

ROC CITY

WESTLAND LYSANDER BUILD REPORT

SCRATCH BUILDING DETAIL INTO THE 1/72 NOVO KIT



WESTLAND LYSANDER - HISTORY

I thought I'd start by including some history about this very interesting aircraft (REF: DefenseMediaNetwork.com)

Even for aircraft, faster is not always better. Some aircraft have achieved fame because of their exceptional low-speed flight characteristics. Among these, the British Westland Lysander stands out as one of the great special mission planes of World War II.

In 1934 the Royal Air Force opened competition for a new "Army co-operation aircraft" to provide artillery spotting, message dropping and other essential support missions. Arthur Davenport and Teddy Petter, designers at Westland, asked RAF pilots what they needed. The critical requirements were excellent downward visibility, good low-speed handling, and **short takeoff and landing** performance.

Many features of the Lysander were advanced for its time. The forward airframe was built of aluminum alloy tubes; the rear framed in welded stainless steel tubing. Light wooden ribs defined the shape, covered partly in sheet metal, the rest in fabric. Custom aluminum alloy extrusions were used extensively for plates and brackets rather than welded and bolted sheet metal. Finally, the Lysander was one of the first aircraft fitted with automatic wing slots and slotted flaps, reducing pilot workload during takeoff and landing.

By the outbreak of war in September 1939, the Lysander Mark II equipped four RAF squadrons, but over France and Belgium, the *Luftwaffe's* fighters slaughtered them. Of 175 sent into action, 88 were shot down; another 30 were destroyed on the ground. Lysanders were then withdrawn from front-line service, initially relegated to towing targets and dropping life rafts to downed aircrews. In August 1941 the Lysander found its ultimate mission, with the formation of 138 Squadron (Special Duties). Painted flat black for night operations and fitted with extra fuel tanks for extended range, the Mark III could land and take off from tiny improvised airstrips in Nazi-occupied Europe.

These missions included inserting clandestine agents, explosives, radios and critical supplies for the Resistance and retrieving downed airmen who had evaded capture. Machine guns were usually removed to save weight, and the planes relied on stealth to survive. Missions were limited to periods around the full moon, so that pilots would have enough light to navigate, using only a compass, watch and map. Up to three passengers could cram into the rear cockpit "in extreme discomfort." The British SOE (Special Operations Executive) established secret facilities for 138 Squadron and later 161 at RAF Newmarket in Suffolk, along with 357 Squadron in Bengal, India.

LYSANDER SPECS

Specifications, Lysander Mark IIIA (SD):

Length: 30 ft 6 in (9.29 m)

Wingspan: 50 ft (15.24 m)

Height: 14 ft 6 in (4.42 m)

Wing Area: 260 ft² (24.2 m²)

Engine: 1× Bristol Mercury XX 9-Cylinder Radial, 870 hp (649 kW)

Maximum Speed: 212 mph (184 knots, 341 km/h) at 5,000 ft (1,520 m)

Stall Speed: 56 mph (90.1 km/h)

Range: 600 Miles (522 nmi, 966 km) on Internal Fuel

Endurance: About 8 Hours.

Ceiling: 21,500 ft (6,550 m)

Climb to 10,000 ft (3,050 m): 8 min

Take-Off Run to 50 ft (15 m): 305 Yards (279



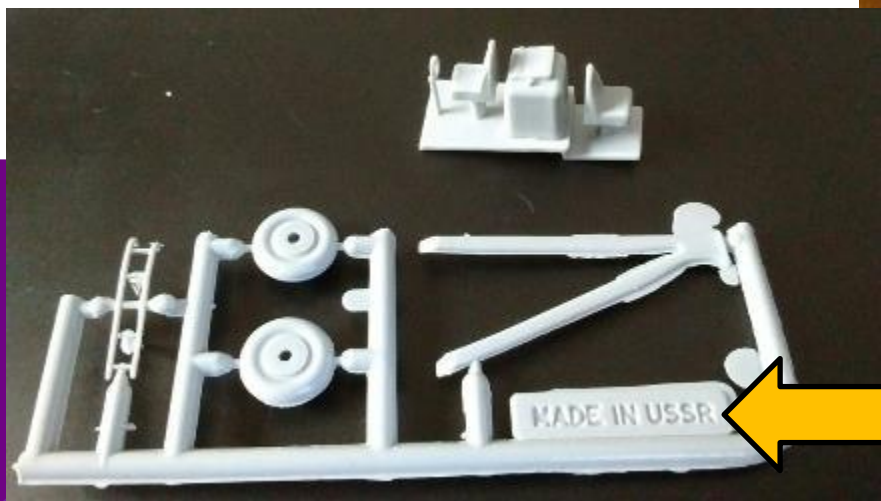
I bought this little kit for about the price of a cup of coffee at the 2016 Rocon show. It came in a Zip-Loc bag with "Frog Lysander" written in black marker.

The kit has a very low parts count - which would usually be associated with a simple kit. Like I said usually.

