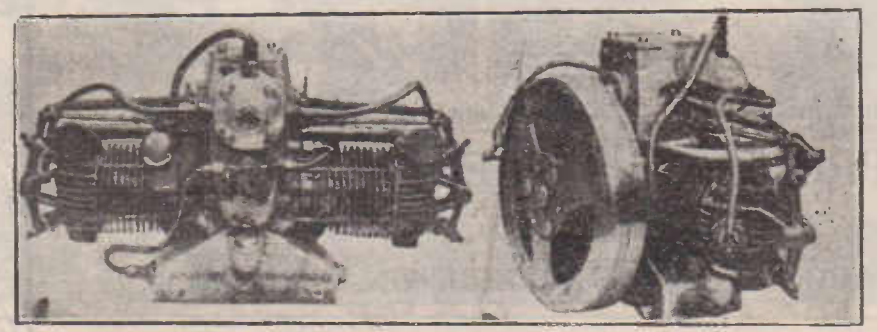
—————:o:—————

AUSTRALIAN TRIAL AND SPEED RESULTS.

Reliability Trial in New Zealand.

The Hawera-Te Kuiti Reliability Trial is the most strenuous of all New Zealand motor cycling tests. It is an annual event, which causes considerable interest in the Dominion, owing to the gruelling nature of the course.

This year once again the Indian team put up a wonderful performance and carried off the highest honors and the Harley-Davidson Shield. They were the only team to finish, the riders being L. Wann, D. McBeth and H. W. Lightband. McBeth rode a Super-Chief, and arrived exactly on time; all other riders of heavyweight motor cycles were at least an hour or two behind schedule.



Beaufort miniature o.h.v. flat twin of 175 c.c.

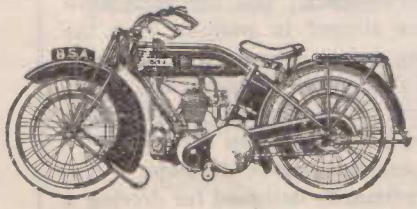
ALL THE PLEASURES OF MOTOR CYCLING AT A LOW WEEKLY EXPENDITURE.

Britain's Greatest Motor-cycle Value.

B.S.A

Economical in Service Low First Cost

MOTOR CYCLES



£75 cash — £25 down, 20/- per week.

The B.S.A. is a Wonderful Motor Cycle for Consistent Service and Reliability.

Models range from 2¾ h.p. to super 8 h.p. twin. Grease-gun lubrication, all-chain drive, mechanical lubrication, countershaft gear-box, kick-starter, and clutch are features of each model.

SELECT YOUR MACHINE FROM THE B.S.A. RANGE. Catalogues and Full Particulars—

FINLAY BROS., 322-324 ELIZABETH STREET, MELBOURNE.
No connection with any other firm of similar name.

D. Y. RENNIE, B.S.A. Representative, 49 Elizabeth Street, Melbourne.
Or from these State Agents—
N.S.W.-Qld.—Bennett and Wood Limited, 284 Pitt Street, Sydney.
S.A.—J. N. Taylor and Company Limited, 121 Grenfell Street, Adelaide.
W.A.—Mortlock Bros., Hay Street, Perth.
Tasmania—Sim King, Brisbane Street, Launceston.

SEE IT! ———— RIDE IN IT!

And then inquire the Price.

P. & P.

All-Steel Jointless Side Car Bodies

Are Unequalled for Appearance, Strength, and Durability.

Sole Manufacturers for Victoria, Tasmania, and New Zealand

PROCTOR, PARKER and CO.

"The Satisfactory Side Car Body Builders."

Off ARGYLE SQUARE, CARLTON, VICTORIA.

A VISIT TO WARRNAMBOOL.
Indian Club Officials Entertained.

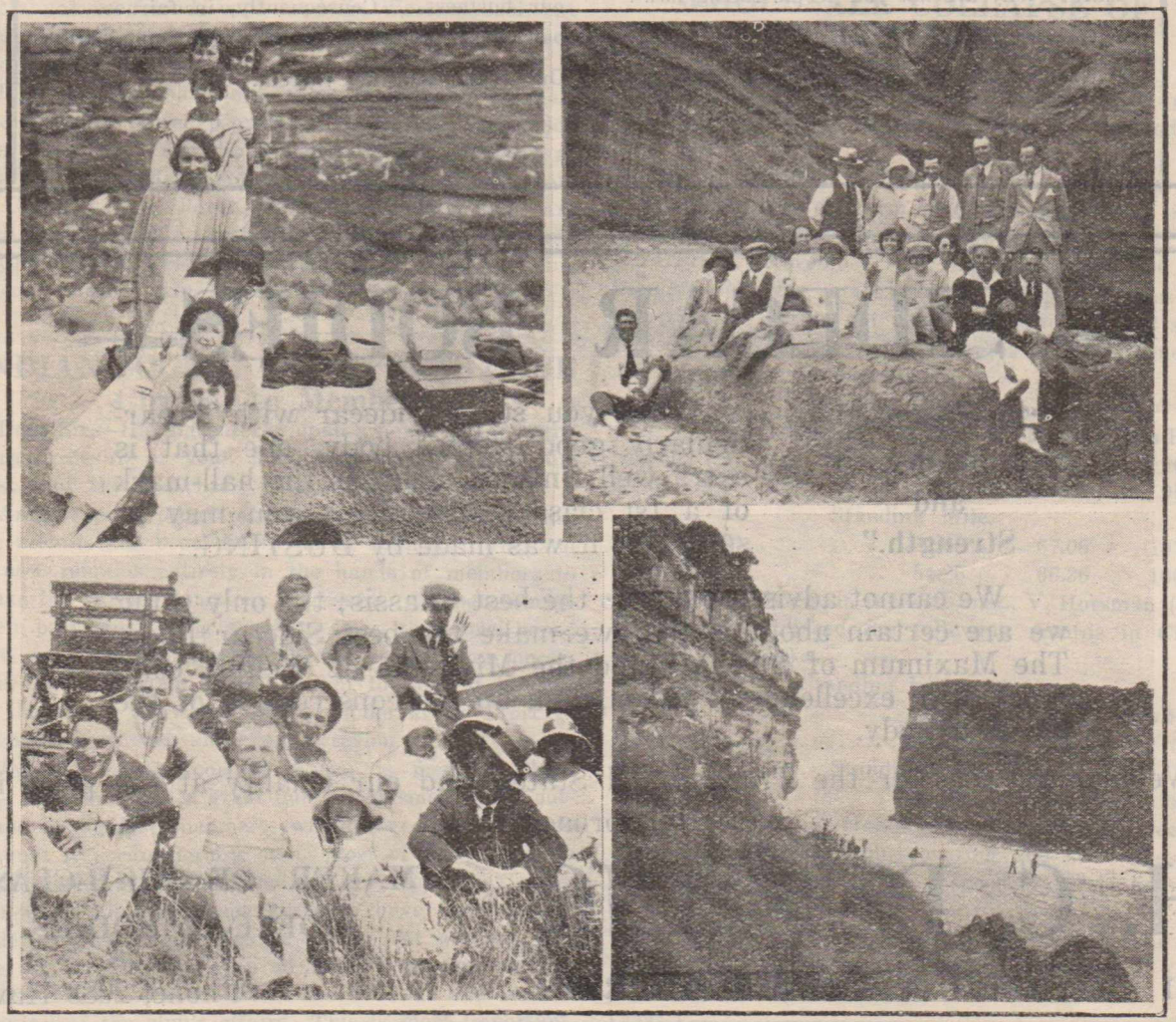
A real pleasant holiday. Thousands who journeyed in various directions for their Christmas holidays are still enjoying the most pleasant recollections of those few happy days, but none have memories more pleasant than three members of the Indian Social and Sports Club who chose Warrnambool as the venue for their vacation.

The trip was made by two of the party per motor cycle outfits; on this occasion the side cars were empty except for luggage and sporting materials. The wives of the two excursionists were by this times long enough married to know their "hubbies" could be trusted away alone, and their consent was easily obtained; how these ladies fared at this end may be the subject of another story. However, this being the first time such liberty was granted the men-folk probably accounts for the enjoyable time they so enthusiastically describe, but, in any case, some of the details are undoubtedly unrecorded.

To get on with the story they recount. Their destination was reached without any happening of moment; a punctured rear tyre and magneto trouble are minor details at such times, especially with nobody in the side car to ask is there anything wrong when you pull up, as though you would stop for any other reason, although, of course, it has been done.

Mr. D. R. Hannabury was the first to welcome the visitors and, thanks to his influence, accommodation was found at Humphrey's Hotel, despite the lack of accommodation in the town, owing to the great influx of visitors.

A day later the third member joined the party, having travelled by "puff-puff" from Melbourne. By this time, the members of the Warrnambool Indian and Social Sports Club had taken possession of their city friends, and made them their guests during the whole ten days of their visit to their town. Motor trips, social evenings (including card parties and crayfish suppers), shooting and fishing parties, etc., were only a few of the "items on the menu."



Members and ladies of the Warrnambool Indian Club, with their visitors, at Childers Cove and Port Campbell.

An Explanation

To acquire fame always brings with it responsibility.

And when a motor cycle enters the racing-field and carries everything before it, winning championship honors, breaking course records, capturing long-distance road races, etc., etc., and then suddenly leaves the racing-fields at the height of its meteoric rise, some explanation is necessary to the motor cycling public.

For months now we have been asked on all sides: "Why are not you people racing now?"

Here is the explanation:

Norton motor cycles are recognised as being the fastest standard motor cycle in the world. In 1923 and 1924 every worth-while race was won by Norton in England and on the Continent, and proved to the public there Norton superiority.

But that was not enough. The Victorian public wanted to see what Norton could do in this country. So we showed them with the successes known to all. That made Norton a household word, with the result that our sales have increased to such an extent that our undivided attention is necessary to handle our business. Consequently, in fairness to our clients we were forced to give up racing.

Our explanation lies therein.

SIDECAR BODIES

"They embody Beauty and Strength."

When you see a Sidecar with a particularly good shaped body, one that is extra well finished, and has the hall-mark of a 1st class coachbuilder—you may be sure that it was made by DUSTING.

We cannot advise you as to the best Chassis; the only thing we are certain about is that we make the best Sidecar Body. The Maximum of Strength and the Minimum of Weight, combined with excellence of finish, sum up the construction of the Dusting Body.

We manufacture for the Trade in all States, and our Quality at the price is Unapproachable.

H. C. DUSTING

MAKER OF HIGH-CLASS SIDE CAR BODIES

261 BURWOOD ROAD. HAWTHORN. 'Phone, 2083 Haw.

The three visitors express in sincere terms their deep appreciation of the following gentlemen:—

"Dinnie" Hannabury, Past Grandmaster of the Order of Entertainers, and last in for every jackpot.

Roy Taylor, who said crayfish were made to swim and not to eat.

Len. Hill, the cheese expert (and one who knows three aces when he sees them).

Bill Trigg, an orator of some "standing," and an able exponent of the "light, fantastic."

Joe Walters, known as the "Organ Jonah," and live hon. secretary of the Warrnambool Indian and Social Sports Club. (Someone said Joe shot a rabbit up a tree.)

Dan. Thompson, vice-president of Warrnambool I.S.S. Club, leader of all dances, master of the crayfish pot, catcher of sharks, bread-and-butter fish and ladies, and a real Irish gentleman.

Mrs. Hannabury, Mrs. Trigg and the other ladies who kindly helped to make the visit so enjoyable, and provided the tasteful "eats" so plentifully, are not overlooked, and their kindnesses are equally appreciated.

Many more friends were made in Warrnambool, but lack of space only prevents enumeration of their names and special qualifications.

It is now less than eleven months to next Christmas, and there are three people who have already decided that their next Christmas holidays will be spent at Warrnambool (circumstances permitting). Such spots as Childer's Cove, Port Campbell and Jubilee Lake are well worth revisiting without any other attractions, and with the real welcome waiting from many genuine friends another trip cannot be resisted.

INDIAN SOCIAL AND SPORTS CLUB
Circular to Members.

Dear Sir,—Having entered upon a new year, it is the earnest desire of your committee to make 1925 the best that the club has yet experienced.

An attractive programme of events for the ensuing six months has been drawn up in syllabus form, and it now remains entirely in the hands of members to make the various functions successful. Co-operation on their part must bring success. It is, therefore, hoped that each individual member will realise how necessary and important it is for him to interest himself in the club's activities, and to make every effort to be present on each and every occasion.

Another very important matter is finance. There are, unfortunately, a great number of small items outstanding against members, which if collected, would amount to a considerable sum. Most of these have, no doubt, been overlooked, and we feel sure that a reminder is all that it necessary to have them put in order. If you happen to be one of the number, you are requested to make an adjustment at your earliest convenience, and so assist in the effective and smooth running of the club's affairs. This is most important.

Remember that you have a good club, and it is up to you to boost it to the utmost.

Syllabus to End of February.

Saturday and Sunday, February 7 and 8, 1925.—Week-end run to Warburton. Meet at 109 Russel Street at 2 p.m. on the Saturday. Accommodation arranged at "Mountain Grand."

Thursday, February 12, 1925.—Committee meeting, 8 p.m.

Saturday and Sunday, February 21 and 22, 1925.—Week-end run to Ocean Grove. Accommodation arranged at Ocean Grove House. Proceed from Melbourne to V.M.C.C.'s grass-track meeting at Geelong, thence on to Ocean Grove. Meet at 109 Russell Street, 12.30 p.m. on the 21st. Sports are being arranged for the Sunday at Ocean Grove.

Thursday, February 26, 1925.—General Meeting and Social Evening, 8 p.m. Hall to be arranged, of which members will be advised. Bring the ladies.

