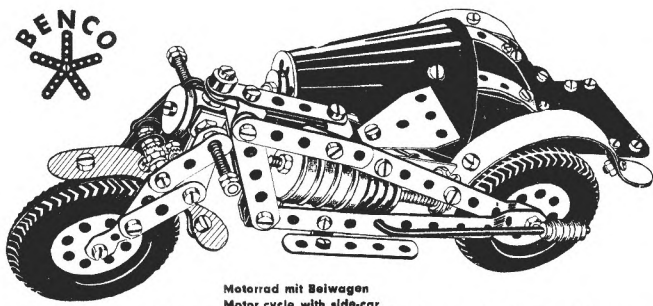


BENCO



Motorrad mit Beiwagen
Motor cycle with side-car
Motocyclette avec siège de côté
Motocicleta con sidecar
Motocicletta con side-car

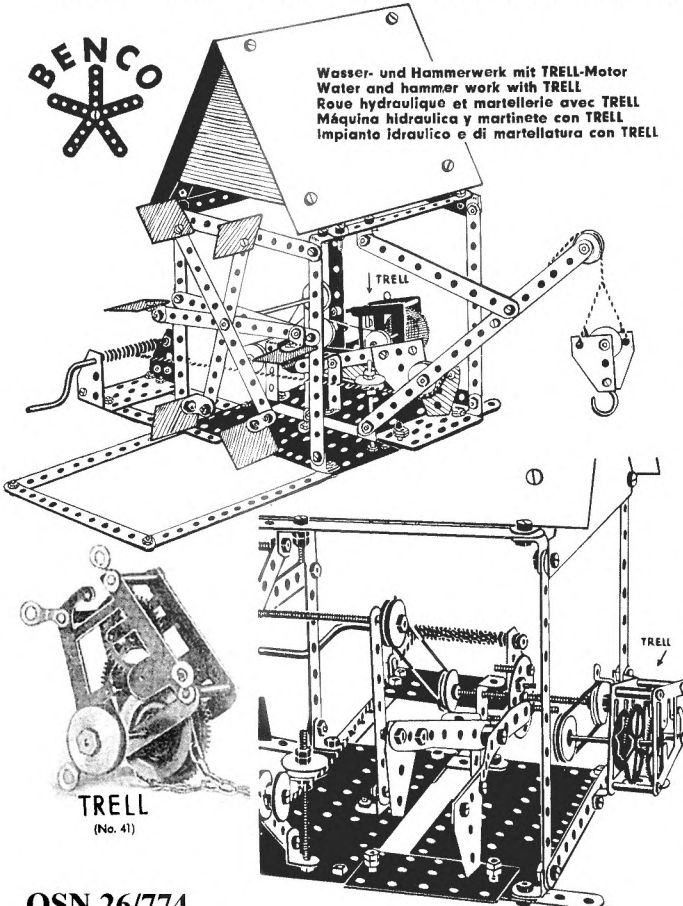
age. The Motor- perhaps one of the models in appearance, with Plastic Sheet used for the sidecar & mudguards. The cylinder is made from 4 Flanged Wheels. A number of the models use parts cut from the Plastic Sheet but no patterns are given for them. The two other models shown here illustrate the use of the Motors.

Other manuals. The '1950' manual has Kasten A on its cover, and the 'blue box' one has Kasten B. All the others have either 'A & B', or 'C & D'. In terms of the models, all that can be said is that the one page that can be seen of the A-B manual with the 'motorway' Set B, has the same models as one page of the Spanish manual, and the open page of the manual shown with the 'motorway' Set E in the Spanish manual is again similar to another Spanish page.

