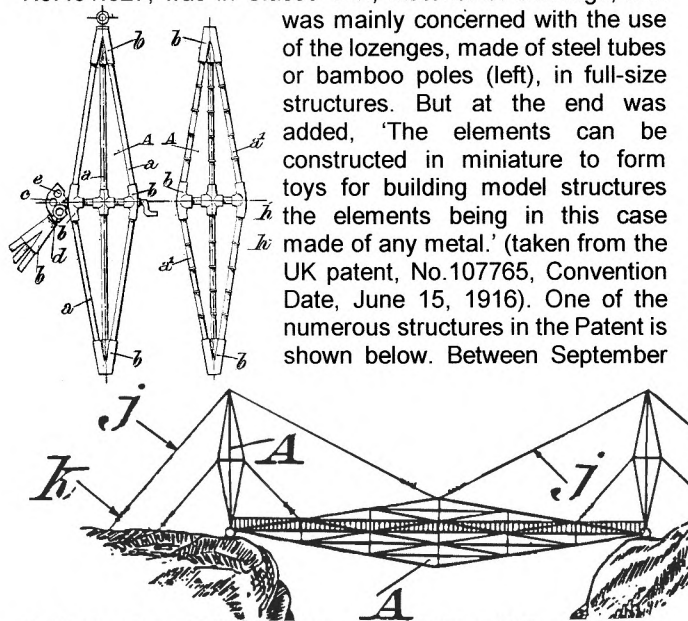


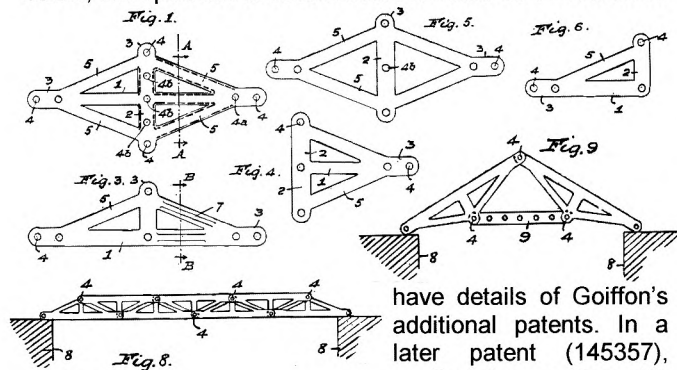
CONSTRUCTOR This rather elegant French system is the earliest to bear the CONSTRUCTOR name; it started in about 1916 & production ceased in 1964. Its novel feature was structures made of lozenge-shaped elements, & though their role reduced with the years, they were retained until the end. This account is based on material contributed by a number of readers, & also draws on articles by Jeannot Buteux/Constructorama which appeared in Issues 50 & 52 of the 'Magazine du Club des Amis du Meccano' (MCAM).

The PATENTS The idea of using lozenges in constructional toys was first patented in 1916 by **Paul Goiffon** of 6 rue Nouvelles Maisons, Lyon. The patent, No.491.527, was in Classe VII/I, Matériel et Outillage, and was mainly concerned with the use of the lozenges, made of steel tubes or bamboo poles (left), in full-size structures. But at the end was added, 'The elements can be constructed in miniature to form toys for building model structures the elements being in this case made of any metal.' (taken from the UK patent, No.107765, Convention Date, June 15, 1916). One of the numerous structures in the Patent is shown below. Between September



& November 1918 Goiffon applied for additional French patents Nos. 20.829, 20.837 & 20.840 (in Classe XX/I, Jouets). Details of these are not to hand but they included a simplified version of the lozenge suitable for toys.

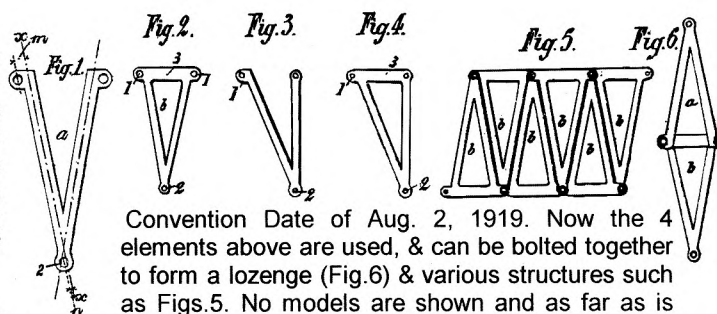
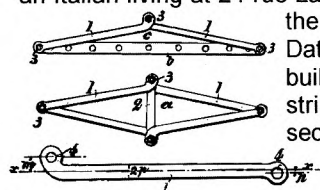
A few other toy patents followed. **Hornby** was granted No. 116370, Application Date June 15 1917 (15 days before the Application Date of Goiffon's UK patent), and in its final version Goiffon's method of fabricating lozenges from tubes was mentioned, but Hornby's claim was for the elements below, stamped out of sheet metal. It would be of interest to



have details of Goiffon's additional patents. In a later patent (145357), applied for on Dec. 16,

1919, Hornby described the ½-lozenge with joggles which was to be produced as the Girder Frame, PN 113. No great structures were envisaged in Hornby's patents, just the Bridge & Roof Truss shown above. It has been said that Meccano sued Constructor and lost, but when and over what isn't known.

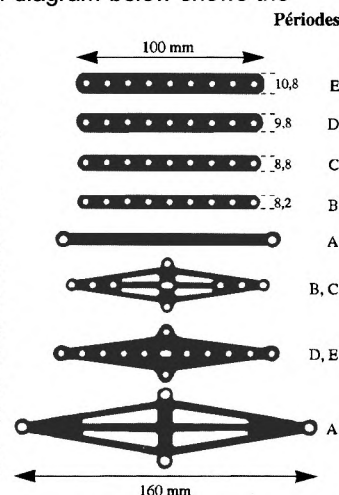
The other 2 patents were granted to **Charles Fregonara**, an Italian living at 24 rue Lanterne, Lyon. The UK version of the first, No.149680, Convention Date July 25 1919, shows lozenges built up from 1 special member & 2 strips (left). The UK version of the second, No.149916 (the French original is No.502.192), has a



Convention Date of Aug. 2, 1919. Now the 4 elements above are used, & can be bolted together to form a lozenge (Fig.6) & various structures such as Figs.5. No models are shown and as far as is known none of these parts were ever produced.

Constructor claimed French, American, Swiss, Austrian, Belgian, Italian & Czech (but not British) **foreign patents**, with their numbers, on the cover of an early 1920s manual. The only one to hand is the U.S. No.1298927 and it covers the same ground as the UK one, but without the examples of structures made with lozenges, and without the mention of a possible application to toys.

The SYSTEM Considerable changes to the parts were made during its life and the CAM diagram below shows the various Lozenges & Strips, in what have been called Period A to E. Other parts varied too, notably the Braced Girder, many parts were added, and there were many minor changes, with for example, some 10 known variations in the 22mm Ø Pulley #28 in Periods D & E alone. The system grew in size from 16 metal parts originally to about 80 after the mid to late 1930s. The larger sets increased in size a little and some smaller ones were added, but they mostly didn't have any Lozenge parts, and finally only the two largest sets included them.



The **holes** in Period A were 4.2mm Ø (with some up to 5mm) and were only at the ends of the parts. After that they were 3.2mm Ø at (usually) 11mm pitch; **Axles** were 3.0mm Ø; and the **thread** was 3mm x .75mm pitch.

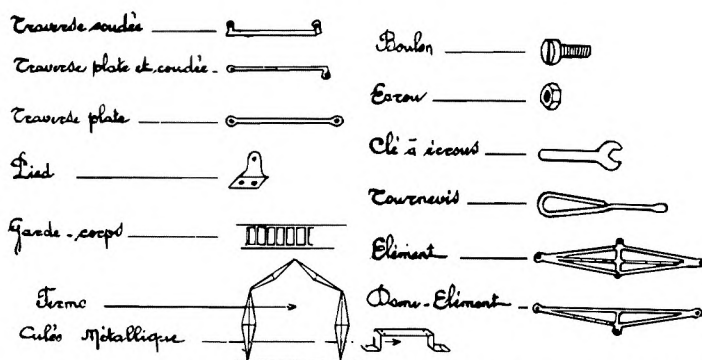
Initially the **quality** and finish of the parts was not too good but they improved afterwards and have been said to be comparable with MECCANO.

Very little CONSTRUCTOR material is dated and that to hand doesn't usually allow the precise timing of changes to be known. What follows therefore are snapshots of the system at various approximate dates. Details of some manuals are given but there were apparently many different editions.

