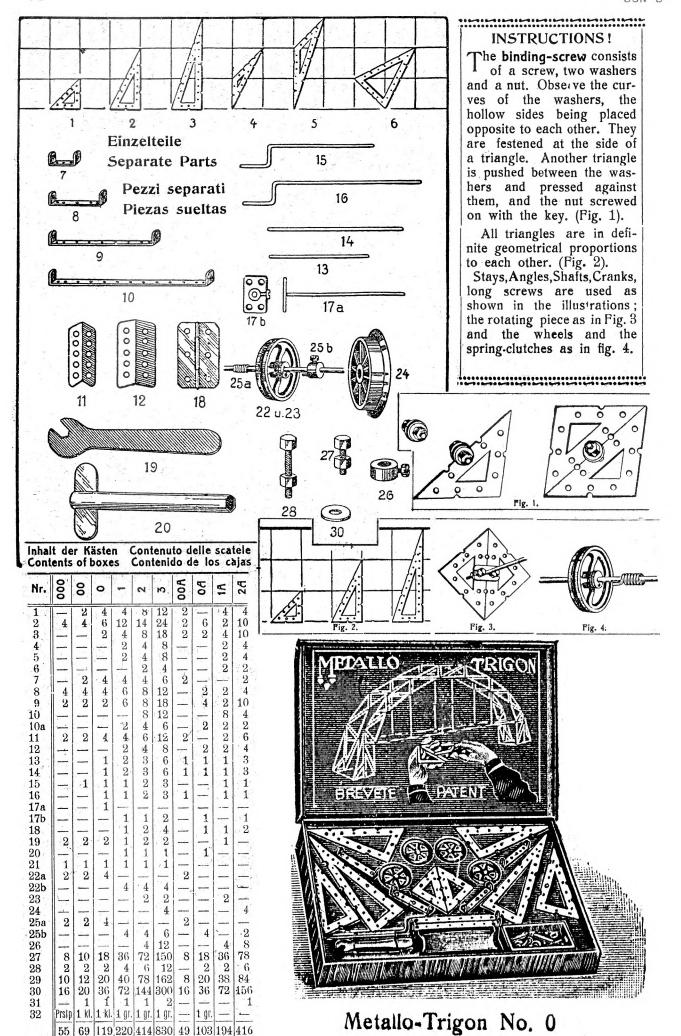
92



<u>NEW FACTS - METALLO TRIGON</u> MCS lists this system (the name is mis-spleit as TRIGNON in some places, in some editions) and there is a sketch of some of the parts. Recently a Set O came to hand, incomplete but with the instruction manual. Reproduced from it, opposite and overleaf, are the instructions, illustrated Parts and Set Contents, the O set (x2), and four models. The manual covers only the O and OO sets but the large Crane is shown as an example of a model from the largest outfit; the Bridge appears on the box lid and on the cover of the manual.

The following points are thought noteworthy

- # From the Set Contents it seems that there were 6 main sets, 000 to 3. There were also 4 'A' sets. 00A to 2A.
- # The 10 hole plate illustrated in MCS is not shown in this manual, nor is the tyre.
- # Of the parts in the Set Contents but not illustrated, 22a and 22b may be two different types of Pulleys, two sorts are shown in the manual models (and in MCS), one with 6 straight and the other with 4 curved spokes. From the Illustrated Parts 23 might be another, different Pulley, it is only included in Set 3. Part 29 is certainly the Nut and 32 will be the Instructions, a leaflet for 000, the small manual for 00 and 0, and a large one for sets 1 to 3. This leaves parts 10a, 21 and 31 unaccounted for.
- # The method of joining the triangular plates by clamping them with washers is unusual but works perfectly well in practice and makes for rapid assembly of structures. The washers are about 10mm diameter. The means of driving the wheels is again unusual and the driving members, parts 25a and 25b, have not been seen. The centre hole of DAS Nos 7 and 8 is extended on one side presumably to allow the driving pin to engage in it: the extension may just be visible in the illustration of the 0 set.
- # The parts are reasonably well finished but are not very accurately made and some vary a little one to another. The grid on which parts 1-6 are superimposed in the Illustrated Parts would have a full scale spacing of 5cm. The sketches in MCS give a good idea of the dimensions of the parts after allowing for the thickness of the pencil which was traced around them. The only real difference is the 6 spoke Pulley where the one seen is larger at 3.2cm diameter than the one illustrated. An example of the 4 spoke Pulley has not been seen.
- # All the parts seen, except the Pulley, are plated, some with a slightly mottled, bright galvanised look and some a duller, darker grey.