Motors 4 Motors are described on p17 of the Spanish manual. **TRELL** (below, PN 41) is weight driven with the weights (unspecified) attached to the chain. It is quite small, about 4½cm across the base. **STABIL** of course had a Weight Motor at one time (see 15/407) but it was much larger, made from standard parts, and it seems to have disappeared in the 1920s. In the Watermill below the drive from the **TRELL** is taken from the pulley on the lowest shaft, the one with the sprocket for the chain. There seems to be 3 stages of step-up gearing from this shaft, no doubt to some form of governor. The **TRELL** in the Set D differs in detail. The nickelled sideplates have no cutouts and it has only 2 stages of step-up gearing to a bladed governor shaft. The output/sprocket shaft has a threaded end to allow a Pulley to be nutted to it, but curiously it is only 3mm Ø so special nuts are needed, & with no special pulley provided, it is difficult to centre one with a standard 4mm bore satisfactorily. No

BENCO

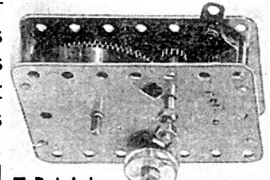
Wasser- und Hammerwerk mit TRELL-Motor
Water and hammer work with TRELL
Roue hydraulique et martellerie avec TRELL
Máquina hidráulica y martinete con TRELL
impianto Idravlico e di martellatura con TRELL



TRELL
(No. 41)

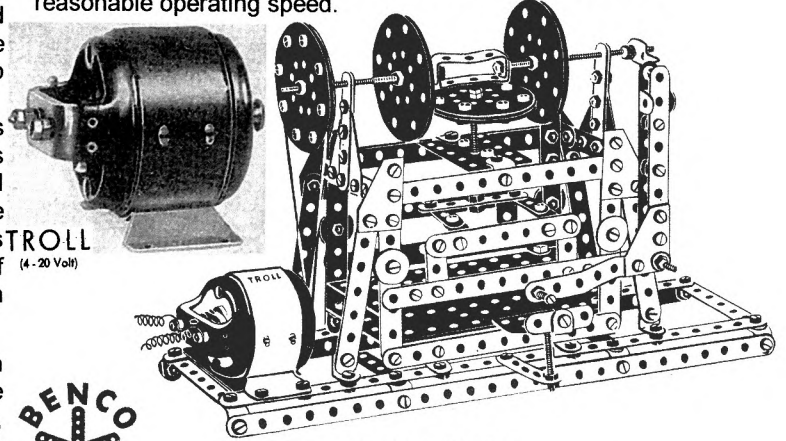
weights to attach to the chain were included in the Set.

TRILL, #41a, right, is a Spring Motor with sideplates about 9*6cm - the holes in them differ slightly in the various illustrations but the Motor in the D set has nickelled sideplates with 7*5 holes around the edges. It has a brake, forward & reverse, and 2 threaded output shafts running at different speeds.



TRILL
(No. 41a)

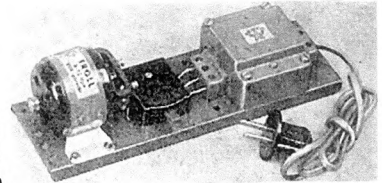
TROLL (below) is a 4-20V AC/DC, with mounting holes spanning 7*3 holes. No mention is made of any internal gearing and a direct drive would give the Press below a reasonable operating speed.



TROLL
(4-20 Volt)

Schwere Friktionspresse mit TROLL-Motor
Heavy friction press with TROLL
Presse à friction avec moteur TROLL
Presse de fricción con TROLL
Pressa a frizione con TROLL

TROLL+
TRAFO



The item above is **TROLL+TRAFO**, with a TROLL Motor & a transformer (110 or 220V) mounted on a long flanged plate, with a switch between them that allows 8 or 12V to the Motor.

The electric motor with the rectangular casing used to drive the Car Transmission model is quite different - perhaps it is a fourth Motor, **TRULL**, which is mentioned in *BK*, but without any details. From the lead shown it might run from the mains.

SNIPPET: SEYMOUR AIRPLANE FACTORY

This name can be seen at the top of the sheet below, & underneath are building instructions for 'Model No.1 Spirit of St. Louis'. This sheet was with a made up model and instructions for a number of others on separate sheets. They all look just like METALCRAFT (see 24/688), & were probably from the equivalent of a No.810 Set. The 'Seymour' outfit may have been a promotional item for the company, but I haven't so far been able to trace a firm of that name.