Sunday, March 1, 1925.—Sealed-time run to Tooroorong Reservoir. Meet at Alexandra Avenue, 10 a.m. sharp. Bring your lunches.

W. A. WRIGHT, Hon. Secretary.

WHOLESALE COLLAPSE OF RECORDS.

Great activity in the record-breaking world preceded the closing of Brooklands track at the end of November.

These last-moment attempts wound up a long list of attacks on records which have been in progress since the week before the Olympia Show.

On Friday, November 14, V. Anstice, with a 596 c.c. Douglas side car, made further efforts in Class F. (for side car outfits not exceeding 600 c.c.), and succeeded in making new world's figures for the kilometre and mile with standing start:—

Standing Kilometre.

	Sec.	M.P.H.	Km.P.H.
Normal (B)	37.42	59.78	96.21
Mean (W)	37.73	59.28	95.41

Standing Mile.

Reverse (B)	53.68	67.06	107.92
Mean (W)	54.25	66.36	106.79

Three days later, on the 17th inst., V. Horsman (599 Triumph) established the following records in Class D (750 c.c. solo):—

Standing Kilometre.

	Sec.	M.P.H.	Km.P.H.
Mean (W)	30.38	73.61	118.46

Standing Mile.

Mean (W)	44.69	80.55	129.63

On November 19, Horsman lowered another record on his 599 c.c. Triumph, covering 200 kilometres in 1 hr. 26 mins. 40.83 secs., at a speed of 138.44 km.p.h., 86.02 m.p.h. (W).

On the same day, A. Denly (490 Norton) was responsible for the following records in Classes C (500 c.c.) and D (750 c.c.):—

Class C—

	H. M. S.	M.P.H.	Km.P.H.
200 km.	1 28 52.24		135.03 (W)

Classes C and D—

300 km.	2 13 12.06		135.15 (W)
200 miles	2 22 58.16	83.93	135.08 (W)
	Miles Yds.		
2 hours	168 389	84.11	135.36 (W)

Denly's speed for the 200 miles is interesting, in that it adds 4 m.p.h. to Lieut. R. T. Grogan's figure established in the 200 miles races, and approaches within 3.4 m.p.h. of T. R. Allchin's record speed in the 1000 c.c. race on the same day.

At the latter end of the week a big onslaught was made on long-distance records by Montgomery and Norton riders, and on short distance figures by Horsman, who employed a slightly larger Triumph engine than hitherto.

On the Friday, November 21, C. T. Ashby and H. M. Walters, on a 490 c.c. Montgomery-Jap, succeeded in obtaining the following records (subject to confirmation) in Class C (500 c.c.), Class D (750 c.c.), and Class E (1000 c.c.):—

	Miles	Yds.	M.P.H.	Km.P.H.
3 hours (W)	241	1088	80.54	129.61
4 hours (W)	361	1421	79.20	127.46
	H. M.	S.		
300 miles (W)	3 45	36.44	79.78	128.40
400 km. (W)	3 5	8.09		129.63
500 km. (W)	3 53	56.54		128.24

On the same day, V. Horsman, on his 498 c.c. Triumph, made the following records in Class C:—

	M.	S.	Km.P.H.
5 km. (flying) (W)	1	58.71	151.63
10 km. (W)	4	7.22	145.69

On the following day, V. Horsman made the following records, subject to confirmation, in Class D (750 c.c.) on a Triumph with a 607 c.c. engine:—

	M.	S.	Km.P.H.
5 km. (flying) (W)	1	56.56	154.427
10 km. (W)	4	1.98	148.803

Also, on the same day, D. R. O'Donovan, A. Denly and W. L. Gard made the following long-distance records on a 490 c.c. Norton in Classes C and D (500 c.c. and 750 c.c.):—

	Miles	Yds.	M.P.H.	Km.P.H.
5 hours (W)	364	1092	72.92	117.35
6 hours (W)	441	595	73.55	118.38
7 hours (W)	504	457	72.03	115.88
	H. M.	S.		
400 miles (W)	5 27	28.25	73.29	117.95
500 miles (W)	6 56	36.04	72.01	115.87
600 km. (W)	5 7	3.25		117.24
700 km. (W)	5 54	2.02		118.63
800 km. (W)	6 54	31.50		115.86

W=World's record subject to confirmation by the F.I.C.M.

B=British record, subject to confirmation by the A.C.U.

RALEIGH THE GOLD MEDAL MOTOR-CYCLE

which is the most reliable and economical machine yet built, now sells at **£65/10/-** cash or **£20** deposit, **£1** week.

Send for catalogue to-day; compare the Raleigh with any other foreign or English Motor Cycle, from the front wheel to the back, and you will certainly agree that the Raleigh is the best value-for-money Motor Cycle ever offered.

Don't delay. Send to-day for illustrated catalogue, and note the wonderful fitments and refinements, and then note the remarkable price.

£65/10/- **£65/10/-** **£65/10/-**

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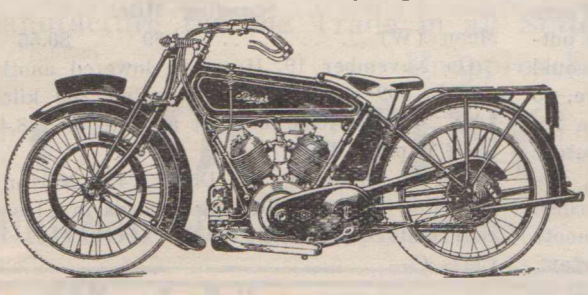
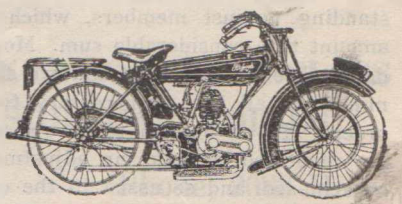
DISNEY'S SQUARE DEALS.

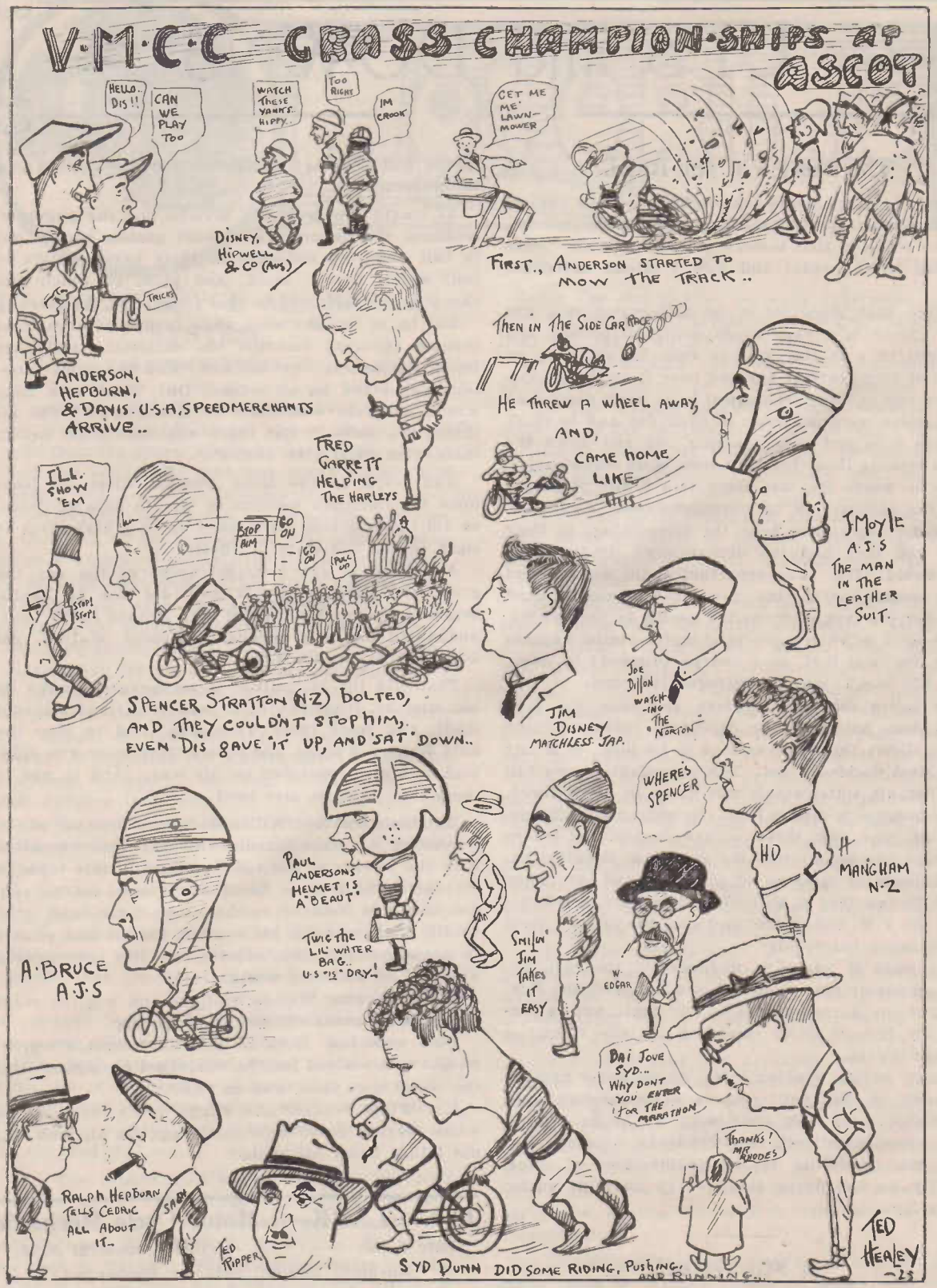
326-28 Elizabeth Street, Melbourne.

'Phone, Central 1529.

Country Agents Wanted Where Not Represented.






V·M·C·C GRASS CHAMPION·SHIPS AT ASCOT
HELLO. DIS!!
CAN WE PLAY TOO
TRICKS
ANDERSON, HEPBURN, & DAVIS. U·S·A. SPEEDMERCHANTS ARRIVE..
WATCH THESE YANKS. HIPPY.
TOO RIGHT
IM CROOK
DISNEY, HIDWELL & CO (AUS.)
FRED GARRETT HELPING THE HARLEYS
GET ME ME LAWN-MOWER
FIRST., ANDERSON STARTED TO MOW THE TRACK..
THEN IN THE SIDE CAR RACE
HE THREW A WHEEL AWAY, AND, CAME HOME LIKE THIS
J MOYLE A·J·S THE MAN IN THE LEATHER SUIT.
ILL SHOW 'EM
STOP! STOP!
STOP AUM
GO ON
GO ON
PULL UP
SPENCER STRATTON (N·Z) BOLTED, AND THEY COULDN'T STOP HIM, EVEN DIS GAVE IT UP, AND SAT DOWN..
JIM DISNEY MATCHLESS JAP.
JOE DILLON WATCH-ING THE NORTON
WHERE'S SPENCER
H MAINGHAM N·Z
PAUL ANDERSONS HELMET IS A BEAUT
TWIG THE LIL WATER BAG.. U·S "IS" DRY!
SMILIN' JIM TAKES IT EASY
W EDGAR
A·BRUCE A·J·S
BAI JOVE SYD.. WHY DONT YOU ENTER FOR THE MARATHON
THANKS! MR RHODES
RALPH HEPBURN TELLS CEDRIC ALL ABOUT IT..
SAY!
TED TIPPER
SYD DUNN DID SOME RIDING, PUSHING, AND RUNNING..
TED HEALEY

UPS and DOWNS

By "CONROD."

The Justice of the Road.

I have held my peace long enough on the subject of police court systems in motor cycling summonses, and the result is that instead of cooling down I have reaching boiling point and now I intend to trickle over.

In the first place let it be understood that the motor cyclist is a very much maligned person, and the sight of a motor cycle to over 75 per cent, of people of fifty years of age and over is as the proverbial red rag to the mythological bull. Such disgusting contraptions were unknown in their day and to think of these boys and men "tearing" up and down the streets making those fearful noises is an abomination.

This is where the last generation firmly plants on itself the hallmark of narrowmindedness. Would not our predecessors have done the same things in their youth had they had the opportunity? Undoubtedly they would. But that opportunity did not present itself; consequently, the present generation must suffer for the lack of inventive genius in the bygone.

And so it is when some poor motor cyclist appears before the local P.M. on a charge (alleged) of doing about 27½ m.p.h. past an unfrequented road.

The police evidence is given and then the P.M. (if he does not bully the defendant into remaining silent) allows the other version to be told. Is it any use? Most decidedly not. The defendant knows full well that his statement is not going to be believed, simply because it differs from the policeman's charge.

Result: One, two, three, or five pounds, and before one word can be uttered, the next case is called on. The majority of cases go off that way, and the motor cyclist knows that a sort of freemasonry exists between the P.M. and police, and that the latter's word will be taken before his.

This state of affairs is undoubtedly the case, because, in ninety-nine cases out of a hundred, the P.M. is one of the narrowminded 75 per cent., and is consequently biassed, fully intending to take it out of the poor victim.

I know of one visiting P.M., whose name appears frequently in the daily papers in connection with motor cases, and this gentleman would do well to listen more attentively to defendants' evidence and admit the possibility of the truthfulness of same. Probably he has never travelled in anything faster than a cable tram!

A Storyette.

And so it happened that the games were listed for a certain day in the first month of the new year.

Warriors saw to their steeds and armor was plated bright and a great feeling of exuberance took hold of the populace.

At length the great day arrived and the populace, realising the importance of such games, turned out in full numbers, bedecked in their gayest colors of red, white, brown, black, and pink, to watch and cheer their champions in their efforts of prowess.

But lo, as the day wore on, a feeling of uneasiness became apparent amongst the onlookers, and they began questoning one another. And the same question was asked on all sides: "Oh! What hath gone wrong with our committee of management? For all things are amiss." But there was none from among them who could give answer.

