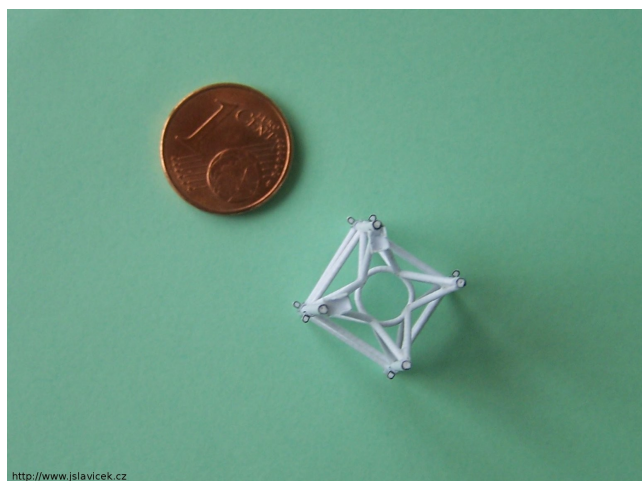
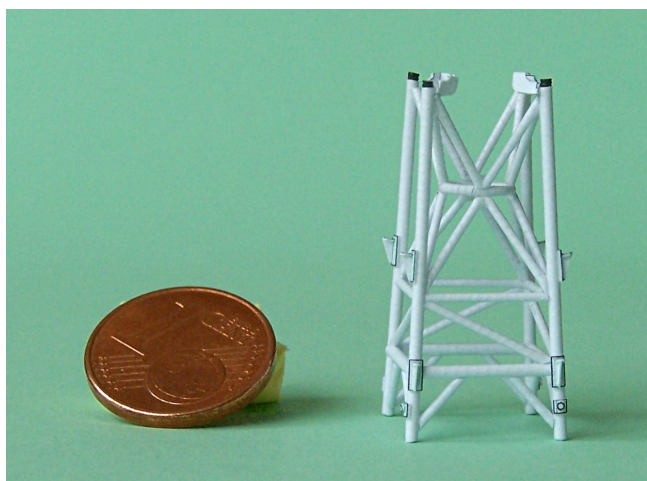
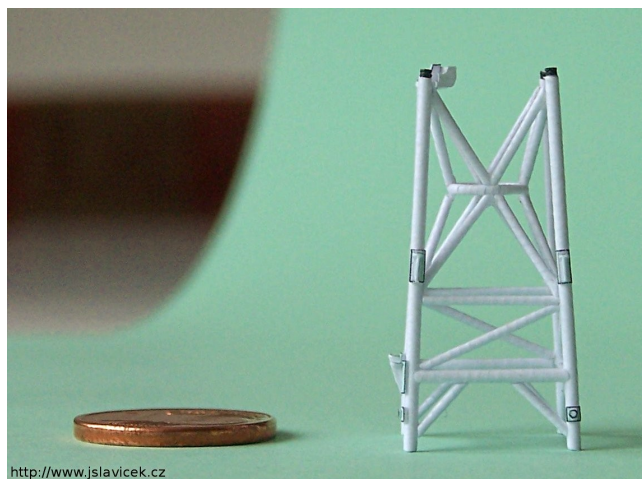
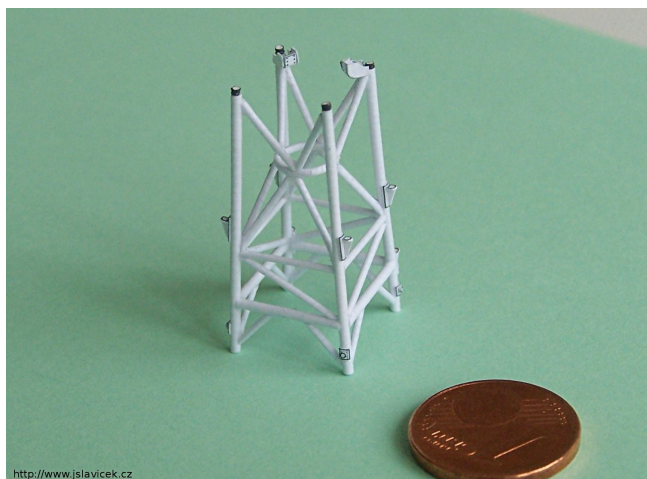


Saturn V SA-506 (Apollo 11)