Until recently little was known of the **firms** that made CONSTRUCTOR but some details have now been unearthed and are given at the end of this article. Those relevant to this account are: production was originally at 19 Quai Arlong, Lyon; it was continued by the Société Française du Jouet Métal (SFJM), of 119 Rue de Sèze, Lyon, founded in 1920; and in 1925, with a change of ownership, was moved to Paray-le-Monial (PIM), a town 100km north-west of Lyon. The postal address was then simply CONSTRUCTOR, Paray-le-Monial.

1917-18 This is Period A. Every CONSTRUCTOR box lid, and every manual cover, bears the claim 'Grand Prix / Concours Lépine', and some early ones add 'Paris 1916'. It is supposed that the award was for CONSTRUCTOR and that sets would have been on sale from about 1917.

There were 5 sets, Nos.1-4 & a Boîte Spéciale, but only one, a No.1, is known. The following details are from MCAM. The parts comprised 16 in steel, with all but the N&B painted black, plus 10 of wood, card, or fabric. Most of the steel parts are in the Set 1 Illustrated Parts at the top of next column - the only Strips parts are the three shown. The non-metal parts may have been similar to those in the next phase. The 'Braced Girder' (Garde-corps = Railing) was 455mm long and had no holes for N&B at all - it was used in



Bridges (as in the one from the Patent shown earlier) & other structures, and in one model as a ladder.

The **box lid** has the boy in the sailor suit with the Tower & Hangar, as in the 1920s version shown later, but they are not in a circle, while to the right is a Suspension Bridge with under it, the Signal Gantry model shown below, and some of the parts. The main wording is CONSTRUCTOR // Jouet de Luxe et de Précision à Combinaisons multiples // LE RÊVE DE L'ENFANT // Invention et Fabrication Françaises.

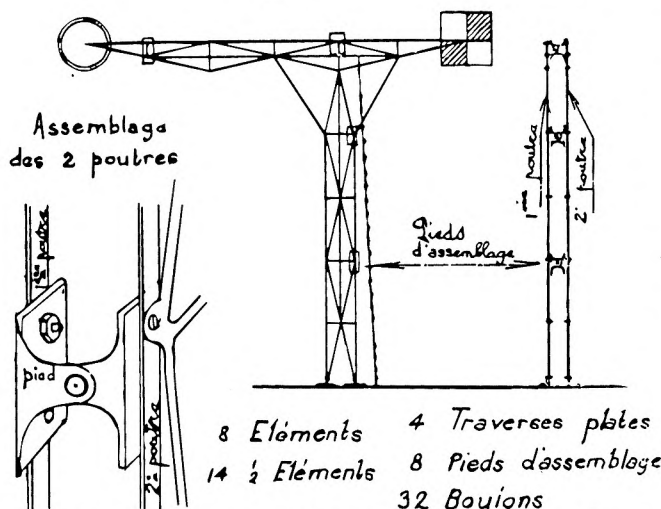
The **manual**, unlike later ones, was in portrait format (136*213mm), & the main wording on the plain cover was CONSTRUCTOR // Jouet de Luxe et de Précision // INVENTION ET FABRICATION FRANÇAISES // Dessins de la Boîte No.1. The Signal Gantry is one of the models, and others included structures in the original patent, barely changed.

INSTALLATIONS pour CHEMINS DE FER

20

Potence pour signaux

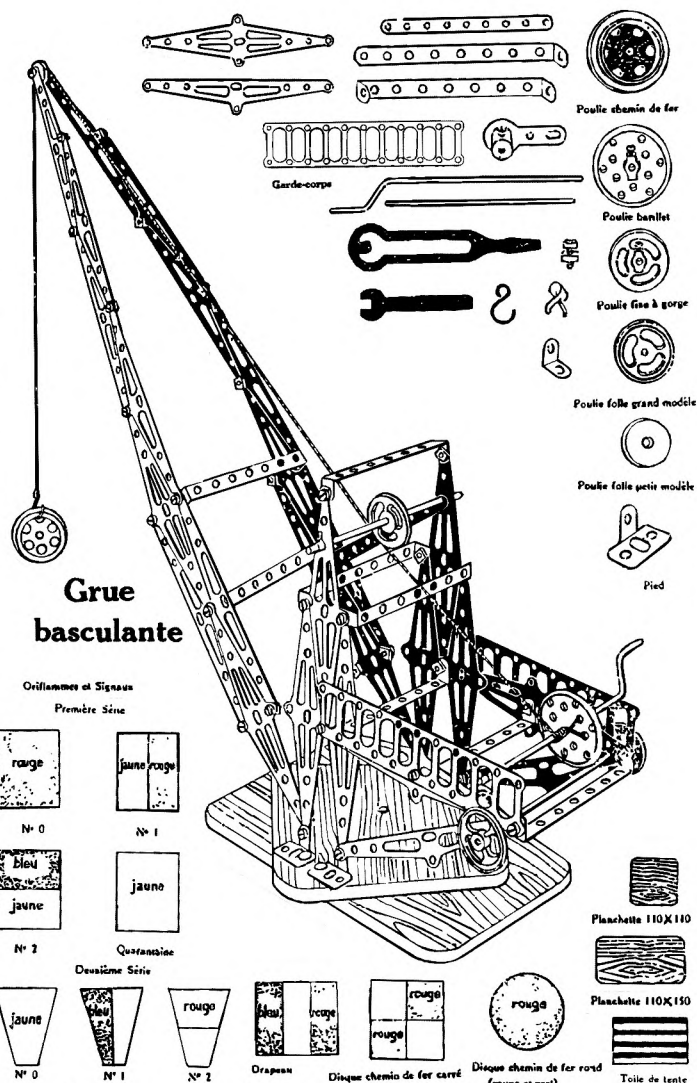
Vue de Face Vue de Côté



At this time the system had no moving parts, and even in terms of structures it was rather limited because of the few parts available that could be used to join side frames made from the Lozenges.

The EARLY to MID 1920s By about 1920 the system had been totally revised and enlarged. The parts from the first (SFJM) manual known from this time are shown atop the next column, with the metal parts above the Crane and the card & wooden ones below it. The Axles are 2, 4, 10, & 13cm long, and the Bolts, 5, 6, & 10mm u/h. These parts are the ones shown in MCAM & MCS/FB. The Flanged Wheel has a pulley groove but although the Bush Wheel is described as a 'Poulie barillet' it isn't clear from various illustrations that it is grooved. The Wooden Bases probably had a centre hole. The 26 metal parts were nickel plated steel except the brass Wheels, and, most likely, the N&B. When the wider Period C Strips were introduced isn't known.

Even though new tooling would have been needed for



both the Strip parts (still only 3 of them) & the Lozenge, it is surprising that they are not entirely compatible with each other. The holes in the Strips are at 11mm pitch and so are the outer 3 holes at each end of the Lozenge, but the extreme outer holes are at 100mm pitch and the centre slot is not a multiple of 11mm from any of the outer holes. The Braced Girder is 107mm long o/a and the holes along it are at 10mm pitch, so they only match the centre & outer pair of holes in the Lozenge, and don't match any two holes in the Strip. Perhaps to save retooling it was just the earlier Braced Girder with the holes added, and this governed to an extent the design of the Lozenge. In that case though, it would have been better to have had 10mm pitch holes in the Strip & Lozenge. The Braced Girder is 23mm wide and the hole pitch across is 17.5mm, so it doesn't match 10 or 11mm spacing. Although a square Nut is shown, an example, perhaps from this time, is hexagonal, 5.9mm A/F, and a matching Bolt, 6mm u/h, has a tapered CH, 5.3mm Ø. Both are brass steel.

The illustrations of the parts above came from pages headed 'Parts in Sets 1-3', and the PN's run continuously from 1-25. It isn't known if, as earlier & later, there was a No.4 Set at the time. Other pages with them talk of a 'Journal CONSTRUCTOR', & competitions with large prizes, both monthly, with details available from the rue de Sèze address. Also with them, 2 model pages which include the No.2 Crane above. The cover of the manual containing these pages is probably that on p7(a) of MCS/FB and is similar to the one shown below except that the patents aren't listed and the set is indicated by a '2' in a circle at each side.

