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MECCANO MAGAZINE

PUBLISHED IN THE INTERESTS OF
MECCANO BOYS.

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In America and Canada

By the Editor

IN company with Mr. Frank Hornby, I have just paid a visit to the United States and Canada and some of our experiences there will, I am sure, be of interest to readers of the *Meccano Magazine*.

We sailed from Liverpool on the "Baltic" on 27th May and, after a pleasant and uneventful passage, arrived at New York on 6th June, where we were met by officials of Meccano Company Inc. We found New York in the throes of an intense heat wave, which lasted during the whole of our stay there. It was just as hot at midnight as at midday and at times the heat was so great that sleep was out of the question. Light clothing, electric fans and iced drinks were the order of the day—and of the night too!

During the first week of our visit we spent most of our time at the new Meccano building in Elizabeth, New Jersey, a large and prosperous town twelve miles from New York City. Here, under the capable management of Mr. J. P. Porteous (who has had much experience in England and on the Continent), assisted by the Sales Manager, Mr. H. H. Dobson, excellent arrangements have been made for dealing with our

RADIO

IN future it is our intention to devote considerable space in the *Meccano Magazine* to Radio matters. News from all parts of the world relating to wireless will be collected and reported, and the latest developments and inventions in this new science will be featured and illustrated.

With the aid of Meccano parts any boy can now build his own Radio Set, and the *Meccano Magazine* will keep him right up to date on all Radio improvements.

The Editor

the value of the Meccano system. A duplicate of the receiving set was built for us to bring to England, and British Meccano boys are destined to find in it the most fascinating and useful model they have ever built.

On 14th June we journeyed to Toronto to see our new Canadian Headquarters that have recently been opened. We travelled by night train through Albany and Buffalo, arriving at Toronto early in the morning.

Our breakfast in the train was served by coal-black attendants dressed in pure white and was a very picturesque function. Ham and eggs, coffee and melon, and apple pie taste much better when served by these gentlemen, whose broad, friendly smiling faces radiate a comfortable atmosphere throughout the dining saloon!



A FAMOUS TRAIN ON THE CANADIAN NATIONAL GRAND TRUNK RAILWAYS.

This train, the "Continental Limited," is an all steel train and runs across the Canadian Continent. It is built throughout of steel and is here seen pulling out of Vancouver for Montreal.

MECCANO IN CANADA.

At Toronto we were met by our Canadian Manager, Mr. Wilfred Jones, who quickly put us in touch with all the Meccano doings and possibilities. In that large and important Dominion, the great trading problem is the immense distances between the important towns. From St. John's, Newfoundland, to Montreal the distance is 1,100 miles, or over 200 miles further than from Land's End to John o' Groats, the most northerly point of Scotland. If you will look at your map of Canada you will see that even 1,100 miles is only a short distance across that vast country. Further west, the distance between Montreal and Winnipeg is 1,422 miles and from Winnipeg to Vancouver 1,481 miles.



THE NEW MECCANO BUILDING AT ELIZABETH, NEW JERSEY.

rapidly increasing business in America, and we were delighted to learn of the progress that has been made in this connection.

MECCANO AND RADIO.

For some time past Mr. Hornby has been experimenting with a Meccano Radio Apparatus and under his guidance our electrical experimenters in Elizabeth had

been working on a Meccano Set suitable for receiving either telegraphic or telephonic wireless messages. Just before we arrived, this apparatus had been perfected and connected to the aerial over our building. There was great excitement, when it was found that a concert being broadcasted in New York by the Wanamaker's Stores was heard with a clearness that could only be described as wonderful.

WE LISTEN IN.

The apparatus is simplicity itself, and such is the adaptability of the Meccano parts that all the requirements of Wireless Telephony were met and the results were every whit as good as those obtained from an expensive receiving set, which had been placed beside the Meccano set for comparison. From New York came speeches, songs, instrumental music, weather reports, etc., with great clarity, and we realised that here was another amazing example of

IN AMERICA AND CANADA (cont.)

Travelling in Canada is a very costly business and takes a long time, and the cost of carriage on goods sent by rail is naturally also very high. However, Canadian boys want their Meccano just as keenly as boys in Britain, and we see that they get it.

TORONTO'S FUTURE IMPORTANCE.

Toronto itself is a fine commercial centre and it was our good fortune to have the important features of the city shown and explained to us by Mr. Slater, of the famous T. Eaton Stores. Mr. Slater is one of the shrewdest and most genial men who ever left Scotland for the good of Canada, and he placed himself and his car at our disposal the afternoon after we arrived. We were extremely interested to learn from him that in a comparatively short time it will be possible for large ocean-going vessels to sail right up the St. Lawrence River into Lake Ontario and to deliver their cargoes at the docks in Toronto. This will be made possible by the river being made navigable and the cutting of a great canal. Although this is a big project, its accomplishment will greatly enhance the importance of the city of Toronto. Mr. Slater showed us over the T. Eaton Stores and by the courtesy of Mr. J. A. Jackson we also had an opportunity of seeing over the Robert Simpson Stores and were much interested. These two Department Stores are wonderful organisations and compare most favourably with similar Stores in any other part of the world.

(To be continued.)

From the Recent Photographic Competition.



"CHUM" POSING FOR A SNAP.
Photograph by Master Arthur J. Jones,
of Maidenhead, Berks.

being paid for at the usual rates. The Editor is at all times pleased to consider interesting photographs for publication, apart from Photographic Competitions and will pay for any that are used.



"THE INCOMING TIDE."

Photograph by Master Phillip Gage, of London, N.W. 8.



Meccano Activity.

In September, springtime commences in Meccanoland, and the coming season promises to be the most active and enjoyable season in the history of this famous country. Meccano model building, Hornby and Zulu trains, Electrical experiments, Meccano Club meetings, Guild activities, £250 Best Model and other Competitions as usual—and now Radio Receiving in its most perfect and enjoyable form. Truly, Meccano boys are in for a happy time.

The "M.M." Bigger and Oftener.

The Meccano Magazine in its present form is too small to record all the news and happenings in Meccanoland, and from now on it will contain twelve pages and during the winter months will be published monthly. This will enable us to print many of the interesting and useful articles on Engineering, Electricity and Radio that we have by us. We shall also be able to include articles on many other subjects of general interest to Meccano boys, that formerly had to be omitted owing to lack of space.

Start the Season Well.

This is the time of year when boys are taking stock of their Meccano parts to see that everything is in order and ready for building. I want to remind readers that Meccano Limited will replace old or damaged parts with bright new parts, on payment of half list prices. The old parts should be returned either through a dealer or direct, accompanied by a list and a remittance to cover the cost of the new parts required.

New Competitions.

There will be many competitions for Meccano boys to enter this winter, and I believe all my readers will take the keenest interest in them. The big £250 Best Model Competition will be run as usual, and many others will be announced in the columns of the "M.M." from time to time.

The Best Rails for Hornby Trains.

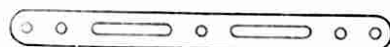
Meccano Limited is anxious that all users of Hornby Trains shall use suitable rails in order to get the best results. The Meccano rails are strong and rigid, have an increased number of sleepers and fit together perfectly, thus ensuring smooth running. A well-illustrated list of ingenious rail designs—showing how all kinds of formations may be built up with the aid of Meccano rails, points and crossings—has recently been published, and will be sent to any address on receipt of stamps value 4d. A copy of this booklet is now enclosed with each Hornby and Zulu Train Set.

The New Meccano Book.

I specially wish to draw the attention of all readers of the "M.M." to the new booklet, "Meccano Products," particulars of which are given elsewhere in these pages.

New Meccano Parts.

No.	s.	d.
1B. Perforated Strips, 7½" long, per ½ doz.	0	8
8B. Angle Girders, 7½" long	1	2
12B. Angle Brackets, 1" x ½"	each	0 1



55A. Perf. Strips, slotted, 2" long, each	0	1
69B. Grub Screws, ¾" long	per doz.	0 6



95A. Sprocket Wheels, 1½" diam.	each	0 4
96A. " " " " " "	"	0 3
120A Spring Buffers	per pair	0 8

A New Photographic Competition.



The recent Photographic Competition was so well supported that we have arranged a further Competition on similar lines with a view to encouraging Meccano boys to pursue this interesting hobby. As before, the Competition will be divided into three sections:—

- (1) ARCHITECTURAL (photographs of churches, castles, abbeys, etc.).
- (2) NATURE STUDY (photographs of birds, trees, animals, etc.).
- (3) MISCELLANEOUS (landscapes, seaside views, groups, machinery, engines, etc.).

There are no restrictions and any type of camera may be used. Prints may be of any size and finished in any way, it being immaterial whether they are mounted or not. The photographs must be taken by the competitor but the developing and printing may be done by others. The entry, however, should state whether the photograph is the competitor's sole work throughout (that is, taken, developed, and printed by him) as this will naturally be taken into consideration when making the award. The entries will be judged on their pictorial merit.