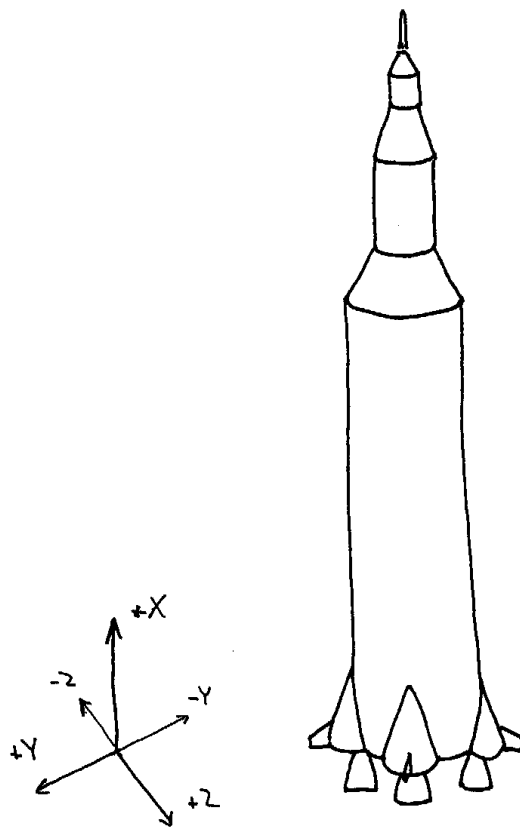
Launch escape system lattice

Scratchbuild instructions

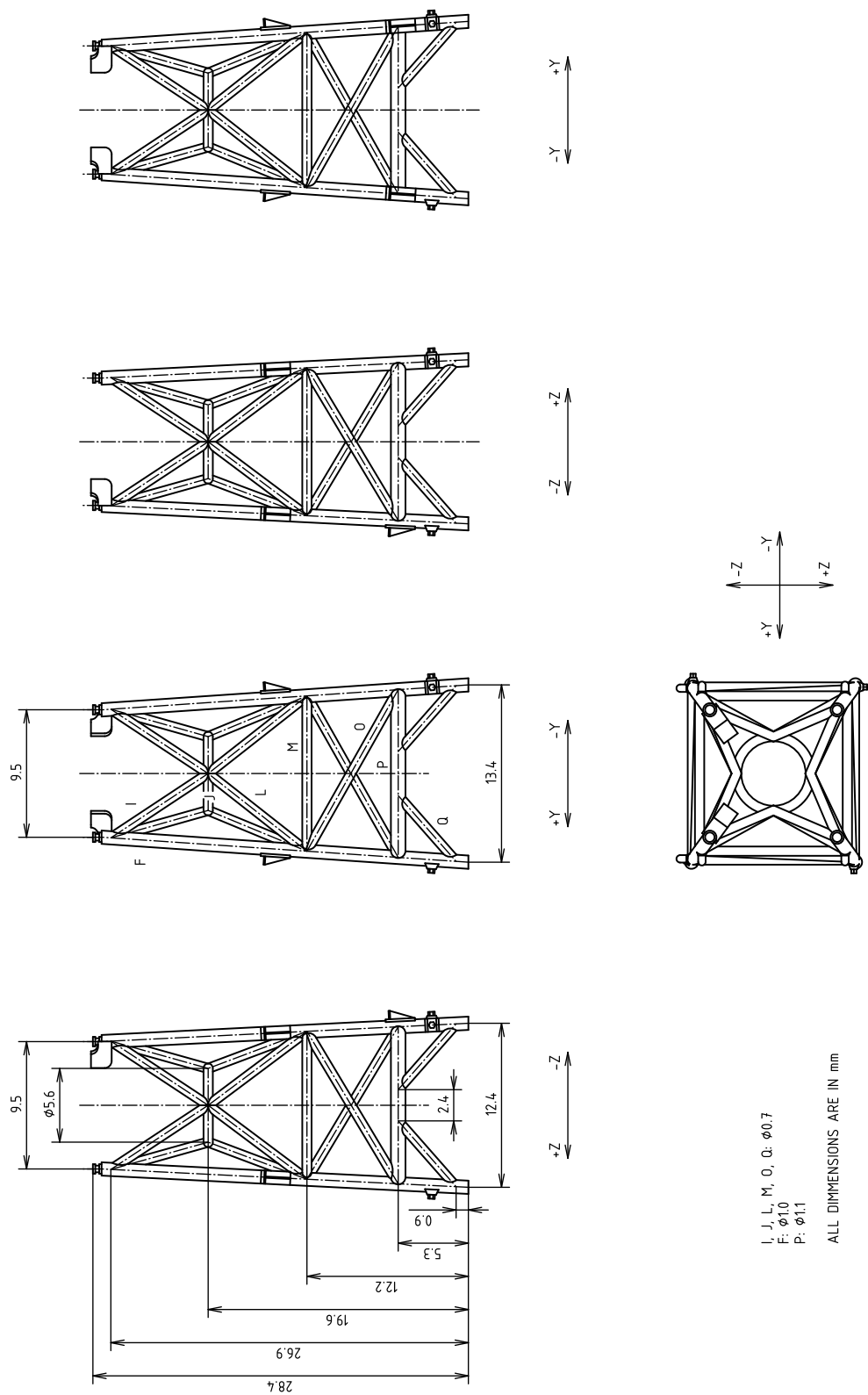
Model revision 2013



Since the Saturn V consist mostly from rotationally symmetric bodies, there is danger of improper relative orientation of model parts. To avoid it, we introduce coordinate system that we will use consistently in whole model. Where necessary, the parts are accompanied with red markers that shows orientation of X and Y axes, so it should be easy to build these parts properly relatively oriented.



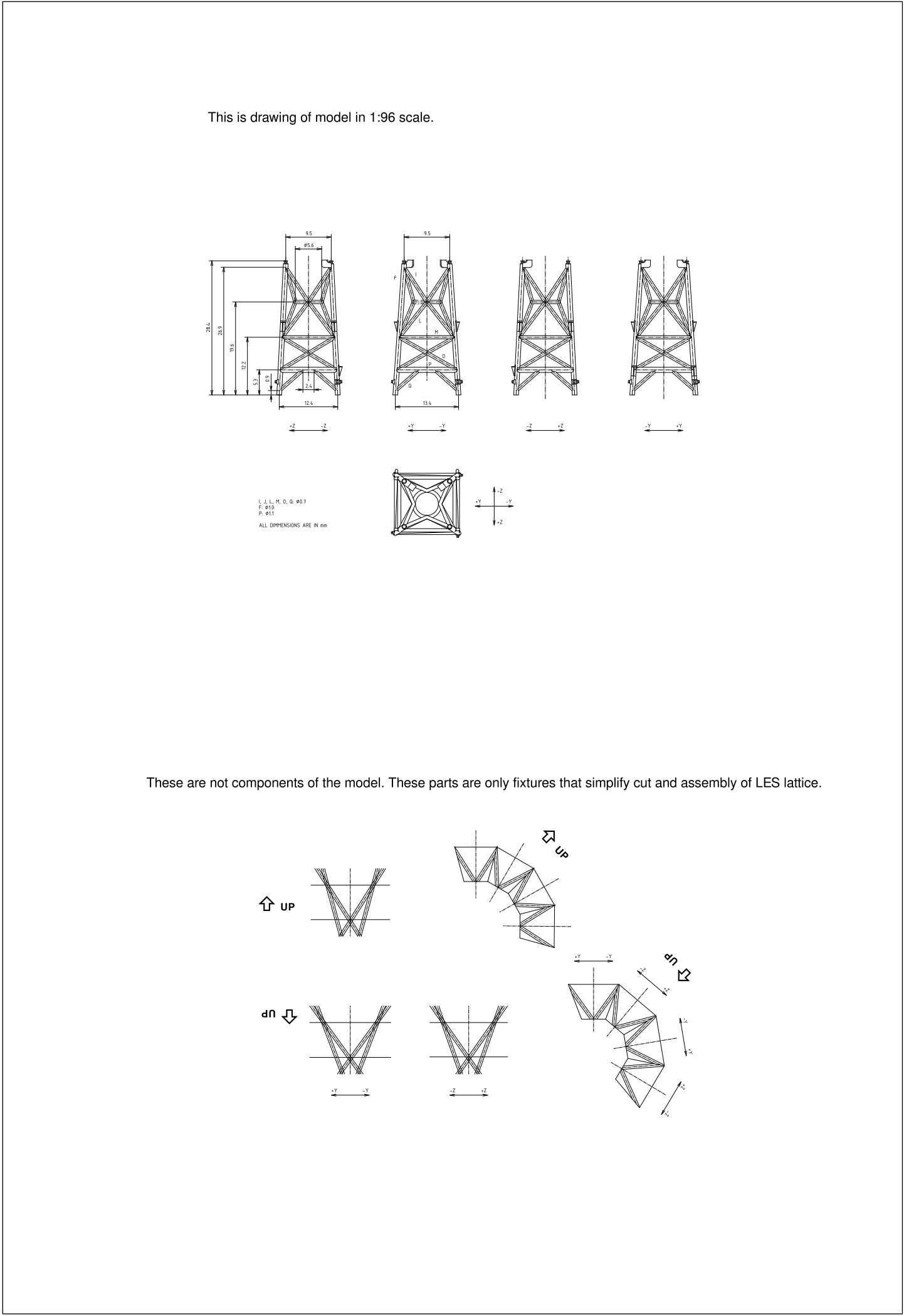
All dimensions refer to model in 1:96 scale while the drawing itself is drawn in 1:48 scale for better visibility of details.