All the Sheets are printed red on white & it isn't clear if they were originally separate or pages from a manual. Instructions for 25 models were provided, as for Set 810.

'New' System: TECHNO Charles Perez found the set to be described in Canada, and passed it on to Don Redmond who kindly sent details. As can be seen from the photos the parts generally resemble TRIX and are quite unlike the 'Chinese' TECHNO noted in 24/712. One other TECHNO has been reported, an Israeli system, but it's possible that it is the VAŠEK-type TEKNO described in 29/866 – there is always the chance of alternative renderings of Hebrew names.

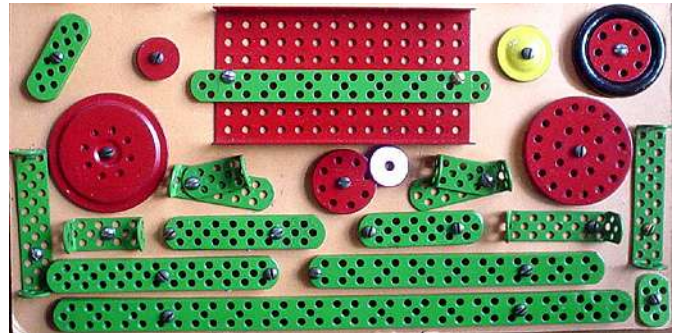


The words in the circle bottom right on the box lid above are 'Made in Canada by Toy-Co' and so the system will be assumed Canadian but the words could of course only apply to the box itself, with the parts made elsewhere. However there is no real reason to doubt that they are of North American origin with the 6-32 thread used and a hole pitch, measured at 7.85mm, very near to 5/16" (7.94mm).

Nothing is known of Toy-Co, and there is no indication of whether TECHNO dates from before or after WW2.

The SET is in a red paper covered cardboard box 310*215*45mm. There is no indication of a Set No. but there is a round space top left on the lid which might have been for one. (Note the reference to 'Sets' at the bottom of the lid label.) It seems that the parts were in 2 layers, sewn to the 2 orange cards found in the box. Also there, 2 pieces of green Roof Card, each probably about 21*22cm originally. From the quantities of some of the parts found (given in the next paragraph) it is possible that they came from more than one set.

The PARTS The different parts are listed below with some comments, and the number found in curly brackets. Most of the main ones are shown in the photo below, bolted to a card. **Paint** has been heavily but rather carelessly applied. **Holes**



are probably about 3.4mm Ø under the paint and the Bolts are a snug fit.

- '33', '25', '17', 13, 9, 7, 5, 3h **Strips** {4, 2, 6, 6, 6, 11, 5, 9}. Inverted commas denote where every other hole in the centre row has been omitted - to give extra stiffness perhaps. **DAS**: 65, 50, 35, 20mm long {3, 2, 4, 1}. **SAS**: 45, 30mm long {3, 2}. **A/B** {9}.
- **54mm Pulley Disc** with just one ring of 8 holes and a raised flat rim {4}. **50mm 8/16h Disc** {4}. **43mm black Road Wheel Disc**, shown top right with an 8h Disc over it. It has 8 matching holes & the edge is formed into half a 'Tyre', so that two butted back-to-back make a wide tread wheel. {10}. **30mm, 8h Disc**, shown below the Flanged Plate, & on top of the Road Wheel, top right {14}. **25mm Formed Disc**, painted yellow, the only yellow part and a 'foreigner' perhaps {4}. The silver Pulley under the Flanged Plate is most likely 'foreign too'. **19mm Disc** {{7}}.
- The **Flanged Plate**, 14*7h just slips into the TRIX part, has square corners, is of much heavier stock, has no end grooves, and the flange holes are noticeably above the midline. {3}.
- **Screwed Rods**, 25, 50, 85mm long. Various **N&B** were found, all in a box with a hinged lid: black Bolts with 5.4mm Ø fillister heads & 8mm u/h {75}; bright Bolts with 6.3mm Ø round heads, 6, 18, 25, 32mm u/h {100}; hex, chamfered face Nuts with various finishes, 7.9mm A/F. Also in the box, red painted **Washers** {20}.
- A **Hook** and a TRIX-type **Motor** can be seen in the Crane on the box lid.