And, even as the lions growled when let loose upon the Christian martyrs in the old days at Rome, so did the populace work itself up to a high pitch at sight of the bad state of affairs.

And then in the principal event of the day the great champion, Warlie Wisney, did lose his equilibrium and come into contact with Mother Earth. But undaunted, his wily opponent, Wencer Watton, did keep merrily on his way.

Then did the committee of management make its big mistake, inasmuch as it became divided amongst itself, and some there were who tried to stop the bold Wencer Watton, and others there were who didst beckon him to continue on his way. And it was to these that he didst give heed.

But there was one Willie Wedger, a member of the committee of management, who had been entrusted with the waving of the red flag (and in this capacity his didst feel well at home), and now did he step out onto the field of combat, and dance and sing wildly, holding forth his red flag for all and sundry to know that the event must cease. But none heeded him and he was very wroth.

So did Wencer Watton continue and win the event to the accompaniment of great cheering.

But opposing factions getting together, great weight was wielded for the conquered champion, with the result that there was no result.

But Willie Wedger still clings to his red flag, the while making great accusations against all who will not follow under his banner.

J. J. CLARK——Motor Cycle Mechanic
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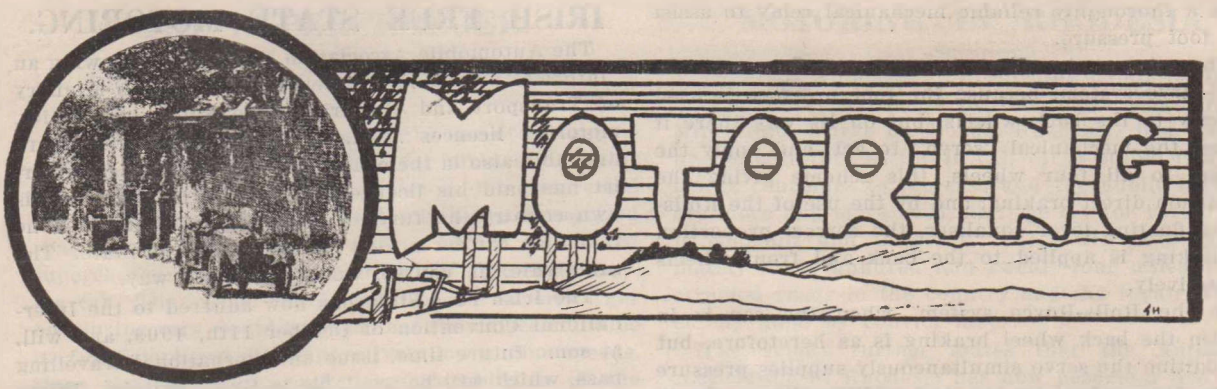

THE ROLLS-ROYCE SIX BRAKES SYSTEM.

A DESCRIPTION.

The engineers of Rolls-Royce, Ltd., have been testing and studying the advantages of four wheel brakes for more than ten years, but until recently they could not find any application that was really satisfactory in practical use.

The expert drivers of the company did not consider that any of the systems of four-wheel brakes which they tried were suitable for the use of ordinary users, because they required too much expert attention in their use, care, and adjustment.

During recent studies the engineers have come to the following conclusions:—

(a) Although for ordinary use on roads which give good adhesion, back wheel brakes have until recently satisfied most drivers, the increased fast motor traffic makes it desirable (on high-speed cars especially) to apportion the braking effort between all four wheels, so that the car may be pulled up in a smaller distance than would be the case if only the back wheels were furnished with brakes, particularly on surfaces on which the adhesion is poor (e.g. greasy roads).

(b) It was found that if all four brakes were operated by direct foot pressure unassisted by a relay system, it required too great a foot pressure, or, if the leverage were arranged so that the pressure was reasonable, then the clearance was found to be insufficient.

(c) Brakes operated by a "servo" system were in many cases found to be too fierce, and therefore dangerous both from the skidding of the front wheels and the risk of destruction of parts (i.e. parts of the brakes, or axles and their fixings, road springs, etc.).

(d) It was decided that a braking system should be so designed that:—

(i.) The brakes shall be automatically correctly equalised on each side of the car, and that the ratio between the front and the back braking shall be automatically proportioned (providing the brakes are kept in working order) independently of wear or of the care and knowledge of the driver or garage mechanic,

(ii.) The brakes shall act as quickly as is safe and that the release shall be prompt and reliable.

(iii.) The system shall be easily understood, and shall not require any attention to gauges, hand controls, etc. (as in air brakes).

(iv.) The braking effect shall be proportionate to the foot pressure as exactly as is possible.

(v.) The braking backwards shall be nearly as powerful as the braking forwards, so that a heavy car can be safely held from running backwards on a steep hill, independently of relying solely on the hand brake.

(vi.) The direct braking by the unassisted foot shall be as powerful as possible (consistent with practical clearances, etc.). This is necessary for close shunting, etc.

(vii.) Under ordinary conditions skidding of the front wheels shall be nearly impossible. Skidding of the front wheels is well known to be incomparably more dangerous than skidding of the back wheels. In the Rolls-Royce system skidding of the front wheels is nearly impossible, because the braking of the front wheels has purposely been kept less powerful than the breaking of the back wheels, and because this proportion remains constant (independently of the wear or adjustment of the brakes, so long as they are kept in good working order). Also, immediately the back wheels are locked and skid along the road surface without revolving, the servo ceases to act, and with the Rolls-Royce system no additional pressure can be applied to the front wheels.

(viii.) The system shall be as independent as possible of change in the co-efficient of friction of any of the brake or servo linings. We believe that brakes which are self-wrapping, i.e., having shoes which by design tend to wrap or embrace the brake pulley directly they are actuated, are not independent of such changes, and also such a system does not give effective braking backwards.

(ix.) The servo shall remain in good condition and not require adjustment more frequently than the usual bi-annual overhaul. In the Rolls-Royce system the servo acts over an unusually large angular range, so that its duty is light and its wear imperceptible.

The Rolls-Royce engineers have designed and tested various types of braking (many of which they have patented), using compressed air, oil pressure, etc., but have come to the conclusion that there is at present nothing better for Rolls-Royce productions

than a thoroughly reliable mechanical relay to assist the foot pressure.

The scheme they have evolved may be termed a semi-servo system, because the foot pressure is used directly to the back wheels, but on its way there it causes the mechanical "servo" to act, and apply the brakes to all four wheels, this scheme giving the maximum direct braking, and by the use of the Rolls-Royce floating lever equaliser, the correct proportion of braking is applied to the back and front wheels respectively.

In the Rolls-Royce system, when the car is in motion the back wheel braking is as heretofore, but in addition the servo simultaneously supplies pressure to the front wheel brakes, and additional pressure to the back brakes. The total braking for a given foot pressure becomes about three times greater than in either two-wheel brake systems or four-wheel brake systems unassisted by servo.

An extremely important feature of the Rolls-Royce system is that the whole braking, both direct and servo, is available backwards, because the servo is driven positively in both directions (not by the more usual single way ratchet), and has a second connecting rod (patented) which enables it also to act when moving backwards.

The Rolls-Royce system of brakes includes two entirely separate brakes on the back wheels. There will thus be six brakes in all, thereby securing extra safety, and the requirements of the regulations of the Ministry of Transport are fully met. Note.—The regulations of the Ministry of Transport demand that there should be two independent brakes either of which shall cause two wheels on the same axle to be so held that the wheels shall be prevented from revolving, etc.

In the Rolls-Royce system, by operating the front-wheel brakes with a small spherical joint under light pressure, the steering is not affected by friction, whereas in the arrangements more generally used the universal joints and cams are under an exceedingly heavy pressure, and may cause material friction, which may be detrimental to efficient steering.

In the Rolls-Royce system, the transmission, equalising and operating is carried out with expensive, efficient, and reliable mechanism. For instance, each of the two pairs of brakes on the back wheels and those on the front wheels are equalised by the bevel gear equalisers, introduced and used for so many years by the Rolls-Royce Company instead of sliding cables, etc., which often act (as equalisers) very imperfectly.

Also, the Rolls-Royce Company have for a very long period used a very efficient design of cam inside the brake, so that the shoe shall be forced to the drum efficiently, and with a constant leverage over the whole range of action and wear, and the system gives perfect facility for accurate adjustment of the shoes while fitting. (This mechanism practically eliminates the risk of a brake sticking fully on.) This system is used on all the six pairs of brake shoes and should be compared with the crude and inefficient cams of square and other inexpensive forms used on many cars.

IRISH FREE STATE MOTORING.

The Automobile Association states that following an "informal arrangement" between the British Ministry of Transport and the Irish Free State Authorities, motoring licences available in the one country are available also in the other. Thus, if the British motorist has paid his licence duty and is in order in his own country, no further licence is required when he takes his car for a visit to the Irish Free State. The same rule, of course, works the other way.

The Irish Free State has now adhered to the International Convention of October 11th, 1909, and will, at some future time, issue an international travelling pass, which will be available in Great Britain. When that time arrives, the present "informal arrangement" explained above will come to an end.

When the international travelling pass is introduced by the Irish Free State, the British motorist will require an international travelling pass (to be obtained from the Automobile Association) for a visit to the Irish Free State, in the same way as he now requires it for France and other countries outside Great Britain and Northern Ireland. It may, however, be some time before the international travelling pass is issued by the Irish Free State Government.

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THE A. A. OF GREAT BRITAIN.

The Automobile Association Night Patrol Road Service, which was instituted last Easter, is now operating, for the first time, under winter conditions. The men in charge of these road service outfits are working up to midnight and are rendering many unique services to motorists.

During the past week, when fogs were prevalent, A.A. members were assisted in various ways. The vehicles employed for this work are equipped with an auxiliary light, enabling the drivers to follow the road during fogs, and to guide members, unable to proceed safely with their own lighting equipment, or ignorant as to their whereabouts, to the next town or to the nearest hotel. The A.A. roadside telephones, available throughout the night, have been utilised by the night patrols to send emergency messages to the homes of delayed members, or to book hotel accommodation for those unable to continue their journeys.

Cases of assistance rendered after dark to cars suffering from mechanical troubles have been numerous; cars ditched on dark roads, or during fog, have been put on the road again with the assistance of the A.A. night patrols, who have also been instrumental in preventing accidents to road users following the breakdown of vehicles in the middle of dark roads. In one case a lorry which broke down at 5 p.m. occupied the whole of the road, with the exception of a small space, just sufficiently wide to enable other vehicles to pass. An A.A. patrol ensured the safety of road users by showing red lights, and remained until the obstruction was removed at 1 a.m.

Several motorists have been able, following the failure of their electric lamps, to proceed on their journeys after borrowing oil lamps from the A.A. night service patrols.

THE SUPERCHARGER.

PREDICTED AS STANDARD EQUIPMENT.

The success that has attended the use of the supercharger, or forced feeding of petrol mixture, in motor car racing in Europe and America, has interested motorists throughout the world, it being recognised that it was only a matter of time before a modified supercharger was incorporated in the high-class touring car. The logical development of the supercharger on touring cars would be such that the device could be usefully employed at comparatively low engine speeds, since the maximum road speed capabilities of the modern car are already more than sufficient for the average motorist, and that the chief avenue for successful supercharging of ordinary touring car engines is undoubtedly on lines which will make touring cars perform better without changing gear, and will give the driver exceptional acceleration if he does change gear, and required instant and rapid movement. Experiments on these lines have already been carried out with success in Europe, and so remarkable have been the results that one can, with confidence, predict that, within a year or two, we shall see the supercharger a standard equipment on high-class touring cars.

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BRITISH BENZOLE SHORTAGE.

Of recent date several notices have appeared in the Press referring to "benzole shortage," and suggesting a necessity for carburetter adjustment in view of the lower percentage of benzole in the various grades of mixture.

Exhaustive experiments have now been made by the National Benzole Co. Ltd. to ascertain if any carburetter adjustment is necessary in view of the slightly-altered constituent parts of National Benzole Mixture, and their experiments prove that the reduction of 10 per cent. benzole in the mixture which has recently been made, does not necessitate any alteration from the carburetter setting, providing it is satisfactory for the use of a 50-50 mixture.

Reference has also been made to the price of the mixture, and the National Benzole Co. Ltd. point out that, as benzole is now priced at 6d. above petrol, and 40 per cent. of benzole is guaranteed in National Benzole Mixture, and the mixture is sold at No. 1 petrol price, the purchase of benzole in the form of National Benzole Mixture is the most economic method of securing that product.

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London's 'Buses.

In London there are now over 5500 motor buses in operation, and they annually carry twice as many passengers as the largest tramway concern in that city.

MOTORING IN RHODESIA.

There are a number of interesting points for motorists in the new report of the under secretary for Mines and Works on Roads, Rhodesia, just received by the secretary of the R.A.C. It is stated that road traffic continues to increase and the public highways are more and more used, and the cry for better roads is constant and insistent. There are now approximately three hundred and twenty-four miles of constructed roads in the country and the repair work is chiefly done by convict labor.

The report further states that the Automobile Association of Rhodesia has now become a live force, and the co-operation which exists between the Roads Department and the Association is helpful to both, and advantageous to the country. No legislation affecting roads was introduced during the past year.

4th December, 1924.

The Austin ambulance has been standardised by the New South Wales Ambulance Transport Board as the future ambulance for the territory. Ten of them were formerly placed in commission recently by the Ministers of Health.

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AMERICA AND THE SMALL CAR.

MANUFACTURERS WATCHING THE SITUATION.

As is generally known, motor manufacturers in the U.S.A. are fully alive to the possibilities of the light car, the production of which would enable them to command a far greater market in this country and in Europe generally than is now within their reach.