A **slightly later 0-2 Manual**, though still with the initials SFJM on one page, will now be described. First though the Illustrated **Parts List** that was found with it. After #10 the PN's differ from the earlier one because new parts have been added in. Together with a slightly different Crank, 4 of

the 5 are shown right. In addition the List shows new versions of the Fast & Large Loose Pulleys, & Flanged Wheel,

without any holes or cutouts in their faces. The new part not illustrated is #39 '**Boules tricolores**' and although not listed before, examples could be seen on the box lid Tower even in Period A. In MCAM the part is described as wooden, 25mm Ø, painted red, white or blue, and fitted with a metal hook & ring. Also listed are the **range of sets**, 0-4 & linking sets 0 bis to 3 bis; **Manuels** Nos.1, 2, 3, & 4; and 2 **Motors**, C/W & 110v Electric.

SUMMARY OF MANUAL •Name: CONSTRUCTOR •Details of maker: S. F. du J. M. on p2. •Dates &/or Ref Nos: none. •Page size: 244*158mm deep. •No. of pages: 32+covers. •Language: French. •Printing: line drawings of models, orange cover with red & black text. •No Parts List. •Page Nos. of Set Contents & highest PN:

29,38. •Sets covered: 0-2. •No. of models for each set: 32, 37, 63. •Name, Model No., Page No. of first & last model of each set: 0: Assemblage droit inverse,1,3; Martin+et,32,7. 1: Bascule, 33,8; Petite Passerelle,69,13. 2: Demi-

circle,70,15; Hangar en longueur,132,28. •Other notes: large models of a Liner & 2-Cylinder Steam Engine are on pp2,14; pp30-32 & C2,3,4 are blank except for the printer on 30 & C4: A.Ramboz, Lyon & Paris.

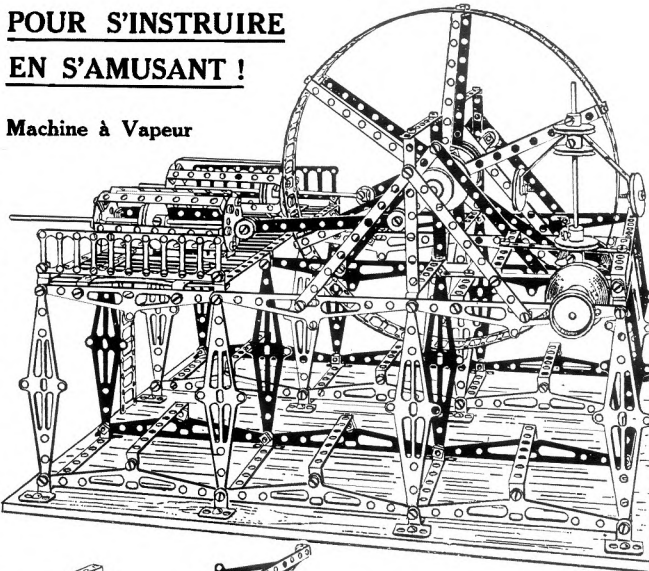
The **Set Contents** shows the main parts in the No.0 are 6 each of the Lozenges & ½-Lozenges, 4 Strips & 6 DAS, 2 Fixed Pulleys, and 25 N&B. 2 more Pulleys, 2 Braced Girders and a Bush Wheel are among the extra parts in the No.1. Of the new parts, 2 Cranks are in the No.3, and all are in the No.4, including 4 Spoked Wheels with Tyres, a Worm, and 2 each of the Gear & Pinion. The other No.4 parts include 32 each Lozenges & ½-Lozenges, 74 of the Strip parts, 10 Braced Girders, and 166 N&B. All the sets have both sizes of Wooden Base and all the 'decor' parts except the Ball.

The **2 model pages** from the earlier Manual are in this one but with different page & Model Nos. Most of the No.0 models show the simplified Pulleys but a few have the older pattern, as do all the larger set models. No models use the Cranks in the No.2 Set. Some of the models are shown in the next column including the Steam Engine & Liner 'super' models. The Chair is from Set 0, the Lifting Bridge from Set 1, & the Saw from Set 2. Also shown is a No.4 Roundabout from a **slightly later 0-4 Manual** with a cover similar to the one above but brown with red & black lettering. It still has SJFM on one page but a postcard with it is printed with the PIM address.

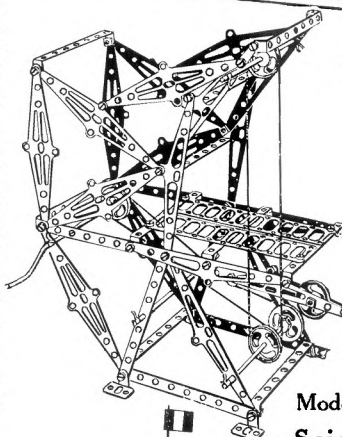
From photos of Sets No.3 & 3 bis that were with this last Manual details of some parts can be seen. The **Spoked Wheel** is about 7cm Ø and is made like the ERECTOR part, with two 6-spoked discs tagged together with the spokes staggered. The **Tyre** looks as if it is a black rubber ring. The **Bush Wheel** scales at 30mm and has the 2 rings of 6 holes as earlier but the boss is circular without the side extensions. The **Flanged Wheel**, with pulley groove, is about the same diameter, the Loose & Fast **Pulleys** are about 20mm, and the Small Pulley about 10mm. All appear to be brass and as would be expected none have the early cutouts. The **Crank Handle**, **Spanner** & **Screwdriver** scale at 132, 63 & 105mm o/a. Scaling the **card parts** gives 40-45mm for the Railway Signals, & the length of the Flag; 30mm for the length of the Oriflammes et Signaux; and 100*75mm for the Toile de Tente (which has 8 red & white stripes). The **Gears** were

POUR S'INSTRUIRE EN S'AMUSANT !

Machine à Vapeur

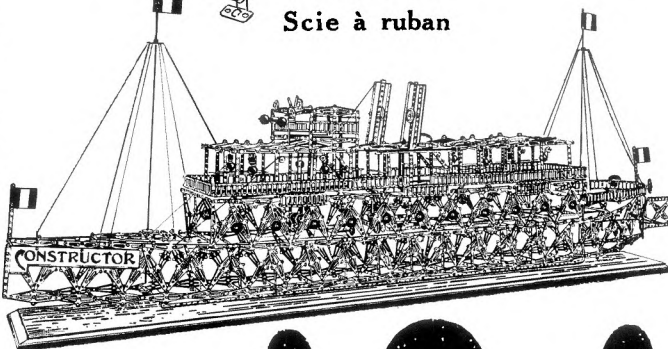


S. F. du J. M.

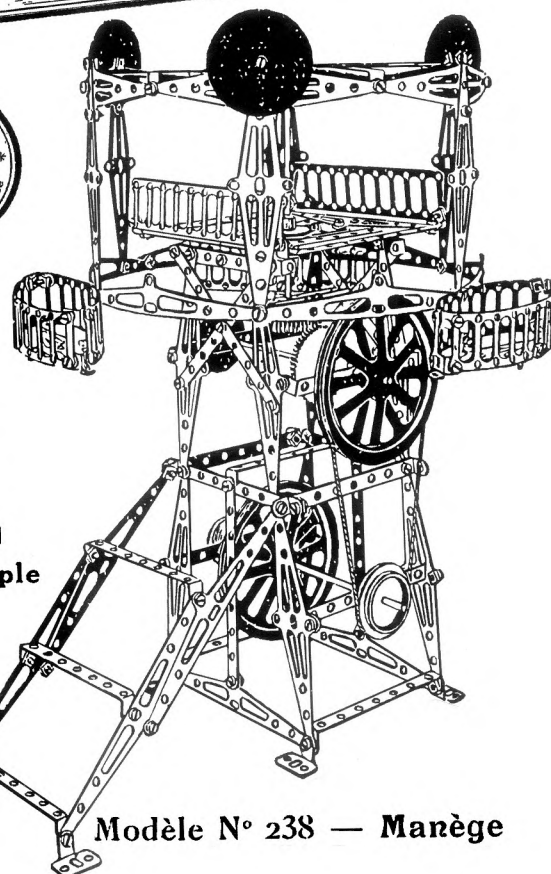


Modèle N° 50
Passerelle
basculante

Modèle N° 127
Scie à ruban



Modèle N° 11
Chaise simple



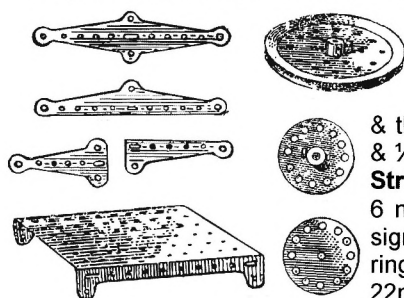
missing but would be brass, machine cut, with the Pinion & Gear Wheel (19 & 55t) bevelled so that they can also run together at 90°.