In our last Competition a large proportion of the photographs were of animals, and no more pleasing subject could be found in this connection than your pet dog. It should be pointed out, however, that family groups and portraits of the entrant's relations, whilst interesting in themselves, are not as a rule of sufficient general interest to warrant their inclusion in the pages of the "M.M." As the winning photographs will be published in these columns this point should be borne in mind.

The closing date for the United Kingdom is 1st November and for Overseas 31st December next. The first prize will be a No. 1 Hornby Clockwork Train Set and the second prize a Tin Printed Train Set. Other prizes will also be awarded according to merit.



BRIGHT IDEAS

These columns are reserved for dealing with suggestions sent in by Meccano users for new parts, new models and new ways of making Meccano model-building attractive. We are always pleased to hear from any Meccano boy who has an idea which he considers will be useful in the Meccano system.

Evan Watkin (New Cross, London, S.E.).—Pulley wheels with serrated edges were war-time expedients and were dispensed with when better materials became available. We shall be interested to hear of the advantages possessed by the combined collar and double bent strips you suggest.

A. Sarjeant (Smethwick, Birmingham).—A boat launching gear is illustrated in our No. 2 Manual, Model No. 416.

Diek Fortesque (Blackheath, S.E.).—Your suggested double bent strips have a great disadvantage in that they depart from our equidistant half-inch standard.

William Griffith (Brisbane, Queensland).—To be of general utility curved rack strips such as you suggest would have to be made in a variety of diameters. At the moment their possibilities are undeveloped, but we shall give your suggestion consideration.

William and Lloyd Oppatt (Wanbi).—A 1½" Contrate wheel geared to a ½" pinion will give you a fast drive. There would be no use for worm wheels with various pitches for the same effect may be obtained from existing parts. We do not quite follow the description of your suggested cam. Send us a sketch with full particulars.

H. Atkins (Leatherhead).—We have under consideration an alteration in the pitch of our propeller blades. Experiments in this direction with the model revolving aeroplane have been highly successful.

Ronald Selling (London, S.W.).—(1) Models of motor cars vary so much in size that it would be impossible to issue a standard bonnet. (2) Bits and drills in miniature would be very costly and would only serve an ornamental purpose.

Deconynck Andre (Lille).—We already list a triple throw eccentric. Adjustments could be made by attaching a strip coupling and using a threaded rod.

G. McKensie (Brondesbury, N.W.).—Your suggested propeller in one piece would be somewhat costly. The existing parts have the advantage of being interchangeable as well as giving a fairly good representation of an aero propeller.

Arthur Rainey (Bristol).—Perhaps at a later date we shall enlarge the variety of our types of engines. We have recently introduced various new types of trucks, including a brake van.

R. Harrison (E. Molesey).—Our long experience of models has shown that the existing spanner is quite long enough without the extension you suggest.

Ronald Walker (Golcar).—Our 2" pulley wheel is an excellent replica of a motor steering wheel.

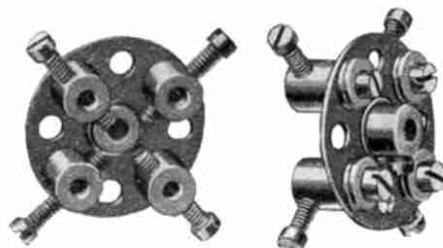
Arthur Hammonds (Totterdown).—24½" braced girders are awkward and restricted in use. Two 12½" are more convenient and can be employed in both instances. The same applies to 24½" strips.

Gerald Liardit (Manningham, Bradford).—Centre rail contact has proved to be the best method for model electric railways, both from a manufacturing and practical point of view. Regarding your suggested rack girder, would not the existing rack strip serve the same purpose? We scarcely see any advantages in the type of gear wheel you suggest.

L. R. Stockdale (Thirsk).—Instructions for building new models of a complicated nature will always be issued in leaflet form.

J. Wm. Harvey (Huddersfield).—We should like to hear what use you have found for the combined wheel and coupling.

Leonard Asquith (Leeds).—See our reply above to Ronald Selling, London, re bonnets. This applies equally to radiators.



A. M. Bentley (Leicester).—Your suggested chuck would mean the introduction of a special part. A very good chuck may be made from existing parts, as illustrated above. (2) The rack strip was introduced to fill the requirements of your suggested toothed rod. (3) Would not the face plate serve the purpose of your third suggestion?

Four Clever Meccano Boys who won Prizes in the recent £250 Competition.



Master W. A. Cullen of Baildon, Yorkshire, who won a prize of a No. 4 Meccano Outfit in Section "C" for his splendid model of a Hammer-head Crane.

We have pleasure in publishing the photographs of four Meccano boys who were successful in winning prizes in the recent £250 Model-building Competition. Every year brings an increasing number of entries from all parts of the world and the ingenuity displayed by the competitors in devising new movements and models is considerable. We feel sure that all readers of the "M.M." will join us in extending congratulations to these four boys and also to the very many other winners.



Master M. B. Kirkpatrick of Ilford who shared the second and third cash prizes in Section "C" for his model of a Loco Breakdown Crane.



Master Ennio Salvioni of Genoa, who shared the first and second cash prizes in Section "A" for his model of a Three Phase Electric Loco.



Master B. Gardarsson of Reykjavik, Iceland, who won one of the cash prizes in Section "B" and also the special prize of £5 awarded by the Meccano Guild for his model of an Electric Searchlight.

THE NEW MODEL-BUILDING COMPETITION. £250 in Cash and other Prizes.

Another Competition has now been arranged on similar lines to the Competition recently closed. There will be hundreds of prizes awarded, including nine prizes in cash to the value of £100 and Meccano Outfits to the value of not less than £150. As was the case last year, the Competition will be divided into three sections: (1) for boys under 10 years of age; (2) for boys between 10 and 14 years of age; and (3) for boys over 14 years of age. There are no restrictions and no entrance fees. Any Meccano boy may enter and full particulars and entry form will be sent on receipt of a post card. The closing date for the Competition will be the 15th April, 1923, for entries from the United Kingdom and 31st May, 1923, for entries from Overseas.

Jack Lord (Hastingsden).—Your suggested eccentric would be somewhat costly to produce. Would not our triple throw eccentric serve the purpose?

James E. Govan (Melrose).—See our reply above to Sidney Dalton re rubber rings. (2) Surely it is not necessary to use a hammer to make your rods go through your wheels. Are you quite sure you have freed the set screws properly?

C. Lysett (Milton Regis, Kent).—Bent strips are included with each Outfit and make possible the construction of the models within the scope of the outfits. Elaboration of models must, of course, be catered for by the addition of separate parts.

A. Despeyroux (Menzin).—We include a propeller blade, No. 41, in our list.

N. Forbes-Wilkinson (Claygate).—Two 1" angle brackets bolted together would give the formation you suggest.

H. Pollard (Deal, Kent).—Sorry, but we cannot follow your description of a modified bush wheel.

S. H. Chaplin (Saltley, Birmingham).—Our wheels are not designed for belt drives. We incorporated the cord

in our system as being the most convenient agent for the purpose.

Arthur Hepworth (Brighouse).—(1) We shall keep your suggestion in mind when we re-design the clock-work motor. (2) Squared rods and wheels with squared holes would have only limited uses. They would not be of general adaptability. We should be interested to hear of any uses you have found for them. (3) Slotting the bolts at the end of the shank would not be practical. You must build your models so as to make the bolt heads accessible.

Bernard Wainage (Cantley, near Doncaster).—1" gear wheels would only mesh with each other and would consequently give no ratio. Four speeds are ample for any and every use, and even vehicles of heavy haulage capacity are seldom fitted with more than three speeds. We shall be interested to see your gear box when entered for the Competition.

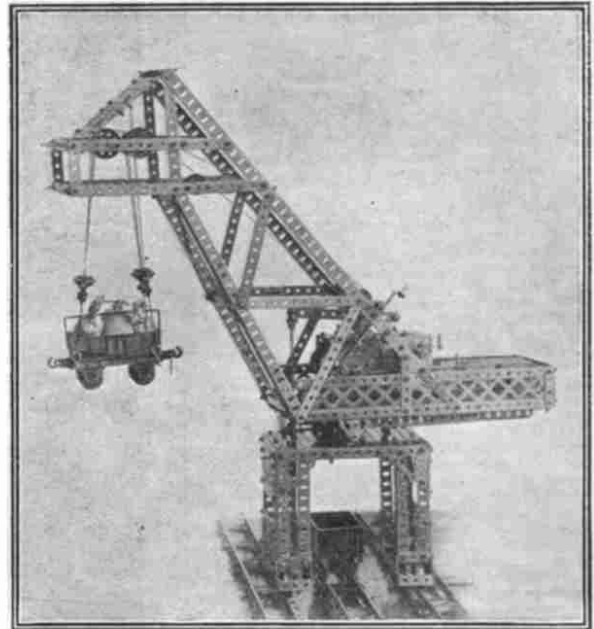
A. Sirins (Denu Lune).—Your suggestions are perfectly sound. We have had the introduction of saws, chucks, tools, etc., under consideration for some little time, and hope to include them as opportunity occurs.