American visitors to Olympia, and to the Paris Salon, have devoted special attention to this question in the last season or two, and components of English and French light cars have been shipped to the States for experimental purposes.

Mr. Elwood Haynes, one of the leaders of the industry in the States, has just given an interview in which he predicts a great future for the light car in his own country, though he considers it mainly as a desirable adjunct, rather than as an alternative, to the typical American car of large size.

In a leading article, however, "Automotive Industries" expresses the opinion that the development of the light car in the U.S.A., must necessarily be slow, depending, as it does, to so great an extent upon road improvements.

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Motor parts, stated to be the manufacture of the country, to a value of £47,175, were exported from the Irish Free State during July last, bringing the total for the first seven months of the year up to £367,774. Of the total, £355,400 were shipped to Great Britain, £78,842 to Denmark, £2536 to France. £1202 to Belgium, £528 to Holland, £84 to Northern Ireland, and £182 to "other countries."

NEW FIAT COMPANY FORMED.

MR. D'ARCY BAKER RETAINS CONTROL.

The concession of the Fiat car in England is being taken over from Fiat Motors, Ltd., by a new company entitled Fiat (England), Ltd.

Mr. D'Arcy Baker, who has for 21 years been in control of Fiat interests in Great Britain, will be chairman of the new concern.

Since the conclusion of the war, the Fiat plant at Turin, Italy, has greatly increased its scope, and its productions now include machine tools, locomotives, railway rolling stock, and Diesel engines.

This development of the parent concern has made the present move desirable, and Fiat (England), Ltd., will handle all the products of the factory.

The present staff at 43-44, Albemarle-street, London, and at the works at Wembley, will be retained.

"SPARKLET" MOTOR JACK.

A "Sparklet" Motor Jack was entered for an official demonstration by Messrs. The "Sparklet" Motor Jack and Televel Co., of 39 Victoria Street, London, S.W. 1.

The description of the jack is as follows: The main body of the jack consists of a pressed steel cylinder, of 3.7-16 in. diameter. This cylinder contains an indiarubber bag. Sliding in the cylinder, and with its base resting on the upper surface of the bag, is a piston, the lifting of which lifts the car. The handle of the jack contains a receptible for a gas-bulb, of the well-known "Sparklet" type, but of a larger size (6¼ in. long). The rotation of the jack handle punctures the capsule of the bulb, thus admitting gas to the rubber bag, and causing the piston to rise. When the gas is allowed to escape from the bag, the jack is lowered. Two types of handles are provided with the jack, one short and the other long. The body of the jack contains divisions for storing 7 gas-bulbs and the short handle. The weight of the jack, including the short handle and 6 bulbs, was found to be 8 lb. 1½ oz.; fitted with the larger handle, the weight is 1 lb. heavier. The height of the jack when closed is 9 5-8 in. The head of the piston is provided with an adjustable spindle, which can be used to increase the height of the jack, in lowered position, by 5¼ in.

The jack was demonstrated upon a 40 h.p. Rolls Royce car, weighing 4595 lb. (41 cwt. approx.). The weight on the front axle was 2120 lb. (19 cwt. approx.) and that on the rear axle 2475 lb. (22 cwt. approx.).

In order to approximate to practical conditions, the car was lifted from a deflated tyre; the size of the tyres was 895 mm. x 135 mm. Two of the tests were made on the front axle and two on the back axle. In the first of the two tests on the front axle it took 17 secs. to assemble the jack, and to locate it beneath the axle. The actual raising of the car took 4 2-5 secs. In the second test the time for assembly and location of the jack was 26 secs., the time for raising being 3 secs. In each case the wheel was lifted 5¼ in. In the first of the two tests on the back axle the operations of locating and lifting took 25 secs. and 4 secs. respectively, and in the case of the second test, 16 secs. and 4 3-5 secs respectively. In the first test on the back axle, the car was lifted 5 ins. and in the second test 4¾ ins. The shortest time in which the jack was dismantled and a new bulb placed in position was 25 secs. The shortest time occupied in lowering the car was 3 secs.

The car was left with the back axle *in situ* on the jack for 16¾ hours, after which time it was found that the axle was the same height from the ground as when lifted.

LOW-PRESSURE TYRE HINTS.

Useful hints about low-pressure tyres — which garage proprietors may, with advantage, pass on to customers—have been issued by the Goodyear Tyre and Rubber Co. (Great Britain) Ltd.

They say that, although balloon tyres are made to be used at low air pressures, it does not follow that *any* low pressure will ensure maximum mileage from the tyre.

Because balloon tyres carry very low air pressures to begin with, a drop of from five to ten pounds represents a big percentage of decrease in the total recommended pressure.

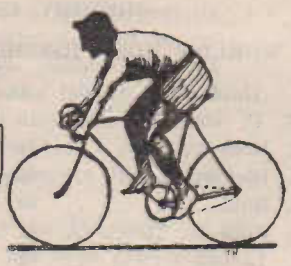
There is an erroneous impression that the balloon tyre is not only built for comfort, but that it will stand rough usage and can be run over the worst kinds of roads, and even railway tracks; that it can climb kerbs, and take without damage as well the skid which follows harsh braking. Properly cared for, balloon tyres will last as long as, and give mileage equal to, that of high-pressure tyres. The driver should remember that every time he runs over a kerb or a very bad road he is gambling away mileage.

Importations of American Cars.

Figures recently compiled show that during 1924 American motor car chasses imported into Australia totalled 41,372. At the same time 10,347 motor bodies were brought into this Commonwealth from the same source. Despite the efforts of the Australian tyre manufacturers to have chasses brought into this country less tyres, thereby providing more scope for development of this Australian industry, covers and tubes to the value of £217,000 were brought from U.S.A. into Australian ports during the past twelve months. Those latter figures do not include probably 40,000 covers and tubes that came from Canada during the same period.

Forward 20/- to the Manager, 312 Exhibition St., Melbourne, and you will receive this journal, post free, for twelve months.

CYCLING



By "SPROCKET"

Fifty Years of Effort Bring the Hour Paced Record to Almost 70 Miles.

(In view of the great interest that is being taken in motor-paced cycling, we have much pleasure in giving our readers a half-century record of the efforts of numerous well-known riders to beat the other fellow.—Editor.)

On March 25, 1876, Dodds, an Englishman, paced by riders on ordinaries, established a record of 15 miles 1493 yards for the hour. To-day, the motor-cycle paced record stands at 69 miles 1525 yards. Dodds established his paced record on the Cambridge track, England. Rapid strides were made in the intervening years. From the time that Dodds set up his figures to 1885 pace was supplied by riders on the same mounts. In 1888 bicycles were used, and then came tricycles, in 1890, for pacing. From 1892 to 1894 tandems only were used. The next rider to break the hour record employed four tandems and two triplets. The four-seated machine came into use in 1895. In 1897 a five-seated and a six-seated machine came into use for attempts at the records.

Motorised pacing commenced in 1898, when the motorised tandem was employed in slashing the hour record. The introduction of the gas-driven machine saw the end of the tandems, triplets and other multi-cycles and pacing teams composed of twenty or more men became a memory of the past.

From this time onward the hour record distance began to stretch out. The accompanying table will show the numerous successful attempts that have been made since W. Stinson reached the 40-mile mark in 1900—

English riders were the first to make records up to 21 miles, then came an Irishman, who touched 21½ miles, he in turn being followed by five successful English riders. A Frenchman then took the honors, followed by various Continental and American riders, who took turns at the record for the hour, which seemed to be a fine pastime.

At the present time John Brunier is the holder of the hour record behind the motor cycle. Leon Vanderstuyft took the record from Paul Guignard, who held the title for fifteen years, only to lose the record to Brunier. J. W. Stocks, England, was the first rider to do over 25 miles; T. Linton, England, the first to cover 40 miles; T. Robl, Germany, the first to do 50 miles, and A. E. Wills, England, the first to go over 60 miles. Tom Linton, England, was the first to use windshields, and every cyclist who has bettered the record during the last 23 years has used the same device.

Pacing machines of other years.—Orient motor tandems posed by Horner in Boston. Following the inside motor is Jimmy Michael, and Harry Elkes is on the outside.

HISTORY OF RECORD.

WORLD'S HOUR RECORD FROM 40 MILES UP.

Holder	Distance		Date.
W. C. Stinson	40	330	Oct. 25, 1900
T. Robl	40	1246	June 30, 1901
P. Dickentmann	40	1256	Oct. 30, 1901
T. Robl	40	1496	Nov. 3, 1901
T. Robl	41	1500	April 20, 1902
T. Linton	42	900	May 4, 1902
T. Linton	44	930	May 11, 1902
T. Robl	45	153	May 13, 1902
T. Linton	45	1023	July 20, 1902
T. Linton	45	1034	Aug. 15, 1902
J. Michael	46	1360	Sept. 7, 1902
H. Contenet	46	1605	Oct. 24, 1902
H. Contenet	48	708	Oct. 31, 1902
H. Contenet	48	1222	July 5, 1903
B. Munro	49	210	Aug. 1, 1903
T. Robl	50	262	Aug. 8, 1903
P. Dangla	50	715	Aug. 16, 1903
T. Hall	52	537	Sept. 13, 1903
P. Dangla	52	977	Oct. 18, 1903
T. Hall	54	436	Oct. 29, 1903
E. Bruni	54	760	Oct. 27, 1904
L. Darragon	54	1044	Nov. 15, 1904
P. Guignard	55	1520	April 12, 1906
T. Robl	57	180	June 21, 1906
P. Guignard	59	86	July 19, 1906
A. Wills	61	942	Aug. 27, 1908
P. Guignard	63	255	Sept. 15, 1909
L. Vanderstuyft	66	1636	Oct. 1, 1924
J. Brunier	69	1525	Oct. 19, 1924

Dodd's record stood from March 25, 1876, to May 25, 1877, when Shoppe, an English rider, put it at about 16¾ miles. Weir, England, on May 10, 1878, did almost 17¾ miles, which was raised to 18.8 miles by Christie, on June 9, 1879. H. L. Curtis made three successful attempts up to August 2, 1882, his last mark being slightly over 20 miles, he being the first rider to go over that figure.

R. H. English and F. Lees, English riders, then took turns at breaking the record, English adding one-tenth of a mile and Lees two-tenths to that. On August 13, 1888, bicycles were used for the first time for pacing, when H. G. Laurie, England, covered 21 miles in the hour. Two years later tricycles were used by Dr. E. Turner, England, who added another tenth of a mile to Laurie's distance. Several English and Irish cyclists then had a try, and each bettered the previous mark, until Ede, England, on his second attempt, had put the figures at 23.85 miles. H. Fournier, France, was the first French rider to take the record, and he put the mark to 24.4 miles. Using tandems for pacing, J. Dubois, France, beat Fournier's record by 350 yards. G. E. Osmond and J. W. Stocks, England, using tandems, were the next to try, Stocks taking the mark to 25½ miles. L. S. Meintges, South Africa, succeeded in making the figure 26 miles, on the Springfield, Mass., track, Sept. 22, 1893. The late A. Linton then took the record back to Europe again for five years, by doing 26.6 miles. J. Dubois and E. Bonhours, France, then took the honors, Bonhours setting the highest mark, 27½ miles. Using triplets and tandems, A. Linton then took the honors again, at Bordeaux, France, on Nov. 3, 1894, by taking the mark to 28.2 miles. L. Lesna, France, using same kind of pace, added another hundred yards on June 29, 1895 J. Michael, following triplets and quadruplets, made the mark 28½ miles on Sept. 1, 1895. Several riders made successful attempts, and then T. Linton, England, on his second try, took the figures to slightly over 30 miles, on July 9, 1896. Stocks, on Oct. 3 of the same year, did 31 1-3rd miles. Eighteen days later Linton recovered the record by a few yards. Quadruplets and quintuplets were used by Stocks, on June 10, 1897, when he did 32.2 miles; and on Sept. 27 of the same year he took the mark to 32.6 miles. The record went back to America again on July 5, 1898, when E. Taylor, a Frenchman, covered 33½ miles at Philadelphia, using quintuplets. The late H. Elkes used motorised tandems for the first time on August 6, 1898. Elkes covered 34 miles 1220 yards. On June 30, 1899, C. Murphy startled the cycling world by doing a mile in 57 4-5th seconds, back of a locomotive and car. Elkes held the one hour record for almost a year, when E. Taylor, at the Velodrome Parc des Princes, Paris, on Aug. 3, 1899, took the figures to 35.3 miles. A month later P. Bor, France, using a motorised triplet, covered over 36 miles. E. Taylor then made three successful attempts, his last being on April 29, 1900, when he

Exhibition Oval

World's Cycling Derby

Heats of the Derby will be run on WEDNESDAY NIGHT, FEBRUARY 4.

Finals on SATURDAY NIGHT, FEBRUARY 7. All champions competing.