After some research, I found that this was originally a Frog Co. mold that was bought by the company Novo. Novo made the kit in the Soviet Union after Frog went "belly up".

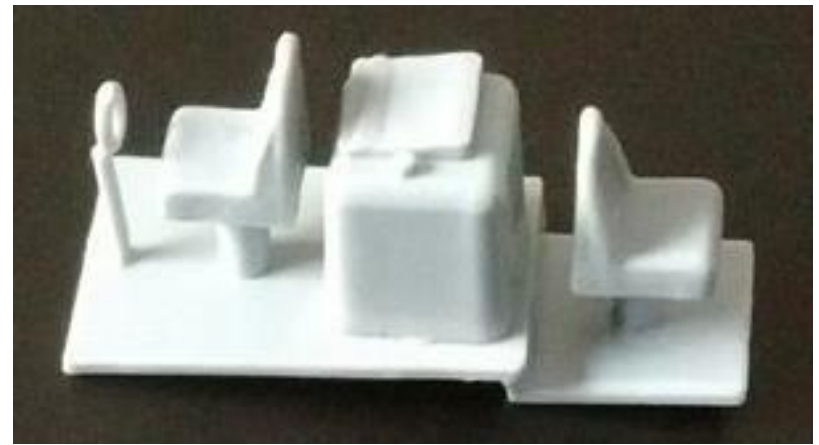
(Ha ! - There's a word picture !)

The Frog molds are from 1968 and they were used by Novo from 1977 to 1980. All the parts required quite a bit of flash trimming.



The interior detail is OK - it's a good base to work from.

The real Lysander has some very prominent interior framing that is visible through the canopy glass. I decided that this was one detail that I could add with styrene rod fairly easily.



The exterior surfaces have a mix of recessed and very fine raised detail - nice for an old mold. There are a few small sink mark dimples that shouldn't be too difficult to fill in.

The clear part for the canopy was in rough shape after being tossed around with other parts in a plastic bag for so long.

Here is the canopy after the first round of clean-up - removing flash and buffing it with toothpaste and a soft cloth. Surface defects and scratches are still making it cloudy.



After cutting it apart, buffing a little more, and coating with future, the finish improved.

Much Better !



The interior walls had no detail. I started by painting the section of doped fabric. Lines outlining the interior fabric area are made up. I wanted to give the impression of doped fabric just in case any of it was visible. Light brown acrylic paint was hit with a wash of Pink/Red blotches and then lines were added with a pencil.

The two white styrene pieces will go at the edge of the cockpit lip around the pilot and crewman's seats.



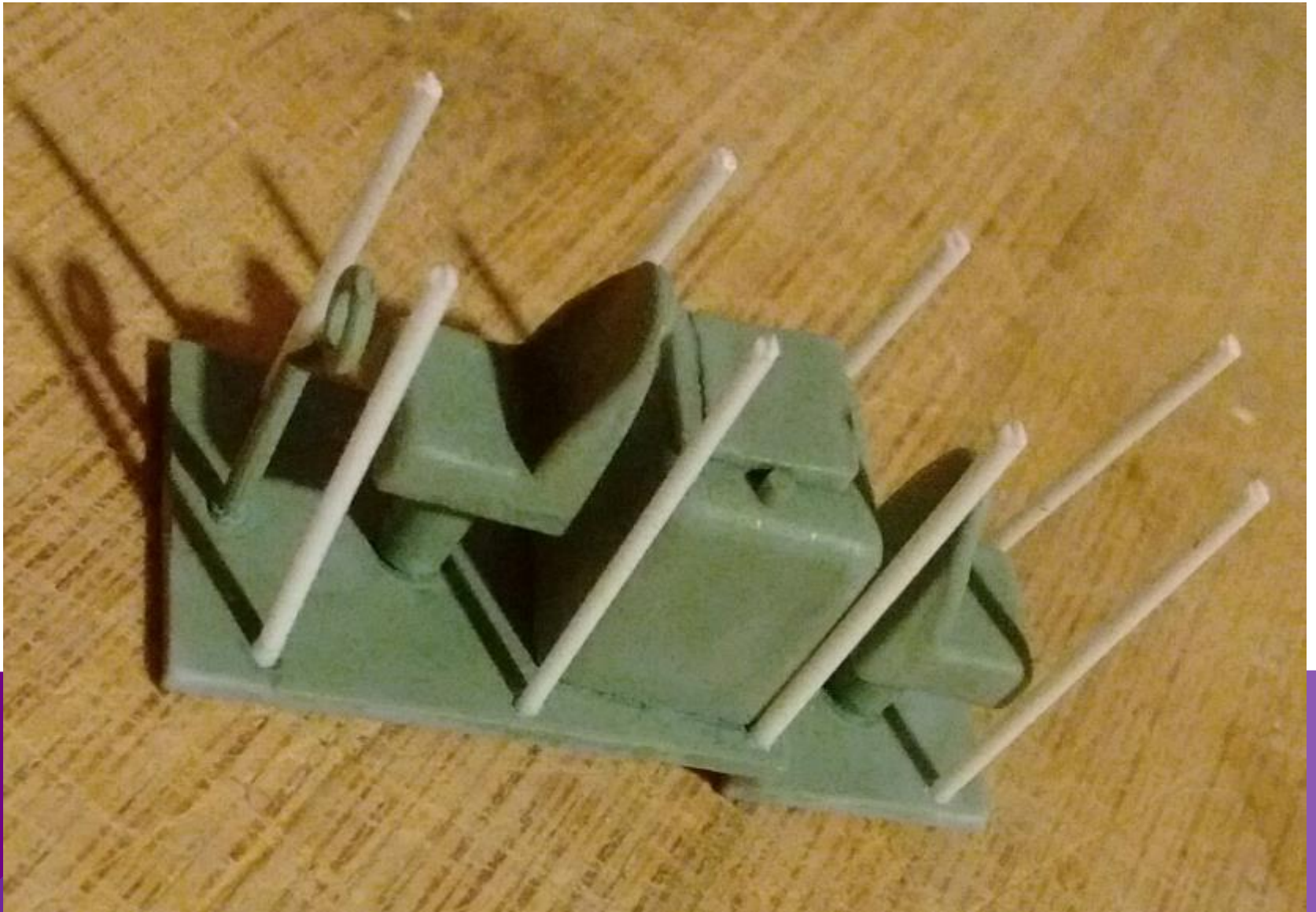
With the back of the canopy open, it will be easy to see inside the cockpit.

