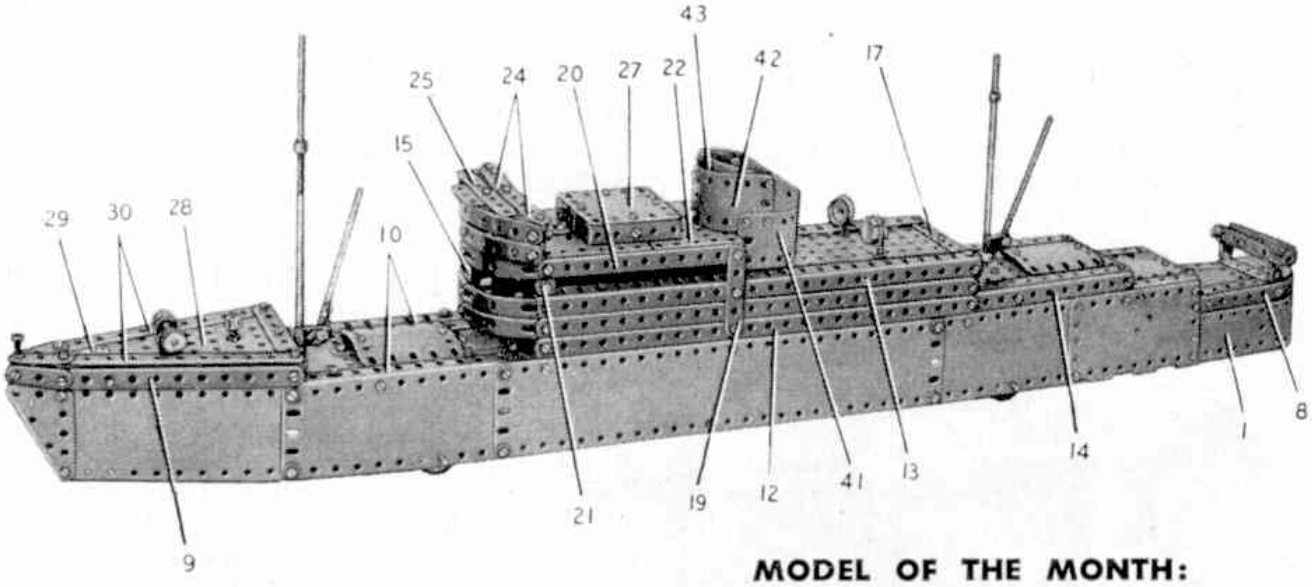


MODEL OF THE MONTH:

Passenger and Cargo Liner

ONE of the outstanding features of the Meccano hobby, and one that is appreciated in full measure by every model-builder, is the almost endless variety of models it is possible to build, using the same parts over and over again. This point is well illustrated by the models described in this series, for so far we have had a Gantry Crane and a Car Transporter, and now this month we turn to the fine Passenger and Cargo Liner shown in these pages. This splendid model can be made with parts in a No. 7 Outfit, as also can the Gantry Crane featured previously, yet it is hardly possible to find two models so widely different in both design and application.

Fig. 1. Ships are a very popular subject with Meccano model-builders. This fine Passenger and Cargo Liner can be made with parts in a No. 7 Outfit.

Model ships have a fascination of their own, and appeal to practically every model-builder, for although they are simple to make and require little in the way of mechanisms, they are fun to build and make most attractive models. In Meccano it is usual to make what are known as waterline models, and our model this month is an excellent example of this type of construction. The term "waterline" means simply that only the upper part of the hull and the deckworks are represented in the model, and no attempt is made to reproduce the section of the hull that normally is below water level. This system is ideal for a Meccano model, for it enables parts that would otherwise be required to build the complete hull to be used to make a larger and more detailed waterline model, yet the result is just as realistic. Another advantage, especially for younger model-builders who like to play with their completed models, is that small wheels can be fitted to enable the model to be pushed easily along the floor.

This new feature is intended specially for owners of the larger Meccano Outfits and model-builders who have good stocks of parts at their disposal. Each month a specially selected model is illustrated and its main features described. When possible some details are also given of the actual vehicle, machine or other subject on which the model is based. Full constructional details of the model and a list of the parts required to build it can be obtained free of charge from the Editor on request.