C. E. LYNAM, Promoter.

did 38.7 miles. E. Bonhours and A. Bauge, France, then took turns at bettering the previous mark, Bauge bringing it up to 39½ miles on June 3, 1900. It was left to W. C. Stinson to have the honor of doing 40 miles in the hour, which he finally accomplished on Oct. 25, 1900, by covering 40 miles 330 yards back of a motor tandem. These figures stood for less than a year, when, on June 30, 1901, the late T. Robl, Germany, rode 40 miles 1246 yards. On Oct. 30 of the same year, P. Dickentmann, Holland, added ten yards to Robl's mark, only to lose it three days later, when Robl added a further 240 yards. Then, on April 20, 1902, Robl added a mile and four yards to his previous mark. T. Linton, using windshields for the first time, on May 4 and May 11 of the same year, covered 42 miles 900 yards, and 44 miles, 930 yards respectively. Two days later Robl regained the record by covering 45 miles 153 yards. T. Linton then did 45 miles 1023 yards, on July 20, 1902; and on August 15 of the same year rode eleven yards further. On Sept. 7, 1902, J. Michael recovered the record by doing 46 miles 1360 yards. Then H. Contenet, France, after two successful attempts, finally set the new figures at 48 miles 1222 yards. B. Munro, America, just missed the "50" on August 1, 1903, when he did 49 miles 210 yards; but a week later Robl went 262 yards over 50 miles. Eight days later the late P. Dangla added 453 yards to Robl's record. T. Hall then did 52 miles 537 yards; but lost it to Dangla, who covered 440 yards more. Hall then recovered the record by doing 54 miles 436 yards. This mark stood until Oct. 27, 1904, when E. Bruni, Italy, covered 54 miles 760 yards. Several riders held the record during the next four years, and A. E. Wills, England, using a motor cycle for the first time, put the mark over 60 miles, by covering 61 miles 942 yards, on August 27, 1908. These figures stood for over a year, when Guignard covered 63 miles 255 yards, paced by a single motor cycle with shield. These figures, made on Sept. 15, 1909, stood the test for fifteen years, when L. Vanderstuyft, on Oct. 1, 1924, covered 66 miles 1636 yards. Eighteen days later J. Brunier took the record to 69 miles 1525 yards. Vanderstuyft used about 165 gear, with a specially built hub, carrying a five-tooth sprocket. Brunier also used about 165 gear. Other riders are going after the latest record. The question is, Where will they stop?

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AMATEUR CHAMPIONSHIPS.

Victorian Team Selected.

The Victorian Amateur Cyclists' Union held test races at the Exhibition Oval on Saturday afternoon, for the purpose of selecting a team of senior and junior riders to represent this State at the Australasian Championships to be held in Sydney on February 18 and 25. Mr. C. E. Lynam generously placed the Oval at the use of the V.A.C.U. for that purpose. The selectors were faced with a hard task, especially in the junior section, and eventually decided to recommend to the council that two juniors be sent across instead of one as was originally intended. The juniors were narrowed down to two riders, and, although a deciding match race over half a mile was run, they found it impossible to separate W. Beard and C. Webber.

The team will leave for Sydney on February 12, in charge of Mr. C. A. Collier, who has been appointed manager, the president of the Victorian Amateur Cyclists Union. Mr. Geo. Perugia will also accompany the team. The following are the selected riders:—

Seniors.—E. Gibaud (Northcote), E. A. Broadbent (Richmond), R. W. Lamb (Malvern) Joe Parmley (Northcote); emergency, R. A. Broadbent (Richmond).

Juniors.—W. Beard (Prahran and Sth. Yarra), C. Webber (Preston).

Results of the tests were as follow:—

Half-Mile Senior.—First heat: J. Parmley, 1; E. Gibaud, 2; E. A. Broadbent, 3. Won by inches. Time, 1.9 4-5. Second heat: R. W. Lamb, 1; R. Boadbent, 2; S. Cocks, 3. Won by half a wheel. Time, 1.10 3-5. Final: E. Gibaud, 1; J. Parmley, 2; R. Broadbent, 3. Gibaud was in front at the bell and maintained his position until reaching the aquarium bend. Parmley, who was lying handy, secured a run on the inside and at this stage looked a likely winner, but Gibaud was not to be denied and came on in brilliant style, crossing the finishing line a length ahead of Parmley, with three-quarters of a length separating second and third. Time, 1.9 2-5.

One-Mile Junior.—W. Beard, 1; C. Webber, 2; H. Best, 3. Beard led at the bell. Webber appeared to be satisfied to remain close up until nearing the aquarium bend, when he disputed the lead with Beard. He could not get around the leader, who, in a fine finish, defeated Webber by three-quarters of a wheel, with Best two lengths back, third. Time, 1.14 1-5.

Match Race, half mile.—Won by W. Beard. Beard again adopted the same tactics with success, and, although the Preston boy rode well, he was half a wheel in arrears at the finish. Time, 1.14.

Five-Mile Senior Scratch Race.—E. Broadbent, 1; R. W. Lamb, 2; J. Parmley, 3. Pacers were put on to ensure a fast race. They did their work well and made the pace so hot that, at five laps to go, J. Rough, E. Broadbent, R. W. Lamb, and J. Parmley were the only riders left in the race. Parmley used unsound judgment in making the pace for three laps thus spoiling any chance that he had in the final sprint. Parmley led at the bell until the aquarium bend, where Broadbent came with a brillian sprint, winning very easily by two lengths from Lamb, who defeated Parmley by a wheel for second place Time, 11.4 1-5.

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Forward 20/- to the Manager, 312 Exhibition St., Melbourne, and you will receive this journal, post free, for twelve months.

CLUB NOTES AND RESULTS.

Fitzroy Professionals.—The club held a One-Mile Handicap on the Exhibition Oval last Saturday. There were twelve starters. The first prize was a gold medal presented by the club. Results: H. Maxwell, scratch, 1; P. Millman, 50 yards, 2; J. De Cure, 40 yards, 3. Won by six lengths. Time, 2.12.

CLUB EVENTS.

During the afternoon, several clubs held races for their members on both road and track. Details:—

West Footscray.—Footscray Pros., Half Mile: C. Lamers, 80 yards, 1; R. Phippen, 15 yards, 2; J. Fordham, 35 yards, 3. Time, 1.6. Two Miles: R. Phippen, 60 yards, 1; J. Fordham, 100 yards, 2; E. Hewett, 270 yards, 3.

Footscray Amateurs.—Two Miles: J. Finlayson, 50 yards,1; F. Miller, 75 yards, 2; D. McEwen, 65 yards, 3.

Port Melbourne Amateurs.—Five Miles: P. Bollman, 1 min., 1; A. Nelson, 1.30, 2; A. Batchelor, 1 min., 3. Winner's time, 19 min.

South Melbourne Amateurs.—Five Miles: P. Johnson, 1.15, 1; J. Le Gassick, 45 secs., 2; M. Ellis, 45 secs., 3. Winner's time, 14.22. Fastest time, C. Ellis, scratch, 13.22.

EPPING.

Carlton.—Five Miles: C. Angelo, 1.45, 1; R. Davies, 1.45, 2; A. Smith, 2 min., 3. Winner's time, 14.55. Fastest time, V. Clements, 30 secs., 15.5.

Preston Amateurs.—One Mile: A. Dunn, 140 yards, 1; F. Dalton, 180 yards, 2; A. Vickery, 170 yards, 3.

Brunswick.—Five Miles: A. Falcke, 1.15, 1; E. Montgomery, 1 min., 2; F. McDonald, 1 min., 3. Winner's time, 13.45. Fastest time, F. Elliott, scratch, 12.50.

Preston Professionals.—Five Miles: A. Bell, 2 min., 1; H. Gandlehoff, 1 min., 2. Fastest time, T. Davies, 30 secs., 13.36.

MOORABBIN.

Gardenvale.—Five Miles (Senior): B. Lewis, 20 secs., 1; J. McKissoch, 1.20, 2; A. Smith, 40 secs., 3. Winner's time, 15 min. Fastest time (unplaced), L. Bond, 20 secs., 15.2. Five Miles (Junior) C. Fraser, 40 secs., 1; G. Stanley, 1.30, 2; K. Crocus, scratch, 3. Winner's time, 17.55. Fastest time (unplaced), G. Brown, scratch, 17.46.

Black Rock.—Fifteen Miles: N. Resuggan, 2.30, 1; W. Styles, 2.45, 2; F. Perry, 1.45, 3. Winner's time, 33.40. Fastest time, H. Rogers, scratch, 32.20.

Kew.—Five Miles: J. Shannon, 1.25, 1; M. Jones, 1.25, 2; H. Morris, 1.10, 3. Winner's time, 14.29. Fastest time, V. Jones, 15 secs., and W. Atkins, scratch, equal, 13.49.

Oakleigh.—Five Miles: E. Dowler, 2 min., 1; R. Harding, 2 min., 2; A. Wadsworth, 30 secs., 3. Fastest time, A. E. Box, scratch.

Prahran & South Yarra Amateurs.—Three-quarter Mile: J. Matthews, 70 yards, 1; C. Guy, 50 yards, 2; J. Ryder, 60 yards, 3.

Fitzroy Professionals.—The annual meeting of the Fitzroy Club was held at the club rooms on Thursday, January 29. There was a good attendance of members. The following office-bearers were elected for the ensuing year: President, Mr. L. Clifford; vice-presidents, Messrs. J. Bagot, and W. Smith; hon. sec., Mr. G. Welch; hon. assistant sec., Mr. L. Lloyd; hon. treasurer, Mr. L. Clifford; committe, Messrs. H. Woods, J. Costello, H. Hudson, A. Hudson. Mr. L. Clifford, who has been President of the club for the past five years, was given a suitable presentation, being an enlarged photo of the club officers and members, for the yeoman services that he has given the club. Mr. Clifford, better known as "Lon." will be remembered as a very popular rider about two years ago. It was in May, 1923, that he met with an accident whilst walking in the street that put him out of the game for good. The assistant secretary, Mr. L. Lloyd, has seen three years' service with the club in that capacity and is well known to cyclists. The hon. secretary, Mr. G. Welch, is serving his second term as secretary.

Northcote Amateurs. — The Half-Mile Handicap held on the Northcote Park was won by J. Nichols; G. Davidson, 2; R. Rogers, 3. 1.8 2-5. Fve-Mile Scratch Race (25 laps): F. Thomas, 1; C. Guest, 2; R. Rogers, 3. 14.31 2-5. J. Nichols, who won the Half-Mile Handicap, also won the silver cup for the road season aggregate, 1924, and is one of the most energetic members of the club, being treasurer for the past two seasons. In the Five Mile, F. Thomas, gained a break at 22 laps to go and maintained it to the finish, eventually winning by 7 seconds. The field gained 8 seconds on Thomas in the last lap. Members were again pleased to see G. Davidson win a place in the Half-Mile Handicap. R. Rogers (the winner of B.S.A. Fifty Mile in 1924) is improving in his sprinting, gaining two 3rds (one 3rd in Half Mile and 3rd in Five-Mile Scratch Race). At the rate he has been going the last three months, he should soon win in open company.

Essendon amateurs held a five-mile on the Bulla Road. There were 13 starters. The winner proved to be C. Mobbs, who, riding off 2 min., soon gained the lead, never being headed. He finished an easy winner. The back-markers, R. J. Brown, W. Mobbs and B. Withall, set a merry pace going out to the turn, where W. Mobbs' foot slipped off his pedal, letting B. Withall gain about 100 yds.' lead. This gap was quickly bridged by W. Mobbs, who, in the final burst for home, just managed to push his wheel over the line ahead of B. Withall and R. J. Brown.

C. Mobbs (2 min.), time 15.47 1
P. Bathols (1.15) 2
J. Stainer (2.30) 3

Fastest time, W. Mobbs (S r.); time, 13.52. This is the third time that W. Mobbs has got the time in succession.

Members are requested to note that the club will hold its annual meeting on February 10. All members and intending members are requested to be present.

EXHIBITION, SATURDAY.

One of the best programmes submitted to patrons this season was given at the Exhibition Cycling Carnival on Saturday night. There was a good attendance of fans who risked a possible ducking as the weather was very threatening and no doubt kept a few timid ones away. A very popular event was the Motor-paced Handicap—the first for the season. The management would be well advised if they continued them as the initial one proved very popular with the fans. The racing opened with the remaining heats of the Three-quarter-Mile Handicap, postponed from December 13 on account of rain. For some reason, the handicap men did not turn out in force for the remaining three heats. Results:—

Three-quarter-Mile Handicap, 8th heat.—M. G. Clarke, 95 yards, 1; A. E. Monk, 105 yards, 2; H. Lewis, 135 yards, 3. Time, 1.36.

Three-quarter Mile Handicap, 9th heat.—F. Wilson, 135 yards, 1; E. Beecher, 90 yards, 2; — Fisher, 100 yards, 3. Time, 1.27 2-5.

Three-quarter-Mile Handicap, 10th heat.—A. Clinton, 110 yards, 1; E. Bainbridge, 120 yards, 2; H. Burnand, 90 yards, 3. Time, 1.37 1-5.

Motor-paced Match Race, three miles.—E. Vedrine (Belgium) defeated "Woody" Hedspath (Africa) in two straight heats. Hedspath was cautioned by the Referee for inconsistent riding.

Half-Mile Match Race.—W. Spencer (U.S.A.) v. W. Bailey (England). Bailey won the first heat somewhat easily. In the second heat Spencer put up a much better ride and was just defeated on the line by a tyre.

One-Mile Match Race.—Harris Horder v. J. Fitzgerald. First heat won by Horder very easily. Second heat Fitzgerald forced Horder to "ride" all the way, being only defeated by inches. Last furlong, 12 4-5 secs.

Final for thirds, Three-quarter-Mile Handicap.—— Fisher, 100 yards, 1; H. Burnand, 90 yards, 2.

Final for seconds.—E. Beecher, 90 yards, 1; A. E. Monk, 105 yards, 2; E. Bainbridge, 120 yards, 3.

Final for firsts.—R. Bates, 80 yards, 1; A. Clinton, 110 yards, 2; P. Hehir, 115 yards, 3. Time, 1.26 3-5.

Final, Motor-paced Handicap, four miles.—R. Amott, scratch, 1; J. Beer, 40 yards, 2; A. Dixon, scratch, 3. Beer, who was having his first ride back of the motors, made his opponents go all the way. He was mounted on his sprint bike and, naturally, was at a big disadvantage, but, even so, he rode very creditably. Entering the straight Beer came with a great rush and was only defeated by a wheel. Dixon was tailed off. Time, 7.29 3-5.

