

The
South India Motor Owner
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Jan to March-1936

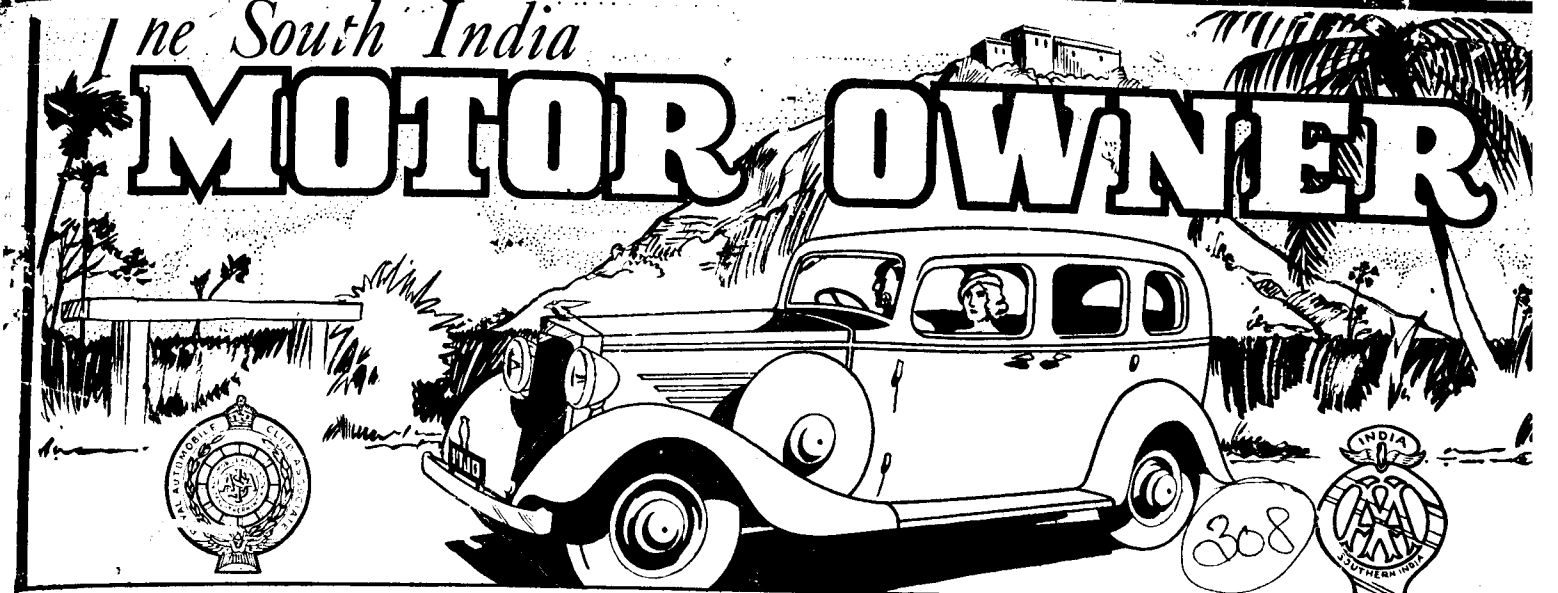


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The South India

MOTOR OWNER

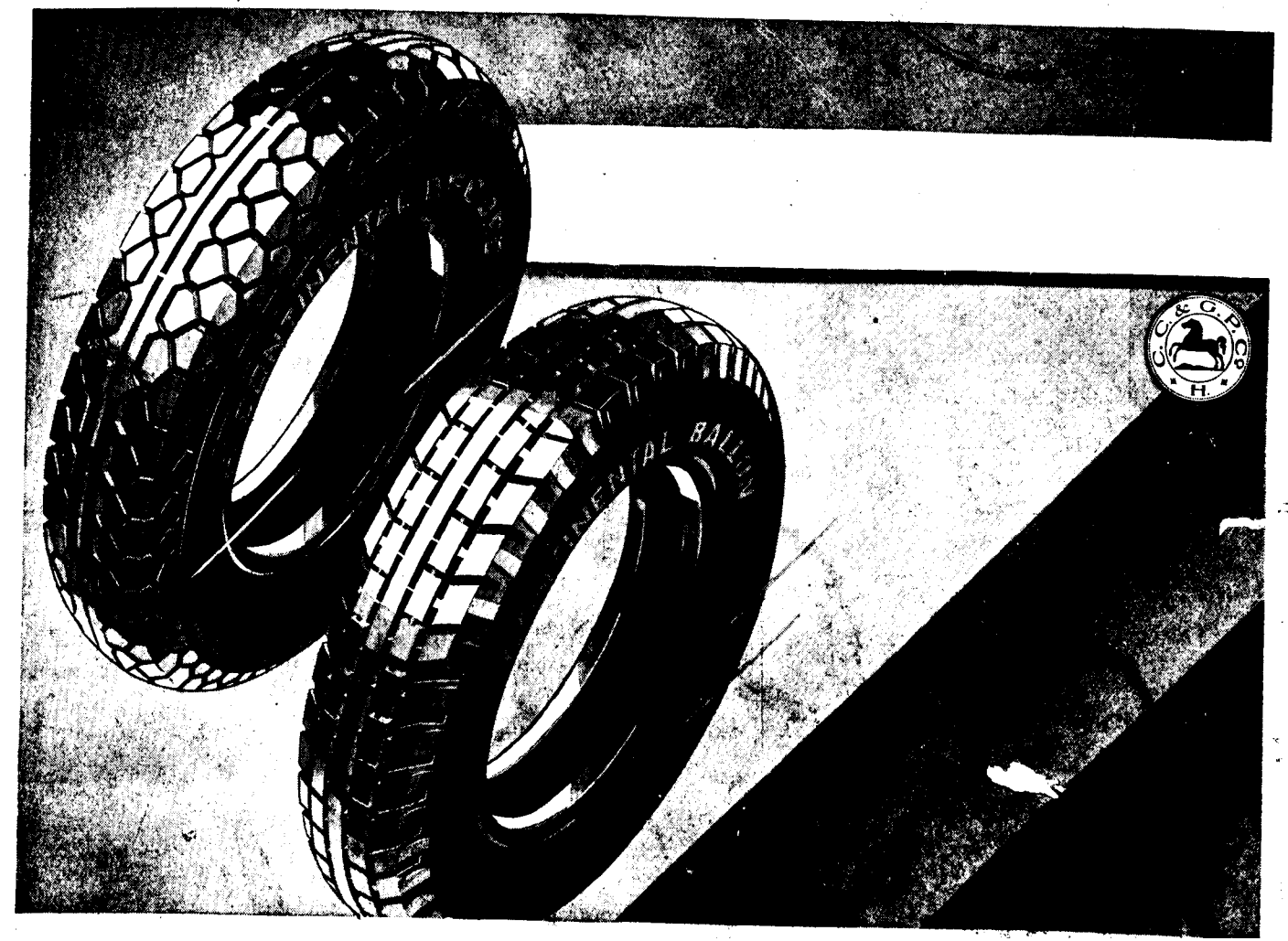


THE OFFICIAL ORGAN OF THE AUTOMOBILE ASSOCIATION OF SOUTHERN INDIA

Vol. VIII. No. 1.

JANUARY 1936

SINGLE COPY A.



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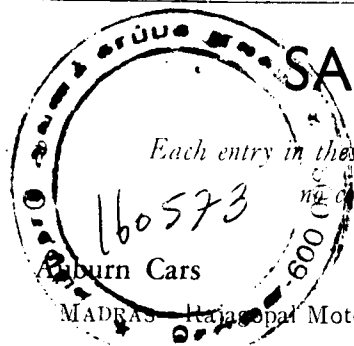
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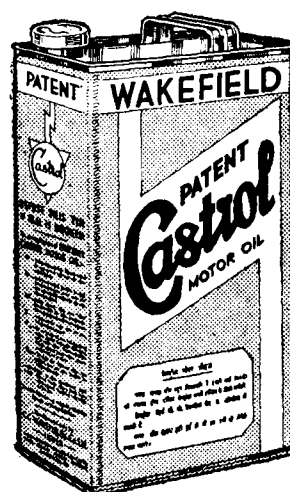
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THE SOUTH INDIA MOTOR OWNER

The Official Organ of the
Automobile Association of Southern India



Volume VIII Number I

JANUARY 1936

Notes and News for A.A.S.I. Members.

Road Information

The weather having been favourable throughout the greater portion of the month, there is nothing unusual to report under the heading "Road Information". Motorists who have toured by road during the X'mas vacation have been fortunate in not having to negotiate flooded unbridged rivers, except perhaps in the south-east corner of the Peninsular, where rains caused flooding in the Tambraparani River.

Madras-Calicut Trunk Road

Reports show that the surface of the Madras-Calicut Trunk Road from Coimbatore to Walayar (on the boundary between the Coimbatore and Malabar Districts) is in a bad condition so much so that several members advocate the use of the more circuitous route via Pollachi and Palghat as being preferable both for comfort and saving of time.

Another diversion from the Madras-Calicut Trunk Road that has been recommended as being preferable to the trunk road is one which takes off to the north from the trunk road in mile 385.3 just west of Mannarakhud and proceeding via Melattur and Manjeri rejoins the trunk road in mile 418.3.

This road is said to be a nice shady one with a good surface, carrying very little cart traffic and some six miles shorter than the corresponding section of the trunk road which proceeds via Perintalmanna and Malappuram.

Madras-Bangalore Road

The foundation of a bridge over the Ponnai River, near the Rice Causeway, was laid early in the month. The bridge is due for completion early in 1937 and will be welcomed as a great boon by motorists, especially those who have experienced the difficulty of crossing either the Rice Causeway or the Wenlock Causeway through a foot

or two of water, supplemented by a heavy layer of sand.

Incidentally, the completion of this bridge is likely to be followed by an improvement (or possibly a re-alignment) of the Tiruvellam-Katpadi Road, which will then take the place of the Arcot-Vellore Road as a section of the Madras-Calicut Trunk Road.

Palar River (Chingleput) Causeway

Motorists who recently have traversed the northern section of the Southern Trunk Road will have noticed with some misgivings, the heavy accumulation of sand that has collected under the left (north) bank of the river bed just upstream of the causeway; the accumulation is so deep that it has been necessary to cut a road through it to the depth of about two feet in order to clear the pavement.

Whether this sandbank will disappear with the next fresh in the river remains to be seen, but if it does not there is a grave possibility of the paved causeway, or a considerable length of it, disappearing below the bed of the river, as is believed to have occurred a few years ago when the height of the causeway was increased at considerable expense. The necessity for a bridge at this point seems very apparent, if the trunk road is to be kept open for traffic throughout the year. Incidentally, no mention has been made of this crossing in the Scheme of Road Development for the Madras Presidency, now under consideration by Government.

Motor Vehicle Taxation

Up to the time of writing no definite information has come to hand of the "short period licence" measure that is being considered by the Madras Government, beyond the fact that Government cannot agree to the grant of an initial period of exemption from taxation to visiting motorists for which the Automobile Association of Southern India and other interested bodies have been

pressing for the past year or two. This is most unfortunate and is, no doubt, to some extent responsible for the stand taken by the Government of Mysore whose Road Traffic and Taxes Regulation of 1935 (which comes into operation on 1st January 1936) requires motorists visiting that state to pay a motor vehicle tax in addition to the tolls that they have had to pay hitherto. Details of the Mysore Regulation are given below.

Mysore Road Traffic and Taxes Regulation

The following are briefly the chief provisions of the Mysore Road Traffic and Taxes Regulation and of the rules thereunder, regarding taxes on motor vehicles of persons not residing in, but visiting, Mysore for temporary periods, from British Indian Provinces and other Indian States.

(1) From 1st January 1936, no motor vehicle shall make use of public roads in Mysore unless it has paid the taxes due under the Regulation. Failure to pay the tax, is an offence punishable with a fine of Rs. 50. In addition, the tax itself may be recovered as if it were a fine, or an arrear of land revenue, or by distraining and selling the vehicle and its accessories.

(2) Motor vehicles of visiting motorists are liable to the same taxes as those of the residents of the State. These taxes are as detailed below:—

(i) Private motor cycle and motor cars are subject to a vehicle tax as follows:—

	Per half-year.		
	Rs.	A.	P.
(a) Motor cycles	7	8	0
(b) Motor cars weighing not more than 15 cwts. unladen	12	0	0
(c) Motor cars weighing more than 15 cwts. unladen but not more than 40 cwts. unladen ..	18	0	0
(d) Heavy motor cars weighing more than 40 cwts. unladen	50	0	0
(e) Motor cars constructed or adapted to carry eight persons or more including the driver	30	0	0

(ii) The payment of the vehicle Tax exempts the vehicles from all Municipal tolls.

(iii) Such vehicles are, however, subject to tolls on State Fund and District Fund roads and bridges. The owners or the persons in charge of the vehicles may, at their option, compound for all such tolls, except the tolls on the bridges, at T.Narsipur, Akkihebbal, and Gorur and the dam at Krishnarajasagar, by the payment of a quarterly composition fee as follows:—

LIST OF A.A.S.I. PUBLICATIONS.

	Rs. A. P.		
1. Road Map of Madras Presidency. Mounted on linen and folded into covers ...	4	8	0
2. Road Map of Northern India. Scale 16 miles to 1 inch. Mounted on linen and folded in stiff covers ...	6	8	0
3. A. A. Handbook of Northern India ...	5	0	0
4. A. A. Handbook of Ceylon ...	6	8	0
5. Road Map of India. Scale 50 miles to 1 inch. Mounted on linen and folded into covers ...	2	8	0
6. "This Motoring" The Romance of the A. A. by Sir Stenson Cooke ...	4	8	0

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	Quarterly fee. Rs. A. P.		
(i) Motor cycles	5	0	0
(ii) Do. with side car ..	7	8	0
(iii) Motor cars weighing not more than 15 cwts. unladen	15	0	0
(iv) Motor cars weighing more than 15 cwts. but not more than 30 cwts. unladen ..	20	0	0
(3) (i) Private motor lorries are subject to a road tax, based on the unladen weight of the vehicle.			
(ii) No lorry shall use a public road without a permit obtained from the District Magistrate. No charge is made for this permit.			
(iii) These lorries are liable to all municipal tolls.			

- the office of the Superintendent of Police, Kolar Gold Fields, during working hours on all days except holidays.
- (ii) Arrangements are being made for the receipt of taxes and issue of licenses therefor at the frontier toll-gates specified below:—
- (i) Attibele, on Bangalore-Hosur Road.
 - (ii) Nangli on the Bangalore-Madras Road.
 - (iii) Bhandipur Mysore-Ootacamund Road.
 - (iv) Periyapatna on the Mysore-Mercara Road.
 - (v) Harihar on the Bangalore-Dharwar Road.

In the early days of the quarter commencing with the 1st January 1936, this arrangement will not be in force. Till these arrangements come into force, the taxes must be paid at any Government treasury and license obtained.

(6) Refunds:—The taxes must in all cases be paid in advance for the quarter or half year, as the case may

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- (iv) They are exempt from State Fund tolls on roads for which they hold the permit.
- (4) Vehicles let or plied for hire:—
- (a) Motor cars are subject to a quarterly service tax based on the registered seating capacity of the vehicle. These are subject to Municipal and State Fund tolls. The latter may be compounded for, under the same conditions as those applicable to private motor cars, Vide para 2 (iii) above.
- (b) (i) Motor Buses are liable to a service tax on Seating capacity and to a mileage cess of pies 9 per mile.
- (ii) They are free of all tolls in the area for which they hold the permit.
- (c) Lorries let or plied for hire are subject to a road tax at one and a half times the rate for private lorries and are subject to the same conditions as private lorries in regard to tolls.
- All vehicles let or plied for hire must obtain short-term or special permits from the District Magistrate of the District through the limits of which such vehicles have to pass immediately on entering the State.
- (5) (i) Where to pay the taxes.—Taxes may be paid at any Government Treasury or at

be. A refund of taxes for periods less than a quarter or half year is made as follows.—

- Amount refunded.
- (i) Half yearly vehicle taxes on private motor cycles and motor cars.
- When the total period of the use of the vehicle does not exceed one calendar month during the half year. A refund of half the tax paid.
- (ii) When such period exceeds one calendar month. No refund.
- In the case of other vehicles liable to a quarterly road or service tax:—
- Amount refunded.
- (i) When the total period of the use of the vehicle does not exceed one calendar month during the quarter. 3/5ths of the tax paid.
- (ii) When the total period is more than one calendar month and does not exceed two calendar months during the quarter. 2/5ths of the tax paid.
- (iii) When the total period is more than two calendar months. No refund.
- No refund of mileage cess is allowed.

The persons claiming refund must surrender the license or the license and the permit, as the case may be, to the officer empowered to grant refunds so as to reach him not later than two days after the date of the expiry of the period.

Applications for refund should be made to the Inspector-General of Police, Bangalore, in regard to refund of taxes on all private vehicles and to the District Magistrate of the District granting the permit in regard to vehicles let or plied for hire.

(7) *Carriage of license.*—The Regulation requires that the licenses granted on payment of the taxes should be carried on the vehicles, in the manner prescribed by Government. Government have notified in Notification No. P. 3812—Legis. 46-35, dated 11th December 1935, published in Part IV of the *Mysore Gazette*, that the license should be carried either on the left lower corner of the front glass of the windscreen, or on the near or left side of the vehicle, as prescribed therein, so as to be clearly visible at all times by daylight to a person standing at the near side of the vehicle.

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Bombay M. V. Taxation

It is understood that the Bombay Government has recently, passed an act providing for the abolition of tolls and the levying of a provincial tax on Motor Vehicles, but no details are yet available. The new act will probably come into operation on 1st April 1936, before which date it is hoped that details will become available for publication in this journal.

Signposts

It is with much pleasure that we are able to announce that the Salem Municipal Committee has erected direction signs at all important road junctions within the municipal area. Our thanks are due to the Municipal Commissioner for the interest he has taken in this matter.

It is hoped that it will not be long before other municipal commissioners where necessary, will give their sincere attention to this most important subject. One cannot stress too urgently the fact that the provision of direction signs in municipal areas is as essential to the comfort and safety of the residents as are good roads and good drainage. Good direction signs will ensure that vehicles keep to those roads that are selected as the best and most suitable for traffic entering the area and either passing straight through or making for special places, such as railway stations, travellers' bungalows, etc., thus avoiding congestion in thickly populated streets and disturbance of the inhabitants by night traffic.

While on the subject of signposts it may not be out of order to mention that responsibility for the erection of

direction signs, danger signs, etc., lies entirely with the authority responsible for construction or maintenance of a road. This responsibility has been definitely ruled by Government, and for reasons that appear obvious, is most necessary. Promiscuous signposting by bodies other than local governing bodies would lead to much duplication with consequent confusion, not to mention exploitation by those interested in roadside advertising.

It has been suggested that the Automobile Association of Southern India should undertake the provision and erection of signposts; partly for the convenience of motorists and partly as an advertising measure. However, careful consideration indicates that such a measure is both undesirable and unfeasible. Undesirable because it would create a dangerous precedent, even if Government gave its consent (which is most unlikely) and unfeasible because the cost of any efficient system of signposting is far beyond the financial resources of the Association, involving, as it most probably would, heavy charges for ground

Before leaving this subject it is only just to add that road maintaining authorities invariably have been most sympathetic and helpful in the matter of signposting except perhaps in certain municipal areas. It is rare that a suggestion put forward by the Automobile Association of Southern India in connection with the provision of new signposts, or the re-siting or re-lettering of existing signs is not favourably received. Touring members can give material assistance in this direction by bringing to the notice of the Secretary, Automobile Association of Southern India, any points where new signs appear necessary, or where existing signs appear incorrect or misleading.

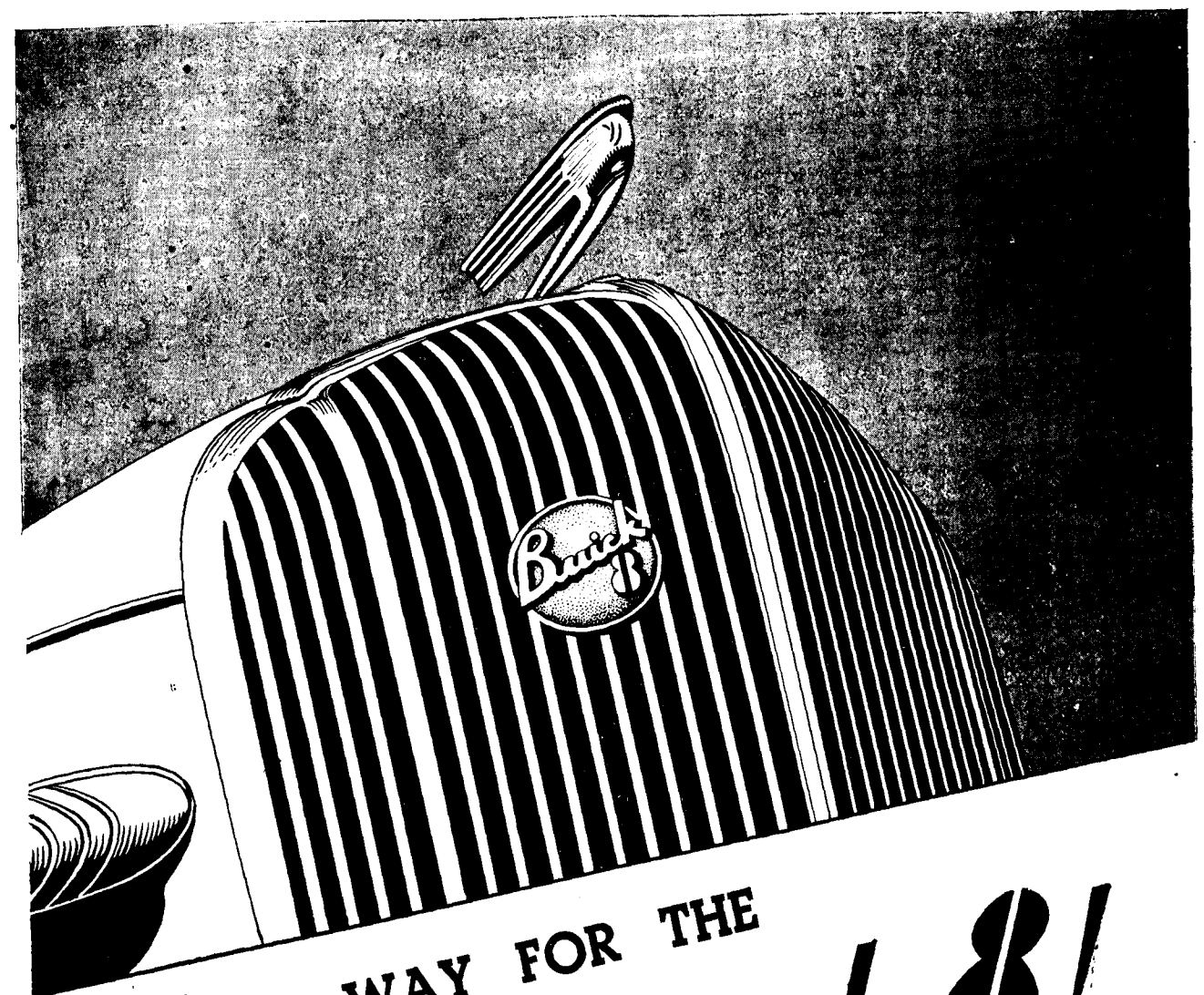
Motor Car Insurance

A rather important point has recently arisen in connection with motor car insurance, which appears to merit the attention of all motor policy-holders.

It is understood that many, if not all insurance companies are adding a clause to the "Exclusions" of their motor car insurance policies which reads, more or less, as follows:—

"The Company shall not be liable for any accident loss damage or liability directly or indirectly proximately or remotely occasioned by contributed to or traceable to or arising out of or in connection with Flood, Typhoon, Hurricane, Earthquake, etc., etc."

At first sight this may not appear an exclusion of much importance but its effect may have very far-reaching results; for instance:—a culvert may be weakened as the result of a flood, and months later collapse as a car is crossing it. The Exclusion as worded could be held to release the insurance company from liability.



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In view of this possibility the official insurers of the Automobile Association of Southern India were approached for a ruling in the matter and they have replied that, so far as they are concerned, the word "flood" would not be held to include periodical "spates" or the usual monsoon flooding of rivers and streams which are generally dry, or nearly so. They further remark that provided an insured owner takes the normal precaution of seeing that a causeway, irish bridge, or culvert is not under water obviously too deep for safety, a claim for loss or damage while crossing would usually be admitted.

Similarly a claim in connection with loss or damage whilst an insured car is being transported across such a swollen river by a regular ferry boat would also be admitted.

Incidentally the official insurers of the Automobile Association of Southern India have not yet adopted the new wording in their policies but members insuring with other companies will be well advised to raise a query should the new wording appear in their existing policies, or be added thereto on renewal.

Your Car on Leave

Members about to proceed on leave, who are interested in the purchase of a car (either new or second-hand) on arrival in England, can obtain copies of English literature on the subject on application to the Secretary, Automobile Association of Southern India. Local dealers are also in a position to offer advice and assistance in this connection and might be approached, with advantage, before considering the literature received from firms in England.

Texas Centenary

Readers projecting a visit to America during 1936 who may be interested in the Texas Centenary, can obtain leaflets on the subject on application to the Secretary, Automobile Association of Southern India.

Membership

During the month of December 1935, 14 new names were added to the membership register. They were introduced by the following:—

Two by Rev. S. D. Bawden and one each by Messrs. H. Ramakrishna Rao, E. J. B. Greenwood, B. W. Waddington, N. Kirwan, A. L. Fern and Rao Sahib Dr. T. Madhava Row; the remainder were enrolled by the staff.

New Members

K. Venkataswarlu, Esq.,
"Venkata Vilas",
11, Ormes Road, Kilpauk

Dr. R. K. Chettur,
Uplands, Waltair,
Vizagapatam District

Avanna Chettiar, Esq.,
"Red Night",
Mambalam, Madras

H. Burkinshaw, Esq.,
Madras Club, Madras

J. L. Bernard, Esq.,
Phipson & Co., Ltd.,
169, Broadway, Madras

Lt.-Col. G. A. Blake,
Nasirabad, Rajaputana

K. Ram, Esq.,
84, Strahams Road,
Perambur

E. B. Robey, Esq.,
Highfield, Coonoor
K. Karunakaran, Esq., B.A.B. Com. (Birm.),
Merchant, Alleppey

D. O. Asher, Esq.,
Cotton Merchant & Municipal Councillor,
Tirupur

Rev. J. C. Martin,
Kavali, Nellore District

E. Erickson, Esq.,
C/o A. B. Mission, Vinukonda, Guntur District
Madras Race Club, (Rep. Major H. A. Hilderbrand),
Guindy, Saidapet

W. Woodbridge, Esq.,
Bettamane Estate, Mudigere P.O., Kadur

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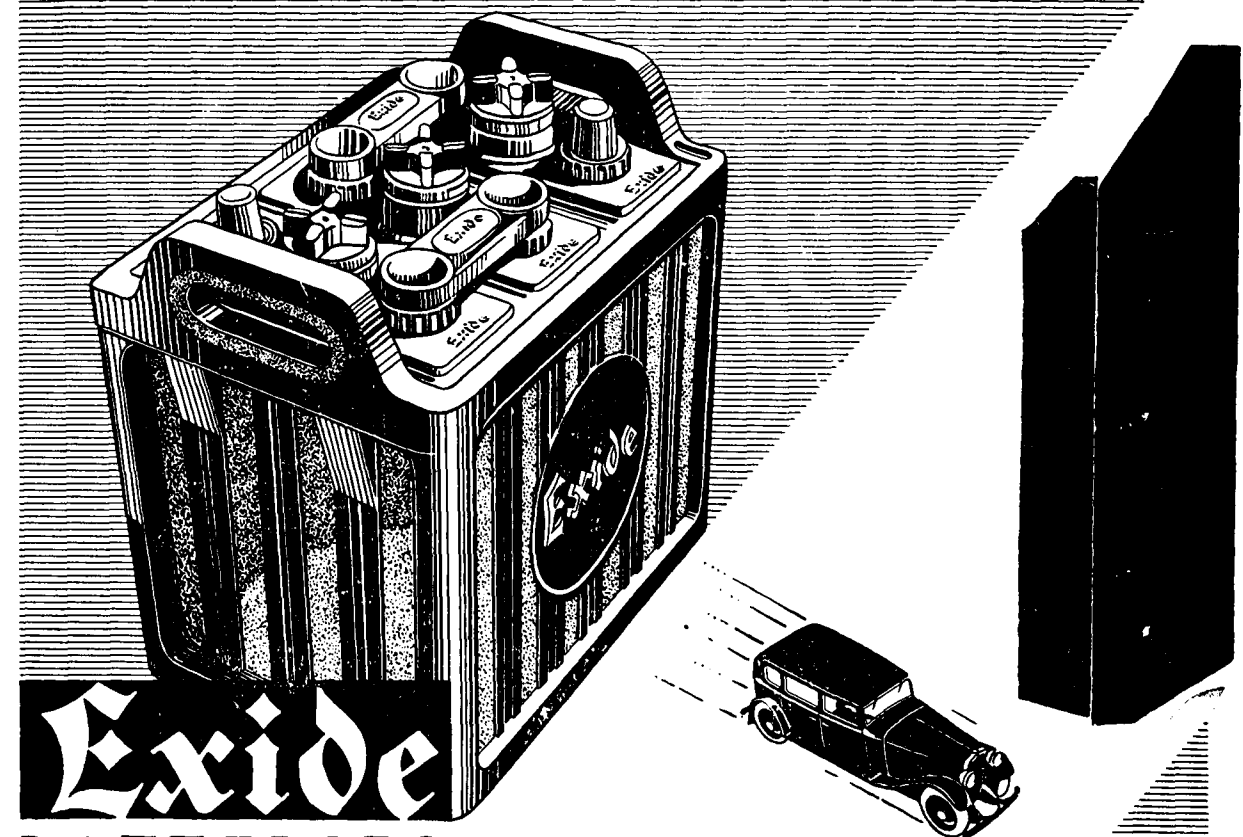
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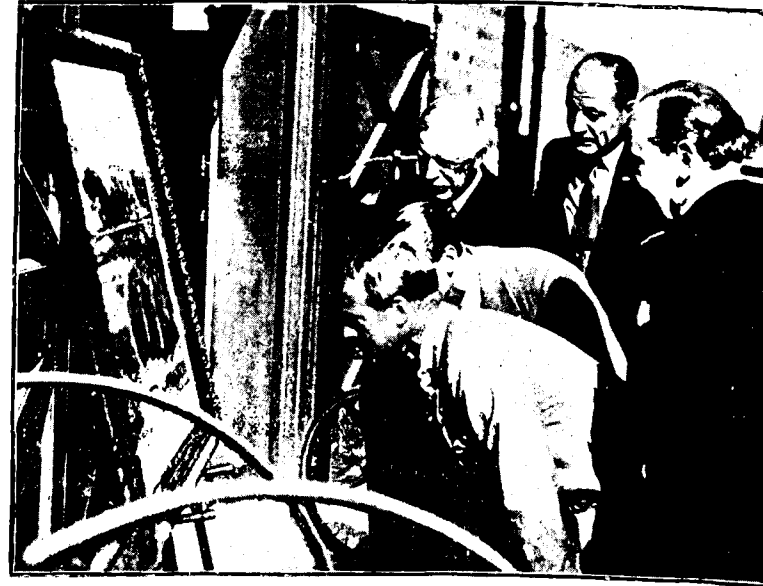
The Chloride Electrical Storage Co., Ltd., Export Department,
137, Victoria Street, London S.W. 1; 4 Lyons Range, Calcutta;
Feltham House, 3rd Floor, Graham Road, Ballard Estate, Bombay.

AROUND A MODERN AUTOMOBILE FACTORY

A Brief Visit to the Humber-Hillman Works at Coventry

Quality Production which is not "Mass Production"

To visit the extensive factories of the Humber and Hillman Companies—makers of "quality" automobiles—at Coventry, by the grouping of the two concerns have resulted in more economical production, hence the competitive selling price of the products.



His Royal Highness the Prince of Wales during a visit to the Humber-Hillman factories at Coventry, England, became interested in a symbolical reproduction of a group of notable early-day patrons of the Humber bicycle. Others in the photograph, reading from left to right, are Major J. R. Aird (Equerry to H. R. H.), Colonel J. A. Cole, O.B.E., Mr. J. G. Chaldecott and Mr. W. E. Rootes.

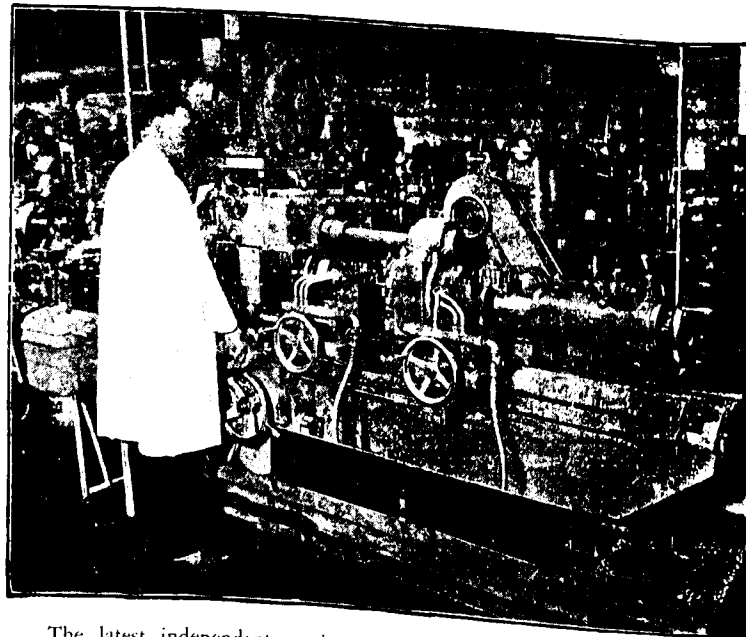
Coventry is to come away with an unforgettable impression of meticulous care and accuracy combined with rapid methods which alone can enable such high quality products to be turned out at so really moderate a price.

Wherever you go you will always hear Humber and Hillman cars talked of with—well, we were going to say "reverence", but "respect" would probably be a more apt word. Between the Hillman Minx and the lordly Humber Pullman Limousine, there is a range of models which caters for every motorist's taste and purse—and the cheapest, like the more expensive, is made with the same care and of similar high-quality material.

The Humber and Hillman factories are located at Coventry, England, and occupy adjoining sites. Since amalgamation in 1928, production resources have been linked up, although each marque still retains its own individuality. The merging of purchasing facilities and enlargement of manufacturing requirements brought about

Our tour commences at the Receiving Stores, where goods and material of all kinds are delivered. If the item happens to be raw material, i.e., steel, iron or non-ferrous metal, a sample of it is taken for the purpose of analysis, and goes to the laboratory where tests are made to ensure that it is absolutely in accordance with specification. This analysis is important, since the wrong grade of steel, or an excess of impurities in iron—such as sulphur—will result in softness or other fault in the finished part, which may not be detected until the owner finds that undue wear is occurring. In the Humber-Hillman laboratories the tests are of the most stringent description.

Analysis is, however, only one part of the many forms of testing to which raw material is subjected. Tensile tests, hardness tests and special tests of a secret nature are all carried out to ensure that no faulty material can get through. You can, therefore, be definitely certain that the material which goes into a Humber or a Hillman car



The latest independent semi-automatic lathe forming the front and rear of the crankshaft in the modern Humber-Hillman factories at Coventry. At the conclusion of the many precision processes to which this part is submitted, the crankshaft is both statically and dynamically balanced, to ensure the smooth running of the engine.

is of the very highest grade so far as quality is concerned. Probably the next point that comes to your mind is how is the accuracy of the finished components determined, and to what "tolerance" must the operatives work?



Humber six-cylinder models for 1936 have completely transformed lines, while the frontal appearance is modern and pleasing to a degree. The car illustrated is an Eighteen: the Snipe is very similar in looks, but has a 27 horse power engine.

Now, let us visit the vast machine shops. To the uninitiated a thousandth of an inch (.025 mm) sounds a lot. A sixteenth (1.5 mm) is about the smallest marking on the average ruler, and if you look at a sixteenth and imagine that divided into less than one fiftieth part you can realise that a thousandth is a pretty small thing. May be you have heard about the Cockney who, having had a thousandth explained to him by comparison with the thickness of a cigarette paper, was asked how many went into an inch. "Blimey," he replied: "there must be millions of 'em".

However, you can rest assured that there are a thousand, no more and no less, but even so the gauges in the Humber-Hillman factories regard a "thou." as being a really big error if it is a "thou." too much or too little. Why, on some parts, such as crankshaft bearings and the like, where dead accuracy is essential in the interest of long life and hard wear, the maximum "tolerance" is no more than 1/5,000 in. (.005 mm.). Similar fine limits are required for weight and so delicate are some of the balances that they will actually weigh the signature of a visiting card! By this I mean that if you place a visiting card on the scale before and after writing on it, the additional weight of the ink will be recorded. Such accuracy is most desirable in balancing crankshafts, where a tiny discrepancy will cause

uncurable vibration.

Let us now go into the shop where the Minx light car is manufactured. Although not an immense place, it nevertheless by skilful planning is capable of a quite large output. It is laid out on really scientific lines, and all its machinery is of the most modern description. You will see no forests of belting in this shop, for each machine has its own electric motor. This shop was laid out to produce some 250 cars per week, but owing to the immense demand for the Minx, overtime has been worked almost continuously, and more than double the intended output is obtained regularly.

In it the component parts flow steadily and in constant progression from one end to the other, being machined and assembled as they go, so that from the rough casting stage at one end, finished engines, gear-boxes and axles emerge at the other.

Chassis under assembly progress along a track, receiving front and rear axles, springs and brake fittings as they move slowly along. Next the engines are lowered into place and, as the chassis becomes complete, the body (which has been brought in from an adjacent shop on another overhead runway) is similarly lowered into position.

Thus far the car has been supported by the assembly track beneath it, but now comes the time for the wheels to be put on, and these wheels reach the track by an ingenious conveyor of their own, which automatically delivers them, complete with tyres, to a position handy to the operator who fits them to the car. Incidentally, a system of coloured light signals notifies the tyre fitters as to which set of wheels they must next put on the conveyor, as there are, of course, several different body colours with wheels to match.

The wheels once fitted and the brakes adjusted, the car is complete and passes off the assembly line to the test shop, where it is sent out on the test track, and it should be mentioned that every single car gets its road test, not a mere percentage of the output. Every Humber and Hillman car goes out on the road in the hands of an experienced tester, and is adjusted and tuned up individually before being despatched from the factory.

Each separate model has its own assembly shops, so that every car of the entire Humber-Hillman range is built from beginning to end by specialists in that particular model. Only certain machine shops, the foundry, the body cellulosizing departments, etc., are common to all the cars: you will see therefore that although full advantage is taken of pooling production facilities, the final stages when the cars begin to take shape are independent. Thus they all retain their individuality while at the same time sharing the benefits of the wonderful machinery which has recently been installed at huge cost.

It is for this reason largely that the products of the Companies have attained such a high reputation for reliability. In short, to purchase a Humber or a Hillman car is to buy a car of highest reputation, made of the very finest materials, by methods which are both modern in their accuracy and thoroughly British in their reliance upon the best type of craftsmanship. Backed by financial resources of the most stable nature, there is little wonder that this powerful group of concerns is taking an ever more prominent place in the automobile industry of the world.

The Indian Roads & Transport Development Association Ltd. Monthly News Letter

Bombay Motor Vehicles Bill

The new Bill for the taxation of motor vehicles in lieu of tolls in the Bombay Presidency which was referred to in our September News Letter was finally passed on November 15th after twelve days' discussion by the Legislative Council entailing the consideration of a large number of amendments. It comes into force on 1st April 1936.

The present Bill imposes a provincial tax and abolishes all tolls on motor vehicles and bullock carts, but does not restrict municipalities from imposing a wheel tax on motor vehicles and bullock carts—so that it is not so comprehensive a Bill as the Association would have wished and in that way differs from the previous Bill turned down by the Legislative Council last March. It is nevertheless a step in the right direction and will serve to help the development of motor transport. The present Bill as originally presented to the Legislature, did not include the abolition of tolls on bullock carts but Government for certain reasons saw fit to offer to remove these tolls which will represent a loss in revenue to Government of about 9 lakhs of rupees, but in doing so the necessary majority in the Council to pass the Bill was obtained. There was, however, considerable feeling amongst certain bodies, particularly the I.R.T.D.A. because it was considered that the abolition of tolls on bullock carts would encourage the extension of their use and result in an additional burden upon Government in the expenditure on road maintenance. The Bill offered several important advantages, however, amongst which was the formation of a Road Fund so that finally in taking these various points into consideration the Bill received support from various quarters. While the new schedule of taxes imposed by the Bill appears to be rather high—the following all-round reductions in the cost of driving licenses and registration fees have been made:

	RATE OF FEE.	
	New Rs.	Old Rs.
First registration of a motor vehicle.	8	80 heavy veh. 40 light ..
Re-registration of a motor vehicle.	2	64 heavy .. 32 light ..
New driving licenses	5	20
Renewal of driving licenses	1	5

Reciprocity Between Provinces and States

The motorist, casually visiting the Bombay Presidency, has up to the present paid tolls over the roads used, but with the coming into force of the new provincial tax, special rules need to be drawn up to meet the new situation. Some provinces allow up to 30 days grace for visiting motorists before they become liable to local taxation and to study this question the Council of the Association have invited the co-operation of the W. I. A. A., the M. M. I. A. and the Police authorities on a special Sub-Committee to advise them on the subject with the object of communicating their combined views to Government.

Amendment of the Indian Motor Vehicles Act, 1914

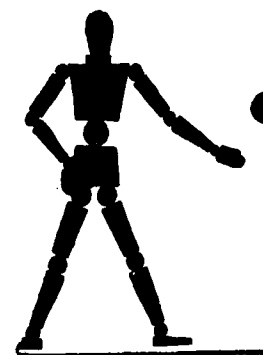
With the rapid development of motor transport the powers conferred by the Indian Motor Vehicles Act have become inadequate for the purpose of properly controlling motor vehicles which ply for hire. The present system, whereby transport policy is controlled by district registering authorities has resulted in such diversity of practice that it is doubtful how far the Act gives powers to regulate fares, to require the issue of time-tables and to impose certain other conditions desirable in the public interest upon the owners of public motor vehicles. The printed copies of the model motor vehicles rules have been circulated by the Government of India to Provincial Governments but they cannot be adopted until the All-India Motor Vehicles Act has been amended in respect of these matters. There are also many questions such as third party insurance, the offences compoundable under the Act, and the control of fares, the issue of time-tables and the co-ordination of motor transport with other forms of transport which will tend to bring about a higher standard of services for the travelling public. It is hoped that an amending Bill covering all these points will be placed before the Legislative Assembly at the next session and in the meanwhile Government's proposals in this connection are being considered by the special Sub-Committee referred to in the foregoing paragraph.

London Passenger Transport Board

Before the establishment of this Board in 1933, the passenger transport facilities in an area which covers 1,550 square miles were provided by no fewer than five railway companies, exclusive of the main line railways, with whom there is a pooling arrangement for suburban traffic, 14 municipally owned tramways, three company owned tramways and 61 bus services, all of which have now been transferred to the Board.

In the year ended June 30th last, the total number of passengers dealt with under the pooling scheme amounted to 4,129,000,000 representing travel at the rate of 435 journeys per annum per head of the population served estimated at 9½ million persons. Of the grand total 547 million originated on the four main railways and 3,582 million on the Transport Board System. Of the latter the total omnibuses and coaches accounted for 59 per cent., tramcars 28 per cent., railways 12 per cent. and trolley buses 1 per cent. The total pooled passenger receipts amounted to £39,718,000 of which the Board's share was £28,823,000. The operating rate was 78 per cent. as against 79 per cent. in the previous year.

The Board, faced with a miscellaneous fleet of buses and coaches, representing forty different types of chassis alone, decided upon a replacement programme. In the two years of the existence of the Board 779 new vehicles have been placed in service and certain obsolete buses withdrawn. Maintenance and overhaul of buses and



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(INCORPORATED IN ENGLAND)

CALCUTTA. BOMBAY. MADRAS. KARACHI. NEW DELHI.

coaches have been co-ordinated, tramway rolling stock has to a large extent been modernised and its overhaul centralised while steps have been taken to substitute trolley buses for trams on several routes.

Advantages of Pneumatic Tyres for Bullock Carts

We have from time to time referred in our News Letter to the advantages of bullock carts equipped with pneumatic tyres and with the experience gained during the last few months, we are now able to give more definite facts regarding these advantages.

A trial in Bombay made in connection with Municipal rubbish carts produced the following striking figures:—

	Total tonnage carried	Total expenses including upkeep of bullocks, wages, etc.	Cost per ton
		Rs. a. p.	Rs. a. p.
Pneumatic type rubbish cart ...	88	102 10 8	1 2 5
Old type cart ...	22	103 6 6	4 11 2

It will be seen from the above that a saving of over Rs. 3-8-0 per ton was effected by the use of pneumatic equipment. It will also be seen that one of these pneumatic tyre carts did 4 times the work of the old type. Official tests show that Pay Loads may be increased by as much as 100 per cent. under some conditions.

If, however, only 50 per cent. greater load is carried, two carts will do the work of three which represents a saving of Rs. 834-8-0 annually as per details below, based on rates in Bombay.

	Rs. A. P.
Interest @ 5% on Rs. 250 (cost of 1 cart and 2 bullocks) ...	12 8 0
Wages to cartman @ Rs. 10 a day ..	228 0 0
Feeding 2 bullocks @ Rs. 1-4-0 a day ..	456 0 0
Stable charges @ Rs. 5 a month ..	60 0 0
License fees, etc. ...	30 0 0
Shoeing for bullocks @ Rs. 2 a month ..	24 0 0
Repairs to cart @ Rs. 2 a month ..	24 0 0

The pneumatic tired cart moves faster with less noise, and it can travel over ground surfaces impassable to ordinary carts. The jolting and shocks ordinarily transmitted to carts with iron tyres are absorbed by the pneumatic tyres so that repairs and maintenance costs are considerably reduced.

It is, however the question of economy in road upkeep and the saving of public money, in which, we as an Association, are particularly interested and for this reason alone we would urge the Provincial Governments and Municipal and other authorities to offer all facilities to the owners of country carts to replace their metal tired vehicles with those equipped with modern pneumatic tyres.

Visit of Sir Otto Niemeyer

Sir Otto Niemeyer is due to arrive in India about January 16th to conduct an independent enquiry into the

budgetary positions of Provincial Governments and the Central Government under the new Constitution. The Council have, therefore, considered it opportune to address him on the urgent need for the adjustment of the revenue derived from the taxation of motor transport on a more equitable basis between the Central and Provincial Governments than that existing, so that a larger revenue may be made available to the Provinces, for road development.

Calcutta Roads

An open letter to the *Statesman* from the Managing Committee of the Automobile Association of Bengal, protesting against the retrogressive suggestion made by the Chief Executive Officer of the Calcutta Corporation to provide money for the main drainage scheme of the City by reducing expenditure on roads reveals the already ridiculously low expenditure on the City's roads when compared to that of Bombay which we quoted in our last month's News Letter. This Corporation receives yearly Rs. 4½ lakhs which sum is earmarked for road construction and maintenance. Ignoring this provision, it appears the Chief Executive Officer would reduce an estimate which amounted to Rs. 5,45,000 in the budget estimates of the current year to a sum nearer half that figure for the coming year.

When comparing the expenditure on Calcutta's 400 miles of road of less than 6 lakhs with Bombay's 16 lakhs of rupees on 231 miles of road—there is certainly sound reason for the protest made by the Managing Committee of the Automobile Association of Bengal.

Road Development in Sind

Arising out of the report of Mr. Stubbs in which he recommends a road development scheme for Sind, costing Rs. 97 lakhs the Government of Bombay have now announced the appointment of Mr. H. B. Parikh, Executive Engineer, as special Road Engineer for Sind with headquarters at Karachi. Our Sind Branch has been pressing for the appointment of this Special Engineer for some time and it is now hoped that actual work in connection with the schemes will commence at an early date.

Madras Road Development Report

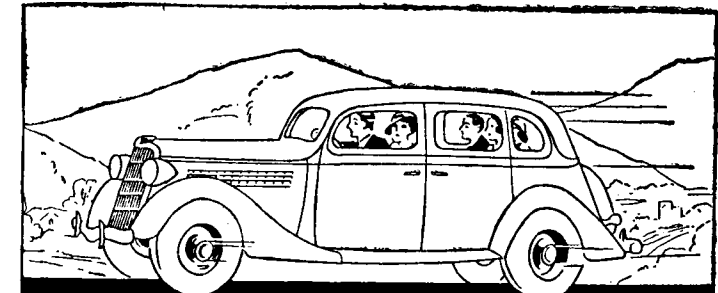
The report of Mr. A. Vipan, the Special Officer appointed to draw up a comprehensive scheme of road development, in the Madras Presidency has been issued. It contains most valuable information including a detailed survey of the existing communications and schemes for co-ordination in the matter of inter-district communications which were fully apparent in the discussions held with the local officials. It was frequently stated that a district was interested in a particular road and had developed made of it as the neighbouring district was not equally interested.

The schemes proposed cover expenditure on inter-district roads amounting to Rs. 36,82,840; major bridge projects Rs. 1,05,85,100; district schemes Rs. 4,32,91,190; railway feeder roads Rs. 21,98,140; plant Rs. 13,58,610

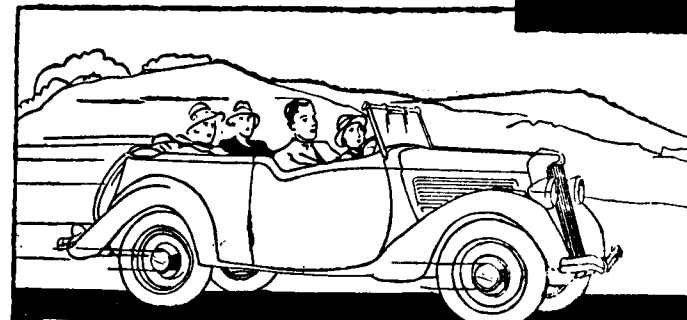
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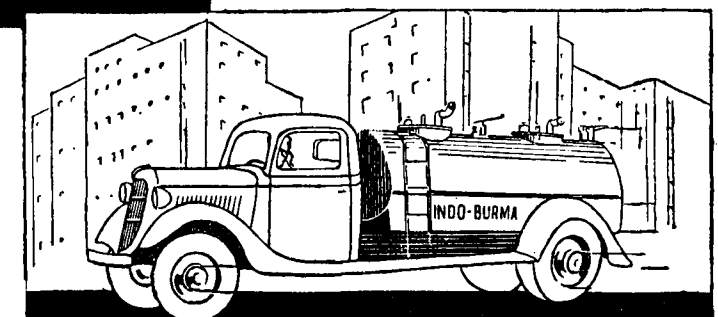


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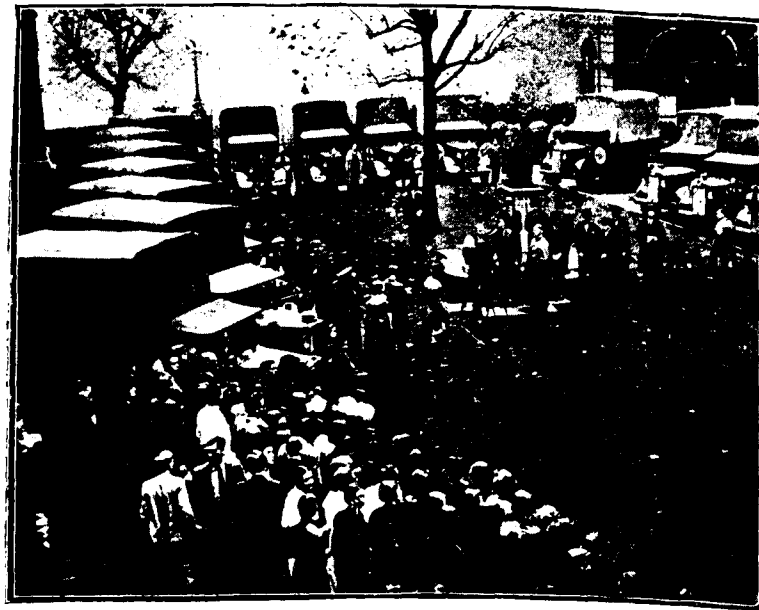
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or a total of a little over 6 crores of Rupees. The additional charges on account of annual maintenance of trunk and important marketing roads will be Rs. 14,28,135; inter-district roads Rs. 77,175; district road schemes Rs. 7,26,050; railway feeder roads Rs. 7,960. Total Rs. 23,04,320.

The Madras Government, having the information contained in this valuable report at their disposal, it is hoped, will now take steps to put into effect without delay some of the more important recommendations contained therein.

The Bengal Government some time ago appointed an officer on special duty to report on their road communications but little information is available as to the progress, if any, that has been made. It is hoped other Provincial Governments may also take steps to have a thorough examination made of their road communications and future requirements so that work can be undertaken in a progressive manner and for schemes of importance



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which cannot be financed from current revenues consideration might be given to the possibility of financing them by means of Road Loans.

Hyderabad State Communications

The Nizam's Government during the last few years have taken special measures to bring about co-ordination between the State Railways and road transport. They have imported special modern buses suitable for the local conditions which are being operated in conjunction with the railways. With a capital investment of about 4½ lakhs of rupees their gross earnings during the year have amounted to about 4 lakhs. This service, it appears, is now so firmly established in public favour

and the results achieved have been sufficiently impressive as to inspire confidence in a progressive policy of expansion which, it is understood, is being provided for next year.

Skeleton System of Trunk Roads

In order to restrict to some extent the competition between road and rail transport caused by the construction of roads parallel to railways, it was proposed by the Transport Advisory Council at their meeting early this year that a Skeleton System of trunk roads should be agreed upon in conjunction with the Provincial Governments, the development of which from the road account should be accepted and that the development of other roads in competition with railways should not be so financed.

There have been many instances in the history of the road account in which the Government of India have found themselves in the difficult position of trying to reconcile the opposite view of a local Government and a Railway administration regarding the schemes of road development involving increased facilities for competition between road and rail. One review is that schemes should not be approved which would have the effect of reducing railway revenues as long as there remains scope for the development of roads complementary to railways. The other view is that motor transport must inevitably develop and that a proper system of roads cannot be devised which would entirely avoid competition with railways. Both points of view appear logical. The Government of India, therefore, suggest a working compromise which will serve for the next few years or until further developments and greater experience clarify the problem.

As it was not clear to the Council of the Association whether they would have an opportunity of expressing their views on this subject a communication was addressed to the Government of India and it is now understood that the matter is being dealt with by the respective provincial Boards of Communications on which bodies the Association through their representatives will be in a position to express their views.

The Bombay Board of Communications have appointed a Sub-Committee to consider the question on which our President, Mr. Ormerod, has been invited to represent the Bombay Branch of the Association.

The Association, in addressing the Government of India, were of opinion that the terms "Skeleton System of Trunk Roads" and "Roads parallel to Railways" should be more clearly defined. In considering any proposal for the duplication of a road by a railway or a railway by a road, the guiding principle, in their opinion, should be the requirements of the district not only in the light of its present commercial and industrial activity but with

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reference also to its potential future development. Wherever the existing means are found to be inadequate by these standards there is room for expansion. As to whether that expansion should find scope in the construction of alternative means of communication or the extension of the available one should depend upon the economy and efficiency with which each instrument of transport will serve the purpose in view.

Deterioration of Roads in Madras Presidency

A few years ago the roads in the Madras Presidency were considered to be some of the best in the country. Since the passing of the Madras Motor Vehicles Taxation Act in 1932 which imposed a Provincial Tax on motor vehicles and the abolition of tolls on all road transport including bullock carts, there has been a considerable decrease in revenue from this source which has resulted in a shortage of funds for road maintenance and in consequence a rapid deterioration in road surfaces.

The Administration Report of the Malabar District Board for the past year is a fair example of the losses incurred. Previously the tolls yielded the Board an income of Rs. 2,02,000 which, if continued for the past five years, would have brought in a total income of Rs. 10,10,000. The contribution from Government under the Act during this period and including the current year in compensation for the abolition of tolls amounted to Rs. 4,78,550, which shows a deficit of funds available of approximately Rs. 5 lakhs. This loss is due largely to the fact that bullock carts, since the introduction of the above Act and the abolition of tolls, have not contributed towards the cost of road maintenance; yet they cause greater destruction to road surfaces than any other road users.

Recently efforts have been made to re-introduce tolls in the Presidency so that bullock carts should again contribute a fair share towards the upkeep of the roads they use, but it is understood that Government have finally decided not to re-impose tolls on non-motor vehicles. If this is the case an annual license fee on all bullock carts might be a solution, although it may cost a little to collect, but even then the cost of collection would not amount to the cost of the collection of tolls or in other words the toll contractor's profit which is estimated to be about 40 per cent.

Roads in Lahore

The Lahore roads and those of the new suburbs that have sprung up around Lahore are to be improved and the sum of Rs. 3,64,462 has been sanctioned for this purpose.

The programme provides for 53 new roads on which Rs. 75,000 will be spent. The retaxing of old roads will cost Rs. 40,000. Seven roads are to be tarred or asphalted at a cost of Rs. 33,000 and Rs. 70,000 is to be spent on asphaltting of Lahore's longest thoroughfare, the Circular Road. Nineteen new roads are to have their first coat of tar and 39 are to receive their second road dressing with material.

Engineering for Road Safety

In a paper on the above subject read by Mr. A. S. Trollop, Joint General Secretary of the Safety First Association of India, at the 21st session of the Bombay Engineering Congress he has dealt with the possible solution of the many traffic problems of Indian cities. The author points out that it has long been realised by automobile engineers that improvements in the design of vehicles and ease of maintenance can greatly reduce the accident hazard and the seriousness of accidents that occur. Among the improvements made in recent years may be mentioned: lower centre of gravity, sturdier construction, better lighting equipment, better brakes, improved steering apparatus, better tyres, safety glass, windshield wipers, direction indicators, width indicators, etc. Research is actively continuing and special attention is being given to the new problems created by increasing speed of motor vehicles. Here, however, the automobile engineer is limited by factors outside his scope—the highway and the driver—and there is grave need for automobile engineers, highway engineers, and others directly concerned to face the speed question squarely and reach agreement as to necessary limitations of maximum speeds for various conditions.

As the traffic demands have become more severe, road engineers have made progress in designing and building strong, durable and reasonably economical roads with smooth surfaces and good drainage. Although the driver and pedestrian may be blamed for most accidents, the road engineer realises that he must find ways to provide roads on which the drivers will have less opportunity for accidents. For this purpose the following types of improvements merit special consideration: (1) Sidewalks along streets and highways; (2) Street systems in residential developments planned to avoid pedestrian hazards; (3) Segregation of through traffic from local traffic; (4) Rotary traffic islands; (5) Centre white lines to form separate one-way roadways; (6) Street, highway and junction illumination; (7) Non-skid surfaces; (8) Avoidance of multiple intersections; (9) Grade separation at railway crossings and highway intersections; (10) Reduction in curves and grades; (11) Improvement of visibility at intersections; (12) Banking of curves; (13) Elimination of high crowns; (14) Avoidance of dips; (15) Elimination of narrow bridges; (16) Improvement in guard rails; (17) Widening of traffic lanes.

In viewing the traffic problem it is suggested that you do so from all angles, viz., the pedestrian, cyclist and motorist. The pedestrian problem is the most serious in India, and to deal with it effectively, the roads engineer must become a pedestrian to see and analyse the basic reasons why the pedestrians do not use the footpaths. The experiences he gains as a pedestrian will be invaluable in solving the problem.

Such a procedure will, however, take a long time and in order to meet the great strain that our roads are already trying to meet, Engineers should set aside regularly a definite part of their appropriations for the elimination of known physical hazards. (Courtesy The Indian Roads and Transport Development Association Ltd.).

EVEN THE WORST ROADS CAN'T BEAT FIRESTONE



"Never such care-free motoring," says user in Assam
 "I am proud to inform you that I am still using the Firestone Tyres originally supplied with my car. They have done well over 26,000 miles on the worst of possible Assam roads, and are good for another 10,000 at least. I have had hardly a puncture, and have never before known such care-free motoring."
 Max H. Burton
 Hailem Tea Estate, Hailem, Assam

5-POINT Margin of Safety

- 1--GUM-DIPPED CORDS. EVERY PLY IS A SAFETY PLY.
- 2--WIDE, FLAT TREAD.
- 3--GREATER TREAD THICKNESS.
- 4--DEEP NON-SKID DESIGN.
- 5--TOUGHER TREAD RUBBER.

Gum-Dipped

Firestone

MOST MILES PER RUPEE

ANY motorist who has driven in Assam can appreciate the terrific punishment to which tyres are subject. Yet Mr. Burton's experience proves that even on the worst possible roads Firestone Tyres give exceptional service. Next time you buy tyres change to Firestone and get more miles for the money you spend.

This is why Firestone Tyres last longer

The greatest enemy to tyre life is the heat generated by the continuous flexing of the cotton fibres within the cords. To counteract this, Firestone has developed an exclusive process of Gum-Dipping whereby Firestone high-stretch cords are saturated in liquid rubber, which insulates the cotton fibres and welds the cords and plies into one unit of immense strength. Note also Firestone's extra wide and extra deep tread of super-tough rubber.

JOTTINGS FROM HERE & THERE

Chevrolet Home Delivery Service

Messrs. General Motors India Ltd., have recently issued a booklet on the "Chevrolet Home Delivery" Plan which explains the simple procedure to be followed by those purchasing a Chevrolet for delivery in the United Kingdom.

It is only through the facilities offered by the British Triptyque System that this simplification was rendered possible and since the privileges extended under the Triptyque System are open only to members of the Royal Automobile Club, the Automobile Association or affiliated A.As. (e.g. The A.A. of Southern India), it is necessary that purchasers become associate members of either of these associations, the fees for which are nominal.

It may not be out of place to mention here that the A.A.S.I. is federated with the A.A. of Great Britain and affiliated with the Royal Automobile Club and its members are entitled to full membership of the A.A. and associate membership of the R.A.C. at a reduced subscription of one guinea, entrance fee being waived.

The plan caters for "London ex-duty delivery" or "all-in India duty paid delivery" and purchasers have only to select the type of car required, make the necessary payment arrangement (which includes the hire-purchase agreement if required) and sign a few forms already filled in.

Copies of this booklet can be obtained from all Chevrolet Distributors and Dealers.

Overland to Nigeria

Three British motorists, in a British car, set out from England on 25th November, in an attempt to shorten the journey to Nigeria by several days. To do so, they will have to beat the combination of a fast mail steamer and express train, which enables Kano, in Nigeria, to be reached from England in 15 to 16 days.



Mr. John L. Chidsey

Bombay and throughout the East will join us in wishing him *bon voyage* and many years of happy retirement.

The route to be followed involves crossing France from Boulogne to Marseilles, a 21-hour steamship journey across the Mediterranean, and finally a 2,300-mile trek over the desert, skirting Libya—Italy's great African colony—by taking a hazardous route through the desolate Hoggar mountains.

From the end of the Algerian railway at Djelfa to the beginning of the Nigerian railway at Kano is 2,100 miles. Owing to the arid, waterless nature of the intervening country, the dream of a Trans-Saharan railway has never been realised; there is thus a huge gap in the railway communications of the Dark Continent.

It is hoped to bridge this gap in record time by using one of the new Series 11 Morris 25 h.p. saloons. The journey has been planned by Mr. H. E. Symons, who put up a remarkable performance six months ago by driving a smaller Morris model from London to Timbuctoo, a distance of 2,800 miles, in seven days, including crossing the Sahara Desert at its widest part. This time, Mr. Symons is being accompanied by two members of the Morris organisation.

Special Equipment

The Morris "25" selected for this arduous undertaking is a standard model as regards all essential features, but it has been provided with certain "extras" in the shape of additional tanks for petrol and water, a compass, an aneroid barometer, and water and air thermometers. Specially light rope ladders, made of wire cable and bamboo, and planks and shovels, are included, to cope with the tracts of deep, soft sand which will almost certainly be encountered.

Standard export tyre equipment, Dunlop extra low pressure 7.00 x 16, is being used, a second spare wheel being carried on the roof. Food and water for five days are being taken, to comply with the French military authorities' regulations governing travel in the Sahara. Further equipment includes air mattresses, blankets and cooking utensils.

Farewell to Ford Executive

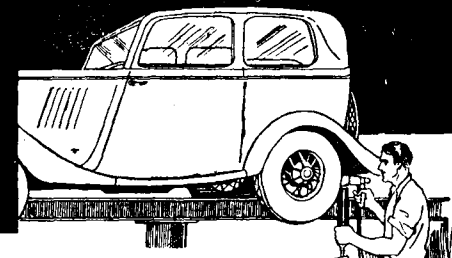
Mr. John L. Chidsey retired as Managing Director of the Ford Motor Co., of India, Limited, on the 31st December, after 22 years in the East, of which the greater part was devoted to the sale of Ford products.

A farewell dinner was given in his honour by those of the staff of the Ford Motor Co. of India, Ltd., who were able to be in Bombay for the occasion. The dinner was held in the Princes' Room of the Taj Mahal Hotel on Saturday, December 28, Mr. Chidsey sailed on the "Nargunda" for Canada via the Far East on January 2nd.