Model of a Mitchell Appliance

Wins a FIRST PRIZE IN MECCANO £250 COMPETITION.



THE MITCHELL APPLIANCE AT BLACKBURN POWER STATION
EMPTYING A WAGON.



THE WINNING MODEL OF THE
MITCHELL APPLIANCE.

MASTER LESLIE HUGHES, of 80, Barnwell Road, Brixton, London, S.W.2, has built a splendid Meccano model of a Mitchell Appliance, which he entered for the recent Meccano £250 Model-building Competition. This fine model was awarded the first prize in Section B and we have pleasure in illustrating it above.

Knowing that it would be of interest to Messrs. The Mitchell Conveyor and Transporter Co., of London, the manufacturers of this wonderful appliance, we sent a photograph of the model to them. It is interesting to find that they have congratulated Master Hughes on his excellent work and as an additional appreciation they have sent him a cheque for £5. It is by the courtesy of the Mitchell Conveyor and Transporter Co. that we are able to reproduce the above illustration from a photograph of an actual Mitchell appliance.

CRANE LIFTS FULL RAILWAY WAGON.

This appliance, which handles coal in a novel method and is in use at the Electricity Works of the Blackburn Corporation, consists of an electric revolving crane that travels round the store ground. It is capable of lifting full railway wagons from any point on the track and discharging the coal for a distance of 40 ft. on either side. The coal is brought to the power station in trucks by rail and in barges by canal, and in both cases the crane performs the operation of unloading.

A large quantity of coal is required at a power station and the problem of handling all this coal cheaply and efficiently—from the time it arrives in wagons or barges until it is consumed—has an important bearing on the price charged for the current used in our homes and factories. Thus this crane has a distinct claim on the interest of every one of our readers who

uses electricity in general, and those Meccano boys living in Blackburn in particular.

The crane, which is entirely operated by one man, rises to a height of 50 ft. above the ground level and is built on an under-carriage arranged to allow wagons to pass underneath. It runs on a 12 ft. gauge track and is provided with hoisting,



MASTER LESLIE HUGHES.

travelling and slewing motion, each electrically operated by separate motors.

A superstructure is mounted on the under-carriage, supporting the operating machinery and driver's cabin, which is placed in a position to enable the operator to see the entire working of the crane.

Except for braking, slewing and travelling, no mechanical levers or brakes are used, the whole control being exercised by means of electric controllers within reach of the operator. The hoisting winch is provided with two separate motors and drums with rope attachments. These ropes are fixed to either end of a specially designed cradle on which the wagon rests. The cradle being adjusted, the motors hoist

it in a horizontal position to the required elevation, when the crane revolves until it is over the point for unloading. Here a single winch comes into motion tilting the wagon until the coal discharges through the end door. The hoisting speed with wagon is 30 ft. per minute.

When hoisted the cradle lifts the wagon by means of its axle and by an ingenious attachment the wagon is prevented from sliding off the cradle when in an inclined position.

The cradle is carried on four wheels, running on an inside track and when disengaged from the ropes it can be easily pushed under a wagon for lifting. After returning the empty truck to the track the crane continues to lower the cradle until it is again on its special track, ready for the next wagon to be hoisted.

The crane is fitted with a patent automatic weigher and totalizer capable of recording the exact weight handled at any moment. This is possible either when a wagon is weighed or when the grab is used, the only difference being that in the case of the grab the record is registered automatically, whereas when wagons are being lifted the weight is recorded by hand in the operator's cabin.

"GRABBING" COAL FROM BARGES.

Electric grabs, having a capacity of 1½ tons and a hoisting speed of 120 ft. per minute, are provided for use with this crane. These can be readily attached to the hoisting ropes after the wagon cradle is disengaged. When grabbing from the barges the crane delivers the coal direct to the receiving hopper of a skip-hoist, which elevates the coal to the bunkers of the boiler house. Thus the coal is taken from the barges to the boiler without any form of man-handling. The maximum

(Continued on page 12.)



A MESSAGE

TO MECCANO USERS

For many months past I have been giving very close attention to the subject of Radio, and I have become firmly convinced of the importance and possibilities of this new and wonderful science. I am anxious, therefore, that every Meccano boy shall have his share in the pleasure that I am convinced Radio is destined to bring to the human race.

In America and Canada there are thousands of boys who are at the present time owners of their own Radio Receiving Sets. Every day they receive not only telegraphic messages in the Morse code, but also concerts, speeches, weather reports, etc., by wireless telephony. Every Meccano boy should make it his business to acquire as much knowledge as possible of radio matters. In my opinion, the discovery and development of wireless communication has conferred as much benefit on mankind as has any invention or discovery of modern times. Not only has it established throughout the world extremely rapid and certain inter-communication over both long and short distances, but it has made cheaper quick transmission of messages. In these, and in many other ways, its commercial value is inestimable.

Wireless telephony, the most recent development of this new science, enables clear and effective conversations to be carried on over great distances. This development has undoubtedly opened up a great new industry, devoted to the dissemination of both instruction and entertainment in a new and wonderful way.

Installations have already been set up at three hundred and sixty populous centres in America. These installations, called "Broadcasting Stations," are capable of transmitting wireless telephonic messages, and each one, at certain fixed hours each day, transmits a programme previously announced in the local daily press. This entertainment consists of orchestral music, singing, lectures in botany, astronomy and other interesting subjects, market reports, fashion reports, results of sporting events, speeches or dance music. Any one located within the radius and possessing a suitable

receiving set can enjoy these programmes seated comfortably at the fire-side.

A Radio receiving set is a comparatively simple instrument and I believe I am quite right in saying that considerably more than half the sets in use in this



OUR ILLUSTRATION SHOWS ONE OF THE TWO AERIAL TOWERS OF THE MOST POWERFUL BROADCASTING STATION IN THE UNITED STATES.

Its great height of over 180 ft. may be judged by noting the two derrickjacks at the top of the tower. The station is owned by the General Electric Company of Schenectady.

country and abroad are either home-made or have been assembled and fixed up completely by the persons who are using them. It is also fortunate that whilst the theory of Radio is abstruse and requires a good deal of study, the actual receiving of messages is not much more complicated than the installing of a gramophone in the home.

The first time I heard a wireless concert was with the aid of a simple receiving set, which, with the exception of ear telephones, a small inexpensive fitting called a Crystal, some ordinary electric wire, and one or two simple electric fittings—was made entirely from Meccano parts. The extraordinary efficiency of this simple receiving set, and the intense pleasure it gave, determined me to do all in my power to make it possible for every Meccano boy to receive Radio messages, and to share in the pleasure and instruction afforded by this remarkable new science.

In Great Britain the progress of Radio has been much delayed by the absence of broadcasting stations, but the difficulties in this matter have now been overcome. Shortly there will be powerful broadcasting stations installed in the most populous centres throughout the country. When this is done a tremendous impulse will be given to Radio and it is my desire to see all Meccano boys early in the field.

An Instruction Leaflet for the building of a Meccano Crystal Receiving Set is now available and you will find particulars of this on another page. You should apply for this Radio Leaflet at once.

Our Wireless Experts are at work on Meccano Valve Receiving Sets and full particulars of these will be announced in the *Meccano Magazine* as soon as they are ready. In the meantime I would urge every Meccano boy to keep in very close touch with all that goes on in the world of Radio by following the articles that will appear in future issues of the *Meccano Magazine*.

If you experience any difficulty in understanding the subject, or in constructing your Receiving Set, you should write to our Radio Editor who will solve your difficulties and make everything clear to you.