This is drawing of model in 1:96 scale.

L, J, L, M, O, G, Ø0.7
F, Ø1.0
P, Ø1.1
ALL DIMENSIONS ARE IN mm

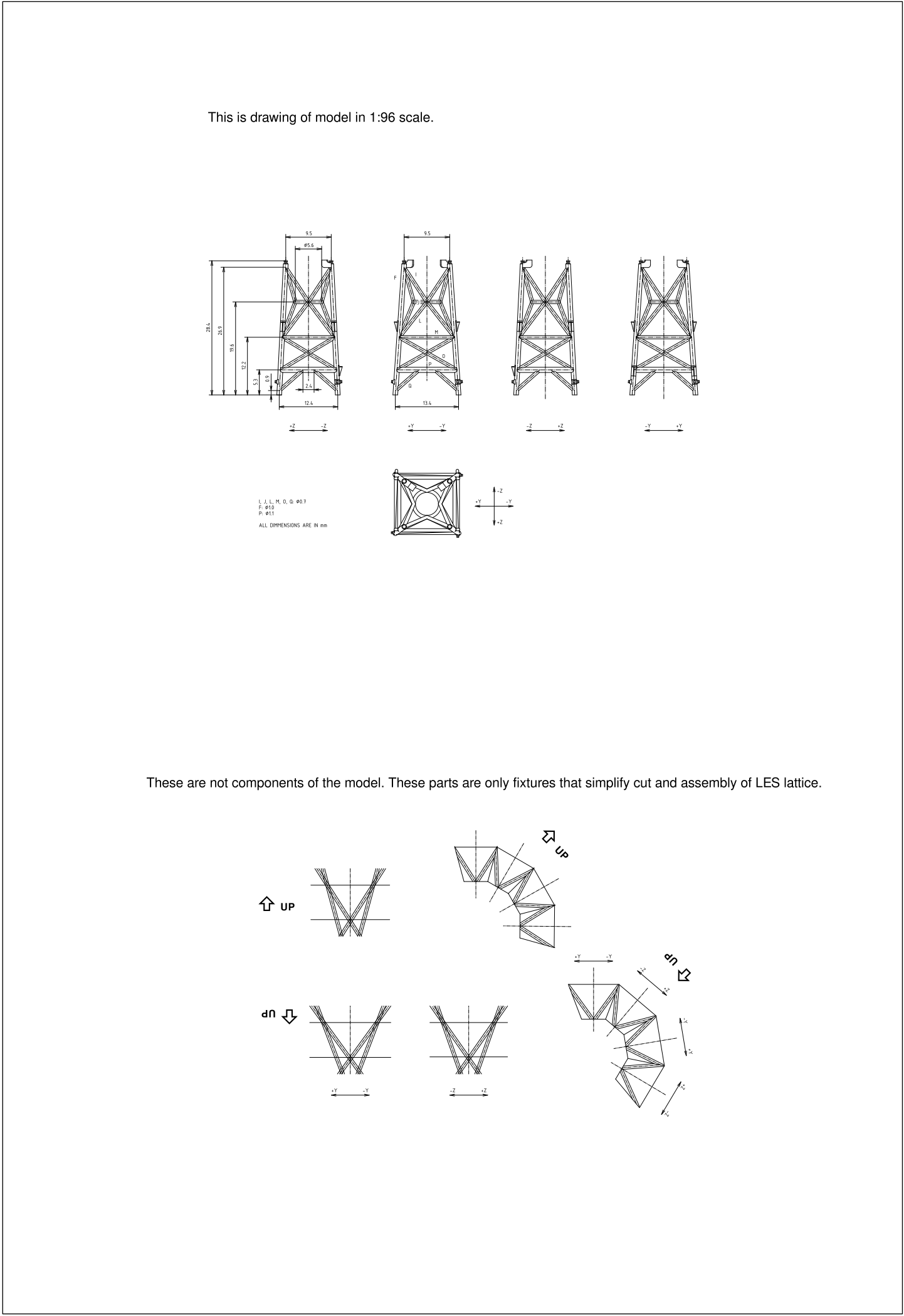
These are not components of the model. These parts are only fixtures that simplify cut and assembly of LES lattice.



This is drawing of model in 1:96 scale.

L, J, L, M, O, G, Ø0.7
F, Ø1.0
P, Ø1.1
ALL DIMENSIONS ARE IN mm

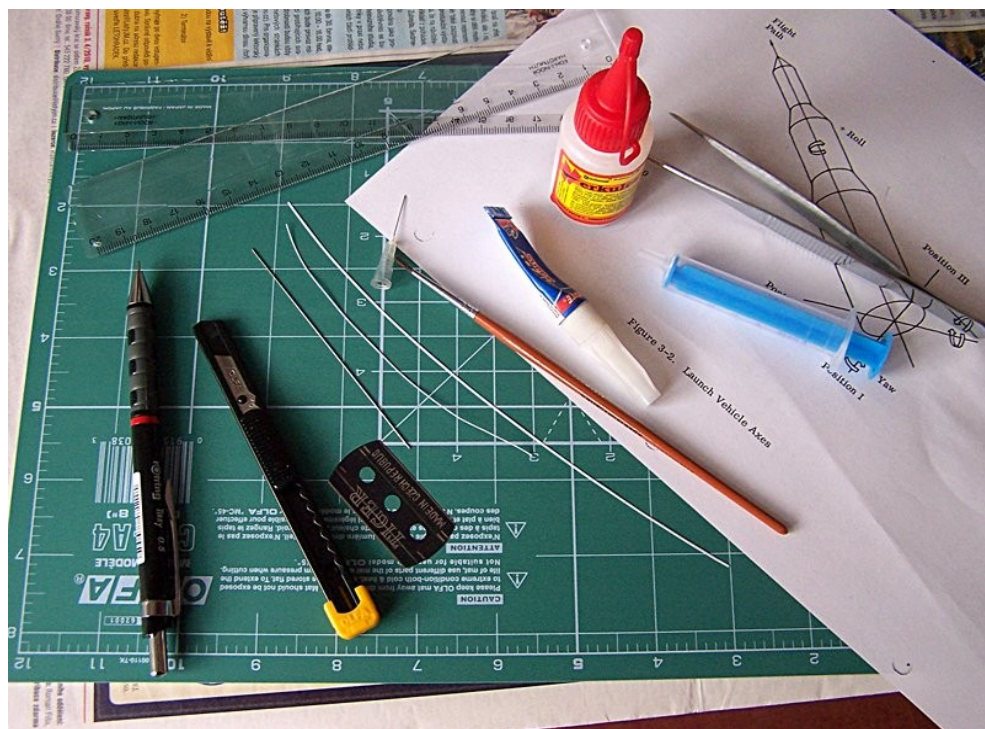
These are not components of the model. These parts are only fixtures that simplify cut and assembly of LES lattice.