From 1913 to 1926 Mr. Chidsey was in charge of the Sales of Ford products in India, Burma, Ceylon Straits Settlements and the Dutch East Indies. When the Ford Motor Company of India, Ltd., was formed in 1926 Mr. Chidsey was appointed Managing Director which position he has occupied until now.

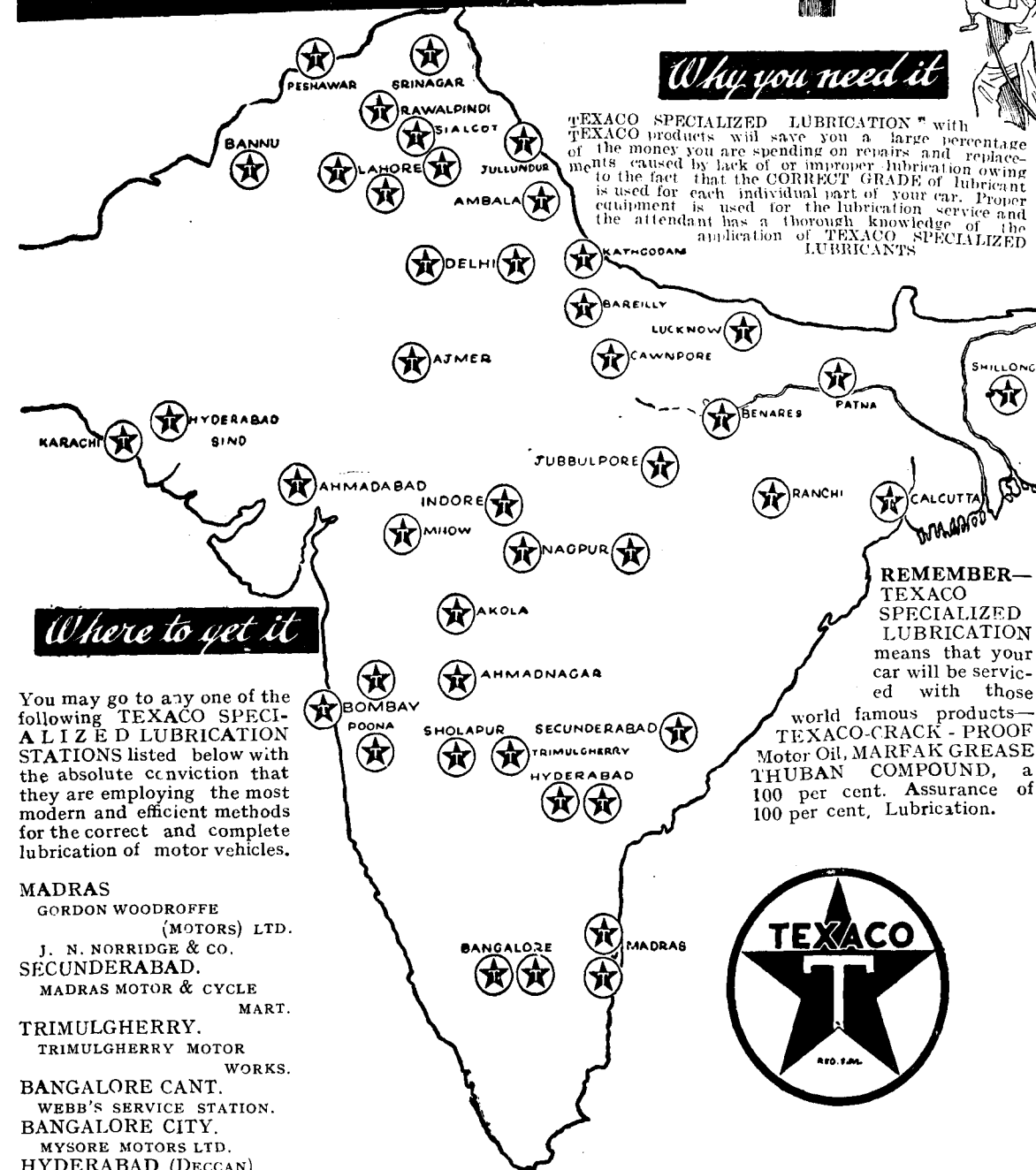
We feel sure that his host of friends in

SPECIALIZED LUBRICATION



Why you need it

TEXACO SPECIALIZED LUBRICATION "with TEXACO products will save you a large percentage of the money you are spending on repairs and replacements caused by lack of or improper lubrication owing to the fact that the CORRECT GRADE of lubricant is used for each individual part of your car. Proper equipment is used for the lubrication service and the attendant has a thorough knowledge of the application of TEXACO SPECIALIZED LUBRICANTS."



Where to get it

You may go to any one of the following TEXACO SPECIALIZED LUBRICATION STATIONS listed below with the absolute conviction that they are employing the most modern and efficient methods for the correct and complete lubrication of motor vehicles.

MADRAS
GORDON WOODROFFE (MOTORS) LTD.
J. N. NORRIDGE & CO.
SECUNDERABAD.
MADRAS MOTOR & CYCLE MART.
TRIMULGHERRY.
TRIMULGHERRY MOTOR WORKS.
BANGALORE CANT.
WEBB'S SERVICE STATION.
BANGALORE CITY.
MYSORE MOTORS LTD.
HYDERABAD (DECCAN).
HYDERABAD MOTOR & OIL CO.
A. D. GRANT.



REMEMBER—
TEXACO SPECIALIZED LUBRICATION means that your car will be serviced with those world famous products—TEXACO-CRACK - PROOF Motor Oil, MARFAK GREASE THUBAN COMPOUND, a 100 per cent. Assurance of 100 per cent. Lubrication.

THE TEXAS COMPANY (INDIA), LTD.

(Inc. in U.S.A.)

Head Office: BOMBAY.

Branches: CALCUTTA, COLOMBO, KARACHI, MADRAS.

A Complete List of Texaco Lubrication stations in India can be had on application to our Head Office, Bombay.

MADRAS RACES
SEASON 1935-36

(Under R.C.T.C. Rules of Racing)

FIXTURES

SECOND SPRING MEETING (Six Days)

Second Day ... SATURDAY ... 25th Jan. 1936 (The "Bobbili" Cup)	Fourth Day ... SATURDAY ... 1st Feb. 1936 (The "Merchants" Cup)
Third Day ... WEDNESDAY ... 29th Jan. 1936 (The "Griffin Handicap" Plate)	Fifth Day ... SATURDAY ... 8th Feb. 1936 (The "Ramnad" Cup)
Sixth Day ... WEDNESDAY ... 12th Feb. 1936	

SUMMER MEETING (Five Days)

First Day ... SATURDAY ... 15th Feb. 1936	Third Day ... WEDNESDAY ... 26th Feb. 1936
Second Day ... SATURDAY ... 22nd Feb. 1936	Fourth Day ... SATURDAY ... 29th Feb. 1936
Fifth Day ... WEDNESDAY ... 4th Mar. 1936	

The following Cup Races are proposed to be run at the Summer Meeting

The Ceylon Cup.	The Cochin Cup.
The Willingdon Plate.	The Ramnad Cup.
	The Maharani of Venkatagiri Cup.

RATES OF ADMISSION

Grand Stand and Enclosure

Season Tickets (Public Only)

(1st Enclosure only) Gentlemen. Ladies.

	Rs	Rs		
			Day Tickets	
			1st Enclosure:—	
			Gentlemen (On Saturdays and Gazetted Holidays) ...	Rs. 5
			Gentlemen (On non-holidays) ...	Rs. 3
			Ladies ...	Rs. 2
			2nd Enclosure:—	
			Gentlemen ...	Re. 1
			Ladies ...	As. 8
Ticket for Season	65	30		
Winter Meeting 6 Days	22	10		
1st Spring Meeting 6 Days	25	10		
2nd do. 6 do.	22	10		
Summer Meeting 5 do.	17	10		

Note.—There may be one or two Extra Days' Racing after the Summer Meeting.

HIGH PRESSURE LUBRICATION

In these days of enlightened advance in the Automobile trade we are apt to look back into the past with a sentiment akin to amazement, and wonder how the cars of a decade ago were kept in efficient running order by the 'Guesswork' lubrication which we used to receive from our Service Stations.

Things have changed, automobile manufacturers have advanced their industry to a very high degree of efficiency and now when we look at the beautiful modern creations gliding along our city or country roads, most of us realize that no longer can we rely on the "hit or miss" method of greasing and oiling as in the past.

The cleverest brains in the motor industry have been employed to turn out magnificent vehicles with every mechanical part machined to very fine limits, ensuring quiet and smooth running and now more than ever the fiction writers can use the terms so favoured by them when writing thrillers, and they can refer to the villains car as 'sliding' or 'gliding' instead of what should have been 'rolling' or 'bowling' along.

Oil manufacturers in close co-operation with the Automobile designers set about the problem of lubricating these modern cars, and after months of research and experiment, scientists developed a High Pressure Greasing and Special Lubrication. To lubricate the modern car as the manufacturer intends, special equipment is necessary, and of course special lubricant.

The average motorist does not realize that there are approximately 45 different lubrication points on his car, where the proper grade of grease or oil should be applied regularly. In fact it is doubtful if some parts are ever lubricated during the life of the car, unless a chart is used. Often the wrong lubrication is used, oil used where grease should be applied, and very often the wrong grade is used.

Oil manufacturers have produced a lubricant to suit every point on your car. Every one knows that the engine requires a particular grade of oil, but few realize that if long life and trouble free motoring is desired each lubrication point must be filled with a particular grade of grease or oil. The grade suitable for the king pins on your car may not be suitable for wheel bearings, or shackle pins, and so on throughout the entire car. If one listens to some of the automobiles squeaking along our roads it is readily apparent that a system of greasing and oiling is necessary. When the petrol in the tank is exhausted the engine stops and a fresh supply must be obtained before the car will run. However, that same car can squeak for mile after mile, and there is no response from the driver.

Up-to-date Service Stations can now offer you a Specialized Greasing Contract. Once a month or even twice a month, depending on the mileage covered, your car can be thoroughly cleaned underneath, sprayed with penetrating oil, and each lubrication point will receive the correct grade. For instance, the water pump lubricator on your car will be charged with special water pump grease. Your shackles, generator, wheel bearings, univer-

sal joints, king pins or distributor will all receive the correct lubricant, and by using this highly efficient and up-to-date method, wear and tear are reduced to a minimum, whereas with the 'hit or miss' method, and where the incorrect grade is used, the lubricant will be squeezed out in the first few miles, and in spite of all the hard work you may have put in on your car, you are, after only perhaps a day or two's running, exactly where you started.

In order to give this special Service, High Pressure special guns are necessary. As much as 3,000 lbs. pressure is sometimes necessary to force grease into a reluctant greaser, and with an ordinary hand gun this is not possible. Several cases have come to light where the owner has religiously greased his car or thinks he has, but as soon as a High Pressure Gun has been placed on some of the nipples it has been found that these were blocked. With the ordinary gun this was not found out.

The average owner uses grease for certain points and a thick oil is usually to be found in the gun supplied with the car, and yet if the manufacturers' specification is followed it will be found that perhaps 10 different grades are necessary. Where is the owner who carries a stock of 10 grades of lubricant in his garage?

When taking advantage of this Specialized Service care should be taken to see that the Service Station have the necessary equipment and what is also most important, the various grades of oil and grease.

The service is cheap and if the car is regularly inspected and lubricated, repair bills will be at a minimum. An owner who has once taken advantage of this special branch of garage work, seldom cancels his contract and the cost is no more than he pays in the ordinary course of events.

Another advantage is that by having your car thoroughly inspected periodically a check can be made for adjustments such as rattling brake rods and these small items can, as a rule, be repaired either free or for a very nominal charge. If left to rattle they in turn cause all sorts of other minor troubles which eventually end in large repair bills.

Re-Registration of Motor Vehicles

Motorists whose vehicles are registered in the Bangalore C. & M. Station will no doubt be gratified to learn that the Government of Madras has so amended its vehicle rules as to remove the necessity for re-registering BA vehicles when the owners take up residence within the Madras Presidency.

Any registration certificate granted or renewed in Bangalore (C. & M. Station) is valid up to the date of its expiry without any restriction throughout the Madras Presidency. G. O. 2719 Mr. dated 26th. August 1935.

This Motoring by Stenson Cooke

THE ROMANTIC STORY OF THE



CHAPTER XX—(Contd.)

FOR KING AND COUNTRY.

But approval was not forthcoming. Instead, there was received a rather stilted request that "The Chairman and Secretary be good enough to attend at Room Number So-and-So, War Office, on Sunday, the 16th instant (August), at 4 p.m."

It read like a Jury Summons! Never mind. Our country before our pride. The summons was obeyed. A Great One addressed the jurymen.

"We have considered your proposal, but, thanks, it isn't needed. All we require is a matter of a hundred and forty of your fellers to stand by with their cars, at a given centre, for eight days, or it may be ten, until Territorial mobilization has linked up with our Defence Scheme. The show will be over in three months. Good afternoon."

Did he add "Mind the step?" It seemed so.

In that curt way a fortnight's soulful work was squashed by one who sat in a high place, and thought he knew!

"Never mind!" said the Committee, "we won't let all this fine staff work be entirely wasted. Idea! We'll turn the Motor Corps scheme into a Voluntary Service Corps; then the lady members can join."

It was done. Within a few weeks the A.A.V.S.C. numbered nearly twenty thousand of all ranks and both sexes, doing all kinds of duty anywhere, and at any time, such as transport of the wounded from railway station to hospital; taking the convalescents for a breath of country air; acting as taxi-men and women—without the clock—at the call of Military Authorities. Regimental, Divisional, and Command Headquarters had good cause to appreciate this A.A. activity.

There were regrettable incidents, inevitably, but only a few.

As an example, one afternoon an honest Yorkshire tradesman burst into the A.A. Office in Leeds.

"Look here," he said, "I've got two sons doing their bit in France. I filled up one of your forms, and was doing my job thoroughly, but I'm finished with Voluntary Service. I'll do no more! It's like this. I turned up yesterday afternoon at one of the Headquarters, and a gawky chap with tabs and brass hat and spurs, and all, clanked out and stepped into my car as though it were his own. Not so much as a 'thank you,' but I didn't much mind. Serving my country, says I, and left it at that for the moment. But mark you, I was wild. I drove this officer-chap up hill and down dale for over three hours, with him lolling in the back of the car, and me at the wheel like my poor chauffeur who went down in the *Cressy*."

He wiped his brow.

"And then! We were half way between Selby and York, about three miles from a village either way, when something happened to the engine and the car stopped."

He wiped his brow again, and went on.

"I got down and began tinkering with the works, found out what was wrong, and was just putting it right, when this officer-chap, getting impatient I suppose, barked at me—that's the only way to put it—and said: 'Look here, my man, I can't be kept here all the blessed afternoon—I'm in a hurry!' Imagine that! 'My man!' His two boys at the front! I was wild. Just then the engine gave me the O.K. and I knew sh'd start. I kept that to myself and I said to his Lordship, 'I'm doing my best—but—just get out for a moment; I want some tools from

under the back seat.' So like a great gawk he stepped to the side of the road, and said, 'All right, but hurry up, I can't wait all the—'

"And before he could finish I hopped back into the driving seat, and said, 'In a hurry, are you? Your man, am I? Well, see here! I've had enough of you, with your spurs and your tabs and your swank. You can something-well walk home.' And I let in the clutch and left him—gaping!

"But!" concluded the honest tradesman, "now I've got it off my chest, I'm just wondering if—you see we're at war, and we've all sorts of laws in war—D.O.R.A. and suchlike. Can they do anything to me up at Headquarters, do you think?"

The A.A. sympathizer—a Yorkshireman, too—smiled and replied, "You did quite right! and I'll tell you another thing"—wagging his finger—"that officer-chap won't say a word. He feels too much of a fool. And don't stop doing Voluntary Service, please. They are not all like him."

"Oh, very well," said the injured one. "I'll carry on."

Next! A circular letter was issued to what remained of the potential fighting force of the A.A. staff. The wording was purposely unofficial. "Your King and Country need you, and the A.A. doesn't. Every one of us who can't get pass the doctor is joining up. What are you going to do?"

The answers to that appeal came promptly. The depletion of Staff was accelerated. Early in September a hundred and fifty patrols made a brave show as, complete with bicycles, they marched from Fanum House, Coventry Street, along the Embankment, up Queen Victoria Street, past the Old Lady of Threadneedle Street, along Old Broad Street, to entrain for Colchester, there to form the first two Companies of the 2/8th Cyclists' Battalion, Essex Regiment.

What next? Ambulances! Oh, yes! A special fund was opened, and over ten thousand pounds was quickly subscribed. Members gave their cars for conversion into ambulances. Many themselves defrayed the cost thereof in their eagerness to give and keep giving. His Majesty King George reviewed the fifty in the garden of Buckingham Palace. Those went to France, others to Belgium, others were allocated to the War Office, the St. John Ambulance Corps, and kindred organizations.

One morning, those at Fanum, Birmingham, who were trying to keep the home fires burning, received a call from a bluff Midlander who, past military age, devoted all the time he could spare to making jig-saw puzzles for convalescent soldiers and attending the hospital-trains, which were arriving with dreadful frequency from the coast.

He went straight to the point.

"Four-and five-seater cars carry the minor injuries quite efficiently, but those who have two-seaters can only take one. These motorists are working themselves to

death on munitions, but they are quite willing to come along to the station, even though it means waiting two and three hours before the train actually arrives. At the same time, they don't feel they are doing much good in carrying one man. Further, there is a shortage of ambulances for the stretcher cases. Now," continued he, "I have invented a trailer-ambulance. It is a light car on two pneumatic wheels, with a canvas awning, which will take two stretchers. Towed behind a two-seater it increases the capacity 200 per cent. and gives the motorist a real job. It is cheap—£50 or £60 against the £500 and £600 of the ordinary ambulance."

"Bravo!" said Fanum, Birmingham.

"Thank you! I took it to the War Office. It's unpractical, they said, and turned me down—flatly. I reminded them that gun-limbers were trailers and were not exactly unpractical, but the Brass Hat had spoken, and that appeared to settle it. Do come down and see it."

"Certainly!"

Fanum, Birmingham, knew a good thing when he saw it. He whipped up the willing members, with the result that quite soon afterwards a column of trailers was working day and night in the Midlands—and the idea was copied throughout the country.

"Unpractical!" had said the Brass Hat.

While good work of this kind was going on, the A.A. had broken out in a fresh place. There were about four hundred miles of overhead and underground cables to the Continent which needed guarding by day and by night, because—well, because you never know, you know! The police were busy enough, and their forces, too, were being depleted by the demand overseas. So the A.A. did it until the police could take over and carry on.

The papers were preaching "Business as Usual." That slogan looked well enough in print, but—"Business as Usual?" said the eager and devoted. "Don't be silly! There's a War on!" So the slogan died.

Depletion was not confined to the staff. Members were flocking to the colours by the thousand upon thousand. The membership figures were dropping persistently, pitilessly, like the rain on that last evening at Earl's Court. Never mind—what next?

Another brain-wave.

"Let us help recruiting! What we may term the cream, is getting thin. Conscription is not yet contemplated. The eager ones have gone already. There remain umpteen thousands of worthy men not perhaps so impulsive, but not any the less willing. They need to be talked to. It's like an ordinary peace-time business. After the first rush for a new article—those who want to keep the sales up must get out and—scratch for customers. That's what the dear old Recruiting Officers have got to do, in order to keep up the supply. Let us help them to get out and scratch."

"Certainly! But how?" seemed a fair question.

"Let us provide them with cars—free. Remember the Guards to Hastings scoop, and how A.A. members rushed to help! In the present crisis they will do it again, anywhere and everywhere."

It was true. Those who couldn't join up, and those whose dearest *had* joined up, were aching to do something—waiting only for a lead.

It followed, therefore, on a certain morning in October that the "War House" received a visitor from This Motoring. He went straight to the point.

"Would it be of value if your Recruiting Officers throughout the country were afforded motor-car transport *free*, with the result that they could tour their districts—you know, like a Candidate for Parliament has to tour his constituency canvassing for votes? Motoring is expensive."

"Indeed it is," said the Staff Officer, "and don't I know it? I'm a member of the A.A. I drive a 'twenty.' It costs me eightpence a mile."

"Very well, sir. If we could give you a million miles of *free* driving, would that help?"

"Splendid feller! It would be wonderful."

This officer was one of Britain's brightest and best. Tall, lean, fit, with legs which simply were made for a top-boot—that is, no calves; a rather formidable nose, twinkling grey eyes, and—yes—even dimples. He smiled away most of the gloom with which earlier the well-intentioned ambassadors of This Motoring had been smothered. ("No, thank you; it will be over in three months. Good afternoon—mind the sstep.")

"You like the idea," said his visitor.

"Like it? I love it. Now let us get down to details."

They were soon settled. A well-conceived appeal to A.A. members, to be signed by the Chairman, with a postscript endorsing the appeal, to be signed by—whom?

"Do you think you could get the Greatest One to sign it?" asked the visitor.

"'Fraid not." The twinkles faded out for a moment. "He's too busy, we can't get near him, but I'll get the next biggest to sign it. Rely on me. Good-bye for the present—splendid feller!"

The "million-mile scheme" was a triumph. A.A. members, and members' wives, and members' daughters, and sisters, and sweethearts, jumped at it.

It was all done by kindness, and post cards. Kindness proposed—post cards disposed—in this way. Every Recruiting Office in the Service in due course was gladdened by a batch of yellow post cards showing who would drive, in what kind of cars, with how many seats, and when! Telephone numbers added for mutual convenience.

"Bless these people," said the overworked R.O.'s; "now we can get on." And they proceeded to do so.

The umpteen thousands of worthy ones—perhaps not so impulsive as their brothers who formed the First

Hundred Thousand of immortal fame, but not any the less patriotic—were reached and talked to and, perhaps for the first time, who knows? were offered a ride in a fine car, driven by a bright girl—who would say, "My brothers are out there. I say, now, hop in behind—there's room for three of you, and we'll run you along to the Recruiting Office, only ten miles, and—What? Oh, yes! I'll drive you back here again—after you've been sworn in."

The Greatest One, of lamented memory, acclaimed this particular A.A. activity in a speech at the Guildhall, London.

What next?

The air raids. Another good idea. Special Constabulary. A special A.A. Motor Section was formed, composed of members unfit for active service, but keen to do their bit. Their bit consisted of turning out at any hour of the night, in all weathers, to drive through the streets, without lights, sweeping the unthoughtful into safety, crying "Take cover! Take cover!" while taking not any themselves. Their orders were to carry on until the all-clear signal was given. That job didn't seem much, but it called for courage, and got it.

A year passed. The female staff were dribbling away to join the W.A.A.C.'s, and the W.R.E.N.'s, and later the W.R.A.F.'s.

Another year. The membership figures were down to sixty-seven thousand, but the spirit of the members who remained was inspiring. "We're getting practically nothing in return for our subscription," they wrote, "but never mind! we will keep on paying. It's the least we cana do."

Even more inspiring was the fact that at every Committee Meeting there were always some—not many—applicants for election. And at one Meeting in the dark days of 1917, Britain and Mrs. Britain gave evidence of their unquenchable optimism in that one hundred and eighty-one of them took up Life Membership at a fee, then, of fifteen guineas.

Three years of war. Membership down to forty-eight thousand. The staff on Service by now was decimated. Killed in action. Died of wounds. Torpedoed. Those who were invalided out were coming back to resume duty. One brave soul appeared pathetically with an inferior and unworkable false leg—the best that a hard-driven Medical Staff could furnish. To wear it involved such discomfort that he preferred to take it off and stand it in the corner, like an umbrella.

"We can't allow this," said the Committee. "Let's get the poor chap a really fine one—aluminium, springs, and all that—the nearest approach to the one he left in France."

"How much will it cost?"

"Sixty pounds!"

"Never mind!"

(To be continued)

AVIATION

Madras Flying Club Notes

The new life that started flowing in the Club's veins in November increased nicely during the month succeeding. Two recently joined members were launched forth on their first solos, Messrs. V. Sundaram and P. W. Lomax, and the former proceeded to the flying tests for his "A" licence, passing them in good style. In the way of local flying 71 hours 20 min. dual was flown, 44 hours 25 min. solo by Club members and 4 hours 35 min. of joy rides to the public. Cross country flying by members totalled 28 hours 40 min., of which 8 hours 20 min. were flown in the way of dual with the pilot instructor. Mr. Mathai was the most travelled in this line with three regular cross country flights to his log book, firstly to Trivandrum and back with Mr. G. C. Arya early in the month, Mr. Arya piloting one way, then to Bangalore and back with Mr. J. C. Puri of Tatas in the middle of the month and lastly to Bangalore again and back with Mr. B. K. N. Rao of Tatas at the end of the month. And he flew one day to Pondicherry and back without of course landing, as did Messrs. Rajaram and Sitaram together next day. Mr. A. S. Ratnam flew on the 1st with the pilot instructor to Nellore and back without landing. Neither Pondicherry nor Nellore have landing grounds at present. The Trivandrum flight cost Mr. Mathai Rs. 15 in landing dues, but on the other hand enabled him to bear away a certificate proclaiming that VT-ACB of 2050 lbs. burthen, Capt. Mathai, under British Indian colours bound for Madras had complied with port regulations.

There were two charter flights in the Club Puss Moth during the month, one to Colombo (the second trip to the new Ratmalana Aerodrome), and the other to Quilon. The former, starting perforce on Friday, the 13th, was arranged for Mr. E. Wanigesekera, a recently joined Club member from Ceylon whose business necessitated his immediate return to Ceylon. Mr. N. de Silva another club member from Ceylon, took the opportunity of going to and returning next day with the machine, and a second passenger was found for the return journey in Colombo in the person of Mr. G. Corkill, a jockey. Again the Palk Strait route was taken on the outward journey and the Adam's Bridge route on the return. The Palk Strait was crossed at 10,500 feet above cloud and a course was then set below cloud for Kandy, but clouds and rain were thick on the hills and the Kandy idea had at the very last to be given up, but not before many places in Ceylon had had their first sight of an aeroplane. The charter flight to Quilon was arranged for Mr. T. P. M. Alexander, who was to spend his Christmas holidays in Travancore and wished to look down upon familiar scenes and drop a Christmas card or two as a preliminary. He flew dual with the pilot instructor via Salem, Coimbatore, Cochin and over many an out of the way rubber estate to Quilon, where petrol was picked up and a continuation made southwards via estates and odd palaces and Tri-

vandrum and back to Quilon. The pilot instructor returned to Madras alone next day after an abortive attempt to make Trichy the same evening, frustrated by interminable cloud field spread immensely thick over the intervening hills.

On the 28th Wing Commander D. S. R. Crossbie arrived from Karachi, via Bombay and Bellary, with the first Hornet Moth to be seen in India, an event the Club had long been looking forward to. The following morning and a Sunday the Club threw one of its breakfast parties, well attended and hearty and conducive as usual to a boost of flying.

On the last day of the month the pilot instructor and a Gipsy Moth were hired to do an hour's acrobatic flying over a fair in Madras, "jolly tricks" in fact, in the words of the fair promoters. The firing upwards of rockets from the fair ground at the same time, with their bursts of white smoke, all amongst the jolly tricks, led to a somewhat warlike spectacle.

Flying time for December, 1935

Dual instruction to members under training	H. M.
Advanced dual to "A" licensed pilots	61-10
Solo flights by members under training	6-00
Solo flights by "A" and "A-1" pilots	14-30
Pilot with passengers	23-55
Joy rides	4-35
Cross country trips in Club machines piloted by the Club pilot	16-45
Other flying	1-00
Test flight	0-35

Hrs. 138-40

The following members took dual instruction during the month:—

Europeans:

Mr. T. P. M. Alexander	Advanced dual.
Mr. W. W. Clark.	do.
Mr. P. W. Lomax.	
Mr. C. E. Gayes.	
Mr. H. Foote Carey.	
Capt. J. R. S. W. Elkington.	

Indians:

Mr. Ananda Prasad.	Advanced dual.
Mr. G. C. Arya.	do.
Mr. A. S. Ratnam.	do.
Mr. R. Rajaram.	do.
Mr. R. Sitaram.	do.
Mr. W. Parthasarathy.	
Mr. M. D. Sundararajan.	
Mr. Atmaram.	
Mr. V. Sundaram.	
Mr. S. Runganadhan.	
Mr. K. V. Muthukumar.	

Ceylonese:

Mr. N. de Silva.
Mr. C. B. Darius.
Mr. D. W. Wetta Singhe.
Mr. E. Wanigesekera.

New members during the month:—

Mr. V. Sundaram.
Mr. E. Wanigesekera.
Mr. S. Runganadhan.
Mr. K. V. Muthukumar.

Members who flew first solo during the month:—

Mr. V. Sundaram.
Mr. P. W. Lomax.

FLIGHTS

(Courtesy "Shell Aviation News")

The Maharajah of Patiala's Spartan Cruiser, VT-AER, fitted with three 320-h.p. Hermes IV engine, piloted by Capt. A. F. Muir, has just completed a flight from England to Karachi. Leaving Heston on the 11th October, he flew across Europe to Naples, and thence via Cairo, Baghdad and Basra along the Imperial Airways' route to Karachi. The pilot carried a Shell Carnet.

Mr. A. C. Gazdar, pilot instructor to the Bombay Flying Club, on his return to India during the last week in September after the completion of the flight undertaken by members of the Bombay Flying Club, the first half of which was described in detail by Flt.-Lt. Carey in the July issue of *Shell Aviation News*, has sent a letter to the Shell Company, of which the following is an extract:—

"I take this opportunity of thanking you on behalf of the members of the Bombay-Heston-Bombay flight, and myself, for your excellent organisation. I wish you to convey to your agents throughout the route our appreciation and gratitude for the manner in which they helped us in every way during our refuelling stops at various points.

"Without doubt your organisation deserves full credit, for which I can only compliment the Shell for their well-organised arrangements."

Mr. R. G. W. Ellison, R. A. F. O., who was formerly chief pilot to Portsmouth, Southsea and Isle of Wight Air Lines, is to fly a Dragon Rapide (two Gipsy VI) to Kashmir for H. H. Maharajah of Kashmir and Jammu, to whom he has recently become personal pilot. The Dragon Rapide is fitted to carry four passengers, and its equipment includes blind-flying instruments, a precision altimeter and normal landing and navigation lights.

Mr. and Mrs. Martin Johnson, the American explorers and photographers who filmed "Baboonia" in the African jungle, intend to make a new film of jungle life in Borneo. They travelled by steamer from New York to Belawan, Sumatra. Here they assembled their aircraft, a Sikorsky amphibian S.39, fitted with a Pratt & Whitney Wasp engine, which they had taken with them on the ship, and with Mr. James Laneri as pilot, on the 16th September flew to Singapore via Port Swettenham. Here they spent a fortnight before flying to British North Borneo via Kuching, the capital of Sarawak, to which place they were escorted by a Short Singapore III flying boat of No. 205 (F.B.) Squadron R.A.F. They used Aero Shell Heavy lubricating oil and Shell aviation gasoline. The following is an extract from a letter received by the Shell Company from Mr. Martin Johnson:—

"We had a very good flight from Port Swettenham to Singapore. This is due to your kindness in being on the job; in fact I do not know what I would have done without your help. But your people were so kind to us in Africa, and your men had done so much for us in Singapore that we are becoming quite spoiled, so much so, that when we get away from the Shell office we probably shall not know how to take care of ourselves."

FROM VARIOUS CONTINENTS

(Courtesy "Shell Aviation News")

Commercial Air Hire

For some years now the task of transporting daily newspapers from London to Paris by air to ensure their delivery in the early morning has been in the hands of Air France and an English company, Commercial Air Hire Limited. Air France have been carrying about half the load on their night freight services while they subcontracted the other half to Commercial Air Hire, but this contract expired on the 6th October and Air France's night service stopped a week later. The result was that Commercial Air Hire took over the whole of the contract from Messageries Hachette, the Paris newsagents. It is reckoned that the company carries over a ton of newspapers a day between London and Paris. The early morning service to Paris, which is operated in almost any weather conditions, is usually maintained by an Avro 642, but at present the two Armstrong Siddeley Jaguar engines fitted to this aircraft are being overhauled, and the work has been taken over temporarily by two de Havilland Dragons.

Indian Mail Services

At the beginning of 1935 Tata Sons Limited operated only two services, Bombay to Karachi via Ahmedabad and Bombay to Madras via Bellary. In April a new scheme for a daily air mail service between Bombay and Calcutta was submitted to the Government of India. The scheme contemplated night flying between Bombay and Calcutta, and the carriage of mail at a surcharge of only one anna above the usual postal rates. The mail would leave Bombay at 21-00 hours and arrive at Calcutta at 07-00 hours the following morning, as compared with the

two days taken by train. There is however, considerable controversy as to whether this new line should operate on the direct route by Nagpur, or whether Bombay should be linked at Cawnpore with the Cawnpore-Calcutta section of the trans-India route, but so far no arrangement has been fixed. Another route under survey is that from Bombay to Colombo via Madras, and this will probably be opened when the aerodrome for Ceylon, Ratmalana, is ready. When this comes into operation, the Puss Moths (Gipsy III) which at present are being used on the Bombay-Madras service, will be replaced by Miles Merlin aircraft fitted with Gipsy VI engines. On the 29th October, Tatas actually started a new service between Bombay and Trivandrum, in Travancore, via Goa, in Portuguese India, and Cannanore. At present it is being flown once a week, but shortly it is hoped to increase the frequency to twice weekly, with additional calls at Bangalore and Bellary.

Imperial Airways

The annual report of Imperial Airways Limited has just been published. The year's working to the 31st March, shows a profit of £133,769. The dividend declared on the ordinary shares is six per cent and a bonus of one per cent, both less tax. Last year's dividend was six per cent only. The above net profit compares with £78,571 for 1933-34, and with £52,894 for 1932-33. The provision for obsolescence of aircraft and engines is £192,960, compared with £191,336 in the previous years. The Government has informed the Board that the company shall continue to develop the existing Empire trunk

services, and a long-term agreement is at the moment under consideration with this in view. The Board believes that this scheme is one of the most important events in the history of the postal service as well as of aviation development, and is of great importance to the British Empire. The report will be reviewed in greater detail in the December issue of *Shell Aviation News*.

A British Air Transport Amalgamation

The new merger combining Hillman Airways with four of the principal independent air transport companies in Great Britain was ratified at the general meeting of the company's shareholders recently held in London. The four companies concerned are United Airways, Northern and Scottish Airways, Highland Airways and Spartan Air Lines. United Airways were founded last April and they serve London, Liverpool, Blackpool, Morecambe, Carlisle and the Isle of Man. Northern and Scottish Airways operate joint services in conjunction with United Airways linking Glasgow with the Isle of Man and Campbelltown and Islay. Highland Airways, who are under contract with the Post Office for the carriage of mail, serve Aberdeen, Inverness and the Orkneys and Shetlands, while Spartan Air Lines, a private company formed in February 1933, fly between London, Bembridge, Sandown and Cowes. A detailed report of the activities and the latest developments of Hillman Airways appeared in the July issue of *Shell Aviation News*. The new company is to be called Allied British Airways, and its routes will form a net work of lines over 2,200 miles in length.

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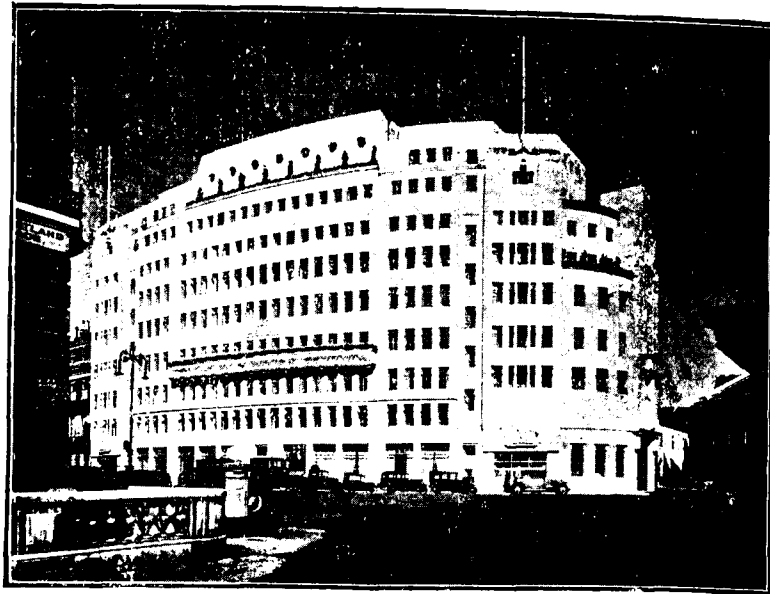
3/33 MOUNT ROAD, MADRAS

RADIO

The Empire Broadcasting Service

The Distribution of Programmes

by
Peter Goss



Broadcasting House, April 1933

One of the fundamental principles underlying the operation of the Empire Broadcasting Service is that listeners in all parts of the British Empire possessing short-wave receivers shall be given an opportunity to hear a broadcast programme from London each day, during the course of the evening hours, local time. To this end, and owing to the vast difference in time between Great Britain and the various parts of the Empire, the Empire programmes have been divided into a series of six transmissions, which are radiated at intervals throughout each twenty-four hours of the year. Each transmission is intended specifically for reception in a certain part of the Empire during the evening hours, local time; but, in practice, listeners in many parts of the world are able to hear programmes from the Empire station which are not specifically intended for reception in their part of the globe, although they cannot always hear them with the same quality of reception and at a convenient local listening hour.

An analysis of the Empire programmes for one day reveals the complex problems which must be faced in an endeavour to supply listeners in all parts of the globe with a daily broadcast programme. At the time of writing the Empire broadcasting day in London begins at 8.0 a.m. G.M.T. with the opening of Transmission 1, intended specifically for reception by listeners in the Antipodes. In the eastern States of Australia the beginning of this transmission will be heard at 6.0 p.m. on the same day, and in New Zealand at 8.0 p.m. The programme opens, as do all Empire transmissions, with the chimes which precede Big Ben, the most popular of Empire broadcasters. In view of the fact that this transmission comes outside the normal broadcasting hours of the National and Regional programmes in Great Britain, it must necessarily include a large number of items prepared especially by the staff of the Empire Department. In addition, a number of recordings of the more important programmes broadcast in the Home Service are included.

"Live" and Recorded Items

Many of the more important items broadcast in the National and Regional programmes for the benefit of listeners in Great

Britain are recorded in this way and later radiated to Empire listeners in all Empire transmissions. Similarly, the outstanding programmes which are broadcast "live", as we say, in one transmission are recorded and later broadcast in subsequent Empire transmissions for the benefit of listeners in other parts of the world.

It may be asked why the officials responsible for the compilation of the Empire programmes do not record a greater number of programmes which are broadcast in the Home country for the benefit of Empire listeners. Firstly, in view of the uncertain quality of short-wave reception, a special production technique is highly desirable for Empire programmes. For instance, many Empire listeners have complained that artists taking part in the Home programmes speak too fast for them to be intelligible overseas. The use of certain "effects" and the superimposition of speech over music in broadcast plays are similarly deprecated. Secondly, judging from the vast volume of correspondence which is received from Empire listeners, programmes of long duration are not appreciated. In the case of dramatic productions a considerable degree of concentration on the part of the listener is essential, and this must be accentuated when listening to short-wave transmissions. Thirdly, many listeners imagine that in the process of recording programmes for subsequent broadcast transmission no additional cost is involved. This is not the case. While the actual technical costs of recording are low, the process necessitates the payment of heavy additional fees to artists, musicians, and other contributors. For this reason, a very large number of programmes are produced especially for overseas listeners by the staff of the Empire Department.

The Separate Transmissions

Transmission 1 ends at 10.0 a.m. with the Empire News. News bulletins are broadcast daily in all Empire transmissions, each bulletin being designed to cover the events of importance which have taken place throughout the world during the twenty-four hours preceding its transmission. The Empire News bul-

letins are compiled by the News Section of the Empire Department, consisting of a News Editor and three Assistants. The contents of the Empire News bulletins are supplied by two of the leading British news agencies, which provide tape machines in the offices of the Empire Department. In the selection of items for each News bulletin, consideration is given to the particular interests of listeners in that part of the world for which each transmission is intended. As a supplement to the News bulletins, a limited number of topical talks are broadcast, and weekly market notes and general commercial intelligence are included in all transmissions. While the popularity of the Empire News bulletins has been much evident in correspondence received from listeners, there is no doubt that they are more appreciated by isolated listeners and in the Colonies than in the main centres of population in the Dominions, where other news services are accessible.

Transmission 2, which is of two-and-three-quarter hours' duration, opens at 11.0 a.m., and is intended mainly for reception by listeners in Malaya and the Far East, where the difference in time varies from six to nine hours. Since Transmission 2 coincides with the morning programmes broadcast from the National and Regional transmitters, listeners overseas at this time are fortunate in that they hear, not only many of the special Empire programmes, but a considerable number of "live" excerpts from the Home programmes. Many of the most outstanding broadcasts in the Home programmes of particular interest to overseas listeners, such as the Royal Wedding, the Changing of the Guard, the Armistice Day Service at the Cenotaph, and many others, are radiated at this time. Many of the Empire programmes, particularly those broadcast in Transmission 2, are contributed from the Regional studios, and prove exceedingly popular with a large number of listeners in the Empire who have sentimental associations with the provinces.

The programmes broadcast in Transmission 3, which are heard each evening by listeners in India, Ceylon, and the Near East, coincide with the afternoon programmes broadcast in Great Britain. Listeners to this transmission, in addition to hearing a number of the Home programmes, receive a certain number of special Empire productions, notably vaudeville programmes and talks. A balance in programme material is thus maintained. Many of the more important broadcasts covering sporting events, such as the Derby, the Grand National, and the Boat Race, are broadcast "live" in this transmission.

Listeners to Transmission 4, living in all parts of Africa, are more fortunate than others in that they hear the British programmes broadcast between the hours of 5.15 p.m. and 10.45 p.m. in Great Britain. Programmes broadcast in the latter half of this transmission are also heard by listeners in the West Indies and South America.

Transmission 5, which is designed to serve listeners in Canada, Newfoundland, the West Indies, and British listeners generally in North and South America, is broadcast between 11.0 p.m. and 1.0 a.m. This transmission, like Transmission 1, gives little opportunity for relaying items from the Home programmes, and necessitates the compilation of special Empire programmes and the employment of a limited number of recordings of the Home broadcasts.

Transmission 6, which has recently been inaugurated for the especial benefit of listeners in Western Canada, begins at 3.0 a.m. in Great Britain and 6.0 p.m. on the previous evening in Western Canada. Incidentally, this same transmission provides a break-fast-hour programme for listeners in India and Ceylon, and many letters of appreciation from the East have resulted.

British Radio Exports in October

Recent figures issued by the Department of Overseas Trade show that British exports of radio receivers during October were valued at more than £36,000. These were taken largely by South Africa, the Irish Free State, Egypt, Sweden, and the Netherlands. The export of radio gramophones to British India and South Africa showed a considerable increase. During the month, Italy bought 54 valves, valued at £10,172—her only

purchase. One receiver, valued at £1, was imported from Australia.

New Relay Service at Lagos

The Secretary of State for the Colonies, the Rt. Hon. J. H. Thomas, P. C., broadcast a message in the Empire programmes on December 2 on the occasion of the formal opening at Lagos of the first broadcast relay service in Nigeria.

In his broadcast Mr. Thomas said:—

"The development of Colonial broadcasting... closely engaged the attention and, I believe I may go further, the enthusiasm of my predecessor, and I welcome this early opportunity of saying that I find myself in complete agreement with him as to its importance. The establishment of broadcasting services in one form or another, in all Colonies can only be a matter of time, and, I hope, a short time...."

"You will now have available, through the same medium that I am using at this moment, the vast entertainment resources of the BBC Empire Station, not to mention other stations, and I am sure also that there must be an abundance of local artistic production and other local matters of interest upon which you will be able to draw for your programme. It needs no words of mine, therefore, to point out the entertainment and pleasure which will ensue to those of you who avail yourselves of the Service. I have spoken of entertainment and pleasure because I think that to provide these is the first function of broadcasting and I am not going to attempt to persuade you otherwise, but there is another side to it which I am confident will not be overlooked in Nigeria. I refer to its potentialities as an instrument of education and for the dissemination of information both generally and in such important fields as public health and agriculture...."

Three Special Concerts

During the current winter the BBC has arranged to give three special concerts at each of which one work of outstanding importance and character will be presented.

The first consists of a concert version of "King Arthur", an opera by the old English composer, Purcell. Presenting, as it does, a series of scenes rather than a coherent dramatic story, it lends itself well to broadcasting when the listener can concentrate his attention on the impressive music—a part of our natural heritage of which we know very little. Dryden's libretto, suitably condensed by Mr. Peter Creswell, will be recited by two narrators, in order to connect the music into a continuous and intelligible story. The BBC Chorus and the BBC Symphony Orchestra will be conducted by Dr. Adrian Boult.

"Christopher Columbus", by Darius Milhaud, which will be conducted by the composer in February, has been described as "a new synthesis of the arts of the theatre in which even the cinema has a place." This work has not been performed since it was first heard in Berlin under Erich Kleiber in 1930. In style it is more akin to oratorio than to opera and so is particularly suitable for concert performance. In the original state production the cinema was used to supplement the action, but this is not an essential element of the work and will not, of course, be seen in the London performance.

Finally in March the BBC will present "Lady Macbeth" by the Soviet composer Shostakovich. This opera, which by the way has nothing to do with Shakespeare, has been much discussed inside and outside of Russia. Shostakovich's other works are appearing with increasing frequency in London concert programmes and musicians in Great Britain will welcome this opportunity of hearing this work about which they have read so much. Shostakovich's Symphony No. 1 received its first performance in London in September 1935 at the hands of Sir Henry Wood in a series of BBC Promenade Concerts. "Lady Macbeth" will be conducted by Albert Coates, the well known British composer who was born of English parents in Russia. Coates was famous as a conductor in St. Petersburg before the War and since 1918 has visited Russia almost every year to conduct either the Leningrad or Moscow Philharmonic Orchestras under the direction of the Soviet Government.

Looking Round

Recent radio news from other countries reminds us of the infinite variety of broadcasting. Twenty thousand more sets working in Egypt... a garden studio planned at Cracow... the bellowing of stags in Pomeranian forests recorded for broadcasting in Poland... 680 schools listening in Poland... broadcasts relayed in New Zealand... the sale of radio sets in the U.S.A. for this year estimated at 5,000,000, of which 1,500,000 are car radios... Hungarian broadcasting keeping its tenth anniversary. So broadcasting goes on striving to hold the mirror up to life in practically every country in the world.

Mixture As Before

It is always amusing (to a simple mind) to come across familiar ideas in a foreign form. In the pages of *Radiodiffusion*, the half-yearly magazine of the International Broadcasting Union, we have just made the acquaintance of the term "doser" which is apparently the French equivalent for our "mix". "Deux phones artfully mixed". This is one of the rare instances where we prefer our own word.

In Coronation Year

After the broadcast of "Scrapbook for 1911" a reader sent us a copy of the *Daily Mirror* for January 4 of that year containing nearly ten pages about the Sydney Street Siege. That was interesting enough, but in browsing through its yellowed pages we found a lot more to evoke nostalgic memories of the past. The Amusements Column, for instance, bristling with such famous names as George Edwardes, George Alexander, H. G. Pelissier, and Cyril Maude, and skating rinks taking the place of cinema shows which were still confined to squalid suburban halls. But nothing in the whole paper dates more than the Personal Column. All too rarely nowadays does anyone spend good money on saying "Ni—My darling beloved. Long to meet you;" and there is a note of unmodern pathos about "XAM—Waiting for you, anguish, rent, electric to pay." More vivid reading than the present day series of appeals from charities, money lenders, and purchasers of old false teeth.

3/33 MOUNT ROAD, MADRAS

Ancient Daventry

Poking fun at antiquaries has been a favourite sport for hundreds of years. No one enjoyed it better than Sir Walter Scott, who was himself a most distinguished antiquarian. It is recorded that a mound in Renfrewshire was the subject of a dispute amongst antiquarians. It was believed to be of Roman origin, but when it was opened it contained *inter alia* a large number of American corned beef cans. However, there has never been any danger of a *contretemps* of this nature at Daventry, where the relics of antiquity recently found by BBC engineers are 'genuine originals'. On the site of the Empire Station traces of very ancient earthworks have been discovered, which are supposed to be of a pre-Roman period.

—*The Empire Broadcasters.*

Reception of Christmas Day Broadcast

Several months must elapse before the last of the reports on the reception of the Christmas Day programme, "This Great Family", are received; indeed, isolated reports on the reception of the King's speech on Jubilee Day are still being received. Sufficient information has, however, already reached Broadcasting House to show that reception of the King's Christmas Day message and of the programme that preceded it was generally very good all over the world. Observation of short-wave conditions on a receiver in England showed that they were favourable, and each of the overseas contributions to the programme was relayed direct over the Post Office Radio telephone circuits. It was thus unnecessary to use any of the stand-by records which had been made of the overseas contributions.

The reports received up to December 31 are as follows:—

South Africa.—Cape Town reported excellent reception of the programme, which was re-broadcast over the radio telephone circuit. One report states that the King's message to his "Great Family" was received with perfect clarity.

East Africa.—The Nairobi (Kenya) broadcasting station did not relay the original transmission and local listeners had poor reception, but the recording of the programme transmitted by the Empire Station at Daventry in the evening was very well received and relayed locally.

Southern Rhodesia.—Salisbury reported by telegram that reception of his Majesty's speech was marred by fading and atmospheric.

West Africa.—Accra (Gold Coast) and Freetown (Sierra Leone) reported that reception of the whole programme was good.

Quiet Please !

Australia.—A message passed over the Post Office radio telephone channel at the conclusion of the programme reported excellent reception. Another report stated that families stayed up until after midnight to hear the King and that reception was perfect.

Canada.—All reports indicate that reception was very good. The Canadian Radio Broadcasting Commission stations relayed the programme *via* the Post Office radio telephone circuit, and a message states that "almost every Canadian family seems to have listened to the Empire broadcast."

India.—A report from Bombay stated "Programme received O.K." Indian stations re-broadcast the programme *via* the circuit. A listener to Daverity at Ootacamund (Madras Presidency) reported that the programme was received perfectly and that nineteen Europeans and Indians gathered round the loudspeakers and much enjoyed it.

New Zealand.—No reports have yet been received from New Zealand.

U. S. A.—The programme was relayed from the Empire

U. S. A.—The programme was relayed from the Empire Station at Daventry by the net-works of both the Columbia Broadcasting System and the National Broadcasting Company. The latter reported good reception.

British West Indies.—A report from Jamaica indicates that reception of the programme from Daventry was excellent, and one from Barbados states that reception was exceptionally good.

British Broadcasting Corporation Empire Service

Programmes for Transmissions 2 and 3

NOTE—All times given are Indian Standard Time which is five hours and thirty minutes ahead of Greenwich Mean Time. Wavelengths shown for each Transmission are those in use at time of going to press. Changes, if any, will be duly notified by microphone which should be listened for in the announcements made at frequent intervals.

Transmission 2:—4.30 to 7.15 p.m. I.S.T. (11 a.m. to 1.45 p.m. G.M.T.).

GSG 17, 790 Kc/S (16.86 m.),
GSF 15, 140 Kc/S (19.82 m.).

In this transmission Greenwich Time Signal is given at 5.30 p.m. [12 noon G.M.T.).

Transmission 3:—7.30 to 10.30 p.m. I.S.T. (2 to 5 p.m. G.M.T.).

Two of the following frequencies will be used:—

GSG 17, 790 Kc/S (16.86 m.),

GSF 15, 140 Kc/S (19.82 m.),

GSE 11, 860 Kc/S (25.29 m.) or

GSB 9, 510 Kc/S (31.55 m.).

In this transmission Greenwich Time Signal is given at 10 p.m. (4.30 p.m. G.M.T.).

MONDAY, JANUARY 20

4.30 p.m.—Big Ben. Reginald Porter-Brown, at the Organ of the Regal Cinema, Torquay.

4.45 p.m.—Haydn Heard and his Band, relayed from the West End Cinema, Birmingham.

5.45 p.m.—"From the Woman's Point of View." A talk by Minnie T. Hogg.

6.00 p.m.—The BBC Dance Orchestra,* directed by Henry Hall.

6.30 p.m.—The News.

6.50 p.m.—An Organ Recital.†

7.15 p.m.—Close down.

7.30 p.m.—Big Ben. Arthur Salisbury and his Orchestra, relayed from the Savoy Hotel, London.

8.15 p.m.—Sports Talk.*

8.30 p.m.—"Shiver my Timbers!"*

9.15 p.m.—"Accident." A short story by G. Broom. Read by Carleton Hobbs.

9.30 p.m.—Sonata Recital. Helen Just (Violoncello) and Hetty Bolton (Pianoforte).

10.00 p.m.—The News.

10.20 p.m.—Orchestral Concert.† The Hallé Orchestra, conducted by Sir Hamilton Harty: The Royal Hunt and Storm (Berlioz).

10.30 p.m.—Close down.

TUESDAY, JANUARY 21

4.30 p.m.—Big Ben. The BBC Symphony Orchestra; conductor, Adrian Boult.

5.05 p.m.—An extract from "The King of the Golden River," by John Ruskin. Read by Patric Curwen.

5.20 p.m.—The Arthur Dulay Quintet.

6.00 p.m.—Variety of Waltzes.†

6.30 p.m.—The News.

6.45 p.m.—The Manchester Tuesday Midday Society's Concert, relayed from the Houldsworth Hall, Manchester. Margaret Chamberlain (Pianoforte), Sinclair Logan (Baritone). At the pianoforte, Dorothy Crewe.

7.15 p.m.—Close down.

7.30 p.m.—Big Ben. The Leslie Bridgewater Harp Quintet.*

8.00 p.m.—Talk: "Imperial Affairs." H. V. Hodson.

8.15 p.m.—Dance Music.†

8.30 p.m.—The Torquay Municipal Orchestra; leader, Harold F. Petts; conductor, Ernest W. Goss. Dorothy Helmrich (Australian contralto). Relayed from the Pavilion, Torquay.

10.00 p.m.—The News.

10.15 p.m.—Pianoforte Recital.†

10.30 p.m.—Close down.

WEDNESDAY, JANUARY 22

4.30 p.m.—Big Ben. Irish Music.†

4.40 p.m.—Two Plays*: (1) "The Land of Heart's Desire," by

W. B. Yeats. (2) "The Wooing of Julia Elizabeth." A comedy of Dublin life in one act, by James Stephens. Both produced by John Pudney.

5.15 p.m.—"Soft Lights and Sweet Music."

5.30 p.m.—Surprise Item.

5.45 p.m.—The BBC Empire Orchestra; leader, Daniel Melsa; conductor, Eric Fogg. Frank Merrick (Pianoforte).

6.45 p.m.—The News.

7.00 p.m.—Dance Music.†

7.15 p.m.—Close down.

7.30 p.m.—Big Ben. The BBC Northern Ireland Orchestra; leader, Philip Whiteway; conductor, E. Godfrey Brown.

8.30 p.m.—"High Spots"—No. 14: Windsor Castle. A descriptive commentary from the Norman Tower of Windsor Castle.

8.45 p.m.—"The Gossip Hour"—11th Edition.* Compiled and produced by Cecil Madden, consisting of visitors, novelties, characters, music, and types.

9.25 p.m.—The BBC Dance Orchestra,* directed by Henry Hall.

10.00 p.m.—The News.

10.15 p.m.—Jan Berenska and his Orchestra, relayed from the Pump Room, Leamington Spa.

10.30 p.m.—Close down.

THURSDAY, JANUARY 23

4.30 p.m.—Big Ben. "Bertie" or "Balham to the Bone."* A burlesque in three scenes with music and a moral. Book and lyrics by Diana Morgan and Robert MacDermot. Music by Michael Sayer. The cast supported by the Chorus and the BBC Empire Orchestra (Leader, Daniel Melsa) under the direction of Eric Fogg. Production by William MacLurg.

5.30 p.m.—Talk: "Imperial Affairs."* By H. V. Hodson.

5.45 p.m.—The Bath Pump Room Orchestra; leader, J. Andrew Cooper; conductor, Frank Gomez. Relayed from the Pump Room, Bath.

6.30 p.m.—The News.

6.45 p.m.—Harp Trio: Harry Dyson (Flute), Tina Bonifacio (Harp), and Gethyn Wykeham-George (Violoncello). Adelaide Beattie (Soprano).

7.15 p.m.—Close down.

7.30 p.m.—Big Ben. Light Music.

8.00 p.m.—"All Fares, Please!" A dissertation on London's red buses, presented by John Pudney.

8.30 p.m.—The Band of His Majesty's Royal Marines, Plymouth Division (by permission of Brigadier J. W. Huddleston, C.B.), conducted by Captain F. J. Rickets, Director of Music, Royal Marines. Mabel Grose (Soprano). Relayed from the Abbey Hall, Plymouth.

9.30 p.m.—Talk: "The Spice of Life."*

9.50 p.m.—A Recital by Keith Falkner (Baritone).†

10.00 p.m.—The News.

10.15 p.m.—Dance Music.†

10.30 p.m.—Close down.

FRIDAY, JANUARY 24

4.30 p.m.—Big Ben. The BBC Welsh Orchestra; leader, Frank Thomas; conducted by Reginald Redman. Arthur Walter (Baritone). Arthur Walter.

* Electrical recording.

† Gramophone records

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5-15 p.m.—The First Instalment.* No. 1 of a new series of popular variety programmes, with comedy, songs, and dance music.
6-0 p.m.—The BBC Dance Orchestra, directed by Henry Hall.
6-30 p.m.—The News and Announcements.
6-50 p.m.—Concerto in A minor.† The London Philharmonic Orchestra, conducted by John Barbirolli. Jascha Heifetz (Violin): Concerto in A minor, Op. 82 (Glazunov).

7-15 p.m.—Close down.
7-30 p.m.—Big Ben. Geiger and his Orchestra, relayed from Claridge's Hotel, London.
7-45 p.m.—"Around these Isles."* Folk lore, legend, and folk song, collected from all points of the compass in the British Isles. Presented by Douglas Moodie.
8-15 p.m.—The BBC Northern Orchestra; leader, Alfred Barker; conductor, T. H. Morrison.
9-15 p.m.—"From the Woman's Point of View."* A talk by Minnie T. Hogg.
9-30 p.m.—A Recital by Frederick Thurston (Clarinet) and Myers Fogg (Pianoforte).
10-0 p.m.—The News and Announcements.
10-20 p.m.—The Hotel Metropole Orchestra; leader, A. Rossi; under the direction of Emilio Colombo. Relayd from the Hotel Metropole, London.
10-30 p.m.—Close down.

SATURDAY, JANUARY 25

4-30 p.m.—Big Ben. The BBC Northern Orchestra; leader, Alfred Barker; conductor, T. H. Morrison. Alfred Hemingway (Violin).
5-30 p.m.—"High Spots"—No. 14: Windsor Castle.* A descriptive commentary from the Norman Tower of Windsor Castle.
6-0 p.m.—Scots Songs.†
6-15 p.m.—The Children's Hour. "Scott in the Antarctic." An epic re-told. Compiled from the records by Val Gielgud and Peter Creswell. Production by Derek McCulloch.
7-0 p.m.—The News.
7-15 p.m.—Close down.
7-30 p.m.—Big Ben. Burns Concert, introduced by Thomas Henderson.*
8-0 p.m.—"Die Fledermaus." Act 1 of the Opera by Strauss. Scene: Eisenstein's Apartment. Relayd from Sadler's Wells Theatre, London. Cast in order of appearance: Alfred (an opera singer), Morgan Jones; Adele (Rosalinda's maid), Janet Hamilton-Smith; Rosalinda (wife of Eisenstein), Winifred Kennard; Gabriel Von Eisenstein, Tudor Davies; Dr. Blind (a lawyer), Powell Lloyd; Dr. Falke, Summer Austin; Frank (Governor of the Gaol), Arnold Matters. Conductor, Warwick Braithwaite. Producer, Clive Carey. Chorus master, Geoffrey Corbett.
9-0 p.m.—The Bernard Crook Quintet.
9-45 p.m.—Instrumental Novelties.†
10-0 p.m.—The News.
10-15 p.m.—The London Zigeuner Orchestra, directed by Ernest Leggett. Maria Sandra (Soprano).
10-30 p.m.—Close down.

SUNDAY, JANUARY 26

5-30 p.m.—Big Ben. Weekly Newsletter and Sports Summary.
5-50 p.m.—Pianoforte Solos.†
6-0 p.m.—The BBC Scottish Orchestra.
7-0 p.m.—A Short Religious Service.*
7-15 p.m.—Close down.
7-30 p.m.—Big Ben. Eugene Pini and his Tango Orchestra.
8-15 p.m.—Sports Talk.*
8-30 p.m.—A Concert of Classical Music.
9-15 p.m.—The BBC Military Band.
10-0 p.m.—Weekly Newsletter and Sports Summary.
10-20 p.m.—Violin Solos.†
10-30 p.m.—Close down.

MONDAY, JANUARY 27

4-30 p.m.—Big Ben. Cinema Organ Recital.
4-45 p.m.—Haydn Heard and his Band.
5-30 p.m.—"High Spots"—No. 15.
5-45 p.m.—Viennese Waltzes.†
6-0 p.m.—"Around these Isles".*
6-30 p.m.—The News.
6-50 p.m.—Sonata Recital.†
7-15 p.m.—Close down.
7-30 p.m.—Big Ben. "Bertie the Bank Clerk, or Balham to the Bone."*
8-30 p.m.—The BBC Northern Ireland Orchestra.
9-30 p.m.—A Sonata Recital.
10-0 p.m.—The News.
10-20 p.m.—Dance Music.†
10-30 p.m.—Close down.

TUESDAY, JANUARY 28

4-30 p.m.—Big Ben. The Orchestra of the New Victoria Cinema, Bradford.
5-5 p.m.—A Short Story.
5-20 p.m.—Studio Concert.
6-0 p.m.—A Recital of New Gramophone Records.
6-30 p.m.—The News.
6-45 p.m.—An Organ Recital.
7-15 p.m.—Close down.
7-30 p.m.—Big Ben. Arthur Salisbury and his Orchestra, relayed from the Savoy Hotel, London.
8-5 p.m.—Talk: "Foreign Affairs".
8-20 p.m.—Light Orchestral Concert.
9-5 p.m.—An Organ Recital.
9-35 p.m.—The BBC Dance Orchestra,* directed by Henry Hall.
10-0 p.m.—The News.
The BBC Dance Orchestra* (contd.).
Close down.

WEDNESDAY, JANUARY 29

4-30 p.m.—Big Ben. Sports Talk.*
4-45 p.m.—Charles Manning and his Orchestra, relayed from the Granada, Walthamstow.
5-15 p.m.—Cinema Organ Recital.
5-45 p.m.—The BBC Empire Orchestra.
6-45 p.m.—The News.
7-0 p.m.—Song Recital.†
7-15 p.m.—Close down.
7-30 p.m.—Big Ben. "Looking Backwards".*
8-15 p.m.—A Song Recital.
8-30 p.m.—"High Spots"—No. 15.*
8-45 p.m.—The Bournemouth Municipal Orchestra.
10-0 p.m.—The News.
10-15 p.m.—The John MacArthur Quintet.
10-30 p.m.—Close down.

THURSDAY, JANUARY 30

4-30 p.m.—Big Ben. Excerpts from Opera.†
5-15 p.m.—Jack Petersen v. Len Harvey.* A commentary on the boxing match, relayed from the Empire Pool, Wembley.
5-45 p.m.—The Bath Pump Room Orchestra.
6-30 p.m.—The News.
6-45 p.m.—The City of Birmingham Orchestra.
7-15 p.m.—Close down.
7-30 p.m.—Big Ben. Light Orchestral Concert.
8-30 p.m.—Evensong, relayed from Westminster Abbey, London.
9-20 p.m.—Nocturnes (Chopin).†
9-30 p.m.—Jack Peterson v. Len Harvey.* A commentary on the boxing match, relayed from the Empire Pool, Wembley.
10-0 p.m.—The News.
10-15 p.m.—Orchestral Music.†
10-30 p.m.—Close down.

FRIDAY, JANUARY 31

4-30 p.m.—Big Ben. "Looking Backwards".*
5-15 p.m.—An Organ Recital.
5-45 p.m.—Talk: "Foreign Affairs".*

* Electrical recording.

† Gramophone records

TUESDAY, FEBRUARY 4

6-0 p.m.—The BBC Dance Orchestra, directed by Henry Hall.
6-30 p.m.—The News and Announcements.
6-50 p.m.—The Birmingham Hippodrome Orchestra.
7-15 p.m.—Close down.
7-30 p.m.—Big Ben. Chamber Music.
8-15 p.m.—The BBC Northern Orchestra.
9-15 p.m.—"Under Big Ben." A talk by Howard Marshall.
9-30 p.m.—"Jack and Jill".*
10-0 p.m.—The News and Announcements.
10-20 p.m.—The Hotel Metropole Orchestra.
10-30 p.m.—Close Down.