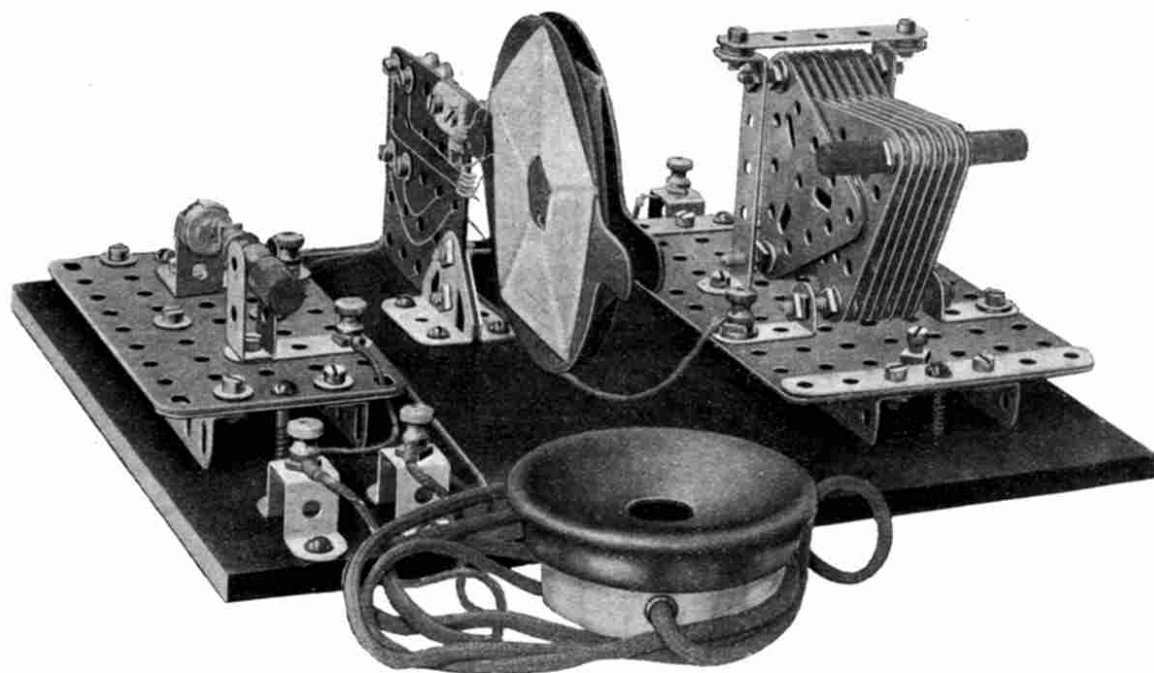
Frank Hornby

A Giant Aeroplane

A giant bombing aeroplane has been designed for the British authorities and will shortly undergo strenuous official tests.

This machine will be fitted with a 1,000 h.p. "Cub" engine, and will have two decks. The elaborate release gearing and instruments for the accurate dropping of bombs are fitted on the lower deck, whilst on the upper deck the pilot and the navigator will have their quarters.

The machine is designed to be a fighting bomber with an exceptional radius of action. Both decks are fitted with gun positions, so that the aeroplane can resist attacks from all sides.



The Meccano Crystal Radio Receiving Set.

Our illustration shows the Meccano Crystal Receiving Set and we wish to draw our readers' special attention to its great simplicity in design and manner of construction. Any intelligent boy can assemble it in one evening. It has been tested thoroughly in London, Paris and New York and in each of these cities clear telephonic and telegraphic messages have been received. In London we have listened to broadcasted concerts from Marconi House. In New York, where the opportunities for testing are much greater than in this country, it has proved to be as efficient as the more costly and elaborate instruments in use there. In Paris we have listened to concerts broadcasted from the Eiffel Tower and have heard them with great clarity.

No scientific instrument ever introduced has been subjected to more thorough tests than the Meccano Radio Receiving Set and if properly adjusted, according to the

simple instructions, it will be found to be highly efficient. It is suitable for receiving telephonic or telegraphic messages on a wave length of 360 metres. Provided that the instrument is installed within a distance of about 25 miles from any of the broadcasting stations, it will be suitable for "listening in" to the concerts, etc., that will be broadcasted in accordance with the arrangements made by the Postmaster-General with the Broadcasting Company of which Meccano Limited is a member.

Tests and experiments are being made continuously by trained Radio experts in the Meccano factories. Already several valuable discoveries have led to improved results in Radio receiving with the aid of Meccano parts. These will be fully described in future numbers of the Meccano Magazine.

We are very desirous that all Meccano boys shall be kept in close touch with the Radio movement and that they shall

participate fully in the pleasures that this great invention will bring. If you live within 25 miles of a broadcasting station the Meccano Crystal Set is the simplest and most effective apparatus with which to commence to enjoy this wonderful new science. Your first step should be to send for the Meccano Radio Instruction Leaflet. This will be forwarded post free on receipt of 3d. in stamps. If you reside more than 25 miles from a broadcasting station you will require a more powerful receiving set, and in this connection our Radio Department is now at work on a Meccano Valve Set, and full particulars will be announced in the "M.M." as soon as it is ready.

If you are in any difficulty in regard either to your apparatus or to the erection of your aerial, do not hesitate to write to the Editor, Radio Department, Meccano Magazine, Old Swan, Liverpool, who will be glad to help you.

Prices of Meccano Radio Receiving Set and Special Radio Parts.

- RS1. Meccano Crystal Receiving Set, complete. Efficiency tested. Packed in strong carton. price 55/-
- RS2. Outfit containing parts to make Meccano Crystal Receiving Set, in strong carton...price 45/-

No. Meccano Radio Parts. s. d.

401. Specially Prepared Fibre Flat Plates, $4\frac{1}{2}'' \times 2\frac{1}{2}''$... each 0 3
402. Specially Prepared Fibre Flat Plates, $2\frac{1}{2}'' \times 2\frac{1}{2}''$ 0 2

- No. s. d.
403. Specially Prepared Fibre Triangular Plates, $2\frac{1}{2}''$... each 0 1



(No. 404)



(No. 410)



(No. 411)

404. Insulating Handles ... each 0 3
405. Brass Washers, $1/32''$... doz. 0 4
406. 9" Lengths 22s Bell-wire with Tags each 0 2
407. Inductance Discs (wound to 250 metres) ... per pair 6 0



(No. 408)

- No. s. d.
408. Single Telephone Receivers each 18 6



409. Detector Arm, Complete each 1 0
410. Meccolite Crystals Mounted (Complete with Clips, No. 411) each 2 6
411. Clips for Crystals 0 3
412. Mounting Boards 5 0
- Instruction Leaflets 0 2

The Coming of Radio

The Greatest of All Inventions

ALTHOUGH RADIO may be said to be one of the most difficult and complicated of sciences, yet fortunately for the world at large, a clear understanding of its most attractive side is a comparatively simple matter. This is demonstrated by the fact that wireless messages themselves, radiated through a medium about which even our greatest scientists know but little, may be received by means of a few Meccano parts, and one or two additions. The marvels of this wonderful subject will appeal greatly to all Meccano boys, for in it there is so much to explore and so many opportunities for them to turn their inventive powers to good account.

RADIO IN THE U.S.A.

American boys have already had some experience of Radio and in many cases they use home-made instruments, some of which are extraordinarily simple. America has certainly gone "Radio mad" and from the number of sets in use, the number of broadcasting stations and the variety of the programmes sent out, we can well believe that this pastime is exceedingly popular. Radio receiving sets are as common as gramophones (which is saying a good deal, so far as American homes are concerned) and interesting Radio magazines and periodicals are very numerous and occupy prominent places on the bookshelves.

To a certain extent this popularity of Radio in America is due to there having been no restrictions upon the amateur. At one time both transmitting and receiving stations might be installed and equipped without restraint, either as to their number or the power of the apparatus used.

The absence of restrictions had its disadvantages, however, for it resulted in general confusion and a considerable amount of "jamming." This means that the receiving of a message or concert programme is interrupted by messages from

some other station or stations, with the result that the listener hears nothing but a confused babel of sounds or shrieks. This state of things is very undesirable, and measures have been taken by the United States Government to put a stop to it by limiting the number and power of amateur transmitting stations.

PROGRESS IN THIS COUNTRY.

In the United Kingdom the Postmaster-General has always exercised a very strict control over all wireless installations. From the very beginning it has been necessary for the amateur to apply for a licence to erect an aerial. He must give full particulars of the instruments he proposes to use and of his aerial, and must satisfy the Postmaster on other matters.

At present there are over 13,000 amateur receiving stations in this country. Only some 250 amateurs are allowed to send messages, however, licences for sending stations not being often granted. When they are granted they permit the use of a comparatively low power only. There are other restrictions also, all tending to keep a very close hand upon the wireless amateur, so that this great science shall not reach a state of confusion similar to that existing in the States.

THE WAR HELPED RADIO.

Notwithstanding these restrictions, amateur wireless operators in Great Britain have made considerable progress. In their technical skill they are certainly equal to, if not better than, amateur operators in any other country. They have had to make the best of things under the existing conditions, and this has inspired a considerable amount of ingenuity in their treatment of the problems that have been presented, and, incidentally, has led to several interesting inventions.

Amateur wireless installations are not by

any means new in this country. There were indeed many well-equipped stations in operation long before the War.

It is largely due to the inventions and to the great advances made in Radio during war-time, that the present interest has arisen in the subject. The invention of a particularly useful article called the "valve" is largely responsible for making possible wireless telephony.

Although valves were used by the French during the War, it is only during the last year or two that the invention has been successfully applied commercially. It has made possible the broadcasting of music and speech of such a nature as will appeal to every one, and to Meccano boys in particular.

THE FUTURE OF RADIO.

At present Radio is developing very rapidly in this country. Our Government, in consultation with several of the leading Radio firms, has been giving close attention to the possibilities of broadcasting. It has been decided that broadcasting stations shall be established in certain towns, in different parts of the country. At present these stations are being equipped with the necessary instruments and experiments are being made in transmitting music and concert programmes.