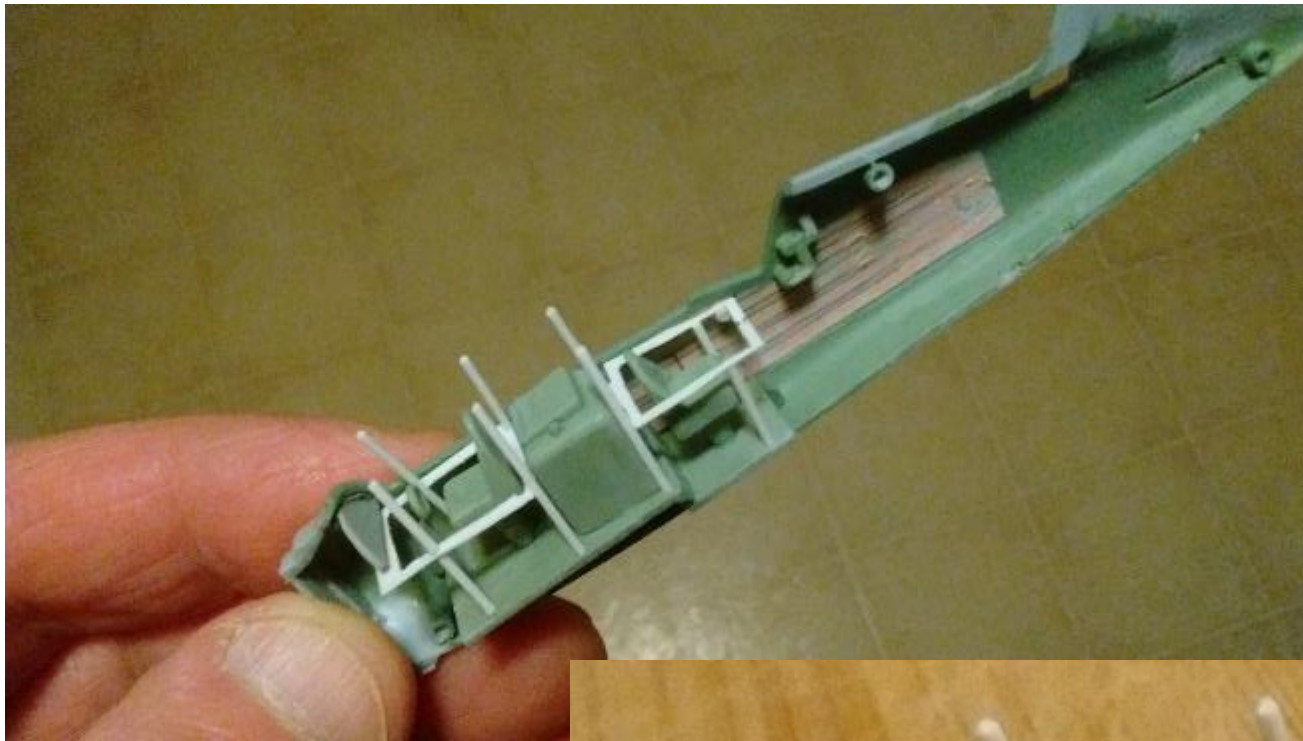
It just wouldn't look right without a little bit of the tubular framing detail that is so prominent in the Lizzy's cockpit. I didn't add all the framing that I saw in reference photos – I concentrated on the parts that would be seen through the canopy.

The process started by drilling holes in the cockpit floor.