SATURDAY, FEBRUARY 1

4-30 p.m.—Big Ben. The BBC Northern Orchestra.
5-45 p.m.—"Twelve o'clock and All's Well".*
6-15 p.m.—The Children's Hour.
7-0 p.m.—The News.
7-15 p.m.—Close down.
7-30 p.m.—Big Ben. A Recital of Gramophone Records.
8-5 p.m.—Scotland v. Wales. A commentary on the Rugby Union football match, relayed from Murrayfield.
9-45 p.m.—The Broadhurst Septet.
10-0 p.m.—The News.
10-15 p.m.—The Broadhurst Septet (contd.).
10-30 p.m.—Close down.

SUNDAY, FEBRUARY 2

5-30 p.m.—Big Ben. Weekly Newsletter and Sports Summary.
5-50 p.m.—A Recital by Dora Labette (Soprano).† With Sir Thomas Beecham, Bt. (Pianoforte).
6-0 p.m.—Brass Band Concert.
7-0 p.m.—A Religious Service.*
7-15 p.m.—Close down.
7-30 p.m.—Big Ben. The BBC Empire Orchestra; leader, Daniel Melsa; conductor, Eric Fogg. Antonia Butler (Violoncello).
8-30 p.m.—"Twelve o'clock and All's Well."* A collection of verse and music, presented by John Pudney.
9-0 p.m.—Light Music.† Alfredo Campoli (Violin), Sydney Crooke (Pianoforte).
9-10 p.m.—A Religious Service (Methodist),* relayed from the West London Mission, Kingsway Hall, London. Address by the Rev. I. G. Goldhawk.
10-0 p.m.—Weekly Newsletter and Sports Summary.
10-20 p.m.—Light Music.†
10-30 p.m.—Close down.

MONDAY, FEBRUARY 3

4-30 p.m.—Big Ben. Reginald Porter-Brown, at the Organ of the Regal Cinema, Torquay.
4-45 p.m.—Haydn Heard and his Band, relayed from the West End Cinema, Birmingham.
5-10 p.m.—"All Fares, Please!"* A dissertation on London's red buses, presented by John Pudney.
5-40 p.m.—"Under Big Ben."* A talk by Howard Marshall.
5-55 p.m.—The New Light Trio with Gwen Catley.
6-30 p.m.—The News.
6-50 p.m.—Dance Music.†
7-15 p.m.—Close down.
7-30 p.m.—Big Ben. The BBC Dance Orchestra,* directed by Henry Hall.
8-15 p.m.—Short Story.
8-30 p.m.—The BBC Northern Ireland Orchestra; leader, Philip Whiteway; conductor, E. Godfrey Brown. James Hopkinson (Flute).
9-30 p.m.—Sonata Recital. Florence Hooton (Violoncello) and Dorothy Manley (Pianoforte).
10-0 p.m.—The News.
10-20 p.m.—A Recital by Billy Mayerl (Pianoforte).†
10-30 p.m.—Close down.

* Electrical Recording.

† Gramophone Records.

- 5-0 p.m.—An Organ Recital by Albert Taylor, relayed from First Presbyterian Church, Rosemary Street, Belfast.
- 5-45 p.m.—The Bath Pump Room Orchestra; leader, J. Andrew Cooper; conductor, Frank Gomez. Relayed from the Pump Room, Bath.
- 6-30 p.m.—The News.
- 6-45 p.m.—Interlude.†
- 6-50 p.m.—The Leeds University Midday Concert, relayed from the University, Leeds. A Pianoforte Recital by Eileen Joyce.
- 7-15 p.m.—Close down.
- 7-30 p.m.—Big Ben. The Garrick Theatre Orchestra, directed by W. Chapman. Relayed from the Garrick Theatre, Southport.
- 8-30 p.m.—"Books to Read." Some suggestions for the listener's bookshelf by Eric Gillett.
- 8-45 p.m.—A Recital of Songs and Duets by Herbert Thorpe (Tenor) and Foster Richardson (Baritone).
- 9-20 p.m.—"The Roosters."* The famous Army concert party in selections from their repertoire, including some War-time memories. Arthur Mackness (Tenor); Septimus Hunt (Baritone); William Mack (Humorist); Percy Merriman (Entertainer); Charles Harrison (Comedian); Frederick Pain (Pianist).
- 10-0 p.m.—The News.
- 10-15 p.m.—A Recital by Yehudi Menuhin (Violin).†
- 10-30 p.m.—Close down.

FRIDAY, FEBRUARY 7

- 4-30 p.m.—Big Ben. The BBC Welsh Orchestra; leader, Frank Thomas; conducted by Reginald Redman.
- 5-15 p.m.—Two Plays*: (1) "The Power and the Glory," a modern tragedy. (2) "Jessie's Eggs" (or "The Downfall of Septimus"), a radio play. Both by John Pudney. The two plays produced by William MacLurg.
- 6-0 p.m.—The BBC Dance Orchestra, directed by Henry Hall.
- 6-30 p.m.—The News and Announcements.
- 6-50 p.m.—The Birmingham Hippodrome Orchestra; conductor, Harry Pell. Relayed from the Hippodrome Theatre, Birmingham.
- 7-15 p.m.—Close down.
- 7-30 p.m.—Big Ben. England v. France.* An eye-witness account and a running commentary on the Ice Hockey match. Relayed from the Empire Pool and Sports Arena, Wembley.
- 8-0 p.m.—"Monologue in Melody." Howard Clarke in a programme of syncopated pianoforte music.
- 8-15 p.m.—Light Music.
- 9-15 p.m.—Chapter IV of "The Call of the Wild," by Jack London. Read by Patric Curwen.
- 9-30 p.m.—Chamber Music.† The Pro Quartet.
- 10-0 p.m.—The News and Announcements.
- 10-20 p.m.—The Hotel Metropole Orchestra; leader, A. Rossi; under the direction of Emilio Colombo. Relayed from the Hotel Metropole, London.
- 10-30 p.m.—Close down.

SATURDAY, FEBRUARY 8

- 4-30 p.m.—Big Ben. The BBC Northern Orchestra.
- 5-45 p.m.—Talk: "Imperial Affairs."* H. V. Hodson.
- 6-0 p.m.—A Pianoforte Recital.† Alexander Brailowsky.
- 6-15 p.m.—Scottish Children's Hour. "The Back of the North Wind," from the book by George MacDonald. Adapted by Christine Orr and arranged by M. Douglas.
- 7-0 p.m.—The News.
- 7-15 p.m.—Close down.
- 7-30 p.m.—Big Ben. The New Georgian Trio.
- 8-5 p.m.—Ireland v. England. A running commentary on the International Rugby Union football match, relayed from Dublin. (By courtesy of the Irish Rugby Union and in co-operation with the Irish Free State Broadcasting Service).

- 9-45 p.m.—Dance Music.†
- 10-0 p.m.—The News.
- 10-15 p.m.—Pianoforte Solos.†
- 10-30 p.m.—Close down.

SUNDAY, FEBRUARY 9

- 5-30 p.m.—Big Ben. Weekly Newsletter and Sports Summary.
- 5-50 p.m.—Ireland v. England.* Special summary and a running commentary on the last half-hour of the International Rugby Union football match, relayed from Dublin. (By courtesy of the Irish Rugby Union and in co-operation with the Irish Free State Broadcasting Service.)
- 6-25 p.m.—A Studio Concert. Eileen Andjelkovich (Violin) and Cicely Hoyer (Pianoforte).
- 7-0 p.m.—A Short Religious Service,* from the Studio.
- 7-15 p.m.—Close down.
- 7-30 p.m.—Big Ben. The Serge Krish Septet.
- 8-15 p.m.—"Young Ideas."* A programme for anybody and everybody with young ideas.
- 8-45 p.m.—A Recital of Irish Songs by Henry Cummings (Baritone).
- 9-15 p.m.—An eye-witness account of the Winter Olympic Games,* relayed from Garmisch-Partenkirchen, Germany.
- 9-30 p.m.—The Celebrity Trio.
- 10-0 p.m.—Weekly Newsletter and Sports Summary.
- 10-20 p.m.—Operatic Arias.†
- 10-30 p.m.—Close down.

MONDAY, FEBRUARY 10

- 4-30 p.m.—Big Ben. "Dragons and All That."* Being "Medieval Moonshine," or "A Night of Knights and Suchlike." Book and lyrics by David Kean. Music by various composers. Produced by William MacLurg.
- 5-10 p.m.—A Recital of Scottish Songs by Catherine Stewart (Contralto).
- 5-30 p.m.—"Books to Read."* Some suggestions for the listener's bookshelf by Eric Gillett.
- 5-45 p.m.—The BBC Northern Orchestra; leader, Alfred Barker; conductor, T. H. Morrison.
- 6-30 p.m.—The News.
- 6-50 p.m.—Grieg Concert.†
- 7-15 p.m.—Close down.
- 7-30 p.m.—Big Ben. Arthur Salisbury and his Orchestra, relayed from the Savoy Hotel, London.
- 8-15 p.m.—A talk by the Chief Engineer of the British Broadcasting Corporation.*
- 8-30 p.m.—A Recital by Winifred Bury (Soprano).
- 8-50 p.m.—Two Plays*: (1) "The Power and the Glory," a modern tragedy. (2) "Jessie's Eggs" (or "The Downfall of Septimus"), a radio play. Both by John Pudney. The two plays produced by William MacLurg.
- 9-30 p.m.—A Sonata Recital by Anthony Collins (Viola) and John Cockerill (Harp).
- 10-0 p.m.—The News.
- 10-20 p.m.—Dance Music.†
- 10-30 p.m.—Close down.

TUESDAY, FEBRUARY 11

- 4-30 p.m.—Big Ben. Sidney Torch, at the Organ of the Regal, Edmonton.
- 5-0 p.m.—Prose Reading.
- 5-15 p.m.—Musical Interlude.†
- 5-20 p.m.—The Norbert Wethmar Trio.
- 6-0 p.m.—The BBC Dance Orchestra,* directed by Henry Hall.
- 6-30 p.m.—The News.
- 6-45 p.m.—The BBC Welsh Orchestra; leader, Frank Thomas; conducted by Reginald Redman.
- 7-15 p.m.—Close down.

* Electrical recording.

† Gramophone records

FRIDAY, FEBRUARY 14

- 4-30 p.m.—Big Ben. "My Valentine."* A sentimental programme for St. Valentine's Day, devised by W. L. Hanchant and John Pudney.
- 5-0 p.m.—Talk: "Foreign Affairs."* Sir Frederick Whyte, K.C.S.I., LL.D.
- 5-15 p.m.—An Organ Recital by Ernest W. Maynard, relayed from Bath Abbey.
- 5-45 p.m.—"Barrel Organ."* A musical programme in praise of its immortality, with an introduction to its inner workings by Richard Pasquale. Devised by S. E. Reynolds and Cecil Madden.
- 6-0 p.m.—The BBC Dance Orchestra, directed by Henry Hall.
- 6-30 p.m.—The News and Announcements.
- 6-50 p.m.—The Birmingham Hippodrome Orchestra; conductor, Harry Pell. Relayed from the Hippodrome Theatre, Birmingham.
- 7-15 p.m.—Close down.
- 7-30 p.m.—Big Ben. Geiger and his Orchestra, relayed from Claridge's Hotel, London.
- 7-45 p.m.—"Lullaby."* Impression of a Scots-woman's life, by Valentine Dunn and Rosalind Wade. The folk-songs of Scotland are so woven into the warp and woof of the lives of her sons and daughters, that those "auld sangs" form an ever-present background to those who "fret their hour upon the Scottish stage." This programme draws upon these facts in homely fashion in its statement of the theme. Produced by Andrew Stewart.
- 8-15 p.m.—The BBC Northern Orchestra; leader, Alfred Barker; conductor, T. H. Morrison.
- 9-15 p.m.—"Celebrity Snaps"—No. 3.* A symposium of important and unimportant remarks people have made lately, compiled and presented in living form by Cecil Madden.
- 9-30 p.m.—Dance Music.†
- 9-45 p.m.—The Hotel Metropole Orchestra; leader, A. Rossi; under the direction of Emilio Colombo. Relayed from the Hotel Metropole, London.
- 10-0 p.m.—The News.
- 10-20 p.m.—The Hotel Metropole Orchestra (cont'd).
- 10-30 p.m.—Close down.
- SATURDAY, FEBRUARY 15.
- 4-30 p.m.—Big Ben. The BBC Midland Orchestra; leader, Alfred Cave; conducted by Reginald Burston. Alice Vaughan (Contralto). Orchestra. Greenwich Time Signal at 12-0 noon.
- 5-45 p.m.—"A Countryman's Diary."* A talk by A. G. Street.
- 6-0 p.m.—English Folk Songs.†
- 6-15 p.m.—The Children's Hour. Men and women who have done interesting things in all parts of the world will be facing the microphone—many of them for the first time—to tell you some true stories. Incidental music by the BBC Welsh Orchestra; leader, Frank Thomas; conducted by Reginald Redman.
- 7-0 p.m.—The News.
- 7-15 p.m.—Close down.
- 7-30 p.m.—Big Ben. The BBC Scottish Orchestra.
- 8-30 p.m.—"Wig and Gown," or "Law and Lobster Salad."* Being a little good-natured leg-pulling at the expense of those responsible for the administering of our complicated legal system. The programme devised by Robin Gerard and presented by William MacLurg.
- 9-0 p.m.—Dance Music. Ambrose and his Embassy Club Orchestra.
- 9-45 p.m.—The Broadhurst Septet.
- 10-0 p.m.—The News.
- 10-15 p.m.—The Broadhurst Septet (cont'd.).
- 10-30 p.m.—Close down.

* Electrical recording.

† Gramophone records

Phohi Programmes

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SUNDAY, JANUARY 19

6-30 p.m.—Dutch National Anthem and opening announcement.
6-35 p.m.—Music.
6-40 p.m.—Microphone debutants.
6-50 p.m.—Music.
7- 0 p.m.—"Latest News from Holland."
7-15 p.m.—Music.
8-25 p.m.—Music.
7-35 p.m.—Talk on behalf of the Dutch Y.M.C.A., by Dr. Engelberts.
7-50 p.m.—Music.
8-10 p.m.—Broadcast by the R.C. Broadcasting Association.
9-10 p.m.—Dance music.
9-30 p.m.—Closing down—Dutch National Anthem.

MONDAY, JANUARY 20

6-30 p.m.—Dutch National Anthem and opening announcement.
6-35 p.m.—Music.
6-40 p.m.—Violin recital by Sal Dwinger with piano accompaniment by Lo de Groot.
6-55 p.m.—Music.
7- 0 p.m.—"Latest News from Holland."
7-15 p.m.—Music.
7-20 p.m.—"Meeting of the Phohi Club."
7-40 p.m.—Music.
7-45 p.m.—Talk on sports.
8- 0 p.m.—Second part of the violin recital by Sal Dwinger.
8-15 p.m.—Dance music.
8-30 p.m.—Closing down—Dutch National Anthem.

THURSDAY, JANUARY 23

6-30 p.m.—Dutch National Anthem.
6-40 p.m.—Music.
7- 0 p.m.—"Latest News from Holland."
7-15 p.m.—Piano recital by Julius Hyman.
7-30 p.m.—Criss—cross through the Netherlands.
7-40 p.m.—Classical music.
8- 0 p.m.—Second part of the piano recital by Julius Hyman.
8-15 p.m.—Dance music.
8-30 p.m.—Closing down—Dutch National Anthem.

FRIDAY, JANUARY 24

6-30 p.m.—Dutch National Anthem and opening announcement.
6-40 p.m.—Station orchestra conducted by Luc Cohen.
7- 0 p.m.—"Latest News from Holland."
7-15 p.m.—Station orchestra.
7-35 p.m.—Talk on literature.
7-55 p.m.—Music.
8-10 p.m.—Talk by Mr. F. Z. Schalkwijk.
8-25 p.m.—Dance music.
8-30 p.m.—Closing down—Dutch National Anthem.

SATURDAY, JANUARY 25

6-30 p.m.—Dutch National Anthem and opening announcement.
6-40 p.m.—Music.
7- 0 p.m.—"Latest News from Holland."
7-15 p.m.—Music.
7-25 p.m.—News talk by Mr. L. Aletrino.
7-45 p.m.—Music.
7-55 p.m.—Accordion music by the Hodlars.
8- 5 p.m.—"From Mail to Mail in Holland."
8-15 p.m.—The Hodlars continue their program.
8-25 p.m.—Local colour talks.
8-40 p.m.—Music.

9- 0 p.m.—The Hodlars.
9-10 p.m.—Dance music.
9-30 p.m.—Closing down—Dutch National Anthem.

SUNDAY, JANUARY 26

6-30 p.m.—Dutch National Anthem and opening announcement.
6-35 p.m.—Music.
6-40 p.m.—Microphone debutants.
6-50 p.m.—Music.
7- 0 p.m.—"Latest News from Holland."
7-15 p.m.—Talk.
7-25 p.m.—Male voice choir.
7-40 p.m.—Music.
7-50 p.m.—Male voice choir.
8-10 p.m.—Broadcast by the R. Cath. Broadcasting Association.
9-10 p.m.—Dance music.
9-30 p.m.—Closing down—Dutch National Anthem.

MONDAY, JANUARY 27

6-30 p.m.—Dutch National Anthem and opening announcement.
6-40 p.m.—The Residential Quartet (Classical music).
7- 0 p.m.—"Latest News from Holland."
7-15 p.m.—Music.
7-20 p.m.—"Meeting of the Phohi Club."
7-40 p.m.—Music.
7-45 p.m.—Talk on sports by Mr. H. Hollander.
8- 0 p.m.—The Residential Quartet.
8-20 p.m.—Dance music.
8-30 p.m.—Closing down—Dutch National Anthem.

THURSDAY, JANUARY 30

6-30 p.m.—Dutch National Anthem and opening announcement.
6-35 p.m.—Music.
6-40 p.m.—"Short waves—long distances."
6-55 p.m.—Music.
7- 0 p.m.—"Latest News from Holland."
7-15 p.m.—International cabaret program.
7-45 p.m.—"Criss—cross through the Netherlands."
7-55 p.m.—International cabaret program.
8-30 p.m.—Closing down—Dutch National Anthem.

FRIDAY, JANUARY 31

6-30 p.m.—Dutch National Anthem and opening announcement.
6-35 p.m.—Music.
7- 0 p.m.—"Latest News from Holland."
7-15 p.m.—Music.
7-20 p.m.—Song recital by Nelly Sluizer.
7-35 p.m.—Music.
7-40 p.m.—Talk by Mr. M. J. Brusse.
7-55 p.m.—Music.
8- 0 p.m.—Second part of the song recital by Nelly Sluizer.
8-15 p.m.—Dance music.
8-30 p.m.—Closing down—Dutch National Anthem.

SATURDAY, FEBRUARY 1

6-30 p.m.—Dutch National Anthem and opening announcement.
6-35 p.m.—Microphone debutants.
6-45 p.m.—The Troubadours.
7- 0 p.m.—"Latest News from Holland."
7-15 p.m.—Talk.
7-25 p.m.—The Troubadours.
8- 0 p.m.—News talk by Mr. L. Aletrino.
8-20 p.m.—The Troubadours.
8-55 p.m.—Dance music by the Troubadours.
9-30 p.m.—Closing down—Dutch National Anthem.

HOW A RADIO SET COMES INTO BEING

A Plan is made

Following the co-ordination of many and varying factors a plan is made for the design of a new receiving apparatus and its subsequent introduction on the market. The manufacturer, the dealer and also the public have had very definite experiences in the preceding radio season with the types existing up to now; also market conditions have changed and receiving conditions been influenced through the increase in number and intensity of transmitting stations. Then again, in the course of the season the experts in the laboratories will have found new ways and possibilities in receiving technique, improved existing ones and penetrated still further into unexplored regions.

The exchange of ideas and opinions among the executives of the large radio factory regarding these manifold facts herald the birth of the new receiver type. Technical and commercial experiences now completed by the findings of the laboratory decide what design lends itself for future marketing and what construction will adapt itself best to present and future receiving conditions. The commercial management now will have to view the proposed methods from a price angle which should perfectly respond to the present state of the market. As soon as these fundamental questions have been cleared up the laboratory is instructed to prepare a model of the new type of receiver on the lines discussed.

As we are just now at the beginning of a new season it should be very instructive to elucidate the above with a practical example and to go still further into details. At this stage we'll be paying a visit to Messrs. Philips at Eindhoven, one of the largest radio works in the World, with the aim of making the acquaintance of the newly introduced receiver types, and also of ascertaining what were the decisive principles that influenced the trend of production.

"There are really two fundamental principles underlying this year's production," one of the prominent engineers explained to us. The one, which comes first throughout the entire manufacture, is adhered to quite generally. One could formulate it as follows:—The Philips brand must absolutely hold first place, not only owing to its world-famous quality as regards radio technique, but also owing to the well-designed and sturdy construction and absolute reliability. This first principle is almost automatically followed for the very reason that many years' training has made our personnel accustomed to produce the best only and consequently our workers will not be able to manufacture anything that is inferior in quality.

The second fundamental principle is governed solely by considerations of transmission and reception technique and has led directly to the elaboration of the new types of receiver now generally met with in the trade. To thoroughly understand this principle it will be necessary to subject the history of world-broadcasting to a close scrutiny.

A few years ago several manufacturers of receivers already began by adding to their sets what are known as "supplementary parts" for short-wave reception. This was done more with a view to meeting the propagandistic requirement of "offering customers a novelty" than as a result of a technical necessity. It soon transpired that those works which were sceptical about this trend and refused to follow it were quite right, for neither was it possible to hear anything in the short-wave domain that could interest a layman, nor were the "supplementary" constructions suitable for receiving technically useful short waves. Meanwhile, however, two circumstances presented themselves which not only made it desirable, but even essential to provide high-class receivers with a reliable short-wave section. In the first place because in the short-wave band of 50—16 metres regular broadcast entertainment has been developed. This owing to the great number of stations in this band and their excellent programmes forms a splendid addition to the standard reception on long and medium waves. On the short waves it is also possible to hear far-distant continents and this opens up a large, unlimited field which had hitherto been unknown.

These preparations with regard to transmitting technique could, however, only be utilised as a result of the second circumstance, which on the receiver side presented itself just in time. For short-wave reception the best is only just good enough! Previously it was not possible, even with the most ingenious device, to achieve true reliability in reception. It was the invention of the Octode, the converter valve which put new life in the old superhet, and made it possible to build receivers capable of giving uniform performance on each waveband.

The concurrence of these two circumstances—entirely new broadcast—entertainment on short waves and the possibility of elaborating with the aid of the new Octode the necessary apparatus for the reception of these new radio departure—has been mainly decisive in the design of their new sets.

It soon became clear that only high-class receivers could be provided with a short-wave section, because high-quality workmanship must needs accompany satisfactory short-wave reception. The standpoint adopted by Philips has never been one of complacency with their own products: the short-wave section of a set must not just be a publicity fad, which later on is sure to cause disappointment to listeners, but it must always operate in a reliable manner. However, this demands an expenditure that would not be justified for the cheaper class of receiver.

Lower-priced receivers, too, though not provided with a short-wave section, had their fundamental principle governed by the new wonder-valve, the Octode. It was this valve that first enabled set-makers to devote themselves entirely to building superhets. What in previous years had been largely attempted through unsuitable means was now to be put into practice with the certainty this time that the highly-sensitive Superhet circuit, stripped of all its faults, could be placed entirely at the service of radio reception.

Some idea can now be formed as to how the plan to build a new series of receivers originates in the Works in a perfectly logical manner, based on facts and experience. It is perfectly well known what should be constructed, what corresponds to the latest demands made by technique and what the market requires.

The Preparatory Stage

When everything has been settled in the Works regarding design, drawings are prepared and a few models of the new types made. The conscientious manufacturer does not confine himself by any means to testing the models in the laboratory or the home city only, but he sends his sets to all parts of the world, so that they may prove their worth under all conditions imaginable. Preference is given to testing-stations that are very close to a transmitting station, with a view to testing selectivity to the utmost; the models are also operated in very disturbed centres, with a view to studying their behaviour under the most unfavourable reception conditions.

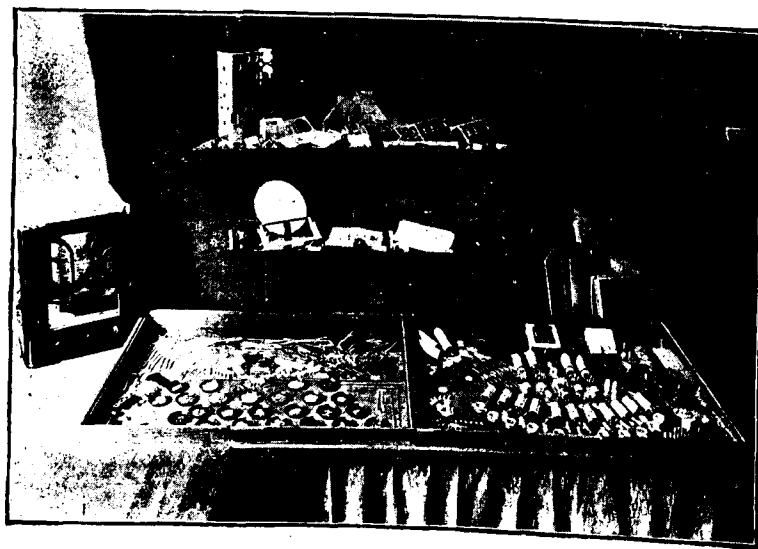
The special desires and requirements of listeners in individual countries have also to be considered as far as possible. There are districts in which reception on long wavebands is specially preferred, again in other districts the wavelengths under 300 metres must be received to perfection. In the one place added selectivity is necessary in view of the presence of a powerful local station near by; the greatest possible range and sensitivity impose themselves because of the country possessing but one single station or several weak transmitters. But in spite of the often very contrasting wishes as regards selectivity and sensitivity, best possible reproduction is desired. Also as regards appearance tastes differ very much so that one country may like smooth, simple shapes, whilst another territory may prefer decorations and ornamentations and look at a radio receiver in the light of a piece of furniture or an article of decoration rather than think of it in terms of a mechanical instrument.

All these observations and experiences have now to be collected as thoroughly and as quickly as possible, in order to use them as a basis for the improvement of the initial receiver in the

laboratories. When this has been done the preparatory stage may be considered terminated and actual manufacture can begin.

Manufacture

Who can answer this question: Of what "raw materials" does a modern radio receiver really consist? In order to make it easier for you, we will leave radio valves out of consideration for the present. Judging by the appearance of the smooth, neat wooden cabinet one would not think that a great number of the most varied materials have been housed inside it, materials which together produce such wonderful performance. Well, in the first place we need some metals: first we have sheet-iron, from which the chassis-frames and the screening-plates have to be stamped. This sheet-iron, by the way, must first be subjected to a chemical treatment to make it rust-proof. The sheet-iron serves so to speak as a scaffolding, as a support for the receiver; the same material is also used for manufacturing the holders for loudspeaker cones. In the second place we need copper wire, not



The "raw material" of a modern receiver.

only for connecting the different circuit elements, but also as raw material for the coils and stranded wire. Thirdly brass is required, for the rotary condensers are for the greater part made of this metal,—the plates, axles and casings are of brass—and also the smaller smoothing condensers. For electrolyte condensers, however, we need a fourth metal, aluminium, which is also used in other components. In the fifth place we find, on analysing, a steel alloy of which the permanent magnet of the loudspeaker is composed. But we must not forget iron, though tucked away deeply in the core of a transformer or a small coil.

However, besides the metals mentioned a number of other materials are needed if we are to build a receiver. We need "Philite"—that wonderful product of the Philips Works made up of artificial resin which can be used as insulating material as well as for all kinds of mechanical constructional parts, owing to its almost incredible adaptability. The parts made of "Philite" are the knobs by means of which the set is controlled; "Philite" is again used for the frame of the large dial which during reception lights the way to all stations. The valve bases and many switches have also been pressed out of the "Philite". But we need still more, for we must have porcelain, glass and mica. Porcelain is used in rotary condensers; the bodies of the cylinder coils are of glass of a special composition and make an excellent dielectric after long laboratory experience, and the small condensers known for a long time as "mica condensers" naturally contain mica. For other condensers paper and paraffin must be available. Rubber is important in the manufacture of different insulating parts and for use as a base; silk and lacquer are used for the manufacture of insulating tubing for bare wire, the window of the tuning dial is generally made of celluloid, like the dial itself, and finally—the last material that we need and

which is the first to catch the eye in the finished product is the wood which goes into the cabinet.

It will be clear that all these raw materials have to be subjected to special and partly very complicated treatment before they can be used in the construction of a receiving set. A description of the manufacture of the wire would of itself be enough to fill a book. It must suffice to mention here that a large radio factory like the Philips Works in Eindhoven, handles most of the raw materials mentioned in numerous auxiliary factories of its own, where thousands of workers press, stamp, turn and forge them, in fact make them suitable for their purpose.

It will now no longer be astonishing to hear that the electrical switching elements in the circuit of a modern radio receiver, for instance, of the new type "Philips 535" amount to no less than

30 coils
31 resistances
50 small condensers
17 metres of wire.

Quite a number of parts, such as transformers, switches, valve sockets, etc., have not been taken into consideration here.

When all components and switching elements are ready for assembly, they are transferred thousands at a time to the giant stock-room, which in a way is the antechamber to the conveyer band, for the factory halls in which the conveyer bands are operating actually adjoin these stock rooms. The conveyer band itself has already been described so often that it will suffice here to mention that also in the assembling of a radio receiver hundreds of expert workers are busy on both sides of the band completing their part of the assembling operation. It must be admitted that practically every worker is an artist in his or her domain; especially those workers responsible for soldering the wires and contact-places hold a record of wonderful accomplishment as regards precision and speed.

The different operations of assembling a receiver on the conveyer band fit together like the links of a chain that is running perfectly uniform. The first worker receives the chassis bent to shape and provided with all holes and screw-threads, and rivets the valve sockets to it. This work only takes a few minutes; then he takes up another chassis and at the same time deposits the chassis he has just provided with sockets on the conveyer band beside him. Immediately the worker in the second place sets about providing the contacts of the valve sockets with the necessary wires, which he takes, ready bent to shape and insulated, from the stock cabinet at his side. And thus the ever-growing piece moves from place to place till it has got so far that the circuits and the connections to the switching elements have been effected. Now the first electrical test is made at the conveyer band; current is passed through the different connecting wires and a worker can see from the deflection of the measuring instrument whether the leads are in order. This intermediate test in an unfinished stage saves much time and trouble later on, for the later testing places need only refer to this stage of development when a fault has to be eliminated. The chassis arriving at the end of the conveyer it is completely fitted up with all parts and wires; it is now only necessary to insert the valves and fix the complete assembly in the wooden cabinet that is awaiting it—the radio receiver is now ready.

The Testing Sections

Life is not made easy for a newly-born receiver. It has to live through severe tests before it is considered fit to go out into the world. The first test will probably be the most unpleasant for our candidate: He is placed in an iron cage, contacts are fitted to him and the cage-door is then closed. At the same time a high-tension circuit is closed and a voltage of 1500—2000 volts flashed through the set. All parts must now show what they can stand. No wire may fuse, no condenser may break down, no resistance become weak. In its whole later life a receiver

will probably never again be subjected to anything like this load; if it is able to stand this test it will certainly be able to cope with any voltage that it may be exposed to later on.

The H. T. test completed there are several other tests with a view to establishing whether the sensitivity and the sound range of the set satisfies all just requirements. The calibration of the dial must be correct to a degree of dependability and also the pick-up switch has to undergo a practical test. All these tests are effected relatively quickly, because long before that individual components were subjected to a check that goes far beyond what will ever be required of such parts. As an example of this we would mention that the knobs and the "on and off" switch are turned to and fro thousands and thousands of times by an ingenious device to establish whether or not they are capable of standing up against such mechanical overloading.

Besides electrical safety there must also be a guarantee that the receiver is able to cope with all mechanical requirements. Not because it is feared that the radio listener will handle his set carelessly; it must be considered that during transport, which sometimes means a journey round half the world, and during trans-



Testing sections: The "tropical cabinet."

shipment to other means of transport, goods are not always handled with the necessary attention. For that reason one must be certain that the receiver is able to stand all kinds of vibrations. In the factory there is a special testing stand for this purpose which, in view of its construction and manner of working, is called the "hammering table" or the "vibrating table". The receiver is placed between two iron plates resting on a movable base. A heavy pneumatic hammer hits the lower plate sharply and powerfully, so that the receiver is vibrated to and fro. The whole test may only last a few seconds, for owing to the enormous vibration every construction would simply fall to pieces during a longer test; however, in the time fixed our radio set must not only hold out, but neither a single wire nor screw-connection may have become broken or loosened.

One can imagine that having safely passed the test on this table of torture there will hardly be any danger of the set ever having to suffer from mechanical vibrations. The Works, how-

ever, are not yet satisfied and apply another test when the apparatus has been packed, for the cardboard packing-boxes must be constructed in such a manner that they can stand up against violent shocks and knocks. To check this the set in its packing is placed on a small machine which lets the box drop like lightning from a height of some 5 feet. If it is found that this drop on a hard stone floor has not had any detrimental effect either on the receiver or its packing the test for mechanical strength is passed.

We do not wish to close our discussion of testing sections without referring to a special device which proves the meticulous care with which a large radio factory tests its products before they are delivered to the World. Manufacturers who have to supply all parts of our globe, like the Philips Works in Eindhoven, have to bear in mind that in tropical countries climatic conditions may have a very detrimental effect on the receiver's components, due to either heat or moisture. This question has again become topical because of the tremendous growth of short-wave reception and the manufacture of receivers entering into consideration for this purpose, for it is in these tropical countries that short-wave reception plays such an important part, permanent communication with the cultural centres of the temperate zones having become possible through its agency.

For this reason there is a special testing section for deliveries that have to be effected to the tropics, which is called the "Tropical Cabinet" and deserves special mention:

If we wish to become acquainted with the way such a tropical cabinet works we must present ourselves at 9 o'clock sharp at the testing section of the Philips Works in Eindhoven. There, in a corner of the testing room is a massive iron cabinet, which vaguely reminds one of a safe. Fixed to its sides are numerous switchboards and contacts and the space between the heavy double door is filled with thick glass so that one can easily look inside the cabinet.

"That used to be a lacquering oven" our guide explained, "and we have transformed it into a tropical cabinet to enable us testing whether our sets and their components are tropic-proof. With the aid of an electric current and water vapour we duplicate the temperatures and conditions of moisture existent in the tropics. The cabinet is opened every morning at 9 o'clock so that new sets may be placed in it and old ones removed from it, and then it is closed and locked again for 24 hours. The changing of receivers is effected with despatch to avoid interfering too long with the internal atmospheric conditions."

We know it now. An artificial tropical day is produced inside this cabinet. It is most remarkable that exactly the same heat and the same fluctuations of dampness as in the tropics can be produced. Thermometers and hygrometers that can be easily read from the outside make continuous supervision easy. In order that dry heat shall not upset the procedure there is a basin of water at the bottom of the cabinet, which is heated up and evaporates slowly.

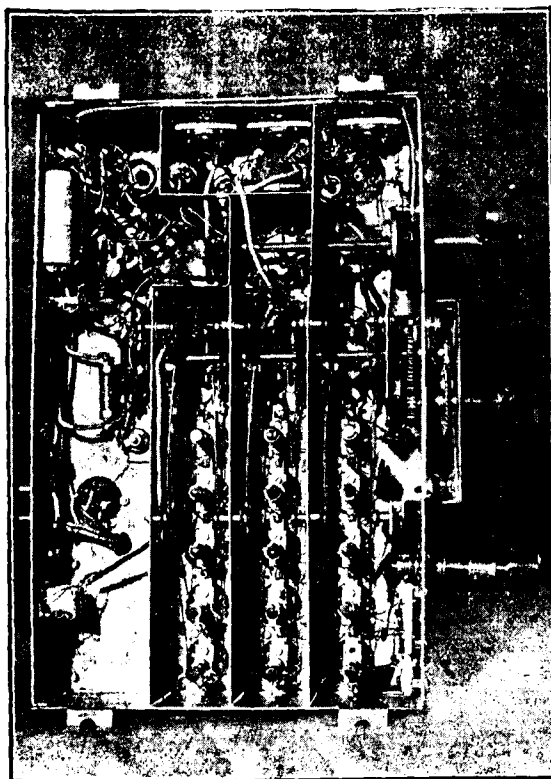
Those sets with which special random tests have to be made, can remain uninterruptedly in this hatching-oven for a period of 3 months and after that time they must not show any changes in their switching elements or other constructional parts. At the termination of this test one has the absolute certainty that receivers treated in this manner will also in their series-manufacture be able to meet all requirements of tropical climates.

Safety first

The testing sections have to take special care that the set meets all requirements as regards the personal safety of the person controlling it. As this point is pre-eminently a matter of public interest, allow us to go more deeply into the subject.

It is high time that people in all circles realise that the radio receiver, especially when it is a mains-receiver, is just as much an electric household aggregate as a lamp, an iron or a vacuum cleaner. And just as these universally-used instruments may not be introduced on the market and utilised until they satisfy very definite legal safety regulations, the highest demands must be made on a radio set, so that it affords the greatest personal safety to its user.

In the case of the first-mentioned installations such as irons, vacuum-cleaners, etc., one knows that the authorities take care that no unreliable articles come on the market. In most civilised countries electricians are not allowed to work unless they have



Underside of a modern receiver.

been examined and possess a license. One might conclude from this that also radio receivers, owing to the fact that they are also part of the high-voltage installation of a house, have in any case

passed an official safety examination and though they might break down in use they would never become dangerous.

This conception is logical, it is true, but unfortunately it does not agree, or rather not yet agree with actual facts.

Certainly, the state of affairs at present is not entirely primitive. The sense of responsibility of a number of reliable manufacturers led the latter about 11 years ago to form an international association that is still little known to the general public. The task of this association is making the entire output of the electrical industries and the employment of such products dependent on compliance with very sharply-defined safety regulations. This "I.F.K." or "Installations-Gragen-Kommission" which was established about 11 years ago at the suggestion of the Netherlands Testing Section under the management of Prof. van Staveren, has standardised up to now the regulations for plug devices, box switches, fuses, sockets and lately for radio sets, and it is endeavouring to induce the governments of all countries to make its very far-reaching safety regulations, which often are more severe than the national ones, a condition for import and trading permits. In other words an earnest endeavour is being made to legally confine the sale to such apparatus that have been tested by the I.F.K.

It is in the interest of the broad masses of listeners, a matter of their own safety, that the efforts of the I.F.K. shall have success. It should be brought to the notice of all that carelessly-constructed and cheap radio receivers are a continual bodily danger to their owners and their families; some fateful day one may easily come into contact with some "live" part!

The testing sections of the large factories and especially of those affiliated with the I.F.K. take great pains that their products comply with the requirements of the I.F.K. It is for this reason that the owner of a "branded" receiver has the advance assurance that his set meets the safety requirements in every respect and that electrically it will never be a danger to him.

Now that we are fully informed on this subject we will be able to esteem at its correct value the testing section of a large radio factory, for it not only takes care of the set's perfect performance, but beyond that it also guarantees perfect safety for the persons operating the receiver.

And now, after all tests have been passed successfully, our set reaches the tremendous stock-rooms with its thousands of brother-sets and waits there till the hour arrives when it has to be packed and sent out into the world bringing into the home perfect radio enjoyment. We know now for a certainty that it will fulfil its task in a reliable manner.

Madras Programmes

Daily from 5 to 7 p.m., School Programme from 4 to 4-30 p.m., on School days

V. U. M. 770 Kc/S (390 m.)

MONDAY, JANUARY 20

- 4 p.m.—Karatikal Annaiyar.*
5 p.m.—Miss S. K. Kannammal, South Indian Music, (Vocal).
5-45 p.m.—Radio Talk No. 48 on "The Importance of Tuberculosis Institutions in the Prevention of—Tuberculosis—The Colony, The Settlement and the Preventorium," by Rao Bahadur Dr. M. Kesava Pai, O.B.E., M.D.

TUESDAY, JANUARY 21

- 4 p.m.—Music.
5 p.m.—Mr. V. Lakshminarayanaia, South Indian Music, (Vocal).

WEDNESDAY, JANUARY 22

- 4 p.m.—Poramai Pei.*
5 p.m.—Mr. Prabhunaryayan, Hindustani Music, (Vocal).

THURSDAY, JANUARY 23

- 4 p.m.—Music.
5 p.m.—Mr. M. K. Kalyanakrishna Baghavathar, South Indian Music, (Veena).

FRIDAY, JANUARY 24

- 4 p.m.—Raja Raja Cholan.*
5 p.m.—Miss K. Nagambujam Ammal, South Indian Music, (Vocal).

SATURDAY, JANUARY 25

- 5 p.m.—Mr. Malayappa Iyer, South Indian Music, (Vocal).

SUNDAY, JANUARY 26

- 5 p.m.—Shri Veena Dhanammal, South Indian Music, (Veena).

MONDAY, JANUARY 27

- 4 p.m.—Buddha.*
5 p.m.—Master C. N. Pandurangan, South Indian Music, (Vocal).

TUESDAY, JANUARY 28

- 4 p.m.—Music.
5 p.m.—Mr. H. Yegneswara Iyer, South Indian Music, (Vocal).

WEDNESDAY, JANUARY 29

- 4 p.m.—Kannappa Nayanar.*
5 p.m.—Mr. M. Khaja Mohideen Sahib, Hindustani Music, (Vocal).

THURSDAY, JANUARY 30

- 4 p.m.—Music.
5 p.m.—Shri C. Lakshmikantham Ammal, South Indian Music, (Flute).

FRIDAY, JANUARY 31

- 4 p.m.—Yelankoadigal.*
5 p.m.—Shri Ponneri Saradambal, South Indian Music, (Vocal).

*Stories for School Children.

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THE AUTOMOBILE ASSOCIATION OF SOUTHERN INDIA

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Use the above argument to induce your motoring friends to join the A.A.S.I. An application form is subjoined.

DEAR SIR,

I forward herewith my application for membership of the Automobile Association of Southern India and enclose Rs. being my annual subscription for one year from this date, the badge fee and cost of fitting (see below).

Please send me a copy of the rules and a badge with a fitting suitable for (see below)

(Signature)

TO

THE SECRETARY,
A.A.S.I., P.O. Box 352,
Mount Road, MADRAS.

For Office use only.

Date

Name of Member

Address

Member proposing

Ackd.

Entd.

Cheque/Cash/M.O.

Badge No.

Fitting No.

Elected

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No. 1 for Any round bar (state diameter)	Re. 1-4-0 each
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No. 5 " Any flat bar or plate	Re. 0-12-0 each
No. 6 " Two long bolts with plates for securing badge to front of radiator	

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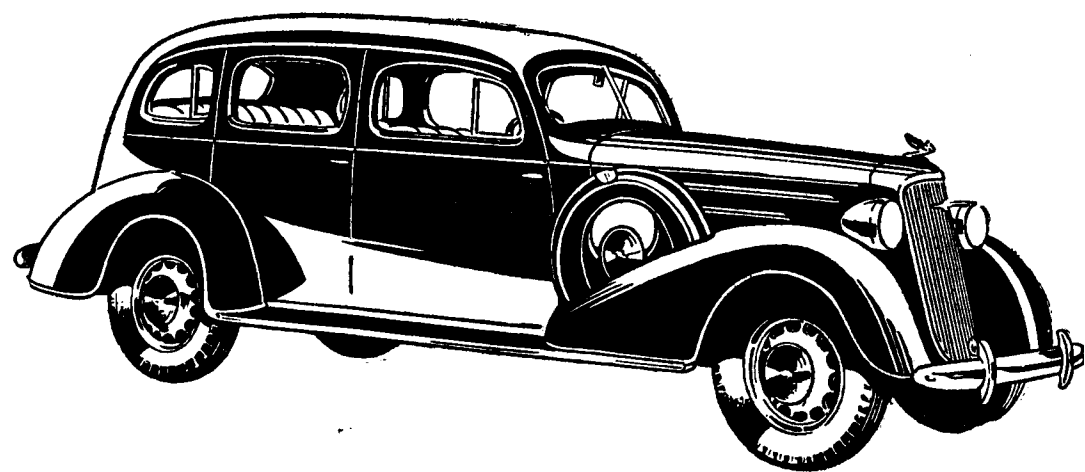
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Ordinary car or



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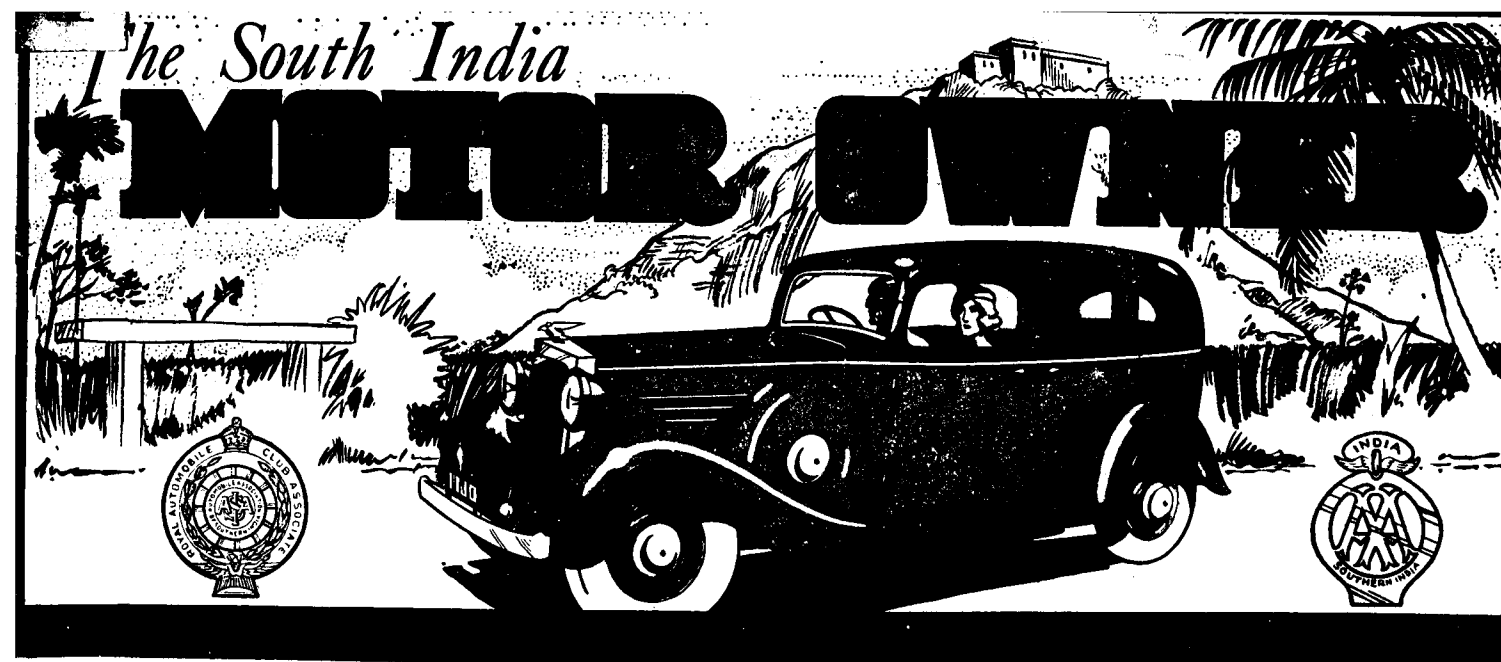
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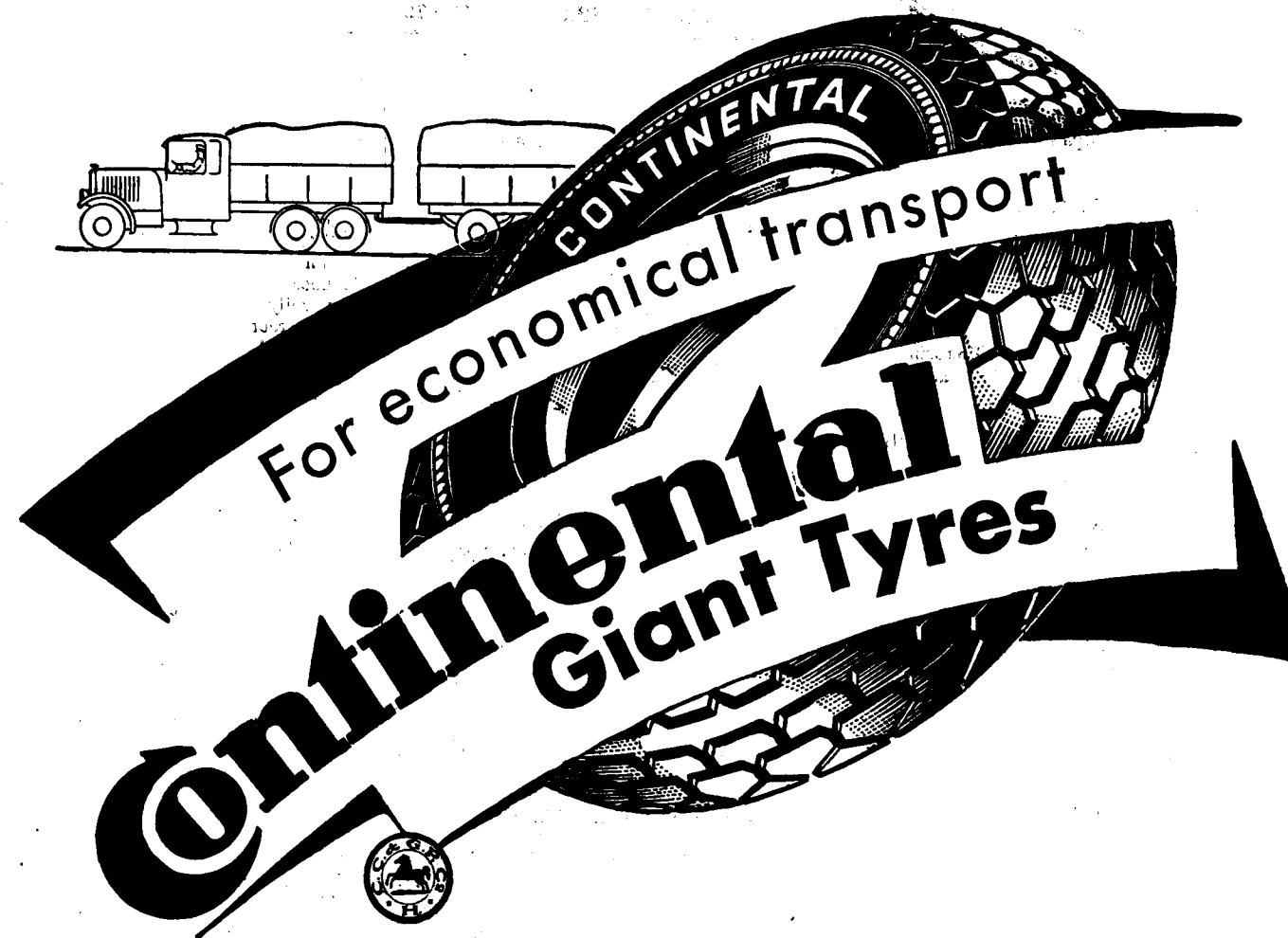
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FEBRUARY 1936

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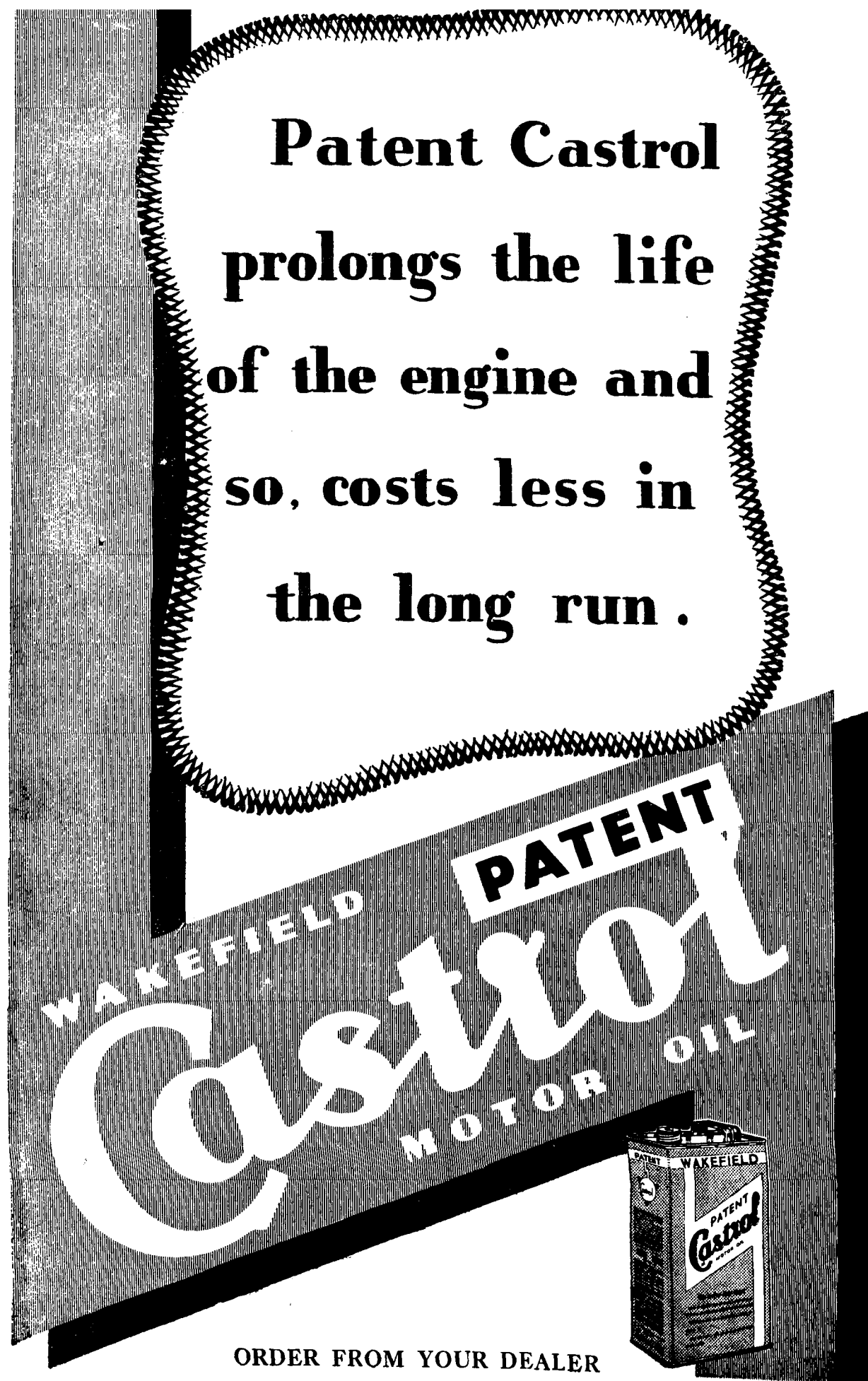
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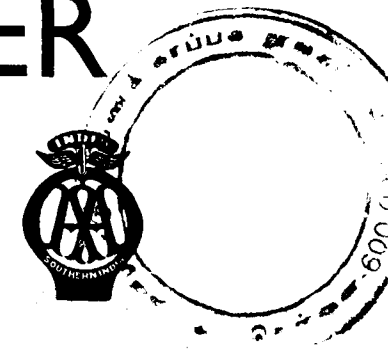
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The Official Organ of the
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Volume VIII Number 2

FEBRUARY 1936

Notes and News for A.A.S.I. Members.

Road Information

The weather having been consistently fair there has been little change in road conditions throughout Southern India, beyond continuance of that regrettable deterioration of road surfaces upon which there has been much comment of late. When will those responsible for our roads realise that "a stitch in time saves nine" is an adage which applies as aptly to road maintenance as to any other form of repair work. The fact that many crores of the tax payer's money has been sunk in roads, and that road transport is still regarded as one of the main sources of revenue, appears to be a matter of small moment.

In this connection it may be noted that the Automobile Association of Southern India, as well as a number of other public bodies interested in roads and road transport, have addressed a memorandum to Sir Otto Neimeyer, (who is conducting an enquiry into the financial arrangements for the coming constitution) urging a fair sub-division between the Central and Provincial Governments of revenue derived from import duties on motor vehicles and their accessories and excise and import duties on petrol.

As matters stand at present only a very small portion of the total revenue is devoted to roads; i.e., 25% of the Petrol revenue which goes to the Road Development Fund and is distributed to Provinces primarily for road development.

Kistna Anicut

An important item of road information, so far as touring motorists are concerned, is that the Kistna Anicut Road near Bezwada is now free from water and that the roadway will be fully restored and opened to road traffic on 5th February. Needless to say the road will again be closed early in June, in anticipation of the periodical floods which the South West Monsoon will occasion.

Wenlock Causeway

In the January issue of this Journal mention was made of the silting up of the Palar River Causeway near Chingleput. Now comes similar news from the Wenlock Causeway which carries the Madras-Calicut Trunk Road across the same river between Ranipet and Arcot Town. It appears that when the Xmas rains fell, the heaps of sand which had been banked on either side of the causeway, converted the roadway into large stagnant pools and gave every indication that a spate in the river would quickly cover the roadway with sand several feet deep. This in spite of the fact that it is only a couple of years since a considerable sum of money was expended on improving the causeway. Incidentally neither the Wenlock Causeway nor the Palar River in its vicinity has been mentioned as a possible bridge site in the scheme for road development now before the Madras Government. This, most probably, is because the Ponnai River near Tiruvellam, only 5 miles distant, is being bridged at the moment, and there may be an idea of abandoning the Wenlock Causeway as a crossing for the Trunk Road, and taking up a new alignment *via* the new (Ponnai River) bridge and Katpadi and carrying the Calicut Trunk Road across the Palar River by the ancient arched bridge that already exists between Katpadi and Vellore. However, if available information is correct the days of this ancient bridge are numbered, it having already been sentenced as unfit for certain types of heavy vehicle; so something should be done to ensure uninterrupted communication across the Palar River in the neighbourhood. It would be interesting to learn what the local engineer thinks about it.

Tungabhadra River

While on the subject of bridges it may not be out of place to revive an old subject and review the situation in the light of recent events. A year or so ago it was rumoured that there was a project for bridging the Tungabhadra River near Madhavaram in Bellary District and the Kistna River near Raichur in order to provide uninterrupted road

communication between the Madras Presidency—Mysore State and, H. E. H. The Nizam's Dominions, with a prospect eventually of uninterrupted road communication with Nagpur and the North. Up to date it remains little more than a rumour and one is inclined to ask WHY? A study of the map seems to furnish a reply. The Madhavaram and Raichur sites are not very far distant from the M. & S. M. Railway Main Line—Wadi—Guntakal Section—so would not be favourably viewed by the administration of that railway and possibly (and in consequence) by the Government of Madras, though quite satisfactory so far as Hyderabad State is concerned. Alternative sites suggested by the map would be near Kurnool, on the line of the existing Bangalore—Kurnool Trunk Road, but these would be very close to H. E. H. The Nizam's State Railway, Secunderabad to Dronachelam, so are not likely to find favour with The Nizam's Government, though no doubt quite acceptable to the Madras Government.

It seems fairly obvious that whichever of these two lines are taken, two large bridges will be necessary, one for the Tungabhadra and one for the Kistna. Since the cost of bridging the Tungabhadra in either case would have to be shared by the two Governments, it follows that there will have to be agreement before a decision is arrived at and it is most probable that herein lays the cause of delay. However, what the public want is uninterrupted communication between the South and the North and to the lay mind it would appear to be just as easy, and considerably cheaper to have only one bridge at a site downstream of the point where the two rivers join about 20 miles N. E. from Kurnool, which would not materially affect either railway. Whether, or not, a suitable site for a bridge can be found near the point indicated is a matter for experts to decide. What is most patent to the lay mind is, that it is incredible that there should only be one bridge across the Tungabhadra—Kistna River throughout its length of 700 miles, and that at Harihar some 500 miles from the sea.

The Motor Vehicle Taxation Tangle

The chaos that can be created by the independent action of a number of self-governing provinces and states in a vast sub-continent like India is daily becoming more and more apparent. When the Madras Government introduced provincial motor vehicle taxation and abolished tolls in 1931, many motorists residing in the Madras Presidency regarded it as a measure of relief and looked forward to the day when neighbouring States would follow suit. At that time the Madras M. V. Taxation Act allowed for a short period of exemption in favour of visiting motorists and persons newly acquiring motor vehicles. The periods during which exemption was admissible covered the last 14 and the first 14 days of the quarter and in combination allowed a total of 28 days sufficient to cover, for instance, the Xmas Holiday season. However, after the Act had been in force for one year, and presumably because there had been much abuse of the privilege with consequent loss of revenue, but also presumably, because the neighbouring Indian States continued to levy tolls on Madras registered vehicles, the law was altered and the exemption privilege was withdrawn, in spite of representations made from

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was withdrawn, in spite of representations made from

several quarters that the revised Act would operate very harshly on *bona fide* visiting motorists and tend to restrict unduly the circulation of motor vehicles.

Shortly afterward the small province of Coorg followed the lead of the Madras Government and imposed a similar taxation law, but entered into a reciprocal agreement with Madras by which a small measure (a very small measure) of relief was granted to visiting motorists.

Now we have that go-ahead State-Mysore-imposing something entirely new in the way of motor vehicle taxation which makes one wonder to what extent it is retaliatory. Mysore now levies a State M. V. Tax *in addition to tolls* and to make sure that it is paid by visiting motorists, collects it at the frontier toll gates.

Bangalore (C. & M. Station) which lies entirely within Mysore State, but is not part thereof, has had its own M. V. Tax regime for some years past, and the application of the Mysore State M. V. Tax Regulation caused considerable concern and inconvenience to motor owners resident in Bangalore because the dividing line between the two administrations was practically non-existent—the daily routine of the residents taking them across the dividing line very frequently. However, an agreement was quickly arrived whereby there is complete reciprocity between Mysore State and Bangalore (C. & M. Station) on

the road development fund which eventually goes to the provinces and States in proportion to their consumption of petrol.

This multiple taxation by provinces and States really appears uncalled for. Motor vehicle taxes are levied essentially for user of public roads and presumably bear some relation to the approximate damage that a vehicle can do to the road in a given time. No vehicle can be in more than one place at any one time, so the extent of the damage does not vary merely because the vehicle moves from one area to another. Why, then, require the owner to pay again and again? What a province or State "loses on the swings it will again on the roundabouts". Every vehicle that is away from its home area ceases to use and do damage to its home area's roads and the home area is the gainer, so why should it not reciprocate with the neighbouring area which for the time being is the loser by bearing the burden of the visiting motor vehicle. No adjustment of revenues appears desirable or necessary provided every motor vehicle in use pays tax in at least one province or State, a matter that is subject to very easy check.

This matter of reciprocity appears essentially one in which the Central Government should take a serious interest as it will be the greatest loser in the long run, if as a result of the multiple M. V. Tax levies, motor transport development is stifled.

WHEN VISITING MADRAS

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the subject of M. V. Taxation, payment of tax to one administration covering the vehicle in the other.

But what of the motoring visitor to Bangalore? A decision recently arrived at by the Bangalore (C. & M. Station) Municipal Commission indicates that a visiting motorist who pays Mysore M. V. Tax at a frontier toll gate on entry, and obtains a licence for display on his vehicle, will have to pay the Bangalore M. V. Tax if he remains in Bangalore for more than 14 days (and presumably will have to display both a Mysore State and a Bangalore Licence simultaneously on his vehicle). This will be double taxation with a vengeance.

It will most probably result in a very big fall off in the number of motorists who visit Bangalore annually for purposes of health or pleasure and will inevitably react on the prosperity of that popular summer resort, and on the trades people who are its mainstay.

When will the authorities realise that these repressive measures will surely kill the goose that lays the golden egg? The motorist as a class is probably one of the most heavily taxed in India and every mile that he runs his vehicle means more money to the national coffers; directly by way of the petrol tax, and indirectly by way of import duty, on new cars, tyres, spare parts and accessories.

Cut down the mileage run, the Central Government's revenues will be reduced and consequently the income of

Customs Duty—Drawback Rules

A decision of considerable importance to motor vehicle owners who may anticipate taking their vehicles out of India in the near future has just been arrived at by the Government of India. It has relation to the system of drawback of customs duty which has hitherto been admissible where a motor vehicle has been re-exported within two (or three) years of the date of importation, when a refund of 7/8ths of the amount originally paid as import duty on the vehicle was refundable.

The new rule, which refers only to motor vehicles which have been taken into use between importation and re-exportation (*i.e.*, not to new and unsold vehicles) allows drawback of customs only if the vehicle is re-exported within twelve months from date of importation, and fixes the amount of drawback (or refund) at varying rates, according to the actual periods, as follows:—

Length of period between date of importation and date of re-exportation. *Amount of duty to be repaid as drawback.*

Not more than 4 months—	3/4ths of the duty.
More than 4 months but not more than 8 months—	5/8ths of the duty.
More than 8 months but not more than 12 months—	1/2 of the duty.

It is very interesting to note that this new rule will not apply to motor vehicles imported into India before the 25th January 1936, so it is not likely to seriously affect many present owners. However, it is a point for consideration by any motorist about to acquire a new vehicle and who may anticipate taking the new vehicle home when proceeding on leave or when permanently leaving the country.