Those scientists interested in this side of the subject realise that they have a great deal to learn in connection with Radio and as soon as they feel sure that they have mastered the first difficulties, we may be certain that broadcasting will commence in real earnest in this country.

When this takes place, Meccano boys throughout the land will be able to receive every day concerts and music, speeches, lectures, and stories. The main thing to remember at the present time is that this great science is in its infancy and can only be developed by degrees. New ideas are brought out almost every day, and it is impossible to state what to-morrow will bring.



Arthur T. Smith (Purley).—I am very pleased to see that you are interested in Radio and elsewhere in these pages you will find full particulars in answer to your enquiry. I note that you "think Meccano can play a good part in Wireless."—You are quite correct, Arthur, and there is a wonderful opportunity for enjoyment ahead for Meccano boys.

H. J. Rowlands (Penygroes) writes: "I am very keen to know and to gain what knowledge I can about Wireless telegraphy. I am sure you will be interested to know that my home is only about four miles from

Britain's greatest Wireless Station."—Although you are so near to this great station at Carnarvon you will have difficulty in receiving their signals, as this is one of the highest-powered stations in the country. It is used for communicating with Australia and usually works on a wave-length of 32,000 metres, whereas broadcasting will not exceed 500 metres. Quite a different apparatus is required to receive either of these wave-lengths.

J. A. C. Shaw (Manchester).—Full particulars of the Meccano Radio Set are given elsewhere in these pages, together with the cost. You are fortunate in being situated in one of the cities from which broadcasting will take place and you will be able to receive the concerts and lectures with a Meccano Crystal Set.

R. R. Gray (Rotherham).—I congratulate you on your enterprise in wishing to have "the first large Outfit in your district" and note that you intend to instal a valve receiving set in your spare time. We hope to publish particulars of a Meccano Valve Set at an early date.

E. Sole (East Ham, London, E.6).—Else-

where in these pages you will see that a very fine Radio Set can be made from Meccano parts. Living in London you should be able to receive not only the concerts broadcasted from Marconi House, but also many other telephonic messages. For instance, the Croydon air station speaking to the pilots on the cross-Channel service and amateur stations transmitting telephony. We hope to hear from you further when you have built your set.

Oswald M. Yeomans (Redditch).—Full particulars of a Wireless Set built with Meccano parts are given in this issue. The Meccano Set is the finest crystal set on the market and gives most wonderful results.

R. Arnaud (Abbeville, Somme).—"I have recently installed in my house a Wireless Receiving Station and in this Meccano was of great help to me. I was able to utilise a great number of the parts."—We are pleased to hear this further instance of the adaptability of the Meccano parts, Robert, and you will be interested to see the Radio announcements in this connection in these pages.



A radio receiving set has recently been installed at Buckingham Palace. This must surely be a sign that the King himself is showing a keen interest in Radio.

Mr. Marconi recently expressed the opinion that "there is nothing in the world that can rob Radio of its popularity with the people. It is here to stay."

Some idea of the extent of the apparatus required for long-distance transmission is obtained from the fact that the proposed station at Bourne, in Lincolnshire, to communicate direct with Australia will have aerials a mile in length and half-a-mile in breadth!

The Bourne Station will be the largest in this country and will be capable of transmitting for reception to places as far distant as Poona (India), Johannesburg (South Africa) and Perth (Australia).

Direct communication was established recently between a new wireless station at St. Assise, France, and New York, when the President of France sent the first message to President Harding. This new station is the most powerful in the world and is capable of sending six messages simultaneously.

Messages from St. Assise may be sent at the rate of 100 words a minute. This is an extraordinary achievement, for when six messages are being despatched at this speed the station speaks to different parts of the world at the rate of 36,000 words per hour.

The valve, or vacuum tube that has made wireless telephony commercially possible is the outcome of the work of several scientists. It may be called the modern Aladdin's Lamp. We hope shortly to publish an article in which its action is fully explained.

Radio has been responsible for saving thousands of lives. It is specially valuable in the case of fire on board ship, and over 700 persons were rescued from the "Titanic" in response to the sinking vessel's wireless calls for help. Had wireless not been discovered it is improbable that these passengers would have been saved.

Another well-known instance is that of the "Vultur" on board which fire broke out in mid-Atlantic. A wireless call for help was sent out and no fewer than eleven vessels responded. They raced up under full steam from a radius of 200 miles and were the means of saving 521 persons from being burned to death.

One of the latest inventions in connection with Radio is the sending of photographs without wires. This is a remarkable process possessing great possibilities. Another invention upon which several scientists are at work is wireless tele-vision, or seeing without wires. There

is little reason to doubt that the day is not far distant when this suggestion will become practicable.

The great wireless station at Clifden, in Ireland, was recently burned down by the Irregular troops. The receiver and other parts were completely destroyed and the damage is estimated at about £70,000. The vast number of messages that this station transmitted every day to America are now being sent from Onga.

As all readers of the "M.M." know, Radio is extensively used for sending messages from ships at sea in the form of wireless telegrams. During last year some 45,000 of such messages were sent by White Star liners alone. Even greater use is being made of this means of communication during the present year, for during the first six months over 39,000 messages were sent from White Star liners.

An old umbrella frame, stripped of its cover, is being used as an aerial for his portable wireless set by an enterprising Radio enthusiast.

During the last two or three months some 5,000 amateurs have been granted licenses for receiving sets. The number in use in this country is now over 13,000.

Radio Instruction Leaflet.

Every Meccano boy should possess a copy of the new Radio Instruction Leaflet which gives full instructions for the construction of the Meccano Crystal Receiving Set. It also contains a list of the new Meccano Radio parts used in this connection.

The Leaflet, which is beautifully illustrated, is now in the printers' hands and supplies will be available within the next few days. The price is 3d. post free. Orders will be executed as soon as the leaflet is ready and you are advised to order your copy immediately.

Meccano and Wireless.

SOME USES FOR MECCANO PARTS.

We recently received an interesting letter from Miss Winifred Iles, Kingswood, near Bristol, who writes:—

"I am delighted to see that Meccano is to be used for making wireless apparatus. I venture to describe half-a-dozen ways in which I have seen Meccano parts used with excellent effect in wireless receiving sets.

"(1) In the making of one's own condensers Meccano parts are invaluable. The plates of the condenser may be mounted on a short Meccano rod and thereby rotated. They may be spaced by Meccano washers. The capacity of the condenser may be varied by the turning of a knob at the top, made of a Meccano 1" pulley wheel. If you wish to effect very fine tuning, and to avoid the proximity of the hand, an 8" rod, fixed by a coupling at right angles to the short rod on which the plates are rotated, is just the thing that is required to vary the

(Continued in next column.)

Broadcasting News

Concerts are broadcasted at the present time from the Hague in Holland on Sunday and Thursday evenings from 8 to 9 p.m. The wave length used is 1085 meters, the call letters being P C G G. The power is being considerably increased and a new aerial devised. Owing to the distance these concerts can, of course, only be heard on valve sets.

Those Meccano boys who live in London and own a Meccano Crystal Set will have no difficulty in receiving the concerts broadcasted between 5 and 7.30 p.m. from Marconi House on a wave length of 360 meters. It should be noted that these concerts are not sent out every day, but it is worth listening in on the chance that some music may be heard about the time mentioned. The call letters of Marconi House are 2 L O.

Concerts are also sent out from Writtle (Chelmsford) at 8 p.m. on Tuesdays on a wave length of 400 metres. The call letters are 2 M T.

The organisation of the Broadcasting Company, which is being formed for transmission of concerts from several large towns in England, is being pushed forward as rapidly as possible. There are many difficulties in the way and special apparatus has to be installed, all of which takes time. Although everything possible is being done to expedite matters it will be some weeks yet before broadcasting takes place from the selected centres.

Radio enthusiasts in Liverpool and district often hear the Mersey Docks and Harbour Board Offices speaking to the lightship at the Mersey Bar on a wave length of 450 metres. The telephony is generally exceedingly clear and it is most interesting to hear the report of the watchers on the lightship as to the state of the weather in the channel, and other similar details.

capacity of the condenser. By this you will see that about the only parts of a condenser any one can make, that are not made of Meccano, are the plates."

"(2) I have made a capital little tapping-key from a single seven-hole strip, bent so that it will spring back if pressed down. I know that more elaborate keys may be made, as for example Model No. 75 in the Book of Instructions.

"(3) Meccano nuts and bolts are useful for a variety of purposes, among which may be mentioned their utility as studs on a variable inductance, where a moveable switch-arm has to sweep round and establish contact with a certain part of the coil within the box. A perforated strip may be used as the switch-arm.

"(4) The rack strip, together with a pinion wheel, is very useful where it is desired to vary the degree of coupling between two coils. The rack strip is fixed along one side of the coil, and a rod on which a pinion wheel is rotated fixed at right angles to it. If the rod is then turned, the pinion wheel will engage with the rack strip, and will move the coil backwards and forwards, nearer or further away from the fixed coil, as is desired.