Prior to coming across this set I had had a fair selection of these parts for several years. Karst Quast came across them in a street market in Holland, all strung up on a piece of string, and thinking that I might like to have them he was good enough to send them over. I was intrigued because it was obvious that some care had been taken in designing the parts, especially the triangles. The only problem was to know how to use the latter for while it was clear that they were meant to butt together edge to edge, there seemed no parts that could be used to join them. I thought that perhaps the 10 hole Plate mentioned above might be used but I didn't have any and a great many would have been needed to make a reasonably sized model. So I gloated over my parts from time to time and then one day I decided that there must be a reason for the half holes on the edges of the triangles and that the only way to make use of them was to use washers to clamp the plates together. I had no original nuts, bolts or washers so I used some that seemed suitable and I ended up with a quite pleasant looking Hammerhead Crane with a jib some 20" long. Friends who saw it tended to be a bit sceptical about the method of construction but now I can show the manual to any doubting Thomases.

This is the only system I know that uses clamping with washers as a primary method of construction, and outside of TRIGON there aren't many parts to which it could be applied. In fact the only ones that come to mind are the PRIMUS Roof Ridges and Eaves which have a row of half holes along one edge. I have used the Eaves as the bottom members of a quite heavy bus body, clamping them to the chassis with washers. As with TRIGON the resulting joint was more than strong enough for its purpose.

### SUMMARY OF MANUAL

#Name: METALLO TRIGON. #Details of maker: none. #Dates or Ref Nos: 'Printed in Germany' on front cover. #Page size: 236x160mm deep. #No of pages: 12 including covers. #Language: German, English, Spanish, Italian. #Printing: the paper has turned very yellow with age. Apart from two fulltone illustrations the rest are black line drawings. The front cover is shown opposite, the hollow triangle has MT inside it and METALLO TRIGON PATENT around it. The other lettering is a slogan in the 4 languages. #Page nos of Parts List & highest PN: 12.30. #Page nos of Set

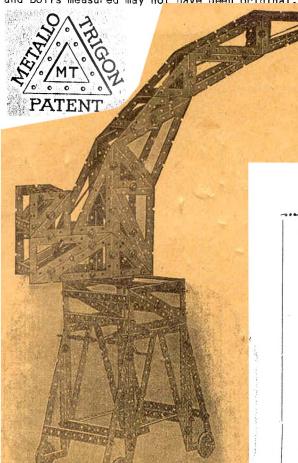


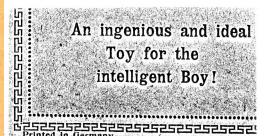
Contents & highest PN: 12.32. #Sets covered: 00,0 (but contents of sets for 000-3). #No of models for each set: 16.16. #Name, model no, page no of first and last model of each set: 00: Waggon, 1, 3. Door-way, 16, 6. 0: Waggon, 17, 7. Double-lift, 32, 10. #Other notes: none.

#### MCS SUPPLEMENTARY INFORMATION

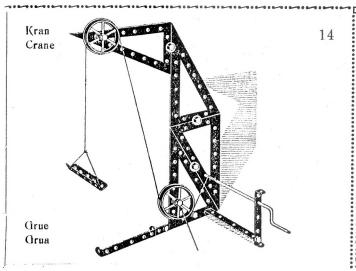
#Name: METALLO TRIGON #Hole spacing: generally 12.4 to 12.6mm but 12.0 in longest DAS. Also 8.0 to 8.5mm between outer pairs of holes in DAS. #Axle dia: 3.07mm. #Dia of holes in Strips/Bosses: 3.23-3.30mm but about 3.5mm in the 10 hole Brackets, 11 and 12/3.10mm. #Dia of Bosses: 8.08mm (part 17b). #Boss material/finish: brass/none. #DP or Module of gears: N/A. #Nut and Bolt - name or dia of thread/material/finish: M3/ steel/ brass. #Nut - sq or hex/size A/F: not seen. #Bolt head - shape/dia: buttonhead/ 5.63mm. #Other threads used: M2 for set screw. #Set screw - material/finish/head shape/dia: brass/none/cheesehead/3.05mm. #Pulley (nearest to 1") - material/finish: (3.2cm dia, 6 spoke) cast alloy/ gold paint. #Other unusual features not in MCS: method of clamping Triangles together and driving wheels. #Notes: the Axle

and Bolts measured may not have been original.

