

Three МУСАЛА (MUSALA) No.4

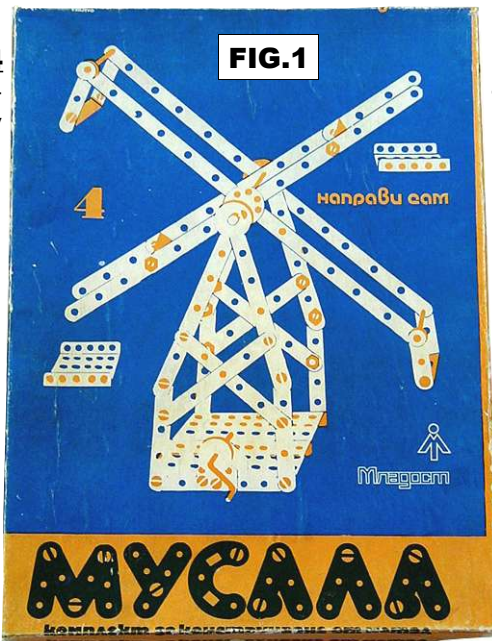
SETS MUSALA was a Bulgarian system which was clearly inspired by MERKUR, witness the Illustrated Parts, the manual models, and, with the exception of the Pulleys, the parts themselves. However there is one important difference, the holes are a little larger and the N&B are M4 rather than M3.5.

The account is based mainly on a set, near complete; details of a similar outfit, kindly sent by David Hobson, virtually complete but without a manual; & the loose parts, less the metal Pulleys, from another No.4.

The Sets Both sets have similar boxes, 27*36*2¾cm, and the parts sit in a formed cream plastic tray. The N&B and some small parts are in circular recesses covered by white lids, MERKUR fashion. My set has the box lid in Fig.1 and David's is the same except that the logo & name at bottom right is replaced by the circular logo on the manual cover (Figs.4 & 5).

The quantities of parts in the No.4 match those in the MERKUR No.4 exactly except that 4 extra Axle Stops replace the 4 Collars in the Czech set, and a Driving Band the two 22mm lengths of Spring Cord.

The Parts Apart from the Pulleys & Tools the parts look similar to MERKUR but are easy to identify by their larger holes (MERKUR are 3.9mm) and their colour. A selection is shown in Fig.2 and all are listed below with the quantities in curly brackets. The details relate to the parts in my No.4 with variations in the other parts noted. **Finish.** All the parts are nickelled except the Flanged Plates and Strips of 8 holes or longer, which are painted olive green; the A/Gs either olive or red-orange; and the Loose Pulley of blue plastic. **Quality.** The parts are not quite so well made as MERKUR but are of acceptable quality except that some of the Axles have slight bends in them and all are too loose in the bosses. It will be seen though that there is some variation in the size of the holes and slots between the 3 samples. **Holes** are 4.1mm Ø except as stated, at 10.0mm pitch. Slotted holes have large radius ends. **Bosses** are nickelled steel, 8mm Ø (9mm for #20), 4.1mm bore (some 3.9-4.2), single-tapped M3. The **Set Screw**: 5.2mm Ø cheesehead, 6mm u/h. David's are similar



but round-headed; in the loose parts they are 5.3mm Ø countersunk, 8mm long o/a.