Five-Mile Scratch Race.—Horace Horder, 1; Harris Horder, 2; W. Spencer, 3; J. Beer, 4. The pace was on right from the gun. It was about the cleanest race of its kind for the season. The lap-getters worked well together until Bowie Stevens went out as per usual with a great burst of speed at four laps to go. M. Fitzgerald then took Stevens' place and, with the assistance of Block made the pace a cracker. Just before the bell Bailey looked to have a great chance when his tyre partially flattened and he went up the bank. Horace Horder led from the bell and came into the straight with a commanding lead from Harris, with Beer close up. Harris Horder made a desperate effort to catch his brother, but just failed by inches. Beer, who, no doubt, was feeling the effects of his hard ride behind the rollers, was beaten by Spencer for third place. Time, 11.2 3-5. Lap winners: L. C. Stevens, 6; K. Block, 6; H. Maxwell, 5; E. Beecher, 5; R. Amott, 1; M. Fitzgerald, 1.

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FIXTURES

Exhibition, every Saturday and Wednesday.

February 7.—Wangaratta.

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"Oppy" defeats Corry in 5-mile match, breaking Corry's 5-mile record behind regulation motors by 14 seconds.

"Oppy" reduces his own 3-mile standing start record to 3.59 3/5ths.

Frank Cozzolino breaks Corry's 3-mile flying start record of 3.59, reducing it to 3.40 2/5ths.

Roy Johnston wins £50 handicap, with "Oppy" second and Bill Smith fourth.

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MOTORDROME PACED CYCLING.

"Oppy" had a night out when paced by Bob Finlay in the Three-Mile Motor-Paced Handicap, standing start. He broke his own record by 7 2-5 secs. The new figures are now set at 3.56 4-5. Opperman has improved greatly since going to the 'Drome, and whoever beats him will know that they have been travelling. Results:—

Motor-Paced Match Race, Three Miles.—F. Cozzolino v. R. Johnson. Johnson won the first heat somewhat easily. Cozzolino won the second and third and the match.

Motor-Paced Match Race, Five Miles.—F. Corry v. H. Opperman. Corry was lapped three times by Opperman, who won by three and a half laps in the good time of 6.26.

Motor-Paced Handicap, Three Miles.—Final: R. Johnson, 50 yds. (paced by White), 1; H. Opperman, Scr. (paced by Finlay), 2; J. Beasley, 400 yds. (paced by C. Disney), 3. Won by 20 yds. Time, 3.56 2-5.

The principal attraction at the Motordrome on Saturday night was the return match between H. Opperman and F. Corry. The contest was marred by unpleasant incidents, and ended up in Corry being suspended for one month for allegedly not trying. Corry punctured in the first heat after going three laps, which, of course, could not be helped. At the second start, both men got away well, but it was apparent that Corry either would or could not give his best; he kept losing his roller at only a moderate speed, much slower than what he is capable of. "Oppy" lapped him three times, and finished up a winner, 3½ laps ahead of Corry. There has been rumors of alleged dissatisfaction from the Corry camp during the week, owing to the 'Drome management changing pacers. Corry should not be afraid to meet "Oppy" simply because Antennucci was not allowed to pace him. Both Finlay and White will give him a fair go.

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EXHIBITION, WEDNESDAY NIGHT.

There was a very poor attendance of customers at the usual mid-week cycling carnival conducted by Manager Lynam at the Exhibition track. Probably this was due to the very cold night. The programme, which had been carried over from the previous Wednesday owing to heavy rain, was well arranged and should have attracted the fans. Those who did brave the cold were well rewarded by some very spirited racing. The night's sport commenced with heats of the Three-quarter-mile Amateur Handicap. Very close finishes were seen in the One-mile Alternance Match between the four champions, Harris Horder, J. Fitzgerald, W. Bailey, and W. Spencer. Fitzgerald made amends for recent failures by winning the event with 23 points. A well-balanced field of riders competed in the Three-mile Amateur Scratch Race which was put on by Manager Lynam to assist the selectors to choose riders for the Australian Championships to be held in Sydney on February 18th and 25th. The V.A.C.U. are sending four senior and one junior rider over under the management of Mr. C. A. Collier. Three scratch men, E. Gibaud and E. and R. Broadbent filled the places in the handicap final. The same riders also secured the placings in the Three-mile Scratch. The Horder brothers again finished in front of the field in the Five-mile Scratch, closely followed by Beer and Bates. Results:

Amateur Handicap, three-quarters mile.—Final: E. Gibaud (scratch) 1, R. Broadbent (scratch) 2, R. W. Lamb (scratch) 3.

Match Race, half mile.—L. Faucheux v. E. Vedrine. Faucheux won easily in two straight heats.

Motor-paced Race, two miles.—Woody Hedspath v. R. W. Ford. Hedspath the winner in two straight heats, after a very uninteresting race.

One-mile Alternance Match Race.—J. Fitzgerald, 23 points; Harris Horder, 18 points; W. Spencer, 16 points; W. Bailey, 15 points.

Three-mile Amateur Test Race.—E. Gibaud 1, E. Broadbent 2, R. Broadbent 3, C. Webber 4; time, 7.21 3-5. Gibaud secured a break on the field and held it to the finish, winning by six lengths. Two lengths between second and third.

Five-mile Scratch Race.—Harris Horder 1, Horace Horder 2, J. Beer 3, R. Bates 4. Won on the line. Time, 11.21. Horace Horder led into the straight, but could not hold off Harris, who came up the straight with a magnificent burst of speed. Lap winners: Ken. Block 8, A. Monk 6, Bowie Stevens 5, M. Fitzgerald 2, Horace Horder, R. Amott, and H. Maxwell 1 each.

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The friends of Joe Scruse, the midget cyclist, will be pleased to hear that he is about again. Accompanied by "Woody" Hedspath Scruse watches training operations from the grand stand. Joe is still very weak on his legs, but there are always plenty of volunteers to give him assistance. His dark "nurse boy" is never far away.

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REGGIE McNAMARA AND VAN KEMPEN WIN SIX-DAYS' GRIND.

R. McNamara and P. Van Kempen team in the six-day race which ended Saturday night, December 6, at Madison Square Garden, carried off first money, with a lead of 514 points on the second team—B. Walthour and F. Giorgetti—a lap ahead of the third team, who were a lap ahead of the next division. The leading teams covered 2368.5 miles in the 143 hours of racing.

McNamara and Van Kempen scored a total of 1057 points, 743 of which were made in the last hour. The Goullett-Horan team and McBeath-Hanley team met with bad luck, as Horan and Hanley were injured in a spill. Horan suffered a fractured collar bone, and Hanley a wrenched back. Goullett and McBeath then joined up and finished eighth with 327 points. There were 24 sprints in the last hour; McNamara and Van Kempen each won five. B. Walthour won three; his partner, Giorgetti, did not win a sprint. A big jamb started early Saturday morning, and the Walthour-Giorgetti and McNamara-Van Kempen teams were given a lap over the field. Fifteen minutes later, Grenda-Coburn and Gastma-Lawrence teams were credited with a lap. At 5 a.m. McNamara and Van Kempen went out and gained two laps, Walthour and Giorgetti going with them for one. Egg-Girardengo and Grenda-Coburn teams were penalised a lap because both members of the teams were off the track. The Grenda-Coburn team withdrew at 6 a.m. At noon the De Wolfe-Stockelynck team gained a lap, Stockelynck doing the job alone.

The Egg-Girardengo team retired from the race before the last hour of sprinting, when they were five laps in arrears of the two leading teams. The Giorgetti-Walthour team covered 1235.9 miles in the first 72 hours (the record is held by Goullett and Grenda, who did 1468.5 miles in 1914). At 96 hours the leaders had covered 1621 miles (the record is 1904.9 miles, made by Cameron and Kaiser in 1914).

Friday was the only day that no laps were gained or given to teams through bad pick-ups on the part of the other riders. Quite a lot of jambing was staged, pick-ups were of the radio brand, and riders were all over the track, but the field remained the same. McNamara and Van Kempen were leading the second team by 55 points after 120 hours of riding, with a total of 1997.8 miles (record made by McNamara and Moran in 1914—2349.2 miles). The leaders continued to pile up points right to the finish, and came out easy winners. The final placings are as follow:—

	Miles.	Pts.
McNamara-Van Kempen	2368.5	1057
Walthour-Giorgetti	2368.5	543
One Lap Behind.		
Buysse-Goosens	2368.4	103
Two Laps Behind.		
Kockler-Stockholm	2368.3	359
Benezatto-Taylor	2368.3	248
Belloni-Demyter	2368.3	221
Three Laps Behind.		
Stockelynck-De Nolfe	2368.2	639
Goullett-McBeath	2368.2	327
Gastman-Lawrence	2368.2	55

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HERE AND THERE.

In the first heat of the England v. America stunt Bailey was accorded a great reception from the guests. Spencer had a good sit on all the way, and when Bailey stepped on the "juice" Willie was puzzled and spent the last fifty yards or so examining Bailey's back wheel.

According to the programme the Velodrome de Exhibition management must think that their clients are good at cross word puzzles. The last heat of the Three-quarter Mile was a very good example of their efforts.

Spencer, Bailey and Co. must receive some funny sensations when they ride on Melbourne's leading bike track after being used to the first class board speedways of the States and Europe. Rumor is busy saying that "our track" is going to be boarded. If so, there will be racing on the flat instead of the spectacular stepplechases that we now enjoy. Cheerio, boys! Any old track is better than none at all.

The go between Bell and Amott in the Motor-paced Handicap was the tit-bit of the night—I dips my lid to them. As for some of the others they should be tied to their pacers with rope—not elastic.

Jimmy Beer added to his laurels by winning his first Indian-chasing contest. He only had a sprint cycle and, therefore, was at a disadvantage. Do it properly, Jimmy, and see Bruce at once.

Jim Nagel was also inconvenienced. The powers that be were repairing the electric glimmers on the track last Friday and Jim rode into a ladder (that had been carelessly left about) with drastic results to himself. Did you think that it was the ladder of fame, Jim?

Willie Spencer kept well out of the "pockets" in the Fiver. He only got into one "pocket," which had a liberal supply of air, seperating him from the winner in the sprint up the straight.

The selectors put Eric Gibaud in the restricted class at the trophy-collecting boys test races on Saturday. "Gibbo" won the Handicap and the Three-Mlie Scratch on Wednesday night. On Saturday afternoon, he won the Half-Mile Test and was not allowed a try in the Five Mile. He pedals much too fast for most of the boys.

Bill Hedspath wants to know the meaning of inconsistent riding. This information would be welcomed by "Woody," as he is of the opinion that perhaps the referee has ideas of his own about it.

Gordon Neilson is becoming almost as good as Jim Nagel at falling on the track. You are allowed ten falls, Gordon, and by then you should be able to topple over quite comfortably without hurt to yourself. You are allowed two laps for a fall in a 100 Kilo., but none in a handicap. (So cut it out, boy.)

Fred. Hepner "mixes" things somewhat. He has a turn at motor-pacing, tandem riding, handicap riding, and his latest is chasing the elusive roller. All on one programme, too. Nothing like variety, "Hep."

Quite a number of the boys are coming the double business—Harris Horder, Eddie Broadbent, Eric Gibaud, and lesser lights.

It is said that "Oppy" left the care of the five-mile lap department to Maxwell and Block. These two boys took Bowie Stevens and Beecher into partnership with them on Saturday night which, of course, affects the dividends.

Bert. Monk seemed liable to win his heat in the three-quarter mile pick-up-the-gap event for cash-chasing anklers, only he struck a hurdle (or some other obstacle) coming into the straight, which euchred his chance.

The pacers and patients in the "Midnight" v. Vedrine behind the roller match provided a comedy in two acts. It eventually developed into a motor bike race. There must be keen rivalry between the "windshields."

Joe Parmley gave a great exhibition of cycling, acrobatics and walking on A.N.A. Day. It was a good display of your abilities, Joe, and you well earned third prize for your trouble.

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WORLD'S CYCLING DERBY, ONE MILE.

The heats of the World's Derby will be run to-night (Wednesday), and the final on Saturday night. Last year W. Spencer won the event, but this year will meet with stern opposition from Harris Horder, Bill Bailey, J. Fitzgerald and J. Beer. On form, Harris Horder should win the title for Australia.

Conditions.

Twenty-one selected riders will compete in seven heats, the winner of each to start in semi-finals. Those riders not qualifying in heats will compete in two special heats; the winner of each will start in semi-finals. The nine eligible riders will then compete in three semi-finals, and the winner of each will start in the grand final. The six riders not qualifying for the grand final will compete in a special semi-final, the winner to qualify for the grand final. These four riders will contest the grand final. Competitors not in the grand final will race off in a three-mile miss-and-out scratch race.

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NOTES.

Alfred Grenda and Reggie McNamara, who rode in the Madison Square Garden Six-day Race, went over to Brussels for the Six-day Race which was scheduled for January.

Reggie McNamara started in the Six-day Race with a swollen jaw from a bad tooth, and he also had a bad foot from a corn. His trainer said he thought that Reggie had the foot and mouth disease.

Jack Dempsey and his manager, Jack Kearns, are reported as going to promote six-day cycle races. If such is the case, we hope that he will, as a promoter, "Do unto others as they had to do to him" (distribute big prizes).

Prior to the start of the Garden Six-day Race, Alfred Goullett, the six-day champion met B. Walthour in a match race of one mile. Goullett won the first from in front. In the second heat he tried to win from the back, but Walthour had plenty to spare and held him off to the finish. In the third heat Goullett went to the front at three laps to go, and stayed there until the finish, winning the match.

F. Giorgetti (Italy) met Oscar Egg (Swiss) in a match race of one mile. Giorgetti won in two straight heats. Egg was outclassed by the Italian.

G. Belloni and C. Girardengo, Italian road riders, met in an unlimited pursuit race. Belloni led during the early part of the race, but Girardengo then got into his stride and passed his countryman at the 2¼-mile mark. Time, 4 min. 29 sec.