"I know that the ideas I have set down here are not a scrap original. I can only hope that they will be of some small use to you."

*Excellent Condenser Plates may be made with No. 76 21" Triangular Plates.—Ed.



THE SECRETARY'S NOTES.

The Past Session.

It has been very gratifying to me to see the increasing enthusiasm of Meccano Clubs in general and to note the extension of their activities. This last Summer Session has been most enjoyable, the members having followed out-door pursuits with their usual spirit. Among Meccano Guild members are found the healthiest and happiest boys in the world, who greatly enjoy camping out, cycling, rowing, cricket and tennis.

The Autumn Session.

At the present time great preparations are being made for the Autumn Session. I have been in touch with Club Leaders and know that interesting programmes are now being drawn up, and that by the end of the month the Autumn Session will be in full swing. Any Meccano boy living in the vicinity of a Meccano Club should at once communicate with the Club Leader or Secretary, so that he may share in the fun and look forward to Club night as the happiest night in the week.

The Recruiting Campaign.

In connection with the Recruiting Campaign, which will be continued during the coming winter, a Medallion is awarded to those members who enrol three new members in the Guild. I would mention that this Campaign is open to every Guild member whether or not he is a Club member. Six additional recruits, making nine in all, entitles the member to have his Medallion engraved with his name and the words "Special Award."

Lost Guild Badges.

I have received quite a number of letters from Meccano boys reporting that they have lost their Guild badges. For their information, I would say that new badges may be obtained on payment of 7d. Should the enamel of a badge become chipped or worn, or the badge broken, a new badge will be forwarded on receipt of a remittance of a similar amount. A lost Recruiting Medallion cannot be replaced, but a new one will be supplied on three additional recruits being enrolled.

Meccano Lectures.

At the moment the Lectures available for use in connection with Meccano Clubs are "Lives of Inventors" and "The Story of Our Ships." The former Lecture has been revised and I

am sure that both will prove immensely interesting to Club members. Copies will be forwarded on loan to Club Leaders on request. The play "Nonsense Nana" will also be available again this year, for those Clubs who intend giving a concert or similar performance.

Club Membership Cards.

The printing of the new Club Membership Card is now in hand. Club Leaders should advise me as soon as possible how many they will require, so that supplies may be forwarded immediately they are received from the printers. As was the case last year, these cards are supplied free to affiliated Clubs, and I feel sure that they will prove as popular as ever.

Holiday Essay Competition.

I hope that all Guild members who were able to do so have taken part in the "Holiday Essay Competition," for I think that this is one of the most interesting Competitions that has yet been arranged. I am sure that all who have been away this year must have interesting holiday snapshots, and Guild members have proved in the past that they can draw "word pictures" with their pens as successfully as they can take photographs with their cameras.

U.S.A. Boys Request.

Several Meccano boys living in the United States wish to correspond with English Meccano boys. Any Guild member who desires to respond should write to me for further particulars.

Special Merit Medallions.

The award of several Special Merit Medallions was announced in recent issues of the "M.M." and I am able to publish further photographs of successful Guild Members.



The Medallions, which are here illustrated, are very beautiful in both design and finish and have been produced specially for us by a well-known firm. On each Medallion is engraved the name of the recipient.



Master G. H. A. Murray of the Jarrow-on-Tyne Meccano Club is an energetic Guild worker and has been presented with the Special Merit Medallion for a fine astronomical lecture he delivered to the Club on "The Planets."



Master Greenway, of the "Stanley Road M.C." Worcester, who has been awarded his S.M. Medallion for good work on the recommendation of his Club Leader.



Master H. G. van der Sluis, of Den Haag, Holland, who won his Special Merit Medallion for his excellent work in connection with the Weltevreden Meccano Club in the Dutch West Indies. Master van der Sluis was an enthusiastic member of this Club up to the time of his return to Holland recently, and he is now contemplating the formation of a Meccano Club in Den Haag. He is a very enthusiastic Guild member and it is a pleasure to receive from him long and interesting letters in very excellent English. We wish him every success in his new sphere and hope soon to announce that The Hague Meccano Club has commenced activities.

A Happy Guild Member.



Master Pierre de Wet, a happy-looking Guild Member who has done excellent work in connection with the Meccano Guild in Pretoria, S. Africa. He has won a Recruiting Medallion and, as will be seen from the photograph, Master de Wet is also an enthusiastic Boy Scout.



CLUB NOTES

Cobham M.C.—Recently held a very successful Exhibition in connection with the local Flower Show. There were two Sections, the First Prize in Section 1 being won by Master S. Impey (Motor Char-a-banc) and the Second by Master O. Osborne (Delivery Van), while in Section 2 Master C. Redfern (Biplane) took the First Prize and Master C. Cornell (Triplane) won the Second Prize. The Club start the Autumn Session with a credit balance in hand and a very enjoyable time is anticipated. **Secretary:** Master Wm. Phillips, The Fox & Hounds, Cobham, Surrey.

Malvern (S. Africa) M.C.—The last Session included Lectures on "Metallurgy," "Films" and "Submarines." A picnic and a Sale of Work were both successful, over £28 being realised, of which £17 was sent to a local home, £2 to the Sunday School and the balance added to the Club funds. The Secretary will be pleased to welcome new members. **Secretary:** Master C. Gunnell, 177 St. Frusquin Street, Malvern, Transvaal, South Africa.

Bute (Australia) M.C.—This overseas Club continues to make good progress, despite the fact that as yet the membership is but small. With the Club funds spare parts are purchased for the general use of Club members. In a recent competition Master H. Ellery was successful in winning the first prize. Mr. G. W. Kendrew has kindly undertaken the leadership of this Club, the previous Leader having left the district. The Club is endeavouring to organise a concert. **Secretary:** Master F. K. Barnes, Bute, S. Australia.

West View (Nottingham) M.C.—Club work has been carried on during the greater portion of the Summer and interesting Lectures given by the Club Leader on "Balloons and Aeroplanes" and "Electric Motors." An illustrated Lecture on "How to make a Wireless Set" was also given and a Competition arranged for the construction of a wireless set. In addition to the ordinary Club work, cricket and other outings have been enjoyed. **Secretary:** Mr. H. Cousins, 494, Mansfield Road, Sherwood, Nottingham.

Mihl Creek (Australia) M.C.—This Club, organised at a remote sheep station in New South Wales, has held a very successful Exhibition at which a number of interesting models were exhibited. These included a Mountain Railway, a Railway Station, an Oscillating Steam Engine, a Rotating Crane and an Overhead Bridge. The Club Leader writes: "I wish you could see the smiling faces of the younger members after they have completed building their models, or the agonised faces of the older ones when they try their skill at some engineering structure and fail to use their heads sufficiently to make a real engineering model!" The progress of the Club since its inception has been all that could be desired and the interest displayed by its members amply repays the work entailed in its formation. **Secretary:** Master H. W. Cordingley, Mihl Creek, New South Wales, Australia.

Lizard High School M.C.—The Summer Session has been very successful, the members being keen and enthusiastic. Programme has included ten-minute lectures on "Swimming," "Lighthouses," "Gibraltar Rock," etc. Some enjoyable picnics have been organised, including excursions to Electricity and Printing Works, etc. A very successful exhibition and concert was held some time ago, the members acting with great success the Meccano play "Nonsense Nana." **Secretary:** Master B. Warburton, 11, Brisbane Avenue, New Brighton.

Willaston School M.C.—Master A. V. Bass, Willaston School, Nantwich, has now been elected Secretary of the "Willaston School Meccano Club." It has been decided to hold an exhibition at the close of the present session. Some of the models to be exhibited are High-speed Ship Coaler, Pullman Car, Dredger, etc. The present session has proved highly successful.

Dudley M.C.—New members are joining every week; and in addition to the Club work, Saturday rambles and cricket matches have been an important item during the Summer months. An interesting Yacht Race has been arranged in which the Club is divided into patrols, each entering a certain number of yachts. **Secretary:** Master F. W. Whitehouse, 16 New Rawley Road, Dudley.

Club Recently Affiliated.

Kilmarnock Academy M.C.—Established under the leadership of Miss J. Maxwell, this Club has recently become affiliated with the Guild and there is every prospect for its future. The members are all keen and enthusiastic and already considerable progress has been made. **Secretary:** Master R. McCluney, 19, Irvine Road, Kilmarnock.

Clubs Not Yet Affiliated.

Devonport M.C.—A Meccano Club is being established by Master Charles Springay, 1, St. Aubyn's Avenue, Keyham, Devonport, with whom any Meccano boy wishing to join should communicate.

Calcutta M.C.—This Club, although only recently commenced, has already made rapid progress, and it is hoped will become affiliated with the Guild very soon. The members are very keen and a successful Session is anticipated. **Secretary:** Master A. N. Chowdhury, 35/2 Beadon St., Calcutta, India.

An Interesting Display by the "Thornton Heath Meccano Club."