- #1 **A/B** with a 4.1mm hole & 5.9mm slot (David's: 3.9 & slightly oval). {8}
- #2 **Flat Bracket**: holes as A/B, 20mm long o/a. {6}
- #3-8 **Strips** 3,5,6,10,15,25h: 10.0-10.3mm wide. {8,10,6,8,4,4}
- #9 **Curved Strip** with 4.8mm slots. {4}
- #10 **A/G**, 15h: holes are 4.4mm Ø, the slots 5.9mm long. Those in the loose parts match but are olive green. David's are also olive green but have 4.9mm holes instead of the slots. {4}
- #11 **D/B**: 11½mm wide with 4.0mm holes. {1}
- #12 **2h D/B**: 10¾mm wide. {1}
- #13 **DAS**: David's have 4.4mm holes. {2}
- #14 **Reversed A/B** with no slotted hole. {2}
- #15 **Flanged Plate** 5*5h with 4.5mm holes, & 5.4mm slots in the flanges. {2}
- #16 **Flanged Plate** 5*10h with 4.1mm holes, & 4.9mm holes in the flanges. {2} [In Guibert's Encyclopédie the colour of the Flanged Plates is given as red.]
- #17 & 18 **Flat Trunnion & Trunnion** with 7.7mm slots. {2,2}
- #19 **Pulley**: 23mm Ø, 4¾mm wide. {4}
- #20 **Bush Wheel**: 28mm Ø with 4.0mm holes at 10mm radii. • #21 **Pulley**: 38mm Ø, 7¾mm wide. {2}
- #22 **Pulley**: 62mm Ø, 5¼mm wide, with 5.7mm holes at 20mm radii. {2}
- #23 **Loose Pulley**: 14½mm Ø, 5mm wide, badly moulded in blue plastic. • #24 **Nut & Bolt**: the Nut is hexagonal, 6.9mm A/F & 3-3¼mm thick; the Bolt is roundheaded, 6.7mm Ø & 6mm u/h {33}
- #25 **Nut & Bolt**: Nut as #24; Bolt is cheeseheaded, 6.7mm Ø & 8mm u/h (David's similar but roundheaded; likewise in the loose parts). {12}
- #26-28 **Axles** 30, 70, 120mm long, 3.6mm Ø but one 3.4 (3.4 in David's & the loose parts). Some are not straight and all are very loose in the bosses. {2,2,3}
- #29 **Crank Handle**, 3.4mm Ø, 94mm long o/a (98mm nominal). {1}
- #30 **Screwdriver**: shown as right but not seen. {1}
- #31 **Spanner**: shown as right but the actual part as Fig.2 – at 80mm it is slightly too long to fit the recess in the tray. {1 but 2 in my set}
- #32 **Cord**: thin green twine in David's set. • #33 **Nut Holder**, 100mm long. {1}
- #34 **Washer**, 10mm Ø, .5mm thick, somewhat dished. {8}
- #35 **Driving Band**, not seen. {1}
- #36 **Axle Stop**: black rubber 12mm Ø, 2¼-4mm thick. {8}
- #37 **Hook**: based on the Flat Bracket with a 2mm wide slot. {1}.