The **boxes** are black, green inside, and the **lid label**, below, is the design used throughout this period and into the 1930s. It has a fawn background with the two panels in colour and the name in red.



About 1930 This is in Period D & details are from a Leaflet headed 'LE NOUVEAU CONSTRUCTOR en Couleurs', and a Manual of the time. The **sets** listed in the Leaflet are Nos. 00 to 4, and 00 bis to 3 bis, plus 2 others, Baby No.1 & No.2, which still had nickel parts, and cost Fr.5 & 10, against 19 for the No.00. The 2 **Motors** are also listed. The box **lid labels** in the illustrations of the Sets 1-4 are the same as before; those of the 0 & 00 are similar but with the text to the right of the centre panel moved to under the name.

By this time the **parts** and sets in the system had been revised again, and given that the only novelty claimed was the coloured parts, those changes had no doubt happened earlier. No Parts List is available but the main changes, from the parts used in the Manual models, were (with illustrations of those starred):



•The redesigned **Lozenge parts*** with holes that now match the Strips, & the new End ½-Lozenge* & ¼-Lozenge* parts. • Extra **Strips** with 2,3,5,7,17h, and 6 new SAS/DAS. • A redesigned **Bush Wheel*** with 1 ring of 12 holes on a pcd of 22mm, and a **Wheel Disc***

to match. • A 36cm **Axle**; • a **65mm Pulley*** with a ring of 6 holes at 22mm pcd, and another with 12 at 44mm – this replaced the Spoked Wheel. There may also have been a Loose Pulley of the same diameter– later there was, with discs spot welded together, no face holes, & pronounced belling at the centre. The **Tyre**, white looking now, was a separate part. • A new 11*7h **Flanged Plate***, flanged on the 11h sides with 'feet' at each corner. • A **Braced Girder** of the same pattern as before but 'stretched' to give holes at 11mm pitch lengthways and 22mm across.

The **PNs** for all the parts now correspond to those on p3/4 of MCS, and the **sets contain** all the parts through #45 except 5b,c,d, 10a, 14a, & 17a. In addition the Square & Round Signal Discs are used in a few models and in one are listed as #62 & 65 (judging from a later List #65 should have been #63).

So a real rethink, with the desire no doubt to make the system more flexible in use, and the models less 'old-fashioned' looking. The feet on the Flanged Plate are an original feature which is often useful, and rarely looks out of place. The introduction of red & green coloured parts would have helped too. It is said incidentally that some coloured parts had been produced earlier but then dropped, and also that at certain times some/all parts were brass plated.

No details of the colour scheme are to hand but for reference the general **post-WW2 colours** were: Strip parts and Braced Girders green; red Lozenge parts, Plates, 22 & 65mm Pulleys, Bush Wheel & Wheel Disc; solid brass

Gears, Flanged Wheels, & 16mm Pulley; brass plated Crank, 2 & 3h Strips, Angle & Double Brackets, & Double Bent Strip.

From B&W photos of the sets in the Leaflet, the Lozenge parts, the Flanged Plate, the 65mm Pulley, & the Braced Girders look dark, and the other parts lighter. In a photo of an actual model (with this pattern Braced Girders but of unknown date) the main parts have the postwar colours.

No **Set Contents** is available but the following can be seen from the illustrations. No.00 had a Flanged Plate, Strips up to 9h long, 2 each of ½-Lozenges, End ½-Lozenges, & Braced Girders, a Bush Wheel & 4x 22mm Pulleys (probably 2 each, Fast & Loose). The No.0 had more Strip & Lozenge parts, and 4x 22mm Fast Pulleys. 4 of the 65mm Pulleys are in the No.1; an extra Flanged Plate, & 2 more Braced Girders in No.2. The No.3 has 4 Flanged Wheels, 2 Cranks, & 2 extra Braced Girders; the No.4 a Worm, 2 pairs of Gears, Tyres for the large Pulleys, and 10 in all Braced Girders. My impression is that the sets were larger than before with at least in some sets, addition of the new smaller parts to the existing Full- & ½-Lozenge pieces.

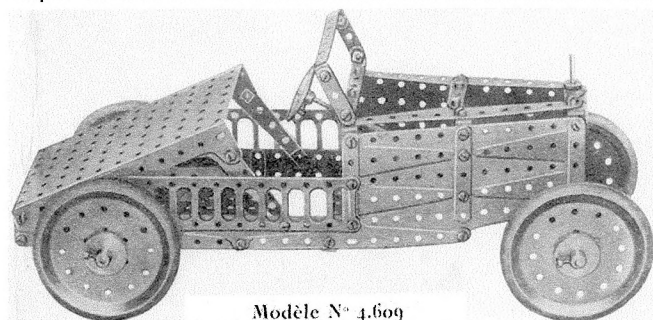
The **manual** to hand of this time has models for Sets 00 to 4, and on an introductory page has the same pictures of the sets as on the Leaflet, and with the same heading. Its cover (below) has a boy with a Crane in which the Lozenges are the old pattern.

SUMMARY OF MANUAL •Name: CONSTRUCTOR •Details of maker: Paray-le-Monial, Saone et Loire, on C1. •No dates or Ref Nos. •Page size: 245* 167mm. •No. of pages: 64+covers. •Language: French. •Printing: ½-tones of models; cover red, white, black, on light brown & white. •No Parts

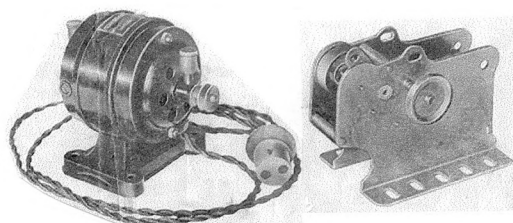


List or Set Contents. •Sets covered: 00-4. •No. of models for each set: 101,28,30,37,20,20. •Name, Model No., Page No. of first & last model of each set: 00: Letter A of GRAND ALPHABET,00.1,3; Jauge de voie,00.101,11. 0: Hangar en voûte,0.201,12; Bobinoir, 0.223,17. 1: Grue fixe,1.302,18; Pèse-lettre,1.327,25. 2: Poste d'observation,2.407,26; CAMION HIPPOMOBILE,2.437,40. 3: Presse automatique à plateau tournant,3.500,41; Appareil à dessiner,3.519,50. 4: Passerelle de chemin de fer,4.600,51; Bateau, 4.619,63. •Other notes: C3,4 missing; photos of Sets 00-4 on p2 and C/W & Electric Motors on p64; some errors in model numbering.

The previous line drawings are replaced by halftones and as before there is one good-sized illustration of each model, with, now, brief explanatory remarks and an extra view for a few. Nearly all the models include the new parts to a greater or lesser degree, and are either new or adaptations of earlier designs. Some at any rate do look more modern but others have rather lost their period charm, and the Braced Girder begins to look out of place in certain models, the No.4 Tractor shown in 3/29 for instance. Some models include pulley drives but otherwise the only mechanical features are some straightforward gear trains in the No.4 models, and centre-pivot steering, as in the Sports Car below, operated by the Crank Handle which carries the steering wheel. No 'super' models are shown in this manual but the whole of the



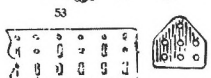
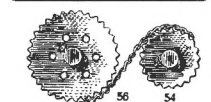
Modèle N° 4.609
Automobile "Grand Sport"



last page is taken up with photos of the 2 Motors (left). The 110v has oil cups front & rear and the claimed power

is 1/60 C.V. Neither is shown in any of the models.

About 1933 More new parts and drastic changes to the small sets. The **sets** listed are as in 1930 except that typed in between Baby No.2 at Fr.10.50 and No.00 at Fr.27, is 'No. spéciale.' at Fr.22. The other new item is a 110v Rheostat. Sets 00 to 4 (but not the Spéciale) are illustrated and though their lid labels remain as before, the layouts have been changed and **new parts** can be seen in them.



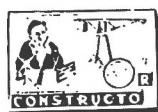
The latter are **11 & 31h Strips**; a new pattern **Braced Girder***; a **3*11h Perforated Plate**; a **3*7h Flanged Plate**, with flanges on the short sides; a **7h Trunnion*** & **Flat Trunnion***; and probably: **15 & 30t Sprockets***; a **7*7h Flanged Plate** with 2 flanges; and a **2*1h L-section A/G***, 31h long (* the flat version, not in the sets, is also shown – the bend line is between the rows with all & alternate slotted holes).