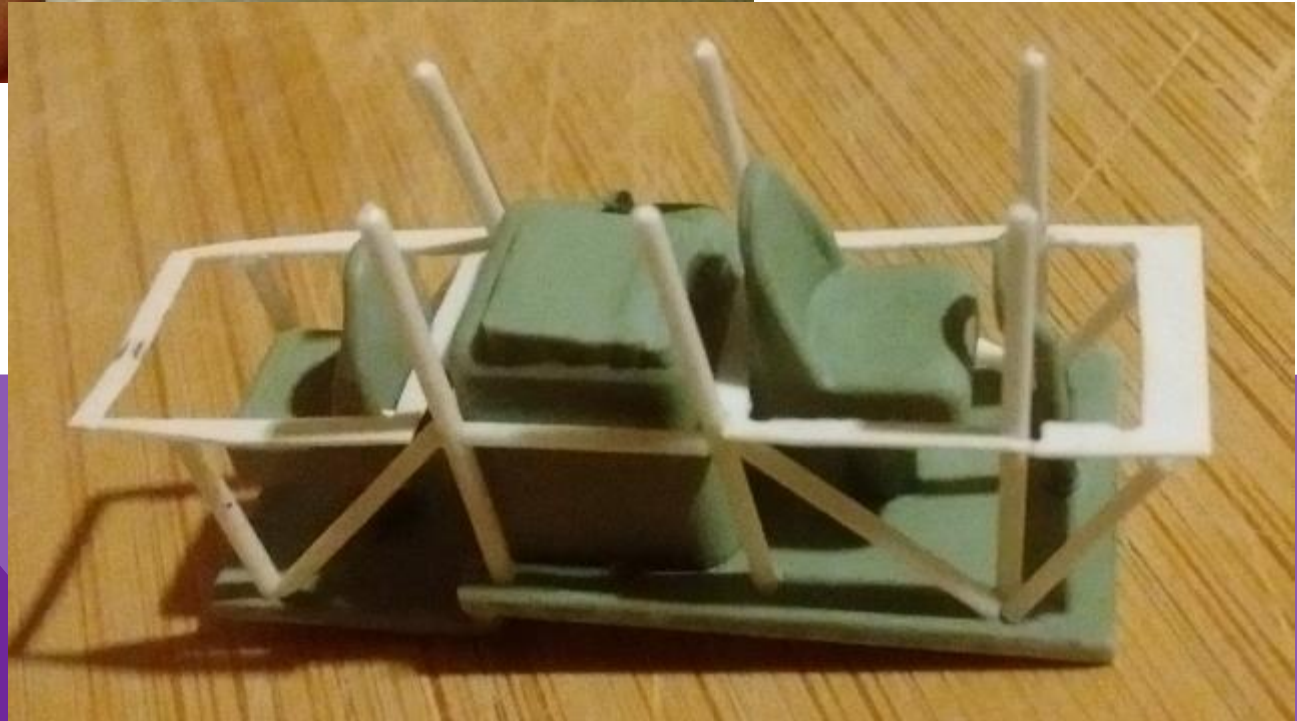
. . . And then adding styrene rod





Test fitting the assembly and trimming the height.

... and then adding some diagonal members to the frame



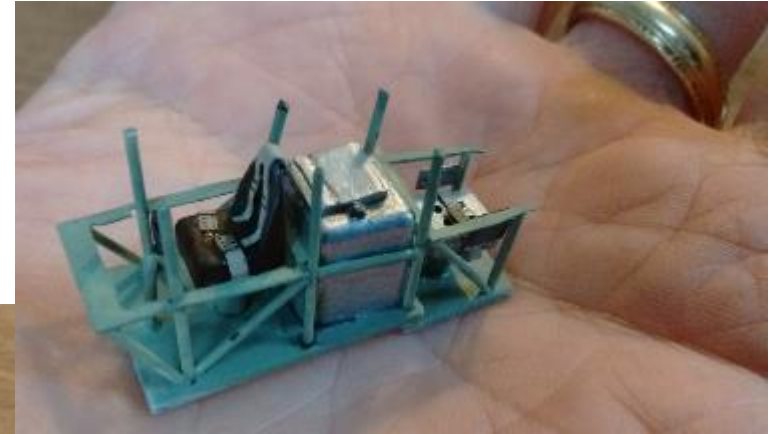
Some reference photos showed that the crew seat was not identical to the pilot's seat as was supplied with the kit parts. The rear seat was just a metal pan, with no back, and a few holes.

To modify the (already assembled) kit parts – I cut the rear seat off, cut off the back, carved a "dish" into what remained, and drilled some holes. A little more research beforehand would have helped me here.

Various boxes were added on the sidewalls in the rear and in the pilot's area with cardstock.

Wine bottle foil was used for seat harnesses fore and aft.

Here are the guts before adding to the fuselage along with the instrument panel in front, and the ammo tray in the rear . . .



The fuselage buttoned up

One of the most physically difficult parts of this build was cutting and polishing those tiny little windows (about 1/8" x 3/16") in the rear of the fuselage.