TECHNO [3]: S1

OSN 32/952

Snippet – The SEYMOUR AIRPLANE FACTORY A



note in 26/774 mentioned this system as a possible Seymour promotional item but from the poster left (about 16*21") it seems more likely that Seymour marketed promotional sets for Metalcraft. Right an enlarged view of the Set, 'cut out' from the poster; it could be a METALCRAFT No.951, but in the red panel it says 'parts for the construction of various airplanes', against the 25 models claimed for the

951. Also there looks to be a #32 Pilots Cabin (see 24/688) bottom right in the box, a part not in the 951. Possibly the Seymour set was simplified by having only 1 Wing and consequently fewer Struts, and this limited the number of possible models. Such a mix of parts also meant that it



couldn't be compared directly with any of the regular METALCRAFT sets. I don't know how much the 951 cost but this Seymour could be obtained for 8 of Voigt's Crescent flour coupons plus \$1.69.

The Ebay seller of this item suggested the the poster would probably have hung in a grocery or general store and mentioned that the small print included a reference to the (Metalcraft) patent 1674637, and also Seymour's address: Central National Bank Building, St Louis, Mo.

SEYMOUR AIRPLANE FACTORY: S1

OSN 32/952

Plate. Supports are attached to the Base Plate by Mounting Bolts, Nuts, & Washers.

For a Microswitch (1). It is 30mm high and 20mm wide. Its four holes are not threaded. One can be seen middle left in Fig.5 with the switch held by 2 bolts.

Fitted with Ball Race(s). The width is always 20mm, and the top is 10mm above the Shaft. All but the Adjustable have two threaded holes so that it is possible to bolt on various parts such as the Dial, Index, etc. **Adjustable (2).** It has a short 'L' and a slotted bearing block (see Figs.2 & 3) which is held to the 'L' by two 2.5mm Allen Bolts. The height of the bearing can be adjusted from 30 to 45mm. **With 2 races 30mm high (3).** The bearings are aligned. The foot is 20mm wide, and the upright 10mm thick. This Support appears bottom left in Fig.5. **With 1 race 30mm high (10).** **With 1 race 40mm high (2).** This height is necessary for the large Gears: for Mod 0.25, the 250 teeth Gear has a radius of 31.25mm. In Fig.5 two are used for the second shaft from the right.

For Electromechanical Items. These fit into the Support's large hole whose centre is always at 30mm above the Base Plate. The 4 tapped holes around the large hole carry Clips held by Allen Bolts which hold the item's flange to the Support. The 3 Supports are 35, 35, 50mm wide with 12.5, 25, 33mm holes (2, 2 (but 4 are present in my set), 2), and accommodate items with the following standardized sizes: 08, 11, 15.

Parts Missing from My Set.

Base Plate (1). See Fig.5. It measures 308*203mm and the distance between the centres of its 25 lines of slots is 12mm. Alternate lines have 5 long slots, and 4 long with a short one at each end. Four **Feet** may be bolted to the Plate.

Locking Link (1). See Rotation Limiter above.

Parts not in the Miniature Sets.

Dog Clutch. No details are available.

Differential. One is on the motor shaft in Fig.5. The input gear has 80, 80, or 60 teeth depending on the module.

Anti-backlash Gears. They have the same number of teeth as the normal Gears, but they do not exist when the number of teeth is less than 100. Therefore, there are 7 such Mod 0.25 Gears, and only 6 for the other modules. Without these special Gears it is impossible to completely eliminate backlash between two spur gears; this is particularly inconvenient when the direction of rotation of these gears changes. Many mechanisms have been patented for gears to remove backlash but, as the Set does not contain this kind of Gear, and there are none in the Fig.5 mechanism, I have no idea of the chosen solution.