A vessel of the type represented by our model is used to carry both passengers and cargo, and the model is a good example of the modern trend in the design of this kind of ship. Some of its distinctive modern features that will be readily apparent are the smoke deflecting funnel, rounded bridge and sharply raked stem. It will be noticed that good use is made of Triangular Flexible Plates in reproducing the bows and in giving a streamlined shape to the single funnel. Fore and aft hatch covers are provided, together with derricks mounted on the

masts so that they can be swung over the hatches to handle the cargo. An interesting feature is the use of ¾" Flanged Wheels to make realistic ventilators.

In building any kind of model of the larger type it is always advisable to first study the subject carefully and form a plan of campaign. In the case of the present model it is best to begin by bolting together the Plates that form each side of the hull, together with the strengthening Strips and Angle Girders seen in Fig. 3. The sides are then joined together to complete the hull, and the Plates that form the fore and aft decks can be bolted in place and supported as indicated. The next step is to build the upper deckworks and the bridge and attach them to the hull. The final stages in the construction of the model are to assemble the funnel, masts, winch and other deck fittings and to fix them in place.

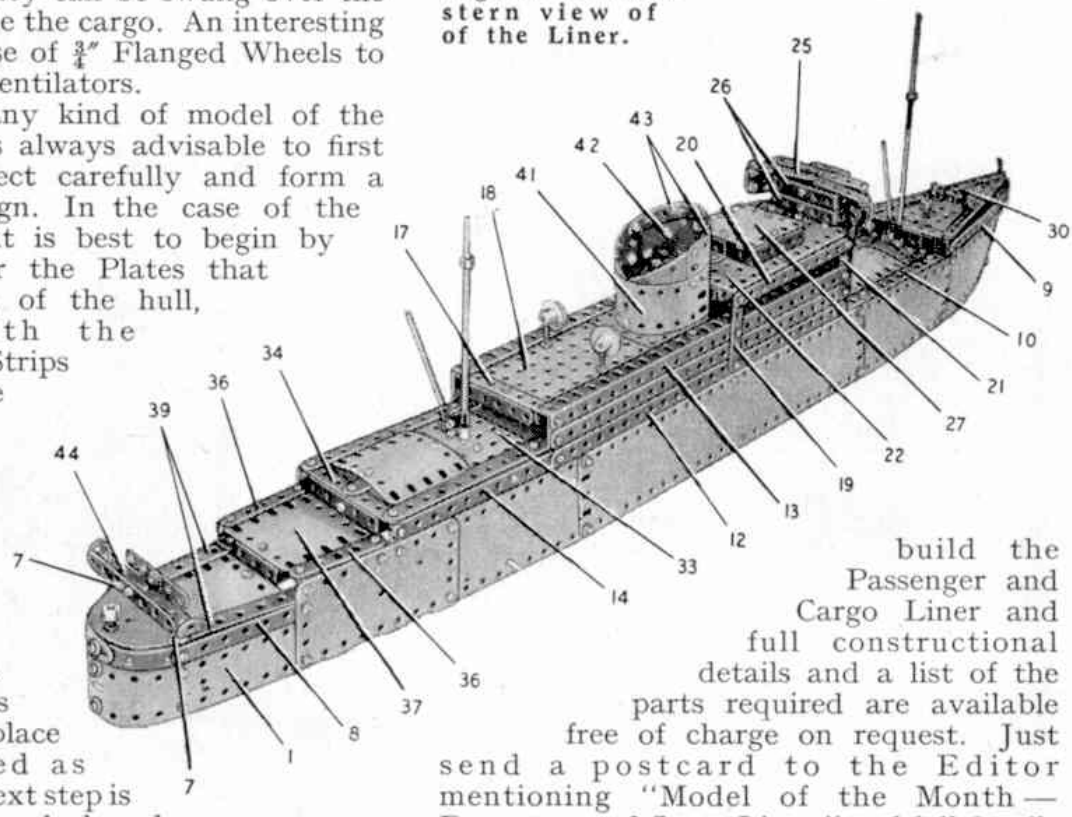
When the constructional work has been completed, a further touch of realism can be added by fitting rigging to the masts and arranging a radio aerial between them. Meccano Cord will be found useful for these functions and there should be no difficulty in arranging it satisfactorily.

Although the model is easy to build its construction provides plenty of interest and if the assembly is carried out neatly, the finished effect is most attractive and the ship has both a realistic and a handsome appearance.

Many readers no doubt will want to build the Passenger and Cargo Liner and full constructional details and a list of the parts required are available free of charge on request. Just send a postcard to the Editor mentioning "Model of the Month — Passenger and Cargo Liner," and full details will be sent to you as soon as possible. Please make your application early, otherwise you may find that supplies have run out! We have prepared sufficient copies of the instructions to cover an estimate of the number of requests we will receive from model-builders, but in the event of an unprecedented demand it is just possible that supplies may prove inadequate. Special arrangements have been made to reserve copies of the instructions for model - builders living overseas.