They were super cloudy, rough, and didn't fit in the recesses very well. They probably wouldn't have been as much of a problem if they were larger - but it was hard just to hold them.



A test fit of the canopy . . .

Yeah - I think it was worth the labor.
The detail can be seen.

The rear canopy part that came with the kit was not meant to be posed open. It was so thick that it wouldn't fit over the fuselage in the open position.

A friend on the Finescale Modeler Forum showed me how to “smash mold” a replacement part by heating a piece of thin, clear, sheet styrene from a food container, heating it, and quickly stretching it over the kit part.

Success ! It made a rear canopy part that fit well over the fuselage when it was in the open position.

The thin molded “smash molded” styrene sheet on the left.

The thick kit part on the right.



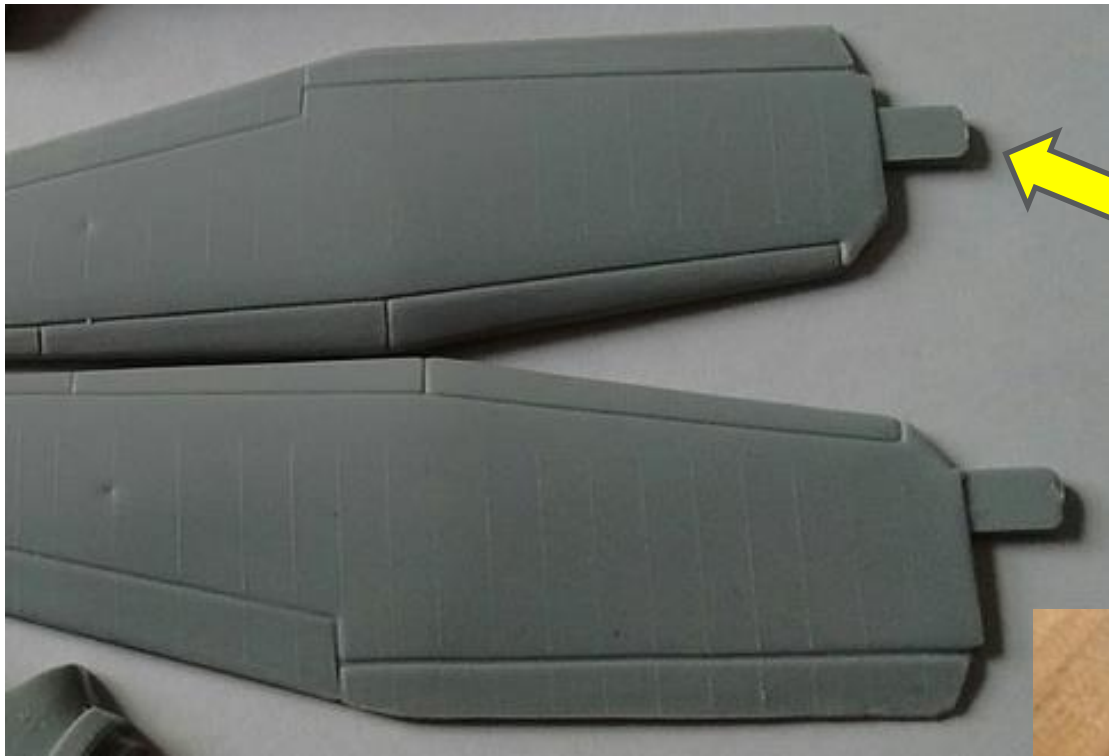
More progress . . . The engine is in the cowling, the landing gear is on, winglet bomb racks are added to the landing gear, holes were drilled in the front of the gear spats to hold lights that will be made later. Seams and sink holes have been filled. An intake hole was drilled in the air scoop on the cowling.

The Lysander has a giant wingspan compared to the rest of the body. It has a strange, insect-like look.



Hole is drilled in the tube on the underside. I wondered if that was a relief tube ?
A few sink marks, unused holes, and seam gaps needed to be filled with white putty.





The wings on this kit are joined to the body of the plane at the top of the canopy. It does so with these rather thick tabs.

On the real aircraft, the wings are joined by a truss of tubing that doesn't obstruct the overhead view like these 2 solid tabs.

I decided to modify the wing tabs to make them look more like tubing. Holes were drilled in the tabs and they were opened up and shaped with an X-acto knife.

It doesn't look exactly like a Lysander frame, but I think it's an improvement and it seems like it will still hold everything in place.



Here it is with a first thin coat of dark earth – the base camo color.
I brush painted Testors Model Master acrylics, slightly watered down with a few drops of tap water.
The first coat never looks very good, but with a few thin coats I don't get significant brush strokes.
A second coat can usually be applied about 10 minutes after the first.



And here it is after a second coat of both dark earth and Sky "S" on the underside.
Looks like the Sky "S" might need one more coat !



The prop needed a lot of work. Each blade had its own unique shape, length, & thickness, along with the ever-present flash to trim.

A session of cutting and filing helped make the differences less obvious.