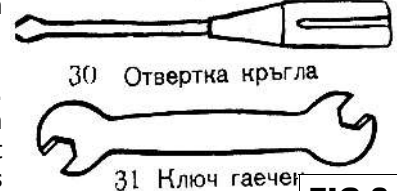


FIG.3

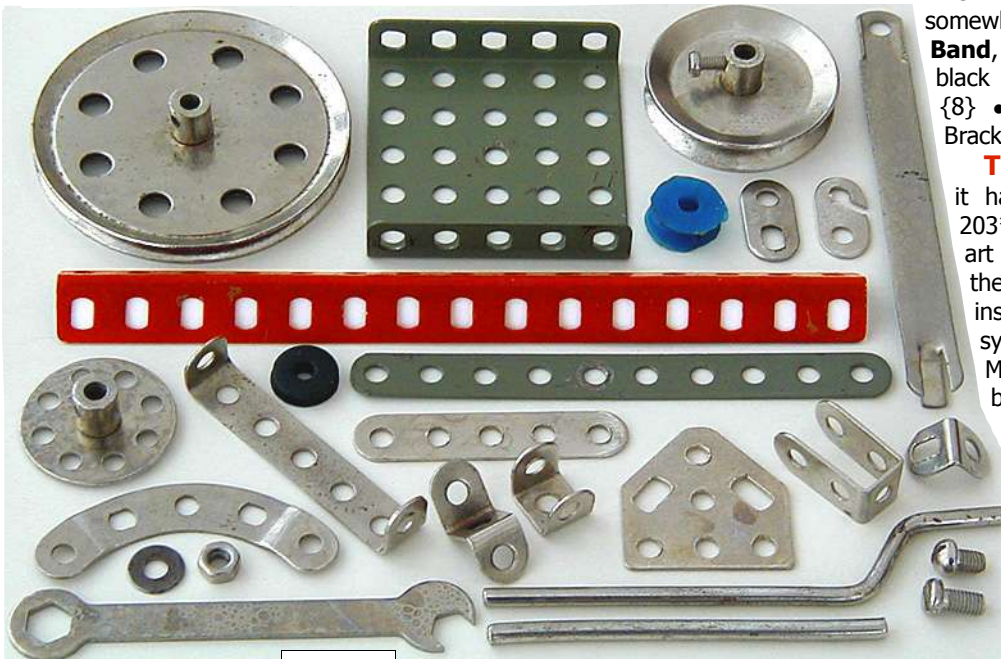


FIG.2

The Manual Including the covers it has 32 unnumbered paper pages 203*158mm printed in Bulgarian on art paper. Fig.4 is the front cover with the logo enlarged in Fig.5. On its inside is an introduction to the system. p3 is the title page, МУСАЛА 4, and p4 has general building instructions. pp5-10 have the illustrated parts interspersed with constructional details. All except the Tools, & the 38mm Pulley (shown without face holes), match their MERKUR counterparts, though redrawn. Next 20 models including the Big Wheel on the cover. Nearly all

are one to a page from Въжена (Inclined Hoist) to Гимнастик (Gymnast). All are based on MERKUR No.4 models, a few changed appreciably but usually only slightly. Sadly in a few cases the changes prevent the model from working as intended. All the 38mm



FIG.4



FIG.5

Pulleys are shown without face holes but all the 62mm are the original MERKUR pattern. Some Collars are replaced by Axle Stops, some are not. One oddity, all the Pulleys used as road wheels are shown fitted with rubber rings though there are none in the Set, nor in the MERKUR set or manual

models. There is a good halftone for each model, mostly clearer & more attractive than the MERKUR line drawings, plus a parts list. C3 has the Set Contents and C4 some details of the maker.

There is a fair range of models including some novelties & several machine tools, but none of the models do justice to the number & range of parts in the Set. For example only one uses the A/Gs (Fig.7). Fig.6 is one of the more interesting models, shown here at the original size. The MERKUR version has guide cords for the lift & a way of raising & lowering it, though it's hard to see how it works. The MERKUR version of Fig.7 has the appropriate driving bands, also a Collar inside the frame on the 62mm Pulley shaft with an 8mm Bolt in it to cause the 'tup' to rise & drop.

A B&W photocopy of another manual is identical except that the front cover has the logo left (as in MCS), the same one as on the box lid but for the additional line of text above it.

FIG.8



History MUSALA was made by the firm Vasil Petleshkov of Bratsigovo, a small town in the south of the country. It was the company which also made MLADOST (theme sets, see 25/720); RODOPI (TRIX-style parts, see 26/751) and ELEKTROMEKHANICHEN KONSTRUKTOR (one model sets, motorised, see 36/1099).

David's box has a label on its underside which includes 2 dates: '30.12.1977' after 'Permission from', and '1984' rubber stamped after 'Produced'. My set has the same label with the same 'Permission' date but the 'Produced' date is too blurred to read. The equivalent label on the RODOPI box had no Produced date and the same Permission date, which makes one wonder what the latter really signifies. The other two Petleshkov systems are thought to be later, an Ebay ELEKTROMEKHANICHEN KON set was said to be from 1990.

The words above & below the Fig.8 'figure' translate as 'State Economic Association' & 'Youth'; those around the Fig.5