P. Van Kempen, Holland, carried off the honors in the Alternance Match Race, his opponents being A. Beckman, H. Horan and R. McNamara. Van Kempen beat Beckman and McNamara in the first heat. The second heat went to Van Kempen from McNamara and Horan. The third heat went to Beckman from Horan and McNamara. Van Kempen won the fourth heat from Beckman and Horan. Van Kempen scored 30 points, Beckman 20, McNamara and Horan 11 each.

A. McBeath was presented with the Ten-mile Open. Reggie McNamara won the race, but was disqualified for not holding the pole line; W. Hanley second, D. Lands third, P. Van Kempen fourth. Time, 20.33 2-5.

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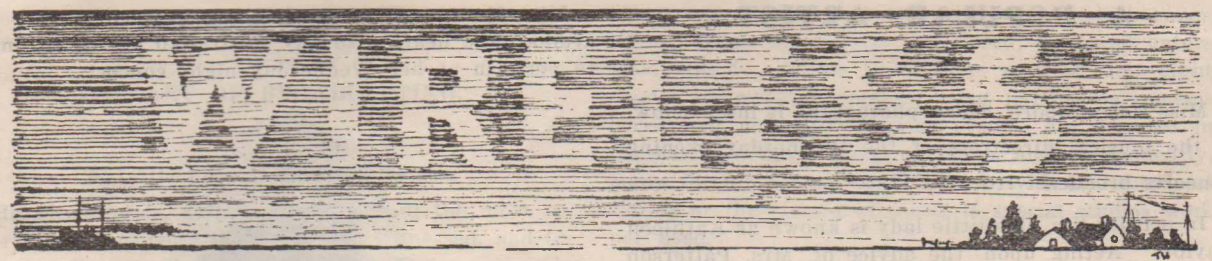
To the Editor.

Dear Sir,—The Hawthorn Cycle Club will begin its racing programme this year with a Five-Mile Handicap Race at Blackburn, to be run on Saturday, February 7. This opens the third year of the club's existence, in which it has steadily grown to a membership of between 60 and 80 members. During its existence, the club has had very little outside support, except from one or two old-time cyclists and cycling enthusiasts. One member in M. Fitzgerald has been riding very consistently at the Exhibition Oval this season. E. Beare, another member, broke his collarbone while riding at Longwarry during the holidays, and M. Roberts sustained a nasty fall while riding at Launceston, Tasmania. Two very promising lads are seen in F. Guerin and S. Guerin, and the club members expect to see them put up some good performances in open company this coming road season. The club meets every alternate Tuesday night at 8 p.m., at the club rooms, rear of 130 Glenferrie Road, Glenferrie. The next meeting will be held on Tuesday, February 17. Intending members are requested to send their names to the secretary, Mr. J. Morris, c/o J. Holland, 134 Glenferrie Road, Glenferrie.



WIRELESS AND THE GARAGE.

The following is a letter from a correspondent appearing in the English trade paper, "The Garage and Motor Agent," and should be of special interest to garage and service station proprietors. In a previous issue of "The Australian Motor Cycle, Bicycle, and Radio," we advocated the handling of wireless supplies by garages, service stations, and motor cycle dealers in Australia. The motor business is generally slack here during winter, and this should be the period to sell wireless goods. As "Utopian's" letter indicates, wireless sales increase wonderfully in the winter months in England, and undoubtedly there will be a huge demand here when the cold weather sets in. There are several well-known lines of wireless goods being sold by motor accessory wholesale houses in Melbourne, and, without presuming to teach other people their business, we must add—"a word to the wise is sufficient":—

Sir,—It is claimed that wireless has already surpassed the motor business in America, and is now the leading industry. Of course, "over there" new things get taken up in a way that staggers us, but there is no doubt that wireless is a growing thing "over here," too.

I heard on the best authority, only last week, that there are wireless firms making 200 per cent. on their capital, while only 5 per cent. of those who buy wireless sets get sick of them. The Broadcasting Company, too, is steadily improving its programme, and week by week we hear more interesting items being added.

As sets can be purchased and most successfully used. with practically no upkeep costs, at from 7s. 6d., according to one's distance from a broadcasting station, the field of potential wireless purchasers is really untapped as yet, and is unlimited.

The great point for motor traders to remember is that the wireless season is approximately September to April, as far as sales of sets are concerned, and this should make an exceptionally strong appeal to us. Our motoring season is very much "off" during the winter —that is, as long as the public remain prejudiced against the closed car, and so do not motor so much in the winter because it is cold and draughty and dirty. Wireless, therefore, supplies us with the necessary work to keep down our overheads, the necessary profits (and they are good on wireless!) to keep our hearts cheery and increase the necessary publicity to influence further very necessary sales in the coming spring and summer.

I am far from attempting to say that every wireless buyer is a car prospect. No, but we need personal local publicity, so that if we are connected with both cars and wireless we get recommended for both, and through one to the other. Many car owners—should I say most car owners?—are certainly potential wireless purchasers, while many wireless enthusiasts may either buy cars themselves one day, or will recommend a friend to come to us.

However, from the mere fact that wireless is a "coming thing," we must not be slow in realising to the full its potentialities. Someone must sell it, because there is a demand; and if we don't then others will. Moreover, wireless is very easily worked in with our business, and need not necessarily disturb us during the busy car season. Even if it did, we could hardly call it disturbing, since the profits are fairly large and the selling efforts are reduced almost to nil.

There is not nowadays enough money to be earned and saved in the motor business for us to retire and grow fat, since the boom periods have passed, and so it behoves us to look to other lines to swell our balance at the bank and give us peace and plenty in our old age.

"UTOPIAN."

[Our reasons for having devoted attention to wireless for a long time past are precisely those which you have ably enunciated. The most active period of the wireless trade comes just when things are quietest in the motor trade, and as the "atmosphere" of wireless is not in any sense degrading, the business, properly conducted, can well be added to that of selling cars and their accessories. Apart from the humble "home constructor" of sets, there are thousands of fairly well-off people who are at this moment buying cabinet instruments at anything up to £100. After all, pianos cost as much or more, and are not nearly so generally entertaining.—"The Speaker."]

A POPULAR ARTIST.

Miss Helen Moore, whose photograph is inset below, is the musical directress of the Wednesday evening concerts broadcast from 3A.R.

In private life, this little lady is known as Kathleen Taylor. Acting upon the advice of Mrs. Patterson (Dame Nellie Melba's sister), Miss Moore joined the Melbourne Conservatorium a few years ago, where she studied a two-year full course in singing and pianoforte, gaining honors at her examinations. As a pianiste, her technique is fine, and she plays and accompanies with great feeling. In addition, she possesses a rich mezzo-soprano voice. Her especial study is "Songs at the Piano," which she performs with great ease and skill. During the past year, Miss Moore has been largely known in musical circles as the pianist of the "Cecilian Trio." This trio (piano, violin, and 'cello) has performed successfully at many Melbourne functions, as well as having done a great deal of work for charity funds.

Miss Moore is deeply interested in literature, and at present is negotiating with many Australian writers to give short talks at her concerts. She hopes that wireless will lead the Australians to appreciate even more their authors and poets, as well as their concert performers. She writes fairy stories herself, and takes much pleasure in reading them to the wireless kiddies. She is "Aunt Helen" for the Wednesday night children's hour.

Miss Moore will always be very pleased to give a sympathetic hearing to any Australian artist wishing to perform at her Wednesday night concert.

Inset.—The photograph of the "All Victorian Jazz Syncopaters," who are often heard on Miss Helen Moore's programs for 3A.R. These boys add greatly to the brightness and general effect of occasional numbers, by all joining in song.

"The Victorian Jazz Syncopaters'" Band is one of Melbourne's most popular ones, and "listeners-in" will be pleased to hear that they are booked to play for Wednesday, February 4th:—Saxaphone, Thorald Smith; violin, Roy Waller; piano, Hector Glover; banjo, Alan Neith; drummer ziliphone, Jock Prater.

BROADCASTING.

THE ART OF BROADCASTING.

A Little Peep Behind the Scenes.

Broadcasting is, without doubt, one of the most remarkable movements the world has witnessed, and today in all quarters of the globe it is increasing in popularity, literally by leaps and bounds.

The wireless enthusiast who either dons a headgear or switches in a loud speaker to listen to a broadcast programme is ofttimes impressed with the wonder of reception, but perhaps very few who are entertained by a broadcasting station realise the enormous amount of work which underlies the successful transmission of a programme of speech and music, and the very careful attention to detail which is necessary for the perfect broadcasting of all items.

The task of broadcasting a programme may be roughly divided into three groups or branches. Firstly, the actual concert itself must be organised and held; secondly, the items rendered must be transformed from sound-waves into electrical currents; and, thirdly, these electrical currents must be carefully handled and radiated in the form of electro-magnetic waves in the ether.

The carrying-out of the first section calls for much exertion on the part of the manager of the broadcasting service. He must understand just what his listeners need, and must see that all tastes are catered for. While one section of the public may want jazz and light music, another portion may view only classical items with favor. All parties must be pleased, and programmes must, therefore, be arranged in such a manner that all tastes are catered for. Of course, this cannot be effected in one night; but over certain periods the exact classes of programmes which are demanded must be provided. Artists must be interviewed and tests carried out for the purpose of ascertaining just which items and voices are suitable for inclusion in the programme. In short, the concert must be organised much in the same way that an ordinary platform concert is organised—quite a task in itself.

As the concert so arranged is, however, to be broadcasted, and as listeners who, in most cases, are keenly critical, special arrangements are necessary to ensure perfect transmission. The items themselves must be rendered in special studios, constructed so as to exclude all sounds except those which it is intended to broadcast.

Special Studios.

These studios are built of hollow bricks, and are lined with tin sheeting, which reffects any sound which may happen to pass through the walls and throws it on to a padding of felt. An inner wall of beaver board or some such material completes the studios, which are fitted with double sound-proof doors, with hinges fitting into rubber pads and with air-pockets between them. When these doors are closed, no sound enters from outside. These precautions may at first sight appear somewhat unnecessary, but it must be remembered that most broadcasting studios are situated in the heart of large towns or cities, and, consequently, many foreign noises would mingle with the voices of artists or the strains of music if special studios were not used.

The studio work does not, however, finish with the construction of a special room which will exclude foreign noises, but all echoes must be "damped out" inside the studio itself. This is effected by the loose draping of the interior walls with heavy cloths, and when a studio is built only careful experimenting will show when the correct amount of draping has been added, and when all resonant effects have been banished.

The draping of the studios has the effect of rendering the voice dull to the ear, and many artists at first find it very difficult to sing in such a room. In most cases, a singer attempts to force an item in an endeavor to create the usual "ringing" tone. Such an action must, of course, be avoided.

The Microphone.

The first section of the broadcasting of a programme is then completed when the artists sing in the studio; and the second section—that of collecting the sound-waves and transforming them into minute electrical currents—is entered on.

The microphone is the small instrument which is used for this purpose, and it may be likened to the human ear. The carbon-granule type is extensively employed, but in some of the London stations the Marconi magnetic type is giving splendid results.

The carbon-granule microphone consists of a small diaphragm of steel, which is stretched tight, and which is packed on either side with carbon granules. To these carbon granules a small current of electricity is applied. When a sound-wave strikes the diaphragm it causes it to vibrate, and the vibrations, varying the pressure on the carbon on each side, cause either a stronger or a weaker current to flow. These variations of the current, caused by the sound-waves, may, therefore, be said to represent those waves—or, in other words, the small microphone is performing the function of registering the sound-waves in terms of fluctuating currents.

These currents are, however, too feeble to handle in connection with actual transmission, and they are passed through an ordinary amplifying panel and are "built up" or amplified to a stage which renders them suitable for passing to the transmitter itself. The tendency during recent months has been to erect broadcasting stations at some little distance from the studios. Many of the American studios are arranged on this plan, and the large stations which have been, and others which are now being, constructed in Australia, are now utilising the same method. A special direct telephone line connects the studios and the station, and

along this the currents registered by the microphone are carried from the control room at the studios to the station.

The Amplifier.

The amplifier contains many controls which enable the engineer in charge to adjust his instruments to their correct working points, and the amount of current which is allowed to go out over the line to the station is regulated by one potentiometer. When the amplifier is adjusted and is working, the operator, by adjusting the potentiometer, controls the output to the station, and makes the necessary adjustments in current flow for various items. Speech and music require different amounts of amplification for the ensuring of even transmission.

When the currents reach the station they are carried direct to a panel containing power valves acting as modulators. These valves impinge the currents on continuous waves, which are generated by other panels of valves, and these waves are carried, via an arrangement of tuning apparatus, to the aerial, whence they are radiated.

Special Tests.

Prior to the actual broadcasting of a programme, special tests are made over the whole of the system. The microphone in the studio is switched in, and the necessary readings are taken, the station is started up" and a test item (usually consisting of some speech and a little music) is put across the line to the station and radiated. At both the station and the studios, receivers are operated, and the test is received back by wireless and carefully checked.

The successful broadcasting of a programme is possible only by strict attention to detail on the part of the staff at all points of the service.

Studio Working.

When an item is to be rendered, the announcer signals the engineer, and then throws in a small switch which connects the microphone to the instrument room or control room. The throwing-in of this switch also lights small red pilot lamps in the studio, near the engineer's table, and outside the studio door. These serve to warn the artists that the studio is "on the air," and to indicate that no sounds other than those which it is intended to broadcast must be uttered. The lamp ouside also warns those who may be waiting that the studio is working, and so prevents them from entering.

Microphone Peculiarities.