At this point I was thinking:

With the “fiddly-ness” and delicacy of the way the wings join to this kit at the canopy, it would probably be best to complete the painting of all of the major parts (fuselage, canopy, and wings) before assembling them all together.

So . . More painting . . .

Final coats of
Dark Earth and Sky "S" . . .



- . . . a couple coats of the Dark Green camo,
some gloss black on the spinner just for some variation in finish,
and a start on the canopy painting.



While I was laying down the first coat of RAF Dark Green over the Dark Earth base I followed a paint scheme from a photo reference. The wings are done, and I'm pleased with the way things are turning out.

I move on to the fuselage and the engine cowling, checking my photo reference again . . .

Wait ! . . . what ? !

.... ***Noooooooooooo!***

How did I miss that ! ?

I glued the air intake scoop 180 degrees off - but the exhaust pipe was positioned correctly !

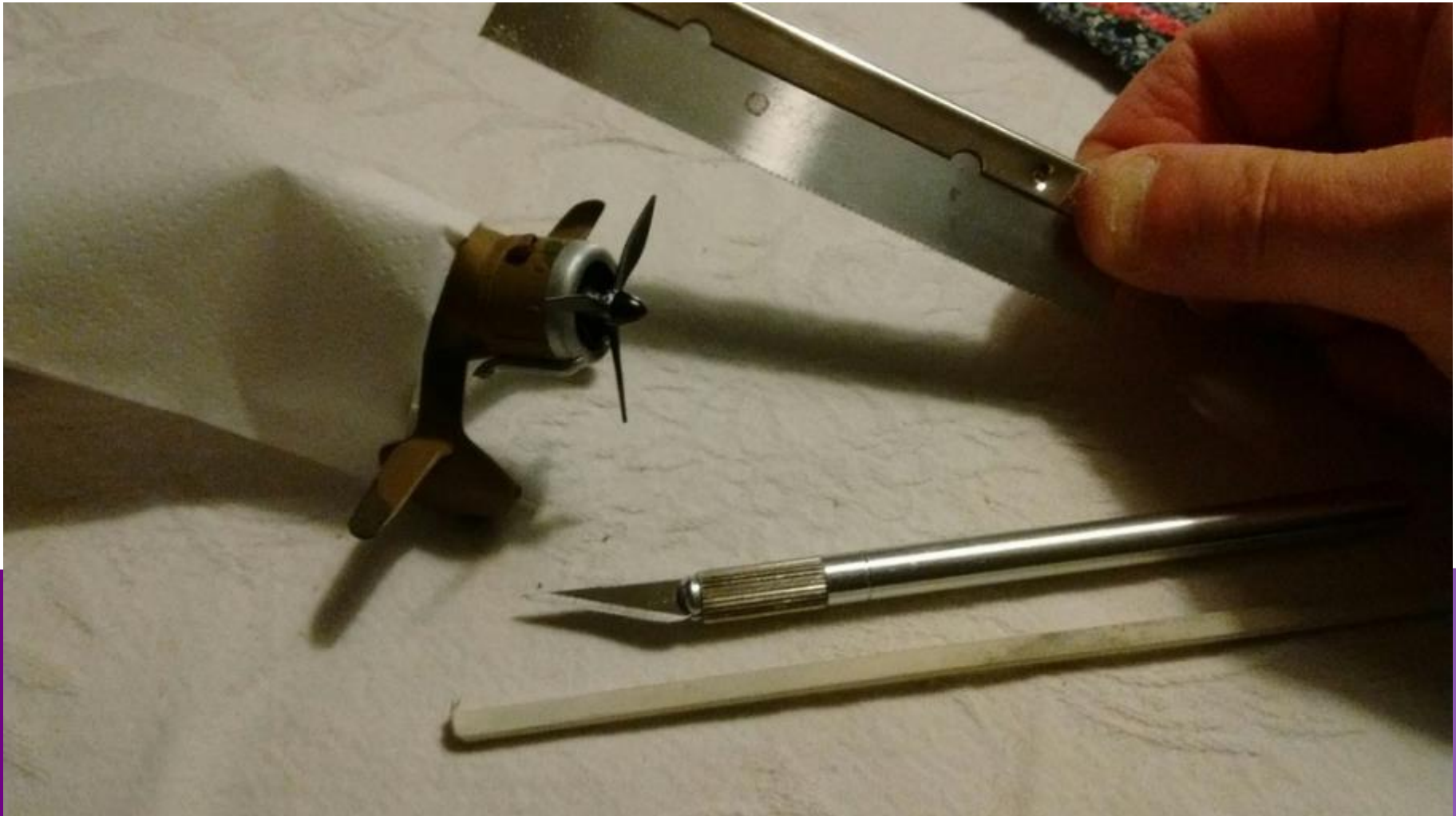
This put the intake on the top of the cowling instead of the bottom where it belongs.

Grrrrrr !