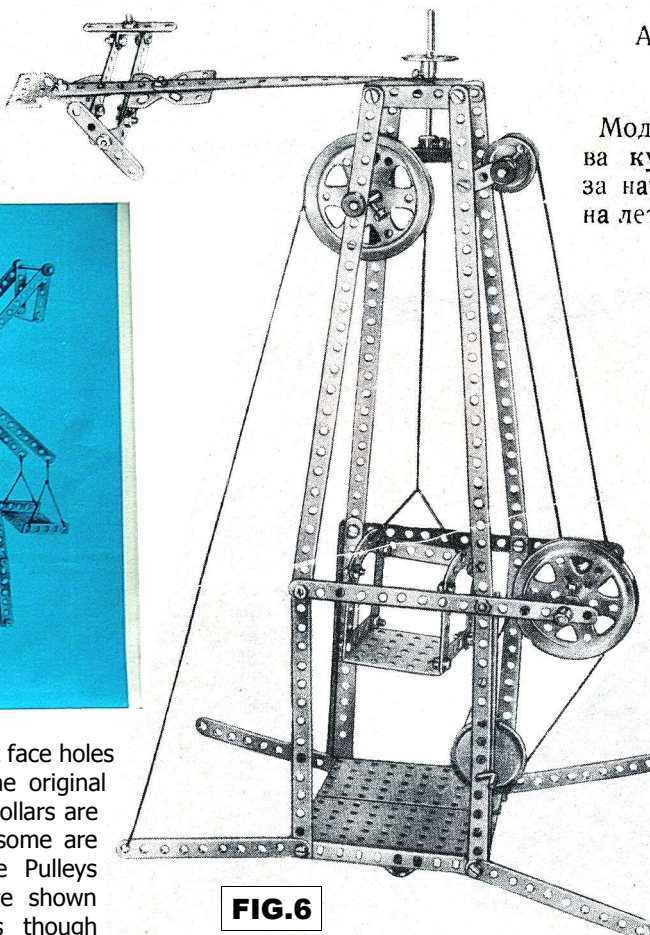


FIG.6

Асансьор със самолет

Модела представлява кула със самолет за начално обучение на летци.

ном. броя

1	2
2	3
4	8
6	5
7	4
8	4
9	2
10	3
11	1
12	1
15	2
16	2
17	2
18	2
19	3
21	1
22	2
24	33
27	3
28	1
29	1
35	1
36	6

Трансмисия с чук
ном. броя

1	2
3	4
4	6
5	4
10	4
13	2
15	2
16	2
19	3
21	1
22	1
24	33
27	1
29	1
35	1
36	5

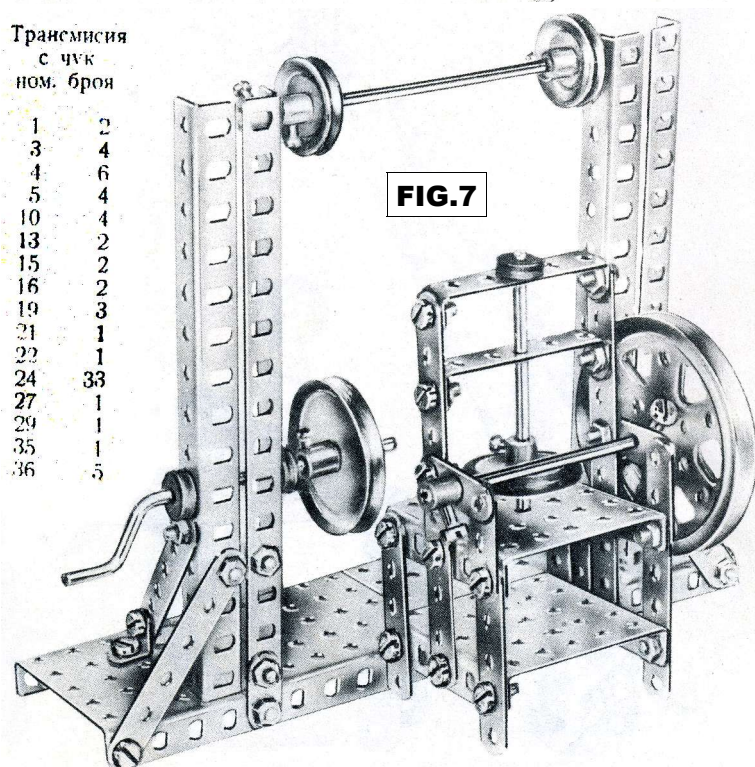


FIG.7

one as 'DSO Youth Factory Vasil Petleshkov Bratsigovo'. The Fig.8 figure is in the MLADOST & RODOPI material; the ELEK KON has no logo at all. What was the sequence of the various logos? It's hard to fathom and nothing credible comes to mind.

There is no mention of any other set in the manual.

Using the Parts Apart from the poor fit of the Axles in the bosses two other difficulties were found. One was the thickness of the Nuts which often made it impossible to have them both on the inside faces of the A/B. The other problem was that there were very small variations in the hole pitch of some of the longer Strips and the clearance of the Bolts in the holes was not sufficient to accommodate this.

Two Smaller MUSALA SETS Up to the present all the known MUSALA sets have been No.4's, but now Urs Flammer has kindly sent photos & details of his two sets, a No.3 and, surprisingly, a No.3A, the first time a linking set has been recorded. They look substantially complete but have no manuals with them.