A new Value to A. A. S. I. Membership

Details have just come to hand of an incident which gives a new value to the membership card which is issued to every A. A. S. I. Member to enable him to enjoy the privilege of making use of P. W. D. Bungalows in the Madras Presidency, and certain other concessions.

A member who was in the habit of carrying his membership card in his purse, was unfortunate enough to lose his purse in a railway train. The purse eventually came into the hands of the Lost Property Office who, finding the membership card, at once communicated with the Secretary, A. A. S. I. who was able to put the owner of the purse in touch with the railway authorities, much to the satisfaction of the owner, as the purse contained cash and articles of some value.

An alternative would be the education of motor drivers and this is being taken in hand by the Automobile Association of Southern India. However, much assistance can be given by the employers of motor drivers, who might instruct their drivers not to abuse the motor horn, which is designed for use as a warning of the approach of the vehicle to which it is attached; NOT to threaten other road users with bodily injury if they do not "clear the way."

In this connection it may be stated that Belgium has recently adopted a law which entirely forbids the use of motor horns and cycle bells between the hours of 10.0 p.m. and 7.0 a.m., and imposes a heavy fine if a horn or bell is sounded during the day-time except in dire necessity, as for instance, to prevent a collision.

Some day we may have a similar law in Madras, but in the meanwhile every motor driver should endeavour to make such a law unnecessary by a more intelligent use of the horn than is displayed in Madras City at present.

Short Period M. V. Licences in Madras

As we go to press, a scheme for introducing a system of monthly and weekly M. V. Tax Licences will be engaging the attention of the Madras Legislative Council.

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Unnecessary Noise in the Streets

A motorist who has spent a considerable time in Calcutta, Bombay, and other Indian Cities, and has recently returned from Home Leave, has stated his opinion that the noise caused by motor cars in Madras City far exceeds that in any other part of India, and ascribes this to the incessant and frequently unnecessary use of motor horns of all types.

This complaint is not a new one; articles on the subject having frequently appeared in the public press, but to little purpose. Many motor drivers in Madras, particularly taxi drivers, appear to rely entirely on the horn to ensure their own safety; regardless of the fact that it is their duty not to interfere unnecessarily with the progress of other road users, be they motorists, cyclists, or pedestrians. One has only to live, or have an office on or near Mount Road, somewhere between Government House and The Neil Statue, to realise how nerve wracking the continual horn blowing can be, and to look forward to some action which will bring a measure of relief.

A period of silence has been suggested as a remedy, but such a measure would be fraught with considerable risk of danger to human life, having in view the complete lack of road sense displayed by pedestrians and the drivers of slow moving and badly lighted vehicles such as juktas, rickshaws, bullock-bandies and hand-carts.

The idea no doubt has its merits, but why the necessity for short period licences when practically every other province in India, and every civilised country in the world has already adopted a scheme which allows an initial period of exemption from taxation for *bona fide* visiting motorists. As mentioned in another article in this Journal on the subject of motor taxation a vehicle cannot be in two places at one and the same time, so there should be no need for multiple payments of road tax so far as private motor vehicles are concerned; provided of course every such vehicle pays a road tax to at least one Indian Administration. If a census was taken of the private motor vehicles entering and leaving any administrative area throughout (say) a half year very little variation would be found in the number of vehicles proceeding in each direction. It follows, therefore that any large increase in the number of vehicle-miles covered by private motor vehicles in any one administrative area is a very remote possibility and that the cost of road maintenance in any area should not be more than it would be if the passage of private motor vehicles from one area to another was entirely barred. The case for complete reciprocity in the matter of road taxation for private motor vehicles between all administrative areas thus appears to be clearly established. Again we ask "Why the necessity for short period licences"? We would go further and ask "Why the necessity for multiple payments of road tax"?

In dealing with this matter public service vehicles which ply backward and forward over the same route daily, frequently more than once a day, have not been considered. The damage that these vehicles do to the roads can be fairly accurately assessed and apportioned to the several administrative areas concerned. Reciprocity in this case, though equally desirous, in the interests of free circulation, is not as essential as in the case of privately owned and operated vehicles.

It is hoped that the Madras Legislature will take a long view of the matter and decide to extend a gesture of welcome to visiting motorists by granting the initial period of freedom from taxation which has been recommended by the majority of public organisations interested in motor touring and the development of roads and motor transport generally.

Car Parking Schemes

Madras motorists who have attended recent functions at Government House, Madras, will have observed a complete change in the traffic and car parking arrangements as compared with former years. This change, which it is sincerely hoped, has proven a success and an improvement on the previous arrangements, has been made possible by the keen personal interest taken in the matter by the present Deputy Commissioner of Police (Traffic) and his ready acceptance and trial of suggestions put before him.

(ii) On leave with a car 1936 issued by Mann Egerton & Co.

Applications for copies should be accompanied by annas three in postage stamps to cover postal charges.

Membership

During the month the names of 24 new members were added to the membership register.

The 24 new members were introduced by the members mentioned below:—

Four each by Major A. Waters and A. H. Venkata Rao, Esq.

Three by Mr. G. G. Gill and

One each by Messrs. Addison & Co., R. K. Murthy, W. F. Inman, A. E. Ramble, J. N. Norridge, K. R. Simpson, A. R. J. Runnaces, A. Edwards, T. Williams, P. Harischandra Rao; the remainder were enrolled by the staff.

New Members

K. Ramabrahman, Esq.,
Merchant & Contractor, Vizagapatam.

STANDARD CARS

"For Motorists who put quality first"

Distributors—THE UNION CO., MADRAS

The Automobile Association of Southern India were invited to assist with the parking arrangements and furnished the system of telephones that was installed between the entrances to the Banqueting Hall and the several car parks to facilitate the departure of guests.

The Automobile Association of Southern India were also invited to assist in the traffic arrangements for the Hunt Point to Point Races; when in addition to arranging the car parks and telephonic communication to them, a road was marked out and improved so that visitors were able to motor in comfort a couple of miles across country, right up to the ground selected for the paddock and stands.

A. A. Publications

A limited number of copies of two A. A. Publications of interest to motorists about to proceed on leave, have been received, and may be obtained free of charge on application to the Secretary A. A. S. I. They are

(i) Great Britain and Ireland in 1936—A calendar of events during the year, with a section containing useful information for motoring visitors.

N. Narayanan, Esq.,
Guardian of Industries Co. Ltd.,
Mount Road, Madras.

W. S. Rowson, Esq.,
Nellikai Estate, Vandeperiyar P.O.,
Travancore.

L. P. Hunt, Esq.,
C/o Imperial Tobacco Co. of India Ltd.,
1st Line Beach, Madras.

W. M. Wilde, Esq.,
"Unsworth", 10, Sterling Road,
Nungambakkam.

G. G. Armstrong, Esq.,
Harbour House, Madras.

J. A. D. Naoroji, Esq.,
Bombay House, Fort, Bombay.

K. Krishna Menon, Esq.,
Advocate, 26, Poonamalle High Road,
Vepery, Madras.

R. G. K. Morrison, Esq.,
Marikuppam P.O., South India.

V. T. Rajaram, Esq.,
52-A, Sebastian Road, Secunderabad, Deccan.

A. V. Thiruvankadam, Esq.,
142, D. Prendarghast Road, Secunderabad, Deccan.

A. T. Vira Raghavan, Esq.,
142, D. Prendarghast Road, Secunderabad, Deccan.

A. M. Ramanujam, Esq.,
Second Pan Bazaar, Secunderabad, Deccan.

V. Rajagopala Thamban, Esq.,
District Superintendent of Police,
Cuddalore, South Arcot.

G. Benn-White, Esq.,
Oorgaum P.O., Mysore State.

G. S. W. Marshall, Esq.,
C/o Fraser & Ross, Armenian Street, Madras.

T. M. Charles, Esq.,
1, Old Madras Road, Bangalore.

Rev. G. P. Tasker,
5-B, Cornwell Road, Bangalore.

J. O. Marsland, Esq.,
Rodier Mills, Pondicherry.

A. Gallois-Montbrun, Esq.,
Pondicherry.

A. Narayana Menon, Esq., M.B.B.S.,
"Ambat House",
Goodshed Street, Madura.

M. G. Anantha Pai, Esq., B.A.,
Sawkar Mahal, Car Street, Mangalore.

R. Viswarthan, Esq.,
2, Lal Bagh Road, Bangalore.

F. Webb, Esq.,
30, South Parade, Bangalore.

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CITY ON THE ROUGE

On the Banks of the River Rouge in Dearborn, Michigan, half way between the iron mines of Minnesota and Michigan, and the coal mines of Kentucky and West Virginia, stands the largest industrial works in the world. It is the Ford Rouge Plant which can produce parts for more than 6,000 complete Ford V-8 Cars every day. It is an industrial city, more wondrous than Babylon with its hanging gardens; more fabulous than ancient Bagdad when all caravans sought its market squares.

In the spring of 1935 daily production at the Rouge Plant exceeded 6,000 cars. To build them, a few less than 80,000 workers were employed. In other Ford Plants in the United States, some 55,000 workers were busy. More than 5,000 firms supply various parts or material for the Ford V-8 Car, and the addition of their employees' families to those of the 135,000 Ford workmen makes a staggering total. Literally millions of people in the United States play some part in building the Ford V-8. Almost everyone, in some way or another, is touched by and concerned with the things that take place in this great industrial establishment.

Perhaps that is why every day the Plant is in operation hundreds of visitors make the trip through it to watch and marvel at the things they see there.

The Rouge Plant covers an area of 1,096 acres—a good sized industrial city. It is a city of health, light, and sunshine. It has 333 acres of window glass to let in the light. Although it includes the largest foundry in the world—covering 30 acres—there is never an accumulation of dust or grime. A measured supply of fresh, clean air is forced into every room each minute.

Against the threat of dirt and grime, a determined army of 5,000 men battles night and day. It keeps ceaseless watch over the 7,250,000 square feet of floor space, the thousands upon thousands of machines, and the acres of glass above and around the workmen.

This army requires much ammunition. Each month it wears out 5,000 mops and 3,000 brooms. In each 30-day period it lays down a barrage with 172,000 pounds of soap. Each month 16,000 gallons of paint are applied to walls and machinery.

Hand in hand with the campaign for cleanliness goes the march to health. Looming white and spotlessly clean against the gray of surrounding machinery are 14 completely equipped first aid stations. In the Plant not even the slightest scratch escapes attention. The central hospital quarters in the Rouge are the finest in industry. A staff of 125 doctors, surgeons, dentists, chemists, and medical assistants guards the health of this industrial city.

In spite of the Plant's amazing size there is not the slightest hint of haziness or confusion about anything that happens in it. Everything is calculated in advance and controlled minutely.

THE PRODUCTION PLAN—Iron ore in the hold of a ship that docks at the Rouge wharf on Monday morning may emerge by noon the following day, after many changes and processes, as part of a new Ford V-8. During its course through the Plant, someone is responsible every minute for each particular unit, along every foot of its progress.

The word that best describes the Rouge system of production is "control". That one word explains how it is possible to keep track of the vast amounts of material, the thousands of working processes, and all the thousands of machines involved in the making of 6,000 Ford V-8 Cars a day.

The same word explains the product of the Plant. The world-wide reputation of Ford Cars for long life, dependability and economy is based upon the meaning of the word "control" in Ford manufacture.

Henry Ford said: "Precision methods in manufacture make quantity production possible." That is another way of expressing the central theme: "Control".

The Ford Motor Company controls a considerable share of the raw materials used in making Ford V-8 Cars. Iron mines, coal mines and timber lands are listed among Ford properties. The ships that bring materials to the Plants are largely Ford ships. This guarantees control of costs and quality.

Iron ore, coke and limestone go into Ford blast furnaces and later emerge as purified iron. Added ingredients and processes change the iron into special types of iron, or into one of the 52 kinds of steel used in making the Ford V-8 Car. The iron and steel are cast, pressed, rolled, or hammered into rough shapes for parts.

THE MAKING OF PARTS—After the huge primary storage bins, capable of holding 2,000,000 tons of iron ore, coal and limestone, there is practically no storage of materials or parts in the Rouge Plant. Iron, steel, glass and other materials are manufactured into finished parts as they are needed. Very little surplus ever accumulates. Production is too carefully controlled to permit that.

After the rough parts leave the foundry, the steel mills or other departments, they start a long journey to completion through a series of machining steps, heat treatments, tests and checks.

Here control enters again. As it is machined, every Ford Part is held to variations in size, shape, hardness, strength, texture, and quality so exacting that it defies non-technical description. Hundreds of intricate machines have been devised in Ford laboratories to check and maintain these standards of control.

Back of them all is a set of master gauges called Johansson blocks kept in an underground room where the temperature never changes. These blocks are the most accurate measuring devices known to man. They are accepted as the world's standard in industry, and are accurate to two-millionths of an inch—a dimension beyond imagination.

Against these master gauges production gauges are checked. In turn, many of these production gauges, used in measuring parts for Ford V-8 Cars, are accurate to one ten-thousandth of an inch, or a dimension one-thirtieth the thickness of a human hair. In the Ford V-8 Engine many parts measurements must be accurate to two ten-thousandths of an inch before the unit is accepted in production. Such is Ford control.

THE ASSEMBLY LINE—The engine is assembled; steel body panels are welded into a single unit for Ford



FORD MOTOR CO. OF INDIA, LTD. BOMBAY CALCUTTA MADRAS COLOMBO.

all-steel bodies; double drop frames are formed—and everywhere thousands of machines produce parts such as axles, shafts, links, spindles, bolts, Ford safety glass, radiators, and many more that make up a finished automobile.

As they are finished, parts are hung from an overhead conveyor which begins a long swing through one or more departments in the plant. This overhead conveyor is not the assembly line.

The assembly lines are knee or waist high, and units on them travel at carefully calculated speed, accommodated to the working pace of the men on the line.

Parts are tested many times before they reach conveyor lines. After they are assembled into units, these too are tested again and again.

Besides the tests for dimension and quality, parts or assemblies are chosen at random and subjected to long torture tests. Such tests subject them to strains many times greater than they encounter in actual use. Again—control.

The assembly of complete automobiles at the Rouge Plant is confined to the supply required by a single Ford Branch serving Michigan and a few countries in Ohio and Indiana. There are 34 Ford Branches in the United States, and cars distributed through the other 33 are assembled in the Branch Plants, all located in important marketing areas.

DISTRIBUTING THE PARTS—Ford manufacturing is done near the source of raw materials. Ford assembly and distribution are accomplished near the markets. There is little or no storage of parts and cars in Ford Branches. Each Branch forecasts its needs for a brief period and notifies the Factory of their extent.

At once parts for the exact number of cars specified are despatched from the Rouge Plant to the Branch. The traffic department assumes control, and after a carload of parts leaves the Rouge it is never out of sight on traffic charts until it reaches its destination.

CONTROL MEANS HIGH QUALITY, LOW COST—Thus from the time ore and coal leave the mine until the finished car reaches a Dealer, every step is calculated in advance, carefully carried out and completely controlled. There is no confusion or lost motion anywhere along the line.

This fact is significant to the owner of an automobile because he would be penalized by waste or inefficiency. Ford manufacturing control goes even further, for it utilizes the waste materials growing out of the car's manufacture.

Coke which cannot be used in blast furnaces is sold. So is the tar derived in coking. Fine oil, another by-product, is refined and sold. Ammonium sulphate, still another, is sold as fertilizer.

Blast furnace slag is made into Portland cement. Blast furnace gases are captured and used to pre-heat the blast of air forced through the charge in the same furnace. Particles washed from gases are reclaimed and used again. The dust from grinding wheels contains metal particles from the parts smoothed on the wheels. This mixture is reclaimed and yields tons of metal every week.

The savings effected by these salvaging and by-products operations amount to millions of dollars a year. Ford practice provides an unvarying three-way division of all profits.

Labour gets its share through increased wages. A second share goes to management. The third share goes to the customer in a better product. Economics in manufacture or salvage are translated into terms of added quality, better performance and longer life for the Ford V-8 Car.

A WORLD-WIDE INSTITUTION—Great as it is, the Rouge Plant is only one unit in a world-wide plan of Ford production, distribution and service. In every portion of the globe, Ford is represented. Literally, the sun never sets on the Ford Organization.

The Ford Motor Company Ltd., Plant at Dagenham, England, is the largest automobile plant in the Empire. The Ford Plant at Windsor, Canada, is among the Dominion's largest. There are Ford manufacturing, service or assembly plants in France, Belgium, Germany, the Netherlands, Denmark, Irish Free State, Spain, Turkey, and other countries. Ford of Canada, Limited, operates three Assembly Plants in Canada beside the main plant in Windsor; three in Australia; three in India; one in Ceylon; one in South Africa; and one at Singapore.

In South America, Ford Plants are located in Argentina, Brazil, Chile, Uruguay, and other nations. Others are operated in Japan, Mexico, China, Cuba and the Canal Zone.

The control and precision so important to the Rouge Plant extend to all these others. Automobile owners in every country benefit by the Ford plan of quality manufacture and world-wide service. One might drive his Ford V-8 around the world and be separated from the familiar Ford Service blue oval only while on shipboard.

Truly, Ford is a world-wide institution.

PYROIL SUPER RECORDS

Breaks World's "Dry-Run" Record

(all officially attested)

April 17th 1933, Trough Brothers of Pawhuska, Oklahoma, operated a previously PYROIL conditioned Chevrolet without oil in the crank case for 903.4 miles before trouble developed. This was a cross country run at speeds up to 40 miles an hour with the motor sealed against tampering.

Other sensational Pyroil "DRY RUNS" of 745 miles at Halifax; 411.5 miles at Yarmouth; 318.7 miles at Elgin; 206.8 miles at Manhattan and 161 miles at Cedar Rapids.

WORLD'S RECORD AIRPLANE DRY FLIGHT

Pilot Gerald Kohner of Conrad Flying Service, flew a PYROIL conditioned Spartan Plane 35 MINUTES IN THE AIR WITH NO OIL IN CRANK CASE—WITH PERFECT RESULTS AND NO DAMAGE TO THE MOTOR!

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The Indian Roads & Transport Development Association Ltd. Monthly News Letter

Annual Meeting of the Associated Chambers of Commerce

His Excellency the Viceroy, in addressing the Annual Meeting of the Associated Chambers of Commerce in Calcutta, referred at length to the steps taken by the Government of India to find a solution to some of the problems of transport and also to the development of aviation in India. In this connection he said:—

"I referred last year to the constitution of the Transport Advisory Council, consisting of the members of my Government concerned sitting with Provincial Ministers and their Advisers. And I then expressed the hope that the Council would promote close and regular contact between the Centre and the Provinces in the solution of the difficult problems of transport co-ordination. I am glad to be able to say that that hope has so far been realised and that at its first meeting the Council adopted with a gratifying approach to unanimity a statement of policy concerning the construction of roads and railways, the control of motor transport, and the creation of administrative machinery to promote co-ordination.

"While I am discussing the question of transport, I must refer briefly to the Indian Roads Congress, which was inaugurated a few days before I last addressed you. That inaugural meeting was, I believe, a successful step in the direction of getting our engineers together to exchange opinions and the results of their experience with the object of promoting efficiency and economy in the expenditure of roads.

"There is no question of the very great need for road development nor unfortunately can any one suggest that the funds at present available are adequate. In these circumstances economy and efficiency in the application of whatever money is available become an imperative necessity. My Government believe that the Indian Roads Congress is an institution which will make for these ends and we have, therefore, decided to defray the cost involved for a further period of two years.

"In Civil Aviation the most important recent developments have been the completion of the air mail service between London and Singapore and the inauguration by Tata Sons Ltd. of a weekly air mail service between Bombay and Trivandrum with intermediate landings at Goa and Cannanore. This latter service which connects at Bombay with the existing Karachi-Madras air mail service, will shortly be available for carrying mail as well as passengers and freight. Now that the Government of Ceylon have provided an aerodrome at Colombo, it is hoped that a further development, namely, the extension of the Tata air service from Madras to Colombo, will take place in the near future.

"It is a regrettable, though I hope a temporary setback, that the Indian National Airways Ltd., have been compelled to close down the services between Calcutta and Dacca and Calcutta and Rangoon which they had successfully inaugurated and operated for eighteen months. The former service never had the support from the public which

the company had expected in view of the obvious advantages it offered for rapid communication between the two chief cities of Bengal, and though on the latter service both passenger and mail traffic showed a steady increase, that increase was not sufficiently rapid to justify the company in continuing to operate at a loss.

"Considerable progress has been made with the programme for the development of ground organisation to which I referred last year. Orders for air route and aerodrome lighting equipment for the Trans-India route and contracts for hangars at aerodromes on that route and on the main feeder routes have been placed and improvement to the existing aerodromes and the construction of new aerodromes are being carried out. Much of the work has been of a preliminary nature but before long there will be material evidence to show what is being done. Important adjustments within the original programme have been necessitated by the early prospect of a greatly increased intensity of the Trans-India service. Active consideration is being given to the proposals of His Majesty's Government in the United Kingdom for the speeding up and increase in the frequency of the Empire air services and the carriage of all first class empire mail by air."

Motor Vehicles Taxation and Regulations.—One of the important resolutions passed by the Associated Chambers of Commerce was "that action on (a) the Road-Rail Conference Resolution regarding the co-ordination of motor taxation and (b) to secure the unification of the motoring laws in British India should be taken without delay." Speaking on this resolution, Mr. J. R. Farquharson, a member of the Calcutta Branch of the Association, said that the diversity of the system of taxation on motor vehicles throughout British India was well known. Every taxing authority regarded the motor vehicles as fair game. The Central Government made a start with customs duties and the petrol tax, and there uniformity ended. Provincial Governments and local bodies then came in, and many and various were the ways in which they took their cut off the joint. Between them all, they imposed restrictions on the development of motor transport generally, and the degree of divergence between provinces, districts and localities was particularly harassing to transport requiring a wide range of movement.

"Everything tends" said Mr. Farquharson "to confine the sphere of operation of a vehicle to a very limited area. The frontier barriers between province and province, sometimes even between different districts or townships, present obstacles that not infrequently compare unfavourably with the international barriers between different countries in Europe or America. For instance, a motorist who, however temporarily, enters the Presidency of Madras immediately becomes liable to taxation at full scheduled rate as soon as his car enters the territory."

Referring to the resolution adopted by the Road-Rail Conference at Simla in 1933, favouring uniformity in the

system of taxation in India, Mr. Farquharson pointed out that there was no divergence of opinion at the Conference on the desirability of adopting a common basis of taxation everywhere, but unfortunately the progress made since had been negligible. Many of the Provinces had been disposed to put a very narrow interpretation on the term 'co-ordinated plan of taxation' and had disregarded entirely the important inter-provincial aspect. They had gone ahead in several instances with new legislation for taxation; but about the only matter in which any similarity could be found in their new codes was the provision for consolidating taxation into a provincial tax and superseding the powers of local authorities to levy taxes on motor vehicles. While admitting that this was a very important forward step, Mr. Farquharson pointed out that it did not go far enough. There still remained lack of uniformity as between provinces, in the basis adopted for arriving at a scale of taxation. In some provinces, lineal dimensions were used for assessing the rate; in others, the seating accommodation or load carrying capacity; and in others, the weight. There had been a total disregard of the crying need of the public for inter-provincial reciprocity to facilitate mobility throughout the country.

As far as could be seen there was little intention on the part of Provincial Governments to do more than arrange for a compounded system of taxation. (In some cases even this was not contemplated). "They seem determined to maintain an attitude of splendid isolation in regard to their neighbours when it comes to reciprocal arrangements that would be appreciated by the public. Cannot, something be done to induce Provincial Governments to adopt a long view and make an effort to remove the restrictions which now exist and which ultimately influence adversely their exchequers?"

"The Central Government, who have the last word in the disbursement of the proceeds of the Petrol Tax, could very easily give an impetus to provinces in the required direction. They have, however, shown themselves reluctant to discuss a scientific plan for the proper adjustment of the burden of taxation on motor transport, and the subsequent distribution of the proceeds of central taxation in an equitable manner to provinces. Until some progress can be made here, it is perhaps not unnatural that provinces hold aloof from each other over a common basis of taxation."

Turning to the part of the resolution relating to unification of the motoring laws in British India, Mr. Farquharson said it would appear to the man in the street that this very desirable object should be easily attainable, yet the subject was said to have been engaging the attention of Government for something like five-years, with very little to show for it beyond a statement by the Member for Industries and Labour in the Assembly in September last that the Government of India had addressed local Governments regarding proposed amendments to the Motor Vehicles Act, which would be necessary before local Governments could enact a standard set of model rules that would be recommended to them as a means of overcoming some of the anomalies in the present rules. The need for this amended legislation was foreshadowed at the Road-Rail Conference two and a half years ago and at this rate

of progress a similar period might well elapse before any action took place.

"There is no common system throughout India" said Mr. Farquharson "for registration of motor vehicles, or for granting driving licenses that have availability throughout the country. Some provinces issue registration certificates and driving licenses which are valid in other provinces; others do not. Some provinces regard registration certificates as a source of revenue and charge fees accordingly; others merely charge fees to cover administrative expenses and deal with taxation separately. The Indian Motor Vehicles Act of 1914 empowers Local Governments to make rules, and deprives the Central Government of such powers. Consequently, the question of acceptance or rejection of any model code of rules that may be suggested by the Government of India lies at the discretion of Provincial Governments. It is impossible to take exception to the principle of empowering local Governments to make rules to govern road transport in accordance with the local needs, but any amendments to the Motor Vehicles Act should certainly seek to embody in the Act itself provision for registration to be valid throughout British India, together with provision for similar availability of driving licenses and a common standard of driving tests."

Sir John Abercrombie, who supported the motion, expressed the view that a motor vehicle, having paid a tax in one province, should be free to operate anywhere in India without additional taxation and urged that this should receive the careful consideration of the Transport Advisory Council. The resolution was then carried.

Traffic Faster and Safer in England

Modern traffic problems were discussed by Captain Austin Hudson, Parliamentary Secretary to the Ministry of Transport, at the luncheon of the Cordwainer Club of the City of London. "Efforts are being made by the Ministry" said Captain Hudson, "to make vehicles more flexible, more silent and more efficient. Trolley buses are gradually to supersede tramcars and horse-drawn vehicles are giving way to motor vehicles. One-way streets have proved one of the most useful innovations since the war in easing traffic, and parking and signals have proved most valuable in the interest of fluidity of traffic." He claimed that the 30-mile limit had actually increased speed in journeys by providing greater fluidity.

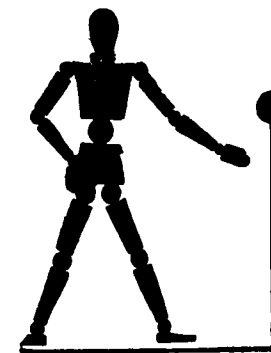
London to India in Three Days

As a result of the continuous growth of the Imperial Airways services, the Company has under construction or on order 29 flying boats and 12 land planes. The new aircraft, intended for use on Empire routes, will have a carrying capacity of from 3½ to 5 tons, according to the fuel load.

The designs embody a standard of passenger comfort superior to anything yet provided. There will be sleeping accommodation to allow continuous day and night flying.

The speed of the new mainline aircraft, operating to 24 hours schedule, will enable Imperial Airways to fly between London and Australia in seven days, to South Africa in four and to India in three.

I have flown over 500,000 miles relying on lubrication by Shell -so it should look after my car all right for at least 50,000.



Shell Lubricating Oil, having been submitted to the most rigorous tests, is now used exclusively by Imperial Airways and by K.L.M. and Air France on their Eastern routes. These famous Air-lines rely on the same Shell Lubricating Oil as is obtainable from your dealer.

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AGENTS: CALCUTTA BOMBAY MADRAS KARACHI NEW DELHI

BSK 11

New Aerodrome for Madras

Sir Frank Noyce who recently visited Madras said that that city had three direct media of contact with the rest of the world—land, sea and sky and "I cannot think but that the third of these may one day bring Madras into a central position on the Continental routes when the long sea crossings have lost their terror for aircraft."

It is understood that the choice for a civil aerodrome lies between the present site at Meenambaukum and the large open space near the Red Hills.

Mysore Aerodrome

The Mysore Government are contemplating the erection of a civil aerodrome station at Jakkur, near Yelahanka, about seven miles from Bangalore, on the Bangalore-Nundydroog Road.

Air Transport in Great Britain

Lt.-Col. Shelmerdine, Director-General of Civil Aviation in Great Britain, in a lecture delivered to the Institute of Transport, London, recently, on the question of air transport in Great Britain, pointed out that although there were some 25 services in operation, nearly all were losing money. To find the reasons for the failure of air transport expenses to pay their way, one must look very closely into the matter. The chief advantage the aircraft operator had to offer, that the public was willing to buy, was cheap speed. But cheap speed was useless unless it saved time over any alternative means of transport. Before one talked about the speed of air travel, one must be quite sure that by no other means could one make a journey in approximately the same time. Referring to the fares charged, Col. Shelmerdine said the fare per passenger mile on the Imperial Airways service to Paris was 5½d. and the public was very willing to pay this. Admittedly it was a very luxurious service. The fares to-day of the internal air lines which averaged about 4d. could not, therefore, be regarded as liable to act as a deterrent, provided any real advantage was offered.

The speed, therefore, might be cheap enough, but was it fast enough? Before inquiring into the speed of an air journey, one must decide what was meant by an air journey. Unfortunately it was not a journey by air because from the public's point of view the journey did not begin at the airport.

The speaker examined an air journey of 100 miles as an example. The average distance of a provincial airport from the centre of the town which it served was 3½ miles, and the average speed of a coach through a built-up area was 12 m.p.h. The journey should, therefore, take 17½ min. or nearly 20. At the airport it was usual to allow a period of 5 min. for embarking and disembarking the passengers. The pure speed of the air liner was the speed at which it cruised, which, making a modest allowance for progress, might be assumed to be 160 m.p.h. On an air journey this pure speed was adulterated, and became what is known as the "chuck to chuck speed". Allowance had to be made for certain necessary manoeuvres of the aircraft such as taxiing on the aerodrome, traffic delays and so on. For a single flight along a busy

air route it was reasonable to allow 15 min. for such delays. The air journey was, therefore, made up of:

	Min.
Road journeys to and from the airports at 20 min. each	40
On and off loading the aircraft	10
Aircraft manoeuvres—allow	15
100 miles at 160 m.p.h.	37
Total	1 hr. 42 mins.

The average speed between town centres was thus 58.8 m.p.h. On an air journey of 100 miles one achieved 37 min. fast flying and dawdled for 1 hr. 5 min. If the journey began or ended in London, the position was naturally worse, as it took about 40 min. instead of 20 to reach the airport. It was obvious that, by increasing the length of the trip, more of the time was spent in the air travelling fast and a smaller proportion on the ground travelling slowly. This would increase the average speed for the air journey by the following amounts, if the same basis of calculation was used:—

200 mile journey average speed	86 m.p.h.
300 mile journey average speed	101 "
400 mile journey average speed	112 "

If these speeds were to mean anything, they must be compared with the speeds of alternative methods of transport. It would then be seen whether the saving of time effected was sufficient to be a marketable commodity.

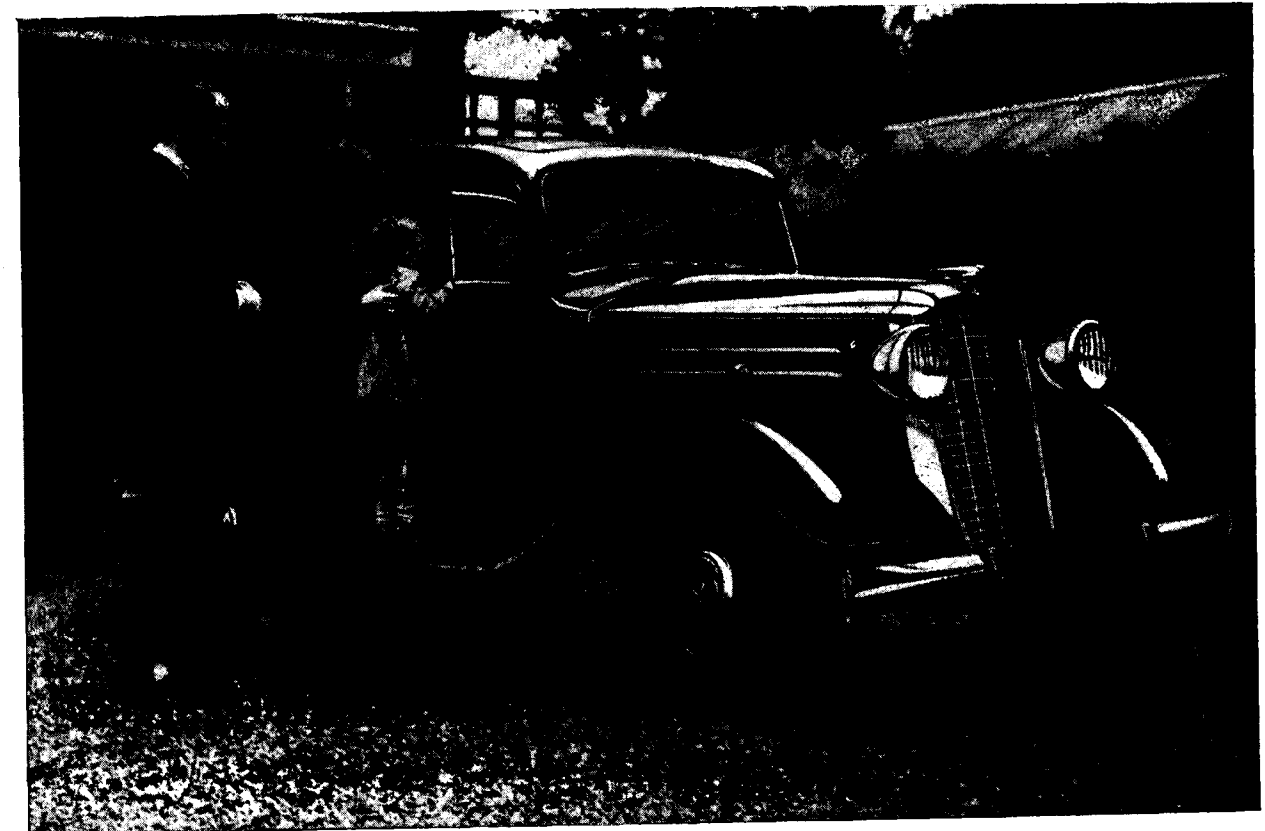
But the main service to the terminal airport was by surface transport. If, in serving our airports, surface transport could reduce the delay in reaching them, it would indeed have contributed something of very great value to aviation. To knock 20 min. off the time for a 100 mile air journey, the aircraft had either got to cruise at 350 m.p.h. or the journey time between the towns and the airports had got to be halved. One was a job for aviation, the other for surface transport.

The saving of time in surface transport between the city and the aerodrome so that the full benefits of travel by air can be made available to the public had been the principal reason for the representations made to the Government of India by this Association regarding the taking over of Block 7 of the Reclamation ground in Bombay for an aerodrome. While no favourable decision has yet been reached, we feel sure Government realise its importance to the future development of aviation and that the existing aerodrome at Juhu, situated 14 miles out of the city, will be an obstacle rather than an aid to aviation.

Second Indian Roads Congress

The second session of the Indian Roads Congress met at Bangalore from the 5th to the 11th January and was attended by about 80 delegates, of whom nearly 20 were non-officials, consisting mostly of members of the Indian Roads and Transport Development Association. These included the President of the Association, Mr. H. E. Ormerod, and the General Secretary, Lt.-Col. H. C. Smith. Previous to the formal opening of the session, which was done on the 9th January, the delegates inspected various road experiments, such as trackways between Maddur and

"Oh, Mummy, there's lots of room for all of us!"



For *Your* Family

CHOOSE VAUXHALL

.. the Ideal Home Leave Car

THE Vauxhall Light Six has been called—most aptly—the Family Car with a sports car performance. Its independent springing, all-weather ventilation and roominess combined with lively and very economical per-

formance—provide all the qualities desired for smooth, comfortable and economical motoring. The fine, aristocratic lines are a true reflection of the dignity of appearance that has been a Vauxhall tradition for more than a quarter of a century.



For particulars of the Vauxhall Home Delivery Plan, write to
SIMPSON & CO., LTD., 201, MOUNT ROAD, MADRAS

Mandya, road surfacing with molasses and application of emulsion to road surfaces.

In declaring the Congress open, on the 9th January, Sir Mirza Ismail, the Dewan of Mysore, observed that roads with one-way traffic, safety-island separation, long radius of curves, etc., had not yet become a matter of imperious necessity in India, but what the Engineer was chiefly engaged in now was the improvement of road surfaces. That in itself constituted a problem, having regard to the different kinds of vehicles using roads and the paucity of funds provided for the purpose. Until aviation had proved the most economical form of transport, roads demanded the closest attention of the engineer.

Twenty papers on road construction were presented to the Congress and keenly discussed. They included papers on roads in rural areas by Capt. Rao Bahadur Chaudhury Lalchand, member of the Standing Committee for Roads of the Central Legislature, surface treatment with molasses and 'gravel roads' by Dewan Bahadur N. N. Ayyangar and a general review of the results of the recent road experiments by Mr. K. G. Mitchell, Consulting Engineer to the Government of India (Roads).

In his paper 'gravel roads', Dewan Bahadur Ayyangar said that there were 19,421 villages in Mysore State, access to most of which was by narrow tracks whose maintenance was at present nobody's concern. Assuming roughly an average length of 2 miles per village for connection with the thoroughfares, 38,842 miles of new roads would be required, which was a formidable problem unless a far cheaper, quicker and fairly efficient method of road making than the present macadam road was resorted to. If each of the 8 District Boards in the State constructed 50 miles of new road a year, it still meant work for nearly 96 years to come. "This enormous amount of new work and the subsequent maintenance cannot possibly be carried out by ordinary human labour. It can only be successfully handled by adopting efficient modern methods of quick construction with machinery such as tractors, scarifiers, road graders and rollers. It is further, necessary that some recognised unofficial body like the Indian Roads and Transport Development Association should take up this question and carry on propaganda so that the District Boards may tackle this problem of village roads actively and persistently."

Mr. Mitchell, in his paper, explained how far certain intensities of traffic which may be quickly attained, an unmetalled road cannot be maintained in good order, however good the soil, and advocated the use of "trackways" as cheaper than any other stage development. "The idea is that if hard tracks can be provided to carry the loaded bullock cart, then the rest of the traffic can be easily carried by an earth road having average good soil. The trackways, if in cement concrete, are expensive in first cost, say about Rs. 10,000 per mile,

but it is believed that they will be cheap to maintain and on the whole be found to be economical." Mr. Mitchell also pointed out that it is notorious that in relation to other agricultural countries the number of motor vehicles in use in India is, on the basis of population, extremely low. "We must, therefore, be prepared for an increase in road motor traffic, an increase that all those responsible for roads must welcome as proof of their greater utility and public value, but an increase which is likely to aggravate the difficulty to provide good roads at a reasonable cost in the peculiarly adverse circumstances of traffic and climate prevalent in India." The increase in motor traffic which must be anticipated will render uneconomical a constantly greater mileage of ordinary waterbound macadam and it is necessary to find the cheapest method of improving that to carry motor transport and at the same time to stand the destructive bullock cart.

An important question discussed by the Congress was the relative damage caused to roads by bullock carts with iron tyres and motor vehicles with pneumatic tyres. Most speakers were agreed that while the bullock cart was more responsible than the motor vehicle for the deterioration of asphalted and tarred roads, the motor vehicle contributed more than the bullock cart to the rapid deterioration of waterbound macadam. Mr. Mitchell remarked that what the Conference had to take into consideration, for practical purposes, was the effect of both kinds of traffic on each type of road surface. When the two kinds of traffic used the same road, the resulting destruction was greater than the added total of the destruction caused when each type of traffic used the road exclusively. That was because while the bullock cart traffic, with its iron wheels, filed up the surface of the road, the filings were sucked and blown away by the action of the wheels of motor vehicles moving fast.

There was a Congress Dinner on the 10th January when Sir Mirza Ismail, in proposing the toast of the Congress, referred, *inter alia*, to the efforts of Mr. K. G. Mitchell (Consulting Engineer to the Government of India, Roads) and Mr. H. E. Ormerod (the President of this Association) to focus the attention of Governments and the public on road improvement works. In replying, Rao Bahadur Chuttanlal, Chief Engineer, U.P., who has been elected President of the Congress for the current year, said the Congress had proved a great educative factor. It was a forum for the varied experiences of several experts on road problems and an effective medium for the exchange of ideas and the comparison of results.

Both the President of this Association, Mr. H. E. Ormerod, and the General Secretary, L.-Col. H. C. Smith, have been elected to the Council of the Congress which will hold its next session at Calcutta. (Courtesy I.R.T.D.A.).

Motor Business Better in India

The signs of the times are pointing to better business conditions in India. Evidence of recovery are found in the recent statement issued by the Ford Motor Company of India, Limited, to the effect that deliveries to their

Dealers of Ford Cars and Trucks during 1935 were the highest in the history of that Company.

The year 1929 was the previous peak year for high deliveries, but 1935 surpassed the previous high mark by a good margin.

THE NEW HUMBERS WITH EVENKEEL SUSPENSION

Report by the Technical Editor of "The Motor" (London) upon the Performance of these Extremely Interesting Six-cylinder Cars, with Independent Springing and many other New Features

Although direct successors of the previous 16/60, Snipe and Pullman, the latest Six-cylinder Humbers display so many points of difference as to rank as entirely new cars. Outstanding features are the Evenkeel suspension (embodying independent front springing), a larger engine with aluminium head and higher compression, full-length water jackets, a finned aluminium sump, inserted exhaust valve seatings, lead-bronze bearings, box-section chassis frame, power-assisted brakes and much larger tyres. Added to this long list of improvements are a redesigned range of coachwork with V-type windscreen, streamlined wings and new frontal appearance.

The new suspension was regorously tested under a wide variety of conditions on the road, at Brooklands track and with various loads. It provides an excellent example of the two outstanding performance features obtainable with a correctly designed front suspension of the independent type: soft riding combined with stability, and an almost entire absence of pitching, which makes rear-seat riding exceptionally pleasant.

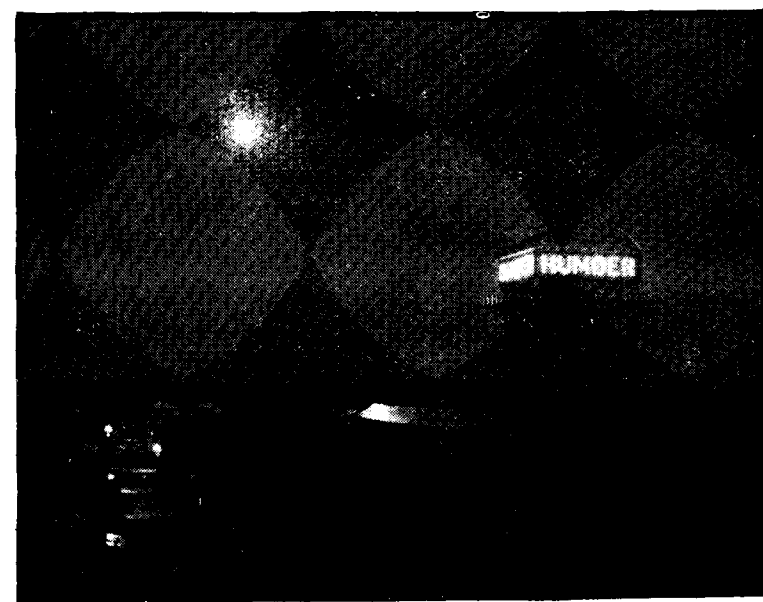
The fact that it has been found possible to fit Dunlop E.L.P. tyres of no less section than 7½ ins., together with really soft springs, without running into any difficulty in regard to wheel wobble or control at speed, goes to show that the steering and suspension have been most carefully designed.

Brooklands track afforded an excellent impromptu test of controllability because many sections of concrete had already been taken up in the winter programme of repairs. Consequently, our speed trials involved snaking through various obstructions.

We noticed particularly the ease with which the car could be handled running through these obstructions and, again, on the open sections of banking, the way in which steady riding was maintained up to the maximum speed.

Later in our trial we were able to try the car over some extremely rough sections of unmade gravel road. The speeds which could be held in safety and comfort were 50 per cent higher than would normally be possible.

Full marks must be given to the Humber engineering staff for producing an engine of such extreme quietness and smoothness. When it is idling in a traffic block it is altogether inaudible, and in built-up areas the car runs so quietly that the speed tends to creep up without the driver becoming aware that he is breaking the law. The car tested was fitted with de Normanville epicyclic gearbox, which enables full use to be made of third gear owing to the easy and rapid change which it affords.



A striking night panorama of the Humber factory at Coventry, England now working at full strength to execute the large volume of orders following the announcement of even more attractive models for the new season.

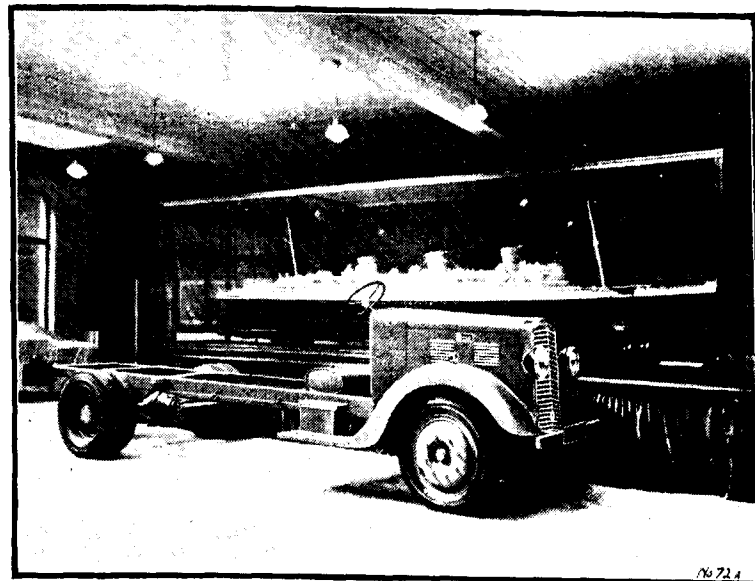
The gear lever is mounted above the steering wheel and cannot be shifted until the clutch pedal has been depressed. The gear selected is then brought into action by hydraulic brakes in the box, and the drive is picked up with the clutch in the usual way. The only exception to this rule is a coasting position, marked "C", to obtain which the lever is moved beyond the top-speed position. This can be done at any time without declutching, and the car will coast until the lever is brought back to top. It is a handy feature, appreciated in hilly country.

A special word of praise must be accorded to the Bendix braking system. This is now assisted by a Clayton Dewandre vacuum servo motor, and additionally the operating gear includes compression springs which have the effect of limiting the load applicable to the rear wheels. Consequently, under emergency stopping conditions any excess of pedal pressure is diverted to the front wheels and these, in virtue of the throw-forward of weight which then occurs, have a big margin of adhesion against locking.

As a result of this plan the Humber shows a stability under severe high-speed braking conditions which is quite exceptional. The driver has to school himself to the use of a moderate pedal pressure, because the servo action is quite considerable. Once accustomed to using the weight of his foot instead of real muscular effort, we found a delightful reduction of fatigue and a very satisfying sense of control.

The new style of radiator, front wings, coachwork, etc., are a point of special interest to the driver being the adoption of a two-piece screen with the panes steeply raked and set at a shallow Vee angle. This entails a central division, but the narrow steel bar employed for this purpose does not produce any noticeable obstruction. Tried under a variety of conditions, including mist and darkness, we found that the screen gives good vision with a praiseworthy absence of reflections.

The coachwork is extremely well built and was found to be completely devoid of rattles, squeaks, or drumming, even when the car was driven hard over extremely rough roads in the course of our suspension tests. The seats are of adequate dimensions, are nicely shaped and are softly upholstered. Those at the front are independently adjustable on Leveroll slides. Elbow rests are fitted to the front doors and the rear seat is provided with fixed rests at each side and a folding armrest in the centre.



As the time of her maiden voyage draws nearer, public interest in the "Queen Mary" becomes greater and greater. Here is a magnificent model of the new ship, weighing 5 tons, of which the size can be gauged by the 2-3 ton Commer chassis in the foreground.

The windows in the front doors are each divided into two sections, one of which can be angled for ventilation, while the other is a drop window controlled by a long quick-action lever. The rear doors carry winder-operated drop windows, and the quarter windows slide horizontally. The section of the windscreen opposite the passenger is fixed, but the driver's section can be opened by turning a handle. Triplex laminated plate glass is used for the windscreen panes and the Toughened variety is employed for the side windows.

The doors are swung from the central pillars, those at the front slanting forwards into the scuttle so as to

provide plenty of foot room for easy entry. The rear seat is placed ahead of the rear axle; a plan which makes for ease of access. The floor at the back is flat with the exception of slight central hump necessary for propeller shaft clearance.

The body is of the composite type, framed in seasoned ash and panelled in steel. Special precautions have been taken to insulate the interior from the bonnet space. So effectively has this been carried out that the car can be driven hard for long periods without experiencing a trace of heat or fumes from the engine.

The interior of the body is sensibly equipped. For small articles there are large cubby holes in the fascia, and a shelf behind the rear squab.

Ashtray and cigarette lighters are provided both in the front and back. The fascia carries three double instruments, easy to read, which are indirectly lit with a rheostat control to vary the intensity.

As ignition is automatically looked after by a centrifugal governor and a suction diaphragm, the steering column carries only a Traffic-actor switch and a headlamp switch. The latter is used in conjunction with a foot-operated dipping switch. There is a strangler control on the fascia, together

with a Yale-type ignition key and a starter button.

Interior lights are fitted within the quarters and useful auxiliary lamps are provided under the bonnet and in the luggage locker at the back. This locker, incidentally, can be used with the lid open when very bulky articles have to be carried. The spare wheel is housed beneath a hinged platform on which the luggage is supported. The shapely tail carries a flush-mounted number plate, stop signal rear lamp and reversing light. Chassis equipment shows consideration for the owner-driver in the shape of simplified lubrication and D.W.S. permanent jacks.

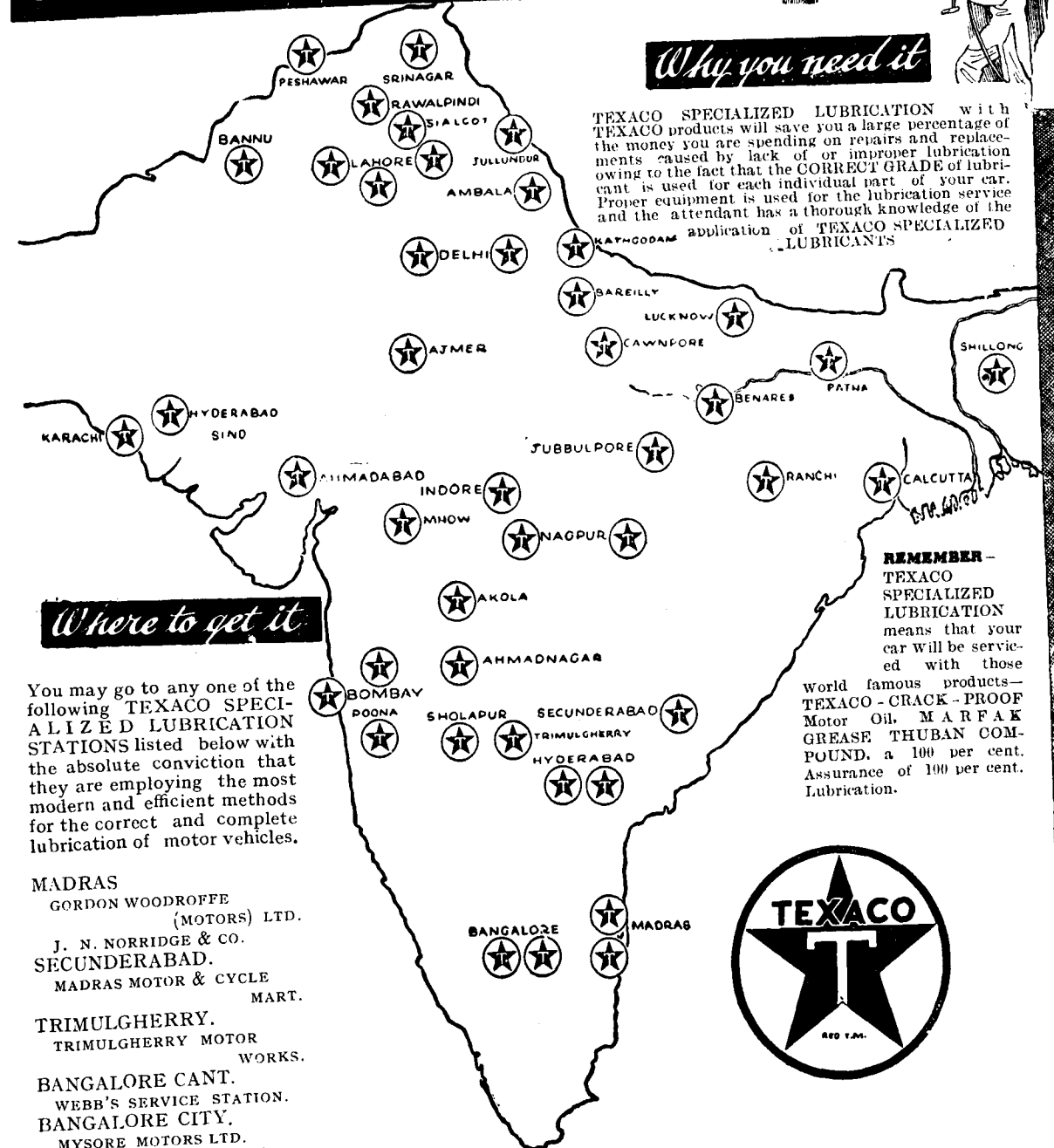
Altogether, an interesting six-cylinder car of advanced design, which displays many commendable features in its construction and performance.

SPECIALIZED LUBRICATION



Why you need it

TEXACO SPECIALIZED LUBRICATION with TEXACO products will save you a large percentage of the money you are spending on repairs and replacements caused by lack of or improper lubrication owing to the fact that the CORRECT GRADE of lubricant is used for each individual part of your car. Proper equipment is used for the lubrication service and the attendant has a thorough knowledge of the application of TEXACO SPECIALIZED LUBRICANTS.



Where to get it

You may go to any one of the following TEXACO SPECIALIZED LUBRICATION STATIONS listed below with the absolute conviction that they are employing the most modern and efficient methods for the correct and complete lubrication of motor vehicles.

MADRAS
GORDON WOODROFFE
(MOTORS) LTD.
J. N. NORRIDGE & CO.
SECUNDERABAD.
MADRAS MOTOR & CYCLE
MART.
TRIMULGHERRY.
TRIMULGHERRY MOTOR
WORKS.
BANGALORE CANT.
WEBB'S SERVICE STATION.
BANGALORE CITY.
MYSORE MOTORS LTD.
HYDERABAD (DECCAN).
HYDERABAD MOTOR &
OIL CO.
A. D. GRANT.



REMEMBER - TEXACO SPECIALIZED LUBRICATION means that your car will be serviced with those World famous products - TEXACO - CRACK - PROOF Motor Oil, MARFAK GREASE, THUBAN COMPOUND, a 100 per cent. Assurance of 100 per cent. Lubrication.

**THE TEXAS COMPANY
(INDIA), LTD.**
(Inc. in U.S.A.)

Head Office: BOMBAY.

Branches: CALCUTTA, COLOMBO, KARACHI, MADRAS.

A Complete List of Texaco Lubrication stations in India can be had on application to our Head Office, Bombay.

The starting times at Madras as fixed by the Official Handicapper were as follows, and all competitors left exactly on time.

7-36	"Gypsy—I Moth"	—	VT-ABY	—	Sir A. W. MacRobert.
7-36	"Gypsy—I Moth"	—	VT-ABX	—	Mr. S. K. Dube.
7-57	"Gypsy—I Moth"	—	VT-AET	—	Mr. G. V. Gadgil.
7-57	"Gypsy—II Moth"	—	VT-AGJ	—	Lieut. Misri Chand.
8-30	"Major Moth"	—	VT-AGL	—	Mr. A. C. Gazdar.
8-52	"Short Scion"	—	G-ADDT	—	Mr. C. E. Gardner.
9-45	"Miles Hawk"	—	VT-AGT	—	Mr. N. Vintcent.
9-50	"B.A. Eagle"	—	G-ADGJ	—	Mr. R. Vaughan-Fowler.
9-51	"Miles Hawk"	—	VT-AGH	—	Mr. N. M. Gazdar.
10-18	"Percival Gull"	—	VT-AGY	—	Capt. A. F. Muir.

We have received advice that the order of arrival at Hakimpet was as follows:—

					<i>Average speed.</i>
10-47	"Gypsy—I Moth"	—	VT-AET	—	Mr. G. V. Gadgil .. 120 m.p.h.
10-47	"Gypsy—II Moth"	—	VT-AGJ	—	Lieut. Misri Chand .. 120 m.p.h.
10-52	"Gypsy—I Moth"	—	VT-ABY	—	Sir A. W. MacRobert .. 104 m.p.h.
10-54	"Gypsy—I Moth"	—	VT-ABX	—	Mr. S. K. Dube .. 103 m.p.h.
11-11	"Major Moth"	—	VT-AGL	—	Mr. A. C. Gazdar .. 126½ m.p.h.
11-31	"Short Scion"	—	G-ADDT	—	Mr. C. E. Gardner .. 128 m.p.h.
12-01	"Miles Hawk"	—	VT-AGT	—	Mr. N. Vintcent .. 150 m.p.h.
12-14	"B.A. Eagle"	—	G-ADGJ	—	Mr. R. Vaughan-Fowler .. 141½ m.p.h.
12-23	"Percival Gull"	—	VT-AGY	—	Capt. A. F. Muir .. 163 m.p.h.

It will be noticed that Mr. N. M. Gazdar's "Miles Hawk" did not arrive at Hakimpet, and we have heard that he made a forced landing near Markapur.

Competitors left Hakimpet at the following times:—

11-07	"Gypsy—I Moth"	—	VT-AET	—	Mr. G. V. Gadgil.
11-07	"Gypsy—II Moth"	—	VT-AGJ	—	Lieut. Misri-Chand.
11-12	"Gypsy—I Moth"	—	VT-ABY	—	Sir A. W. MacRobert.
11-14	"Gypsy—I Moth"	—	VT-ABX	—	Mr. S. K. Dube.
11-31	"Major Moth"	—	VT-AGL	—	Mr. A. C. Gazdar.
11-51	"Short Scion"	—	C-ADDT	—	Mr. C. E. Gardner.
12-21	"Miles Hawk"	—	VT-AGT	—	Mr. N. Vintcent.
12-34	"B.A. Eagle"	—	G-ADGJ	—	Mr. R. Vaughan-Fowler.
12-43	"Percival Gull"	—	VT-AGY	—	Capt. A. F. Muir.

The order of arrival at Bombay at the end of the first day was as follows:—

					<i>Average speed.</i>
14-38	"Gypsy—II Moth"	—	VT-AGJ	—	Lieut. Misri Chand. .. 111 m.p.h.
14-42	"Gypsy—I Moth"	—	VT-AET	—	Mr. G. V. Gadgil .. 109 m.p.h.
15-06	"Miles Hawk"	—	VT-AGT	—	Mr. N. Vintcent .. 138 m.p.h.
15-07	"Major Moth"	—	VT-AGL	—	Mr. A. C. Gazdar .. 108 m.p.h.
15-11	"Short Scion"	—	C-ADDT	—	Mr. C. E. Gardner .. 117 m.p.h.
15-14	"Percival Gull"	—	VT-AGY	—	Capt. A. F. Muir .. 155½ m.p.h.
15-24	"Gypsy—I Moth"	—	VT-ABY	—	Sir A. W. MacRobert .. 93 m.p.h.
15-24	"Gypsy—I Moth"	—	VT-ABX	—	Mr. S. K. Dube .. 93½ m.p.h.
15-25	"B.A. Eagle"	—	G-ADGJ	—	Mr. R. Vaughan-Fowler .. 136 m.p.h.

The results of the Race which have just come to hand as we go to press, are as follows:—

			<i>Average speed m.p.h.</i>
1st	Lt. Misri Chand (Gypsy Moth)	4-21½ p.m.	.. 116.5
2nd	Mr. G. V. Gadgil (Gypsy Moth)	4-35 p.m.	.. 114.6
3rd	Mr. A. C. Gazdar (Gypsy Moth)	5-6 p.m.	.. 121.5
4th	Mr. S. K. Dube (Gypsy Moth)	5-41½ p.m.	.. 100.0
5th	Flight-Lt. N. Vintcent (Miles Hawk)	5-42 p.m.	.. 148.3
6th	Mr. C. E. Gardner (Short Scion)	5-43 p.m.	.. 124.0
7th	Sir Alasdair MacRobert (Gypsy Moth)	5-48 p.m.	.. 99.3
8th	Captain A. F. Muir (Percival Gull)	6-7½ p.m.	.. 162.0
9th	Mr. R. Vaughan-Fowler (B. A. Eagle)	6-26½ p.m.	.. 141.0

It is hoped that we may be able to publish in our next issue a description of the Race written by one of the actual competitors.

MADRAS RACES

SEASON 1935-36

(Under R.C.T.C. Rules of Racing)

FIXTURES

SUMMER MEETING (Five Days)

First Day ... SATURDAY ... 15th Feb. 1936	Third Day ... WEDNESDAY ... 26th Feb. 1936
The "Bangalore" Cup	The "Cochin" Cup
Second Day ... SATURDAY ... 22nd Feb. 1936	Fourth Day ... SATURDAY ... 29th Feb. 1936
The "Willingdon" Plate	The "Ceylon" Cup
Fifth Day ... THURSDAY ... 5th Mar. 1936	
The Maharani of Venkatagiri Cup	

RATES OF ADMISSION

Grand Stand and Enclosure

Season Tickets (Public Only)

	Day Tickets	
(1st Enclosure only)	Gentlemen.	Ladies.
	Rs.	Rs.
Summer Meeting 5 Days	17	10
	1st Enclosure:—	
	Gentlemen (On Saturdays and Gazetted Holidays) ...	Rs. 5
	Gentlemen (On non-holidays) ...	Rs. 3
	Ladies ...	Rs. 2
	2nd Enclosure:—	
	Gentlemen ...	Re. 1
	Ladies ...	As. 8

Including Tax

Note.—There may be one or two Extra Days' Racing after the Summer Meeting.

A Popular Car

It is of interest to note that no change has been made in the Vauxhall DX 14 H.P. Saloon for 1936 as compared with the 1935 model.

Changes and improvements in design are based largely on the results of exhaustive tests by experts and on reports from Distributors' Service organizations and owners representing many thousands of miles of use under all conditions throughout the world. When this is realized it becomes obvious that this car has passed the "teething trouble" stage and is sufficiently advanced in design and workmanship for yet another year.

Building well abreast of modern design and thereby avoiding frequent new models is also of no small advantage to owners (especially those living away from the main towns) when spare parts are required or when the time for re-sale arrives.

Reports received go to show that there is an increasing demand for these cars both at home and abroad to cope with which the factory is working at high pressure.

General specifications are given below:—

Engine:—Six-cylinders, overhead valves operated by push rods, Duplex roller chain camshaft drive, four-bearing crank-shaft, vibration damper, full pressure lubrication extended to gudgeon pins, external oil filter, ventilated crank-case, thermosphon cooling with fan and thermostat control, coil ignition with automatic and vacuum control, also micrometer adjustment, Zenith down-draught carburettor with air cleaner, silencer, and flame arrester, fuel feed by mechanical pump from 9 gallon rear tank, power

unit rubber mounted at four points. R.A.C. rating, 14.07 H.P., Tax Rs. 25 per quarter, bore $61\frac{1}{2}$ m.m., stroke 100 m.m., capacity 1783 c.c.

Transmission:—Single dry plate clutch, four-speed gear-box, synchromesh top and third gears, ratios—top 4.77, third 7.18, second 11.02 and first 18.70 to 1, reverse 16.71, open propeller shaft, Hardy-Spicer needle roller-bearing universals, spiral bevel final drive.

Brakes:—Semi-servo mechanical on all four wheels, cable operated, actuation by pedal and control lever.

General:—Worm and sector steering, cruciform frame, six cross-members, box section side members forward, independent front suspension, underslung semi-elliptic springs at rear, shock absorbers double acting hydraulic Vauxhall manufacture Lovejoy design—double-acting at front, single-acting at rear with anti-roll stabilising bar, wire wheels, 5.50 by 16 in. tyres, twin screen wipers, foot operated dipper switch.

Dimensions:—Wheelbase 8 ft. 5 in., track 4 ft. 2 in., overall length 13 ft. 6 in., width 5 ft. 2 in., height 5 ft. $3\frac{1}{2}$ in., ground clearance 7 in., turning circle $36\frac{1}{2}$ ft.

Models and Prices:—Except for special order, there is at the moment only the De Luxe Fourteen H. P. Saloon available at Rs. 4,725 at ports.

Makers:—Vauxhall Motors Ltd., Edgeware Road, The Hyde, London, N.W. 9.

Distributors:—Distribution points are given in our Sales and Service Guide on page 48.

The "Prix Constant-Bezier" has Just Been Awarded to the "Yellow Light" by the Touring Club de France

By Baudry De Saunier

The scientific world and the general public have very kindly given close attention to the campaign which I have been conducting in good faith for a year in order to get motorists not to use other than yellow bulbs in their head-lights.