Sets 00-1 have been transformed with Strips & Plates replacing the Lozenge parts & Braced Girders. The 00 has 3 Flanged Plates, 2x 3*7h as well as the existing 7*11h; and 4x 3*11h Perf. Plates. In addition 2 each Trunnions, Flat Trunnions, & 65mm Loose Pulleys. The main extra in the No.0 is a second 7*11h Flanged plate, while the No.1 has a 7*7h Flanged Plate and 4x 65mm Fast (probably) Pulleys. Not all the parts in the larger sets can be seen but they certainly have the new parts, and probably the previous number of Braced Girders. No Lozenge parts can be seen in the No.2, but there are some in Nos.3 & 4.

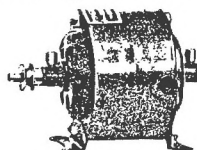
The prices of the sets compared with 1930 may give an indication of the extent of the change that had occurred. The Baby Sets had only increased by 5% but the 00 was 42% more at Fr.27. This left a big gap between the 00 & Baby 2, which was filled by the Spéciale Outfit. The other sets all increased by between Fr.11 for the No.0 to Fr.5 for the No.4.

The bottom of a **manual cover** can be seen with the No.3 and it looks like the '1930' one above, but new models would have been needed for the revised sets.

1937 A 'Tarif 1937' lists all the 1933 sets with illustrations of all but the linking sets. The Baby 1 & 2 lids are similar



Baby 1



Baby 110 volts
1/60 HP



Boîte
Spéciale



Boîte 00

with a boy & a Hammerhead Crane (top left). It looks as if the R of the name is being hoisted by the Crane. Above is the Spéciale: the large wheels are the 65mm Loose Pulleys, and the Aeroplane on the lid is a model in the '1930' manual. The other sets seem to be as

in 1933 but as in the No.00 above left, the lid label has been changed and appears to the type, illustrated later, that was used postwar. If so it is much brighter, though the photos are perhaps not quite as handsome.

The C/W Motor in the List looks the same as before but

is described as the No.2. The 110v Electric (shown between the Baby & Spéciale sets) has a slightly different case and is called Baby, 1/80 HP (earlier 1/60 C.V. was claimed).

The WAR YEARS Some parts in this period were made from very thin steel, or aluminium, plain or painted. Pulley bosses were also aluminium. A batch of parts with aluminium bosses, age unknown, includes Flanged Wheels turned from solid aluminium (instead of brass), and 22mm & 65mm Pulleys with aluminium discs, the latter painted red. The bosses of the Flanged Wheels are 8.5mm Ø, but the others are 9mm, as are later brass ones. All are double-tapped. The Strips are Period E, 11.0mm (±) wide, but I've no start date for it. The colour scheme is the postwar one with the red a mid-shade slightly darker than the MECCANO 1950s colour, and a light green similar to 1960s MECCANO.

The 1950s A **No.000 Set** has in it 2 Model Sheets with 000 models, a packing slip dated 1953, a Price List of parts dated Feb.1953, and a Set Contents sheet for Sets 000 to 4, and 00 bis to 3 bis. The **Price List** is the same as the one in MCS, and the main **parts** not already mentioned (and which weren't in the sets of the time) are: a **13h Strip**; a **Tyre** for the 22mm Pulley; **Perf.Plates** 5*11h, 7*7h, & 7*11h; 7 & 11h 'L' A/Gs; 3*7,11,31h **Flat Girders** (the A/G stock); a **Coupling***, and **Spring Cord**. The **card parts** #60-63 are in the Set Contents list of parts (but aren't in the sets), and so is a **Spéciale manual**, as well as the 000, 00 to 1, & 2-4 in the Price List.

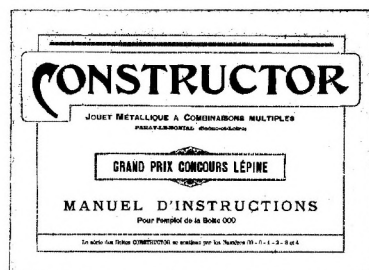
The **contents** of **Sets 00-4** seem to match quite well what can be seen of the 1937 sets. There are only 4 of each of the Lozenge parts in Sets 2 & 3, but Set 4 has 90 in total as well as 6 each of Flanged & Perf. Plates. It still has the same number of N&B as in the 1920s. **Set 000** is generally a smaller version of Set 00 but with 4x 22mm Loose Pulleys as wheels, and a few parts not in the No.00: 4 of the A/B-type Feet (#20), & 2 each of the 1/2-, End 1/2-, & 1/4-Lozenges. Did the factory have too many in stock, or did someone there still value/love these interesting looking parts?

The **000** is in a large light blue box, 39*20 1/2*2 1/2cm, with the lid label of the time below. It is in full colour on a yellow



ground, with 2 boys and a Transporter Bridge on the left, and the real bridge to the right with a Crane and a Warship in front of it. The colours of the parts are correct except that the Warship is blue, purple & fawn. The boy standing has a red jumper with black horizontal zigzag stripes. The parts were strung to a yellow backing card, and the N&B are in a light blue 6 1/2cm square card box with a boy and a Crane on the yellow lid label. The green parts are the earlier shade but some of the red ones are lighter, between the MECCANO 1950s & 60s. The 22mm Loose Pulleys are as light as 1960s MECCANO red, and are made from 2 discs spot-welded together. The Spanner is painted red. None of the small parts remained in the Set.

The first Model Leaflet is a yellow sheet, 49*35 1/2cm folded twice, with the outer face as below, and halftones of the models. There are 60 on one side, including the Alphabet & Numerals, from B1.1 to B1.60, and 33 on the other, from B2.1 to B2.33. Perhaps these were models for



the earlier Baby Nos.1 & 2 sets. If so apart from Strip parts & Brackets, the No.1 had 2 each of 1/2- & End 1/2-Lozenges, & 4x 22mm Ø Loose Pulleys. Extra in the No.2 were 2x 3*11h Plates, & a 7*11h Flanged Plate.

The other Sheet, 24 1/2*17 1/2cm, and again yellow, has 4 models on both sides under the heading 'Modèles construits avec la BOITE 000'. They run from A 35 to A 42 and need all the main 000 parts except the End 1/2- & 1/4-Lozenges. What does the 'A' signify?

A photo of a **1956 No.3 Set** is as would be expected, with a light blue box and the 000 lid label. The parts are in the 'standard' colour scheme, and are strung to yellow backing cards or packed in transparent packets. Noticeable though, the 22mm Pulleys are fitted with white rubber ring Tyres.

A **Set Contents sheet, date unknown**, shows 4 of these Tyres included in Sets 00-4. Otherwise the 00-4 contents are as in 1953 except that: a Hank of Cord (#48) is also included in each set; the card parts #60-63 are in the No.4; and there are 2 extra 3*11h Plates in the No.00. Set 000 is unchanged.

Also listed is the Spéciale (in the 000 column and vice-versa), so it seem that it was reintroduced, assuming this 'mid-50s' Sheet is after the 1953 one. If it was earlier then the 22mm Tyres must have been dropped from the Sets at some point, no doubt due to the war, and then restored.

At any rate the main **Spéciale contents** were 2 each of the 4 Lozenge parts; 10 Strips from 3 to 7h; 3x 1*7*1h & 2x 1*3*1h DAS; a 7*11h Flanged Plate; 2x 5*11h & 4x 3*11h Plates; 4 A/B; a Bush Wheel & 3 Wheel Discs; 4x 65mm Loose Pulleys; and 33 N&B. It would be interesting to see the models if a manual ever turns up.