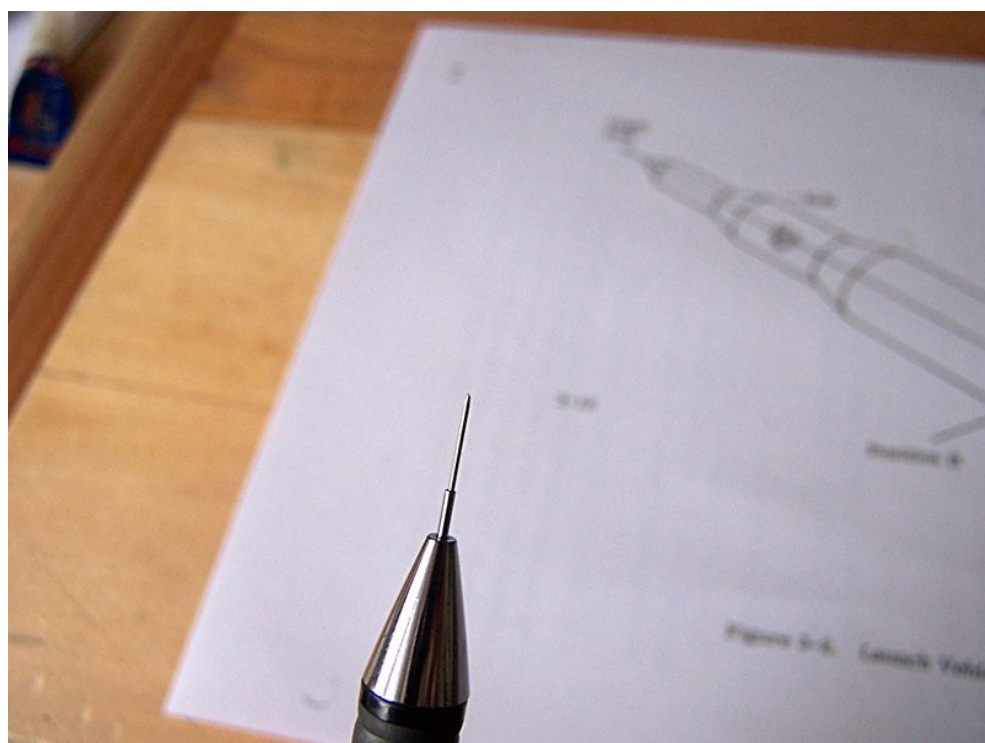
WARNING: during described procedures, we used some potentially dangerous tools such as razor blades. Does not attempt to follow our procedure if you are not experienced enough to do it safely. If You decide to follow it, then You are doing it on Your own risk. Described procedures are not suitable for kids modellers.

Building paper tubes \varnothing 0.7 mm

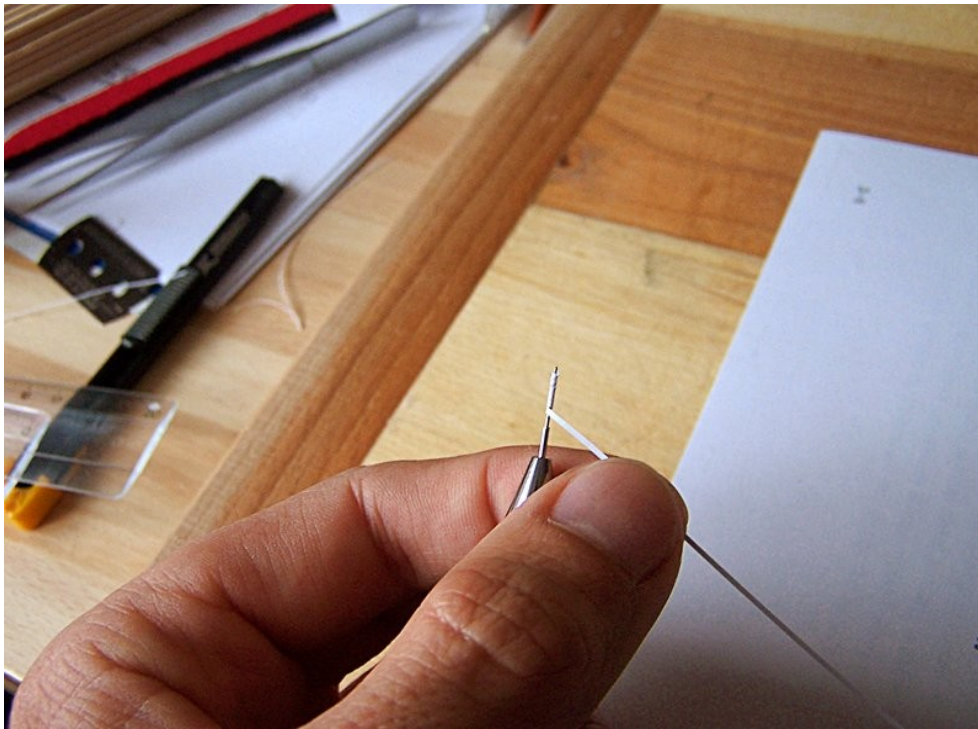
WARNINIG II: our procedure is in some sense incommunicable. Some steps needs experience to be done properly. You may expect dozens of damaged and unusable tubes before you will be able to build one in satisfactory quality.