At present we do not intend to compile a regular mailing list for the supply of Model of the Month instructions. Readers are requested therefore to write to the Editor for the instructions for any particular model in which they are interested.

Fig. 2. A semi-stern view of of the Liner.



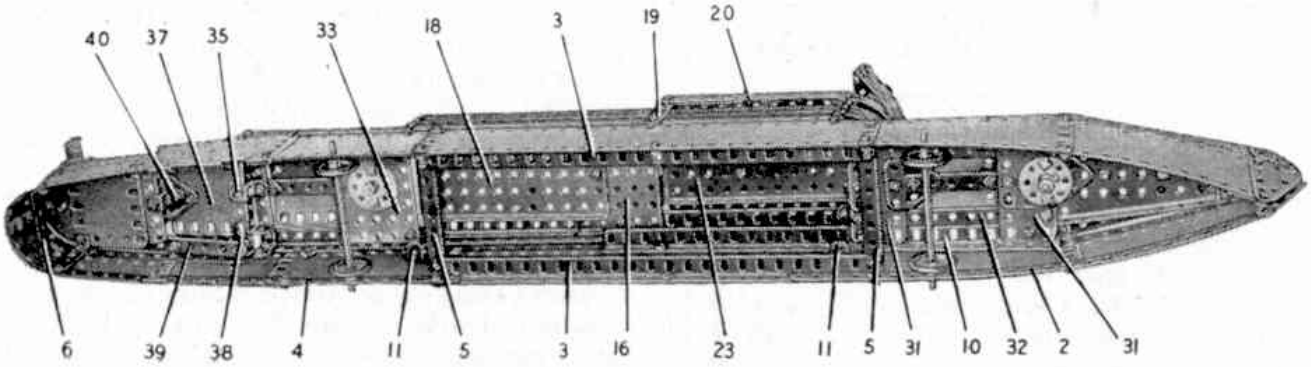


Fig. 3. The interior bracing of the hull can be seen in this underneath view.

May 1956

MODEL OF THE MONTH

PASSENGER AND CARGO LINER

Building the Hull

Each side of the hull, from the bow to the stern, consists of a $2\frac{1}{2}$" x $1\frac{1}{2}$" Triangular Flexible Plate, two $5\frac{1}{2}$" x $2\frac{1}{2}$" Flexible Plates, a $12\frac{1}{2}$" x $2\frac{1}{2}$" Strip Plate, a third $5\frac{1}{2}$" x $2\frac{1}{2}$" Flexible Plate, one half of a Hinged Flat Plate, and a $5\frac{1}{2}$" x $1\frac{1}{2}$" Flexible Plate 1. These Plates are strengthened along their lower edges by a $12\frac{1}{2}$" Strip 2, a $12\frac{1}{2}$" Angle Girder 3 and another $12\frac{1}{2}$" Strip 4. The sides are connected together by an Angle Bracket bolted to the front ends of the Strips 2, by two $3\frac{1}{2}$" x $\frac{1}{2}$" Double Ang le Strips 5 fixed to the Girders 3, and by a $2\frac{1}{2}$" x $\frac{1}{2}$" Double Angle Strip 6 placed between the rear ends of the Strips 4. The bolts securing the Double Angle Strip 6 support also $2\frac{1}{2}$" Strips, the upper ends of which are seen at 7 Fig. 2.

The rear ends of the Flexible Plates 1 are curved and are bolted together to form the rounded stern. Two Formed Slotted Strips and two $5\frac{1}{2}$" Strips 8 are secured to the Strips 7, and the Strips 8 are bolted also to the halves of the Hinged Flat Plate.

A $5\frac{1}{2}$" Strip 9 is attached by two Fishplates to each side of the hull at the bows. These Strips are extended forward by $1\frac{1}{2}$" Strips, which are connected at their front ends by an Angle Bracket. A $12\frac{1}{2}$" Angle Girder 10 is fixed to each side of the hull as shown in Fig. 3.