Going back to the **No.3**, the 2 **manuals** with it (00-1 & 2-4) have the bright yellow cover below, with 2 boys, a Crane & a Loco, and a dock & skyscrapers in the background, all in solid colours. A similar 00-1 manual is as follows:

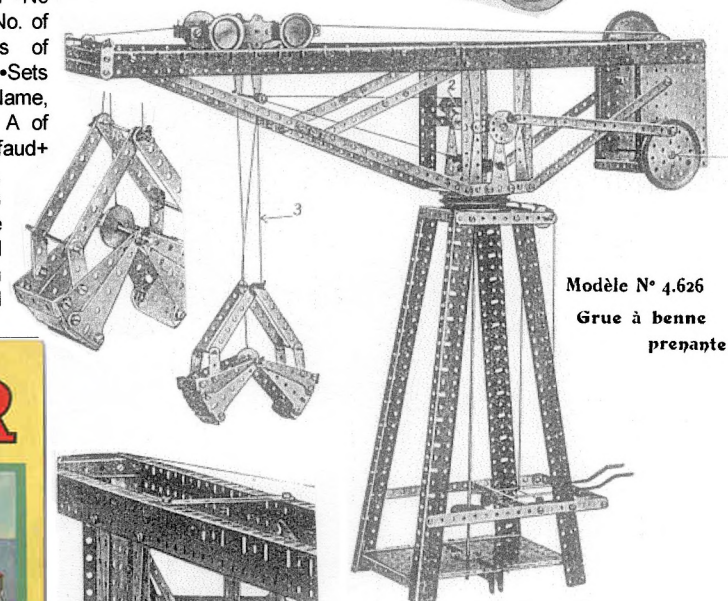
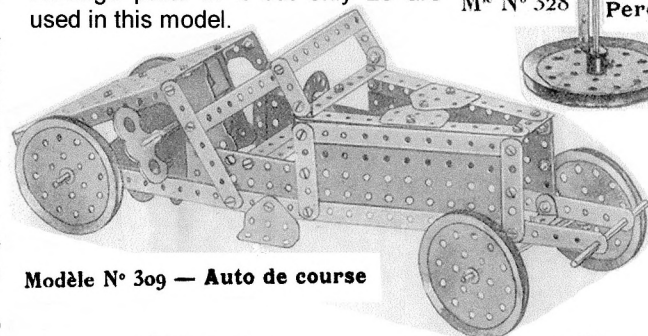
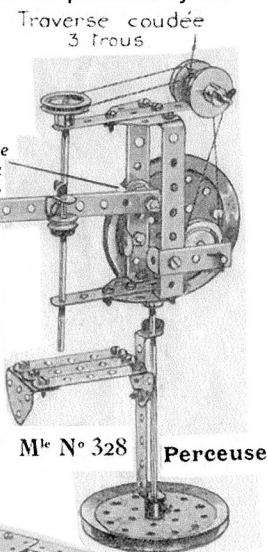
SUMMARY OF MANUAL •Name: CONSTRUCTOR 00-1 •No details of maker, dates or Ref Nos. •Page size: 264*211mm. •No. of pages: 32+covers. •Language: French. •Printing: 1/2-tones of models; cover solid colours. •No Parts List or Set Contents. •Sets covered: 00,0,1. •No. of models for each set: 109,42,39. •Name, Model No., Page No. of first & last model of each set: 00: A of GRAND ALPHABET,1,1; Chariot à bagages,106,11. 0: Echafaud+age roulant,200,12; Tracteur agricole,241,20. 1: Régulateur, 300,21; Canon de campagne,338,30. •Other notes: the models are not always in exact order, & there are 2 of No.46; the Electric Motor is shown driving a Gearbox on p31, & a Flywheel on p32; C2,3 blank, - C4 has CONSTRUCTOR in a large green rectangle with LA MÉCANIQUE POUR TOUS behind in a red circle.



There is a large halftone of each model and a Parts List for all but the 00 ones. The models are a fair selection, fairly simple and straightforward, but, with good use of the Plates

in the sets, quite realistic, rather like the better MECCANO models of the early 1930s. Few of them require parts to be curved or bent. The 22mm Tyres are only used in 2 models. The 65mm Pulleys are about right for the vehicles and the feet on the 7*11h Flanged Plate are often useful, and rarely look out of place. The models do not of course contain any of the Lozenge parts that distinguished earlier small models. Below the Drill Press is from Set 00, and the Sports Car is a Set 1 model. It is quite similar to the No.4 version shown earlier except that it has no steering, and it's interesting to see that a handful of Strips and 4 Plates have replaced 24 Lozenge parts & 2 Braced Girders. It is now powered by the C/W Motor and so is one other model in this manual.

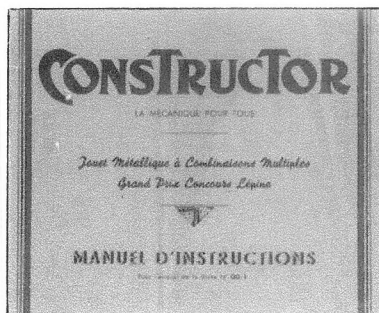
Also below the No.4 Crane which is the one featured on the small card N&B boxes in the sets. The two Crank Handles at the bottom control slewing & hoisting, with 2 pairs of 'Bevels' in the hoist drive; the grab is operated by the Pulley 1. An earlier version in the 1930 manual had no crab or grab, and the tower legs & top horizontal members were made of 44 Lozenge parts instead of 8 A/Gs. The No.4 still had over 90 Lozenge parts in it but only 26 are used in this model.



Pièces nécessaires

Nos 1...	2	Nos 10...	8	Nos 28...	3	Nos 36...	4
2...	4	14...	6	29...	6	37...	7
3...	8	15...	1	30...	1	40...	4
4...	12	16...	6	31...	1	43...	112
5...	8	21...	18	32...	1	44...	6
5bis...	8	23...	2	33...	2	45...	4
6...	8	24...	2	34...	2	49...	8
7...	4	25...	2	35...	4		
8...	6	27...	4	35bis...	1		

Another 00-1 manual with identical models is known - it has the blue cover 252*207mm, with dark blue lettering shown below. The back cover is blank and so are the yellow



inside covers. The page numbers and layout are identical to the first 00-1, and from its covers it would have been earlier, but not much because it too has the 2 models with the 22mm Tyres.

A photo of a **No.0 Set** has the same style of packaging as the

No.3 and the only differences in the parts are that the 22mm Pulleys look brass, the 16mm looks grey, and the 65mm Loose Pulleys have 6 face holes on the same pcd as the outer ring of the Fast version.

The 1960s At some point the lid label was changed to the one below, almost as before but the boys are different, both now with dark hair and plain, dark, long-sleeved jumpers, green for the older boy, and red for the one kneeling down.



Just when this change occurred isn't known, but a **1960 No.3 bis** has the new label. A photo of it shows parts not seen in earlier material: red Sprockets, black 65mm Tyres (which still look like rubber rings), and red Cord. Otherwise the parts are 'standard'.

A **No.3** is shown in Plate 74 of *Eisenzeit* with unpainted Sprockets and brass 26mm Pulleys. Some of the Card Parts can also be seen.

An incomplete **No.1** has lighter red parts like 1960s MECCANO, and green parts rather lighter and much brighter looking. Green Cord was found in it.

The **Spanner** (left) is still red but is now 2-ended, 75mm long o/a, cranked at one end & angled at the other; the **Screwdriver** is the wire type, which had replaced the original flat one sometime in the 1950s.

A photo of a **No.00** also shows these Tools, and lighter looking red parts.

The END For whatever reason CONSTRUCTOR ceased being produced on 31 July 1964. That it was an original & interesting system is not in doubt, and the parts from the earlier phases have been, fairly I think, described as 'beautiful'. However it is generally agreed that many of the manual models didn't do justice to the parts. That said, it is perhaps more difficult to use the parts effectively in some types of models - my own efforts, using the later type Lozenge parts, started with the thought of making something mechanical & ended with a model of an Edwardian Summer House. I don't know of any system really comparable to CONSTRUCTOR - triangular elements were used in CHARPENTO (21/617) & STEEL WORKER (16/449) in the 1920s, but they were larger and only suitable for the frameworks of buildings - METALLO TRIGON (5/93) in 1913, was perhaps the nearest but the parts were very angular looking and lacked flexibility in use.