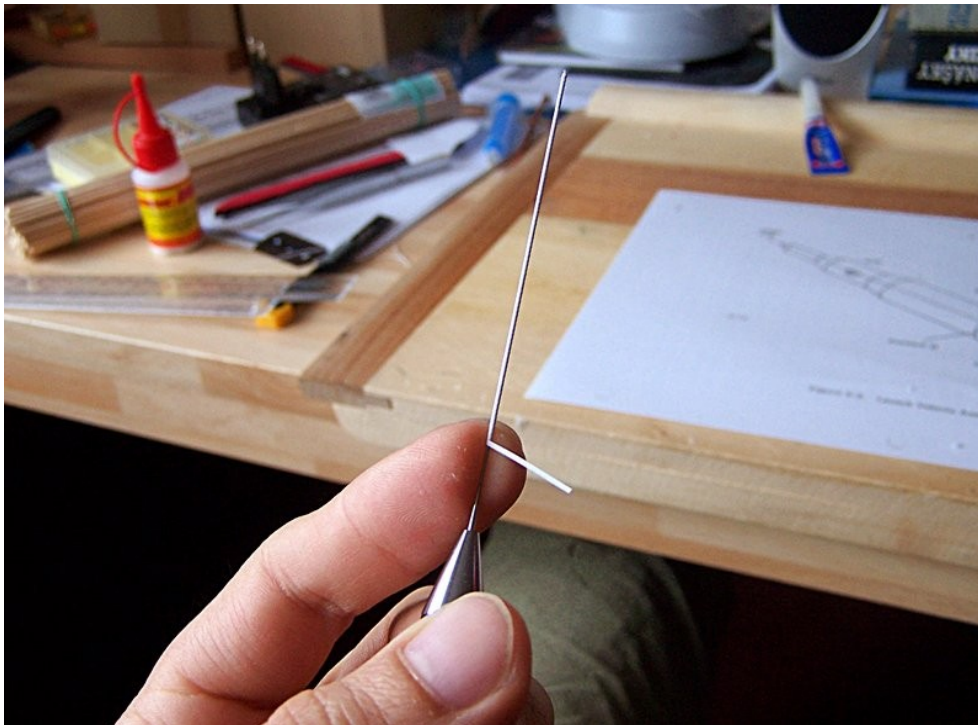
1) To build paper tube \varnothing 0.7 mm, 40-50 mm length you will need following tools and material: 100 mm piece of straight steel wire \varnothing 0.5mm, micropencil 0.5 mm, ~1 mm wide strip of 100 g paper 200 mm long, ~0.4 mm wide strip of 160 g paper 100 mm long, gel superglue, white glue diluted by water, brush, sharp knife, syringe, hypodermic needle 0.4 mm.



2) Fix the wire into pencil. End of wire must be rounded to allow easy removal of finished tube.

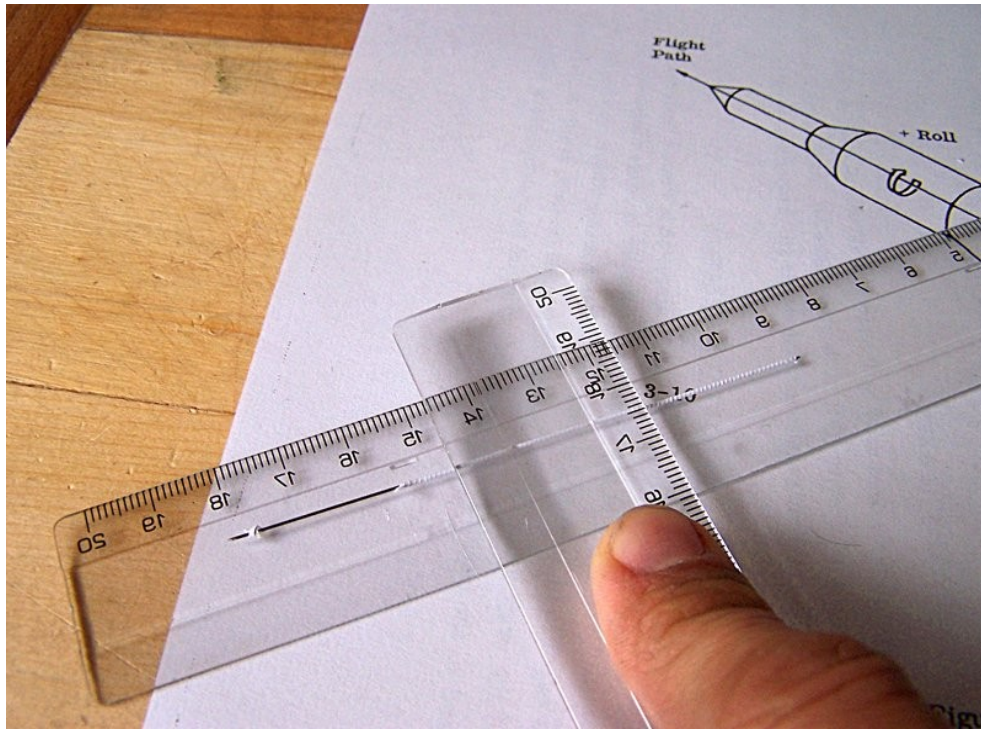


3) Start to coil the 100 g paper strip around the wire. Fix several first turns to wire with superglue. For now, does not worry about regularity and space between turns.

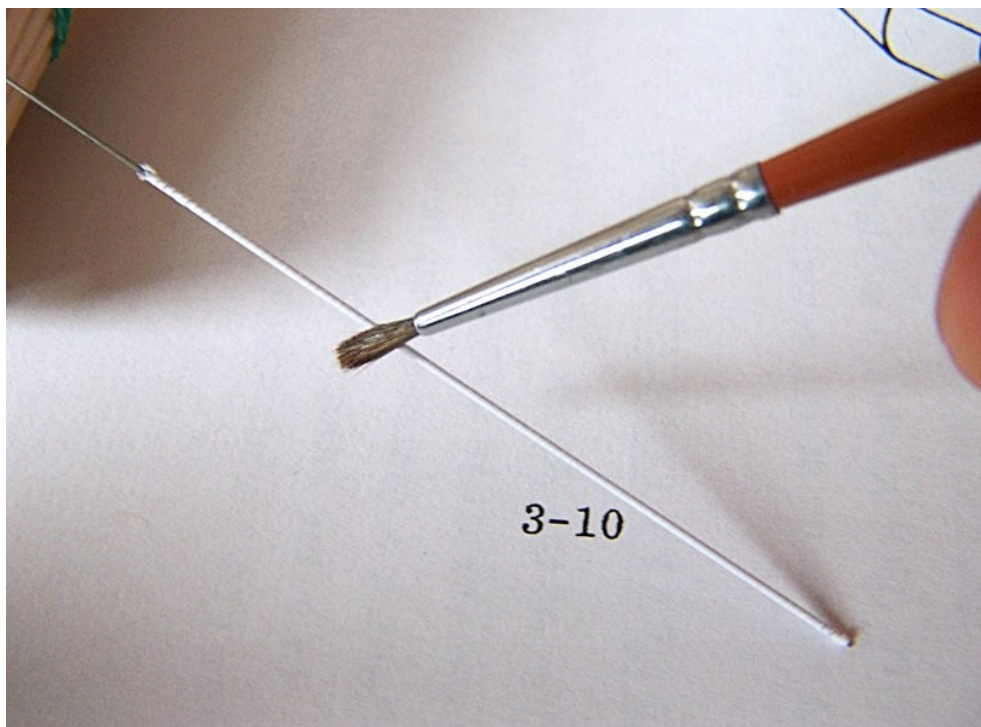


4) Continue to coil the paper around wire. Does NOT glue the paper to wire. Compress the tube axially during coiling. You must create regularly coiled screw with tight but not overlapping turns.