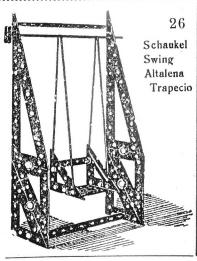




## Metallo-Trigon No. 00



# Metallo-Trigon No. 0

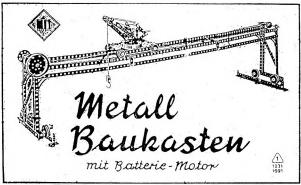




about 1950. The Sets 18-24 in MCS were preceded by a series 1,1A....3. MCS doesn't mention that Strips, A/Gs, and small parts were nickel plated.

**METALL BAUKASTEN** A system from the 1930s with over 50 different black parts. Holes are 4.1 mm Ø at 12.7 mm spacing.

**METALL BAUKASTEN mit Batterie-Motor** The manual cover of this East German set is shown below - the logo on it was reproduced in 13/337. EZ says that the parts were packed in a plastic box, and that they were strong and well made, with a black finish. They included 2 sizes of Tyres, rectangular and trapezoidal Plates, and circular parts up to 7h Ø. 4mm Bolts were used, and the pitch of the holes was 12mm.

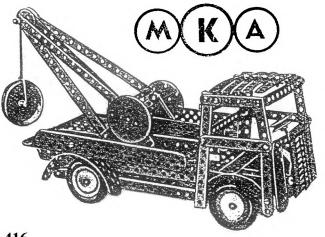


METALLO-TRIGON This 'geometrical' system was discussed in 5/93. EZ gives the period as 1913 to c1926 and lists the firms who made it during that time: Metallo-Trigon GmbH, Offenbach; from 1916, Stanzwerke GmbH, Eisenach; from 1919, Stanzwerke u. Schloßfabriken GmbH, Bad Liebenstein and Sachsendorf bei Eisfeld; from 1920, Stanzwerke GmbH at Sachsendorf and from 1923 at Eisenach again. A photo of a 1916 No.2 Set shows several types of spoked Pulleys with 3, 4 and 6 spokes, all straight, and a pair of the smaller (6-spoked) ones are fitted with Tyres, as shown in the original sketches of the parts in MCS.

**MEWEKA** From EZ: this DIY system (see 12/321) was made until c1960.

MIKRONO Konstruktionsspiel EZ lists this system as being made by M. Löffler of Altona/Elbe from 1918 to ?, but no details of it are given. If I've understood correctly it already existed in 1916 under the name ROSETTA Konstruktionsspiel, and also mentioned is PYTHAGORAS Konstruktionsspiel in connection with the words 'objection/Patent/renaming', but I can't sort out exactly who did what to whom.

**M K A** Probably from East Germany in the 1950s, this system had about 40 parts, all plain aluminium except for steel Axles, and included both TRIX-style and MECCANO-



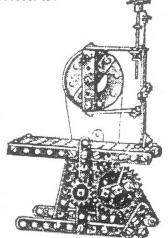
style Strips. The hole pitch at 11.2mm was larger than TRIX but smaller than MECCANO, and the holes were 4.1 and 4.3mm respectively. Mystery Part #3 from 2/25 may be a M K A part, or if not it's very similar. The model at the foot of the last column gives an idea of some of the parts. There are 3 sizes of Pulley with Tyres to fit the middle one. All of them, and the 5h Ø Disc, have tapped bosses.

M K A may well be connected to **M F C**, already in MCS - the parts look the same, the same range of PNs are used, and those for the N&B, the only parts that can be positively identified by PN, are identical.

**MODELLO** On the logos (12/312), Jeannot wrote that the JB one was that of the first manufacturer, Johann Brandner of Regensburg (1919-20). Ernst Plank at Nürnberg then continued (EP-MODELLO) until at least 1928. EZ confirms the hole pitch as 10mm with an Axle diameter of 4mm.