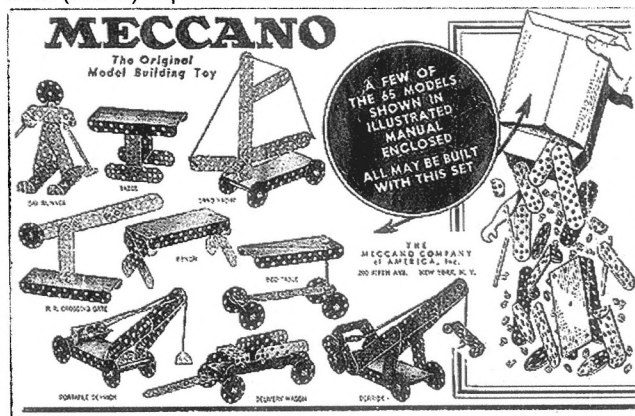
ENDWORD - Commercial History Constructorama & the Meccano-Champagne club held an exhibition of CONSTRUCTOR at Paray-le-Monial in February, and Jeannot Buteux kindly sent a poster about it, which gave the details that follow, discovered as a result of research by

Constructorama. Following the first Paul Goiffon patent (491527 of 15 June 1916) and the additions later in 1916 (20829 of 13 Sept., 20837 of 17 Oct., & 20840 of 18 Nov.) trade marks were registered on 30 Dec. 1916. From some point not known exactly A.Frégonara & F.Mangard started production at 19, quai Arloing, Lyon. (Perhaps A.Frégonard was related to the Charles Fregonard who took out the 1919 patent described earlier.) The firm was acquired by Léonce Bailly-Comte on 6 Dec. 1918, and he joined forces with Adolphe Gayet on 1 Feb. 1920 to found the Société Française du Jouet Métal, of 119 rue de Sèze, Lyon. The company was bought by Antoine Maillet on 1 July 1925, and its address then was 'Lieu de Bellevue', Paray-le-Monial. Production at Paray saw some changes to the dimensions of the parts and improvements in their quality.

THANK YOU to all who have contributed to this account including Frank Beadle, Josep Bernal, Jeannot Buteux/Constructorama, David Hobson, Harry Marien, Jacques Pitrat, & Clive Weston. Also to Constructorama & the Editor of the CAM Magazine for permission to reproduce the Period A illustrations.

Another GILBERT MECCANO Wide Beam Set

Kendrick Bisset has had a lucky find and kindly sent details. It's a Wide Beam Outfit No.1026 and seems to be very similar to the No.1025 mentioned in 12/319. Kendrick wrote, "The 'box' is a 6*9" paper envelope similar to today's large envelopes in color (yellowish brown) and construction. The front (below) is printed in black and doesn't show the Set No.



Pages 3 & 4 (unnumbered) of the 4 page manual (one folded sheet) match those in MCS for the No.1025 (/FB, MECCANO (AMERICA) 'X' SERIES, pp5a & 5b) EXCEPT that the 'made with the No.1025 Meccano Set' on page 4, has been replaced by 'made with the No. 1026 Meccano Set'. The '1026' is not on the same line as the rest of the text, and is a little crooked. The front of the manual has 'MANUAL OF MODELS / Built with the new No. 1026 / MECCANO', copyright 1933, the New York address, & Form M1491.

Quantities: 1 Flanged Plate; 2x 3 3/4" Beams; 4 each of 2 3/4" & 2 1/4" Beams; 2 DAS; 3 Threaded Rods, 2 1/2" long; 2 Angle Brackets; 2 Washers; 21 Nuts (some may be missing); 11 Bolts but I think there are supposed to be 15.

The parts are as described in OSN 12, except that the 2 3/4" Beams have the same middle hole as the DAS. The Wide Beams are green, the Flanged Plate is red, the Angle Brackets & 3/4" Washers are nickel, and the Discs are dark blue. N&B are 8-32 and the Bolts match one style of Erector Bolts, with shiny (nickel or chrome) plating.

The Beams are 0.041" thick over the paint (which is quite thick, and in many cases has drips and runs); The Discs are only 0.022" thick, and so is the Flanged Plate. The latter has again a poor paint job and is so thin that 'axles' will screw themselves across, and bind when rolling along.

Comparing the parts to my LITTLE JIM Wide Beam outfit (similar to the 'Snap Rivet' sets in OSN 12), the 1026 2 1/4" Beams are fully radiused at the ends, while the L-J ones have slight 'corners'. The L-J Beams are 0.036" thick, but that may well be due to a better paint application. The L-J Flanged Plate is also 0.022" thick."

EDITORIAL A record 25% or so of subscribers sent comments on the 'new' OSN, and reactions were mixed. Nearly all liked the colour & the better quality B&W photos, but over half strongly regretted the passing of the folded, double-sided, stapled sheets. To them I can only say 'me too', but I'm afraid that single-sided A4 is the only practical way I can see of continuing to produce the N/L. No one mentioned the increased price, the new rates are given overleaf.

One point of detail. For my convenience all the pages of the last N/L were collated face up so the wide margins were to the left & right on successive sheets. The idea was that the recipient would turn over every other sheet so two printed sides could be seen at a time with the wide margins innermost (and then two blank sides, etc). This seemed a good idea but not everyone thought so, and I have found myself that more often than not I open to blank pages and then have to turn over a page to see a page number (Sod is alive & well). It would be easy to have the wide margin on the left on all pages and if you feel strongly about this, one way or the other, please let me know.

On another matter, several readers have reminded me that my OS Database is now very out of date. Perhaps I'll be able to produce a new version in 2004 and I'd be glad to hear if anyone has thoughts about improvements to it. Bear in mind though that new material will increase its present 44 pages considerably.

FROM READERS

1. From Don Redmond. On **THE CONSTRUCTIONER** (9/206, 26/779), the hole spacing between the 2 centre lengthwise rows of holes in the Plates is $\frac{1}{2}$ " instead of the standard $\frac{7}{16}$ ".

THE CONSTRUCTIONER: S1

[29/845]

2. From Don Redmond, some additional notes on **Phase 2 MODELIT** (see 15/186) from a recently found Set E. The Gear does have 50 teeth and meshes with the 16t Pinion at 2h centres, giving a DP of 38, as in Phase 1. There are no Sprockets in Set E, but a 45" length of Chain was found in it which appears to fit over every other tooth of the Gear. Its pitch is .18". Strips are 10.5mm wide. Both arms of the A/G are 14.5mm and in each the holes are toward the edge. Some Crank Handles have a hole $1\frac{1}{2}$ " from the bend (like the Phase 1 parts, see 8/186) but others, if they are genuine, don't.

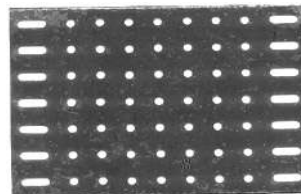
MODELIT (b): S1

[29/845]

3. David Hobson showed me a French **CONSTRUCTOR** lot of parts, and they seemed to fall into two groups. The first correspond to those for the 'Early to Mid 1920s' shown in 24/701, and the Strip parts are 8.0-8.1mm wide, very near the 8.2mm of Period B.

In the second the Strip parts are 10.1mm wide and so are nearest to the 9.8mm of Group D. They generally correspond to those described for 'About 1930' in OSN 24 except for the Flanged Plate. It has the usual feet at the corners but is 9h long instead of the later (presumably) 11h

type, and its ends, and end holes, are extended by about 6mm. Below a plan view – the length overall is 112mm (120mm for the 11h type) and the slots are 10.6mm long. The flanges are similar to the 11h type but the end slots match those on top and the depth along the sides is a little less, typically $9\frac{1}{2}$ against 10mm. Of the Lozenge parts only some



$\frac{1}{2}$ -Lozenges were present and these, and the Flanged Plate are dark red (like late 1920s MECCANO). The Strip parts, the 12h Wheel Disc, the A/B, and the flat Hook (as in MCS, 17.6mm long with a 2.7mm hole) are nickel. The brass parts are the Pinion (#25 in MCS, with 19t, Mod. 0.6), the Flanged & Grooved Wheel (#27, 32mm o.d., turned with a slightly tapered integral boss), and the Loose Pulley (#31, again turned, 22mm o.d., and 3mm thick).

3 Nuts found with the parts are brass, square, 5.6mm A/F, and 1.8mm thick.

CONSTRUCTOR [1]: S1

[29/845]

4. Another lot courtesy David Hobson, this time the model leaflet and parts from a **MASTER BUILDER** No.25 set, complete except for 2 A/Bs, & a few Nuts. The Strips have the large radius ends noted in 16/450 & 19/554, and the thread of the N&B is 8-32; otherwise the parts are as described in OSN 16, but the following details may be of interest: • The holes are 4.3mm except in the A/B. • The end radius of the Strips is about $\frac{7}{16}$ " and there is only 3mm of metal outside the end holes. • The 4h Wheel Discs are 24.0mm Ø and the holes are on a $\frac{5}{8}$ " pcd (if the o.d. had been a little larger to accommodate a .7" pcd, the part could also have served as a corner bracket). • The A/B, typically 12.4*12.6mm, is 12.4mm wide. It has a 4.5mm hole in one arm and a slotted hole 4.9mm wide & 7.2mm long in the other, both with only about 2mm of metal outside them. • The N&B are nicked, the Nut is square, 8.8mm A/F & 3mm thick, the Bolt has a roundhead, 7.6mm Ø, & is 6.6mm u/h.