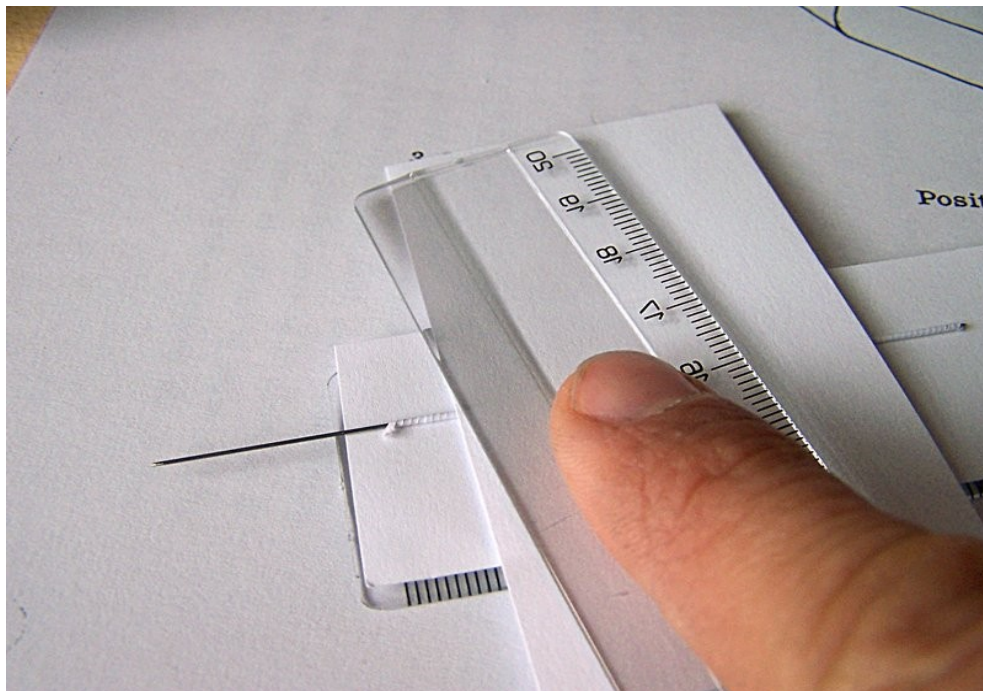
Fix the lower end of paper strip to wire using superglue.



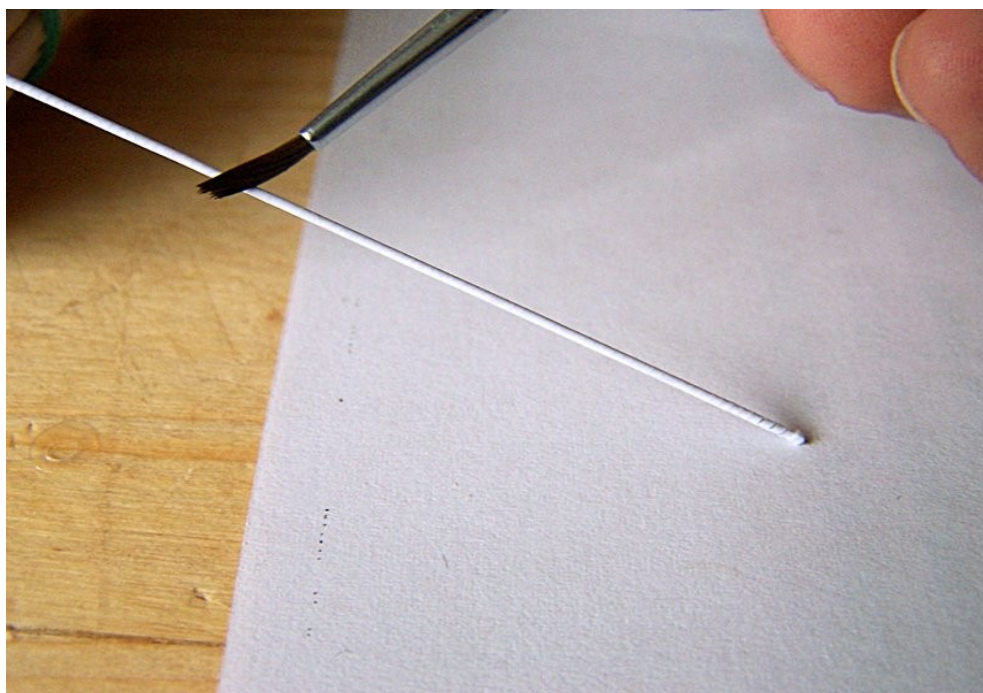
5) Roll the wire with coiled paper strip between two rulers to smooth the surface.



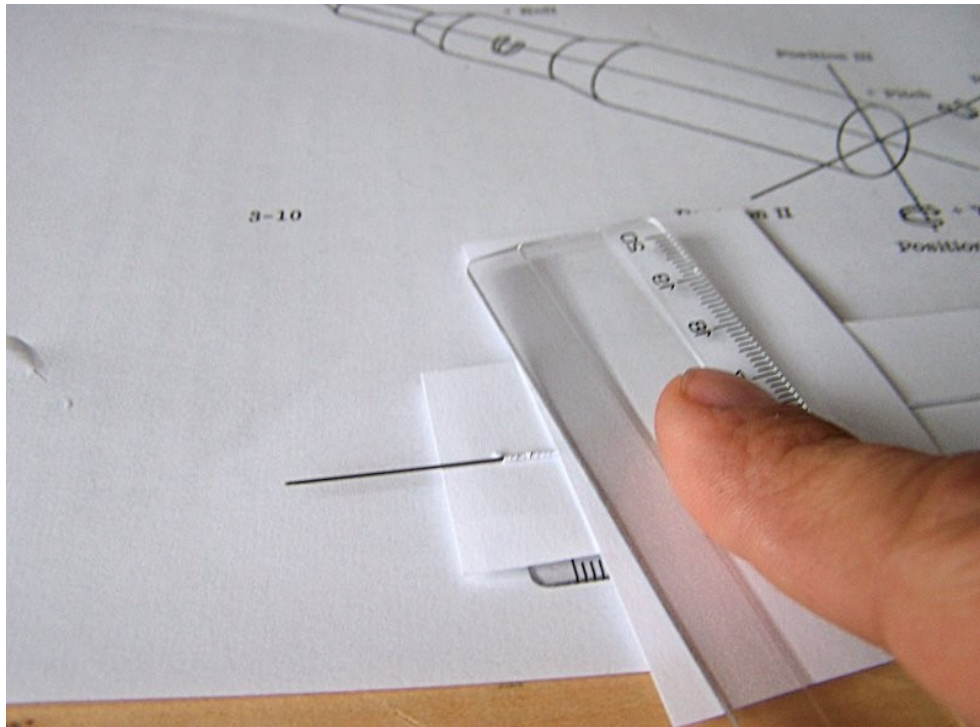
6) Apply thin film of diluted white glue. You must use minimal amount of glue sufficient to cover whole surface of tube.