Many thanks to all. The dreadful list of nocturnal accidents will come to an end.

But what are the exceptional qualities of yellow light? My articles and brochures have analysed them in detail, but I will recapitulate them briefly here: dazzle diminished to such an extent that henceforth two motorists with "yellow" light can pass each other in opposite directions without their drivers for one moment losing sight of the road and the obstacles on it as in white light; great increase in "contrasts", i.e., much clearer perception of the minutest details in the field of vision; increase in the depth of this field; finally, very considerable reduction of driver's fatigue due to eye-strain.

Our most famous scientists have admitted and sung the praise of these remarkable qualities. I cannot of course quote everything here, but I will take the liberty of mentioning that Louis Luminere, the immortal inventor of the cinema, wrote that the use of yellow light should be compulsory. Did he foresee what might happen tomorrow?

Well, the largest touring association in the world, the Touring Club De France, has just awarded the inventor of the yellow lamp its rarest and most cherished prize, the Prix Constant-Bezier. We all know with what sagacity, what independence and what sense of duty the Touring Club De France makes its decisions.

The nocturnal catastrophes on the roads will be eliminated by yellow light. Once again France, as regards the question of traffic, gives an example to other countries. I will, I hope, be excused for being so singularly proud of my god-child.

You can go **FURTHER**

FASTER

AT LESS EXPENSE

AND LESS WEAR

ON

Mobiloil BB

IMPORTANT

Because Gargoyle Mobiloil was the first motor car lubricant sold in India—and in the world, for that matter—it became the practice to use the word "Mobiloil" as a synonym for "motor oil."

Even when other motor oils were imported into India, this usage continued, and persists to this day.

But there is only one Mobiloil—Gargoyle Mobiloil—which from the first development of the motor car, right up to the present time, has maintained its reputation as the best motor oil made.

DEMAND



Mobiloil

Hill-Climbing Grows in Popularity

Light Cars Triumph in Ceylon Contest

Most exciting and most strenuous of all motor sports, in the opinion of many famous drivers and thousands of keen spectators, is hill-climbing. To those who crowd in hairpin corners and the steepest stretches to watch their favourites roar up seemingly unscalable gradients, there are infinitely more thrills packed in a few minutes than one can get in hours of watching an ordinary road or track race. And for the drivers, too, the monotony of events "on the flat" is thankfully exchanged for the continual need for real driving skill which the hazards and difficulties of hill-climbs demand. Seconds gained or lost in changing gear can win or lose the contest; one's engine must be continually coaxed to give its best under the immense strains imposed on it; and the man whose nerves—and machine—allow him to take corners fastest is the man who generally wins.

Overseas, hill-climbs are regular and very keenly contested events in all clubs' programmes. In the East, unfortunately, they are few and far between, but reports from various clubs which organize them indicate their growing popularity both with the public and with diverse. One of these clubs, the Ceylon Motor Sports Club, has recently held a successful meet at Loangwala, near Bandarawala, with exceptionally interesting results.

In the event for touring cars under 1500 c.c.'s, J. D. Burgess put up the winning time on his first run in a Ford 10 h.p. with M. G. Dover, also driving a Ford 10, only two-fifths of a second behind him. Dover, however, achieved first place in the large touring car class with a Ford V-8 covering the extremely difficult course in only 5 seconds more time than that taken by the less powerful but more manoeuvrable Ford 10. In the sports car class over 1100 c.c. a Ford 10 secured first place again with a Ford V-8 (Commercial Truck Chassis) only 1-4/5 seconds behind—an interesting result as these standard products were in open contest with "pukka" sports cars including two Bentleys and an M. G. Tiger.

It was unquestionably the light cars' big day—an indication that in sporting events as well as on the road, the vastly improved performance of modern light cars enables them to compete on very favourable terms with their "big brothers".

Ford Home Delivery Plan

Motorists proceeding on Home leave and contemplating the purchase of either a Ford V-8, the "DeLuxe Model (10 h.p.) or "Popular" Model (8 h.p.) will find much to interest them in the booklets entitled "Enjoy Your Leave with a Car" issued by the Ford Motor Company of India Ltd.

These booklets clearly explain the procedure to be followed under the "Ford Home Delivery Plan" when purchasing a V-8 or the English light car.

Purchases of the "Popular" and "DeLuxe" Model Cars made through a dealer under the Ford Motor Company of India Ltd., for delivery in the United Kingdom for temporary use there (not exceeding ten months) and subsequent shipment to India, Burma, Ceylon or other

IT WILL PAY YOU!

TO INVESTIGATE THE ADVANTAGES OF OUR NEW 'CONTINUITY' PLAN FOR THE PURCHASE BY INSTALMENTS OF ANY MAKE OF CAR

At Home

The scheme operates in conjunction with Dealers and our London Office
3, St. James Square
Pall Mall

and enables you to have the car you choose delivered at Home, shipped to India on expiry of leave and continue payments in India

No worry

No inconvenience

No delay

No annoyance

Exceptionally favourable terms

CONSULT YOUR DEALER OR WRITE OR CALL

GOVAN Bros. Ltd.

Managing Agents

Commercial Credit Corp'n. Ltd.

Bharat Buildings

Mount Road

Madras

and at

DELHI, CALCUTTA, BOMBAY, LAHORE,
GAWNPORE, LUCKNOW, RAWALPINDI, AND
PESHAWAR

overseas country, are effected under the Ford Home Delivery Plan but such purchases are entirely distinct from and must not be confused with those made under the Ford Home Delivery Plan (British Triptyque) covering V-8 units manufactured by the Ford Motor Company of Canada Ltd.

Privileges extended under the Triptyque system are open only to members of the Royal Automobile Club, the Automobile Association or affiliated A. As. (e.g., The

(Continued on page 78)

PREPARING YOUR CAR FOR A TOUR

By J. N. N.

One of the first things one should do before proceeding on a long tour, should be to change the oil in your engine, see that the gear box and differential are topped up with the correct lubricant, and that all lubricators and greasers have their supply.

With reasonable care and attention thousands of miles of care free motoring can be covered. Cast off Bullock shoes are the cause of a lot of trouble on the open road. They have a most annoying habit of being able to cut into a perfectly new tyre and cause irreparable damage. Although not by any means an ornament on any car, it is possible to fit 'bullock shoe catchers' as one might call them, to the front end of the running board. These vary in design considerably and are of course usually an amateur looking job, but if made so that the wind does not carry them back to the foot board by wind pressure they can be very effective. Usually it is the rear tyres that catch the bullock shoe. Theory has it that the front tyres disturb the bullock shoe and the rear tyres are just in time to catch the shoe as it falls to the ground again, with of course obvious results. A good—and even good looking—bullock shoe catcher can be made with ordinary heavy dog chains. To make one guard the following parts are necessary. Two mild steel rods of about 1/4" diameter, and long enough for two eyes to be made in one rod, which in turn is to be bolted to the bottom of the front end of the running board. A length of dog chain and a piece of rubber hose with 1/4" diameter bore. About 18 to 20 lengths of chain will be required for each guard and these must be hung at intervals of about 1/2 an inch on the top and bottom rods. Inter-space pieces of rubber hose 1/2" wide between each length of chain, both at top and bottom and then cover the bottom of the rod with a strong piece of leather leaving a short flap. The length of the guard depends on the type of car used, but about 1 to 1 1/2 inches clearance is about right.

Undoubtedly a lot of tyre trouble can be avoided if something of this nature is fitted, and from experience of the average muffed road in South India some precaution from hidden cast off bullock shoes is necessary, especially as these old shoes are worn to practically a razor edge on one side.

Brakes.—It is advisable to have your brakes tested out before proceeding on a long tour. Brake inefficiency at all times is dangerous, but especially so when covering long distances which necessitate fairly high speeds.

Ignition and Carburettor.—A few minutes spent in checking over the ignition is well worthwhile, and of course removing dirt and water from the petrol system filters is essential.

Spares.—The average owner usually takes great care to see that his tyre equipment is sound and that any

spares carried are really serviceable. In addition it is just as well to have a good set of tools, with a good pump and a jack that will work. A spare fuse or two, and extra sparking plug and a good puncture repair outfit are sometimes the means of saving not only considerable inconvenience, but loss of temper, which in this hot climate is no small matter. A good tip when changing a punctured tyre is to lay the inflated spare on the ground and then run the punctured wheel on to it. In this way the jacking process is easier as the jack will have to travel a much shorter distance. This also applies when it is found that the jack will not go under the axle with a fully deflated tyre.

Another section of the car about which the average owner does not worry is the rubber hose connections from the radiator to the engine. Once a year would be a reasonable time in which to change these. Although the rubber may look perfectly good from an outward inspection, after a year's work it will be found that the inside coating has become worn and eaten away by the constant passing of hot water. If these joints are allowed to remain on the car till they more or less rot, the perished rubber is liable to get into the water and other parts of the cooling system and cause serious over-heating.

Tools.—On most new cars a fairly representative kit of tools is supplied, but during the life of the car this kit is often sadly depleted and it is advisable to check over the remaining few and if any really necessary tools are missing these should be replaced. It is most annoying to be stuck on the road for hours just because a certain nut refuses to be loosened owing to the correct type of spanner not being available. A tool roll made from canvas is a useful accessory and divisions can be made to take certain tools. At a glance the owner can then see whether or not anything is missing.

(Continued from page 77)

Automobile Association of Southern India). It is therefore necessary that purchasers become associate members of either of these associations, the fees for which are nominal.

The A. A. S. I. is federated with the A. A. of Great Britain and affiliated with the Royal Automobile Club and its members are entitled to full membership of the A. A. and associate membership of the R. A. C. at a reduced subscription of one guinea, entrance fee being waived.

Copies of these booklets are available at all Ford Distributor and Dealer points.

This Motoring

by Stenson Cooke



THE ROMANTIC STORY OF THE

CHAPTER XX—(Contd.)

FOR KING AND COUNTRY.

Four years (within a month or so) of War. At the Annual General Meeting the membership figures stood at thirty-six thousand, six hundred and sixty-three. "What price our hundred thousand now?" was a pathetic and pardonable question.

"Never mind! The War can't last much longer. Carry on!"

Then, at eleven o'clock one Monday morning, after a week end of hopes and fears, the explosions of maroons heralded ALL CLEAR! That magic lead off was followed by motor horns, bells, cheers, tears, handshakes, embraces, thumping on the back, kissing, and other excusable evidences of mild hysteria.

The War was over!

CHAPTER XXI

RECOVERY.

With a calm characteristically British, the Committee met as usual on the morrow of Armistice Day.

Outside Fanum House mild hysteria still prevailed. Piccadilly was the centre of revelry, emulating Hampstead Heath on a fine Bank Holiday—but the Committee met as usual.

"And now, gentlemen," said the Chairman, "we must get back to work. For goodness' sake let us close the windows—that row in the street is most unseemly. Where was I? Oh, as I said, we must get back to work. How do we stand exactly? And what shall we do?"

"Our position is somewhat ironical," said the Finance Chairman. "We've dropped in membership from ninety

thousand to thirty-something; but, thanks to our sportsmen and sportswomen who have paid their subs. while getting nothing much in return, we've heaps of money in reserve."

"Good!" said Charles One. "Let us spend some of it?"

"Why?"

"Why not? Hang it all, it belongs to our members, doesn't it? They didn't subscribe it for it to be tucked away in a stocking. Remember the parable of the talents."

Somebody gasped, but Charles Two seized the point.

"He's right. Let's go all out after that First Hundred Thousand. Flood the roads with A.A. patrols. More telephone boxes—Publicity—Get a move on—Wake things up! Why not?"

He puffed at his cigar, and gazed rather truculently—for him—at all and sundry.

The Committee, responsive as ever to enthusiasm, "signified the same" in the usual manner.

"Bravo! Quite right! Let's get that six-figure membership, and hang the expense!"

"Agreed, gentlemen?" asked the Chairman.

"Ay, ay, sir!"

Left to Finance Committee and Secretary to devise ways and means.

Ways and means? Here, indeed, was a problem calling for bold decision. No one could forecast with any degree of certainty whether This Motoring would boom or slump.

"Never mind! Take a chance in the hope that it will boom. Wake things up and that will make it boom."

The war spirit seemed reluctant to die out at the behest of a few maroon signals. This was all to the good. Enthusiasm is ever a healthy germ. The staff were dribbling back, some rather diffidently, though they had no grounds for fear. They were greeted by "Splendid! So glad to see you! There's plenty of work! Hang up your hats and let's get on with it. Things are in rather a mess. We'll clean it up together!"

"We'll clean it up together, but mind," said the Senior, "it means work with a capital W. There must be no passengers on the A.A. boat. In the words of our faithful major domo, we haven't room for the type with one eye on the clock and your hand out on a Friday."

"Rather a mess" was a mild way to describe conditions of This Motoring.

The roads of Britain were in an appalling state. No longer could they be proudly acclaimed "smooth as a billiard table from here to so-and-so. Finest in the world, you know!"

Heavy motor lorries, bearing munitions of war, had rumbled, "good-bye to all that." Britain's star road-engineers had been busy making roads behind the Front, and had perforce taken steam-rolling plant and labourers with them. Hardly a highway retained a decent surface. "Business as usual" had been side-tracked. As and when the surface crumbled under heavy traffic, it was just shovelled to the side. That which didn't crumble, but, like the immortal British front line, could be bent but not broken, was very sadly bent.

The motor industry was in a state of chaos. Every factory had been put to munitions. Cars were scarce and prices prohibitive. Until the boys could come home repairs were being held up to such an extent that anything which would stand up and look like a motor car found a ready and quite irrational market.

"This is fine," chuckled a few lucky garage proprietors, who had kept going somehow. "Hope it will last."

It *did* last for a few months; then the situation was eased by the release of cars and lorries sent home from the War area. But prices remained high, profiteeringly so, as witness:

Early in 1915 one of the innumerable patriotic A.A. members, ordered to India, offered his brand new 12 h.p. touring car, of classic make, and beautiful, as a gift outright. Fanum replied, "Very sporting of you, and keenly appreciated, but, don't! *please*, give it—just lend it to us for War Service, and nothing *but* War Service. Then, at the end, we will return what is left. Who knows? It may be worth a tenner of two."

"All right, thanks!" said the member, and promptly forgot all about the matter. Being, as it was, British throughout, the car was quite fit and well after three and a half years' careful usage.

Its original price was four hundred pounds. Its owner was still in India—a Civil Servant. The process of cleaning up in due time brought the matter of L.B. 4—forward for consideration and settlement.

He who had driven it during intervals of home duty, was quite sentimental. "I've grown to love that bus," he said. "She steers like a yacht and has never let me down, I wish I could keep her, but that's out of the question. What shall we do?"

"There's only one thing to do," said his colleague. "Stifle your feelings, give her a thorough paint and varnish, sell her for the best price we can get, and give our member his money back."

L.B. 4—was reconditioned at a cost of thirty pounds. "We'll throw that in, eh? She saved us ten times that amount."

Looking as good as new, she fetched seven hundred and seventy-five pounds. The full amount was transferred by cable to the Chartered Bank of India in the name of Mr. Blank, who, in accordance with the traditions of his race, had thirsted to give something to his country in her hour of need. That gentleman cabled surprised and pleased thanks in a few well-chosen sentences.

The cable was filed for reference and the A.A. turned its thoughts back to the problem of the first hundred thousand.

Hotels! A rather pretty mess here! A rare state of things. Five-star and four-star had managed to keep their end up, but from those bearing one-, two-, or even three-star A.A. classification the tail had dropped clean out.

Poor things! It couldn't be otherwise. With ration cards, synthetic foodstuffs, unsympathetic mortgages, brewers' and distillers' loans, to worry them, and practically all that fairly profitable custom hitherto derived from This Motoring gone, hotel and innkeepers were in a bad way. Furniture worn to threads. Bed-linen frayed. Table-linen stained. Male staff away fighting, female of the species doing their men's work, pinched and drawn the while, living on war rations and an all too infrequent visitor's tip.

The clock had been put back. Dark rings of anxiety had thickened round the eyes of Boniface and Mrs. Moniface. In cottage windows were displayed, proudly at first, cards notifying that:

"A man from this house is fighting for his Country."

Pathetically, then, a tiny black ribbon would intimate that "is" had been changed by grim strokes of the great Reaper into "was."

The clock had been put back, almost to the time when the Duchess left the Duke's Arms for the last stage of her last journey.

Think what that meant.

Recovery came, slowly but surely, to these brave and patient people.

The brewer's collector sensed an improvement in the atmosphere of This Motoring, and acted in accordance with the best traditions of *his* office, which were to encourage trade. Called with British reticence a mere "Collector," he was, in fact, a General Staff Officer, first grade, to his Army Headquarters, the Brewery.

He administered an area of inns and hotels either owned by his brewery and rented to Boniface, with the stipulation that only the brewery's beer could be sold there, or on which large loans had been made on First Mortgage, also with the stipulation that only the brewery's beer could be sold.

That is how the breweries quite rightly did most of their business, and that is what was meant by the term—being in the hands of the brewers, or tied.

It is easy, therefore, to see that a Collector held a position of responsibility and power far exceeding the modesty of his official title.

A Distiller's Collector, at any rate in England, was not so great in importance because beer was the first item on the agenda of an English hostelry. Spirits and wines came second and third.

The shine had dropped out of A.A. stars. The work had to be done all over again as part of the 100,000 membership campaign.

Recovery in this connexion meant a thorough recombining and re-inspection, in order that the A.A. Handbook should, within a year or two, again be worthy of trust.

Boniface had cause to bless A.A. inspection. He welcomed the bright young Area Road Manager, back from War Service. "Just called in, you know, for a chat and a look round. Yes, thanks, I'm staying the night. How are things? You must have had a rough time, even as we did. But never mind. Thank Heaven it's over. Did your son George come out all right?"

"Yes, bless you!" said Boniface. "He's one arm short, but he's back at work, and we're pulling the business round by degrees. But, listen! The missis and I could do so much more if we could only coax a bit more money out of our brewers. The place fair makes us weep. We took such pride in everything being spick and span, and—look at it—ceilings cracked and wallpaper mouldy; the very chair you're sitting in has a leg loose—be careful. A few hundred pounds would help us to get back to our pre-war smartness. It fair makes us weep."

"What about your Collector?"

"He's a good chap, but I suppose even a brewery has its troubles, what with D.O.R.A. and restrictions on production, and so on. If we could kind of squeeze him a bit—you know what I mean—bring some pressure to bear—"

"Pressure!" said the A.A. man. "You want pressure? Why shouldn't!—I say! take me over your place, now, before we settle down for the evening. I've got an idea—and a notebook."

The A.A. Area Road Manager had paid his bill in full, in accordance with the strictest traditions of *his* office, and was saying good-bye. "Now! don't get the wind up when our official letter arrives. It will be a stinger!" He winked as he let in the clutch. "Don't get the wind up, and mind you let me know. Mark your letter 'Personal.' Good-bye, Boss; good-bye, George! No more Mespot, eh?"

The Collector was taking tea. He looked worried. "Let me read the A.A. letter again!"

"Reluctantly compelled to withdraw the official appointment. Take down the A.A. sign. Take it down!—but that's dreadful! Think what that means to our prestige. How the Rose and Crown will jeer. How the townspeople will talk!"

"But, sir," said Boniface, remembering the wink, "you see what the A.A. letter goes on to say, and it's signed by the Secretary—not a rubber stamp, or *per pro.*,

or anything. It says *unless* I can have the place put in proper repair, and new furniture and beds and bedlinen, and tablecloths, and so on, and two extra lavatories—well! it's not so hopeless! I've worked it all out, and got an estimate. Five hundred will do it. At five per cent. that's only ten bob a week. We can get that back ten times over in trade. Couldn't the brewery help? Now—come!"

"You're right," said the Collector. "The brewery must help. I can't promise, of course—but I'll certainly recommend it! The A.A. sign to come down? Oh, no!"

The Collector got into his car, said good-bye, drove away, and Boniface, beaming, cried: "Here! Mother—George! Collector's gone, and we've 'clicked.' We're through! We'll get the extra loan. The A.A.'s done it!"

The garage man—the roadside repairer—had had a thin time, too! How he even kept a roof overhead is a wonder and a lasting credit. He suffered, but, in accordance with the best traditions of *his* race, managed to keep a firm chin above rough water. Thereby he was a potent factor in the recovery of This Motoring.

No brewers' loans for him—oh, no! The long, long trail a-winding to munition factories afar had pulled away his workmen. The stream of motoring traffic, from which he had extracted a modest living, died down and down to a mere trickle. With Dick and Walter away, of course, Mary and Ethel had put on overalls and were carrying on bravely, but despite their efforts trade had gone from bad to worse, even as with Boniface. True, petrol reached as high as four shillings a gallon, but there hadn't been enough buyers to pay the rent.

Comparatively few people troubled to realize the immense needfulness of the local repairer, and what an important factor he and his were—and still are—in the peace and comfort of This Motoring.

The A.A. had always been his champion. When cleverly conceived enterprises for Co-operative Trading in motor accessories were launched, the A.A. stood aloof. "This Motoring needs the local repairer. He must live, and prosper, and be afforded his moderate profit to that end." Thus said the Executive Committee.

The Motor Trade Association had received this statement of A.A. policy, at an Annual Dinner, with outward applause and inward reciprocal sympathy.

The A.A. spokesman, standing on a chair, with one foot on the tablecloth, had said: "We are not in favour of Co-operative Trading, which aims to kill the small trader. Our members need repair service, supplies, and so on, just as close as can be to the spot where those needs occur." He went on: "If one of ours is hung up near Pitlochry in Scotland, or Pwllheli in Wales, with his last tyre-cover burst to bits, or his big-end seized, what's the use of Co-operative Trading to him? 'No!' he says, 'damn Co-operative Trading. Give me the A.A. Handbook'—and he's right."

That statement cemented an understanding which meant much for motoring and the industry that thrives upon it.

(to be continued).

MADRAS FLYING CLUB NOTES

The New Year and the month of January opened with more aerobatics, the Club Instructor gave a demonstration over the Park Fair accompanied by Mr. Lomax as passenger, the latter took this opportunity of getting first hand experience of the more unusual evolutions that can be carried out by an aeroplane, and gained everyone's admiration by doing it on New Year's Day, which is perhaps of all days the one which most people like to spend quietly at home, this time the Park Fair authorities did not fire off rockets, much to the relief of the Pilot.

Earlier the same day, a Club's Gipsy Moth with the Instructor was chartered by Mr. Steele for a survey of ground for a high tension line in the neighbourhood of Madras, the survey had to be done by sketching as at present no photographs of the ground may be taken from aeroplanes.

Wing Commander Crosbie arrived a day or two later with the new De Havilland Moth, which he demonstrated on several evenings, it certainly is a very simple machine to fly and very comfortable, he was accompanied by three Australian terriers who by the way they frisked about the aerodrome, had evidently formed the opinion that air travel was the thing for discriminating hounds, they caused quite a stir amongst the local pi dogs.

On the morning of the 6th he flew away into the North, bound for Bombay. The same morning Messrs. Gopakumar and Arya set off on a trip to Trivandrum in the Gipsy VT-ACU, and returned next day, followed later by a bill for Rs. 25, being landing charges. Expensive place Travancore to visit by air. Mr. Sundaram flew to Nellore and back one day, and Mr. Soloyappa Chettiar to Pondicherry and back on another, and on the 24th, the Club Instructor carried Lord and Lady Gough to Hyderabad (Deccan), returning at once in time for evening flying.

Dual instruction went along merrily, and four first solos were launched, Messrs. C. B. Darius and N. De Silva (of Ceylon) and Messrs. Sundararajan and Parthasarathy of Madras. All successful. We welcomed a new flying member in the person of Miss J. M. Scrutton who proceeded straitway to make extra rapid progress, but could not quite manage to get off solo in the month, due to the Pilot Instructor being away for a week to Bombay to get his blind flying certificate.

On the 28th the Club was closed for the funeral of His Majesty King George V.

The final flight of the month was by Mr. Warriert. It was his last flight before proceeding to his new appointment of Assistant Aerodrome Officer at Allahabad. We are very sorry to lose one who has been with us for so many years, who has been nurtured at the Club, and we wish him a very successful career.

Flying Time for January, 1936

	H.	M.
Dual instruction to members under training	47	30
Advanced dual to "A" licenced pilots	2	15
Solo flights by members under training	21	45
Solo flights by "A" and "A-1" pilots	22	40

	H.	M.
Pilot with passengers. ("A" and "A-1" pilots)	28	20
Joy rides	5	45
Cross country trips in Club machines piloted by the Club pilot.	6	50
Other flying	3	00
Test flight	0	15
	Hrs. 138	20

The following members took dual instruction during the month:—

Europeans:

Mr. C. E. Gayes.	
Mr. P. W. Lomax.	
Miss J. M. Scrutton.	
Mr. H. F. Prynne	Advanced Dual.
Mr. D. W. Law	do.

Indians:

Mr. R. Sitaram	Advanced Dual.
Mr. V. Sundaram	do.
Mr. G. Gopakumar	do.
Rajah of Vizianagram	do.
Mr. R. Atmaram.	
Mr. W. Parthasarathy.	
Mr. S. Runganadhan.	
Mr. K. V. Muthukumar.	
Mr. M. D. Sundararajan.	

Ceylonese:

Mr. N. de Silva.	Mr. D. W. Wetta Singhe.
Mr. C. B. Darius.	Mr. Wanigesekera.

New Members during the month:—

Miss J. M. Scrutton.

Members who flew first solo during the month:—

Mr. C. B. Darius.	Mr. M. D. Sundararajan.
Mr. N. de Silva.	Mr. W. Parthasarathy.

Members qualified for "A" licence during the month:—

Mr. N. de' Silva.

Cross country trips during the month of January 1936

Date	Machine	Pilot	Passenger	Journey	Time
6-1-36	VT-ACU	Mr. Gopakumar	Mr. G.C. Arya	Madras to Trichy	H.M. 2—20
6-1-36	"	"	"	Trichy to Trivandrum	2—45
7-1-36	"	"	"	Trivandrum to Trichy	2—55
7-1-36	"	"	"	Trichy to Madras	3—00
11-1-36	"	Mr. V. Sundaram	Nil	Madras to Nellore and back without landing	2—40
24-1-36	VT-ACB	Mr. Tyndale-Biscoe	Lord and Lady Gough	Madras to Hyderabad	3—15
24-1-36	"	"	Nil	Hyderabad to Madras	3—35
25-1-36	"	Mr. S.M.R.M. Solayappa Chettiar	with one passenger	Madras to Pondicherry and return without landing	1—45

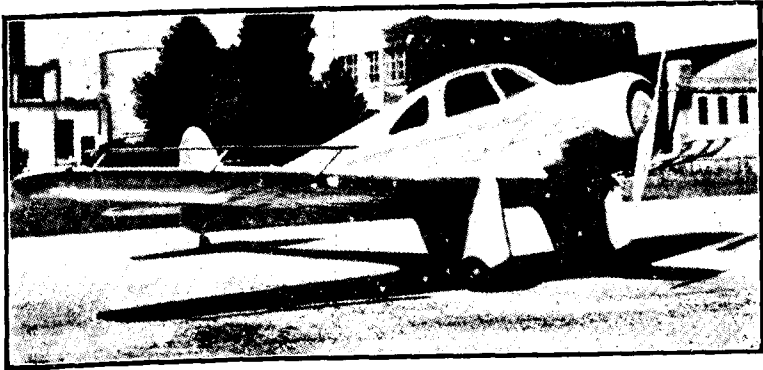
NEW AIRCRAFT, AERO ENGINES AND EQUIPMENT
The Curtiss-Wright "Sparrow"

A two-seater side-by-side low-wing monoplane built on the lines of the latest high-speed air transport aircraft, the Curtiss "Sparrow" embodies many features which are new to the lighter aircraft. Using the latest air transport types as a pattern, each detail of construction has been carefully considered so that safety, reliability, comfort, and economy of operation receive due attention, and speed and range are not sacrificed to obtain them.

The "Sparrow" is of all-metal construction throughout: 24 S.T. Alclad is used which does not have to be painted or periodically resurfaced; aluminium alloy castings are used as far as possible for economy in weight and reliability. The wing is built up of five spars, the skin being designed to carry the load; throughout every effort has been made to avoid any concentration of load; with the result that the structure is elastic as well as strong. This method of construction also means that the exterior parts of the aircraft, which are, easily inspected, are the major structural members; damage is therefore readily detected, and should repair be necessary this is easily done. The attachment of the wing to the fuselage is consistent with the other features of the aircraft in reducing the concentration of loads; the entire width of the surface of the wing is attached to the fuselage by means of a double riveted joint and the fillet between the wing and the fuselage gives additional reinforcement. The ailerons are also entirely of metal and have an ingenious mechanism designed to improve aileron control. They are locked against downward travel, past the neutral position. This is done by means of the inclusion of idler ring in the control rod, so that the pulleys are made to rotate idly when the aileron reaches the neutral position on its downward travel, even though it is rigidly and directly connected with the opposite aileron control mechanism. There are no loose or sliding parts which become disconnected at any time during the operation. This feature eliminates the possibility of flutter as the aileron, as before mentioned, is securely locked upon reaching the neutral position. The mechanism is simple in construction and positive in action and obviates the necessity for cams or other complicated devices. The attachment of the aileron to the wing is through a full-length piano hinge. This eliminates the concentration of loadings usual with other types of hinges, and also acts as a damper under high stresses. The wing is equipped with a split flap running 70 per cent of its length; it is worked by a rotating handle conveniently placed at the pilot's right hand. It is operated through torque tubes

differentially so that the loading on the handle remains almost constant regardless of the loads on the flap; the flap actuating mechanism is attached to the flap at five points. A fixed auxiliary aerofoil is used on the outer tips of the wing. This slat is designed and placed in such a way that it gives the best aileron control at low speeds and avoids the possibility of spinning. The fillet between the wing and the fuselage is designed to avoid the possibility of tail buffeting. The fuselage is of all metal monocoque construction consisting of raised rings, stringers and skin following the usual practice in the construction of air transport aircraft. The cabin has two doors one on either side; its strength is such as to give it a comfortable margin of safety and it will withstand a complete somersault. A great deal of consideration has been given to the comfort of the occupants, and in consequence the various appointments of the cabin are outstanding and at the same time incorporate features which make for greater safety, reliability and ease of handling. The lay-out of the instrument board, control wheel and rudder pedals, is similar to that used in the conventional motor-car, with the exception that complete dual control is fitted. The seats are adjustable fore and aft, as well as vertically, and the backs are hinged to allow easy access to the baggage compartment. Visibility is extremely good, the pilot being placed as close as is practicable to the windscreen, which is made of transparent plastic material or non-shatterable glass whichever is preferred by the purchaser. The ventilation is by means of two ventilators at the top of the windscreen, in which are mounted mirrors which allow a good view backwards for landing and taking off. These ventilators are of the "non-draught" type and suck air from the cabin. Fresh air is admitted to the cabin through an aperture in front of the engine which ensures that only pure and uncontaminated air is admitted. The control column is conventional in type; it is mounted on a hinge between the instrument board and the fireproof bulkhead, and is on ball bearings. The wheel is of aluminium alloy and is of the spade-grip type.

The rudder pedals are of normal design, the actual rudder bar being beneath the floorboard, following the policy of keeping the cabin as free as possible of obstructions. Hydraulic brakes are used to permit of extremely short landing runs. The parking brake is a simple sliding control on the instrument board which operates a screw-stop on the hydraulic cylinder. This eliminates the



The Curtiss-Wright "Sparrow."

(Courtesy "Shell Aviation News.")

necessity for a ratchet or other means of holding the brake on and only a light pull is required to apply the full amount of braking power. The construction of the tail is similar to that of the wing, the stabilizer and fin being fixed. The elevators and rudders are of metal construction, the hinges being of piano type extending from tip to root, thus preventing undue loads being concentrated in any one place. A steel torque tube connects the elevators. The rudder has a fixed flap that can be adjusted on the ground for various cruising conditions.

The "Sparrow" embodies a number of novel safety devices which are enumerated below. A landing gear in which the oleo legs have a travel of 10 in., fitted with air-wheels, is used which makes possible landings in a fully stalled condition without undue shock to the aircraft or to the occupants. It is held in position for the take-off by a small latch in the oleo which is automatically released on the first turn of the flap. This enables the pilot to reduce to a minimum the drag of the undercarriage when in the air.

The engine fitted is a Lambert R-266 developing 90 h.p. at sea level. It is fitted in a mounting of tubular steel, being supported on rubber bushings to absorb the

vibration. The cowling is so designed that no part is fixed directly to the engine and has a hinge running along the top so that by loosening three small fastenings at the side either part of the engine cowling can be opened in a manner similar to that of a motor-car bonnet. The entire cowling can be completely removed from the engine by undoing three small pins which hold the hinge to a steel tube of the engine mounting. The maximum fuel capacity of the "Sparrow" is 52 American gallons which is contained in two tanks, one on either side of the fuselage in the wing. Six gallons in the tank on the port side are held in reserve; the fuel valve has four positions; left tank, right tank, reserve and off. The oil tank is attached to the fireproof bulkhead directly behind the engine and is mounted on felt pads to absorb vibration. It has a capacity of five American gallons, which is ample excess over normal requirements. It is designed to afford the greatest amount of radiation to permit ample cooling of the oil under all conditions of flight. A number of accessories are supplied, including a 12-volt battery, a first-aid kit, and an electrical engine starter.

The span is 35 ft., length over all 25 ft. 5 ins., and height over all 7 ft. 2 ins. (courtesy "Shell Aviation News.")

A Small Aircraft Engine

An aircraft which has created a great deal of interest owing to the good performance it provides at low initial and operating costs—the Praga Baby—is fitted with an engine manufactured by the Ceskomaravska Kolben-Danek A. G. of Prague. It is a four-stroke, overhead-valve flat-twin of 1.9 litres capacity, with a maximum power output of 40 h.p. at 2,500 r.p.m. The crankcase is built up of aluminium and incorporates an oil sump at the front. This is so placed in the slipstream that it acts to a certain extent as an oil cooler. The pistons are die-cast from an aluminium alloy and are fitted with one scraper and three gas-rings. The cylinders are machined from a solid billet of chromium steel and are heavily finned. They are provided with a double flange for attachment to the crankcase. The cylinder head is cast in aluminium and is also heavily finned. The combustion chamber is machined hemispherical, and has bronze valve inserts. The valves are made from alloy steel and are tulip shaped the valve faces are cut at an angle of 30° and inlet and exhaust valves are interchangeable; they are operated by enclosed push rods and rockers, the valve rocker assembly being lubricated by oil breathed up through the push-rod covers. When the engine is installed in the aircraft the push rods are on the underside with the exhaust ports facing forward and the inlet ports at the back. Oil circulation is ensured by means of a double gear type pump situated in the lowest part of the sump; the oil is drawn from the sump and passed through a pressure filter before being fed to the crankshaft. After circulation it passes through a second filter and returns to the sump. For use in winter a special exhaust muffle is provided, which heats the air

supply to the carburettor. This should effectively prevent ice formation.

Specification and Performance

Bore	.. ..	4.13 in.	105 mm.
Stroke	.. ..	4.33 in.	110 mm.
Capacity	.. ..	122.5 cub. in.	1.9 lit.
Compression ratio	.. ..	5.3	
Rated altitude	.. ..	sea level	
Rated speed	.. ..	2,400 r.p.m.	
Rated power	.. ..	36 b.h.p.	
Maximum power	.. ..	46 b.h.p.	
Maximum speed	.. ..	2,500 r.p.m.	
Net dry weight	.. ..	99 lb.	45 kg.
Fuel consumption	.. ..	66 lb./b.h.p./hr.	300 grm./b.h.p./hr.
Oil consumption	.. ..	1¾ pt./hr.	1 lit./hr.

(Courtesy Shell Aviation News).

RADIO
The Choice of a Short-Wave Receiver

by
L. W. Hayes
Empire and Foreign Services Engineer, BBC

(The judicious choice of a short-wave receiver for reception of the Empire Station overseas is of paramount importance. In this article the Empire and Foreign Services Engineer of the BBC endeavours to explain the results which may be expected from a modern all-wave receiver, and to point out the technical features which are principally responsible for good performance.)

Many Empire listeners write to the BBC to ask for a specific recommendation of the make of receiver they should purchase to enable them to listen to the Empire transmissions. These requests cannot be dealt with directly, for it would obviously be undesirable for the BBC—a public corporation—to recommend the products of one or other manufacturer. It is recognised that it is very difficult for the completely non-technical listener to know what receiver he should buy, and the only advice that can be offered to him is that he should get several makes of receiver and try them out, selecting the one which appears to give the best reception under his own conditions. Certain remarks which follow in this article may assist him in his comparison, but since some of them demand slight technical knowledge and others rather more technical knowledge and appreciation, the assistance of a technically-minded friend is necessary if the best selection is to be made. An endeavour is made to show what may be expected from modern all-wave receiver generally, and to point out the technical features which are principally responsible for giving this performance.

When buying a receiver it is most useful to try it out in the situation in which it will be used, and it is desirable that receivers should be compared, if more than one make can be obtained, in the same situation and at the same time. In short-wave reception particularly, conditions vary from place to place even in the same locality, and they may be greatly different from day to day. It is realised, of course, that some Empire listeners cannot try out a receiver where it will ultimately be used, before buying it; but numbers of others can do this, and it is recommended that they should.

Let us now examine some of the terms used in describing receivers, and see how they can give a standard by which performance can be judged on paper. This should not replace practical tests but rather reduce the choice to a few receivers on which practical tests can be carried out.

Wave-Range of Receivers

The Empire Service pamphlet (obtainable free on request to the B B C Publications Dept.) contains some notes on the general type of receiver—whether battery or mains operated, etc.—for use in different situa-

tions, but it is well to set down here what is meant by short-wave, medium and long-wave, and "all-wave" receivers. Until a few years ago there were only two groups of waves generally used for broadcasting. These were known under the names of "long waves" and "short waves". Subsequently shorter wavelengths have to come into use for broadcasting, making it necessary to use the term "medium" waves for the original "short" waves, and to define the newer short-wave bands as "short" and "ultra-short".

The designations generally used for broadcasting waves are now as follows:—

LONG WAVES: 150–300 kc/s (2,000–1,000 metres).

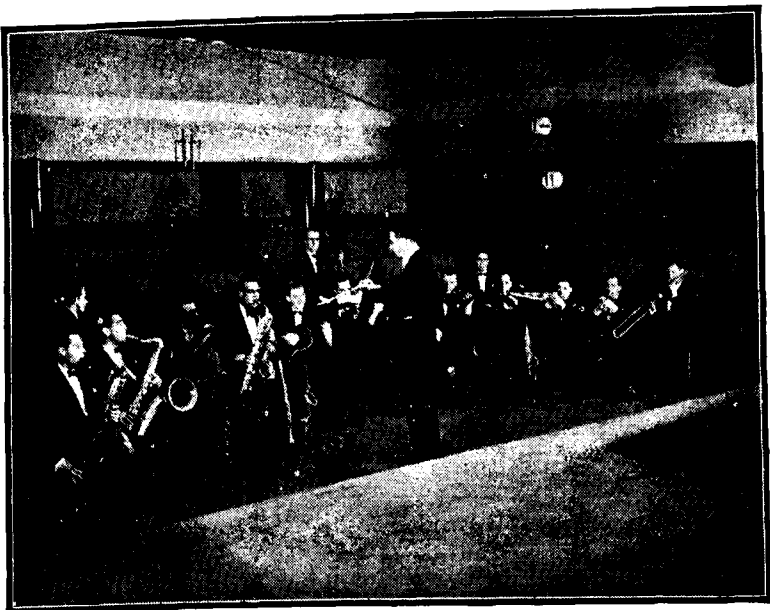
MEDIUM WAVES: 550–1,500 kc/s (545–200 metres).

SHORT WAVES: 6,000–30,000 kc/s (50–10 metres).

ULTRA-SHORT WAVES: above 30,000 kc/s (below 10 metres).

The transmissions from the Empire Station are at present made within the band of short waves on frequencies between 21,600 and 6,000 kilocycles per second (13.9–50 metres). A receiver capable of receiving only this band of waves, or part of it, or a band from 13.9 to 80 or 100 metres is known as a short-wave receiver. A normal European broadcast receiver covers the bands 200 to 545 metres and 800 or 1,000 to 2,000 metres. An American broadcast band receiver covers only the medium-wave band from 200–545 metres. The majority of receivers now sold in America, however, are called "all-wave" receivers and combine some or all of the short-wave band and the medium-wave band whilst, for export to Europe, they also cover the long-wave band. The actual wavelength limits vary widely from one make to another. The most comprehensive cover from 6 or 9 metres to 545 metres in four positions of the wave-change switch, whilst the long-wave band is covered from 800 to 2,000 metres by a fifth switch position. There are, however, other American receivers which do not tune below 16 or 19 metres.

The most comprehensive British all-wave receivers usually have four bands of approximately 13–32 metres, 30–80 metres, 200–545 metres, and 800–2,000 metres, whilst others cover only three bands—namely, 16–50 metres, 200–545 metres, and 800–2,000 metres. It is of course, desirable that Empire listeners should have receivers which cover all the waves at present used by the Empire Station. No. 70 or 80 metre waves are as yet used for broadcasting, but it is possible that they may become available in two or three years' time.



B.B.C. Dance Orchestra directed by Henry Hall. (By courtesy of the B.B.C.).

Number of Valves—Sensitivity

Although the number of valves may give some indication of the sensitivity of a receiver, prospective purchasers should not be misled into thinking that the number of valves is of necessity a true criterion of sensitivity. The modern British valve is, generally speaking, capable of doing more than its American counterpart, but the British practice of combining the functions of two or more valves in one glass envelope causes difficulty. A British-made receiver is now sometimes specified by its number of "stages" instead of by its number of valves.

In addition, the question of "power output" of a receiver must be considered. The most common British practice is to use one-power output pentode, whilst the current American practice is to use several triode valves in a parallel push-pull arrangement. Certain valves used on modern sets for special purposes, such as muting valves, tuning indicators, etc., do not contribute either to sensitivity or power output. In British sets several of these functions may be carried out by one multiple valve, whilst in American sets separate valves are used. The general result of this is that the British set generally has five or six valves, and may have as many as ten or twelve, whilst the American set has eight or nine valves and may have as many as twenty-two or twenty-four.

Dealing with the question of sensitivity, it will generally be found that modern sets have adequate sensitivity on wavelengths above about 25 to 30 metres, and, indeed, the usable sensitivity is generally less than that possessed by the receiver and is determined by the unwanted noise due to atmospheric and man-made static. On waves below 25 metres, however, the sensitivity is not always great enough, and is often limited by the noise generated in the receiver itself. This becomes more apparent as the wavelength is decreased. Experience shows that for satisfactory signal-to-noise ratio on these low waves it is necessary to have a radio-frequency amplifier in front of the frequency changer, and for this stage to contain efficient tuned circuits. This is a most important point to look for when choosing a receiver. Further mention will be made of this under the heading of selectivity.

Type of Frequency-Changer

In a superheterodyne receiver the design of the frequency-changing circuits has an important bearing on the performance of

the receiver, particularly from the point of view of noise generated in the receiver, its sensitivity, and in the short-wave bands—on the ease of tuning. There are many different types of frequency-changer—namely, the octode, the heptode, the triode-hexode, the triode-pentode, and the triode-triode, as well as the auto-heterodyne arrangement for which a pentode is often used. In the triode-hexode and triode-pentode connexions one valve is used by some manufacturers whilst others prefer to use a separate triode valve. There is considerable controversy amongst receiver designers over the advantages claimed for one or other arrangement, but the non-technical purchaser of a receiver will probably not be able to tell the difference. The trend of modern practice in all-wave receivers, however, seems to be towards the triode-hexode or triode-pentode, with a separate triode for the more expensive receivers.

Selectivity

Selectivity in a modern short-wave or all-wave receiver is of paramount importance. Two aspects of selectivity must be considered in a superheterodyne receiver. Adjacent-channel selectivity—the quality which gives freedom from interference from stations in the immediate neighbourhood of the frequency of the wanted station—is determined chiefly by the intermediate-frequency circuits, whilst "second channel" or "image signal" selectivity is determined chiefly by the signal-frequency circuits, *i.e.*, those circuits which are tuned to the frequency (or wavelength) on which the station is working and which come between the aerial and the frequency-changer valve. The value of the intermediate-frequency also has an effect on second-channel selectivity, which increases with increase in intermediate-frequency.

Not less than two tuned circuits, exclusive of the oscillator circuits, are desirable in the signal-frequency circuits of a short-wave receiver, or on the short-wave bands in an all-wave receiver, whilst, in addition, it is advantageous that special "image-signal rejector" circuits be included in the aerial circuit. It is exceedingly difficult to tell whether the image signal or second-channel selectivity is adequate merely by looking at a receiver, although a statement in the specification to the effect that some or all of the above circuits are included will give some comparative indication.

(To be concluded).

EMPIRE BROADCASTING MISCELLANY

The Coming of Television

The early history of television will necessarily differ from that of sound broadcasting for two critical reasons. There is no apparatus for receiving television comparable in simplicity and cheapness with the crystal set, and the range of stations is limited by certain physical factors over which engineering can exercise no control.

For these reasons, television cannot hope to grow with the incredible rapidity with which broadcasting covered Great Britain and the U.S.A. in 1922 and 1923. When television programmes from the new BBC station at the Alexandra Palace start this year, they will be capable of reception only by people in the London area. In addition, these programmes will be experimental in every sense of the word. Apart from the many technical problems attending the inauguration of a regular service by methods as yet comparatively untried, the programme side itself is virtually a virgin field. Both the resources and the limitations of high-definition television have yet to be explored.

It may be some time before television becomes more than a luxury supplement to sound broadcasting. The Television Committee estimated that ten ultra short-wave stations would be necessary to serve fifty per cent of the population, so it is obvious that the one station at the Alexandra Palace will possess only an academic interest for the bulk of listeners. But the importance of a new development is not always proportionate

to its initial effects, and we have no hesitation in predicting that the coming of television will prove in the long run to have been the most momentous happening in the radio history of the New Year.

The "Queen Mary"

In the autumn of 1934 the giant Cunarder, "Queen Mary" was launched on the Clyde, and the ceremony was broadcast by the BBC. Listeners everywhere were able to hear the King's speech, the Queen's words as she named the ship, and the vivid description of the tense moment when the great vessel took the water. Since then the progress of the "Queen Mary" has been followed with constant interest by the British public, to whom the ship has become a symbol of Britain's unflagging ambition to excel in the peaceful rivalry of the sea.

Future Broadcast Plans

In May this year, according to present arrangements, the "Queen Mary" will sail from Southampton on her maiden voyage to New York, and again broadcasting will cater for the public interest that the voyage will arouse. The "Queen Mary" will carry a flying squad from the BBC, with microphones placed at strategic points throughout the complicated structure of the big ship. From the time she sails to the time she docks in New York, British listeners will be in daily contact with her; they

will be able to hear at first hand what progress she is making, and how life goes on among the thousands of people on board. From engine-room to crow's nest, the microphones will convey an impression of the multifarious activities of passengers and crew.

If the many technical difficulties can be overcome, such a series of relays should constitute a new achievement in broadcasting, combining entertainment and news with all the interest of 'actuality' and the thrill that broadcasts from mid-Atlantic can still bring. At all events, it is certain to be one of the most eagerly-awaited events in the broadcasting of 1936, for here, surely, is one of the things that only broadcasting can do.

British Sets in Malaya

The advance shown by British manufacturers in catering for the overseas market for short-wave receivers was well demonstrated at the Penang Radio Exhibition, which was opened by the Governor of the Straits Settlements, Sir Shenton Thomas, on December 5.

Sir Shenton Thomas, who spoke to Penang by landline from Government House, Singapore, expressed his pleasure at the initiative shown by British firms, and declared that the time was certainly ripe for British radio companies to expand their overseas business; local stations were increasing in number, and the new BBC short-wave transmitters promised to give Empire programmes even better than hitherto.

A Jungle Broadcasting Station

We have already reported the opening of a new Broadcasting station at Port Moresby in Papua, which now operates on a wave-length of 221 meters with the call sign 4 PM. We now learn that the early transmissions from this station have proved most successful and that reports on reception have already been received from Thursday Island and various parts of Australia and New Zealand remarking on the splendid quality and strength of the transmissions.

In opening the new station the Administrator of the Territory, Sir Herbert Murray said:—

"Papua has seen many changes since I first came here more than thirty years ago, but of all those changes, the establishment of this wireless broadcasting transmitter is in many ways the most remarkable. We shall all benefit by this service, but it will, in particular, be a priceless blessing to those who hold the lonely outpost of these Territories—the planters, miners, and others who are far removed from the centres of settlement.

"I am glad to think that through the establishment of this service, they will feel less cut off from civilisation, and that they will realise more fully that they are still part of the great world beyond the limits of Papua and New Guinea."

4 PM is owned and operated by Amalgamated Wireless (Australasia) Ltd.

Three Million

We were pleased to hear that the net sales of the Christmas Number of the *Radio Times*, the official journal of the BBC, totalled more than three million—to be exact, 3,069,178.

So far as we know, this figure has never been equalled by any weekly magazine. The primary purpose of the *Radio Times* is to provide listeners with a service of information about BBC programmes, in order that they may enjoy their listening more; its secondary purpose is to produce profits which go to the general funds of the BBC, to be used in the interests of listeners.

The Church in Melanesia

The Right Reverend Walter Hubert Baddeley, D.S.O., M.C., Bishop of Melanesia, recently gave a talk from the BBC on the work of his diocese. In such a diocese transport is one of the biggest problems, and most of it is done from a yacht, "The

Southern Cross," a name which has been given to mission vessels for more than eighty years.

The Bishop stated that he sailed more than 18,000 miles a year on "Southern Cross VII", which carries not only the Bishop and his staff, but collects from outlying islands lads and girls chosen for a course at a central school. She takes teachers and clergy to and from their new headquarters and brings in the sick for treatment at central hospitals. Indeed, she is herself a travelling dispensary with a nurse on board always ready to land at any village.

In recent years, the work has increased so much that aeroplanes have been used. These are specially valuable in New Guinea, in the mountainous areas. A distance which formerly required a week's hard trekking can now be traversed in a little over twenty minutes.

Broadcasting in Hyderabad

It is interesting to follow the rapid progress being made in Indian broadcasting. Syad Mahboob Ali, the Wireless Director of Hyderabad, has recently arrived in New York following a long visit to the BBC in the course of a world tour to study modern broadcasting methods. Four stations—for the purpose of serving a population of 15,000,000—are expected to be ready shortly, to mark the Silver Jubilee of His Exalted Highness the Nizam, who, Syad Ali stated, would present several thousand radio sets for use as listening posts in villages throughout the Nizam's Dominions. The regular broadcasts which are being planned for the four stations will include weather and news reports, health talks, musical programmes, and other features following the lines of British and American broadcasting, although, owing to the diversity of speech, it will be necessary to broadcast simultaneously in English, Hindustani, Marathi, and Canarese, and Telegu.

Poor Pussy

We hear that a well-known French broadcasting station has recently had a small outbreak of fire. The responsibility rested not with a faulty electrical circuit or a careless smoker, but a cat.

Wandering about, it seems, in search of adventure, it strayed into the transmitting apparatus, ignoring the "Danger" notices. The resulting short-circuit caused a fire, which was, however, rapidly mastered, but damage was done—to the cat!

Canada's Licence Income

The receipts from licence fees for receiving sets in Canada during the year 1935 were on a par with those for 1934, when the total revenue from this source was slightly less than \$1,500,000 (about £300,000). At present, the cost of a licence in the Dominion is \$2 (about 10s.).

The BBC Empire Orchestra

Hardened as they are to playing at all hours of the night, Eric Fogg and the BBC Empire Orchestra will find it quite a pleasant relaxation to give a concert in the National programme at the respectable time of 12.15 p.m. Beginning on January 22, they will give a regular weekly broadcast every Wednesday at this hour, and we hope they will show us the versatility that distinguishes them from most other broadcasting orchestras. In the course of their duties they play music of every description; at ten in the evening they may be giving a symphony concert, and at two in the morning they may be accompanying a Variety Bill. And of course, they are heard all over the world. Even these Wednesday concerts will also be going out from Daventry in Transmission 2.

Listening in the Atlas Mountains

According to a friend of ours, broadcasting is making more and more headway in Morocco, that romantic land where the mediaeval and modern meet. It is to be found even in the high-perched abodes of the Lords of the Atlas Mountains. Some

B. B. C. Empire Service Programmes

Transmissions 2 and 3

NOTE—All times given are Indian Standard Time which is five hours and thirty minutes ahead of Greenwich Mean Time. Wavelengths shown for each Transmission are those in use at time of going to press. Changes, if any, will be duly notified by microphone which should be listened for in the announcements made at frequent intervals.

Transmission 2:—4.30 to 7.15 p.m. I.S.T. (11 a.m. to 1.45 p.m. G.M.T.).

GSG 17, 790 Kc/S (16.86 m.),
GSF 15, 140 Kc/S (19.82 m.).

In this transmission Greenwich Time Signal is given at 5.30 p.m. (12 noon G.M.T.).

Transmission 3:—7.30 to 10.30 p.m. I.S.T. (2 to 5 p.m. G.M.T.).

Two of the following frequencies will be used:—

GSG 17, 790 Kc/S (16.86 m.),
GSF 15, 140 Kc/S (19.82 m.),
GSE 11, 860 Kc/S (25.29 m.) or
GSB 9, 510 Kc/S (31.55 m.).

In this transmission Greenwich Time Signal is given at 10 p.m. (4.30 p.m. G.M.T.).

SUNDAY, FEBRUARY 16

5.30 p.m.—Big Ben. Weekly Newsletter and Sports Summary.
5.30 p.m.—Musical Interlude.†
6.0 p.m.—A Violoncello Recital by Cedric Sharpe.
6.30 p.m.—The Isidore Schwiller String Sextet. Thelma Tuson (South African Soprano).
7.0 p.m.—A Short Religious Service,* from the Studio.
7.15 p.m.—Close down.
7.30 p.m.—Big Ben. A Symphony Concert. The BBC Empire Orchestra; leader, Daniel Melsa; conductor, Eric Fogg. Frank Mannheimer (Pianoforte).
8.45 p.m.—A Recital by Olga Athaide (Goan Pianist).
9.10 p.m.—Bells, and an Empire Service,* relayed from St. Paul's Cathedral, London.
10.0 p.m.—Weekly Newsletter and Sports Summary.
10.20 p.m.—Organ Solos.†
10.30 p.m.—Close down.

MONDAY, FEBRUARY 17

4.30 p.m.—Big Ben. Talk: "Agriculture To-day and Yesterday." Sir Dannie Hall, K.C.B., F.R.S.
4.45 p.m.—Haydn Heard and his Band, relayed from the West End Cinema, Birmingham.
5.30 p.m.—A Recital by Boris Pecker (Violin).
6.0 p.m.—Sir Walford Davies: "Music and the Ordinary Listener—What about the Tune?" (1) Violin Tunes.
6.30 p.m.—The News.
6.50 p.m.—A Recital of Gramophone Records.
7.15 p.m.—Close down.
7.30 p.m.—Big Ben. A Recital of New Gramophone Records.
8.15 p.m.—Sports Talk.*
8.30 p.m.—The BBC Northern Ireland Orchestra; leader, Philip Whiteway; conductor, E. Godfrey Brown. William S. Bates (Bassoon).
9.30 p.m.—Sonata Recital. Peggy Radmall (Violin) and Peggy Grummitt (Pianoforte).
10.0 p.m.—The News.
10.20 p.m.—Dance Music.†
10.30 p.m.—Close down.

TUESDAY, FEBRUARY 18

4.30 p.m.—Big Ben. The BBC Symphony Orchestra; conductor, Adrian Boult. Symphony No. 7 in A (Beethoven).
5.10 p.m.—Talk: "The Spice of Life."*
5.30 p.m.—"The Story of a Song."* Being a description in words and music of the history of three famous songs, "Home, Sweet Home," "Men of Harlech," and "Robin Adair." The programme written by Gordon Ireland (New Zealand), with music by various composers. The BBC Chorus and the BBC Empire Orchestra; leader, Daniel Melsa; under the

direction of Eric Fogg. The programme produced by William MacLurg.

6.30 p.m.—The News.

6.45 p.m.—The Manchester Tuesday Midday Society's Concert, relayed from the Houldsworth Hall, Manchester. Margaret Maddison (Pianoforte). Laurence Holmes (Baritone). Accompanist, Dora Gilson. Laurence Holmes.

7.15 p.m.—Close down.

7.30 p.m.—Big Ben. The Birmingham Theatre Royal Orchestra; conductor, Sheridan Gordon. Relayd from the Theatre Royal, Birmingham.

8.5 p.m.—Talk: "Imperial Affairs." H. V. Hodson.

8.20 p.m.—The Norris Stanley Sextet.

9.5 p.m.—"Dragons and All That."* Being "Medieval Moonshine," or "A Night of Knights and Suchlike." Book and lyrics by David Kean. Music by various composers. Produced by William MacLurg.

9.45 p.m.—Dance Music.† Popular numbers of the last ten years.

10.0 p.m.—The News.

10.15 p.m.—Dance Music.†

10.30 p.m.—Close down.

WEDNESDAY, FEBRUARY 19

4.30 p.m.—Big Ben. Cecil Chadwick, at the Organ of the Classic Cinema, Belfast. Cotton (Bloom). Selection of W. H. Squire's Popular Songs (arr. Baynes).

4.45 p.m.—Charles Manning and his Orchestra, relayed from the Granada, Walthamstow.

5.00 p.m.—"Empire Mail Bag"—(4th Edition).* A programme made up of letters from listeners. Compiled and presented in living form by Cecil Madden.

5.45 p.m.—The BBC Empire Orchestra; leader, Daniel Melsa; conductor, Eric Fogg.

6.45 p.m.—The News.

7.0 p.m.—Dance Music.†

7.15 p.m.—Close down.

7.30 p.m.—Big Ben. "The Mitre Madrigal Club."* Being a reconstruction of a meeting of one of the old English music clubs. The scene is laid at the Mitre Inn, Fleet Street, London, about the year 1600 A.D. The programme devised by David Kean, with catches, rounds, and madrigals by various composers. Produced by William MacLurg.

8.5 p.m.—"The British Industries Fair, 1936." A talk by Sir Thomas Ainscough, C.B.E., F.R.G.S., H.M. Senior Trade Commissioner.

8.20 p.m.—A Recital by Eileen Ralph (Australian Pianist).

8.45 p.m.—The Bournemouth Municipal Orchestra; leader, Bertram Lewis; conductor, Richard Austin. Solo Pianoforte, Borovsky. Relayd from the Pavilion, Bournemouth.

10.0 p.m.—The News.

10.15 p.m.—Jan Berenska and his Orchestra, relayed from the Pump Room, Leamington Spa.

10.30 p.m.—Close down.

THURSDAY, FEBRUARY 20

4.30 p.m.—Big Ben. The Composer at the Pianoforte—(3): John Ireland. A recital of John Ireland's songs, sung by Alfred Read (Baritone), accompanied by the composer.

* Electrical recording.

† Gramophone records.

4.55 p.m.—A Recital by Lilly Phillips (Violoncello).

5.15 p.m.—"Wig and Gown," or "Law and Lobster Salad."* Being a little good-natured leg-pulling at the expense of those responsible for administering our complicated legal system. The programme devised by Robin Gerard and presented by William MacLurg.

5.45 p.m.—The Bath Pump Room Orchestra; leader, J. Andrew Cooper; conductor, Frank Gomez. Relayd from the Pump Room, Bath.

6.15 p.m.—Talk: "Imperial Affairs."* H. V. Hodson.

6.30 p.m.—The News.

6.45 p.m.—Lunch Hour Concert, relayed from the Town Hall, Birmingham. The City of Birmingham Orchestra; leader, Alfred Cave; conductor, Leslie Heward.

7.15 p.m.—Close down.

7.30 p.m.—Big Ben. The Composer at the Pianoforte—(2): Cyril Scott.* A recital of Cyril Scott's songs, sung by Kate Winter (Soprano), accompanied by the composer.

7.55 p.m.—"From the Women's Point of View."* A talk by "Corisande" (Miss M. T. Hogg).

8.10 p.m.—A Recital of English Folk Songs by Anna Russell (Soprano).

8.30 p.m.—The Band of His Majesty's Royal Marines, Plymouth Division (by permission of Brigadier J. W. Hudleston, C.B.), conducted by Captain F. J. Ricketts, Director of Music, Royal Marines. Relayd from the Abbey Hall, Plymouth.

9.30 p.m.—"Young Ideas."* A programme for anybody and everybody with young ideas.

10.0 p.m.—The News.

10.15 p.m.—An Organ Recital by Robert Head, relayed from the McEwan Hall, Edinburgh.

10.30 p.m.—Close down.

FRIDAY, FEBRUARY 21

4.30 p.m.—Big Ben. The BBC Welsh Orchestra; leader, Frank Thomas; conductor, Idis Lewis.

5.15 p.m.—Scots Song Recital. Vida Vallance (Contralto). John Jeffrey (Tenor).

5.40 p.m.—Talk: "Conquest of the Air—1."*

12.30 p.m.—The BBC Dance Orchestra, directed by Henry Hall.

1.0 p.m.—The News and Announcements.

1.20 p.m.—Schubert Songs.†

7.0 p.m.—"The British Industries Fair, 1936." A talk by V. A. Lowinger C.B.E. (Agent for Malaya in the United Kingdom).

7.10 p.m.—Schubert Songs (cont'd).†

7.15 p.m.—Close down.

2.0 p.m.—Big Ben. "The Miller and his Men." A melodrama of old Freiburg, in two acts, by I. Pocock. Adapted and produced by John Pudney.

8.10 p.m.—Musical Interlude.†

8.15 p.m.—The BBC Northern Orchestra; leader, Alfred Barker; conductor, T. H. Morrison.

9.0 p.m.—"Guess Again?"* Another half hour of conundrums—vocal, musical, and in sound. Devised by C. Whitaker-Wilson and Cecil Madden. Produced by Pascoe Thornton.

9.30 p.m.—Dance Music.†

10.0 p.m.—The News and Announcements.

10.20 p.m.—The Hotel Metropole Orchestra; leader, A. Rossi; under the direction of Emilio Colombo. Relayd from the Hotel Metropole, London.

10.30 p.m.—Close down.

SATURDAY, FEBRUARY 22

4.30 p.m.—Big Ben. The BBC Northern Orchestra; leader, Alfred Barker; conducted by Crawford McNair. Richard Wilson (Bass-baritone).

5.45 p.m.—"From the Woman's Point of View."* A talk by "Corisande" (Miss M. T. Hogg).

6.0 p.m.—"Monologue in Melody." Fifteen minutes of syncopated music at the pianoforte.

6.15 p.m.—Variety. The Younger Generation Entertains. A programme by Pat Kirkwood (Crooner), Kenneth Cooper (Syncopated Pianist), Harry Isherwood (Banjo), Jimmie Elliott (Imitator), and James Crossley (Accordion).

7.0 p.m.—The News.

7.15 p.m.—Close down.

7.30 p.m.—Big Ben. A talk to Girl Guides by Lady Baden-Powell, G.B.E. (Chief Guide). Relayd from Pietermaritzburg, South Africa. (By courtesy of the African Broadcasting Company, Limited.).

7.40 p.m.—The BBC Scottish Orchestra.

8.20 p.m.—Scotland vs. Ireland. A running commentary on the International Rugby Union football match by Captain H. B. T. Wakelam. Relayd from Murrayfield, Edinburgh. (By courtesy of the Scottish Rugby Football Union.).

10.0 p.m.—The News.

10.15 p.m.—The London Zigeuner Orchestra, directed by Ernest Leggett. Winifred Davis (Mezzo-soprano).

10.30 p.m.—Close down.

SUNDAY, FEBRUARY 23

5.30 p.m.—Big Ben. Weekly Newsletter and Sports Summary.

5.30 p.m.—Violin Solos.†

6.0 p.m.—Brass Band Concert.

7.0 p.m.—A Short Religious Service.

7.15 p.m.—Close down.

7.30 p.m.—Big Ben. The BBC Scottish Orchestra.

8.30 p.m.—Talk: "The Spice of Life."*

8.50 p.m.—Mantovani and his Tipica Orchestra.

9.15 p.m.—An Instrumental Recital.

9.45 p.m.—A Song Recital.

10.0 p.m.—Weekly Newsletter and Sports Summary.

10.20 p.m.—Organ Solos.†

10.30 p.m.—Close down.

MONDAY, FEBRUARY 24

4.30 p.m.—Big Ben. Scotland vs. Ireland.* Interval summary and running commentary on the second half of the Rugby Union Football match, relayed from Murrayfield, Edinburgh.

5.20 p.m.—Musical Interlude.†

5.25 p.m.—The Mitre Madrigal Club.*

6.0 p.m.—"Music and the Ordinary Listener". Sir Walford Davies.

6.30 p.m.—The News.

6.50 p.m.—Light Music.†

7.15 p.m.—Close down.

7.30 p.m.—Big Ben. The BBC Dance Orchestra,* directed by Henry Hall.

8.10 p.m.—Talk: "The Conquest of the Air."*

8.30 p.m.—The BBC Northern Ireland Orchestra.

9.30 p.m.—A Sonata Recital.

10.0 p.m.—The News.