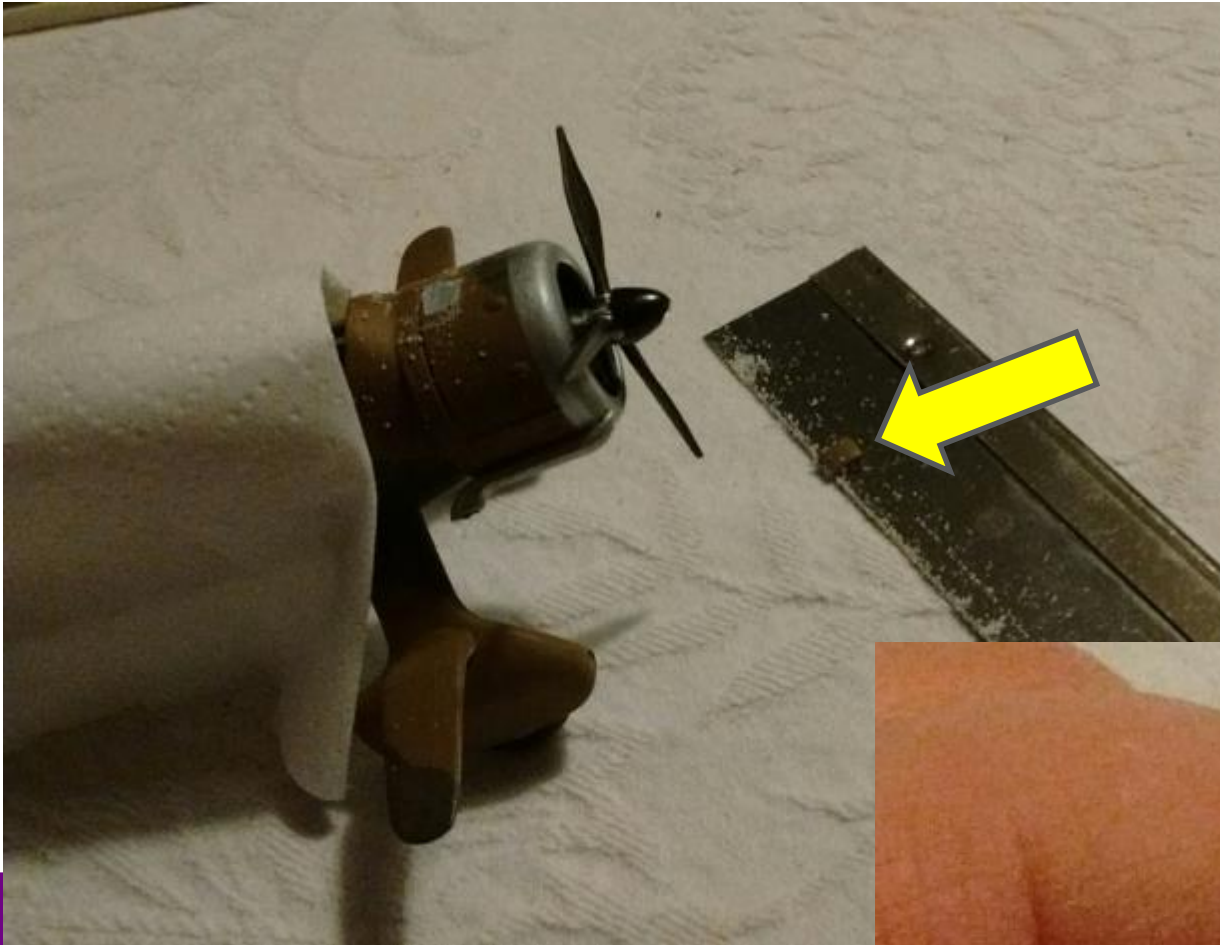


I just couldn't leave that error right on the top of Lizzy's nose.
So I had to engage in some Aeronautical Rhinoplasty . . .

The patient (pre-op):



No anesthesia required . . .
That didn't hurt a bit !



Lucky me ! The scoop came off
clean enough to be salvaged !



Add some styrene sheet to restore the thickness that was removed by the saw



And file/sand to the finished shape



Relocate the scoop.

Then clean up the wound, restore the panel line, and - Voila !

Almost back to where I was before !