The No.3 is shown right. The box is 34*24*2cm and the lid is in the same style as the No.4's described in the previous pages. So too the tray for the parts. As before the contents look to closely match the equivalent MERKUR outfit, and the only major parts missing are the 5*10h Flanged Plate & the Screwdriver. One oddity, the number of Axles. The expected 120mm is in a recess to the right of the long Strips; in addition there should be 1x 30mm & 2x 70mm but there are many more of them in the Flanged Plate recess. Finally on the parts, the most noticeable difference from the No.4's is the colour of the 5*5h Flanged Plate & the Flat Trunnion.

The No.3A The box is 36*27*2cm and the lid is shown right. The words at the top translate as: 'Metal Construction Set'; 'You Build It'; & 'State Economic Association' (as on one of the No.4 manuals). The words bottom right mean 'Factory Popem Bratsigovo'. So the same town as before and Popem was said in MCS to be the name of RODOPI's manufacturer. It was speculated in 26/751 that it might be the name of V. Petleshkov's company.

The parts are again in a moulded plastic tray and again match the corresponding MERKUR set in content. Two differences from the No.4's stand out: all the metal parts are nickelled (the 14mm Loose Pulley is plastic, but red), and the 62mm Pulley is the MERKUR spoked pattern. This part can be seen in one corner of the box (Fig.4). These differences point to the set being earlier than any of the others and another



FIG.1



FIG.2



FIG.3



FIG.4

pointer is that there are the correct number of 2 Collars in the set (in the square recess in Fig.3). Other smaller points. The Spanner is the type shown in the No.4 manual and fits nicely into the recess in the tray. The Axle Stops in Fig.3 may be faced with black rubber, like some seen in MERKUR sets. Mystery parts are some or all of the Cord (there is none in the MERKUR set) and the 'hook' next to the Collars in Fig.3 – the flat '2-hole' type can be seen in Fig.4.

OSN 44/1355

MUSALA: S3

A 'New' Bulgarian System Thanks again to Urs Flammer for the photos below of his No.2 set. The box is 42*30*2cm and the logo is as on the MUSALA outfits. The system was obviously MECCANO inspired with the models on the lid copies from Meccano's 1970-77 manual. The hole pitch is 12.7mm, accurate in the Plates but very irregular in the Strips. The thread is M4 & the Axles are 4mm Ø. The only means of identifying the Set are the words on the lid. They mean Metal Construction Set and trans-

literate as KOMPLEKT ZAKONSTRUIRANE OT METAL – so that, at least for the moment, will have to be the system's name. The set contents are probably as Meccano's No.2 & so the main parts missing are a 5*11h Flanged Plate, a Bush Wheel, 4 Pulleys with Tyres, 2x 5*3h Plastic Plates, & a Screwdriver. The recess in the tray above the latter probably housed the Axles. The cutouts in the Trunnions are MECCANO pattern, partially hidden below by the Angled type sitting on top of the Flat one.

FIG.1

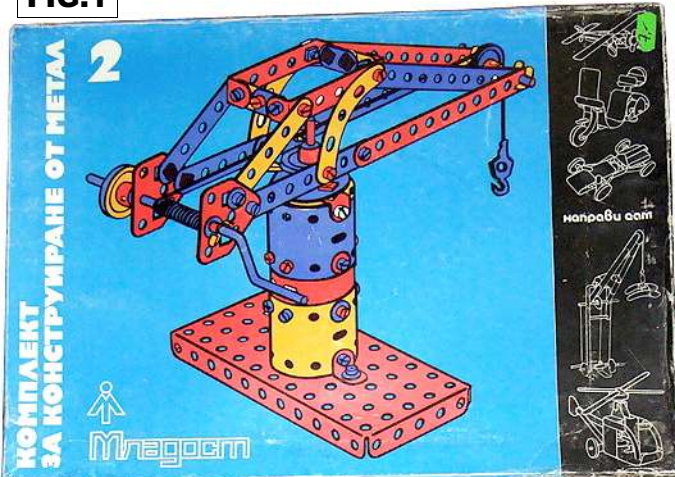


FIG.2

OSN 44/1355 (the last page of OSN 44)

KOMPLEKT ZAKONSTRUIRANE OT METAL: S1