**MÖWE** The name is sometimes spelt **MOEWE**. This system was made from about 1946 until perhaps the early 1950s. A leaflet shows what looks like a metal box, and has at the bottom 'Made in German - Brit. Zone - N. Rh. W.' The only mention of a maker is 'Möwe Metall-Baukasten-Fabrik'; in EZ it is given as 'Möninghoff & Weiß Nachfolger' - the last word seems to mean 'successor to'.

A page from a manual shows 2 models which can be built from Sets 1 and 2. and for which about 20 different parts are listed. These include Strips 3,5,7, 8,11,12 & 20 holes long; Achsenträger which may be Double Bent Strips; a Baseplate which looks as if it is 5\*11 or 12h, and may have flanges on its long sides; 2h Ø Loose Pulleys; 5h Ø Flanged Discs with a pulley groove and a large centre hole, like STABIL; 25 &



85mm Axles which are probably Threaded Rods; a Crank of some sort; and the large and small Gears that you may be able to see in the Bandsaw above, and which look as if they might be similar to the STABIL patented gears.

Some of the parts in a set differ from those in the models. The Baseplate is flat and has 12\*5 holes, while the 5h  $\varnothing$  Flanged Discs appear not to have a centre hole but instead a boss, fitted to the recessed side, with 6 holes at 1h radius around it. There's also a Double Bent Strip and two 8h long Flat Sector Plates with a 5+7\*3 hole pattern. They, like the Baseplate, have sharp corners.

To give an idea of the size of the sets the other model, a Double Swing, uses 57 parts plus 20 Angle Brackets, 8 Pulleys, 80 Bolts and 100 Nuts.

Nothing is known of the hole spacing or diameter but my impression is that the pitch is nearer ½" than 10mm, and in that case the holes scale at between 3½ and 4mm.

**MWK** This was an East German system from between WW2 and the early 1950s, with plain aluminium parts that had 4.1mm holes at 12.1mm pitch. In all there were about 36 but the models I have seen show only the following: 2,3,5,7,11h Strips; 1\*5\*1, 1\*3\*1, 2\*1\*2 DAS; 1h Angle and Reverse Angle Brackets; Double Bent Strip; 7\*11, 3\*11, 3\*7 Perf. Plates; a Tapered Plate (see model at top of next column), & a 2h Triangular Plate (perhaps with a centre hole); 28mm and 62mm Ø (pulley?) Wheels, and a Handle, all of which are nutted onto 50 and 90mm Threaded Rods; N&B.

416

### More on METALLO TRIGON

This piece follows on from the notes in 5/93 & 15/416; it has been prompted by David Hobson kindly lending me his No.3 set, and also digging out some early UK ads for the system.

**The PARTS** Except where stated the notes below are about the No.3 parts.

- Triangles #1-6. They, and all the other parts in the Set, have a bright galvanised finish, and with a few minor exceptions are accurately made. In 2 other small lots (one kindly sent by Graham Jost) the Triangles & other parts are nickel plated.
- #10a is a 2\*5h Flat Bracket, the part used to make the 5h long A/Gs #11 & 12.
- Axles & Crank Handles are brassed steel, 2.80-2.85mm Ø, with sheared ends. #13 is 92mm long and #14, 132mm. The Crank Handles are 120 & 148mm o/a with 27mm handles offset about 15mm
- No **#17a** or **17b** were found in the Set; in the manual 17a is shown as a 17b with one end of an Axle held in it.
- The **Hinge** #18 has square corners and is 35\*9mm closed. Each leaf has 2 hinge loops, & the holes are at 12.5mm pitch.
- Tools. Below the Screwdriver #21, 66mm long. The Flat



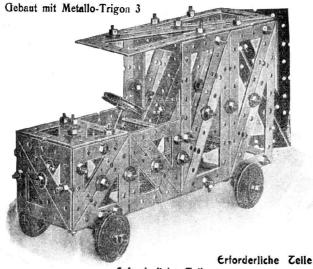
Spanner # 19 was missing. The Box Spanner #21, bottom left, is formed from one piece of steel and is 59mm long. The tubular type can be seen in photos of other sets.