Dials. There are 4 other kinds: fixed & movable, each with divisions from 0 to 100, or from -100 to +100.

Vernier for the 360 Dial. No details available.

New Parts in the 1982 Leaflet.

Cardan Joint. No details are available.

Boss Clamp. This part is in addition to the earlier one. It is a well-balanced part – with its bolt on one side the earlier Clamp was not symmetrical, and it could cause vibration if a shaft was revolving very fast.

OSN 49/1493

MECA LABO: S4

Snippet. A SEYMOUR AIRPLANE FACTORY SET A poster for this set, a promotional item for Voigt's Crescent flour, was discussed in 32/952. It said that the set was made under a Metalcraft patent and a drawing of the open box showed parts which looked very like those in a METALCRAFT 951 outfit.

The Ebay set has a lid identical to the one in the poster and the parts too, right, mostly match. But there is no sign of the Pilots Cabin, a part not in the 951 anyway, and compared to the 951 one Propeller is missing (the 3 parts under the red box are the Engines), and the remaining two have 3 blades instead of 2. The parts look to have the usual METALCRAFT finish except for the red Wheels. Notice that there are 2 Wings – it was mooted in OSN 32 that there might have been only one.

One oddity: on the poster the price was \$1.69 plus 8 Voigt coupons, against 'a Regular Price' of \$5, but the 951 price in the several Metalcraft ads to hand is \$1.50.

OSN 49/1493

SEYMOUR AIRPLANE FACTORY: S2

A 'Thermostatique' Joint. I have not found a reference to this type of part in mechanics, only in plumbing.

REMARKS. MECA LABO is remarkable for its quality; it was used to build high-precision electro-mechanical devices quickly.

3 goals were possible for the system: development of proto-types, realisation of apparatus needed by a laboratory, and teaching electromechanics. The parts of the system were sold separately, which was very convenient for the first two goals, and most of the sales were probably made in that way. However for teaching it is better to define a set with a well-chosen assortment of parts. Probably my set was one such and perhaps more were available. There was no manual in my set but no doubt there was one originally: it would be necessary to provide some help in understanding how the parts could be used correctly & efficiently. Moreover, it is likely that it described some mechanisms as they are useful for learning how to use the parts, & essential for the teaching goal of this system.

It is very rare to find MECA LABO sets. However, this does not mean that it was not successful: it lasted about 30 years. Moreover, it was sold outside of France, I bought my set in Germany and in 1966 there was a UK agent: C.d.C. (Great Britain) Ltd., Terminal House, 52 Grosvenor Gardens, London S.W.1. I see two reasons for this scarcity. First, for the first two goals of this system a set was not very useful: the users only bought the parts that they needed to build a particular mechanism. Secondly, when something that is not very expensive is bought in an industrial laboratory and is no longer needed, it is not sold on, but simply discarded. On the contrary, the boy who no longer uses his system stores it in the attic, and his children or grandchildren sell it on eBay many years later.

Apart from a few new parts the main change in the 1982 leaflet is that the Mod 0.25 Gears have disappeared, leaving only the 0.50, 0.30, & 0.20 modules. 'Leaving' implies that the 0.50 Gears were always part of the system and it has been deduced that they were the original Gears. The supporting evidence comes from the *MCS* entry which is thought to be largely based on the 1982 leaflet, and which says that MECA LABO has 180 different parts. This number would include all the parts corresponding to the 3 modules above, and taking into account that all the parts of the 0.5 module are different from those of the other modules, and that the last two modules have half of their parts in common, 180 parts for the whole gives about 70 for each module. This is a little higher than the 65 parts for a module in 1963. The other possibility is that by 1982 the original parts & gears were no longer part of the system and the 0.5 module system was similar to those for the 0.2 & 0.3, that's to say the common parts plus the 0.5 Gears. This possibility seems much less likely because the total number of parts would then be far short of 180.

Another point of interest is why when the miniature system was launched it was thought necessary to have Gears with 3 quite similar modules. One possibility is that at the time it was wished to accommodate proprietary equipment that used all of these modules.