10.20 p.m.—Light Orchestral Music.†

10.30 p.m.—Close down.

TUESDAY, FEBRUARY 25

4.30 p.m.—Big Ben. The New Victoria Cinema Orchestra, relayed from the New Victoria Cinema, Bradford.

5.5 p.m.—Prose Reading.

5.20 p.m.—Studio Concert.

6.0 p.m.—"Guess Again."* Another half hour of conundrums, vocal, musical, and in sound.

6.30 p.m.—The News.

6.45 p.m.—An Organ Recital.

7.15 p.m.—Close down.

7.30 p.m.—Big Ben. "Mail Bag".*

8.15 p.m.—Talk: "Foreign Affairs". Sir Frederick Whyte, K.C.S.I., LL.D.

8.30 p.m.—The Torquay Municipal Orchestra.

10.0 p.m.—The News.

10.15 p.m.—Dance Music.†

10.30 p.m.—Close down.

* Electrical recording.

† Gramophone records.

WEDNESDAY, FEBRUARY 26

- 4-30 p.m.—Big Ben. A Recital of New Gramophone Records.
 5-0 p.m.—Variety.*
 5-45 p.m.—The BBC Empire Orchestra.
 6-45 p.m.—The News.
 7-0 p.m.—Dance Music.†
 7-15 p.m.—Close down.
 7-30 p.m.—Big Ben. Dance Music.†
 7-50 p.m.—"Young Ideas".* A programme for anybody and everybody with young ideas.
 8-20 p.m.—A Pianoforte Recital.
 8-45 p.m.—Prose Reading.
 9-0 p.m.—The BBC Welsh Orchestra.
 10-0 p.m.—The News.
 10-15 p.m.—Jan Berenska and his Orchestra.
 10-30 p.m.—Close down.

THURSDAY, FEBRUARY 27

- 4-30 p.m.—Big Ben. Dance Music.†
 4-35 p.m.—Cinema Organ Recital.
 5-0 p.m.—"The Miller and his Men."*
 5-40 p.m.—Pianoforte Interlude.†
 5-50 p.m.—Talk: "Foreign Affairs".* Sir Frederick Whyte, K.C.S.I., LL.D.
 6-5 p.m.—The Composer at the Pianoforte—(4).
 6-30 p.m.—The News.
 6-45 p.m.—The City of Birmingham Orchestra.
 7-15 p.m.—Close down.
 7-30 p.m.—Big Ben. Light Music.
 8-10 p.m.—Talk on Agriculture.*
 8-25 p.m.—Musical Interlude.†
 8-30 p.m.—Evensong, relayed from Westminster Abbey, London.
 9-20 p.m.—Violin Solos.†
 9-30 p.m.—"February Fill-Dyke."*
 10-0 p.m.—The News.
 10-15 p.m.—Dance Music.†
 10-30 p.m.—Close down.

FRIDAY, FEBRUARY 28

- 4-30 p.m.—Big Ben. The BBC Welsh Orchestra.
 5-15 p.m.—Talk: "The Conquest of the Air"—No. 2.*
 5-35 p.m.—The Rutland Square and New Victoria Orchestra, directed by Norman Austin. Relayed from the New Victoria Cinema, Edinburgh.
 6-0 p.m.—The BBC Dance Orchestra, directed by Henry Hall.
 6-30 p.m.—The News and Announcements.
 6-50 p.m.—Chamber Music.†
 7-15 p.m.—Close down.
 7-30 p.m.—Big Ben. "Under Big Ben." A talk by Howard Marshall.
 7-45 p.m.—Musical Interlude.†
 7-50 p.m.—The Composer at the Pianoforte—(3) John Ireland.*
 8-15 p.m.—The BBC Northern Orchestra.
 9-15 p.m.—Variety.
 10-0 p.m.—The News and Announcements.
 10-20 p.m.—Viennese Waltzes.†
 10-30 p.m.—Close down.

SATURDAY, FEBRUARY 29

- 4-30 p.m.—Big Ben. Talk: "St. David's Day."
 4-45 p.m.—Concert by Welsh Artists.
 5-15 p.m.—"Under Big Ben."* A talk by Howard Marshall.
 5-30 p.m.—The Coventry Hippodrome Orchestra.
 6-15 p.m.—The Children's Hour.
 7-0 p.m.—The News.
 7-15 p.m.—Close down.
 7-30 p.m.—Big Ben. The BBC Scottish Orchestra.
 8-30 p.m.—Welsh Programme.
 9-0 p.m.—Dance Music.

- 9-45 p.m.—Reginald King and his Orchestra.
 10-0 p.m.—The News.
 10-15 p.m.—Reginald King and his Orchestra (contd.).
 10-30 p.m.—Close down.

SUNDAY, MARCH 1

- 4-30 p.m.—Big Ben. A Religious Service, relayed from Tabernacle Congregational Church, Morriston, Swansea.
 5-45 p.m.—Elizabethan Songs.†
 6-0 p.m.—The J. H. Squire Celeste Octet.
 6-25 p.m.—Weekly Newsletter and Sports Summary.
 6-45 p.m.—The Luton Band; conductor, Harry Mortimer. Essie Ackland (Contralto).
 7-15 p.m.—Close down.
 7-30 p.m.—Big Ben. Religious Service for the People,* relayed from the Colston Hall, Bristol.
 8-20 p.m.—A Violin Recital by Joseph Szigeti.†
 8-40 p.m.—Talk: "The Conquest of the Air"—2.*
 9-0 p.m.—The BBC Orchestra (Section C), conducted by Boyd Neel. Betty Humby (Pianoforte).
 10-0 p.m.—Weekly Newsletter and Sports Summary.
 10-20 p.m.—Medvedeff's Balalaika Orchestra with Max Turganoff (Tenor).
 10-30 p.m.—Close down.

MONDAY, MARCH 2

- 4-30 p.m.—Big Ben. Reginald Porter-Brown, at the Organ of the Regal Cinema, Torquay.
 4-45 p.m.—The BBC Variety Orchestra; leader, Bernard Reillie; conducted by Kneale Kelley.
 5-35 p.m.—"Rocking Horse Winner."* by D. H. Lawrence. Adapted for the microphone by Cecil Lewis. Produced by William MacLurg.
 6-0 p.m.—Sir Walford Davies: "Music and the Ordinary Listener—What about the Tune?"—3: Tunes that make their own channel.
 6-30 p.m.—The News.
 6-50 p.m.—A Programme of Gramophone Records.
 7-15 p.m.—Close down.
 7-30 p.m.—Big Ben. Arthur Salisbury and his Orchestra, relayed from the Savoy Hotel, London.
 8-0 p.m.—The Composer at the Pianoforte—4: Landon Ronald.* A recital of Landon Ronald's songs, sung by Dorothy Stanton (Soprano). Accompanied by the composer.
 8-25 p.m.—Talk: "The Spice of Life."*
 8-45 p.m.—"A Piccadilly Dally." Being fanciful snapshots from round and about the centre of London. Book by Gordon McConnel. Music by various composers. The cast supported by the BBC Chorus and the BBC Empire Orchestra (leader, Daniel Melsa), under the direction of Eric Fogg. The programme produced by William MacLurg.
 9-30 p.m.—Sonata Recital. Frederick Grinke (Violin). Dorothy Manley (Pianoforte).
 10-0 p.m.—The News.
 10-20 p.m.—A Recital by John McCormack (Tenor).†
 10-30 p.m.—Close down.

TUESDAY, MARCH 3

- 4-30 p.m.—Big Ben. The Composer at the Pianoforte—5: Armstrong Gibbs. A Recital of Armstrong Gibbs' Songs, sung by Frances Allison (Soprano). (Accompanied by the Composer).
 4-55 p.m.—Prose Reading.
 5-10 p.m.—The Hallé Orchestra, conducted by Sir Hamilton Harty.†
 5-55 p.m.—"Jack and Jill go out of Town."* Being No. 2 in the series of Adventures of Jack and Jill. Book and Lyrics by Alec McGill. Music by Jack Clarke. Production by William MacLurg.
 6-30 p.m.—The News.

* Electrical recording.

† Gramophone records.

- 6-45 p.m.—The Manchester Tuesday Midday Society's Concert, relayed from the Houldsworth Hall, Manchester.
 A Violin Recital by Eda Kersey.
 7-15 p.m.—Close down.
 7-30 p.m.—Big Ben. The Birmingham Theatre Royal Orchestra; conductor, Sheridan Gordon. Relayed from the Theatre Royal, Birmingham.
 8-0 p.m.—Talk: "Imperial Affairs." By H. V. Hodson.
 8-15 p.m.—Interlude.†
 8-20 p.m.—The Norris Stanley Sextet.
 9-5 p.m.—"Young Ideas."* A programme for anybody and everybody with young ideas.
 9-35 p.m.—Dance Music.†
 10-0 p.m.—The News.
 10-15 p.m.—Dance Music.†
 10-30 p.m.—Close down.

WEDNESDAY, MARCH 4

- 4-30 p.m.—Big Ben. Variety: "How's That?"* An entertainment compered by Ralph Coram. The artists will include: Frank Atkinson, Michael Cole, Marie Dayne, Constance Carpenter, Betty Bolton (South Africa), Jimmy Jewell, Stanford and Taylor, and the Band. The programme presented by Ralph Coram and John Pudney.
 5-15 p.m.—Quentin Maclean, at the Organ of the Trocadero Cinema, Elephant and Castle.
 5-30 p.m.—A Talk by the Chief Engineer of the British Broadcasting Corporation.
 5-45 p.m.—The BBC Empire Orchestra; leader, Daniel Melsa; conductor, Eric Fogg.
 6-45 p.m.—The News.
 7-0 p.m.—Dance Music.†
 7-15 p.m.—Close down.
 7-30 p.m.—Big Ben. "Yorkshire Pudding."* A programme of sketch and verse from the East of the Pennines. Arranged by James R. Gregson and D. G. Bridson. Produced by D. G. Bridson.
 8-0 p.m.—Musical Interlude.†
 8-5 p.m.—Prose Reading.
 8-20 p.m.—A Pianoforte Recital by Egerton Tidmarsh.
 8-45 p.m.—The Bournemouth Municipal Orchestra; leader, Bertram Lewis; conductor, Richard Austin. Raya Garbousova (Violoncello). Relayed from the Pavilion, Bournemouth.
 10-0 p.m.—The News.
 10-15 p.m.—Jan Berenska and his Orchestra, relayed from the Pump Room, Leamington Spa.
 10-30 p.m.—Close down.

THURSDAY, MARCH 5

- 4-30 p.m.—Big Ben. The Victor Olof Sextet.*
 5-0 p.m.—An Organ Recital by Albert Taylor, relayed from First Presbyterian Church, Rosemary Street, Belfast.
 5-30 p.m.—Talk: "Imperial Affairs."* By H. V. Hodson.
 5-45 p.m.—The Bath Pump Room Orchestra; leader, J. Andrew Cooper; conductor, Frank Gomez. Relayed from the Pump Room, Bath.
 6-30 p.m.—The News.
 6-45 p.m.—The Leeds Midday Recital.
 7-15 p.m.—Close down.
 7-30 p.m.—Big Ben. "Jack and Jill Go Out of Town."* Being No. 2 in the series of adventures of Jack and Jill. Book and lyrics by Alec McGill. Music by Jack Clarke. Production by William MacLurg.
 8-5 p.m.—Light Orchestral Interlude.† Marek Weber and his Orchestra.
 8-15 p.m.—Talk: "Some Suggestions for the listener's Bookshelf." By Eric Gillett.

- 8-30 p.m.—The Band of His Majesty's Royal Marines, Plymouth Division (by permission of Brigadier J. W. Hudleston, C.B.), conducted by Captain F. J. Rickets, Director of Music, Royal Marines, Relayed from the Abbey Hall, Plymouth.
 9-30 p.m.—Music by Handel.†
 10-0 p.m.—The News.
 10-15 p.m.—Dance Music.†
 10-30 p.m.—Close down.

FRIDAY, MARCH 6

- 4-30 p.m.—Big Ben. The BBC Welsh Orchestra; leader, Frank Thomas; conductor, Idris Lewis.
 5-15 p.m.—A Recital of Hebridean Songs and Scots Music by Jean Summers (Soprano) and Ian Whyte (Pianoforte).
 5-40 p.m.—Talk: "The Conquest of the Air"—3.*
 6-0 p.m.—The BBC Dance Orchestra, directed by Henry Hall.
 6-30 p.m.—The News and Announcements.
 6-50 p.m.—The Birmingham Hippodrome Orchestra; conductor, Harry Pell. Relayed from the Hippodrome Theatre, Birmingham.
 7-15 p.m.—Close down.
 7-30 p.m.—Big Ben. "The Pyramid."* A play by Norman Edwards, with a setting among the Pyramids of Egypt. Produced by John Pudney.
 8-5 p.m.—Pianoforte Interlude.† Frederic Lamond (Pianoforte).
 8-15 p.m.—The BBC Northern Orchestra; leader, Alfred Barker; conductor by Crawford McNair.
 9-15 p.m.—Variety: "How's That?"* An entertainment compered by Ralph Coram. The artists will include: Frank Atkinson, Michael Cole, Marie Dayne, Constance Carpenter, Betty Bolton (South Africa), Jimmy Jewell, Stanford and Taylor, and the Band. The programme presented by Ralph Coram and John Pudney.
 10-0 p.m.—The News and Announcements.
 10-20 p.m.—The Hotel Metropole Orchestral leader, A Rossi; under the direction of Emilio Colombo. Relayed from the Hotel Metropole, London.
 10-30 p.m.—Close down.

SATURDAY, MARCH 7

- 4-30 p.m.—Big Ben. The BBC Symphony Orchestra; conductor, Adrian Boult.
 5-0 p.m.—"The Music Makers."* An anthology of music in poetry. Presented by John Pudney.
 5-35 p.m.—Pianoforte Recital.† Frederic Lamond.
 5-45 p.m.—"Books to Read."* Some suggestions for the listener's bookshelf by Eric Gillett.
 6-0 p.m.—19th Century Dances.†
 6-15 p.m.—The Children's Hour. "The Flying Fool." A modern thriller by J. D. Strange.
 7-0 p.m.—The News.
 7-15 p.m.—Close down.
 7-30 p.m.—Big Ben. Reginald King and his Orchestra.
 8-20 p.m.—Royal Navy vs. Army. A running commentary on the Rugby Union football match by Captain H. B. T. Wakelam. Relayed from Twickenham. (By courtesy of the Rugby Football Union).
 10-0 p.m.—The News.
 10-15 p.m.—Dance Music.†
 10-30 p.m.—Close down.

* Electrical recording.

† Gramophone records.

Phohi Programme

(Broadcast by the Philips Radio Station at Hilversum, Holland)

Note—All times given are Indian Standard Time.

PHI 11730 Kc/sec. 25. 57 M.
9590 Kc/sec. 31. 28 M.

On Sundays the Phohi Programmes are always relayed by station PCJ on 19. 71 M. (15220 Kc/sec.)
and Special Programmes will be broadcast from 6 p.m. to 7 p.m. on 31-28 M. (9,590 Kc/Sec.)

SUNDAY, FEBRUARY 16

6-0 p.m.—Broadcast by the R. Cath. Broadcasting Association for Asia. Male chorus—Talk—Orchestral music a Talk—Male Chorus.
7-0 p.m.—Dutch National Anthem.
7-5 p.m.—"Latest News from Holland".
7-15 p.m.—Broadcast by the R. Cath. Broadcasting Association for India.
8-15 p.m.—Music.
8-25 p.m.—"From Mail to Mail in Holland".
8-45 p.m.—Light Music.
8-55 p.m.—Sunday Evening Speech.
9-15 p.m.—Music.
9-25 p.m.—Talk by Mr. K. K. Koning.
9-45 p.m.—Dance Music.
10-0 p.m.—Closing down—Dutch National Anthem.

MONDAY, FEBRUARY 17

7-0 p.m.—Dutch National Anthem and opening announcement.
7-10 p.m.—Light Music.
7-15 p.m.—"Latest News from Holland".
7-30 p.m.—Music.
7-45 p.m.—Talk on sports by Mr. H. Hollander.
8-0 p.m.—Music.
8-5 p.m.—Meeting of the Phohi Club.
8-30 p.m.—Dance Music.
9-0 p.m.—Closing down—Dutch National Anthem.

THURSDAY, FEBRUARY 20

7-0 p.m.—Dutch National Anthem and opening announcement.
7-10 p.m.—Music.
7-15 p.m.—"Latest News from Holland".
7-30 p.m.—Violin recital by Loc Cohen.
7-45 p.m.—Talk on domestic animals by Mr. Josselin de Jong.
8-0 p.m.—Music.
8-10 p.m.—Criss-cross through the Netherlands.
8-20 p.m.—Music.
8-25 p.m.—Violin recital—continued.
8-40 p.m.—Music.
8-45 p.m.—Dance Music.
9-0 p.m.—Closing down—Dutch National Anthem.

FRIDAY, FEBRUARY 21

7-0 p.m.—Dutch National Anthem and opening announcement.
7-10 p.m.—Music.
7-15 p.m.—Latest News from Holland.
7-30 p.m.—Music.
7-40 p.m.—Talk on books by Hr. J. Koning.
8-0 p.m.—Concert by Moskowaky Quartet.
8-10 p.m.—Talk by Mr. G. Koning.
8-30 p.m.—Second part of Concert by Moskowaky Quartet.
8-50 p.m.—Dance Music.
9-0 p.m.—Closing down—Dutch National Anthem.

SATURDAY, FEBRUARY 22

7-0 p.m.—Dutch National Anthem.
7-10 p.m.—Light Music.
7-15 p.m.—"Latest News from Holland".
7-30 p.m.—Music.
7-35 p.m.—With us in.....
7-50 p.m.—Phohi Orchestra.
8-10 p.m.—News-talk of the week by Mr. Aletrino.
8-30 p.m.—Music.
8-35 p.m.—Microphone debutants.
8-45 p.m.—Music.
8-50 p.m.—Singing by Maria Kuronko.
9-15 p.m.—Light Music.
9-25 p.m.—Phohi Orchestra, second part.
9-50 p.m.—Dance Music.
10-0 p.m.—Closing down—Dutch National Anthem.

SUNDAY, FEBRUARY 23

6-0 p.m.—Broadcast by the R. Cath. Broadcasting Association for Asia. Music—Talk on music—Music—Talk—Music.

7-0 p.m.—Dutch National Anthem—opening announcement.
7-5 p.m.—"Latest News from Holland".
7-15 p.m.—Broadcast by the R. Cath. Broadcasting Association. March—Talk on agriculture—Potpourri—Talk—Music.
8-15 p.m.—Music.
8-25 p.m.—"From Mail to Mail in Holland".
8-45 p.m.—Light Music.
8-55 p.m.—Talk on "Java stage plays".
9-20 p.m.—Opera Music.
9-40 p.m.—Dance Music.
10-0 p.m.—Closing down—Dutch National Anthem.

MONDAY, FEBRUARY 24

7-0 p.m.—Dutch National Anthem—opening announcement.
7-10 p.m.—Light Music.
7-15 p.m.—"Latest News from Holland".
7-30 p.m.—Music.
7-45 p.m.—Talk on sport by Mr. H. Hollander.
8-0 p.m.—Music.
8-5 p.m.—Meeting of the Phohi Club.
8-30 p.m.—Music.
8-40 p.m.—Talk by Mr. de Geus.
8-55 p.m.—Dance Music.
9-0 p.m.—Closing down—Dutch National Anthem.

THURSDAY, FEBRUARY 27

7-0 p.m.—Dutch National Anthem—opening announcement.
7-10 p.m.—Music.
7-15 p.m.—"Latest News from Holland".
7-25 p.m.—Music.
7-30 p.m.—Well-known Hollanders before the microphone—Professor, C. W. de Vries on "Geneva and the League of Nations".
7-45 p.m.—Music.
7-50 p.m.—Criss-Cross through the Netherlands.
8-0 p.m.—Lyra Trio.
8-20 p.m.—Talk on "Leap Year" by Mr. K. D. Koning.
8-35 p.m.—Music.
8-40 p.m.—Lyra Trio—second part.
9-0 p.m.—Closing down—Dutch National Anthem.

FRIDAY, FEBRUARY 28

7-0 p.m.—Dutch National Anthem—opening announcement.
7-10 p.m.—Light Music.
7-15 p.m.—"Latest News from Holland".
7-30 p.m.—Music.
7-40 p.m.—"Adventure of a policeman" by Mr. S. de Vries.
8-0 p.m.—Piano recital by Rie Kool.
8-15 p.m.—"Among the people of Roteradam" by Mr. M. J. Brusse.
8-35 p.m.—Piano recital by Rie Kool—second part.
8-50 p.m.—Closing down—Dutch National Anthem.

SATURDAY, FEBRUARY 29

7-0 p.m.—Dutch National Anthem—opening announcement.
7-5 p.m.—The Troubadours.
7-15 p.m.—Latest News from Holland.
7-30 p.m.—The Troubadours—second part.
7-45 p.m.—News-talk of the week by Mr. A-letrino.
8-5 p.m.—The Troubadours—third part.
8-40 p.m.—Microphone Debutants.
8-50 p.m.—The Troubadours—fourth part.
9-30 p.m.—The Troubadours—dance music.
9-45 p.m.—Surprise Number.
9-50 p.m.—Dance music.
9-55 p.m.—Intermezzo "Phohi's Goodnight".
10-0 p.m.—Closing down—Dutch National Anthem.

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Volume VIII Number 3

MARCH 1936

Notes and News for A.A.S.I. Members.

Road Information

Kistna Anicut.—Beyond the closure of the Kistna Anicut Road at Bezwada to road traffic on 24th February, owing to a somewhat abnormal fresh in the river, there is little to report under this heading. At the time of writing (29/2/36) there was upward of five feet of water above the crest of the Anicut, and there seems little likelihood of the road being re-opened to traffic for a week or more.

Dowleshwaram (Godavery) Anicut

In view of an announcement which appeared in the press recently, intimating that the road across the Godavery Anicut near Rajahmundry would not be available for motor traffic throughout 1936, the A.A.S.I. has been asked to announce that there is no recognised road on this anicut, nor is there any proposal to provide one in the near future.

This statement is made on the authority of a high official of the P.W.D., and may be taken as definitely dispelling an idea that has been prevalent of late, that the anicut can be used by motors on the prior and special sanction of the officer in charge of the anicut.

Bridging the boundary rivers of H. E. H. The Nizam's Dominions

In the January issue of this journal we published a commentary on the possibility of a road bridge being constructed across the Tungabhadra and Kistna rivers

near Kurnool. Information has since come to hand which shows that a number of important bridging projects are under consideration by the P.W.D. of H. E. H. The Nizam's Dominions, but are at present held up owing to difficulties raised by the neighbouring administrations.

A glance at the Road Map of India will show that on the North, South and East the Dominions are bounded by two of India's major rivers, or their distributaries. At the moment each of the three boundary rivers are unbridged. On the south the Tungabhadra, with its parent river the Kistna forms the boundary between the Dominions and the Madras Presidency for some 800 miles. Neither of these two rivers are bridged for road traffic throughout that portion of their course which forms the boundary or onward to the sea. The Kistna Anicut near Bezwada furnishes a temporary but precarious road bridge during the dry season only. During the remainder of the year motors are able to cross only by railway. Apparently bridging projects have been prepared by the Dominions P.W.D. for bridges near Madhavaram in Bellary District for the Godavery and near Raichur for the Kistna, but the former site not being approved by the Madras Government, who will have to bear half the cost, the two projects are held up for the present.

It appears that an alternative site near Kurnool has been considered but the Madras Boundary extends about two miles north of the river at this point and the cost of a bridge here would have to be borne wholly by the Madras Government.

In any case a bridge across the Kistna a little further north would be necessary to complete this scheme, and this would fall wholly against the Nizam's Government.

**MADRAS M. V. TAX FOR APRIL/JUNE QUARTER
SHOULD BE PAID BEFORE 1st APRIL 1936.**

However, whichever Government is administratively responsible for the works it appears evident in any case that the cost would fall against the Road Development subvention so there must be some other consideration that is causing the delay.

On the Eastern Boundary, the Paleru River forms the boundary and this again is unbridged. A causeway at one time carried the Masulipatam Hyderabad Trunk road across this river, but it was badly damaged by flood some years ago and has not yet been restored or replaced. Here, again, the Dominions' Government are prepared with a project, but the Madras Government having raised objections, the project is in abeyance.

On the northern boundary the Penganga River forms the dividing line, and although a project for a bridge to carry a road between Adilabad and Wun has been closely considered, division of responsibility again forms the stumbling-block.

Studying the Map of India and having in view the importance of road transport in the scheme of economic development in India as a whole, the importance of un-interrupted road communication between Bangalore and Secunderabad on the South; Secunderabad and Nagpur on the north and Secunderabad and the sea on the east appears very evident and it seems strange that the Central Government appear to have no interest in the matter. Surely such through communication must be of strategic value, even if not important as well as from the development point of view.

Why then are these bridging schemes, on which H. E. H. The Nizam's Government appear so keen, being allowed to remain so long on the shelf?

Itineraries

The following actual figures are of interest as showing the spread of the touring instinct in private motor owners. During the month of February, route itineraries were issued to members of the A.A.S.I. which covered in the aggregate 16,250 miles. This is the first month in which the accurate mileage of all itineraries issued has been computed.

The actual number of itineraries issued (50) has been somewhat below the monthly average of the past twelve months.

It will be interesting to compare these figures from month to month in future.

Signposts

Bangalore Motorists and many motorists who visit that delightful summer resort, will be pleased to learn that the Mysore P.W.D. have promised to take up at an early date the signposting of the Bangalore-Magadi (Waterworks) Road, a somewhat important feature in view of the popularity of the Waterworks as a resort for picnic parties and others on pleasure bent.

Elsewhere in this journal will be found an article dealing with the Waterworks and the road leading thereto, from the motorist's point of view; for which we are indebted to our Honorary District Representative at Bangalore—Major A. W. Waters, M.B.E.

Motor Vehicles Taxation

The subject of motor vehicle taxation is very much to the fore in Southern India at present, and is becoming daily a very complicated matter.

The Madras Presidency and Coorg have each had their own motor vehicle taxation regime for just over five years; but as the rules were on very similar lines, and a small measure of reciprocity has been established, no great difficulty has been occasioned although the double taxation has been most unpopular with touring motorists and those who are unfortunate enough to live close to the common boundary of the two administrations.

On 1st January last Mysore State came in with something entirely new in the way of motor vehicle taxation; combining a tax with the tolls formerly levied. Up to the present no form of reciprocity has been established between either the Madras Presidency or Coorg and Mysore, so the motoring tourist has now to face triple taxation on what may easily be a very short tour.

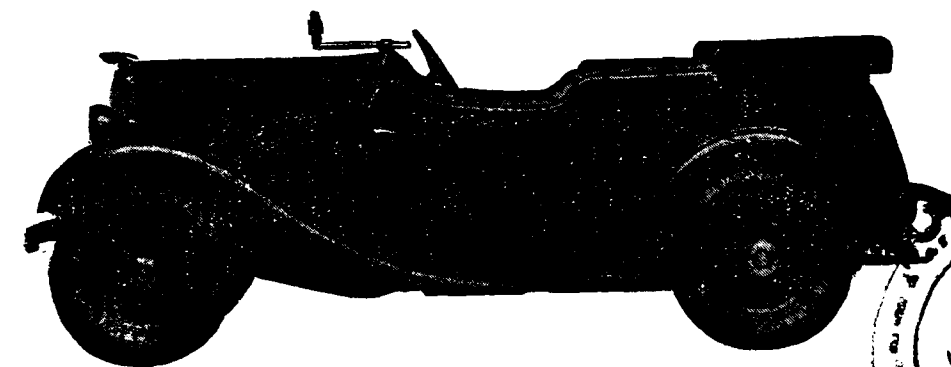
Bangalore (C. & M. Station) with its local motor vehicle taxation law of several years' standing, is surrounded on all sides by Mysore State territory, so every motorist proceeding to Bangalore must pay Mysore State tax before he can reach that station. Fortunately Bangalore C. & M. Station allows 14 days' initial period of exemption to motorists visiting the station but should the stay in Bangalore exceed 14 days, a full half year's tax will have to be paid. In so far as motor private vehicles registered in either Mysore State, or Bangalore (C. & M. Station) are concerned, full reciprocity up to 31st March 1936 has been arranged. We are awaiting, with much interest the terms that will be granted on 1st April. Let us hope the authorities will continue the present arrangement.

Now comes news of the adoption of a provincial motor vehicle taxation regime in the Bombay Presidency, which borders on both the Madras Presidency and Mysore State. In this case, however, the tax entirely replaces the tolls system at present in force, while the Act under which the tax is to be levied makes a definite provision under which the Government may determine what exemption, partial or total, from payment of the tax shall be granted to any person taking a motor vehicle temporarily into the Presidency. Exactly what concession will be granted to visiting motorists has yet to be determined.

Finally, although no official intimation has yet been received, it is understood that Hyderabad State, which also borders the Madras Presidency, is about to introduce a system of Motor Vehicle Taxation.

Thus it will be seen that the lot of the touring motorist in Southern India is not going to be a very happy one, at least for some time to come. However, this multiplicity of taxes has one saving grace in that it will pave the way for the adoption of a uniform system of taxation throughout India, and eventually, it is hoped, to a measure of complete reciprocity whereby the motorist will be required to pay only one tax for any one period, the licence (or token) being recognised by all other Provinces and States.

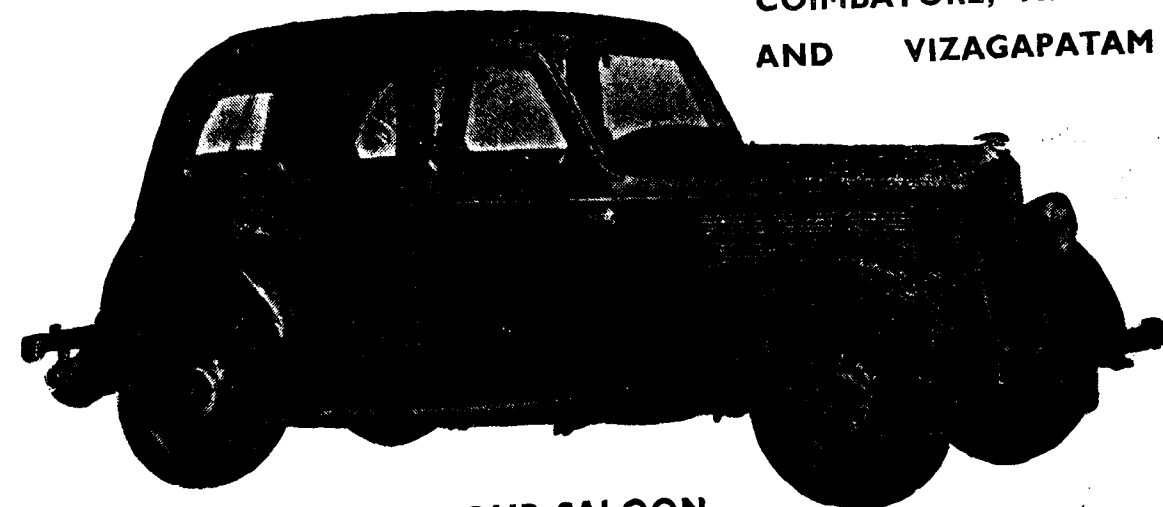
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Short Period Licences

In the Madras Presidency the Legislative Council has under consideration the adoption of a system of short period licences for visiting motorists. When the Bill that was designed to produce these short period licences was introduced in the Council it met with some strong opposition by certain members who favoured an initial period of total exemption on lines already adopted by other Provinces.

It is somewhat unfortunate that the examples quoted in support of this measure should have been Bengal and Burma, both of which Provinces are somewhat remote from Madras. It would have been much more effective had it been possible to quote one or more of the neighbouring states, or even Bombay, but it must be realised that the Madras Government is itself responsible for the attitude of Mysore State and the Province of Coorg. In its original Act, Madras did provide for an initial period of exemption for visiting motorists, fourteen days at the beginning of a quarter and fourteen days at the end of a quarter, an aggregate of 28 days sufficient to cover (say) an Xmas vacation. But this was not sufficient. The 28 days should have been "any 28 days". However, an amending Act withdrew this concession and led up to the present unsatisfactory situation. Although it has never been officially stated, there can be little doubt that the withdrawal of the concession was due to the levy of tolls on visiting motorists in neighbouring Indian States and in the Bombay Presidency.

One can easily understand the Madras Government addressing (say) the Mysore Government and saying "so long as you levy tolls on Madras subjects visiting Mysore State we will levy tax on your subjects visiting the Madras Presidency"; but what has been the result? Mysore State in effect now says, "Right!—we will not only levy tolls from your subjects visiting Mysore State, but we will 'levy a tax as well'".

It appears only just that, since the Madras Presidency lead the way in Southern India with motor vehicle taxation legislation, they should now lead the way with a measure of reciprocity. It seems fairly obvious that Coorg will immediately follow suit and there seems no reason to suspect that Mysore State will not fall into line.

Road Maintenance in the Madras Presidency

The concluding paragraphs of the preceding article lends considerable importance to a statement made recently by the Chairman of the Madras Branch of the Indian Roads and Transport Development Association, *i.e.*, that the only practicable means of securing additional revenue to enable local authorities to maintain their roads in a proper condition is to restore tolls.

While agreeing that there is undoubtedly urgent need for some legislative measure which will restore the revenue lost to local bodies by the abolition of tolls, it must be admitted that the restoration of tolls will militate seriously against the establishment of complete reciprocity between Provinces and States on the subject of motor vehicle taxation. The Bombay Presidency, having given a toll regime a trial of some three years or so, have only just

LIST OF A.A.S.I. PUBLICATIONS.

	Rs.	A.	P.
Road Map of Madras Presidency. Mounted on linen and folded into covers (out of stock at present) ...	4	8	0
Road Map of Northern India. Scale 16 miles to 1 inch. Mounted on linen and folded in stiff covers ...	6	8	0
A. A. Handbook of Northern India ...	5	0	0
A. A. Handbook of Ceylon ...	6	8	0
Road Map of India. Scale 50 miles to 1 inch. Mounted on linen and folded into covers ...	2	8	0
"This Motoring" The Romance of the A. A. by Sir Stenson Cooke ...	4	8	0
The Madras M. V. Taxation Act. A booklet explaining the implications of the Act and Rules made there- under ...	0	4	0
List of Petrol Depots in Southern India ...	0	4	0
Great Britain and Ireland 1936 (A list of the principal events during 1936 with information for visitors).			
Touring in Great Britain and Europe 1935-36 A. A. publications ...			Free to Members only
"My Glorious Adventure," by Captain T. Yates—Benyon. A record, written in a light, amusing style, of the author's trip by car from Piccadilly to Calcutta ...	5	0	0

Postage extra in all cases.

recently enacted a law abolishing tolls again, and adopting a Provincial cum municipal motor vehicle taxation system. If Bombay and all other Provinces in India can raise all the money required for road maintenance by means of a taxation regime, surely it should not be impossible in the Madras Presidency. It certainly seems as though the matter of road maintenance and road taxation in the Madras Presidency needs a close review.

It is significant that in a recent communication from the Central Government to Provinces, the establishment of a system of motor vehicle taxation in all provinces was urged as a preparatory measure toward standardisation; but no mention was made of tolls, a form of levy which appears to be peculiar to Southern India.

Mysore Vehicle Tax and Refunds

Although the procedure adopted by the Mysore Government is to collect vehicles tax from visiting motorists at frontier toll gates, it would appear that there are occasions when the licensing officer is not present at these toll gates. Several cases have come to notice where visiting motorists have passed right through the State without being called upon to pay the tax until passing the last toll gate before leaving, and, incidentally, after paying all the tolls demanded.

Failure to pay tax at the point of entry may invalidate any subsequent claim for refund, while there will be no

Bangalore, a refund of one half of the tax paid can be obtained. The tax on cars weighing 15 cwt or less is Rs. 15 per half year.

For the present a reciprocal agreement is operating in favour of motor cars registered in either Mysore State or Bangalore (C. & M. Station); the licence issued by one administration carrying exemption from payment of the tax of the other. This agreement does not cover motor cars registered elsewhere, so motoring visitors to Bangalore, who may stay in the C. & M. Station for more than fourteen days will most probably be called upon to pay the C. & M. Station tax for one half year, the average rate being Rs. 28.

Coorg Motor Vehicles Tax

The Government of Coorg levies a Motor vehicles tax on all motor vehicles entering the Province of Coorg. The rules relating to this tax are, for all practical purposes, the same as those operating in Madras Presidency, although the rates are slightly lower. No initial period of exemption is granted and the owner of a motor vehicle becomes liable for the tax immediately his vehicle crosses the frontier; as in the Madras Presidency. The tax is payable quarterly in advance but a refund is admissible for any period, not being less than one calendar month, during which a licence is not used, provided the licence is surrendered for cancellation.

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possibility of obtaining a refund of those tolls which need not be paid once the tax has been paid and a licence displayed.

Any motorist who may be fortunate (or we might say—unfortunate) enough to get into Mysore State without paying vehicle tax at the frontier, will be well advised to pay the tax on the first possible occasion and thus avoid the unpleasantness of being continually checked by the police and the possible loss of any refund normally admissible.

For the benefit of those readers who may have missed previous articles dealing with Mysore State motor vehicles tax it may be stated that vehicle tax is based on unladen weight and is payable for the half year in advance; the rate of tax for the average car (*i.e.*, more than 15 cwt, but less than 30 cwt in weight unladen) is Rs. 18. It is normally collected and a licence given in exchange, at the toll-gate nearest point of entry into the State. The Licence must be displayed on the left, bottom corner of the windscreen, and exempts the car from payment of municipal tolls, *but not provincial (or state) tolls*. If the licence is surrendered, within the calendar month of issue, to the Inspector-General of Police, Mysore State,

An arrangement exists whereby a reduced scale of tax is levied if both a Madras and a Coorg Licence is obtained at one and the same time, when a reduction of one third of each tax is allowed. However, in order to obtain a refund on such licences, it is essential that the two licences be surrendered simultaneously also.

Madras M. V. Tax

It may not be out of place to remind those motor-owning readers who are resident in the Madras Presidency that the tax for the quarter commencing 1st April 1936 should be paid, normally, on or before that date.

Incidentally the A.A.S.I. has available a booklet dealing with the Madras M. V. Taxation Act in detail, copies of which are available to members free. Non-members may obtain copies on payment of four annas and postage.

Motor Vehicle Taxation and Public Service Vehicle Owners

The way in which the owners of motor vehicles which ply for hire are hard pressed by multiple motor vehicle taxation is very well exemplified by the following

details relating to a seven seater motor bus (or taxi) which plies on the Mangalore-Shimoga Road between Someshwar in South Kanara District of the Madras Presidency, and Agumbe in the Shimoga District of Mysore State. The total distance of the route is seven miles of which four are in the Madras Presidency and three in Mysore State:—

Initial Registration.

	Rs.
Madras Registration	16
Mysore Registration	16
Total	32

Paid Annually.

	Rs.
Madras M. V. Tax	210
Mysore Road Tax	100
Mysore Tolls	365
Mysore Vehicle Tax	180
Madras Permit fee	8
Mysore Permit fee	8
Madras Brake Inspection fee ..	40
Mysore " " " " " " " " " "	10
South Kanara District Board Licence fee	90
Total	1,011

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" " S. Kanara District Board annually	90

Total .. 1,011

The road on which this bus plies is a ghat road, many miles away from any railway. It is one of the links which connects two railway termini, Mangalore on the one side and Shimoga on the other so it actually helps to serve the railways rather than compete with them. The necessity for this heavy double taxation is certainly most obscure.

Standardisation of Motor Vehicles Rules

It is with much gratification that one learns that the Central Government is closely considering the possibility of standardising motor vehicle law throughout British India and to this end are preparing legislation designed to so amend the Motor Vehicles Act (India) 1914 as to pave the way for a uniform system of registration and licensing throughout the country, with possibly a uniform system of motor vehicle taxation to follow.

That there has been a decided necessity for standardisation in the matter of registering motor vehicles and issuing, renewing and endorsing driving licences is freely recognised, especially by those motorists who have been compelled to re-register their vehicles again and again, owing to a change of residence, and by those who have had to obtain new driving licences under similar circumstances. Since every driving licence issued in British India is issued under the authority of the Motor Vehicles Act (India) 1914, it is not clear why one licensing officer cannot renew a driving licence issued by another licensing officer, irrespective of the province, state or administration in which the other licensing officer is located. The same argument applies to registration certificates.

It is believed that the legislation proposed by the Central Government will go a long way toward eliminating the difficulties indicated above and will bring about a much greater freedom of circulation in so far as privately owned motor vehicles are concerned.

As regards vehicles plying for hire, or for the carriage of goods or material, however, the above remark does not apply. The proposed legislation seeks to bring about a closer control of public service vehicles, so as to do away with any form of unhealthy competition with the railway or with competing road transport services.

Full details are not yet available; nevertheless it is believed that the motoring public will be pleased to learn that the Central Government is actually moving in the matter.

Accommodation for Touring Motorists

The A.A.S.I. is engaged on the compilation of a list of hotels, boarding houses, etc., at which touring motorists can find accommodation in the large towns of Southern India. Readers will help materially in the preparation of a really useful list, if they will communicate with the Secretary and let him have the names of any hotels, boarding houses, and similar institutions of which they have personal knowledge, giving the class of accommodation, etc., each can provide.

The list is intended to include places which cater for Indian motorists as well as Europeans, but will not include travellers' bungalows, or P.W.D. or Forest Rest Houses, which are being separately listed.

Driving License Reminders

Members of the A.A.S.I. who depend upon the A.A.S.I. driving licence reminder service for the timely renewal of their licences, will render signal assistance by

(Supplement)

B. B. C. PROGRAMMES (April 12 to 18)

SUNDAY, APRIL 12.

- 4-30 p.m.—Big Ben. An Easter Service, relayed from Liverpool Cathedral. Organist, H. Goss-Custard. Choir Conductor, E. C. Robinson.
5-45 p.m.—Easter Music from the Oratorios.
6-0 p.m.—The BBC Military Band; conductor, B. Walton O'Donnell.
6-45 p.m.—Weekly Newsletter and Sports Summary.
7-10 p.m.—Musical Interlude.
7-15 p.m.—Close down.
7-30 p.m.—Big Ben. The BBC Northern Ireland Orchestra; leader, Philip Whiteway; conductor, E. Godfrey Brown.
8-30 p.m.—Talk: "The Spice of Life."
8-50 p.m.—A Pianoforte Interlude by Dorothea Aspinall.
9-0 p.m.—The Wakefield Miracle-Play of the Crucifixion, together with a Cornish Mystery Play of the Three Maries.* Adapted and produced by John Pudney.
9-30 p.m.—Weekly Newsletter and Sports Summary.
9-55 p.m.—Musical Interlude.
10-0 p.m.—A Children's Service, relayed from All Souls', Langham Place, London. Conducted by the Rev. Arthur Buxton.
10-30 p.m.—Close down.

MONDAY, APRIL 13.

- 4-30 p.m.—Big Ben. Reginald Porter-Brown, at the Organ of the Regal Cinema, Torquay.
4-45 p.m.—A Recital by Cicely Hoyer (Soprano and Pianoforte).
5-15 p.m.—"April Folly."* A seasonable revue, presented by John Pudney.
5-45 p.m.—Medvedeff's Balalaika Orchestra, with Olga Alexeeva (Soprano), Max Turganoff (Tenor), and Vladimir Elin (Baritone).
6-10 p.m.—"All About the Roundabouts." A Bank Holiday business, presented by John Pudney.
6-30 p.m.—The News.
6-50 p.m.—Dance Music.
7-15 p.m.—Close down.
7-30 p.m.—Big Ben. Arthur Salisbury and his Orchestra, relayed from the Savoy Hotel, London.
7-45 p.m.—Variety.
8-5 p.m.—A Recital by Gladys Corlett (Violoncello).
8-30 p.m.—Talk: "Conquest of the Air"—8.*
9-0 p.m.—"Eight Bells."* A repeat performance of a popular nautical revue, by Mungo Dewar. The cast supported by the BBC Men's Chorus and the BBC Empire Orchestra; leader, Daniel Melsa; under the direction of Eric Fogg. The programme produced by William MacLurg.
10-0 p.m.—The News.
10-20 p.m.—Orchestral Music.
10-30 p.m.—Close down.

TUESDAY, APRIL 14.

- 4-30 p.m.—Big Ben. A Sonata Recital* by Albert Sammons (Violin) and William Murdoch (Australian Pianist).
5-25 p.m.—Talk: "Agriculture in the British Isles; the Livestock Industry," by R. W. Haddon.
5-40 p.m.—Musical Interlude.
5-45 p.m.—The Leicester Opera House Orchestra; conductor, Jack Robson; relayed from the Opera House, Leicester.
6-15 p.m.—A Recital by Arthur Brough (Baritone).
6-30 p.m.—The News.
6-45 p.m.—Organ Recital.
7-15 p.m.—Close down.
7-30 p.m.—Big Ben. A Recital by Jean Norris (Pianoforte).
8-0 p.m.—Talk: "Imperial Affairs," by H. V. Hodson.

- 8-15 p.m.—The Composer at the Pianoforte—10: Thomas F. Dunhill.* A recital of Thomas Dunhill's songs, sung by Winifred Bury (Soprano). (Accompanied by the composer.)
3-40 p.m.—Musical Interlude.
8-45 p.m.—The Norris Stanley Sextet.
9-25 p.m.—Two Short Plays: "Un Desespere." A comedy in one act by Gabriel Timmory. "Le Billet de Faveur." A sketch for the microphone by Lauville. Translated and adapted for broadcasting by Marianne Helweg. Production by John Pudney.
10-0 p.m.—The News.
10-15 p.m.—Dance Music.
10-30 p.m.—Close down.

WEDNESDAY, APRIL 15.

- 4-30 p.m.—Big Ben. "Mixed Pickles" (8th Edition).* Sketches, stunts, songs, sauce, and sophistication, bottled by Cecil Madden.
5-10 p.m.—Talk: "From the Woman's Point of View," by Jane Oliver.
5-25 p.m.—Musical Interlude.
5-30 p.m.—Scandinavian Music. The BBC Empire Orchestra; leader, Daniel Melsa; conductor, Eric Fogg. Hilda Dederich (Pianoforte).
6-30 p.m.—The News.
6-45 p.m.—Excerpts from Opera.
7-15 p.m.—Close down.
7-30 p.m.—Big Ben. A Paderewski Recital.
7-50 p.m.—The BBC Dance Orchestra,* directed by Henry Hall.
8-25 p.m.—Talk: "Down to the Sea in Ships—1: the Merchant Marine."* Major R. H. Thornton.
8-45 p.m.—The Bournemouth Municipal Orchestra; leader, Bertram Lewis; conductor, Richard Austin. Relayed from the Pavilion, Bournemouth.
10-0 p.m.—The News.
10-15 p.m.—Jan Berenska and his Orchestra, relayed from the Pump Room, Leamington Spa.
10-30 p.m.—Close down.

THURSDAY, APRIL 16.

- 4-30 p.m.—Big Ben. The Composer at the Pianoforte—11: Herbert Hughes. A recital of Herbert Hughes' songs and arrangements, sung by James McCafferty (Baritone). (With Herbert Hughes at the Pianoforte).
4-55 p.m.—Musical Interlude.
5-0 p.m.—An Organ Recital by Albert Taylor, relayed from First Presbyterian Church, Rosemary Street, Belfast.
5-30 p.m.—Talk: "Imperial Affairs,"* by H. V. Hodson.
5-45 p.m.—The Bath Pump Room Orchestra; leader, J. Andrew Cooper; conductor, Frank Gomez. Relayed from the Pump Room, Bath.
6-0 p.m.—"Lifeboats."* A programme representing the work of lifeboatmen on and off duty in all parts of the British Isles; with the co-operation of Sir Godfrey Baring, Chairman of the R.N.L.I., and the Rt. Hon. the Lord Mottistone, C.B., C.M.G., D.S.O. Devised by S. E. Reynolds. Produced by Pascoe Thornton.
6-30 p.m.—The News.
6-45 p.m.—The BBC Scottish Orchestra; leader, J. Moulaud Begbie; conductor, Guy Warrack.
7-15 p.m.—Close down.
7-30 p.m.—Big Ben. The Pavilion Theatre Orchestra; directed by Frank Stokes; relayed from the Pavilion Theatre, Liverpool.

* Electrical recording.

† Gramophone records.

8-15 p.m.—Talk: "We Live and Learn."* The Rt. Hon. the Lord Ponsonby, G.C.B.

8-30 p.m.—The Band of His Majesty's Royal Marines, Plymouth Division, conducted by Captain F. J. Ricketts, Director of Music, Royal Marines. Relayed from the Abbey Hall, Plymouth.

9-30 p.m.—"Song of Spring." Book and lyrics by Charles Hatton. Music by Michael North. The cast includes: Laura Bradshaw, Joan Carter, William Chambers, Denis Folwell, Jane Minton, Hugh Morton, Doris Nichols, Warwick Vaughan, Maurice Westhead. The Revue Orchestra and the BBC Midland Revue Chorus; conducted by Reginald Burston. Production by Martyn C. Webster.

10-45 p.m.—The News.
10-30 p.m.—Close down.

FRIDAY, APRIL 17.

4-30 p.m.—Big Ben. The BBC Welsh Orchestra; leader, Frank Thomas; conductor, Idris Lewis. Teifion Williams (Baritone).

5-15 p.m.—A Recital of Scots Songs by John McKenna (Tenor).
5-40 p.m.—Talk: "Down to the Sea in Ships—1: the Merchant Marine."* Major R. H. Thornton.

6-0 p.m.—The BBC Dance Orchestra, directed by Henry Hall.
6-30 p.m.—The News and Announcements.
6-50 p.m.—The Birmingham Hippodrome Orchestra; conductor, Harry Pell. Relayed from the Hippodrome Theatre, Birmingham.

7-15 p.m.—Close down.
7-30 p.m.—Big Ben. Geiger and his Orchestra, relayed from Claridge's Hotel, London.

8-0 p.m.—Talk: "From the Woman's Point of View,"* by Jane Oliver.

8-15 p.m.—The BBC Northern Orchestra; leader, Alfred Barker; conducted by Crawford McNair.

9-15 p.m.—See footnote.
9-30 p.m.—New Dance Music.
10-0 p.m.—The News and Announcements.
10-20 p.m.—The Hotel Metropole Orchestra; leader, A. Rossi; under the direction of Emilio Colombo. Relayed from the Hotel Metropole, London.

10-30 p.m.—Close down.

SATURDAY, APRIL 18.

4-30 p.m.—Big Ben. "Incidental to a Play."* Songs from the legitimate stage, presented by Douglas Moodie.

5-0 p.m.—See footnote.

6-0 p.m.—Marches by Elgar.[†]

6-15 p.m.—The Children's Hour. "The Enchanted Shirt." An old legend adapted as a dialogue story by Margaret Kissane. Songs by Ruth George. "All that Glitters is not Gold." A tale of highway men, by Sean Crawford.

7-0 p.m.—The News.

7-15 p.m.—Close down.

7-30 p.m.—Big Ben. The BBC Scottish Orchestra; leader, J. Mouland Begbie; conductor, Guy Warrack. Andrew Simpson (Tenor).

8-30 p.m.—See footnote.

9-0 p.m.—"Pomp and Circumstance" (Elgar).[†]

9-15 p.m.—Rugby League Cup Final. Interval summary and a running commentary on the second half of the match. Relayed from Wembley Stadium.

10-15 p.m.—The News.

10-30 p.m.—Close down.

* Electrical recording.

† Gramophone records.

ON APRIL 17, it is expected that the Most Hon. the Marquess of Linlithgow, K.T., G.C.S.I., will arrive at Bombay.

ON APRIL 18, it is expected that the Rt. Hon. the Earl of Willingdon, G.C.S.I., G.C.M.G., will leave India on the completion of his term of office as Viceroy; and that the Most Hon. the Marquess of Linlithgow, K.T., G.C.S.I., will be sworn-in as Viceroy in his place.

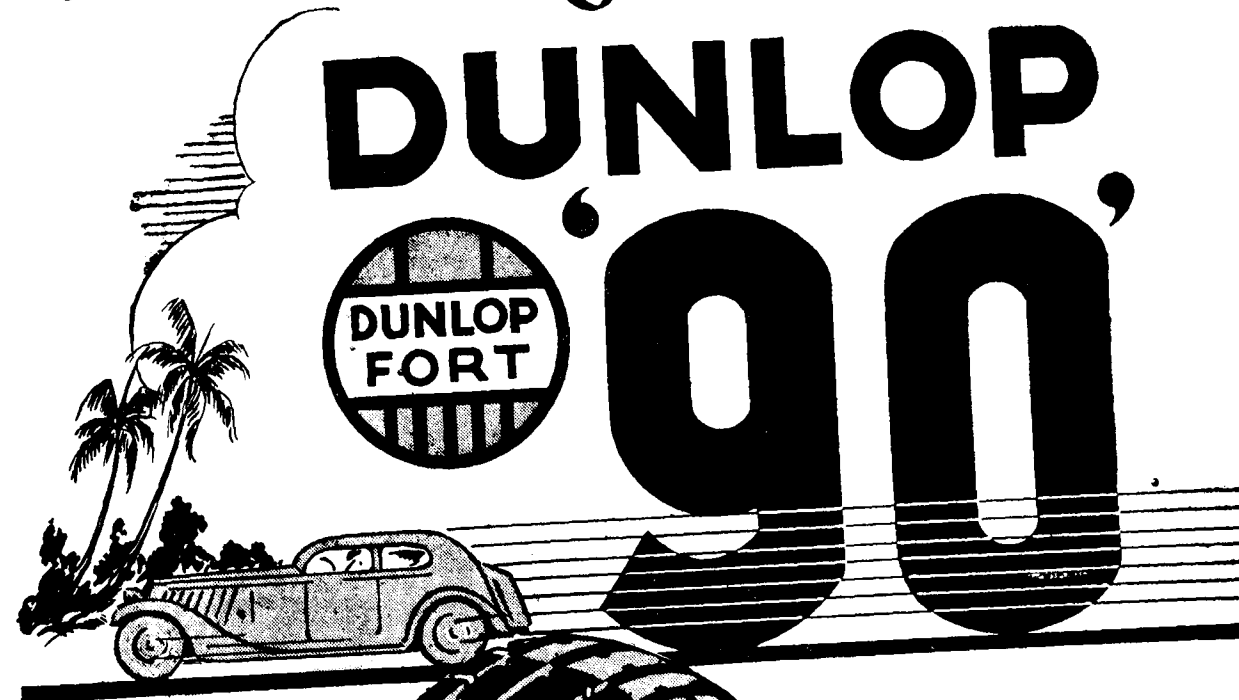
IT IS HOPED that broadcasts on these occasions will be relayed in the Empire programmes, in collaboration with the Indian State Broadcasting Service. Further details will be announced at the microphone and by other means.

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informing the Secretary whenever the date of the termination of their licences are altered; when for instance, the driving licences is renewed after having been allowed to lapse—while away from India.

If this is not done, the date of the original licence only remains on record, and reminders issued regarding that date are valueless and misleading.

International Driving Permits

The institution of a driving test as a necessary preliminary to the issue of motor driving licences in the United Kingdom, has led to an increase in the number of applications for International Driving Permits, the possession of which obviates the necessity for a test.

Readers intending to apply for an International Driving Permit should remember that such a permit is valid for only twelve months from date of issue; consequently it is desirable that the date of issue should not precede date of departure for England by more than a few days.

The A.A.S.I. is in a position to issue these permits and will forward a form of application on request. The application duly filled in accompanied by two passport size photographs and Rs. 10 (the Government fee) should reach the Secretary not less than 10 days before date of sailing, if it is desired that the permit be taken from India by the holder.

STANDARD CARS

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It must also be explained that an International Driving Permit will not be accepted as valid in any overseas country, unless it has been presented for registration and endorsement by a licensing authority immediately after arrival in each such country.

Maps

It is with much regret that we have to announce that for the present copies of the road map of the Madras Presidency are not available for sale.

In 1933 the A.A.S.I. compiled and placed on sale a touring map of Southern India, the stock of which was completely exhausted. When the question of reprinting came up for consideration, certain difficulties arose (including one pertaining to copyright) and as a result it was decided to co-operate with the Madras Survey Office in the production of a revised and more complete edition of the Survey Department's Road Map of Southern India. This revised map is in course of preparation, but copies are not likely to be placed on the market for a few months owing to unavoidable delay in the printing office.

A small supply of the current edition of the road map is being struck off to meet urgent demands for a road map and these are expected to become available in a week or so.

Safety on Our Roads

In co-operation with the Safety First Association of India, and thanks to the keen interest of the Officiating Director of Public Instruction, much is being achieved in the direction of imparting instruction in Road Sense to the rising generation of the Madras Presidency. Many copies of The Indian Highway Codes are finding their way into elementary and training schools, to supplement leaflets on the same subject issued by the Madras Government in 1932. In time no doubt, this subject will find a place in the curriculum of every elementary school and lead to a more general appreciation of the rights and responsibilities of all classes of road user.

Copies of the Indian Highway Codes have also been supplied to the Police Department who are considering the advisability of producing vernacular translations for the instruction of the general public, another step toward the creation of greater road safety.

Mysore Traffic Board

It is with much pleasure that we congratulate Mr. A. L. Hill, a member of the A.A.S.I., on his appointment to the Mysore Traffic Board, representing private motor owners. Mr. Hill has very kindly undertaken to keep in touch with the A.A.S.I. and look to the interests of its members while serving on the Board.

The War in Abyssinia

A number of queries having been received from motorists as to the extent to which the Geneva sanctions will affect the owners of Fiat Cars, we have ascertained that, although further supplies cannot be expected from Italy for the present, Fiat Motors (Eastern India Agency) Limited holds a number of cars and a fairly large stock of spares.

It is understood that the Madras Branch of Fiat Motors (Eastern India Agency) will continue to maintain a sales and service station in Mount Road.

Membership

During the month of February a total of 19 new members were enrolled having been introduced Dr. W. C. Sweet and Mr. G. Brew by Mr. A. W. Hopton, Messrs. V. Srinivasan and W. McD. Redwood by Messrs. Addison

& Co., and one each by Messrs. K. Gopalakrishna, C. Kunhi Raman, J. L. P. Roche-Victoria; the remainder were enrolled by the staff.

Signposting of Roads in South Kanara

The President, Kanara District Board, has recently published a notice intimating an important new feature in the manner of signposting roads in the district. The notice reads as follows:—

Signposts with arms marked X.

“It is notified for general information that where a signpost in South Kanara bears an arm which has ‘X’ painted after the name, it means that there is an unbridged river on the road. In the monsoon period this road will not be practicable for motor cars; in the dry season motorists should make their own enquiries before attempting such a road.”

New Members

V. Srinivasan, Esq.,
571, Pycroft's Road, Triplicane P.O., Madras.

Lt. A. A. J. Danvers,
P. A. V. O. Cavalry F.F., Attached,
Malabar Special Police,
Malappuram.

A. L. K. R. Alagappa Chettiar, Esq.,
Banker, Rasipuram, Salem District.

A. Ramaswamy Iyer, Esq.,
Vakil, Tuticorin.

B. Sodalaimuthu, Esq.,
Vice Chairman, Coimbatore.

W. Mc. D. Redwood, Esq.,
4, Cookson Road, Richards Town,
Bangalore.

Dr. W. C. Sweet,
Palace Road, Bangalore.

G. Brew, Esq.,
1/36 Calvetty Road, Cochin.

R. S. Wolfendon, Esq.,
C/o Parry & Co., Madras.

Dr. P. V. Cheriyan,
Victoria Crescent, Egmore, Madras.

C. O. Commin, Esq.,
Waterfall Estate, Attakatti P.O.,
Via Pollachi.

D

Major H. W. Green,
1, The Grey House, Clifton, Karachi (Sind).

Messrs. John Dickinson & Co., Ltd.,
(Rep. L. N. Powell, Esq.),
9, Maclean Street, Madras.

P. V. S. Venkatachalam, Esq.,
No. 1, Broadway,
Madras.

B. S. Nagarajachar, Esq.,
Representative of Messrs. Masseys (1930) Ltd.,
Coimbatore.

D. H. Elwin, Esq.,
Government House, Madras or Ooty.

The Jagirdar of Arnee,
Arnee House, Egmore, Madras.

T. S. Swaminathan, Esq.,
Merchant, Rajam Vilas, Trichy Road, Coimbatore.

H. Seshagiri Rau, Esq.,
Retired Sub-Judge, Madras Service,
Basavangudi, Bangalore.

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No, this is not a new armoured car, but one of the Minx Magnificents standing alongside a disused anti-aircraft gun at Ashow, in the near neighbourhood of Coventry, the Minx's home town.

I do not know whether it is proper, in reviewing the new Hillman "Minx", to reveal that I am the owner of an old, and perhaps now rather passe "Minx" myself. An owner is supposedly liable to bias where his own car is concerned, however impartial he may try to be. On the other hand, the years give him a more thorough knowledge of the merits and demerits of a certain make than he can ever hope to acquire in the course of the ordinary brief test run.

My own "Minx" was originally bought almost solely on account of one outstanding quality—a quality which, I suppose, must have influenced many thousands of similar sales. I refer to the "sturdiness" which has always been a marked feature of this 10 h.p. model. It looked sturdy, it gave a sturdy performance on the road, and I have certainly had many miles of sturdy service from it.

While the new "Minx" is, of course, a vastly different proposition, it is pleasant to find that it still retains this same quality. Driving it, one does not feel that one is handling a low powered car, although one knows that it is rated at only 9.8 h.p. There is a willingness about the engine's way of settling down to its job, and a solidity in the car's general behaviour at speed on the open road, that suggest that here is something more substantial than an ordinary "Ten".

It is not altogether a matter of figures, although the new "Minx", even on paper, has a performance which is distinctly creditable. A comfortable 60 m.p.h. can be reached in top gear, while in third gear the car will touch 45 m.p.h. It is rather a case of this respectable turn of speed being achieved in a peculiarly competent and satisfying manner.

It would not do, however, to give the impression that the "Minx" specialises in sturdiness and nothing else. Indeed, the new model is decidedly graceful in its general

A POPULAR LIGHT CAR IN NEW GUISE

THE 1936
HILLMAN "MINX"

(By the Earl of Cardigan)

appearance. The saloon coachwork is of streamlined type, and a good point is that running boards have been entirely dispensed with. This omission is both artistically sound and also very sensible. With a low floor level, running boards are apt to be more of an inconvenience than otherwise.

The seating is thoroughly comfortable, and the sloping rear panel has not been allowed to interfere with headroom, so that four passengers will find plenty of space at their disposal. Some drivers may, I think, regret that neither of the front wings is visible from the driving seat; but this is a feature to which one can soon become accustomed.

Among the many improvements incorporated in the new "Minx" perhaps the most striking is that which concerns the four-speed gearbox. This is now an all-synchromesh unit—that is to say, each and every ratio can be engaged with equal readiness. There is no gear-change which can possibly be "crashed".

Personally, I regard this as a very great advance. It was, surely, always rather unreasonable to have *some* foolproof ratios in a gear-box while other ratios still retained an element of difficulty. The new arrangement should lead to better driving; since beginners will now use their first and second gears, when the need arises, as readily as either third or "top". Actually, in this case, first gear is rather low; but second is a very valuable and helpful ratio.

The springing is decidedly good, and this results in the car sitting down very solidly on the road at all speeds. The individual road springs are of long semielliptic type, with a special "Variload" device attached. Like all good ideas, the latter is essentially simple. It consists merely of an additional short, stiff spring leaf, not cambered like the others, but lying horizontally under each main spring.

With the spring lightly flexed, this additional leaf is doing no work at all. When, however, the main spring is much flattened by some combination of heavy load and violent road shock, the extra leaf is there, giving much-needed support. It is, as it were, a "reserve", on which the other spring leaves quite literally fall back in times of exceptional stress.

The steering is light and efficient, with a pleasant amount of self-centring action. The "Duo-Servo" brakes are very powerful, and yet by no means fierce. (How enormously cars have improved during the last few



Rural England—an old mill at Blackdown, Warwickshire, which forms a fitting contrast to that most up-to-date production—a Hillman Minx magnificent.

years in this matter of braking smoothness!).

The box-girder type of chassis frame is a technical feature which, to the layman, must sound rather boring. It has its everyday importance, none the less. A rigid chassis frame means, in the long run, a non-squeaking and non-rattling body. Altogether the Hillman Company has made an extremely thorough job of redesigning the "Minx" for 1936, and can safely claim that this car now offers the motorist even better value than before. (From—"Britannia & Eve"—January, 1936.)

BRITISH MAGNATES' . . . WORLD BUSINESS TOUR

Mr. W. E. Rootes, Chairman of the famous Rootes group of Companies and Vice-President of the Society of Motor Manufacturers and Traders of Great Britain, who is on a business tour of the world, arrived in Madras on March 9th from Calcutta.

Mr. Rootes left London on January 16th and during the next six months will travel over 25,000 miles in the capacity of Ambassador for British Export Trade.

The principal object of his tour is to obtain intimate knowledge of the conditions governing the world's markets particularly in relation to the British automobile industry.