Details of the Upper Deckwork

Two $2\frac{1}{2}$" x $\frac{1}{2}$" Double Angle Strips 11 are bolted to each side, so that one clear hole projects below the top edge of the Plates forming the sides of the hull. These Double Angle Strips support a $12\frac{1}{2}$" Strip 12, a second $12\frac{1}{2}$" Strip and a $12\frac{1}{2}$" Angle Girder 13. The Strips 12 are extended towards the stern by $5\frac{1}{2}$" Strips 14, which are connected byFishplates to the halves of the Hinged Flat Plate. A Formed Slotted Strip is bolted to each of the Angle Girders 13 and the $12\frac{1}{2}$" Strips below them. The Formed Slotted Strips are bolted together at the front, the bolts securing also a vertical $2\frac{1}{2}$" Strip 15 Fig. 1.

The Girders 13 on each side are connected by a $3\frac{1}{2}$" x $2\frac{1}{2}$" Flanged Plate 16 and a $3\frac{1}{2}$" Strip 17, and a $5\frac{1}{2}$" x $2\frac{1}{2}$" Flanged Plate 18 is bolted between these parts. A $2\frac{1}{2}$" Strip 19 is fitted to each side as shown, and a $5\frac{1}{2}$" Strip 20 is attached to the upper end of the $2\frac{1}{2}$" Strip. The Strips 20 are supported at the front by 1" x 1" Angle Brackets 21 fixed to $\frac{1}{2}$" x $\frac{1}{2}$" Angle Brackets secured to the Girders 13 Fig. 2. A $3\frac{1}{2}$" x $2\frac{1}{2}$" Flanged Plate 22 is bolted between the Strips 20, and supports a $5\frac{1}{2}$" x $2\frac{1}{2}$" Flanged Plate 23, fitted at each side with a $5\frac{1}{2}$" x $1\frac{1}{2}$" Flexible Plate. The Flexible Plates are attached to the Angle Brackets 21.

Each of the Strips 20 is extended forward by a Formed Slotted Strip. These are connected together at the front by a bolt that passes also through the next-to-top hole of the Strip 15. The front of the bridge is formed by two $5\frac{1}{2}$" Strips, curved slightly and connected at their ends by Fishplates. The lower Strip is bolted to the top of the Strip 15. The top of the bridge is filled in by two $2\frac{1}{2}$" Strips 24 and a $3\frac{1}{2}$" Strip 25 bolted to a Flat Trunnion. Each of the Strips 24 is secured to an Angle Bracket attached to the upper curved $5\frac{1}{2}$" Strip. The bolts fixing the Strips 24 to the Angle Brackets hold also a $2\frac{1}{2}$" Curved Strip on each side. The back ofthe bridge is formed by two $2\frac{1}{2}$" x $\frac{1}{2}$" Double Angle Strips 26 fixed to one arm of a 1" x 1" Angle Bracket. This Angle Bracket is used to attach the Double Angle Strips to the Strips 24 and 25, and a $\frac{1}{2}$" x $\frac{1}{2}$" Angle Bracket connects.

the Double Angle Strips to the front of the Flanged Plate 23.

The deck house 27 Fig. 1 consists of a $2\frac{1}{2}$" x $1\frac{1}{2}$" Flanged Plate bolted underneath a $2\frac{1}{2}$" x $2\frac{1}{2}$" Flexible Plate. A $2\frac{1}{2}$" x $\frac{1}{2}$" Double Angle Strip is fixed to each flange of the Flanged Plate, and the deck house is fixed to a $\frac{1}{2}$" Reversed Angle Bracket and a Double Bent Strip bolted to the Flanged Plates 22 and 23.

The Fore Deck

The fore deck is filled in by a Flanged Sector Plate 28 Fig. 1 fitted at its narrow end with a Six-Hole Wheel Disc 29. Two $5\frac{1}{2}$" Strips 30 are bolted between the Wheel Disc and a $3\frac{1}{2}$" Strip secured across the wide end of the Flanged Sector Plate. The $5\frac{1}{2}$" Strips are connected to the Strips 9 by Angle Brackets, and are extended forward by $1\frac{1}{2}$" Strips joined together at the bows by a Pivot Bolt.

Two built-up plates 31, each made from two $2\frac{1}{2}$" x $1\frac{1}{2}$" Flexible Plates overlapped three holes, are bolted to the Angle Girders 10. A $5\frac{1}{2}$" Strip 32 on each side is attached to the plates 31, and a 3" Strip extended at one end by a Flat Trunnion is bolted between the plates. The hatch cover is a 1 11/16" radius Curved Plate spaced from the 3" Strip by Spring Clips on the $\frac{3}{8}$" Bolts used to hold the cover in place.