It was stated earlier in this article that the microphone itself was very much like the human ear, and, while this statement is very true, it hardly goes far enough. As a matter of fact, the microphone is even more sensitive than the ear, and will reproduce sounds which are not audible to the ear. This fact gives some surprising results at times. Studio managers have oft-times found that many singers with big reputations for concert work do not reproduce at all well by wireless, while other singers whose efforts would not be appreciated on a platform reproduce with clarity and with tone. The reason is not hard to find. All of us, when singing or speaking, create waves which are not audible. The microphone, being more sensitive than the ear, records faults which the ear will not record, and also records many qualities which cannot be appreciated with the human senses alone.

The placing of musical instruments in a studio calls for an expert knowledge. The arrangement of orchestras is by no means done in a haphazard manner. Each instrument affects the microphone differently from another, and the orchestra must be so placed as to give an even balance to all instruments. This placing can, of course, be effected only by a man with a thorough knowledge of studio working.

Broadcasting From Public Halls.

During recent months much broadcasting from theatres and public halls has been done in Australia. The method employed to broadcast any such programme is very much similar to that used in the case of the studio. A microphone is placed in a suitable position in the hall or theatre, and is connected to an amplifying panel in the basement. The sounds collected are "stepped up" and transmitted by a direct line to the control room of the service, where they are again handled and carried out by the direct line to the station.

All items must be carefully listened to by wireless, and for this purpose a number of receivers are used. The engineer in charge, while watching the progress of a studio item, also listens to it by wireless. At times, when a theatre item is being broadcasted, a receiver is worked in the control room, and the programme which is heard by wireless is put back across a telephone line to the operator at the theatre, who is thus able to listen by wireless to the play which he is actually transmitting!

The enthusiast who understands just what organisation lies behind the programme he receives without a doubt derives very much more pleasure from its reception than the man who merely hears a concert without troubling to ask himself just how its broadcasting is made possible.

—(Courtesy "The Steering Wheel.")

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LEAD TETRA-ETHYL.

Considerable prominence was given in some sections of the public Press not long ago to a claim that a number of men had been poisoned, in New York, by handling lead tetra-ethyl in preparing what is known in the United States as ethylised motor fuel. The incident referred to caused, apparently, something of a panic in New York, as accidents of that kind are rather prone to do in a city that is nothing if not excitable. Rush legislation was, in fact, introduced to to prohibit the use of ethylised fuel. The matter has, however, since been investigated more fully, and with a greater measure of calmness, with the result that the American Bureau of Mines has issued a report stating definitely that there is no ground for believing that the use of petrol treated with lead tetra-ethyl can be considered as generally dangerous. The preparation of the fuel is another matter: the workers involved must be very carefully safeguarded, just as experimenters must realise that they are dealing with a particularly noxious poison. But that is entirely another matter, and one that comes only within the province of the fuel distributors, and the few who are engaged on laboratory work on the subject. It seems quite clearly established that ethylised spirit can be used with entire impunity

Forward 20/- to the Manager, 312 Exhibition St., Melbourne, and you will receive this journal, post free, for twelve months.

A Nice Maid.

To the young man's horror he discovered that he had thoughtlessly placed his arm around the girl next to him in the Trak 'bus. "Beg pardon," he stammered, coming out of the clinch, "but that driver is so careless and goes so fast—I needed support."

"Well," she replied, just like that, "he hasn't slowed down yet, has he?"

Handy to Know.

In Tennessee, U.S.A., a driver operating a car belonging to his employer managed to run over his own wife and the courts ruled that the employer was liable for damages. Soft enough, we'd state, to be a married man and make the boss pay your amusement bills.

A Golf Yarn.

"Didn't I hear Mugs telling you just now that he got a hole in one? He's an infernal prevaricator. He never——"

"Hold on, old chap, don't jump at conclusions. What Mugs said was that he bought a pair of new golf stockings, and the first time he wore them he got a hole in one."

Single Blessedness.

All men are born free, but the majority of them get married.

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M. & R., Feb., 1925.

NEW USE FOR OLD GRAMOPHONE RECORDS.

A Substitute for Ebonite.

Gramophone records are composed largely of shellac, which is an excellent insulating material; they are easily softened, and cut into any desired shape. It is doubtful whether their extreme usefulness is recognised fully.

The best method of cutting is to place the record in a large flat bowl, cover it with boiling water, and then cut out pieces of the softened material with the open ends of tin boxes of suitable shapes and sizes, using them in the same manner as a pastry cutter. If the tin does not cut right through, the record should be lifted from the water and the pieces torn out. It should then be replaced in the water for a few minutes, and then pressed flat between two boards. A search round the house will yield a number of tins and other articles which can be used as cutters, the size and shape depending upon requirements.

This method of cutting is much easier and quicker than using a knife or scissors, and the pieces are uniform in size and shape, the edges being smooth and slightly rounded. Small rectangular tins with rounded corners, such as ¼ lb. mustard tins, will cut condenser top and bottom plates.

Circular pieces are suitable for mounting bracket coils, one being placed on each side of the coil and clamped together lightly with a small terminal or screw, thus holding the coil between them. Circular pieces are suitable for condenser and variometer dials. The lines and figures can be drawn on with a heated needle and filled with white enamel, but a far more effective appearance can be obtained by using a plain dial having a small circular hole near the edge, cut with the end of a metal pencil-case, for instance.

The lines and figures, or names of stations (call letters), are printed on a circular piece of white paper, which is stuck on the panel, under the dial, so that as the latter is turned the hole in the edge reveals the figures.

Insulating washers for use under terminals which are mounted through wood, can be cut with the end of a piece of metal tubing, and narrow insulating strips to take a pair of terminals can be made by overlapping two rectangular cuts.

The use of records can be increased considerably by taking advantage of the fact that, whilst soft, the material can be bent and rolled into simple shapes. Tubes can be formed by rolling a strip round a circular object, the two edges being afterwards sealed by melting them with the heated blade of a knife.

A small tube suitable for making a perikon detector can be made by rolling a rectangular piece of record round a pencil in water as hot as can be borne by the fingers, whilst a long strip, rolled round a pencil or piece of screwed brass rod, makes an excellent lead-in. Long strips, preferably cut out with scissors, can be rolled round a jam-jar to form a tube of, say, 3 in. in diameter, and 1 to 2 in. wide, on which to wind plug in coils. Plugs and sockets can be given insulated holders and small knobs for detector arms and extension condenser arms are an equally simple matter. Holes can be made with a hot nail, and the burr formed by the melted material removed with a sharp knife. Bobbins for transformer windings are another thing that can be simply and efficiently made.

The reader who makes any of the articles mentioned above will be quick to realise the many uses to which old gramophone records can be put, and will probably think of many other ways in which they can be usefully employed.

Those experimenters with small pocket books should always keep the above hints in mind.

TALKING ACROSS THE ATLANTIC.

Important Development.

Talking across the Atlantic by radio telephony has been an accomplished fact for nearly ten years—possible, but altogether too expensive for general use. Just now it is still in the experimental stage, but there are hopes. Already radio engineers working in co-operation under the direction of the American Telephone and Telegraph Company, the Radio Corporation of America, and the Western Electric Company, have succeeded in devising a method which saves two-thirds of the power required. When the enormous quantities of high-frequency power required for transoceanic telephony are considered, it is obvious how much the saving may mean towards making such conversation commercially practicable.

In the ordinary telegraphic transmission three bands of electric waves are transmitted through the ether. These experimenters, according to an announcement to be made by the Engineering Federation, have evolved a method requiring only one band, which makes all the power radiated effective in transmitting the message, while by the ordinary method most of this power is not thus effective. Wave-length space in the ether is also conserved, and the transmitting antenna problem simplified.

Conservation of frequency range is most important when it is realised that the total range available is distinctly limited. The upper limit for radio telephony may be 60,000 cycles a second. Below 30,000 cycles the range is pre-empted by transoceanic telegraphy.

On the basis of figures for the year 1923 it is probable that the American people will spend approximately 350,000,000 dollars for radio equipment during the present year. A conservative estimate of the business in vacuum tubes alone is about 50,000,000 dollars. At least five times as much, or 250,000,000 dollars, will be sent for radio sets and parts. The sales of batteries, both dry cell and storage batteries, will very likely amount to over 45,000,000 dollars. Miscellaneous equipment such as battery chargers, loud speakers and specialties may easily account for 50,000,000 dollars more.

Motor Cycle Engine Capacities

Engines are classified alphabetically; makers' nominal h.p. ratings are given in brackets, and the cubical capacity in cubic centimetres, follows.

Machines fitted with proprietary engines have been omitted from the list, as their capacities can be found under the names of the particular engines employed. A list of such machines, with the names of the engines fitted, will be found below.

The figures given are those of 1924 models, or of the last models of the makes concerned. Where no nominal h.p. figure is shown, it may be taken that the manufacturers are rating their engines on the A.C.U. formula of 100 c.c.-1 h.p.

A.B.C. (3), 398
Abingdon King Dick (3½), 499
Abingdon King Dick (6-7), 796
Ace, 1,234
A.J.S. (2¾), 349
A.J.S. (7), 799
Alecto (3½), 345
Alcyon (1½), 98
Alldays Allon (2¾), 292
American X (7-9), 999
Anzani (see Brit.-Anzani)
Ariel (3½), 498
Ariel (4½), 665
Ariel (6-7), 796
Ariel (8), 994
Atlas (see Aston)
Auto Wheel (1), 117
Aza, 150
Aza, 175
Aza (2¾, 4-str.), 349
Aston (formerly Atlas), (1¾), 142,5
B. & H. (2½), 247
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B. & H. (3½), 498
B. & H. (3½, twin), 494
B. & H. (5-6), 698
B. & H. (8), 996
Barr & Stroud (2¾), 348
Barr & Stroud (3½), 499
Barr & Stroud (8), 998
Bat-Martinsyde (3½), 496
Bat-Martinsyde (6), 738
BeardmorePrecision (2¼), 246
Beardmore-Precision (2¾), 348
Beardmore-Precision (3½), 496
Beardmore-Precision (4¼), 598
Beaufort (170)
Bianchi (4), 498
Bianchi (6), 600
Blackburne (2¼), 248
Blackburne (2¾), 348
Blackburne (4¼), 549
Blackburne (5-6), 696
Blackburne (8), 998
Blackburne (10), 1,096
Bradshaw (2¾), 349
Bradshaw (3½), 494
Bradbury (2¾), 348
Bradbury (4½), 572
Bradbury (7), 872
British Anzani (8), 996
British Anzani (9), 1,075
Broler (3½), 349
Brough (3½), 496
Brough (5), 692
Brough (7), 810
B.S.A. (2¼), 249
B.S.A. (2¾), 349
B.S.A. (3½), 493
B.S.A. (4¼), 557
B.S.A. (6), 770
B.S.A. (8), 986
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Cedos (2), 198
Chater-Lea (4½), 545
Chater-Lea (8), 976
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Cleveland (3), 269
Climax (2¼), 293
Clyno (2½), 269
Clyno (8), 925
Connaught (2¾), 293
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Corona Junior (3½), 450
Coventry Eagle (1¾), 170
Coventry Victor (4), 599
Coventry Victor (6), 688
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Dalm (3), 318
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Douglas (2¾), 348
Douglas (2¾, o.h.v.), 346
Douglas ("600"), 596
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Duzmo (3½), 496
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F.N. (2½), 286
F.N. (2¾), 348
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Gri (3), 346
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Grigg (2), 181
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Harley-Davidson (9), 989
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Humber (4½), 600
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J.A.P. (4¼, sports, single), 600
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J.A.P. (8), 980
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Bat (J.A.P.)
British Standard (Villiers, Bradshaw.
Brough Superior (J. A. P., M.A.G.)
Calthorpe (Villiers, J.A.P., Blackburne)
Campion (Villiers, J.A.P.)
Carfield (Villiers, Blackburne)
C.C. (Villiers, Blackburne)
Cedos (Blackburne, Bradshaw)
Chater-Lea (Blackburne)
Comery (Villiers, Blackburne)
Connaught (Blackburne)
Consul (Villiers)
Cotton (Blackburne)
Coventry Eagle (J.A.P.)
Coventry B. & D. (J.A.P.)
Coventry Mascot (Bradshaw, Blackburne)
Croft Cameron (British Anzani)
Diamond (Villiers, J.A.P., Blackburne, Bradshaw, Barr & Stroud)
Dot (J.A.P., Bradshaw, Blackburne, British Anzani)
Edmund (Blackburne, Barr & Stroud)
Endurance (Villiers)
Excelsior (Villiers, J.A.P., Blackburne)
Francis - Barnett (Villiers, J.A.P.)
Grigg (Villiers, Blackburne)
Grindley (J.A.P.)
Grindlay Peerless (J.A.P., Barr & Stroud)
Hawker (Blackburne)
Hazelwood (J.A.P.)
H.E.C. (Villiers)
Henley (Blackburne)
Hobart 1¾ (McKenzie, J.A.P.)
Holroyd (J.A.P.)
Invicta (J.A.P.)
J.E.S. (Blackburne)
Jupp (Villiers)
Kenilworth (Norman)
Lea-Francis (M.A.G.)
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Monopole (J.A.P.)
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New Gerrard (Blackburne)
New Imperial (J.A.P.)
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Nickson (Blackburne)
O.E.C. (Backburne, Villiers)
O.K. (Bradshaw, Blackburne)
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Powell (Beaufort)
Priory (Villiers, J.A.P.)
P.V. (Villiers, Bradshaw, Barr & Stroud, J.A.P.)
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Rebro (Villiers)
Rex-Acme (Blackburne)
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Saltley (Villiers)
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Sharratt (Aza, J.A.P.)
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Sun (Blackburne, Villiers)
Vasco (Broler)
Verus (Blackburne, J.A.P.)
Victoria (Villiers, J.A.P.)
Warrior (Villiers)
Vindec (J.A.P.)
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