Under the direction of Mr. F. Bolt, the Leader of the "Thornton Heath Meccano Club," a very enjoyable Fete was held recently in connection with the Thornton Heath School. Despite the fact that throughout the entire function the Clerk of the Weather was not favourably disposed, the display was a great success. Parents and friends of the members attended in large numbers and, protected by mackintoshes, turned up their collars and made the best of the bad weather.

The grand parade first attracted the attention of the visitors. Led by the 29th Beckenham Division of Scouts, the procession was very imposing. The boys wore costumes representative of many different characters including Charlie Chaplin, Chinese Mandarins, "Old Bill," Indian Prince, Red Indians, Spanish Pirate and "Flappers."

The parade was followed by a polo match, one boy acting as the pony with the rider on his back, and no little amusement was occasioned while the goals were being scored. This was followed by a football match in sacks, after which a spectacular show was successfully given by the 29th Beckenham Scouts. Under the direction of a Scoutmaster a camp was pitched, fires lighted and a meal cooked, while the first aid section rendered help to a cyclist who had opportunely come to grief.



Members of the "Thornton Heath Meccano Club" dressed as "Flappers," etc., at a recent Sale of Work where they organised a very successful stall.

Unfortunately, owing to the weather, the remainder of the programme had to be abandoned, and after refreshments the class-rooms were visited, the visitors viewing with interest the various Meccano models that were on show.

A humorous exhibition of pictures was greatly enjoyed, the visitors finding considerable amusement in such items as "The Three Stars" (an empty bottle of a well-known brandy), "Scientific Subjects" (illustrated by displaying such papers as the "Magnet" and "Rainbow") and a solitary line to represent "An Unfinished Picture of Lloyd George."

The Inter-Club Model Competition.

AN APPRECIATIVE LETTER.

The result of the Inter-Club model-building competition was announced in our last issue, and I print below an interesting letter, received from the enthusiastic Leader of the New Malden Meccano Club. This Club shared the combined first and second prizes with the Norwich Enterprise and the Kilmarnock Clubs.

NEW MALDEN.

Dear Secretary,
The cheque for £2 13s. 4d. was received safely this morning, and on behalf of the members of the New Malden Meccano Club, I extend our thanks. The whole school went nearly mad with joy this morning after receiving the news, and it has been an exceedingly happy day for all.

It was with great pleasure that I received the news, for it appears to me a return of thanks from my boys. I do my best for them, and they know that in turn I expect the best work from them. The result convinces me of their loyalty to master and to work.

I am hoping to take the boys to Portsmouth Harbour and Dockyard shortly, for when in the Navy I saw plenty of interesting material for Meccano boys to study.

With best wishes,
Yours very sincerely,

V. HAMMOND,
Leader.

S.M. Medallions for Best Papers.

I am particularly desirous of encouraging members to read instructive papers on subjects that interest them. It is excellent training for boys to stand up before their friends and to address them in this way. A popular and instructive discourse should be aimed at, to last from a quarter to half an hour. A discussion may follow, the other members adding some interesting facts to those dealt with by the member who reads the paper.

In order to offer encouragement I am this session again allotting a Special Medallion

to each Club, to be given to the member who delivers the best paper. After the papers have been read at the Club meetings they must be sent to me (with any comments by the Secretary or Leader) at the end of each session. I trust that all Club Leaders will help me to make this valuable part of the Meccano Club work a great success.

How Each Member May Help.

Enthusiastic members may do a good turn to the Guild movement by recruiting new members, and I want all Meccano boys to understand the objects of the Guild. Once they realise for what the Meccano Guild stands they will join its ranks enthusiastically and without hesitation.

There are many thousands of Meccano boys in this country who, strange to say, have never yet heard either of the Meccano Guild nor the Meccano Magazine! This scarcely seems possible, so widely do we endeavour to make both known, yet the numerous enquiries I receive every day show this to be the case. I want all to help me to spread the knowledge of the Guild far and wide.



THE RECRUITING MEDALLION.

Every member should endeavour to enrol at least three new members. To each member who obtains three new recruits for the Guild a handsome medallion will be awarded. This Medallion (which is here illustrated, actual size) is one of why any boy may well be proud.

A SPECIAL AWARD.

To those who already possess the medallion I am offering a further mark of favour. When they have recruited six more members for the Guild, in addition to the three recruited for the medallions—making nine in all—I arrange to have their names engraved on their medallions, together with the words "Special Merit." Any member who wishes to take advantage of this offer, and who has qualified to do so, should forward to this office full particulars of the six additional members recruited, together with his medallions so that they may be engraved.

OUR MAIL BAG



In this column the Editor replies to letters from his readers, from whom he is always pleased to hear. He receives hundreds of letters each day, and only those that deal with matters of general interest can be dealt with here.

Correspondents will help the Editor if they will write neatly in ink and on one side of the paper only.

J. Whittaker (Colne).—Binns Road is famous for many things, but we have not so far found any bird's nests in it, so you will understand why we are not able to send you any bird's eggs for your collection. We hope yourself and your chums enjoyed the Magazines which we sent to you.

F. A. Inskip (Bedford).—Your suggestion for a new Competition is quite good and we may adopt it later. We are able now to increase the size of the "M.M." and to issue it more frequently, and this, we hope, will cause your anger against us to abate!

Chas. Morley (Barnet).—Thanks for photograph of your pet cow. He looks well fed and full of go, and does credit to your bringing up.

L. D. Lonsdale (St. Annes).—We are gratified to know that Meccano has helped you in your work, and that you consider it one of your greatest treasures. We wish you continued prosperity, and we hope you will write us occasionally.

R. T. Hopford (Melsungen, Germany).—We are interested to hear of the sport you and your sister have with your Meccano models. If you will write to us, describing your ocean game a little more fully, we will try to publish it in the "M.M." for the benefit of Meccano users.

D. Mortimer (Bradford).—Your Meccano model workshop is evidently an elaborate affair and we shall be very pleased to receive a photo of it. We hope you will continue to "dream sweet dreams of Meccanoland."

W. W. Crosswell (Wakefield).—We note your suggestion for a Stamp Collectors' column in the "M.M." but we have so much Meccano and Radio news to report that we fear there is no room for this at present. We may adopt your suggestion later.

G. Corby (Cheadle).—We are glad your prize has given you such pleasure. We shall probably need extra space to publish all the Meccano news at Christmas so there may be a double number.

R. Hillair (Southampton).—To own a line of steamships is a great ambition and we hope you will some day succeed. There is some hard work in front of you, but it can be done. Anyhow you have made a line of Meccano models, and that is a good start. You have our best wishes, Ronald.

W. L. Curtis (Launceston, Tasmania).—We congratulate you on winning first prize two years in succession with your Meccano models. Your type C3 Moulder appears to be well constructed. The building of your yacht is also a clever achievement. Thanks for photos.

R. Shillito (Wombwell).—It was an excellent idea to visit another prize-winner in your district, and to compare models with him, and we are glad to know that Master Round received you so well. Every day that goes by sees new friendships formed by Meccano boys of the right sturdy type.

M. Page (New Southgate).—We are indeed sorry to know that Eric is in such a precarious state of health, and we trust that the measures which you are taking will result in a great improvement. We are glad to hear that the prize awarded to him in our £250 Competition gave him such pleasure and that Meccano is such a solace to him.

J. E. Ethall (Carnarvon).—Thanks for your excellent photo of Carnarvon Castle, which we may use. We congratulate you on your School successes.

D. Theron (Wellington, Cape Colony).—We note that all your play hours are occupied with Meccano and that you have just made the discovery that it is your best friend. We have sent you a copy of "Dick's Visit to Meccanoland," which we know you will enjoy. Thanks for your suggestion that we issue writing pads with a Meccano badge printed on it, which we may adopt a little later.

A. Ward (Bournemouth).—It calls for real courage to acknowledge a fault and express regret for it, and your letter gave us pleasure. When you get well again you must help your Club in every way in your power. We hope you will write us occasionally.

G. Allen (Wisbech).—By all means send an account of your hay-making experiences, and if it is really interesting we will try to print it in the "M.M." A monthly photographic competition during the Summer might appeal to many of our readers and we will think the matter over.

I. M. H. Etherington (Thorpe Bay).—
"Ah! strong is the bond which links up each boy,
Who plays with Meccano—his teacher—his toy,
For high is his aim, and broad is his view,
Each link in the chain of Meccano rings true."
Your other verses are perfectly true, Ivor, but as you suggest, they might be considered jibellous.

C. Martin (Beningbrough).—We appreciate your high praise of the "M.M." but we fear we do not understand the riddle you have sent to us. We are glad you are experiencing so much pleasure through our Correspondence Club.

E. C. Smith (Dulbydilla).—You live a long way from everything and everybody, Eric, and it pleases us to know that Meccano and the Guild make you feel that you are in close touch with British boys and less lonely. We like to read your newsy letters.