Mr. Rootes, accompanied by his eighteen-year-old son, Mr. G. Rootes has already visited Bombay, Delhi and Calcutta and left Madras on March 10th for Colombo. His route is then, Penang, Singapore, the Far East and America from whence he will return home on the "Queen Mary" in July next.



Mr. W. E. Rootes

The Indian Roads & Transport Development Association Ltd. Monthly News Letter

Bengal Road Development Enquiry

In our December News Letter we referred to Mr. Vipin's Report on schemes of Road Development in the Madras Presidency and we are now glad to be able to report the progress made by Mr. King, the Special Officer appointed in Bengal to carry out a similar survey.

Under the terms of reference, Mr. King is, however, also required to report on:—

- (a) the drainage condition in the Province so far as this is likely to affect road construction.
- (b) the existing roads in the Province with an examination and description of the more important,
- (c) the types of roads suggested for construction,
- (d) the nature and prospect of traffic likely to develop on new roads or improved roads,
- (e) the type and volume of traffic on the existing roads,
- (f) the amount of bridging required and the types of bridge proposed.

His enquiry necessitates considerable correspondence with the Railway Administrations, Civil Authorities, P.W.D., District Boards and Municipalities in the Province and he has a small outdoor staff of one Assistant Engineer and five Overseers, collecting particulars relating to existing roads and proposed projects for which definite petitions have been received.

One of the difficulties experienced has been the lack of accurate maps, showing the general physical features of the country and the existing roads. This has now, however, been overcome.

An examination of provincial road requirements on these lines by all Provincial Governments will help considerably in bringing about an adjustment in the unbalanced state of road communications in the country.

Bengal is the second Province to appoint a Special Officer to carry out a survey of its road requirements and we hope the others will follow their example.



The Khan of Kalat recently paid a visit to the Assembly Plant of General Motors India, Limited, and when taken through the works evinced the greatest interest in the various operations which are all carried out by Indian workmen. The Khan is seen in the picture with his new Convertible Buick which he recently purchased on his arrival in Bombay.

To have a definite programme of road development in the Province and a knowledge of what it may cost instead of construction in a haphazard manner will surely result in a vast saving of public money.

Road Development in the Dooars

During the last flood of the Teesta near Barnes Junction, the Bengal-Dooars Railway suffered considerable loss and there was complete dislocation of traffic. The construction of a railway between Siliguri and Bagrakote was then proposed but later a road scheme, subject to the sanction of Government, for the construction of a road between Bagrakote and Sevoke has been proposed which will serve as an additional outlet for the tea planting area of the Dooars.

Road Development in Junagadh

The Chief Engineer in Junagadh has, with the substantial financial aid placed at his disposal by His Highness the Nawab Saheb, embarked on a sound road construction policy. He has improved trunk and feeder roads extending over 300 miles and precluded the possibility of their degenerating through increasing traffic and torrential flood by avoiding steep gradients and ensuring uniform resilience. Notable among the new roads taken in hand by him at an aggregate cost of Rs. 1,18,000 were the Balagam-Keshod and Una-Nageshri roads—the former preventing the Ghed tract from being isolated during the rainy season and the latter opening the Babariwar hinterland to traffic with other Mahals of the Junagadh State.

The principal thoroughfares of Junagadh have been asphalted, and the main roads of Veraval have been macadamised. He has constructed a much needed causeway on the Saraswati river, thereby linking up Sutrapada and the outlying villages with the rest of the Junagadh State territory served by a network of metalled roads.

Cochin Road Board

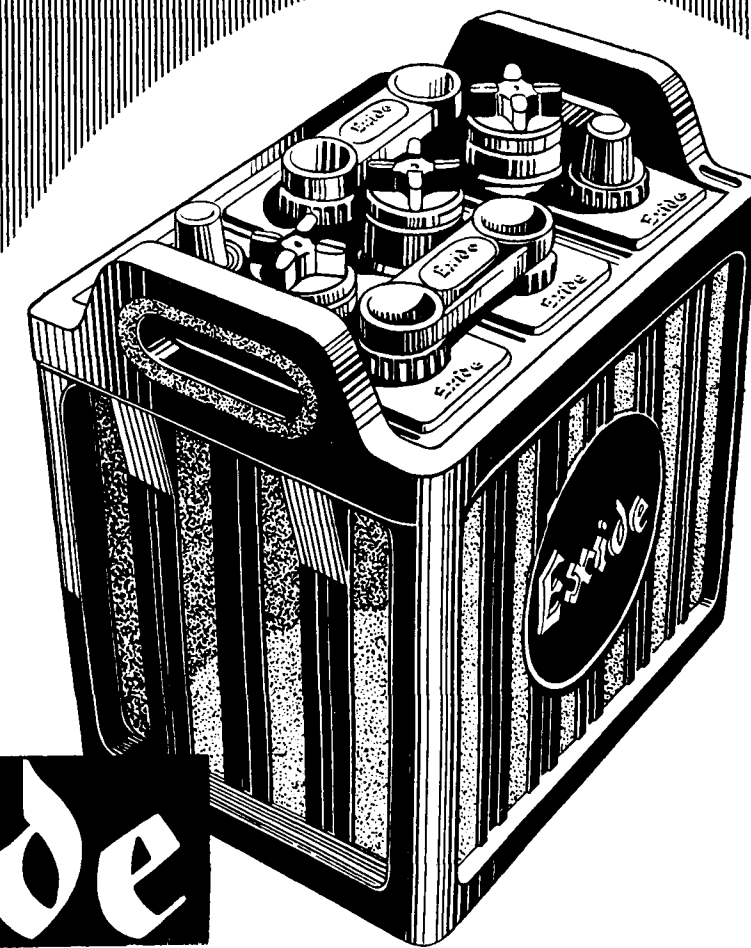
The Board has been asked to submit a five year programme for the construction of roads

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by the Cochin Public Works Department. The Government have agreed to allot 1¼ lakh rupees per year towards the cost of the works to be recommended by the Board.

Burma P.W.D. Report, 1934-35

The state of the finances of the Province did not permit the Local Government in embarking on new works of any magnitude, and the upkeep of the existing roads with inadequate money was again a problem of far-reaching importance. Rs. 25,47,464 was expended on the maintenance of the main roads voted and non-voted in the Province. This was a reduction of Rs. 2,95,148 compared with the previous year.

It is of interest to note that there are 47,000 miles of unsurfaced cart tracks, usually termed village roads, in Burma, which are in addition to the roads maintained by the various District Councils. This enormous road mileage gives some indication of the magnitude and scope of the road problem in the Province.

A work of considerable interest is the commencement of the construction of a Suspension Bridge over the Shweli River on the border of the Federated Shan States and the Bhamo District of Burma, which when completed it will be possible to motor to Bhamo from Rangoon. The cost of the bridge is being met from a grant of Rs. 5.04 lakhs made by the Government of India from the reserve in the Road Fund Account.

Experiments were carried out from funds provided by the Petrol Tax with the object of determining economical methods for improving the travelling surfaces of roads constructed of laterite and delone.

Some little while ago definite proposals were made for a road loan which would result in considerable economy in road maintenance cost which Government unfortunately at the time could not see their way to accept.

Statistics on Road Expenditure in Madras Presidency

We have pleasure in reproducing below some statistics of interest to our members from Mr. Vipan's report on Schemes of road development for the Madras Presidency.

Roads and Railways in Madras Presidency.

	Length in miles.	Length per 100 square miles of area.	Area per mile of road or railway in square miles.	Persons per mile of road or railway.
1. Railways	4,625	3.23	30.92	10,159
2. Metalled roads	19,719	13.87	7.21	2,368
3. Improved or motorable unmetalled roads	3,372	..	..	..
4. Total motorable roads	23,091	16.24	6.16	2,023
5. Other (Unmetalled roads)	9,536	..	..	..
6. Total, all roads.	32,627	22.65	4.41	1,450

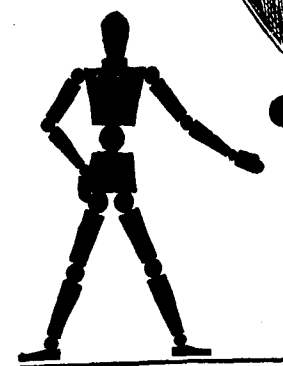
The area more than 10 miles from any railway is 71,577 square miles or 50.3 per cent. of total area.

The following table gives information by districts of the length of the existing communications, the expenditure incurred on road maintenance, etc.

Name of District.	Area in sq. miles	Population	Area under Cultivation	Total length of all roads	Length of motorable roads	Length of Rlys.	Length of navigable canals.	Gross income of D.B. 1933-34	Expenditure on roads 1933-34	Government grant 1933-34	Expenditure from D.B. Funds 1933-34	Percentage of columns 12 to 9
(1)	(2)	(3)	Acs. (4)	Miles. (5)	Miles. (6)	Miles. (7)	Miles. (8)	Rs. (9)	Rs. (10)	Rs. (11)	Rs. (12)	(13)
1. Anantapur ..	6,741	1,050,411	2,052,000	1,145	1,003	262	..	4,57,380	1,96,287	1,65,339	30,948	6.7
2. Arcot, North	4,648	2,266,989	1,118,000	1,682	1,551	228	..	7,46,969	2,77,336	1,70,952	1,06,384	14.3
3. Arcot, South	4,208	2,454,507	1,290,000	1,770	952	234	..	9,12,459	4,17,277	1,75,040	2,42,237	26.5
4. Bellary ..	5,713	969,774	2,350,000	959	487	226	..	4,34,482	1,38,791	97,790	41,001	9.4
5. Chingleput ..	3,091	1,655,115	767,000	1,281	877	153	98	7,69,076	3,76,867	2,15,603	1,61,264	20.9
6. Chittoor ..	5,901	1,447,103	756,000	1,458	1,316	238	..	6,28,284	2,58,140	1,42,105	1,16,035	18.4
7. Coimbatore ..	7,085	2,445,064	1,922,000	2,006	1,317	151	..	14,77,200	7,28,828	2,10,039	5,18,789	35.1
8. Cuddapah ..	5,919	949,397	1,042,000	939	884	125	..	3,93,736	1,79,048	99,808	79,240	20.1
9. Ganjam ..	*8,383	2,411,619	1,455,000	..	..	..	..	..	..	..	..	..
10. Godavari, East	*6,257	1,920,582	980,000	1,552	860	108	559	12,05,794	3,70,191	1,48,369	2,21,822	18.4
11. Godavari, West	2,361	1,223,056	815,000	882	492	122	218	11,84,597	3,66,071	1,64,356	2,01,715	17.0
12. Guntur ..	5,757	2,035,660	2,126,000	1,134	825	297	174	13,31,981	7,13,598	1,84,580	5,29,018	39.7
13. Kanara, South	4,021	1,372,241	558,000	1,467	896	60	4	6,75,077	2,72,648	1,37,946	1,34,702	19.9
14. Kistna ..	3,547	1,254,208	1,087,000	959	513	144	226	12,55,174	3,35,419	1,90,253	1,45,166	11.5
15. Kurnool ..	7,581	1,024,961	2,101,000	1,036	741	207	75	5,40,890	2,24,244	1,60,673	63,571	11.8
16. Madura ..	4,912	2,195,747	1,214,000	1,379	1,310	185	..	11,99,139	5,29,587	1,21,597	4,07,990	34.2
17. Malabar ..	5,794	3,533,944	1,487,000	1,792	1,574	214	95	11,49,522	4,00,275	2,53,848	1,46,427	12.7
18. Nellore ..	7,948	1,486,222	1,360,000	1,239	1,201	196	132	8,59,099	2,68,796	1,67,217	1,01,579	11.8
19. Nilgiris, The ..	982	169,330	89,278	758	409	21	..	2,61,158	1,22,294	55,460	66,834	25.6
20. Ramnad ..	4,819	1,838,955	1,287,000	806	710	220	..	8,54,441	3,23,568	96,562	2,27,006	26.6
21. Salem ..	7,058	2,433,972	1,563,000	2,191	1,166	258	..	9,18,725	2,97,092	1,33,082	1,64,010	17.8
22. Tanjore ..	3,742	2,385,920	1,296,000	2,657	1,087	295	35	40,93,406	7,48,056	1,10,350	6,37,706	15.6
23. Tinnevely ..	4,315	2,046,907	1,216,000	1,136	993	214	..	8,90,977	4,23,750	1,23,923	2,99,827	33.7
24. Trichinopoly	4,314	1,913,245	1,354,000	1,263	937	185	..	8,92,392	4,03,234	1,72,686	2,30,548	25.8
25. Vizagapatam	*17,186	3,607,948	2,597,000	1,136	990	282	..	9,36,936	3,30,941	1,67,280	1,63,661	17.5

* This area includes the area of the Agency Tracts.

I've tested every kind of lubricant and tried most of 'em - I found that Shell Lubricating Oil looked after my cars all right



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BSK 12

Motor Transport in Indore State

Motoring continues to be popular in the Indore State, according to the returns for 1934 just made available by the State authorities. At the end of last year, there were in the State, 1,116 cars as against 999, during the preceding year. The number of motor vehicles plying for hire was 195 buses, 37 taxis and 8 heavy commercial lorries, as against 203, 39 and 5 respectively during the preceding year. During the year under review, legislation as regards the licensing of conductors of motor buses was passed and rules made thereunder came into force from 1st June, 1934. Till the end of the year, no less than 421 conductors were licensed.

During the year, the men on point duty for traffic control rendered good service. The number of prosecutions fell from 277 to 209, of which 125 cases resulted in conviction.

Rubber Tyred Carts

Exemption from taxation in Amritsar.—The Amritsar Municipal Committee, at its meeting presided over by Sardar Sahib Santokh Singh Chawla, decided to exempt country carts fitted with pneumatic tyres from further taxation for a period of three years.

Mr. Padam Chand Bhandari, Secretary, pointed out that the Municipality of Rawalpindi had granted a similar exemption and the proposed inducement to cart owners would result in considerable saving to the Committee in preventing the roads from deteriorating.

How Roads Help Railways

Motor Industry's case in Britain.—A proposal for the further restriction of road transport contained in a note issued by the Association of British Chambers of Commerce is discussed in a reply by the Society of Motor Manufacturers and Traders Ltd., London.

The Society states that the railways, during the past ten years, had retained their relative position in regard to the carriage of the basic production of the country, and that they had recently improved their position under the direct leadership of the motor industry, which had raised the production in coal, iron and steel.

"It is right to say that without the progress of the motor industry these three industries would be in a parlous state, and the receipts of the railways would have suffered accordingly," it is added.

The Society points out that road transport for industrial purposes is now an absolute necessity for the well-being of the country's trade. "The fact is that transport must wait upon industry, and not industry upon transport."

"There can be no doubt that the advent of motor transport on the road has diverted traffic into new channels, but it has created enormous new traffic of a much more suitable nature for the railways themselves. Among these may be cited the 9,000,000 tons of road material carried by the railway, which would not otherwise have been available if motor transport had not been so prevalent, and, in addition, it must be realised that the components of a motor vehicle are carried four times on the railway before the vehicle appears on the road."

"It is submitted that any further restriction of road vehicles with a view to compelling road-created traffic to be carried on the railways—whether this is suitable to the industrial future of Great Britain or not—is unjust and unsupportable, in theory and in fact."

Indian Roads Congress

The Government of India have sent us the following notification for the information of members of the Association:—

At the inaugural meeting of the Indian Roads Congress held in December 1934, it was decided to form a permanent body to be known as the Indian Roads Congress with a regular membership and subscription. The necessary preliminaries having been carried out and the Memorandum of Association, Rules and Regulations and By-laws having been adopted by the Congress at its second session in January 1936 at Bangalore, applications from those wishing to join will be entertained by the Secretary of the Indian Roads Congress care of the Department of Industries and Labour, Roads Branch, New Delhi.

The objects of the Congress are generally to promote the science and practice of road construction and maintenance by annual meetings for the discussion of Papers and inspection of works of interest. The proceedings of the annual meeting, that is to say the Papers presented for discussion and the discussions thereon, will be issued free to all members or associates and will be available on sale to other persons interested. Attendance at annual meetings will of course be open to all members who have paid their subscription and are able to attend.

The Congress will consist of two classes of members: ordinary and associate members. To qualify for ordinary membership, an applicant must be a qualified Engineer actually employed in road construction or maintenance or in business connected therewith. Associate members will be persons other than qualified engineers who are, in the opinion of the General Council, sufficiently closely concerned with road construction and maintenance or any allied business to justify their inclusion. The annual subscriptions are—Members Rs. 10, Associates Rs. 50. An entrance fee, equivalent to one year's subscription, will be levied, but no entrance fee will be charged in the case of those joining before the 30th September, 1936, or from those who satisfy the Council that their total emoluments are not more than Rs. 400 per annum.

Forms of application for membership may be obtained on application to the Secretary of the Indian Roads Congress.

The Council of the Congress has the right to reject any application for membership.

Third Indian Roads Congress—Calcutta

The Council of the Congress have recommended that the third meeting should take place in Calcutta early in January next year and that the Indian Roads and Transport Development Association should organise an exhibition in conjunction with it.

The International Road Congress held in 1930 in Washington and in 1934 in Munich included an exhibition in its programme; and it is by no means a new proposal to do so in conjunction with the Indian Roads Congress. Some two or three years ago the matter was discussed between the General Secretary of the Association and the Chief Engineer (Roads) with the Government of India, but it was decided that until the Indian Roads Congress was an established institution, the matter had better be left in abeyance. An exhibition of this kind will give all manufacturers interested in road development an admirable opportunity to exhibit their machinery and equipment at a minimum of cost to all the leading road Engineers of the country. It is hoped that it will receive their full support. Further particulars can be had from the General Secretary of the Association.

River Bed on Aerodrome

The mouth of the River Var near Nice (France), where its waters have flowed out to the sea for centuries, has been gradually silting up and it is now proposed to divert the river bed 200 yards to the west so that the delta becomes dry land on which an important aerodrome will be built.

Aviation

As an indication of the growth of aviation in India, it is interesting to examine the yield to the Government of India from the tax on aviation petrol over the last six years.

In 1929 the tax produced about ¼ lakh of rupees and it has risen in 1935 to approximately 5 lakhs, totalling during the period something like 15 lakhs. Of this, however, about 3¼ lakhs have been returned to the aviation department and spent on the improvement of aerodromes and their equipment and assisting in the training of Indians in civil aviation.

According to the report on the Progress of Civil Aviation in India, 1934-35, issued by the Government of India Directorate of Civil Aviation, the total miles flown by Indian commercial and civil aircraft has risen from about 5,00,000 miles in 1930 to approximately 16,00,000 miles in 1934 and during the year 1934, 18,413 hours of flying were carried out by aircraft of Indian Registration, excluding the time flown by aircraft used entirely for private purposes, compared with 15,240 hours of flying during the previous years. At the end of 1934 there were the following Flying Clubs in existence:—

1. The Delhi Flying Club—Delhi.
2. The Karachi Aero Club—Karachi.
3. The Bombay Flying Club—Juhu, Bombay.
4. The Madras Flying Club—Madras (with a branch at Trichinopoly).
5. The Bengal Flying Club—Dum Dum.

6. The United Provinces Flying Club—Lucknow & Cawnpore.
7. The Northern India Flying Club—Lahore.
8. The Jodhpur Flying Club—Jodhpur (Indian State).

The Kathiawar Club ceased operation during the year owing to lack of support.

The grant of financial assistance during 1935-36 is on the basis of Rs. 16,000 per club and a bonus of Rs. 200 per pilot trained (*ab initio*) and Rs. 100 per each renewal of an "A" license, subject to a maximum of Rs. 4,000 per club.

To further encourage the development of civil aviation, the Viceroy's Cup Air Race took place again this year. The route was from Madras to Bombay, then Ahmedabad, Jodhpur and Delhi, a distance of 1,520 miles.

There were 10 competitors, of whom five were Indians. The race was won by Lieut. Misri Chand. Messrs. G. V. Gadgil and A. C. Guzdar were second and third respectively.

The winner received the Viceroy's Challenge Trophy and Rs. 7,000, as also the Speedolence Trophy and Rs. 2,000.

Mr. Gadgil was given the Harikishendas Challenge Shield and Rs. 3,000, while Mr. Guzdar was given Rs. 1,000.

The prize money for the race is derived from the interest accruing from investments of the Irwin Trust Fund, which Sir Victor Sassoon, the father of the Aero Club, started in 1931, with the object of promoting air racing in India and providing the prize money. The annual interest derived from the fund amounts to only Rs. 5,400, which if not greatly augmented, the race can only be held once every three years.

As far as concerns the development of commercial aviation, further progress can be recorded in Southern India with the extension of a service by Messrs. Tatas from Bombay to Trivandrum and the possibility of the extension to Colombo.

Messrs. Tatas up till recently had refrained from advertising for passenger traffic as they realised they could not offer the same standard of comfort as the subsidised air lines running through India and other countries and it was hoped that Government finances would permit them to subsidise internal air services sufficiently to enable them to provide the same degree of comfort as was done elsewhere. Since they have received numerous applications from the public for passages, and having aircraft, which enable them to offer passengers comfortable travel they now feel they can no longer refuse to offer the public this facility. With the patronage of the public, it will be possible

to build up a regular passenger traffic which will allow the firm to improve further in the future their standard of aircraft.

It is regretted, however, on the other hand, that the Calcutta-Rangoon and Calcutta-Dacca-Chittagong services run by the Indian National Airways, through lack of support from the public and assistance such as a subsidy from Government or a satisfactory mail contract, have had to be suspended. These services were operated at 100 per cent. regularity and with complete freedom from accident and injury to passengers or crew, throughout all weather up to the date of suspension. The bi-weekly Lahore-Karachi air mail service, which serves as a feeder to the Empire route and has now been in operation for nearly 18 months, is maintained and operated under a ten years' agreement with the Government of India.

The development of regular air services is of national importance and it seems only reasonable that some moderate financial assistance from Government should

be made while such aviation companies are struggling in the uphill fight to make revenue meet expenditure. Up to the present Government have point-blank refused to subsidise aviation companies and in this their attitude differs from that of most other Governments. When Imperial Airways institute their daily service it is essential, if full advantage is to be taken of these new facilities, that internal connecting air links should be available. For this reason neither Government nor the people of the country can view the difficulties of the Indian National Airways with equanimity.

Sir Reginald Ford

Sir Reginald Ford who is a founder member and Vice-Patron of this Association, we learn, ceases to be liable to recall for services in the army on reaching the age limit. He has a very distinguished record of service in the army and it was while in India as General Manager of the Dunlop Rubber Co. that he became associated with this Association.

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Dear Sir,
I forward herewith my application for membership of the Automobile Association of Southern India and enclose Rs. being my annual subscription for one year from this date, the badge fee and cost of fitting (see below).

Please send me a copy of the rules and a badge with a fitting suitable for (see below).

(Signature).

To
THE SECRETARY,
A.A.S.I., P.O. Box 352,
Mount Road, MADRAS.

For Office use only

Date

Name of Member

Address

Member proposing

Ackd.
Entd.
Cheque/Cash/M.O.
Badge No. Fitting
Elected

ANNUAL SUBSCRIPTION.

	Rs.
Motor Car Owner	15
Motor Cycle owner or non-motorist	5
There is no entrance fee and subscriptions are current for 12 months from date of signing application form.	

Non-returnable fee for a badge is Rs. 10. Badge includes two small bolts with double nuts. Special fittings can be supplied, if required, as follows:—

	Rs.	A.	P.
No. 1 for Any round bar (state diameter)	1	4	0 each.
No. 2 " Radiator cap or any vertical bolt	0	12	0 "
No. 3 " Any horizontal bolt	0	12	0 "
No. 4 " 60% Angle bracket for bolt securing Dumb iron apron	0	12	0 "
No. 5 " Any flat bar or plate	1	8	0 "
No. 6 " Two long bolts with plates for securing badge to front of radiator	0	12	0 "

TO NIGERIA BY MORRIS

Further details are now available concerning the recent record journey by a Morris "25" saloon from England to Kano, Nigeria, in seven and a half days. The expedition was led by Mr. H. E. Symons, who was accompanied by two members of the Morris organisation, and the time set up easily beat that of fifteen days necessary to reach the same destination by fast mail steamer and express train. In addition, the Morris trip cost approximately £80 in all, whereas the cost for the same number of people by steamer and train would have been in the neighbourhood of £200.

The car itself was a standard export model, with an extra spare wheel, but special equipment in the shape of additional tanks for petrol and water, mattresses, blankets, cooking utensils and so on caused it to be overloaded to the extent of one ton. Despite such a handicap the Morris never betrayed the trust that had been placed in it. "We never had a moment's trouble," said Mr. Symons, "and the engine remained perfectly cool, even when tackling steep climbs in the middle of the desert."

The first part of the route, from Boulogne to Marseilles, a distance of 665 miles, was run under appalling conditions. The cold was intense, there being 30 degrees of frost inside the car, whilst the drivers had to contend with ice on the windscreen and 400 miles of dense fog. Following a 21 hours' steamship journey across the Mediterranean, the party landed at Algiers, and were soon heading, in pouring rain, for the Atlas Mountains. After the latter, the route lay over a plain of brown mud, and, passing through Djelfa, the 4,300 ft. Col des Caravannes was surmounted before reaching Laghouat. Ghardaia was attained at 8.30 p.m. on the third day, the distance of 400 miles from Algiers having been covered in less than 12 hours.

On many occasions during the desert crossing, the car with its formidable overload sank in soft or wet sand up to the hub caps, and had to be extracted by means of spades and rope ladders. Sharp outcrops of rock constituted another danger.

After Ghardaia, the route passed through El Golea, In Salah and Tamanrasset. It was here that the party came across two well-diggers who were unable to find water, and probably saved their lives by providing them with water from the spare tank. The final stages embraced In Abbangarit, Agades and Zinder, Kano being reached on the evening of the eighth day out from England.

London-Exeter Trial

Following their successes in the London-Gloucester trial, M.G. cars again scored heavily in the London-Exeter trial. With an entry of 106 cars of all makes, two M. G. teams shared the honours for the Team Prize, three "PB" type M.G. Midgets driven by J. M. Toulmin, H. K. Crawford and J. E. S. Jones tying with three M. G. Magnettes driven by R. A. Macdermid, J. A. Bastock and A. B. Langley.

In addition, M.G. entrants gained 25 premier awards—more than any other make—and 14 silver and 6 bronze medals.

More "Eight" Testimonials

The Morris Eight continues to enjoy popularity the world over. Reproduced below are extracts from the letters of owners of these models.

Mr. G. T. Young writes from the Mufulira Copper Mines, Northern Rhodesia, to Messrs. Connock's (S.A.) Motor Co. Ltd., of Johannesburg: "I drove my Morris Eight from Jo'burg up here, and throughout the whole trip (a distance of about 1,500 miles over the worst roads it has been my misfortune to experience) she behaved beautifully, giving not the slightest trouble, and is running to-day as sweetly as on the day of purchase."

"I have only just completed the 500 mark," writes Mr. C. C. Howard from Barbados, B.W.I., "and I am already averaging 33.75 m.p.g., and I must say I am very pleased with the results."

New Morris Factory

A new factory, with a floor area of 198,000 sq. ft., is being built by Morris Motors Ltd., at Cowley. When complete, this will be the largest individual extension in the development scheme which has now been proceeding for some eighteen months. The building and equipment will cost over £100,000, and bring the total expenditure during this period up to over £500,000.

This latest extension is to be used as a dispatch department. It will hold over 1,600 cars, and has been made necessary by the limited accommodation of the existing dispatch department.

A sales school, and a showroom to hold the complete Morris range, will also be housed in this building. Electric petrol pumps will be fed from storage tanks of 5,000 gallons capacity.

The public is buying bigger cars. Sales of the Series II Morris Sixes are increasing out of all proportion to those of the comparable models of previous years.

Over 108,000 Morris cars of all types have been sold in twelve months, a figure which breaks all records for the British motor industry.

M. G. Activities

An M.G. Magnette of 1287 c.c., driven by Mr. L. Meyer, finished fourth in the South African Grand Prix, run over the Prince George Circuit near East London on New Year's Day. The distance of the race was 211 miles, and of the 24 starters only six finished. The M.G.'s performance was very creditable, especially in view of the fact that the race was for cars of unlimited capacity.

An M.G. Magna has won the Light Car Grand Prix organised by the Automobile Racing Club of America. The race was held at Wayland, Massachusetts, and the driver was Mr. J. Bishop, who defeated a Bugatti. Third

and fourth places were secured by J2 M.G. Midgets. The race was run over a course covered with three inches of snow, and in the teeth of a severe blizzard which precluded the use of goggles.

During December last, orders for M.G. cars were received from the following territories: Federated Malay States, Holland, Switzerland, Ceylon, Czechoslovakia, Germany, U.S.A., Sweden, South Africa and Java

News in Brief

A Melbourne motorist has written to Messrs. Lane's Motors Pty. Ltd., the local Distributors: "In just over 13 months I've driven my Morris 16,000 miles and replace-

ments cost me 9d.—a broken valve spring. And I'm not in the habit of nursing her, either, for I do a fair amount of flying, and frequently find myself thinking I'm still sitting behind a Gipsy engine and thrashing the Morris."

The Manager of The African Lakes Corporation, Ltd. recently completed a two months' tour, in a 20 h.p. Morris Special Coupé, of Northern Rhodesia and North Nyasa, including a visit to Elizabethville, Belgian Congo. The trip covered 4,000 miles, and was accomplished in complete comfort and without the slightest trouble. Apart from a coating of dust, the car showed no signs of its long journey.

A ONE-DAY TOUR FROM BANGALORE

The Sri Chamarajendra Reservoir, Bangalore's new Waterworks at Thippagonala halli, presents a very attractive objective for a holiday or week-end run. The total distance from Bangalore to the Travellers' Bungalow (at Magadi) is 31¾ miles. Although lower in altitude than Bangalore, Magadi is somewhat cooler and is one of the most beautiful spots in Mysore.

Starting from the General Post Office at the Western end of South Parade, the Magadi Road is reached by one of two routes (1) *via* Central Jail Road, (2) *via* Race Course Road; to the City Railway (Passenger) Station, passing under the double railway arches, where a turn is taken to the right and about 20 yards further on to the left onto an earth road. This road joins the Magadi Road near the Leper Asylum and is usually free from Cart traffic.

About six miles from Bangalore the road bifurcates, the main road running round the foot of a hill while a more direct road leads up the hill with a stiffish climb for about half a mile. Both roads join further on and the climb only saves about half a mile. At mile 12/7 is a toll-gate—Re. 1. In the fourteenth mile the village of Tavarakere is passed and in the eighteenth mile the new Waterworks are reached. At mile 17/1 bear left onto new diversion road which runs below the 'Dam' and rejoins the old road about 4 miles further on. This section of road has a number of dangerous bends.

At mile 20¾ there is an Inspection Bungalow.

The Inspection Bungalow (or Lodge) is situated on a prominence overlooking the Dam and is about 2,500 feet above sea-level where it commands a very wide view. The bungalow consists of two suites of rooms. It is fitted with electric lights and modern sanitary fittings, while it is fully equipped with cutlery, crockery, glassware, bedding and linen and has a full staff of servants. However, food and drinks are not available for Europeans although good Brahman eatables are obtainable from a coffee shop at the Waterworks.

The Inspection Bungalow is available for use by the public, subject to it not being reserved for officials. The terms are moderate. Incidentally it has been observed that the main hall with its polished tiles does not make a bad dance hall if a gramophone is available with the party.

Magadi village with a travellers' bungalow is about ten miles further on. At mile 31 the road bifurcates near a toll-gate; the branch to right goes to Magadi while the one left goes to Closepet. Between miles 20 and 32 the road is hilly and there are several hairpin bends with steep gradients.

The travellers' bungalow at Magadi is one of the third class, but stands in delightful surroundings and has a mali in charge. It has two suites of rooms but no dining room. It is partially furnished but there are no mattresses on the wire bed cots. There is a little crockery and some cooking utensils. Parties visiting Magadi are advised to take a full supply of eatables and drinks—also bedding if staying out for a night. Similarly sufficient petrol must be taken for the return journey.

The nearby hill of Savandurga is a reserved forest in which panthers abound, but they can also be found, together with wild pig in the unreserved jungle bounding the road between miles 23 and 31; panther in the evening and pig in the early morning.

Bangalore shikaris know the place but good shikaris can be obtained in Magadi.

Panther often prowls round the T. B. but cause little trouble as there is a high boundary wall and a good gate.

Buses run between Magadi and Bangalore and will bring out supplies if required.

The return journey can be made by the outward road, or via either Closepet on the Mysore-Bangalore Road, or Nelamangala on the Bangalore-Bombay road. Kunigal can also be reached by a good road by those who wish to take in a visit to the Mysore Stud Farm as part of the tour.

CORRESPONDENCE

The Editor does not hold himself responsible for the opinions of correspondents. All letters to the Editor should be accompanied by the writer's signature and clear name and address, not necessary for publication.



The Mysore Road Traffic & Taxes Regulation (VI of 1935), Payment of the Govt. Tax, and Municipal Tolls

Sir,

As the season is approaching when many motorists go to Bangalore or the Nilgiris, a note on the new Mysore taxation may be of interest.

Visiting motorists are recommended to carry funds to pay the half-yearly tax (usually Rs. 18) at the Frontier Toll-gate, and not to take advantage of "days of grace" to postpone payment. They will then receive a Vehicle Tax License and be exempt from demands at all Municipal toll-gates.

Logically it might be assumed that any "days of grace" given at the Frontier, let us say, to pay in Bangalore, would place the visiting motorist on the same footing as one who has paid his tax. Actually "grace days" would only free the visitor temporarily from the liability to prosecution for non-payment and a fine of Rs. 50, and still would leave the liability to pay Municipal tolls, vide Appendix VIII, p. 38, of a little two-annas' booklet entitled "Mysore M. V. Tax Rules,"—"To get the exemption from Municipal tolls, the vehicles specified must exhibit current licenses or tokens as prescribed by the Government from time to time."

It is regrettable that there remains to Municipal toll-gate keepers the right to stop passing cars, and to examine their Government licenses. Motorists are still subject in Mysore to tolls at toll-gates on State & District Fund roads and bridges; the new Tax payment brings them little relief from "the Toll-gate nuisance."

Ootacamund

N. WOOD-SMITH.

Sir,

In January 1935 I left India for a motor tour through Ceylon spending a considerable time in the Capital.

Needless to say there are a number of difficulties regarding landing of private motors in Ceylon—Custom Duties (20% on British Cars and 27½% on American Cars), New Number plates and road tax not forgetting a fresh test for a driving licence!

All these preliminaries are overwhelming for the lady motorist travelling alone but thanks to the all-efficient Automobile Association all these problems are very easily solved.

The road condition throughout the whole Island is excellent, and visitors find no difficulty in believing what tradition tells us that the Island of Ceylon is situated only 40 miles from heaven!!

Having spent six months in Ceylon I decided to return to India all the way by boat from Colombo to Madras, and to bring my car over as well. Shortly before I sailed I wrote informing the Secretary of the Automobile Association of Southern India, Madras, the date I hoped to arrive in Madras, asking him to kindly send some representative to assist me on arrival. Imagine my surprise when the secretary himself came to meet the boat and to give me all the assistance I badly needed, which included clearing my car through Customs without payment of duty, in spite of the fact that I had not one solitary document to show that I had taken the car out of India some six months before.

Within a fortnight or so of my return to India the Automobile Association of Southern India also got me a refund of my Colombo Custom Duties as well as the road tax.

I feel I cannot write too highly of our Automobile Association of Southern India and it is really surprising that for a small fee of Rs. 15 per annum one can be a member of this Association which can do so much for each individual motorist both in and out of India.

COONOR.

D. EDGE (MRS.).

Information for Motor Vehicle Owners

The Secretary, Automobile Association of Southern India has received information from the Inspector-General of Police, Mysore that from the 1st April 1936, owners of Motor Lorries and Public Service Vehicles who pay a Mysore Road or Service Tax in respect of their vehicles have to produce the Registration Certificate of such vehicles before the Licensing Officers and obtain endorsement of the payment of the tax on the Certificate. All owners or users of Motor Vehicles who may not be in possession of a Registration Certificate are advised to apply and obtain in good time from the Registering authority concerned, duplicates of such certificates on payment of prescribed fee.

A DAY IN A MORRIS '8'

By F. H. S.

It happened like this. On Thursday a casual suggestion from some friends "What about a trip to Mysore? and we can wind up with a visit to the illuminated dam at Krishnarajasagara." Therefore it had to be on a Saturday so the 1st February was decided on.

My wife and I jumped at the idea especially because on a previous occasion in October last we started out on a similar trip which had to be abandoned at Closepet, only 30 miles away, due to excessively heavy rain. On this occasion there were to be 16 people in three cars, two bix sixes and my modest little 1936 model Morris 8 Tourer.

Arrangements for the day's catering were planned on Friday morning and that afternoon I took my car into Addison's for a general 'once over', just in case she needed some tightening up in preparation for a hard day's work. Next morning we were up before daybreak for an early tea and started for the rendezvous punctually at 6/15 from where we eventually got away at 7. The early morning air was fresh and cool—"cold" said the ladies in the rear seat. We made very good going stopping only to pay tolls, of course, until we got to Scott's bungalow on the banks of the Cauvery, my speedometer showing 81 miles so far.

From the remarks of my three passengers I gathered that we had passed some very pretty scenery, but I am afraid I was too absorbed in watching the road and the performance of my car to pay much attention to the aspect of the country through which we had travelled. What I do know is that for miles and miles up and down grades and round curves the little car had hummed along perfectly smoothly having exceeded 45 miles an hour for long stretches. Up to the point on the Main road where we branched off for Scott's bungalow, the road was good but from there it was soft and very dusty.

It was then 9/40 a.m. and the general cry was 'Breakfast', so we tucked away a substantial meal washed down with delicious coffee. The gardens were cool and the miniature rapids in the river running by suggested the possibility of a swim as a refresher, but we postponed this till our return from Seringapatam, so off we went—all three car loads—and explored the various places of interest, including the summer house, the swaying bridge—which of course we had to test—and the dungeons in the ruined fort. Right through Seringapatam the roads altho' fairly smooth are very very dusty. We had done 9 miles on this run round in about three hours. Back again at Scott's bungalow and the delayed swim which after all was not as enjoyable as anticipated owing to submerged rocks striking one when least expected.

We then ate a delicious cold lunch and set off for Mysore, tore up Chamondy hill for an experience in the little car, following this up by a visit to the Zoo, where the party separated for a while to meet later on at the

Railway station. Here the showers and large porcelain baths washed away the dust and we had some tea, which was very refreshing after the heat of the day. The hood was lowered and we left for the Dam at lighting up time feeling like new men. The distance to the Dam at Krishnarajasagara from the station is only 12 miles but the going is wicked; dust! dust! dust! rising in dense clouds. I was unfortunately the second car in the line and visibility became so bad that I had to stop three or four times to allow the dust to settle. Anyhow we got to the Dam without mishap. The beautiful and marvellous sight which greeted our eyes was sufficient reward for all the heat and dust of the day which we had endured. Such a wonderful display in colors can only be seen to be realized. A little later we partook of a very nice dinner and started on the return journey to Bangalore at exactly 9/10 p.m.

It was a clear moonlight night but for several miles we wallowed thro' columns of dust, having to stop several times for it to settle or blow off the road, till we got to the Main road. From there onwards the journey was cool and pleasant on a good road surface but oh! the bullock carts. We must have passed quite a hundred or more on the 90 miles between the Dam and Bangalore City.

Arrived home safe and sound at 1/10 a.m. on the 2nd, none of us unduly fatigued altho' we had been practically on the move for 19 hours which we thoroughly enjoyed in the little Morris '8'. I must write a word of praise for the Car's performance, which I think was extraordinarily good. At mile 1168/3 I had put in two gallons into an empty tank. On Friday I added 3 gallons at mile 1179 and on Saturday we started on this trip at mile 1183/8 speedometer reading with practically 5 gallons minus the quantity used from mile 1168/3 to 1183/8, 15 miles. At Mysore I took in two gallons and at Bangalore the reading showed 1¾ gallons of petrol in the tank. On this trip we did 219/1 miles but the total mileage with 7 gallons of petrol from 1168/3 to 1402/9 equals 234/6 on 5¼ gallons or 44½ M.P.G. at least. Pretty good! There were four of us and a tiffin basket weighing at least 30 seers on the carrier, yet the whole day's travelling was comfortably and smoothly accomplished with no tyre or mechanical trouble of any description.

Regarding leave car plans Messrs. Govan Bros., Ltd., of Delhi, Bombay, Calcutta, Madras, Lahore, Lucknow, Rawalpindi and Peshawar, and 3 St. James's Square, Pall Mall, LONDON, invite all motorists to seek, without any obligation, information on any aspect. Their specialized leave car service is at the disposal of all motorists and all motor car distributors.

A CAR FOR LEAVE

By Our London Motoring Correspondent

In the course of the next few weeks thousands of motorists in India will consider their plans for a car to use while they are in Europe, and therefore some information concerning the various methods which are offered for achieving this facility may be of interest to—motorists generally—even those who are not lucky enough to be going on leave until 1942.

There are of course a considerable number of business firms both in India and elsewhere who are falling over each other to secure the business offering in respect of leave cars. Those firms which have the least to do with India are as prominently to the fore in offering their services as firms which are established in India. However, variety is said to be the spice of life and therefore all are worth mentioning.

There are, for example, many firms who would have the "Homeleaver" purchase, on arrival in Europe, a new car of the latest model which can be used, enjoyed, and presumably run-in, during the period of leave. At the end of the leave these firms guarantee to repurchase the car from the user at a figure which is predetermined at the time of purchase. After five months' use of a new car costing about £200 this repurchase figure would be about £130 and the cost of this five months' car hire—apart from insurance, tax, and other incidentals—alone would amount to some £70. The motorist with a pain in his pocket then returns to India and there presumably digs his old car out of storage, pays the storage bill, and reverts to some thing like 1932 motoring in 1937. Alternatively he spends sleepless nights wondering which of the many used cars offered him is least likely to let him down, or just how long the bank balance will stand the strain of buying a new car after a rather expensive leave!

In connection with this "guaranteed repurchase" scheme a friend in the trade in England has some caustic remarks to make. He stated that firstly one of the ulterior motives of those who offer such a scheme is to avoid if possible the new car they sell being taken out to India, since they might then be obliged to pay the agent for that car in India part of their commission for "Infringement" for selling into the Indian dealers territory. This is a point worth thinking about, as is the fact that most home-goers arrive in the U.K. just when the motor trade gets busy again after the winter and sells his car back just when the motor business in Europe prepares to lapse into coma for the winter. Perhaps this has a direct bearing on the repurchase price—who knows?

This guaranteed repurchase scheme is similarly offered to cover the use of all shapes and conditions of second-hand cars while on leave, and whilst the pain in the pocket after leave may be proportionately lessened according to the age and condition of the car selected, the other problems persist after the end of leave.

Other schemes cover the possibility of hiring cars on a contract rate for the whole period of leave and although the menu may be in a different language the fare

and after-symptoms are really identical to those in the foregoing paragraphs.

The next tantalizing possibility is that, so succulently expounded, of being able whilst on leave to pick up at a gift price a "slightly used" car. The enormous number of motorists in Europe who use their good cars for a few miles and then fling them into the open market, to maintain terrific stocks of this rare commodity, would be astounding if the literature of those who offer them were carefully analysed. Alas, however, the class of motorist in Europe who changes his car most often in regard to time and possibly least often in regard to mileage is the commercial traveller. It is well worth remembering that the "Traveller" mostly uses a car in which he has no financial interest, since his firm provides the car. Many other points regarding a used car demand the keenest consideration of a motorist on leave from India, who may consider acquiring one to take back with him at the end of leave.

Such cars, for instance, are not usually suitably equipped for use overseas, by reason of inadequate cooling surfaces, fans, tyres, and safety glass. For overseas use the manufacturer's supply special, export equipped models, and they definitely do not supply these special cars for use now in the domestic market. This, by the way, applies equally to any new car which may be considered for use overseas after leave. Again the cost of transporting a used car overseas after leave should be considered *before* parting with the cheque which buys it. It is too late to consider this later without suffering a financial setback. The crux of this matter is, those who are in a position to know, assert, that it often costs more to buy a used car for leave and take it overseas than the equivalent car can be bought in the same condition second-hand overseas. Overhead costs on taking *any* car of normal size out to India amount to between £60 and £80 and these charges are much the same on a brand new car as an old creak of the same size. Customs Duty can actually amount to more on a car bought second-hand than it would be on a new car costing £50 more. If this is hard to understand, any reputable motor dealer will be pleased to explain the figures fully.

Another consideration is that on return from leave in 1936 for a further spell of three or four years' duty, it is better to look forward, if the exchequer insists, to having a 1936 model car in 1940 than to having a 1933 model in that year. The former will be only slightly out of date, but the latter will be verging on the antique. The first will have quite an appreciable resale value, while the latter may only be sought after as a gift.

It is an interesting thought in regard to those who buy a car on leave from some organization which has no footing whatsoever in India, as to just what exactly happens if, by a piece of bad luck, something goes wrong after return to India? After all, there is a considerable handicap in conducting a piece of involved negotiation with a man 6,000 miles away who has had your cash for

Ford has SAFETY GLASS IN ALL WINDOWS

some time. The most unsympathetic crowd of all will probably be agents in India for the car chosen. They may be very inclined to suggest that the same people settle the trouble as were selected to solve the problem of which car to buy when on leave!

By this time anyone who has been so persistent as to remain a reader of this article will begin to think that a car for leave is a snare and delusion whatever may be done. There is, however, one possibility which has not yet been dealt with. Very simply it is the selection of a new car for use on leave purchased from the organization which sponsors that car's sales in India. This simple solution kills stone dead every objection raised so far in respect of suitability for overseas running, after sales service, and the rest. It even solves the problem of the disposal of the old car since the dealer in India, being on the spot, can even offer to trade-in an old car in India against a new one for delivery on arrival in Europe. As for satisfaction whilst on leave, if any car designed is going to provide trouble free motoring while on leave, this year, it will surely be a brand new 1936 model.

One point alone remains to be cleared up and that is the sordid one, of money. Obviously a new car on arrival in Europe involves some capital expenditure, as does the transport of the same car back to India. But this is one aspect which can be thoroughly and conveniently solved. It is even possible to pay, while on leave, only two-fifths of the capital total cost of a new car landed back in India, and payment of the whole of the balance can be spread over 18 months after return to work in India. The subsequent small monthly payments from income will provide not only sound satisfactory leave plus overseas motoring, but also efficient suitable transport on return overseas and furthermore a thoroughly sound investment in a shape of a modern car for use in India, at a low total cost and readily saleable for a fair price in the course of the next three or four years.

It pays therefore to discuss your leave car plans, whatever your ideas with those who cater for your motoring in India. Nothing can be lost by so doing and much may be gained.

Air Conditioning And The Motor Industry.

Air conditioning, America's newest major industry, has been called by the Ford Motor Company to permit of greater precision in making the Ford V-8.

Every layman knows most metals expand with heat and contract with cold. In the precision manufacture of certain parts of the Ford V-8, the limits of accuracy reached heretofore were such that nothing further could be done by conventional methods.

An entirely new conception of large scale precision manufacture of automobile parts opened up with the de-

velopment of air conditioning. The company already had useful experience. For several years the temperature of its gauge rooms, in which master gauges measuring in millionths of an inch are kept to check the accuracy of production gauges and inspection gauges, and of inspection rooms in which many parts were gauged, had been controlled to ensure continuous accuracy. It was decided a few months ago to extend air conditioning to large units of the Rouge Plant. As soon as this was done it became possible to conduct machining operations of an accuracy which would have been unthinkable in large scale production even five years ago.

Overseas Shipments From Ford, Canada.

The largest trainload shipment in the history of the Ford Motor Company of Canada, Ltd., was made during November and December when seven solid trainloads of Ford V-8 cars moved from the factory for export from Canadian seaports. These shipments included knocked

down units, bodies and complete cars for Australia, New Zealand and South Africa. In addition other large shipments went forward to Singapore, British East Africa, India, Newfoundland and British West Indies.

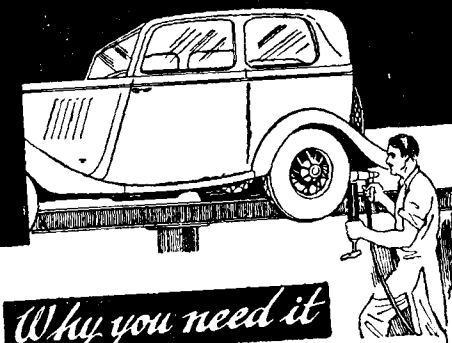
Ford Motor Company Expansion.

The new hot strip steel rolling mills and sheet steel cold finishing mills at the Rouge Plant of the Ford Motor Company, construction of which was begun in 1933, are now completed and ready for operations.

This is believed to be the most modern mill ever installed, embodying in its design and construction every proven device for the control of metal from the time it is delivered as an ingot until it leaves the mill as a finished product.

The new steel mills programme is but one in a series of expansion and modernization projects under way at the Rouge Plant which will cost approximately \$37,000,000. Others include new foundry units, power house modernization, new glass manufacturing equipment, new coke oven facilities, improvements in the plant gas system and construction of several new "little industry" plants.

SPECIALIZED LUBRICATION



TEXACO SPECIALIZED LUBRICATION with TEXACO products will save you a large percentage of the money you are spending on repairs and replacements caused by lack of or improper lubrication. Proper equipment is used for the lubrication service and the attendant has a thorough knowledge of the application of TEXACO SPECIALIZED LUBRICANTS.

Where to get it

You may go to any one of the following TEXACO SPECIALIZED LUBRICATION STATIONS listed below with the absolute conviction that they are employing the most modern and efficient methods for the correct and complete lubrication of motor vehicles.

MADRAS
GORDON WOODROFFE
(MOTORS) LTD.
J. N. NORRIDGE & CO.
SECUNDERABAD.
MADRAS MOTOR & CYCLE
MART.
TRIMULGHERRY.
TRIMULGHERRY MOTOR
WORKS.
BANGALORE CANTT.
WEBB'S SERVICE STATION.
BANGALORE CITY.
MYSORE MOTORS LTD.
HYDERABAD (DECCAN).
HYDERABAD MOTOR &
OIL CO.
A. D. GRANT.

A Complete List of Texaco Lubrication stations in India can be had on application to our Head Office, Bombay.



REMEMBER—TEXACO SPECIALIZED LUBRICATION means that your car will be serviced with those World famous products—TEXACO—CRACK-PROOF Motor Oil, M.A.R.P.A.K. GREASE, THUBAN COMPOUND, a 100 per cent. Assurance of 100 per cent. Lubrication.

**THE TEXAS COMPANY
(INDIA), LTD.**
(Inc. in U.S.A.)

Head Office: BOMBAY.

Branches: CALCUTTA, COLOMBO, KARACHI, MADRAS.

"SHORN" MOTORISTS OF INDIA TOO MANY TAXES GOVERNOR ATTENDS DINNER OF A. A. N. I.

(Extracts from the "STATESMAN" dated 5-3-36.)

Lahore, March 4th 1936.

An amusing comparison between the motorists of Northern India and sheep—in that both are severely "shorn"—was made at the first annual dinner of the Automobile Association of Northern India.

Sir Herbert Emerson was the guest of honour and Capt. Yates Benyon, General Secretary, reported all round progress and advance of membership.

Sir John Ewart, Inspector-General of Police, and Chairman of the Association, pointedly brought out the grouse of Northern India motorists.

"It may sometimes appear—in fact it does quite often appear to most of us—that the private motorist has no rights" he said, "that his interests are only those of sheep before the shearer and that like that placid and pathetic object he is supposed to remain dumb except for a plaintive bleat at the conclusion of the periodical shearing which is supposed to express not so much protest as gratitude that while he has been deprived of his coat and most of his underclothing, he has been left with his skin more or less undamaged and with recuperative power to be ready for another shearing next year".

Speaking on taxation, Sir John said: "We are oppressed and afflicted. Our trouble is that we are taxed not by one authority but by four. The Central Government takes our overcoat and suit in the form of customs duties and petrol tax; the Local Government takes our shirts and under-clothes as car taxes and licensing fees; local bodies take our boots as wheel tax and we are left naked but for our socks to withstand the many-sided attacks of railways who are out to kill us by penal freight rates on everything connected with road construction and transportation. Each one of these authorities except perhaps the last is inclined to take credit for its moderation in not taxing more."

The motoring public did not accept the argument that the effect of the growth of motoring on the railways was

solely detrimental, he said. It was obvious that the spread of communications generally, the encouragement of travel spirit and the increased demand for commodities which the growth of motor traffic promotes must bring traffic to railways in at least partial compensation for what it took away. The A.A.N.I. therefore advocated planned development of an even more extensive network of roads in Northern India, particularly to develop inaccessible areas, and the steady improvement of existing roads.

Sir John also advocated that the main feature of licensing and cognate rules should be as uniform and as easily understood as possible.

PYROIL AUTOMATIC TOP OILER.



The Pyroil Automatic Top Oiler can be attached to any car or truck in 10 minutes. Positively automatic. Visible feed. Once installed, needs no further attention except refilling every 1000 miles. Absolute insurance against the hazards of over-heating and oil dilution. Positively and perfectly lubricates firing chamber, pistons, upper cylinder walls and rings, valves, stems and guides where ordinary oil alone burns up. Virtually doubles the life of your motor by removing the cause of wear and trouble.

Pyroil coats bearing surfaces with a pure, heat-resisting lubricant that fire and wet gasoline cannot destroy or wash off. THE PYROIL AUTOMATIC TOP OILER provides constant new car performance with a big saving in operating expense quickly and constantly noticed.

For Sale by:—

PYROIL COMPANY OF INDIA
"Bharat Buildings"
Mount Road, Madras

Sole Agents:—For INDIA, BURMA and CEYLON

MOTOR CYCLING TOPICS

A New Venture

An interesting item of news appeared in the English papers recently, regarding the Triumph Company Limited of Coventry, one of the longest established and best known manufacturers of motor cycles in Great Britain. This Company was founded over 50 years ago by Mr. S. Bettmann, who was one of the original designers of the first Triumph machine.

The Triumph Co. Ltd., who also manufacture the Gloria Triumph car, which has already been on the market for a number of years, have very rightly decided that the manufacture and design of motor cycles is better carried out by a firm engaged solely in the motor cycle trade, and accordingly a new company will be registered shortly as the Triumph Engineering Co., to take over the design and manufacture of the famous Triumph machines.

The moving spirit behind the new venture is Mr. Jack Sangster, who during recent years has done so much to further the interests of the Ariel Motor Cycle Co., which for many years has been a very sound and well established concern. There will, however, be no connection between the Triumph and Ariel factories. They will remain entirely independent of each other.

In these days when some of the old pioneer companies are disappearing from the motor cycle manufacturing world, it is very pleasing to motor cycle enthusiasts to learn that the Triumph is still making progress, and maintaining its position as one of the leaders amongst British motor cycles.

The "Trusty Triumph" has for longer than most of us can remember, been not only a slogan, but a true appellation for these excellent machines.

In England and in this country particularly, the Triumph has always held first place in popularity with the Army, Government Departments and private individuals,

to whom it is essential to have a reliable, hard wearing and economical motor cycle.

Many of our readers will probably have had personal experience of the extraordinary good work that Triumph motor cycles did in France and various other parts of the world during the war years, in the hands of despatch riders, and others whose very precarious existence in those days, depended almost entirely on a machine that would not let them down, and that was always ready in an emergency. In fact many of these actual machines and models produced in the war period are still in service and in daily use.

Messrs. The Triumph Co. offer a very attractive range of machines for 1936, specially designed for a variety of purposes, and we hope from time to time to review these various models, and also those of other makes in pages of this journal which will be devoted entirely to motor cycling and for the interest of our motor cycling readers.

As far as S. India is concerned, the Triumph has been handled, sold and serviced by Messrs. Addison & Co., Ltd., since 1904, when we understand they imported their first Triumph motor cycle to Madras. From that year up to the present time, many thousands of these machines have been placed in the hands of motor cyclists in S. India.

With this article we reproduce a photograph of the Dealers' Lunch at the King's Head Hotel, Coventry, on the occasion of the announcement of the formation of the new company, which will carry on the tradition and production of this long established and famous firm, who have held such a remarkable and unbroken record of success right from the early days of motoring.

("Motor Cycling Topics" will appear periodically in these columns and motor cycling readers' suggestions will be greatly appreciated. Contributions and photographs are also invited and will be paid for if accepted.—Ed.).



Triumph Engineering Company.
Dealers' Meeting at the King's Head Hotel, Coventry, January 27th, 1936.

This Motoring

by Stenson Cooke

THE ROMANTIC STORY OF THE



CHAPTER XXI—(Contd.)

RECOVERY.

"Here's an idea! That hundred thousand! Let's put it up to the Committee," said the Secretary to his colleagues. "We've got to inspect all our agents and repairers over again. Why not employ the system on which our hotels are appointed, and—"

"And what, please?"

"Star 'em."

"Well, that's an idea, certainly! What does our Engineering Department think about it?"

The head of that Department had recently taken over. He had been chosen not merely for having rows of letters after his name, but mainly for hard and possibly bitter experience as an owner of a repair business.

"Splendid!" said he, "and it's easy to work, with care and discretion, of course. We mustn't hurt anyone's feelings, and they've had an awful time. Don't I know it?"

It was a good idea. The Committee approved, and it did work. One and two stars for modest supplies, and expert motor-cycle repairs done by men who could take one to pieces, put it together again, and have nothing left over. Three and four stars for garages suitably equipped and staffed to undertake repairs and adjustments, as well as carrying a good range of supplies, and having adequate garage accommodation. And that was another step towards Recovery.

Recovery of A.A. service could not keep pace with the immediate post-war needs of This Motoring. War had popularized mechanical transport to such effect that the

average young warrior, drawing his gratuity, proceeded to "bust" most of it in a motor cycle, or a second-hand crotch of a car. Sister W.A.A.C. and Sister W.R.E.N. did a little in the same line, too. And of course those who had stayed at home, to make money, stood, metaphorically, in a queue, cheque-book in hand, waiting for delivery of the best stuff. All these had to be looked after.

A.A. membership was booming. The far-seeing Committee had ordained enthusiastic progress! Wake things up! and keep them moving! So when, at a meeting early in April, 1919, the Secretary diffidently asked for "fifteen thousand pounds, please," the Chairman didn't faint, but just asked for further particulars.

"That's for a start, sir, thank you, and it's like this! Our men are resuming duty in batches, and scores of ex-service men are being taken on and trained. The roads are really looking more like pre-war, and members are flocking in. Two thousand and sixty-nine for election to-day, making a total of forty-one thousand, one hundred and seventy-nine. We're climbing steadily back to pre-war strength, but our men, as you know, are on ordinary bicycles, and they can't work a beat longer than eight or ten miles. We have a scheme to accelerate our progress as well as that of the patrols."

"All right," said the Chairman, genially, "you will have your atmosphere, eh? Now what is it?"

"It's to establish a fleet of Road Service Outfits—motor-cycles with sidecars, specially built, and painted in A.A. colours. Mechanical first-aid. Miniature repair shops, in fact. We've worked it all out in conjunction with our Engineering Department, and of course the Road Department. There is plenty of personnel available—trained men back from the War—Army Service

Corps mechanics, you know. This service will go far to fill the gap in what may be called 'running repairs' until our A.A. Agents get back to pre-war efficiency. I hope that's clear."

"Not quite," said a quiet member. "We mustn't get mixed up in trade, after keeping ourselves unspotted and respected by the Industry."

That gentleman spoke with feeling and authority. He held the twenty-four hour record for Brooklands Race Track, together with another record ungrudgingly accorded to him as the "best seller" of his time.

"No, sir!" was the reply, "our copybook will remain unsullied. Nothing shall be sold, even to a sparking plug, except at full retail price, and supplied or replenished as may be necessary by the A.A. Agent on the beat."

"Good! Now what about cost?"

"Well, sir, we estimate that each outfit will cost one hundred pounds to buy and seventy-five pounds per annum to keep going, but, naturally, the 'beats' will be extended materially. In fact, two men on motor-cycle outfits should, we think, out-class in utility and equal in advertisement five men on pedal-bicycles. Here is a drawing of the proposed side-carrier. We hope the Committee will like it!"

"H'm," said the Medical Member. "It looks like a coffin!"

"Surely the colours yellow and bronze-blue will avoid that?"

"Perhaps! I hope so, but it looks like a coffin, all the same."

"The Doctor ought to know," said Mr. Solicitor. That got a laugh, and diverted attention.

"Anyhow, Mr. Chairman, this is going to wake things," said Charles Two. "Let 'em get on with it. I propose therefore," etc., etc., and—bless them, it was carried unanimously.

But the Finance Chairman looked thoughtful.

CHAPTER XXII

THE FIRST PETROL PUMPS

The War had shown how entirely dependent Britain was on sources overseas for supplies of motor fuel.

Petrol was sold on the basis that it was worth all it would fetch. Prior to 1914 the three leading motoring organizations had combined in an earnest effort to encourage home production of motor fuel, principally benzole, which could be extracted from coal and was then much cheaper than petrol.

But much of this was so inferior in quality that it became suspect and unpopular.

Recovery brought about two reassuring developments. First, a standard specification of benzole to which all the leading by-product manufacturers readily undertook to conform. Second, the historic A.A. ten-thousand-mile

test on a famous British car, and a five-thousand-mile test on an equally famous British motor-cycle. The mileage per gallon in both tests was most satisfactory, and the engines, taken down and examined on completion of the runs, showed perfect condition.

So benzole was restored to public confidence and the National Benzole Association, formed by the leading producers, started out upon its successful career, aided and encouraged in every possible way by motor users and traders alike.

The A.A. Honorary Treasurer was a great traveller. It was his habit to spend the winter abroad, now in his Villa on the Rivera, then in California—motoring always.

Returning from California he button-holed the Secretary. "We can all learn something, can't we?" said he.

"Yes, Mr. Treasurer, that means you have an idea!"

"I have. The first thing to irritate me on arriving home is the bother of messing about with two-gallon tins of motor-spirit. It's silly. Just fancy. There isn't a single roadside fuel-supply station in Britain, in this year of (dis)grace, 1919. Whereas, over there I got all I needed from pumps, and never saw a tin."

"Oh! that looks promising. Couldn't the A.A. start the ball rolling?"

"Exactly! my boy," he said gleefully. "Let's show 'em the way. We want to wake things up. I've made inquiries. We could put up a complete outfit, including pump, tank, and what they call 'free air' installation, for five or six hundred pounds!"

"Have you any pictures?"

"No, but I can cable for some, and have them over in time for our next meeting!"

"Splendid, sir!"

And off the cable went.

"We hope the Committee won't mind our putting forward another scheme, please, Mr. Chairman."

"How much do you want to spend now, pray?"

"Well, sir, the Honorary Treasurer has given us the idea, and it isn't worked out thoroughly yet. A matter of six thousand or so, to start with—but it's a perfectly topping scheme."

"Let's hear it first!" said the Finance Chairman, looking thoughtful.

"We want to put up ten fully-equipped Roadside Filling Stations for motor fuel at different points in England, manned by our own men in uniform, painted in our colours, yellow and bronze-blue—a gorgeous advertisement. They would be available only to A.A. members, on pain of dismissal to any patrol disregarding that rule. Fancy! Mr. Chairman and gentlemen! We, the A.A., will be the very first to introduce Roadside Filling Stations to the British motoring public. Think what that means!"

(To be continued).



The author and his Short Scion.

VICEROY'S TROPHY AIR RACE

By
C. E. Gardner.

In this article
Mr. Gardner recounts
his personal experiences
of the Viceroy's Trophy
Air Race

In a race of the type of the Viceroy's Trophy Air Race, one of the most interesting times is when the handicaps are declared. On Thursday February 13th, the handicapper inspected the machines and tested the revs the engines gave on the ground. Some of the pilots were told that their engines were giving up to 80 r.p.m. more than they expected but ours gave their usual 2,800 r.p.m. When the starting times were posted, it was soon possible to work out our handicap speeds and after we had done this, it became obvious that unless something unforeseen occurred it was a Moths' race. Our handicap speed of 125 m.p.h. was about what we expected.

On Friday we arrived at the aerodrome at 7 o'clock and had breakfast while we watched the first four machines go off. After A. C. Gazdar took off we got on board, pressed the electric starters and taxied to the starting line. At 08.52 hrs. the flag dropped and we started off on our 1,520 mile race to Delhi. The take off was quick and easy and we climbed slowly to about 2,000 ft. to get the full effect of the small tail wind. We soon found we were getting to the left of our course but after altering course three degrees to starboard, we gradually returned to the correct line. The first two-thirds of the Madras-Hyderabad leg is easy flying with plenty of checks for navigating and sitting in the comfortable seats of the Scion, we realized that we were going to have a comfortable and lazy flight.

Visibility all round was exceptional and at no time during the race did it fall below forty miles. With the engines purring away smoothly we were able to look round and enjoy some of the wonderful and varied scenery provided by this part of India. Checks on our ground speed showed we were then doing 126 m.p.h. By 10.45 we were over the very wild country round the River Kistna and by 11.17, Hyderabad was in sight. We landed at 11.30 and taxied to the petrol dump.

Our race card was taken from us and we then got to work on the petrol and oil. In 10 mins. we had put in 43 gallons of petrol into our five tanks and just over one gallon of oil. We still had 10 minutes to wait which we spent getting weather reports, answering questions which the very enthusiastic crowd kept asking and getting a little to eat.