- Wheels. The diameters of #22 & 23 Pulleys are given in the manual as 30 & 38mm. As found the o.d. of the 6-spoke #22 is 32mm & it is 4¾mm wide. The 4-spoke #23 is 39mm Ø & 8¼mm wide. Both have straight spokes. The Flanged Wheel #24 has 10 spokes and is 34½mm o.d. It is 8½mm wide and the tread tapers down to 28mm Ø. All 3 Wheels are gold lacquered zinc die castings, with a bore of 2.9mm. Red painted Wheels have been seen in the photos of 2 Ebay sets.
- The Collar #26 is brass, 8mm Ø, 2.9mm bore, & 4mm long. The Driving Dog #25b is a Collar with a 4mm long, 1.2mm Ø steel pin. These parts are single-tapped like the #17b in OSN 5 but the thread is different. 2 types of Set Screw were found, both about 2.35mm (.093") Ø & 40 tpi (or perhaps .65mm pitch). One is brass, 4mm u/h, with a 3.2mm Ø tapered CH, and the other brassed steel, 5mm u/h, with a 3.8mm RH.
- NBW. The Bolts, #27 & 28, have a flattened RH, 5.8-6.1mm Ø, and are 7½ & 22½mm u/h (though one is 20mm & another 24½mm). The pressed Nut, #29 is hexagonal, 6.2-6.4 A/F, & 2mm thick. The thread is M3 & all are brassed steel. The Washer, #30, is galvanised steel, 10mm Ø, 1mm thick, and slightly dished.

In one lot of nickel parts the NBW are as follows. The Bolt, 7mm u/h, has a hex head, 6.0mm A/F & 2.1mm deep. The hex Nut is also 6.0mm A/F but is 3.0 mm thick. Both are machined and look like plain steel though possibly nickeled originally. The Washer is nickeled and is 10mm Ø by 1.3mm thick.

- #31 remains a mystery and is not listed in the manual's Set Contents.
- The **bore** given for the OSN 5 parts was in the boss of a #17b and is appreciably greater than in the No.3 parts. Probably the 17b had been bored out to suit the Axles with the

## Modell Nr. 75 Lastautomobil



Erforderliche Zeile 4 Räder R 30 12 Dreiecke D 1 1 Rad R 38 1 Greifring G D 2 1 Stellring St D 3 81/<sub>2</sub> \$ 1 5 lange Schrauben and 14 Mattern 20 Klemmschrauben 38 Schrauben und Welle Muttern

OSN 5 parts, and said Axles are almost certainly not genuine.

The SETS Before describing the No.3 a little more about the No.0 in OSN 5. Its box is red. 271/2\*18\*2cm and the label covering the lid is identical to that shown in 5/92, blue with the model in white, & red lettering. The same label is glued to the inside of the lid. The parts are strung to a red card with red/white stranded cord. One corner is cut away for a  $6\frac{3}{4}$ \* $4\frac{3}{4}$ cm red box to house the small parts - it is glued in place and its lid has a fabric hinge. There is nothing to indicate the Set No.

The **No.3** box is also red, 22½\*37½\*5½cm, & on the apron of the lid is a white label with 'METALL-TRIGON No.3' on it. The lid label, 20\*30cm, is like the No.0 but surrounded by a swirly

border. The same label, below, is on the white inside of the lid. There are 2 layers of parts with the bottom of the box divided

up by 13 white card trays. Resting on these is a white board about 1cm thick, made from 2 white cards joined & spaced apart by card strips around the edges & forming a honeycomb inside. Holes in the top card seem to



indicate that parts were strung or clipped to it but apparently before the composite structure was put together. A similar box (labelled a No.2) but with red trays, is shown as Tafel 27 in *Eisenzeit*. In both there would be room for another layer of parts and a No.3 shown in a Leaflet with David's set does have 2 cards.

**Other Sets** The box of the set in *Baukästen*, p156, has an imitation wood grain finish (the top of the lid can't be seen). An Ebay set is in what looks like a wooden box with a sliding lid, and the background colour of its label is black rather than blue. Inside the bottom has wood partitioning to form oblongs and blocks to create spaces for each of the different Triangles. It looks well made but may of course not be original.