Relocated

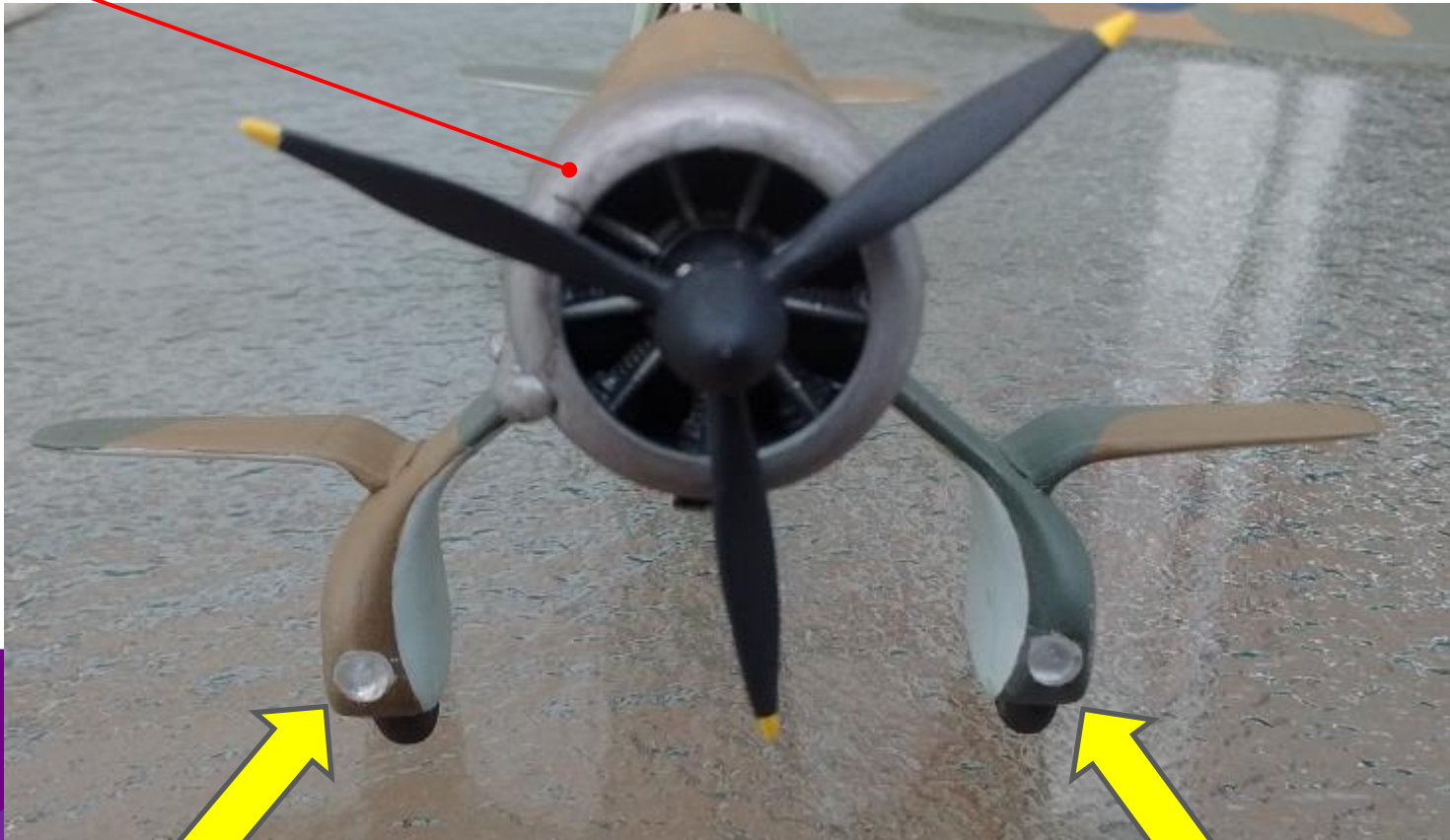
The next order of business was to scratch build some lenses for landing lights. These were not a part of the Novo kit, but they are a very noticeable part of a Lysander - so I decided to add them. I chucked a piece of clear sprue in a cordless drill and used an X-act blade as a lathe tool to turn it down to the right diameter (and make them nicely round). Then the front surfaces were polished with fine sanding paper while it was still turning.

A shallow hole was drilled in the back of the lens with a pin drill to simulate a bulb. Both lenses were glued to a piece of aluminum foil with clear glue to give a reflective surface to the back of the light.



On some radial-engined aircraft the exhaust collector ring is bare metal. During use, this usually develops some heat discoloration and oxidation from exposure to the high exhaust temperature and the elements.

My method for representing this is to “paint” the ring with a silver sharpie marker, and then apply a very dilute rust colored wash over it. I’m still working on improving this method for a more realistic appearance.



Lenses Installed

Painting, decaling, and dull coating complete (except for that retracted canopy).

The kit decals were unusable - I didn't even try them. The spare decal pile comes to the rescue !

In this photo, the canopy pieces are just set in place. Something needed to be done to improve the fit. The canopy had to be raised in order to avoid the need for too much filling and sanding later. I added a 0.040" square styrene rod to the edge of the cockpit to lift it up - and then sanded part of that down to the point where it fit best.



A small locking clamp was used to hold the wing/canopy assembly in place while the glue dried

The rather weird Canopy/Wing join turned out to be very difficult to align. There wasn't a whole lot of surface area to get good adhesion.

Once the wing tabs were inserted into the top of the canopy they were glued together - but the assembly was shaky. I added a plate cut from styrene to reinforce the joint of the two tabs together. After a couple tries, it worked. (No pictures of that part). Success! I can see into the cockpit through the top of the canopy!

I'm calling this one DONE!

... and I'm REALLY glad the Lysander doesn't have any rigging.