At 11.50 we took off on the longest hop of the race, the 388 miles to Bombay. Up to now we had seen no other 'planes except a Moth taking off from Hyderabad as we landed. We did not expect to see any until we had passed near Poona but at 14.14 we saw two Moths ahead of us. From Hyderabad to Bombay we had head winds and our average speed only worked out at about 119 m.p.h. On this leg we decided that our compass was 4° out as it had not been swung since we left England; so afterwards we allowed for this and had no further trouble. Near Bombay we hit strong up currents and also had to dodge some hawks. We saw a 'plane pass us about two miles to our left but did not know who was in front or behind us until we landed at Bombay at 15.11 to find we were fifth. Vincent in the Miles Hawk had passed us unseen but no one else. Shortly afterwards Capt. Muir's Gull roared over the line, followed by the two Moths flown by Sir A. W. MacRobert and S. K. Dube. The B.A. Eagle looked very pretty as it came in with its undercarriage retracted. We were very sorry to hear that N. M. Gazdar had forced landed but were relieved to hear that he was not hurt.

At Bombay we changed oil, filled up with petrol and then left the 'plane until next morning. When we arrived at 08.30 four 'planes had left and at 9.46 we took off to chase them. This leg from Bombay to Ahmedabad was easy flying though the last part tended to be bumpy. The most comfortable part was the 45 miles over the sea, where we felt quite happy with our two little engines

running well at 3,500 r.p.m. The last hour we flew low owing to a head wind but found no trouble in keeping our course. At 12.08 hrs. we handed in our card at Ahmedabad.

We were quickly refuelled, both pilot and 'plane, and had time for a stroll while waiting for our start for Jodhpur at 12.28. The next stretch is dull country except for Mt. Abu. Our course took us directly over the top but as it is 5,000 feet high, we decided it would be quicker to fly round it rather than climb to that height. On this leg we worked out our previous petrol consumptions and were greatly surprised to find they were about 11.8 to 12 gallons per hour. Near Jodhpur we saw some small dust storms but as we were flying at about 2,000 feet we did not trouble about them.

At Jodhpur, where we arrived at 14.22 hrs., we found we had an hour to wait as the first two Moths were going so much faster than the handicappers expected.

The starter's flag dropped at 15.22 and we took off with a quick turn to the left. We had a nice tail wind on this leg and even while climbing to get its full strength we had a ground speed of 135 m.p.h. Just after taking off we tried going through a small dust storm and found it rather bumpy. The rest of the flight to Delhi was uninteresting and we only saw one machine just before getting in, to find we were sixth in the race.

So ended a very interesting and comfortable flight from Madras to Delhi. It was a pity the first three machines were so badly handicapped; as, but for them, it would have been a close race. The 4th, 5th and 6th

machines finished within 2 minutes of each other, but there was over two hours between the first and last arrivals.



The Winner, Lieut. Misri Chand with his Gipsy-II Moth.

MADRAS FLYING CLUB NOTES

On the 1st of February the Club's centre of activity with two-thirds of its fleet shifted to Colombo in Ceylon and there remained for ten days. One Gipsy Moth stopped behind at Madras for soloist members to play with locally under the critical eye of the Club's Chief Engineer. The Ceylon contingent consisted of (i) the Puss Moth piloted by Mr. J. Mathai and carrying Messrs. C. B. Darius and D. W. Wettasinghe back to their homeland for the period of the visit and (ii) the other Gipsy Moth, piloted by a third home-goer in the person of Mr. N. de Silva under the guidance of the Club's Pilot Instructor. Both machines refuelled at Trichy on the way and flew by way of Adam's Bridge. They were received at Ratmalana by the Chief Secretary to Government and by representatives of the Ceylon Aero Club under whose auspices the visit was being made. The next day was a Sunday and business was brisk with joyrides in the Puss over Colombo. The authorities however apparently decided at that time to make Colombo a prohibited area, and in the course of the next few days succeeded in impressing upon the Ceylon Aero Club and all concerned that the prohibition extended three miles out to sea and indefinitely upwards. Mr. G. Gopakumar Menon of the Madras Flying Club had preceded the aero-

planes by surface means and in virtue of his "A-1" licence was permitted by the Ceylon Aero Club to do the joyriding and so relieve the Pilot Instructor to attend to charter flights and to giving dual instruction on the Gipsy. He was thus enabled to put in close on 30 hours of free flying towards his B licence, but on the other hand barely escaped being cast into a dungeon under the Ceylon Official Secrets Act for being latterly visible in the sky over Colombo. The patience of the General had by then been tried beyond its most elastic limit, and only the good offices of the kindly Chief Secretary, applied with persistence, saved the young man, and the Ceylon Aero Club too. It was touch and go. A lull of three days followed that first Sunday and then faster and more furious grew the demands of the populace on the aeroplanes and many were the persons who were left disappointed at the end. In addition to the joyriding six charter flights were undertaken into the interior, two of these for the press. Places visited were Kandy (3 times), Nuwara Eliya, Adams Peak, Ratnapura, Polonnaruwa, Sigiraya, Anuradhapura, Karunegale and Kegalle. This was the first time that Adams Peak had ever had an aeroplane fly around it, or that the prehistoric ruins of Ceylon had ever been seen from the air. Samples of dual instruction were

given to many enthusiasts and most surprising was the promise shown by several of them. One of the samples was to the press. Mr. Dulling, the acting president of the Ceylon Aero Club and already a pilot, after a little dual went solo, becoming a member of the Madras Flying Club to enable him to do so. Messrs. Gopakumar and Mathai did some private flying and so did Mr. N. de Silva, the first Ceylonese to display his prowess over his own home and in his native land. The visit was voted a great success and the thanks of the Madras Flying Club are due to the enthusiasm and hard work of the members of the Ceylon Aero Club and to Mr. Dulling in particular, who bore the burden and heat of the day in all sorts of different directions, particularly in the matter of the prohibited area. The machines returned to Madras on the tenth day with the same disposition of personnel and again via Trichy.

In the interval, preparations for the Viceroy's Cup Race had made headway at Madras and competitors had started to arrive. Mr. U. K. Parekh in a Gipsy Moth arrived on the first but flew off again on the 3rd, never to return. Mr. R. Vaughan-Fowler arrived on the 7th in his B.A. Eagle and stayed, giving demonstrations and jaunts. The Deputy Director of Civil Aviation, Mr. Gandy (who however was not a competitor but a race official) arrived on the 9th in a Gipsy Moth with Capt. Elkington, R.E. who reports on possible aerodromes, and the two flew on to Trichy, hot on the trail of a suspected aerodrome at Ramnad. They and the contingent returning from Ceylon all happened to meet on the Trichy landing ground next midday, whence they all returned to Madras in the evening. On the 11th arrived Capt. A. F. Muir and Mr. G. V. Gadgil in a Percival Gull and Gipsy Moth respectively and on the 12th there arrived Messrs. S. K. Dube, N. K. Dubash, C. E. Gardner, N. Vincent, two Gazdars and Sir A. W. MacRobert in Miles Hawks and Gipsy Moths and one Short Scion. The winner of the race, Lt. Misri Chand assembled last of all in his Gipsy Moth on the 13th and away they all flew on the 14th, in the midst of a prolonged club breakfast party, the competitors rising from breakfast to climb into their machines and away. Dr. Dyson and Messrs. K. R. Simpson, G. M. Randall, C. Elphinston, G. H. Hodgson, J. Mathai, H. F. Prynne, Rao Bahadur K. Govindachari, C. Hitchen, T. M. Rangachari, P. W. Lomax, J. C. Hunter, H. I. Wonfor, H. M. Gordon and Miss J. M. Scrutton were all kept working very hard despatching same.

On the 12th our Pilot Instructor flew to Colombo to take thither the Australian Cricketer Mr. Bryant and returned in the day, both ways via Adams Bridge and nonstop. The Club's lady flying member, Miss J. M. Scrutton, took the opportunity of going too in the back seat and flying dual on the return. Three trips to Bangalore and back next followed. Mr. Mathai with Mr. N. de Silva, Mr. Sundaram dual with the Pilot Instructor and then the same gentleman again with Mr. G. C. Arya. Then followed an instructional cross-country by Mr. M. Ananda Prasad towards Nellore, or was it Pondicherry. On that same day Messrs. G. C. Arya, Sundaram, and N. de Silva flew in the Puss to Colombo,

returning two days later, without Mr. N. de Silva, and the following day our Pilot Instructor and Mr. M. D. Sundararajan took the same machine on an expedition dropping pounds and pounds of leaflets for the Saraswathi Talkies over Nellore, Guntur, Bezwada, Ellore, Coconada and other places in the north, landing at Samalkot for refuelling and releafletting. On the last day of the month Mr. Sundaram flew two passengers in the Puss to Chettinad.

The Club had one first solo during the month in the person of Miss Scrutton and she and Mr. M. D. Sundararajan succeeded by the end of the month in passing all their tests for the "A" licence.

FLYING TIME FOR FEBRUARY 1936

Dual instruction to members under training	34-35
Advanced dual to "A" licenced pilots	21- 5
Solo flights by members under training	17-30
Solo flights by "A" and "A-1" pilots	19-15
Pilot with passengers ("A and A-1" pilots)	57-20
Joyrides	28- 5
Other flying	—
Cross-country trips in Club machines piloted by the Club pilot	29-35
Test flights	0-50
Hrs.	208-15

The following members took dual instruction during the month:—

Europeans:

Miss J. M. Scrutton.
Mr. P. W. Lomax.
Mr. H. M. Gordon (Advanced dual).
Mr. Dulling.
and several others at Colombo.

Indians:

Mr. V. Sundaram	Advanced dual.
Mr. M. Ananda Prasad	"
Mr. K. J. Goswami	"
Mr. V. R. M. A. R. M. Avadi-	"
appa Chettiar	"
Mr. W. Parthasarathy	"
Mr. M. D. Sundararajan	"
Mr. K. V. Muthukumar	"
Mr. S. Runganadhan	"

Ceylonese:

Mr. N. de'Silva	Advanced dual.
Mr. C. B. Darius	"
Mr. D. W. Wettasinghe	"
Mr. E. Wanigasekara	"
and several others at Colombo	"

Members who flew first solo during the month:

Miss J. M. Scrutton

Members qualified for "A" licence during the month:

Miss J. M. Scrutton
Mr. M. D. Sundararajan

CROSS-COUNTRY TRIPS DURING THE MONTH OF FEBRUARY, 1936

Date	Machine	Pilot	Passenger	Journey	Time	H. M.
1-2-36	VT-ABH.	Mr. Tyndale-Biscoe	Mr. N. de Silva	Madras to Trichy	2—0	Instructional flight
"	"	"	"	Trichy to Colombo	3—35	"
"	VT-ACB	Mr. J. Mathai	Mr. C. B. Darius & Mr. Wettasinghe	Madras to Trichy	1—40	"
"	"	"	"	Trichy to Colombo	2—40	"
3-2-36	"	Mr. Tyndale-Biscoe	Mr. & Mrs. E. Wanigasekara with 2 passengers	Ratmalana to Kandy and back	1—35	"
5-2-36	"	"	"	Ratmalana to Ratnapura and back	0—50	"
6-2-36	"	"	"	Ratmalana to Kandy Nuwara Eliya, Adams Peak	2—0	"
8-2-36	"	"	"	Ratmalana	1—5	"
"	"	"	"	"	1—20	"
9-2-36	"	"	"	"	3—25	"
10-2-36	VT-ABH	"	Mr. N. de Silva	Colombo to Trichy	4—15	"
"	"	"	"	Trichy to Madras	2—30	"
"	VT-ACB	Mr. Mathai	Mr. C. B. Darius & Mr. Wettasinghe	Colombo to Trichy	4—0	"
"	"	"	"	Trichy to Madras	1—55	"
12-2-36	"	Mr. Tyndale-Biscoe	Mr. Bryant and Miss J. M. Scrutton	Madras Colombo	4—45	"
"	"	"	Miss J. M. Scrutton	Colombo to Madras	5—35	"
15-2-36	VT-ACU	Mr. Mathai	Mr. N. de Silva	Madras to Bangalore	2—10	"
16-2-36	"	"	"	Bangalore to Madras	2—5	"
17-2-36	"	Mr. Tyndale-Biscoe	Mr. V. Sundaram	Madras to Bangalore	2—30	"
"	"	"	"	Bangalore to Madras	2—10	"
19-2-36	"	Mr. V. Sundaram	Mr. Arya	Madras to Bangalore	2—15	"
20-2-36	"	"	"	Bangalore to Madras	2—5	"
23-2-36	VT-ACB	Mr. G. C. Arya	Mr. N. de Silva and Mr. Sundaram	Madras to Trichy	1—55	"
"	"	"	"	Trichy to Colombo	3—15	"
"	VT-ABH	Mr. Tyndale-Biscoe	Mr. Ananda Prasad	Madras towards Nellore and return	2—5	"
25-2-36	VT-ACB	Mr. V. Sundaram	Mr. Arya	Colombo to Trichy	3—20	"
"	"	"	"	Trichy to Madras	1—55	"
26-2-36	"	Mr. Tyndale-Biscoe	Mr. Sundararajan and Saraswathi Talkies leaflets	Madras to Samalkot	4—25	"
"	"	"	"	Samalkot to Madras	4—15	"
29-2-36	"	Mr. V. Sundaram	2 passengers	Madras to Trichy	2—10	"
"	"	"	"	Trichy to Chettinad	0—35	"

RADIO

B. B. C. EMPIRE BROADCASTING NEWSLETTER

On the evening of January 26th a service to the memory of His Majesty King George V was broadcast from all transmitters of the BBC.

In his address, at this service, His Grace the Archbishop of Canterbury said:

"It is no easy task which has been laid upon me this evening. In the first place, most of you have listened to the eloquent tribute to King George paid by the Prime Minister, and I have already been called upon to speak so often and this morning in Westminster Abbey that you must forgive some repetition, though, of course, I know that I am now speaking to a far vaster audience. But chiefly it is difficult for me to speak because to me personally the passing of King George means the loss of a personal friendship with which he had honoured me for nearly forty years, and because but a few days have passed since I stood at his side and commended his soul to God, as he passed from our midst. Yet perhaps this very difficulty may give to you who are listening to me the assurance that such words as I am able to speak come from the depths of my heart.

"I have been asked to speak about King George himself, his own personality. I venture to say that the impression made by that personality upon the whole Realm and Empire is one of the most striking facts in the long history of this nation. The experience of this last memorable week—the words spoken in Parliament, the tributes received from every part of the Empire and of the world, the demeanour of the vast crowds who watched the body passing through the streets of London and lying in state, the solemnity of the tense silence when it was received in Westminster Hall by the Parliament of the Realm, the sense which can be felt all around us of a great fellowship of sorrow uniting all classes—all this has made it plain that somehow or other this simple and truly humble man had drawn his people everywhere to himself by the ties of a most real personal attachment.

"The historian of the future may find it difficult to account for the depth and range of this national emotion. For first, he may not be able to describe the reign of King George estimated by its events as happy and prosperous. From its beginning to its end King George had to face a constant series of crisis, each of them most anxious, one of them the most exacting ordeal through which the British nation has ever passed. Once as I was walking with him in his Highland Hills he said to me somewhat sadly that he seemed to be destined again and again to encounter national difficulties each one of them more searching than any which had occurred in the more than sixty years of the reign of Queen Victoria, and he asked 'Will there never be an end of them?' Think of all that lay behind such words as these, marking successive periods of his reign—Ireland, the Parliament Act, the Great War, the General Strike, the Economic Crisis five years ago.

"Secondly, King George was not endowed with any conspicuous gifts of body or mind. True, he had a most accurate memory, a sound judgment which, dismissing irrelevant matters, went to the core of complicated questions, and an ever growing experience. But he himself would always lament that he came to the Throne with no fuller education than that which was given to a sailor voyaging on the sea—an education admirable in itself, but scarcely wide enough as an introduction to public affairs. Moreover, he never possessed the arts and certainly never practised the devices by which popularity is often secured. Yet gradually and surely in spite of all his personality came through.

"As crisis after crisis came and passed his people became conscious of the quiet courage, the confident trust, the unswerving devotion to duty with which he met them. They felt that at the centre of the national life there was a man strong, confident, steadfast, and that in their King there was one who both

represented and strengthened the unity and stability of the Empire. Again, by one of the great instincts of a free people they discerned in the King, just the sort of man whom each of them would wish to be—simple, straightforward, outspoken, loyal to his home and his friends, governed by a high standard of life and duty, and mindful of his God. When this marvellous wireless enabled him to speak to them all with his own voice he spoke with a simplicity and sincerity which went straight to their hearts. He had enhanced the prestige and value of the Throne. But it was through the personal affection which he had drawn from the hearts of his people that he gave a new significance to the name of King.

"The knowledge of this growing personal feeling towards himself supported and strengthened him in all anxieties. You may remember the words which he used in his Message on the Christmas Day before the Jubilee year—'If I may be regarded as in some true sense the head of this great and widespread family, sharing its life and sustained by its affection, this will be a full reward for the long and sometimes anxious labours of my reign'. In the celebrations of that memorable year the reward was most fully given to him. They gave him overwhelming evidence not only of the loyalty but of the love he had inspired. I think the strength of it surprised him. I cannot refrain from repeating what he said to me, as his words were so characteristic of his honesty and humility—'I am sure, he said, 'I cannot understand it, for after all I am only a very ordinary sort of fellow'. What pleased him especially was the knowledge that it was in the heart of common folk that this affection lay. He himself told us how deeply touched and stirred he was, in his Broadcast Message on May 6. He said, 'I can only say to you, my very dear people, that the Queen and I thank you from the depths of our hearts for all the loyalty and—may I say—the love with which this day and always you have surrounded us. I dedicate myself anew to your service for the years that may still be given to me'. No further years were to be given. But we may be most thankful that in his last year he knew how truly he had enthroned himself in the common heart. The universal sorrow now has been offered not so much to a King as to a friend and father of his people.

"I have only time to mention briefly one or two special features of his personality. There was what I have already called his unswerving devotion to duty. It upheld him to the end. On Thursday I ventured to give a description to the House of Lords of his last public act as King. I feel that I must repeat it to the largest possible number of his subjects in this country and throughout the Empire. Twelve hours before his death, sitting very thin and frail on his chair, he held a meeting of his Privy Council. To the Order constituting a Council of State he gave in his old clear voice the familiar 'Approved'. He was asked whether he wished to sign the Order with his own hand. 'Yes', he said, 'I have always signed myself'. But his hands could not grasp the pen. For several minutes they moved to and fro across the paper, and then with a most moving act of his old courtesy he turned to his Council and said: 'I am very sorry to keep you waiting so long', and added after a pause: 'You see, I cannot concentrate'. For some minutes still the hands renewed attempts, most gallant and most pathetic to sign. At last he was content to make a mark and then with his old kindly kindly smile he bade his Council farewell. It was a scene which we who witnessed it can never forget. It showed that in his last conscious hour he was true to his lifelong fidelity to the claim of duty. Again, I recall his loyalty to his friends, not least to his old shipmates. Some of us will always remember that one of the favourite endings of his personal letters was 'Your old friend'. It is these old friends who will sorrow most that never again will they see his kindly smile or hear his hearty laughter and his vivid and emphatic talk.

"Lastly, I must say a word about his religion. Though he need fear no evil for God is with him. It seemed to me as I looked for the last time upon his face that the beautiful serenity and peace which lay upon it was itself a sign that he had entered into the rest that remains for the people of God.

"To this good man, this dear and honoured King, his people have given their last, their grateful, and their loving farewell.

"You must let me say a word about Queen Mary, for she has her own place in our thoughts and prayers. No words are needed to remind you of the wonderful comradeship she gave King George for more than forty years, a comradeship of unflinching love and counsel and strength. During these last anxious days, as I can testify, she has shown a truly noble fortitude. The pressure of deep emotion was always ready to break through but it was held in a wonderful self-control. The whole people offer to her a deep and understanding sympathy. We pray God that His Spirit may uphold and strengthen her, and that for many years to come she may be with us and enjoy in ever fuller measure the possession of the hearts of her people.

"What shall we say of our new King—the Prince—whose name has been a household word throughout the Nation and Empire? We all know how eager he has ever proved to be in seeing with his own eyes the real life of the people in all parts of the Empire, in caring for the unemployed, and in giving the youth of the country a better chance of a full life. No other monarch, it may be said, has ever come to the Throne knowing so well, and known so intimately by all classes of his subjects. The new King has a personality of his own, in many ways different from that of his beloved father, and it is though his own personality that he must make his contribution to the history of the British Monarchy. We pray that his gifts may be consecrated to the service of his people and of God, and that his character may be so deepened and strengthened that he may rise nobly to the height of his new and great responsibility.

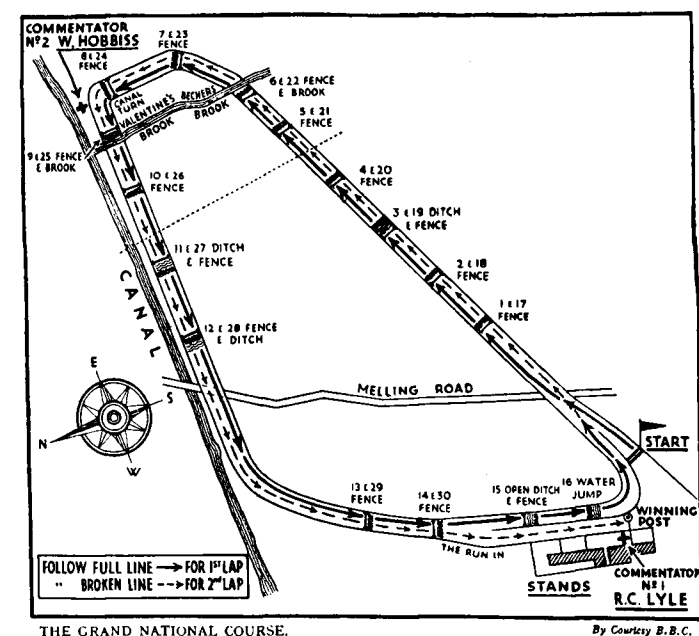
"The King is dead. God receive him. Long live the King. God bless, and guide, and strengthen him."

THE GRAND NATIONAL

A running commentary on the Grand National by Mr. R. C. Lyle and Mr. W. Hobbiss will be broadcast in Empire transmissions on the 27th and 28th March. The Grand National is one of the comparatively few sporting events which have attained world-wide fame. The course measures four miles, 856 yards, and in 1934 Golden Miller covered this distance in 9 minutes 20 seconds, while in 1935 Reynoldstown took only one second longer.

The Grand National dates from 1839 and is recognised as one of the stiffest tests to which any horse can be subjected in a sporting event.

The race will be broadcast at the following times: Transmission 1, Saturday, March 28, at 12.45 p.m. I.S.T., Transmission 2, Saturday, March 28, at 4.30 p.m. I.S.T., Transmission 3, Friday, March 27, at 8.20 p.m., I.S.T., Transmission 4, Friday, March 27, at 11.50 p.m., I.S.T., Transmission 5, Saturday, March 28, at 5.35 a.m., I.S.T., Transmission 6, Saturday, March 28, at 8.30 a.m., I.S.T.



THE GRAND NATIONAL COURSE.

By Courtesy B.B.C.

THE CHOICE OF A SHORT WAVE RECEIVER (Part II)

By L. W. Hayes

Empire and Foreign Services Engineer, BBC.

A practical test is most desirable to determine whether second-channel selectivity interference is present. If interference is experienced in which the pitch of morse telegraph signals or a continuous heterodyne note changes when the tuning knob is moved, then the interference is probably due to second channel or image signal.

The reason for this is not difficult to understand. Let us take the example given in the previous article, in which the receiver has an intermediate-frequency of 110 kc/s (110 kc/s has been chosen only as an example, the intermediate-frequency of modern all-wave receivers is generally of the order of 460 kc/s) the station GSD on 11,750 kc/s is being received, and the oscillator is lower in frequency than the wanted signal. It will, therefore, be tuned to 11,640 kc/s to give an intermediate-frequency of 110 kc/s, and this frequency will also be given if there is a station on the other side of the oscillator-frequency 110 kc/s away—i.e., on 11,530 kc/s. When the receiver is tuned exactly to 11,750 kc/s and the oscillator is thus exactly on 11,640 kc/s, the two intermediate-frequencies coincide at 110 kc/s and the beat note between them will be zero. If the receiver then be returned slightly so that the oscillator-frequency is shifted to say, 11,642 kc/s, two different intermediate-frequencies—namely, 11,750–11,642=108 kc/s, and 11,642–11,530=112 kc/s, will be produced and they will beat together to give a note of 4 kc/s—double the amount that the tuning has been shifted. A displacement on the other side will produce exactly similar results.

If further verification be desired that interference heard is caused by second channel or image signal, it can be obtained by tuning the receiver to points above and below the wanted station, twice the intermediate-frequency away from it. The interfering station will be heard on one or other of these settings. If the receiver has good second-channel selectivity, the interfering station will be very much louder when the receiver is tuned to it, but if the station is equally loud on both settings it is an indication that the receiver has no second channel-selectivity. The provision of adequate second-channel selectivity is largely a matter of cost, since considerable elaboration of the receiver is necessary to secure it. The simplest solution to this problem is a straight receiver, which has no image signal; but on the short waves this is ruled out in practice by other considerations, principally that of adjacent-channel selectivity.

Adjacent-Channel Selectivity

The adjacent-channel selectivity of a receiver should be adequate to separate two stations working with a separation of 10 kc/s. There is no doubt that the provision of variable selectivity is the best solution to the problem, since a receiver

with fixed selectivity cannot be made selective enough to deal with the most unfavourable ratio of signal strengths between the wanted station and the adjacent unwanted station without seriously compromising the quality of reproduction when the ratio is favourable, and *vice versa*. Extreme selectivity can be achieved only by restricting the top-note response of the receiver.

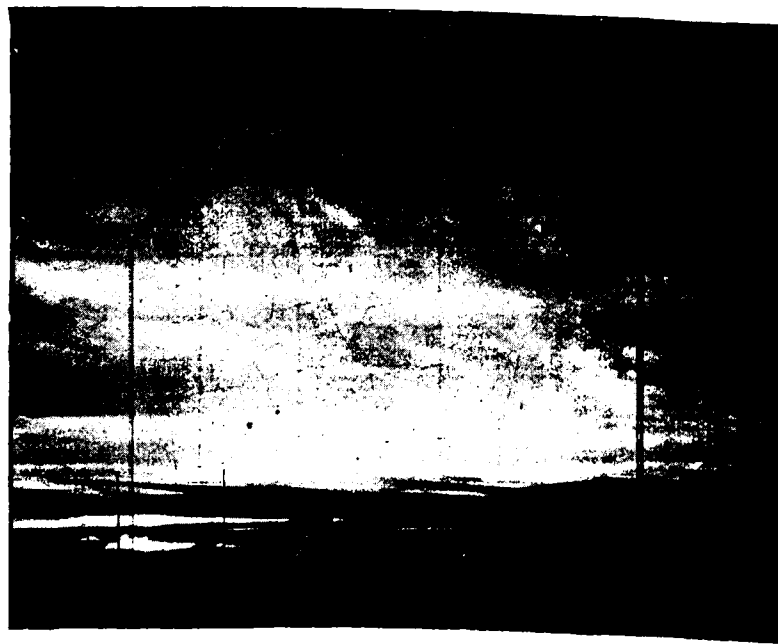
Variable selectivity is also of use in dealing with noise level, since, in the presence of noise, there is an optimum value of band width for a given intelligibility. If the band width be unduly restricted, the noise level will be reduced but intelligibility will also be reduced owing to lack of the higher frequencies, whereas, if the band width be unduly enlarged, the noise level will increase and a point may be reached where the intelligibility which has been gained by increased band width will be lost by the increased noise. Since the optimum setting of band width depends on the signal-to-noise ratio at the input to the receiver, and as this varies over wide limits, variable selectivity can be most usefully employed.

Automatic Gain Control

Most modern receivers are fitted with automatic gain (or volume) control. The function of this device is to control automatically the gain or amplification of the receiver, the amplification increasing as the signal gets weaker and *vice versa*, so that the acoustic output from the loudspeaker remains sensibly constant over a relatively wide range of signal-strength variation. A well-designed system will convert a signal variation of about 1,000 to 1 into an acoustic output variation of two to one.

It is a mistake to think, however, that automatic gain control is a complete cure for fading. If fading is differential—i.e., if the sidebands fade differently and to different degrees relative to the carrier, which is characterised by bad distortion in which music sounds "squashy"—automatic gain control is of little use and may even make matters worse. It has been stated that the gain or magnification of the receiver is changed by the

A.G.C. (or A.V.C.), and it therefore follows that the acoustic signal-to-noise ratio at the loudspeaker will change if the signal varies in strength. A characteristic of a receiver fitted with A.G.C. is therefore that while the acoustic output of the loudspeaker may remain constant the background noise will fall and rise as the signal fades up and down. If the signal becomes very weak through deep fading, the noise will become very strong and the programme may be swamped. On the other hand, if the signal varies with fading from fairly strong to very strong, the A.G.C. will smooth out these quite large variations so that they become almost imperceptible and good reception will result.



The Empire Broadcasting Station at Darenty.

500 ft. masts originally supporting the long wave aerial for the 5XX transmitter are now used to support short wave aerials for transmission to Canada and to East Africa. 31 metre aerial on left, 25 metre aerial centre, and 49 metre aerial right (By courtesy of the B.B.C.).

In practice, there are many forms of A.G.C. (or A.V.C.) and they are given different names, such as "quiescent A.V.C.", which means that the sensitivity of the receiver is not increased unduly between stations whilst tuning, in order to avoid the screech caused by the higher-frequency sidebands; and the "delayed A.V.C.", which means that there is a threshold value of signal below which the A.G.C. (or A.V.C.) does not operate in order to prevent the set from becoming insensitive to weak signals on account of noise.

When tuning a receiver fitted with automatic gain control, the manufacturer's instructions should be carefully followed, since the correct tuning point is not always the point at which maximum acoustic output of signal from the loud-speaker is obtained, and it is often better to tune to minimum unwanted noise.

Tuning Control

In choosing a short-wave or all-wave receiver it is most important to try out the tuning knob, since if this is not geared down sufficiently it will be very difficult to tune in a short-wave station satisfactorily. The current practice of making a receiver cover a band of wavelengths of which the short-wave broadcasting bands are but a very small part means that a very small movement of the tuning condenser may well tune through several

stations. As an example, 13.9 to 30 metres is 21,600 to 10,000 kc/s, or a range of 11,600 kc/s. Of this band only 600 kc/s is allotted to broadcasting—namely, 21,550 to 21,450 kc/s, 17,800 to 17,750 kc/s, 15,350 to 15,100 kc/s, and 11,900 to 11,700 kc/s. If the tuning scale is 6 inches long, the smallest of these bands, which is 50 kc/s wide, will occupy three-hundredths of an inch, and if the scale be divided into 180 degrees, this band will cover only nine-tenths of a degree. It already contains four broadcasting stations!

It is not necessary here to go into the question of power supply, volume-control, loudspeaker or cabinet design, etc., since the first of these is dealt with at length in the Empire Service pamphlet, and the others should have the same criteria of judgment applied to them as is done in ordinary broadcast receivers.

At the beginning of these notes it was recommended that an all-wave or short-wave receiver should be tested out and compared in the situation in which it will be used. In conclusion it may be helpful to suggest that particular attention should be paid to the performance of the receiver at the lower end of the wave-range for it is there that the greater differences in performance will be found. Furthermore, receivers should be tested out on weak signals in this part of the band and not only on stronger ones.

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B. B. C. Empire Service Programmes

Transmissions 2 and 3

NOTE.—All times given are Indian Standard Time which is five hours and thirty minutes ahead of Greenwich Mean Time. Wavelengths shown for each Transmission are those in use at time of going to press. Changes, if any, will be duly notified by microphone which should be listened for in the announcements made at frequent intervals.

Transmission 2:—4.30 to 7.15 p.m. I.S.T. (11 a.m. to 1.45 p.m. G.M.T.).

GSJ 21.53 Mc/s (13.93 m.),
GSG 17.79 Mc/s (16.86 m.),
GSD 11.75 Mc/s (25.53 m.).

In this transmission Greenwich Time Signal is given at 5.30 p.m. (12 noon G.M.T.).

Transmission 3:—7.30 to 10.30 p.m. I.S.T. (2 to 5 p.m. G.M.T.).

Two of the following frequencies will be used:—

GSG 17.79 Mc/s (16.86 m.),
GSF 15.14 Mc/s (19.82 m.),
GSE 11.86 Mc/s (25.29 m.).

In this transmission Greenwich Time Signal is given at 10 p.m. (4.30 p.m. G.M.T.).

FRIDAY, MARCH 20.

4.30 p.m.—Big Ben. "Caravanserai."* "A place where caravans meet." An anthology of travel of all ages and places in verse, prose, and music. The story told by the cast, with a section of the BBC Chorus and the BBC Empire Orchestra (leader, Daniel Melsa), under the direction of Clifton Helliwell. The programme produced by William MacLurg.

5.30 p.m.—Talk: "The Conquest of the Air"—5.*

5.50 p.m.—Scots Songs.† Alex Carmichael (Baritone).

6 p.m.—The BBC Dance Orchestra, directed by Henry Hall.

6.30 p.m.—The News and Announcements.

6.50 p.m.—Military Bands.† The Band of H. M. Grenadier Guards, conducted by Major George Miller. The Band of H. M. Coldstream Guards.

7.15 p.m.—Close down.

7.30 p.m.—Big Ben. "How's That?"* A variety entertainment compared by Ralph Coram. The artistes will include: Tessa Dean, Len Morris, Daisy Crossley, Marie Dayne, Michael Cole, Betty Bolton (South African), Frank Atkinson, Constance Carpenter, Sidney Arnold, and the Band.

8.5 p.m.—Dance Music.†

8.15 p.m.—The BBC Northern Orchestra; leader, Alfred Barker; conducted by Crawford McNair.

9.15 p.m.—"Young Ideas."* A programme for anybody and everybody with young ideas.

9.45 p.m.—"Monologue in Melody." Arthur Young in a programme of syncopated pianoforte music.

10.0 p.m.—The News and Announcements.

10.20 p.m.—The Hotel Metropole Orchestra; leader, A. Rossi; under the direction of Emilio Colombo. Relayed from the Hotel Metropole, London.

10.30 p.m.—Close down.

SATURDAY, MARCH 21.

4.30 p.m.—Big Ben. The BBC Northern Orchestra.

5.45 p.m.—Talk: "Imperial Affairs,"* by H. V. Hodson.

6.0 p.m.—The Coventry Hippodrome Orchestra, conductor, Charles Shadwell. Relayed from the Hippodrome Theatre, Coventry.

6.15 p.m.—The Children's Hour. "The Copper Kettle," a story by Marjorie Roseman. "Nonsense Songs," by George Gibbs (Baritone). "True Stories about Animals," by Sam Ball. Country Songs by Doris Aldridge (Contralto).

7.0 p.m.—The News.

7.15 p.m.—Close down.

7.30 p.m.—Big Ben. The Serge Krish Septet.

8.20 p.m.—England v. Scotland. A running commentary on the International Rugby Union football match by Captain H. B. T. Wakelam. Relayed from

Twickenham. (By courtesy of the Rugby Football Union).

10.0 p.m.—The News.

10.15 p.m.—Dance Music.†

10.30 p.m.—Close down.

SUNDAY, MARCH 22

5.30 p.m.—Big Ben. A Short Religious Service,* from the Studio.

5.45 p.m.—The London Philharmonic Orchestra.†

6.0 p.m.—England v. Scotland.* Interval summary and a running commentary on the second half of the International Rugby Union Football Match, by Captain H. B. T. Wakelam. Relayed from Twickenham. (By courtesy of the Rugby Football Union.)

6.50 p.m.—Weekly Newsletter and Sports Summary.

7.15 p.m.—Close down.

7.30 p.m.—Big Ben. The BBC Variety Orchestra.

8.30 p.m.—Talk: "Conquest of the Air"—5.*

8.50 p.m.—Eugene Pini and his Tango Orchestra, with Diana Clare.

9.5 p.m.—Musical Interlude.†

9.10 p.m.—A Religious Service,* relayed from St. Sylvester's Church, Liverpool (Roman Catholic).

10.0 p.m.—Weekly Newsletter and Sports Summary.

10.20 p.m.—Chamber Music.†

10.30 p.m.—Close down.

MONDAY, MARCH 23.

4.30 p.m.—Big Ben. Tom Jenkins, at the Organ of the Plaza Cinema, Swansea.

4.45 p.m.—"Musical Extremes." Haydn Heard and his Band, relayed from the West End Cinema, Birmingham.

5.30 p.m.—"Escaping for a Living," by Murray (the Australian Escapologist). Introduced by J. C. Cannell.

5.45 p.m.—A Recital of Grieg's Songs by Molly de Gunst (Australian Soprano).

6.0 p.m.—Sir Walford Davies: "Music and the Ordinary Listener: What about the Tune?"—6: "Tunes from Afar."

6.30 p.m.—The News.

6.50 p.m.—A Programme of Gramophone Records.

7.15 p.m.—Close down.

7.30 p.m.—Big Ben. "Empire Cocktail."* A sophisticated show with comedy, music, and West-end artistes. Presented by Cecil Madden.

8.15 p.m.—Prose Reading.

8.30 p.m.—Light Music.

9.30 p.m.—A Sonata Recital. Irene Crowther (Violin). Ronald Onley (Pianoforte).

10.0 p.m.—The News.

10.20 p.m.—Dance Music.†

10.30 p.m.—Close down.

TUESDAY, MARCH 24.

4.30 p.m.—Big Ben. "With and Without Prejudice." (Gala Programme).* Being a symposium in music and sound looking backwards over past "Celebrity Snaps" and "What They Say" programmes of important and unimportant sayings in 1934 and 1935, lifted from their context and presented in living form by Cecil Madden.

5.15 p.m.—Musical Interlude.†

* Electrical recording.

† Gramophone records.

5.20 p.m.—The Leon Wayne Sextet. Music of Romberg.

6.0 p.m.—A Reading from "Lavengro," by George Borrow.

6.15 p.m.—The Leicester Opera House Orchestra; conductor, Jack Robson. Relayed from the Opera House, Leicester.

6.30 p.m.—The News.

6.45 p.m.—The Manchester Tuesday Midday Society's Concert, relayed from the Houldsworth Hall, Manchester. A Violin Recital by Bratza. Dushka Yovanovitch at the Pianoforte.

7.15 p.m.—Close down.

7.30 p.m.—Big Ben. The Birmingham Theatre Royal Orchestra; conductor, Sheridan Gordon. Relayed from the Theatre Royal, Birmingham.

8.0 p.m.—Talk: "Foreign Affairs," by Sir Frederick Whyte, K.C.S.I., LL.D.

8.15 p.m.—Musical Interlude.†

8.20 p.m.—The Norris Stanley Sextet.

9.5 p.m.—"Young Ideas."* A programme for anybody and everybody with young ideas.

9.35 p.m.—A Recital by Cedric Sharpe (Violoncello).

10.0 p.m.—The News.

10.15 p.m.—Light Songs.†

10.30 p.m.—Close down.

WEDNESDAY, MARCH 25.

4.30 p.m.—Big Ben. "How's That?"* A variety entertainment compared by Ralph Coram. The artistes will include: Tessa Dean, Len Morris, Daisy Crossley, Marie Dayne, Michael Cole, Betty Bolton (South African), Frank Atkinson, Constance Carpenter, Sidney Arnold, and the Band.

5.5 p.m.—Pianoforte Solos.†

5.15 p.m.—Quentin Maclean, at the Organ of the Trocadero Cinema, Elephant and Castle.

5.45 p.m.—The BBC Empire Orchestra; leader, Daniel Melsa; conductor, Eric Fogg. Maurice Cole (Pianoforte).

6.45 p.m.—The News.

7.0 p.m.—Musical Interlude.†

7.15 p.m.—Close down.

7.30 p.m.—Big Ben. "Songs Out of the West."* Robert Herrick and his "Hesperides." A programme constructed from the works of Herrick and F. W. Moorman's "Robert Herrick: a Biographical and Critical Study." With Music by Roger Quilter. Arranged by Cedric Cliffe. Produced by William MacLurg.

8.15 p.m.—Musical interlude.†

8.20 p.m.—A Pianoforte Interlude by Ernest Lush.

8.45 p.m.—The Bournemouth Municipal Orchestra; leader, Bertram Lewis, Conductor, Richard Austin. Irene Scharrer (Pianoforte). Relayed from the Pavilion Bournemouth.

10.0 p.m.—The News.

10.15 p.m.—Jan Berensha and his Orchestra, relayed from the Pump Room. Leamington. Spa.

10.30 p.m.—Close down.

THURSDAY, MARCH 26.

4.30 p.m.—Big Ben. The Composer at the Pianoforte—8: Hamilton Harty. A recital of Hamilton Harty's songs, sung by Isobel Baillie (Soprano). (Accompanied by the composer.)

4.55 p.m.—Musical Interlude.†

5.0 p.m.—An Organ Recital by Albert Taylor, relayed from First Presbyterian Church, Rosemary Street, Belfast.

5.30 p.m.—Talk: "Foreign Affairs,"* by Sir Frederick Whyte, K.C.S.I., LL.D.

5.45 p.m.—Fred Hartley and his Novelty Quintet, with Brian Lawrance (Australian Vocalist).*

6.30 p.m.—The News.

6.45 p.m.—Chamber Music from the Scottish National Academy of Music, Members of the Chamber Music Class. Relayed from the Stevenson Hall, Glasgow.

7.15 p.m.—Close down.

7.30 p.m.—Big Ben. "Caravanserai."* "A place where caravans meet." An anthology of travel of all ages and places in verse, prose, and music. The story told by the cast, with a section of the BBC Chorus and the BBC Empire Orchestra (leader, Daniel Melsa), under the direction of Clifton Helliwell. The programme produced by William MacLurg.

8.30 p.m.—The Central Band of His Majesty's Royal Air Force (by permission of the Air Council), conducted by Flight-Lieut. R. P. O'Donnell, M.V.O., Director of Music, Royal Air Force. Relayed from the Royal Air Force Headquarters, Uxbridge.

9.15 p.m.—Speeches at the Farewell Banquet to the Most Hon. the Marquis of Linlithgow, K.T., Viceroy-Designate of India.*

9.40 p.m.—Dance Music.†

10.0 p.m.—The News.

10.15 p.m.—Dance Music.†

10.30 p.m.—Close down.

FRIDAY, MARCH 27.

4.30 p.m.—Big Ben. The BBC Welsh Orchestra; leader, Frank Thomas; conductor, Idris Lewis.

5.15 p.m.—A Recital by Frederick Hall (Harp).

5.30 p.m.—"The Pariah."* A play by August Strindberg. Translated from the Swedish by Edwin Bjorkman, and adapted by Marianne Helweg. Production by John Pudney.

6.0 p.m.—The BBC Dance Orchestra, directed by Henry Hall.

6.30 p.m.—The News and Announcements.

6.50 p.m.—Brass Band Concert.†

7.15 p.m.—Close down.

7.30 p.m.—Big Ben. Geiger and his Orchestra, relayed from Claridge's Hotel, London.

7.50 p.m.—"Under Big Ben." A talk by Howard Marshall.

8.5 p.m.—Geiger and his Orchestra (cont'd).

8.20 p.m.—The Grand National. Described in two parts as follows: by R. C. Lyle (from Messrs. Tophams' private stand) for that part of the course on the grandstand side of Becher's and Valentine's Brooks, and by W. Hobbiss (from the Canal Turn) for the remainder of the course, including Becher's Brook, the Canal Turn, and Valentine's Brook. Relayed from Aintree.

9.0 p.m.—The BBC Dance Orchestra, directed by Henry Hall.*

9.30 p.m.—"Peacock Paradise." An Indian motif, compiled from the works of Rabindranath Tagore, with music. Production by Douglas Moodie.

10.0 p.m.—The News and Announcements.

10.20 p.m.—The Hotel Metropole Orchestra; leader, A. Rossi; under the direction of Emilio Colombo. Relayed from the Hotel Metropole, London.

10.30 p.m.—Close down.

SATURDAY, MARCH 28.

4.30 p.m.—Big Ben. The Grand National.* Described in two parts as follows: by R. C. Lyle (from Messrs. Tophams' private stand) for that part of the course on the grandstand side of Becher's and Valentine's Brooks, and by W. Hobbiss (from the Canal Turn) for the remainder of the course, including Becher's Brook, the Canal Turn, and Valentine's Brook. Relayed from Aintree.

5.10 p.m.—Dance Music.†

5.20 p.m.—"Under Big Ben."* A talk by Howard Marshall.

5.35 p.m.—"The Salvation of Sholto."* Being No. 3 in the series of adventures of Jack and Jill. Book and lyrics by Alec McGill. Music by Jack Clarke. Production by William MacLurg.

6.10 p.m.—Musical Interlude.†

6.15 p.m.—Scottish Children's Hour. "Don and Eve." A play with words and music, written by Roger MacDougall.

* Electrical recording.

† Gramophone records.

7-0 p.m.—The News.
 7-15 p.m.—Close down.
 7-30 p.m.—Big Ben. The BBC Scottish Orchestra; leader, J. Moulard Begbie; conductor, Guy Warrack.
 8-30 p.m.—A Recital by Rispah Goodacre (Contralto).
 8-50 p.m.—"Escaping for a Living,"* by Murray (the Australian Escapologist). Introduced by J. C. Cannel.
 9-5 p.m.—Dance Music.
 9-50 p.m.—The Broadhurst Septet.
 10- p.m.—The News.
 10-15 p.m.—The Broadhurst Septet (Cont'd.).
 10-30 p.m.—Close down.

SUNDAY, MARCH 29.

5-30 p.m.—Big Ben. A Short Religious Service,* from the Studio.
 5-45 p.m.—A Recital by Margaret Pirie (Australian Contralto).
 6-0 p.m.—The BBC Northern Orchestra; leader, Alfred Barker; conductor, T. H. Morrison.
 6-45 p.m.—Weekly Newsletter and Sports Summary.
 7-5 p.m.—Pianoforte Solos.†
 7-15 p.m.—Close down.
 7-30 p.m.—Big Ben. The BBC Empire Orchestra; leader, Daniel Melsa; conductor, Eric Fogg. Pouishnoff (Pianoforte).
 8-45 p.m.—Talk: "Conquest of the Air: 6—the Significance of Air Power."* Air Comm. J. A. Chamier, C.B., C.M.G., D.S.O.
 9-5 p.m.—A Programme of New Gramophone Records.
 9-35 p.m.—A Recital of Folk Songs from Many Lands. Eve Maxwell-Lyte (Soprano).
 10-0 p.m.—Weekly Newsletter and Sports Summary.
 10-20 p.m.—Pianoforte Solos.†
 10-30 p.m.—Close down.

MONDAY, MARCH 30.

4-30 p.m.—Big Ben. A Recital of Songs and Duets by Frances Allsom (Soprano) and Philip Warde (Baritone).
 5-0 p.m.—"The Killarney Dhrugin." A short story by Wilfred E. Shine, read by the author.
 5-15 p.m.—An Organ Recital by Arnold McC. Shields, from St. Machar's Cathedral, Aberdeen.
 6-0 p.m.—Sir Walford Davies: "Music and the Ordinary Listener: What about the Tune?"—7: "Tunes as Characters in a Play."
 6-30 p.m.—The News.
 6-50 p.m.—A Programme of Gramophone Records.
 7-15 p.m.—Close down.
 7-30 p.m.—Big Ben. Arthur Salisbury and his Orchestra, from the Savoy Hotel, London.
 7-55 p.m.—"The Salvation of Sholto."* Being No. 3 in the series of adventures of Jack and Jill. Book and lyrics by Alec McGill. Music by Jack Clarke. Production by William MacLurg.
 8-30 p.m.—Talk: "Ocean Travel as it was: Wind-jammer and Tramp Steamer," by Jerry Nunn.
 8-45 p.m.—A Recital by Lucy Scollick (Pianoforte).
 9-15 p.m.—Organ Solos.†
 9-30 p.m.—Ballad Concert. Gwladys Garside (Contralto). Martin Boddey (Tenor).
 10-0 p.m.—The News.
 10-20 p.m.—Dance Music.†
 10-30 p.m.—Close down.

TUESDAY, MARCH 31.

4-30 p.m.—Big Ben. The Serge Krish Septet.
 5-10 p.m.—Talk: "Conquest of the Air—6: the Significance of Air Power."* Air Comm. J. A. Chamier, C.B., C.M.G., D.S.O.
 5-30 p.m.—The BBC Northern Ireland Orchestra.
 6-15 p.m.—"Your Programmes from Davenport." A talk by the Empire Programme Director.
 6-30 p.m.—The News.
 6-45 p.m.—An Organ Recital by Marguerite Newton, from the College of Technology, Manchester.
 7-15 p.m.—Close down.

7-30 p.m.—Big Ben. A Recital by Edwin Benbow (Pianoforte).
 7-45 p.m.—Talk: "Imperial Affairs," by H. V. Hodson.
 8- p.m.—The Birmingham Theatre Royal Orchestra; conductor, Sheridan Gordon. From the Theatre Royal, Birmingham.
 8-15 p.m.—"Young ideas". A programme for anybody and everybody with young ideas.
 8-45 p.m.—Harry Engleman's Quintet, with Vernon Adcock (Xylophone and Vibraphone).
 9-30 p.m.—"Your Programmes from Davenport." A talk by the Empire Programme Director.
 9-45 p.m.—Dance Music.†
 10-0 p.m.—The News.
 10-15 p.m.—Dance Music.†
 10-30 p.m.—Close down.

WEDNESDAY, APRIL 1.

4-30 p.m.—Big Ben. The Composer at the Pianoforte—9: Frank Bridge. A recital of Frank Bridge's songs, sung by Jan Van der Gucht (Tenor). (Accompanied by the composer.)
 4-55 p.m.—Quentin Maclean, at the Organ of the Trocadero Cinema, Elephant and Castle.
 5-15 p.m.—A Talk by the Chief Engineer of the British Broadcasting Corporation.
 5-30 p.m.—The BBC Empire Orchestra; leader, Daniel Melsa; conductor, Eric Fogg. Vivien Lambelet (Mezzo-soprano).
 6-30 p.m.—The News.
 6-45 p.m.—The BBC Dance Orchestra,* directed by Henry Hall.
 7-15 p.m.—Close down.
 7-30 p.m.—Big Ben. "Pariah."* A play by August Strindberg. Translated from the Swedish by Edwin Bjorkman and adapted by Marianne Helweg. Production by John Pudney.
 8-0 p.m.—Musical Interlude.†
 8-5 p.m.—The Composer at the Pianoforte—8: Hamilton Harty* A recital of Hamilton Harty's songs, sung by Isobel Baillie (Soprano). Accompanied by the composer.
 8-30 p.m.—A Reading from "Reminiscences of an Irish R.M.," by E. G. Somerville and Martin Ross.
 8-45 p.m.—The Bournemouth Municipal Orchestra; leader, Bertram Lewis, conductor, Richard Austin. Solo Pianoforte, Arthur de Greef. From the Pavilion, Bournemouth.
 10-0 p.m.—The News.
 10-15 p.m.—Brass Band Concert.†
 10-30 p.m.—Close down.

THURSDAY, APRIL 2.

4-30 p.m.—Big Ben. Brass Band Concert.†
 5-0 p.m.—An Organ Recital by Albert Taylor, from First Presbyterian Church, Rosemary Street, Belfast.
 5-30 p.m.—Talk: "Imperial Affairs,"* by H. V. Hodson.
 5-45 p.m.—The Bath Pump Room Orchestra; leader, J. Andrew Cooper; conductor, Frank Gomez. From the Pump Room, Bath.
 6-0 p.m.—"Peacock Paradise."* An Indian motif compiled from the works of Rabindranath Tagore. With music. Production by Douglas Moodie.
 6-30 p.m.—The News.
 6-45 p.m.—The BBC Scottish Orchestra; leader, J. Moulard Begbie; conductor, Guy Warrack.
 7-15 p.m.—Close down.
 7-30 p.m.—Big Ben. The BBC Welsh Orchestra; leader, Frank Thomas; conductor, Idris Lewis.
 8-30 p.m.—Evensong, from Westminster Abbey.
 9-20 p.m.—A Pianoforte Interlude by John Wills.
 9-30 p.m.—"Souvenirs." A non-stop medley of song memories, devised by Mai Jones. With the assistance of John Rorke, Lyn Joshua, Emyln Burns, Frederick Harvey, the Carroll Sisters, the Revue Chorus, and the BBC Welsh Orchestra; leader, Frank Thomas; conductor, Idris Lewis.

* Electrical recording.

† Gramophone records.

10-15 p.m.—The News.
 10-30 p.m.—Close down.

FRIDAY, APRIL 3.

4-30 p.m.—Big Ben. The BBC Welsh Orchestra; leader, Frank Thomas; conductor, Idris Lewis.
 5-15 p.m.—"All Fares, Please!"* A medley of London's red buses, presented by John Pudney.
 5-45 p.m.—A Reading from "Tess of the D'Urbervilles," by Thomas Hardy.
 6-0 p.m.—The BBC Dance Orchestra, directed by Henry Hall.
 6-30 p.m.—The News and Announcements.
 6-50 p.m.—The Birmingham Hippodrome Orchestra; conductor, Harry Pell. From the Hippodrome Theatre, Birmingham. Tango, Poor Little Romany (Lisbona). The Legend of the Bells (Thomas). Selection, Frederica (Lehar). The Wedding of the Rose (Jessel). Waltz, The Pink Lady (Caryll).
 7-15 p.m.—Close down.
 7-30 p.m.—Big Ben. Geiger and his Orchestra, from Claridge's Hotel, London.
 8-0 p.m.—An Aeronautical Revue: "Tennessee to Tooting Bec."* Book devised by Miriam Ferris. Lyrics and music by various writers and composers. Produced by William MacLurg.
 8-45 p.m.—The Philip Whiteway Ensemble.
 9-30 p.m.—Talk: "The Spice of Life."*
 9-50 p.m.—The Hotel Metropole Orchestra; leader, A. Rossi; under the direction of Emilio Colombo. From the Hotel Metropole, London.
 10-0 p.m.—The News and Announcements.
 10-20 p.m.—Vocal Serenades.†
 10-30 p.m.—Close down.

SATURDAY, APRIL 4.

4-30 p.m.—Big Ben. "Monologue in Melody." Norman Hackforth in syncopated pianoforte music.
 4-45 p.m.—Oxford v. Cambridge. A running commentary on the Oxford and Cambridge Boat Race, from the launch *Magician* following the crews.
 6-0 p.m.—Light Orchestral Music.†
 6-15 p.m.—The Children's Hour. "The Giant's Castle." A play for small children by J. D. Strange.
 7-0 p.m.—The News.
 7-15 p.m.—Close down.
 7-30 p.m.—Big Ben. Falkman and his Apache Band.
 8-20 p.m.—Harold Ramsay, at the Organ of the Granada, Tooting.
 8-30 p.m.—Oxford v. Cambridge.* A running commentary on the Oxford and Cambridge Boat Race, from the launch *Magician* following the crews.
 8-55 p.m.—Dance Music.†
 9-15 p.m.—England v. Scotland. Interval summary and a running commentary on the second half of the International Association Football Match by George F. Allison. From Wembley Stadium. (By courtesy of the Football Association.)
 10-10 p.m.—The News.
 10-30 p.m.—Close down.

SUNDAY, APRIL 5.

4-30 p.m.—Big Ben. Palm Sunday. A Religious Service, relayed from Brompton Parish Church (Church of England), London. Address by the Rev. Marshall Selwyn.
 5-30 p.m.—Weekly Newsletter and Sports Summary.
 5-50 p.m.—Music of the Elizabethans. A Recital by David Brynley (Tenor) and Lucille Wallace (Harpischord).
 6-25 p.m.—England v. Scotland.* Interval summary and a running commentary on the second half of the International Association Football Match, by George F. Allison. From Wembley Stadium. (By courtesy of the Football Association.)

7-15 p.m.—Close down.

7-30 p.m.—Big Ben. The BBC Empire Orchestra; leader, Daniel Melsa; conductor, Eric Fogg.
 8-30 p.m.—Talk: "The Conquest of the Air"—7.* "The Major Task of our Generation," by Henri Bouché.
 8-50 p.m.—A Recital by Ambrose Gauntlett (Violoncello).
 9-10 p.m.—A Religious Service,* relayed from the Central Hall, Islington (Methodist).
 10-0 p.m.—Weekly Newsletter and Sports Summary.
 10-20 p.m.—Light Orchestra Music.†
 10-30 p.m.—Close down.

MONDAY, APRIL 6.

4-30 p.m.—Big Ben. An Aeronautical Revue: "Tennessee to Tooting Bec."* Book devised by Miriam Ferris. Lyrics and music by various writers and composers. Produced by William MacLurg.
 5-15 p.m.—Haydn Heard and his Band, relayed from the West End Cinema, Birmingham.
 5-35 p.m.—A Recital by Wilma Berkeley (Australian Soprano).
 6-0 p.m.—Sir Walford Davies: "Music and the Ordinary Listener: What about the Tune?"—8. "How to Listen to Two Tunes at a Time."
 6-30 p.m.—The News.
 6-50 p.m.—A Programme of Gramophone Records.
 7-15 p.m.—Close down.
 7-30 p.m.—Big Ben. "Mixed Pickles." (8th Edition.) Sketches, stunts, songs, sauce, and sophistication, bottled by Cecil Madden.
 8-10 p.m.—Musical Interlude.†
 8-15 p.m.—A Talk by the Chief Engineer of the British Broadcasting Corporation.*
 8-30 p.m.—The BBC Northern Ireland Orchestra; leader, Philip Whiteway; conductor, E. Godfrey Brown. Anne Duthie (Soprano).
 9-30 p.m.—A Ballad Concert. Muriel Sotham (Contralto). Frank Webster (Tenor).
 10- p.m.—The News.
 10-20 p.m.—The Hungaria Gipsy Band, conducted by Muklas Lorys. Relayed from the Hungaria Restaurant, London.
 10-30 p.m.—Close down.

TUESDAY, APRIL 7.

4-30 p.m.—Big Ben. Two Short Plays*: "Un Desespere." A comedy in one act by Gabriel Timmory. "Le Billet de Faveur." A sketch for the microphone by Lauville. Translated and adapted for broadcasting by Marianne Helweg. Production by John Pudney.
 5-5 p.m.—Sidney Torch, at the Organ of the Regal, Edmonton.
 5-25 p.m.—Talk: "Conquest of the Air"—7.* "The Major Task of our Generation," by Henri Bouché.
 5-45 p.m.—The Leicester Opera House Orchestra; conductor, Jack Robson. Relayed from the Opera House, Leicester.
 6-30 p.m.—The News.
 6-45 p.m.—The Manchester Tuesday Midday Society's Concert, relayed from the Houldsworth Hall, Manchester. Joan Davies (Pianoforte). Margaret Severn (Contralto). Dora Gilson at the Piano-forte.
 7-15 p.m.—Close down.
 7-30 p.m.—Big Ben. A Recital by Phyllis Simons (Pianoforte).
 8-0 p.m.—Talk: "Foreign Affairs," by Sir Frederick Whyte, K.C.S.I., LL.D.
 8-15 p.m.—Dance Music.
 8-30 p.m.—The Torquay Municipal Orchestra; leader, Harold F. Petts; conductor, Ernest W. Goss. Mildred Watson (Soprano). Relayed from the Pavilion, Torquay.
 10- p.m.—The News.
 10-15 p.m.—Variety†
 10-30 p.m.—Close down.

* Electrical recording.

† Gramophone records.

WEDNESDAY, APRIL 8.

- 4-30 p.m.—Big Ben. A Programme of New Gramophone Records.
 5-0 p.m.—Talk: "The Spice of Life."*
 5-20 p.m.—A Pianoforte Interlude by Ernest Lush.
 5-30 p.m.—The BBC Empire Orchestra; leader, Daniel Melsa; conductor, Eric Fogg.
 6-30 p.m.—The News.
 6-45 p.m.—The BBC Dance Orchestra,* directed by Henry Hall.
 7-15 p.m.—Close down.
 7-30 p.m.—Big Ben. The Composer at the Pianoforte—9: Frank Bridge.* A recital of Frank Bridge's songs, sung by Jan Van der Gucht (Tenor). (Accompanied by the composer.)
 7-55 p.m.—"A Countryman's Diary." A talk by A. G. Street.
 8-10 p.m.—"All Fares, Please!"* A medley of London's red buses, presented by John Pudney.
 8-40 p.m.—Musical Interlude.†
 8-45 p.m.—The Bournemouth Municipal Orchestra; leader, Bertram Lewis; conductor, Richard Austin. Solo Violin, Geza de Kresz. Relayed from the Pavilion, Bournemouth.
 10-0 p.m.—The News.
 10-15 p.m.—Jan Berenska and his Orchestra, relayed from the Pump Room, Leamington Spa.
 10-30 p.m.—Close down.

THURSDAY, APRIL 9.

- 4-30 p.m.—Big Ben. The Composer at the Pianoforte—10: Thomas F. Dunhill. A recital of Thomas Dunhill's songs, sung by Winifred Bury (Soprano). (Accompanied by the composer.)
 4-55 p.m.—A Short Prose Reading.
 5-0 p.m.—An Organ Recital by Albert Taylor, relayed from First Presbyterian Church, Rosemary Street, Belfast.
 5-35 p.m.—Talk: "Foreign Affairs,"* by Sir Frederick Whyte, K.C.S.I., LL.D.
 5-50 p.m.—"Queue for Song." An Empire Promenade, presented by Reginald Smith.
 6-30 p.m.—The News.
 6-45 p.m.—Chamber Music from the Scottish National Academy of Music. Members of the Chamber Music Class of the Scottish National Academy of Music. Relayed from the Stevenson Hall, Glasgow.
 7-15 p.m.—Close down.
 7-30 p.m.—Big Ben. The BBC Welsh Orchestra; leader, Frank Thomas; conductor, Idris Lewis. Ethel Gomer-Lewis (Soprano).
 8-30 p.m.—"Books to Read." Some suggestions for the listener's bookshelf, by Eric Gillett.
 8-45 p.m.—April Folly.* A seasonable revue presented by John Pudney.
 9-15 p.m.—The BBC Dance Orchestra,* directed by Henry Hall.
 10-0 p.m.—The News.
 10-15 p.m.—A Recital by John Wills (Pianoforte).
 10-30 p.m.—Close down.

FRIDAY, APRIL 10.

- 4-30 p.m.—Big Ben. A Short Religious Service, from the Studio.* Conducted by the Rev. Pat McCormick, D.S.O.
 4-45 p.m.—"The Messiah," Part 2.†
 5-45 p.m.—"Books to Read."* Some suggestions for the listener's Bookshelf by Eric Gillett.
 6-0 p.m.—The BBC Scottish Orchestra; leader, J. Mouland Begbie; conductor, Guy Warrack.
 6-45 p.m.—The News and Announcements.
 7-5 p.m.—A Recital by Irene Scharrer (Pianoforte).
 7-15 p.m.—Close down.
 7-30 p.m.—Big Ben. The London Symphony Orchestra, conducted by Frank Bridge.
 8-30 p.m.—"Love and Friendship."* A preposterous romance by Jane Austen, adapted by Cedric Cliffe. Produced by Pascoe Thornton.
 9-10 p.m.—Chamber Music. The Hirsch String Quartet; Leonard Hirsch (1st Violin); Reginald Stead (2nd Violin); Sydney Errington (Viola); Haydn Rogerson (Violoncello).
 9-55 p.m.—The News and Announcements.
 10-15 p.m.—A Short Religious Service,* from the Studio. Conducted by the Rev. Pat. McCormick, D.S.O.
 10-30 p.m.—Close down.

SATURDAY, APRIL 11.

- 4-30 p.m.—Big Ben. Dance Music.†
 4-45 p.m.—"Eight Bells."* A repeat performance of a popular nautical revue, by Mungo Dewar. The cast supported by the BBC Men's Chorus and the BBC Empire Orchestra; leader, Daniel Melsa; under the direction of Eric Fogg. The programme produced by William MacLurg.
 5-45 p.m.—"A Countryman's Diary."* A talk by A. G. Street.
 6-0 p.m.—Country Dances.†
 6-15 p.m.—The Children's Hour. "Out with the Romans." Children in the North have known Romans, his dog Rag, his horse Comma, and his Vardo, or caravan, for some time now, and Easter Saturday seemed a good time to invite children in other parts of the British Empire to join in a ramble through the country with Romans.
 7-0 p.m.—The News.
 7-15 p.m.—Close down.
 7-30 p.m.—Big Ben. The BBC Empire Orchestra; leader, Daniel Melsa; conductor, Eric Fogg. William Overton (Cornet).
 8-15 p.m.—Ivy Tresmand, the Musical Comedy Star.
 8-25 p.m.—Musical Interlude.†
 8-30 p.m.—Harold Ramsay, at the Organ of the Granada, Tooting.
 9-0 p.m.—Sports Talk.*
 9-15 p.m.—Musical Interlude.†
 9-20 p.m.—"Queue for Song."* An Empire promenade, presented by Reginald Smith.
 10-0 p.m.—The News.
 10-15 p.m.—Dance Music.†
 10-30 p.m.—Close down.

* Electrical recording.

† Gramophone records.

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