**MANUALS** Details of the manual for Sets 0 & 00 were given in OSN 5. The one with the No.3, summarised below, is for Sets 1-3,

and has a different type of cover, right, with two slogans which might mean 'The iron way of life' & 'The most play value for the thinking lad'. Like the 00-0 it has no PR or any indication of date, but unlike it the text is all in



German and Set 000 is not included in a list of the sets available (though it is listed in the Leaflet mentioned above). Also a different

presentation of the models is used: instead of just a line drawing for each there is, with one exception, a (rather blurry) photo, a diagram showing the layout of the Triangles in the model, a list of the parts required, and some explanatory notes. In the Set Contents the parts have letter designations as well as a PNs, and the former are used in the Parts Required. As an example the Triangles (Dreiecken in German) are D1 to D6.

<u>SUMMARY OF MANUAL</u> •Name: METALLO TRIGON •No details of Maker, Dates, or Ref Nos: •Page size: 243\*155mm. •No. of pages: 40+covers. •Language: German. •Printing: line drg of 1 model; photos of the rest. •Page Nos. of Illustrated Parts/Set Contents & highest PN: C3,30. •Sets covered: 1,2,3. •No. of models for each set: 16,16,16. •Name, Model No., Page No. of first & last model of each set: 1: Leiter,1,5; Hallenkonstruktion, 16,12. 2: Muldenkipper,31,13; Pavillon mit Türe,46,25. 3: Doppelkran,71,26; Brücke,86,40. •Other notes: •C2,4 are blank. •The model illustrated by a line drg is Nr.5, Lastwagen, on p7.

The models include a good selection of Bridges, Structures, Swings, & Cranes, most of which are credible looking. Most of the Vehicles though are rather clumsy looking, witness the No.3 Van on the previous page, full size. As in many of the models the Pulleys, used as wheels in this case, do not seem to have spokes, whereas most do in the line drawings in the 00-0 manual. But no set seen has any solid Pulleys.

One Leaflet with the No.3 has already been mentioned and it also shows 8 models fro the 000 outfit, from Leiter to Durchgang, all of which are included as 00 models in the 00-0 manual. Another Sheet with the Set is headed 'Zum Schulgebrauch!' (For School Use!), It has the geometric properties of the 6 Triangles on one side, and a mass of maths formulae on the reverse. Among them are multiplication tables from 11x11 to 19x19, trig functions such as  $ctg(\alpha\pm\beta)$ , & the binomial expansion of  $(1+x)^n$  – ah, carefree days of youth!

HISTORY If I've understood *Bk* correctly the system was patented in Germany (No.258829) by Frau Dr. Frieda Lehner of Kelsterbach am Main (near Frankfurt), in April 1913, from an application dated June 1912. A U.S. patent 1103781 was granted to Alfred Lehner of the same town in July 1914, from an application filed in March 1913. The dates in *Bk* for the various firms involved with M-T differ slightly from those given in 15/416, but the end points are the same. Also mentioned in *Bk* is a 'Kriegsbaukasten (war set), as well as the 000-3 range, but I'm not sure if this was devoted to warlike models, or just a wartime expedient in terms of packaging etc. A German trade ad in Nov. 1913 (*Bk*, p155) lists agents in Amsterdam, Hamburg, London, Paris (Maerklin Frères & Cie, 410 Rue St. Honoré), New York, & Vienna.

The London agent was William Seelig & Co. and they first advertised M-T in the April 1913 Toy & Fancy Goods Trader. No details were given but sets could be inspected at 19 Fore Street, London, E.C. The next mention was in an article in the Oct. 1913 number when Seelig & Co. were given as the agent, and the parts were said to be 'plated' - could that mean nickel? Boxes No.1, 2, & 3 were available, at 6, 12, & 20/-, plus linking sets 1a & 2a at 6 & 8/-. The article included line drawings of 2 sets, probably a No.1 & a No.2. In both the parts are in 2 rows of 3 compartments each at one side of the box, and on a card filling the rest of it. The lid labels are as the No.0 in OSN 5, but the No.2 does not cover the whole lid. An article In the July 1914 issue mentions sets at 2, 4, 6, 12, & 20/-, with supplementary sets at 2, 4, 6, 12/-. So that would no doubt not include the 000. Samples could be seen at the sole agent for the UK & the Colonies: Lewis Wild, 12-14 Barbican, London, E.C. - no longer Seelig. No ads from after WW1 are

METALLO TRIGON: S2 OSN 30/966

**HANDY CRAFT - Still More** The piece in 31/935 included mention of the **Airplane Set** and subsequently Kendrick Bisset kindly sent details of a Set he has, and its manual.