The Model Leaflet is one sheet 203*490mm folded into 4, & is nearly identical to the Wetzell one described in 16/451. The Intro, which couldn't be seen clearly before, speaks of 16 successive sets which build 95 models using 58 separate parts, & the address under it is 468 B'way, N.Y.City. It is identical to the one in the No.10 Leaflet in 16/451. The significant differences are that the front has no Acorn logos (on either side of 'THE' at the top), and has been rubber stamped 'REMOVED TO BUSH TERMINAL, BUILDING No.6, BROOKLYN. N.Y. Notes on the addresses & logo were given in 18/495.

MASTER BUILDER: S1

[29/845]

5. Notes from Don Redmond on **BUILD-X & DELTA-X** (see 11/288), and David Hobson lent me some of his parts. In OSN 11 I missed the fact that the bosses of some at least of the plastic circular parts have '**D**' section bores. Those seen are the 21mm Wheel, P-006, & the Compound Gears, P-003-5. The 19mm Pulley, P-008, has a normal circular bore though. The round Axles with my parts are most likely

A 1920s French CONSTRUCTOR No.2 Outfit

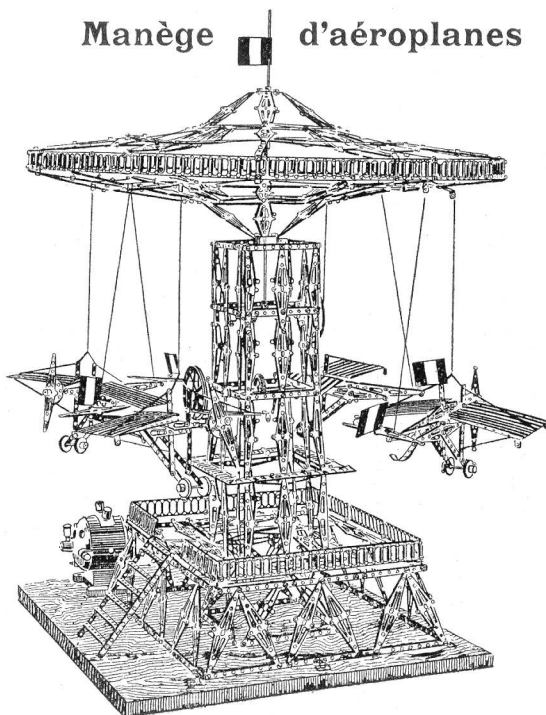
This set, nearly complete, belongs to David Hobson & he kindly let me borrow it. Its manual is similar to the 24/702 one with 'S. F. du J. M.' on p2, but a leaflet with it, showing the parts/set contents, has 'PARAY-LE-MONIAL (S.-&L.)' rubber stamped on it. So the Set probably dates from soon after the move to Paray-le-Monial in 1925. Most of the parts are as would be expected except that none of the Pulleys have cutouts in their faces, and the Strips are narrower than any known before.

David also lent me a No.0, most likely also from the 1920s, which lacks some parts completely but has many more than would be expected of others. Again the Strips are the narrow type in the No.2. The parts in the No.0 are asterisked below & differences are in square brackets.

The SET The No.2 box, 25½*40½*2½cm, is similar to the one in 24/703 and the lid design is identical apart from the Set No. The contents correspond to the No.2 in the Leaflet (& MCS Extra Sheet X1.6). The parts were attached to green cards, and the N&B are in a green box, 53*53*14mm, with a white label saying: ÉCROUS, BOULONS etc... fabriqués spécialement pour le montage du Jouet "CONSTRUCTOR", in navy blue. [The No.0 box is 25¼*18½*3¼cm; the lid label is similar to the No.2 but is only the width of the pictures, with the text & Set No. rearranged above & below them.]

The PARTS The Leaflet with the Set shows the parts as in MCS X1.3/4c, that's to say as at the top of 24/702 but with the simplified Pulleys already mentioned and no face holes in the Flanged Wheel. All the different parts found in the Set are mentioned below, with details where they differ from earlier accounts, or where they have not been described before.

- Except where stated all metal parts are nicked steel. **Holes** are usually 3.2mm Ø but some are nearer 3.1 & 3.3mm.
- The **Lozenge*** & ½-**Lozenge*** #1 & 2 have minor changes to their outer dimensions.
- The **Strip*** #3, **SAS*** #4, & **DAS*** #5 are only 7.1mm wide.
- #7 **A/B** is also 7.1mm wide (which is more or less the same as all others seen). The bend point varies a little but typical overall dimensions are 9.0*9.7mm.
- The **Foot*** #8 has a base 18.2mm long with 2 holes at 11.0mm pitch, and a centre slot 6.0 – 6.4mm long.
- The **Spring Clip** #9 is 5mm wide, and is just like the illustration with half width tails that wrap past one another. When their ends are squeezed together the part can be slid along a Rod but it can only be put onto a Rod's free end. Later the conventional type was used.
- The **Hook** #10 is not wire but the later flat type, see #22 in MCS p3/4. The same part was with the parts described in 29/485, and is 11.0mm wide, 17.6mm long, with a 2.7mm hole.
- The **Pulleys** #16, 19, 20, & the **Bush Wheel** #18 are all brass, turned from the solid. **Loose Pulleys** #19, 20 are 22.1mm/12.1mm o.d., & 3mm wide with parallel sides. The **Fast Pulley*** #16 is 22.1mm o.d., 3-3½mm wide in different examples, & again has parallel sides but recessed on the outer face (left). The boss varies from 8.1-8.7mm Ø in different examples & the bore from 3.1-3.2mm; all are 6½mm long and double-tapped with a standard Bolt as set screw.



The **Bush Wheel**, is 32.0mm Ø & 1.5mm thick; it has 2 staggered rings of 6 holes each, as illustrated, on pcd of 16½ & 25mm. The boss is the same as the Pulley's, without the extensions for the tapped holes shown in the Leaflet.

- The **Crank Handle*** #21 & **Axles** #23-25 are variously 2.94-3.05 Ø, with sheared ends. The Axles are a millimetre or two over the nominal lengths of 100, 40, & 20*mm, & the Crank Handle is 133mm o/a with a 21mm [18mm] handle offset 10mm.

- The **N&B** are machined brass. The 5* & 6mm **Bolts**, #27,28, have neat 5.0mm Ø cheeseheads and pointed ends. Including these they are 6 & 7mm u/h. The **Nut*** (no PN) is square, 5.6mm A/F, & 2mm thick. The flat **Spanner** in the Set, right, is not the single-ended type in the Leaflet, and with 6.2mm openings does not fit the Nut above. So it may well not be a genuine part, though it does fit



the hex Nut mentioned in 24/701. It is 62mm long o/a, and 1.5mm thick.

- The **cardboard parts** #32-36 are printed on both sides in the colours given in OSN 24. The oblongs of the **Ori-flammes*/Signaux*** are about 30*25mm, & the trapezia 30mm long & 26mm deep. The **Flag*** is 44*36mm [44*35mm]. One **Railway Signal*** is 40mm [38*42mm] square & the circular one is 45mm [44mm] Ø. The **Toile de Tente*** is 100*76mm [103*76mm], with the red & white stripes about 5½ & 4mm wide.

- The **Wooden Bases** #37 & 38 are 5mm thick and are 107*105½mm & 107*148mm in plan. They have a centre hole and well rounded corners, typically 10mm radius.

- #6 **Braced Girder*** is as seen before. #29 **10mm Bolt**, & #30 **Screwdriver** were missing from the Set.

The MANUAL As already mentioned it is similar to the 1920s 0-2 in OSN 24. All the set models are identical & are on the same pages. The front cover & Intro on p1 differ only in minor details. p29 after the models has the special model below (truncated here but symmetrical fore & aft), with what look like an electric bulb at each end. The flooring is presumably the Toile de Tente sheets. p30 has small drawings of 3 more 'super' models, a Big Wheel, Windmill, & the rather nice Roundabout above centre. All are about the same size, and all are powered by an Electric Motor similar to the 110v one at the top of 24/704. p31 has the Set Contents, & p32 has yet another 'super' model, a 2-Bay Workshop which was also in the slightly later 0-4 manual referred to in 24/702. C3 & 4 are blank, and no printer is mentioned anywhere. Probably this Manual fits between the two in OSN 24.

MODÈLE SPÉCIAL