A $3\frac{1}{2}$" x $2\frac{1}{2}$" Flanged Plate 33 is bolted between the Strips 14, and on each side a $5\frac{1}{2}$" Strip is bolted to it. The rear ends of these Strips are connected by a $3\frac{1}{2}$" Strip 34, and a 3" Strip is secured to the Strip 34 and the Flanged Plate 33. The hatch cover is made in the same way as the one already described, and is bolted to the 3" Strip.

A $2\frac{1}{2}$" x $\frac{1}{2}$" Double Angle Strip is connected to the Strip 34 by a $\frac{1}{2}$" Reversed Angle Bracket 35, and a $2\frac{1}{2}$" Strip 36 on each side is connected by two Double Brackets and two Angle Brackets to the halves of the Hinged Flat Plate. A $2\frac{1}{2}$" x $2\frac{1}{2}$" Flexible Plate 37 is clamped between the rear ends of the Strips 36 and the Double Brackets, and is supported at the front by the Reversed Angle Bracket 35 and Fishplates 38 bolted to the front ends of the Strips 36.

The Aft Deck

The aft deck is formed by a Semi-Circular Plate and a $2\frac{1}{2}$" x $2\frac{1}{2}$" Flexible Plate bolted together and attached by Angle Brackets to the Strips 7. The bolts secure also a $5\frac{1}{2}$" Strip 39 on each side, which is supported at the front by the Double Brackets holding the Strips 36. A second $2\frac{1}{2}$" x $2\frac{1}{2}$" Flexible Plate is connected by a $\frac{1}{2}$" Reversed Angle Bracket 40 to the Plate 37, the bolt holding also a Trunnion.

The Funnel, Masts and Deck Fittings

The funnel consists of a curved $5\frac{1}{2}$" x $1\frac{1}{2}$" Flexible Plate 41 and two curved $2\frac{1}{2}$" x $1\frac{1}{2}$" Flexible Plates 42 bolted together as shown. Two $2\frac{1}{2}$" x $1\frac{1}{2}$" Triangular Flexible Plates are arranged between the Plates 41 and 42, and two curved $2\frac{1}{2}$" Strips 43 are fixed in position above the Plates 42. The funnel is connected to the Flanged Plates 16 and 22.

The fore-mast is made from a 5" Rod and a 4" Rod joined by a Rod Connector. It is fixed in a Bush Wheel bolted underneath one of the plates 31. The aft mast is a $6\frac{1}{2}$" Rod fixed in a 57-tooth Gear bolted below the flanged Plate 33. The derrick fitted to each mast is a $3\frac{1}{2}$" Rod held in a Rod and Strip Connector. The latter is bolted to a Right-Angle Rod and Strip Connector fitted over the mast and spaced from the deck by a Collar.

The winch on the fore-deck is made from two Pinions fixed on a $1\frac{1}{2}$" Rod that is passed through a Double Bracket. Behind the winch

a Collar is placed on a Threaded Pin. The ventilators are $\frac{3}{4}$" Flanged Wheels screwed on to $\frac{3}{4}$" Bolts, which are held by nuts in the Flanged Plate 18.

The aft bridge is made by bolting a $3\frac{1}{2}$" Strip 44 between $\frac{1}{2}$" Reversed Angle Brackets secured to the upper ends of the Strips 7. A $3\frac{1}{2}$" and a $2\frac{1}{2}$" Strip are attached to a Double Bracket that is bolted to the centre of the Strip 44.

Parts Required

8 of No. 1	2 of No. 16	2 of No. 48b	4 of No. 155
18 " " 2	1 " " 17	1 " " 51	6 " " 188
6 " " 3	1 " " 18a	2 " " 52	5 " " 189
2 " " 4	2 " " 20b	3 " " 53	4 " " 190
12 " " 5	4 " " 22	1 " " 54	6 " " 192
4 " " 6a	1 " " 24	6 " " 59	2 " " 197
6 " " 8	1 " " 24a	2 " " 90	1 " " 198
12 " " 10	2 " " 26	2 " " 111	2 " " 200
4 " " 11	1 " " 27a	2 " " 111a	2 " " 212
17 " " 12	6 " " 35	6 " " 111c	2 " " 212a
3 " " 12a	184 " " 37a	2 " " 115	1 " " 213
1 " " 14	174 " " 37b	4 " " 125	1 " " 214
1 " " 15	30 " " 38	2 " " 126	8 " " 215
2 " " 15a	2 " " 45	2 " " 126a	4 " " 221
1 " " 15b	10 " " 48a	1 " " 147b	