The **box** measures 12½\*11¾\*5½" & 150 models are claimed on the lid. The parts broadly correspond to those given on a label, loose now but apparently pasted inside the box at one time. The heading on it is 'HANDY CRAFT Built-up Toys and Sets', and over a list of the parts 'THIS NO. 3 SET OR NO. 3B TOY CONTAINS:' It may be supposed that the No.3 was a straight constructional set, and No.3B, with the same parts, had some of them made into a model. It would be the featured Airplane in this case and the box would be just the right size for it.

The 252 **parts** listed on the label are, with the H C names in brackets, where different: 3 Flanged (Base) Plates; 6,12,7,5x 15,11,7,5h Strips (Plates); 10 DAS (7h Plates Bent); 12 A/Bs (2h Plates Bent); 10 Flat Brackets (2h Plates Straight); 6 Triangular Plates; 4 Pulley (Grooved) Wheels; 4 (Single) Wheels; 2 Wheel Discs (Plain Circles); 1 Bush Wheel (Circle with Hub); 4,1x 3½,1½" Axles; 2 Crank Handles (Cranks); 64 Screws; 64 Nuts; 22 Axle Stops (Spring Washers); 1 Hook; 1 Screw Driver – Wrench; 1 Wire Screw Driver.

The manual with the Set is the  $3^{\rm rd}$  H C one known and to avoid confusion I'll call:

- the one with the Auto Truck outfit, described in 18/506, the '1/2', because all the models can be made from 'Set Nos. 1 and 2' (PR: W.A.A.-7-26-15M) no doubt that means Set No.1 or No.2;
- this Airplane one, the **'1/2,3'**, because as well as the models in the '1/2' it has models for Set 3 (PR: W.A.A.-7-26-5M);
- the one in 31/935, '1,2,3/4', because it has models for Set 1, Set 2, & 'Set No.3 & 4' (PR: E.R.H.Co. 4-27-7500).

The '1/2,3' has 24 pages plus covers, sized as the other manuals, and with the usual front cover. The model pages for the 1/2 models are as in the '1/2'; the remaining 12 pages have 24 models for Set 3, from Automobile to Railroad Lift Bridge. The

inside covers are blank and C4 just has the PR & Printed in U.S.A.

The '1,2,3/4' has all the '1/2' models but they are now for Set 1. The 11 models for Set 2 include 8 of the No.3 models from the '1/2,3', and the 3/4 models are the remaining 16 from the '1/2,3'.

**Questions arising** (assuming that the 2 manuals with '26' in their PR came before the '1,2,3/4' with '27').

- The models in the '1/2' manual are all for either set, so what was the difference between the 2 sets? The possibilities are the same as those for the 3 & 4 discussed in 31/935.
- Second, why were the No.2 models separated in the '1,2,3/4' manual? Perhaps customers felt cheated if having bought a No.2 there were no specific models for it.
- A few of the No.2 models in the '1,2'3/4' manual need more parts than those in the No.1 models. In particular the 3 new models that are not ex-No.3 ones need 2 Flanged Plates, so did the contents of the No.2 change with the advent of the '1,2,3/4' manual?
- What were the contents of the 3 smaller named sets? Each claims over 50 other models on the box lid, and there are 50 models in the '1/2' manual, so perhaps the sets contained at least the contents of the No.1.
- None of the manuals has more than 77 models, so where are the rest of the 150 claimed for the Airplane set?
- Was the Airplane model included ready made in the Airplane set? And did the other named sets include a built-up model? The Windmill & Auto Truck boxes would be large enough for their featured models, but the Sail Scooter box scales at 12½\*3½" in plan and is probably no more than 2" deep so it would only take the model if its mast & rigging were removed.
- Bearing in mind the built-up Airplane shown with the No.4 set in the '1,2,3/4' manual, was a built-up model included in any of the other numbered sets?
- Did Sets 1-4 actually exist? They are mentioned in the manuals but the 6 outfits known to me all are named sets. Early days though because H C sets are uncommon.