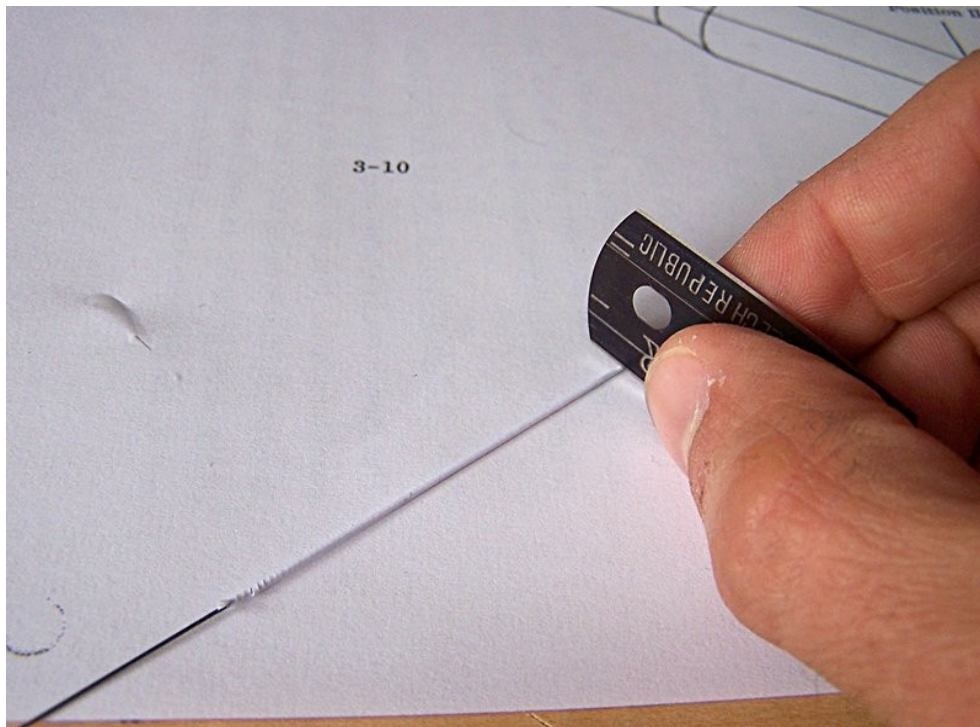
7) Roll it again between rulers. Timing of this step is crucial. Doing it too early with wet film of white glue may introduce glass-like defects to surface of the tube. Doing it too late with white glue film completely dry may lead to destruction of tube. It's better to roll it with two pieces of ordinary office 80 g paper layed between rulers and tube.



8) Repeat the step 6.



9) Repeat the step 7, then let it dry well.



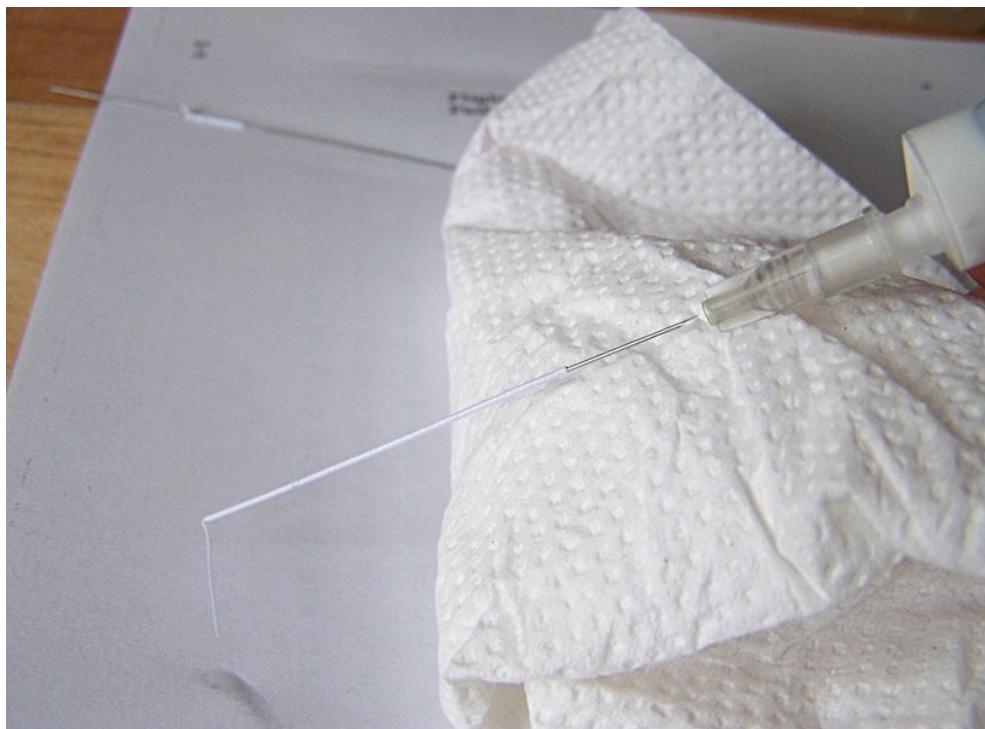
10) Remove end of tube from wire.

Remove all remainders of superglue – end of wire must remain completely smooth.