Eric Reynolds (Wairoa, N.Z.).—
"Of all the lands throughout the world
New Zealand is the best.
And of all the toys that have reached this shore
Meccano has stood the test."
Very creditable statements, Eric, indicating your personal character in a nutshell—patriotic, happy and contented.

G. Campbell (Buenos Aires).—Your verse expresses excellent sentiments but it does not rhyme too well. Try again. Go ahead with your Club by all means, and let us know how you progress, and how we can help you.

J. A. Cowell (Surbiton).—When you get a Meccano Outfit you also get a big number of friends in the Meccano Company who are always glad to help you in all sorts of ways. You have not only expressed this very nicely, James, but you have also hit on a profound truth.

J. C. Clark (Guston).—No, John, we do not own the Great Western Railway Company and we do not know how any such rumour could have started. Thanks for your holiday wishes and for your promise to send us a copy of the "Chronicle."

J. Candler (Tulose Hill).—We are very glad to know you are getting a little better. With Peter and Tim in attendance and your No. 5 Outfit by your side your convalescence should be pleasant and rapid. We hope you will write to us as often as you feel strong enough to do so.

Mary de Bousen (Taplow).—To reply to such pleasing letters as yours is anything but "a bother." Your description of the Old Corner Cottage makes us sigh for breezes from the sea. We have noted your change of address.

H. J. Ryan (Portsmouth).—Many thanks for your article on the Forth Bridge which we shall read with interest. We may be able to use it later.

T. G. Ellaby (Bath).—You are evidently as fanciful and full of imagination as your famous grandfather. We will endeavour to put you into correspondence with a Meccano boy on your favourite island. We wish you better luck in the new £250 Competition.

New Meccano Manuals. REVISED OUTFITS. MORE MODELS.



For a considerable time past Mr. Hornby has been engaged on a revision of all the models that appear in the Meccano 0-3 Manual and this has necessitated the reconstruction of all the Outfits. All Meccano Outfits now contain a selection of the new parts that have been added to the Meccano system from time to time, thus bringing within their range many fine new models. The Manuals have also been reprinted and illustrated by an entirely new process, making the detail of each model clear.

In future there will be three Manuals, the 0 Manual for simple models built with the 0 Outfit, the 0-3 Manual comprising models built with any of the Outfits from 0-3 and the Complete Manual, which comprises a selection of models that may be built with every Outfit from 0-7. This latter Manual is a very fine publication and should be in the hands of every Meccano boy. It includes instructions for building most of the models shown in the present No. 3 Manual.

A limited supply of the No. 3 Manual is still available and those boys who have not yet purchased their copies should do so without delay.

PRICES OF MANUALS:		s. d.
0 Manual	... post free ...	0 6
0-3	1 2
Complete Manual	2 10
No. 3 Manual	1 4½

An Amateur Editor who Publishes, Edits and Prints The Meccano Engineer.

We are pleased to be able to publish a photograph of Master Hubert H. Lansley, of 26, Thornton Road, Barnet, editor and publisher of *The Meccano Engineer*.

This bright little paper is beautifully produced, and every page is well thought out. One of its most original features is a free insurance scheme, by which registered readers are indemnified against breakage of any Meccano parts. *The Meccano Engineer* guarantees to renew all broken or damaged parts free of charge. Hubert tells us that he will be pleased to send a copy of his paper to any Meccano boy on receiving an order. The price is 1½d. post free, and it is issued bi-monthly during the summer season, and monthly during the winter. Hubert is a keen member of the Meccano



MASTER HUBERT H. LANSLEY.

Guild and has been a Meccano enthusiast for over nine years, having been presented with a No. 1 Outfit on his fifth birthday, and being now the lucky possessor of "more than a No. 6." He writes: "During those nine years I have never tired of this great hobby. So far, I have made every model I have set my mind on, from the Loom downwards. In my opinion, this latter model is the crowning triumph in Meccano's long list of successes. I am firmly convinced that there is no limit to the possibilities of this wonderful, educational toy."

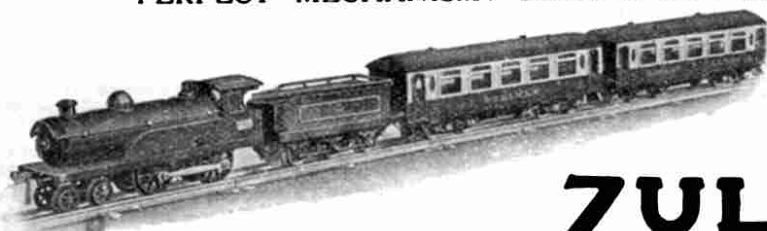
We congratulate you, Hubert, on the well-balanced appearance and the continued excellence of your little magazine, and we hope the day will soon come when we shall see *The Meccano Engineer* in print.

HORNBY CLOCK WORK TRAINS

A MOST valuable and remarkable feature of the Hornby Train is that it can be taken to pieces and rebuilt just as may a Meccano model. All the parts are standardised and there is as much fun taking Loco, Tender, Coaches and Wagons to pieces and rebuilding them as there is in playing with them. Any lost or damaged parts may be replaced with new ones.

The clockwork is a splendid piece of mechanism with accurately-cut gears, ensuring smooth running, and the workmanship and finish are of the highest quality. The Loco is fitted with reversing-gear, brake and governor.

PERFECT MECHANISM: BEAUTIFUL FINISH: STANDARDISED PARTS



HORNBY CLOCKWORK TRAIN PRICES.

No. 1. SET.		No. 2. SET.	
Passenger Sets	each 35/-	Fullman Sets	each 70/-
Goods " "	25/6	Goods " "	45/-
Locos " "	16/-	Locos " "	30/-
Tenders " "	3/6	Tenders " "	4/-
Passenger Coaches	6/6	Pullman Cars	16/-
Wagons	3/9	Wagons	3/9

ZULU CLOCK WORK TRAINS

Guarantee.

Hornby and Zulu trains are tested and their efficiency is guaranteed. A form of guarantee is furnished with each loco and we undertake to repair or replace, at our option, any loco that fails to run satisfactorily from any cause other than misuse, within 60 days of purchase.

THE Zulu Clockwork Train is a new and cheaper type of mechanical train, the chief characteristics of which are fine and durable mechanism and immense strength of construction in all parts. The Zulu Loco is well designed and efficient, and will give long and excellent service. Richly enamelled and highly finished, fitted with brake and governor, non-reversing.

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Passenger Sets	each 25/-
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Locos	10/6
Passenger Coaches	5/-
Tenders	2/6
Wagons	3/-



ZULU TANK LOCO

A STRONG and durable Loco capable of any amount of hard work; richly enamelled and highly finished; fitted with reversing gear, brake and governor. Gauge O, in black only. 12/6.

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Magazine Binder.



In response to numerous requests we have introduced a spring-back binder for Meccano Magazines. The binder has a strong stiff back, covered with imitation leather, tastefully tooled. It takes a large number of copies and keeps them neat and clean. In black, lettered gold. Price 3/- each, post free.

Change of Address.

Subscribers should immediately notify the Editor of any change of address. Send a Postcard giving the old and new address, so that records may be kept up to date.

MITCHELL APPLIANCE (continued from p. 4.)

load of which the crane is capable is 20 tons. The hoisting drums are driven by means of a train of suitably designed machine-cut gearing. A brake operated by solenoid holds the load in any position, when the current is cut off from the motor. Slewing motors, with a speed of 1½ revs. per minute, are fitted with a slipping clutch which prevents any undue load being transferred to the motor and gearing.

The crane travels at a speed of 60 ft. per minute, this motion being performed by one electric motor placed on the platform, at the level of the upper part of the undercarriage. Power is transmitted by means of shaft and reduction gear to the wheels of the carriage, four of which are driven.

A film of this very interesting crane will shortly be appearing and any readers of the "M.M." who are fortunate enough to see this film will be in the happy position of being able to give their friends a full explanation of how this unusual type of crane is worked.

How to get the Meccano Magazine regularly.

The Meccano Magazine is now sold by most of the regular Meccano dealers but in order to prevent disappointment you should place an order with your dealer for a copy of each issue to be reserved for you. The price of each issue is 1d. If you experience difficulty we will mail you a copy regularly on receipt of 6d. for the next six issues, or 1/- for the next twelve.

The New Meccano Book.



A beautiful new Meccano book has been compiled and should be in the hands of every Meccano boy. It illustrates and describes each Outfit and gives full particulars of the Meccano Clockwork and Electric Motors. It also includes details of

the Hornby and Zulu Clockwork Trains, the Tin Printed Trains and a full list of the Meccano Rails, Points and Crossings. A valuable feature also is a fully illustrated list of the entire range of Meccano parts, including all the new and valuable parts added to date.

Every reader of the Meccano Magazine should possess one of these beautiful new booklets. A copy will be sent free on receipt of a postcard and as the demand will be very great, you should take advantage of this splendid offer and write at once for your copy. Put "M.M." after your name for reference.

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