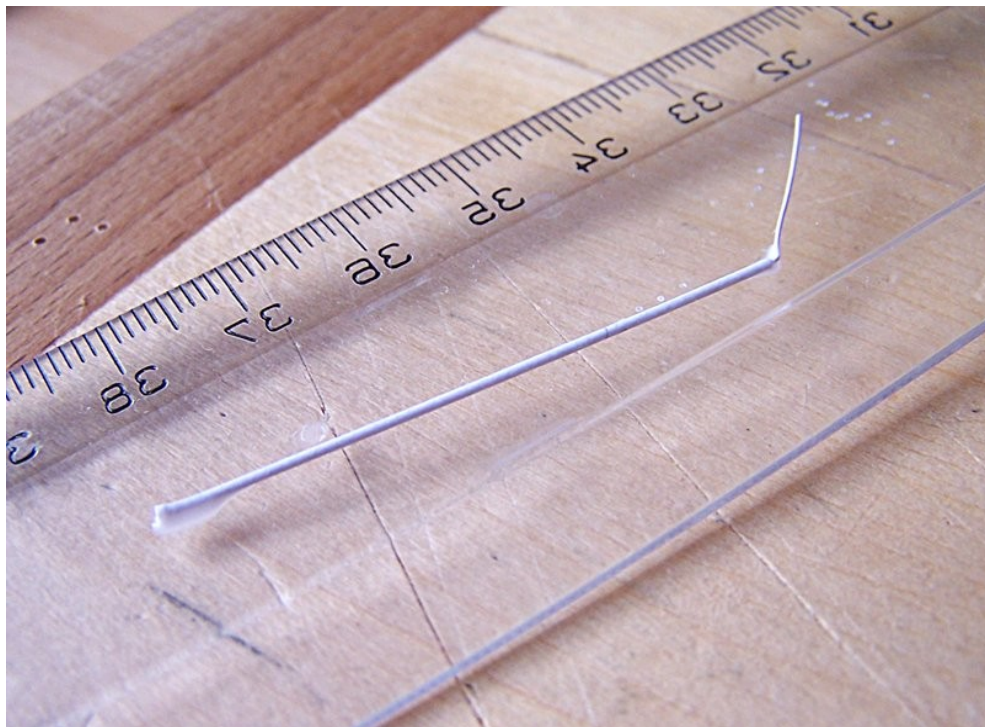
Cut the tube and draw it down from wire.



11) Insert thin strip of 160 g paper into tube. One end must be hidden ~ 5 mm into the tube.

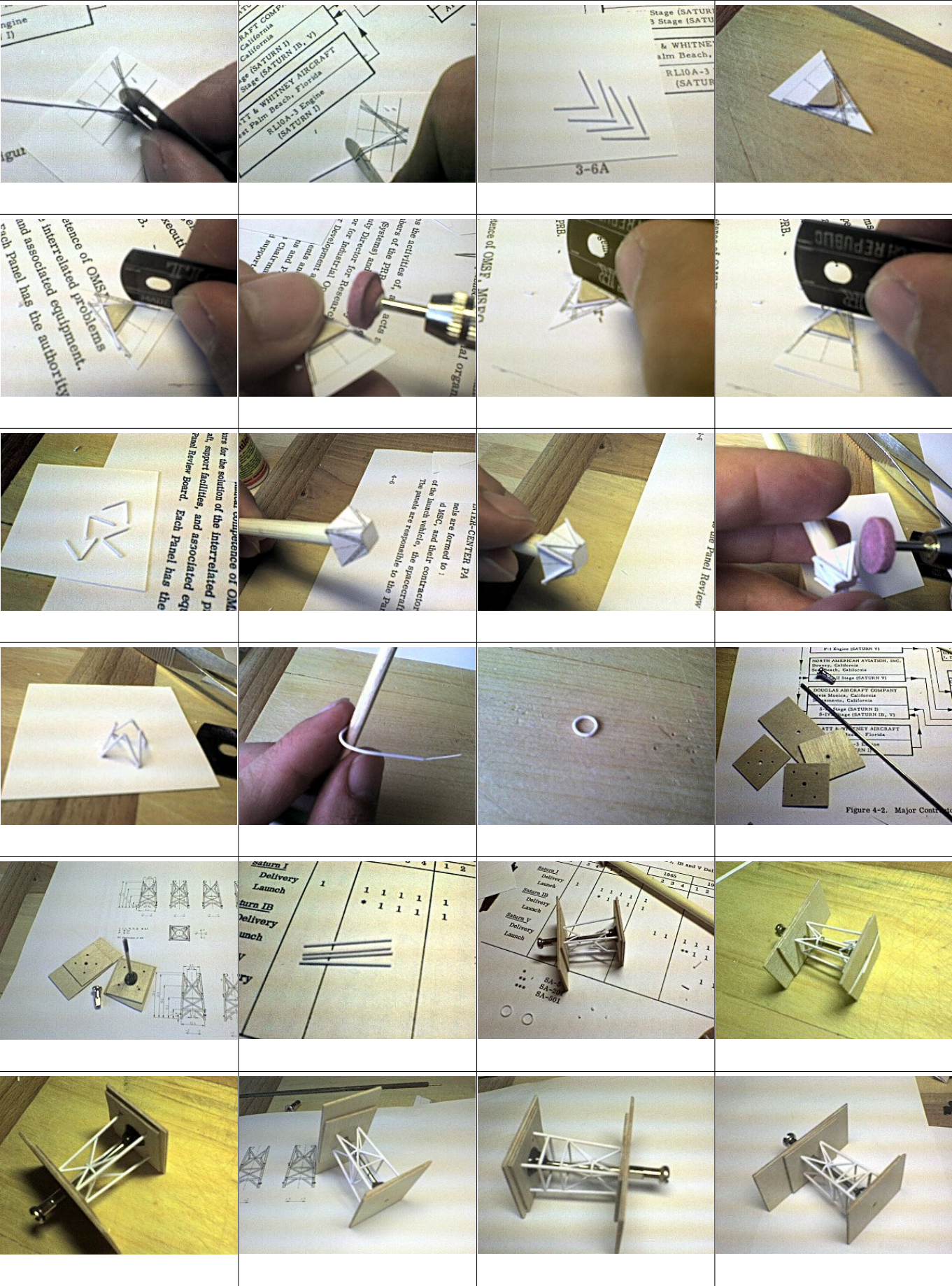


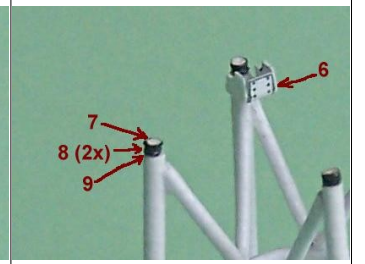
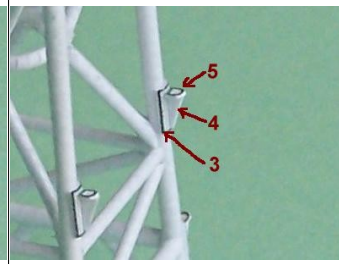
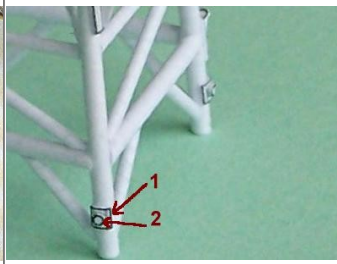
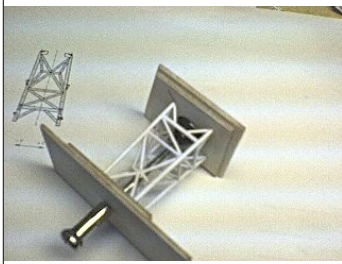
12) Inject diluted white glue into tube, assure that it leak around the strip inserted in step 11 to full length of tube.



13) Let it all dry well on straight surface.

Building LES lattice





Joining LES lattice to LES tower

