

Kit Review

(February, 2007)

Blue Rider Doblhoff WNF-342, Kit Number BR112, 1/72 scale

A Brief History:

This helicopter was the brainchild of Anton von Doblhoff. His idea was to power the rotors with jets mounted at the tips. Fuel and air for the jets was compressed and pumped through hollow blades by an engine mounted in the fuselage and driving a compressor. Early prototypes (which didn't look anything like this version) proved the concept valid, but also exposed the fact that the helicopter was not very fuel-efficient. The V4 version (which is what this kit represents) was a departure from the earlier versions. The jet power for the rotor was retained, but it was used solely for takeoff and landing, while for level flight the engine switched to drive a pusher prop located at the rear of the aircraft with the rotor left to autorotate, like an autogyro. Thus the WNF-342 was in essence the precursor to the more famous Fairey Rotodyne.

The Kit:

This kit was a limited release by Blue Rider back in 1993. It consists of a sheet of vacuformed parts for the big pieces such as the fuselage and booms, white metal parts for the wheels and prop, and a fret of etched brass details for items like the struts, landing gear and rotors. There is no clear part for the windscreens. The windscreens come as a framework located on the brass fret. The windscreens in my kit had been bent out of shape during shipping.

Instructions come printed on both sides of a single sheet of paper. On one side there is a brief history of the aircraft with some profiles, while the other side contains the written building instructions. There are no exploded diagrams showing how the parts go together.

There is one small decal sheet printed by Blue Rider. It consists of four images – two swastikas, and two Doblhoff WNF-342 in white script. The swastikas are intended for the German prototype and the white Doblhoff lettering is for the captured example sent to the USA. The images are matt and quite thick as is common with Blue Rider.

Modifications:

These were extensive. Back in 1993 when Blue Rider released the kit, information and data for the WNF-342 was sparse. Looking over the numerous pictures available on the web, it became apparent that this kit leaves a lot to be desired. As a result much of the parts for the kit are of no use and were discarded.

Most of the etched brass can be assigned to the spare parts box. This includes the main rotor blades and all of the struts, except for those used for the rotor shaft and for the front landing gear leg. From the vacuformed plastic sheet, the only useable parts are the fuselage halves, the tail booms, the fin/rudder, plus the horizontal stabilizer that runs between the booms.

Construction:

Construction commenced with the removal of all the useable vacuform parts from the sheet. Score around the pieces and snap away the excess plastic. Using some sandpaper mounted on a flat surface all the parts are sanded down until the excess plastic is removed. Make numerous test fits for the fuselage halves to make sure they will join properly.

An interesting feature of the WNF-342 was the “clam shell” panel that tilted forward to provide access to the cockpit. There is an excellent picture (see photo 1 on pg. 2) of this that I found on the web at <http://www.luftarchiv.de>. When I first saw this picture I knew I had to build this kit with the “clam shell” tilted forward. So once the fuselage pieces were separated and sanded, I cut the clam shell portions from the fuselage halves by following the scribed line. I used a nice sharp blade for this since you can't add too much pressure while cutting.

Then I glued the fuselage halves and the clamshell halves together, and finished the seams with some filling, scraping and sanding. Then I cut out the openings - one on the top of the fuselage, and another semi-circular opening at the lower rear underneath the pusher prop.

The instructions tell you to add the supplied bulkheads to the inside of the fuselage before joining the two halves, but you can ignore that advice. The cockpit is essentially a big open tub, and from what I can see in picture below there are no bulkheads. What you really need to do is scratch build the cockpit by adding a framework to the inside of the fuselage.



LuftArchiv.de

(photo 1)

Before I started to build up the interior I cut out windows in the front portion of the floor and the nose panel on the clamshell. The instruction sheet does not make any mention of these clear panels (probably because Blue Rider was unaware of them at the time), but if you look closely at the photos (photo 2 and 3) below you can definitely see them. I suspect they are there for the pilot to look through while landing. Make sure you leave enough of the floor in place to mount the front undercarriage leg.



(photo 2)



(photo 3)

The first step in detailing the cockpit was by adding struts along all the seams/creases inside the fuselage. Step holes were cut into the fuselage on both sides. I then measured and cut out the clear panels for the floor and the clamshell from some acetate sheet, but did not attach them at this point. Then the cockpit interior received its first coat of Testors RLM02 grey paint.

Next I scrounged a radial engine from the spare parts box and trimmed the cylinders so that it would fit inside the rear of the fuselage at the very back. It was painted and then super glued inside the fuselage.

The remainder of the interior was then built using plastic rod cut to size and super glued to the fuselage sides. Five pieces of plastic rod were mounted to span the gap between the cockpit sides. Three were used for the seat supports, and one each for the control sticks and pedals. Control sticks came from an Italeri OH-6 helicopter and I fashioned some pedals from plastic sheet. Seats were scratch built from some thick plastic sheet. I also added the rotor shaft using some plastic styrene rod and attached the photo-etched support braces from the brass fret with super glue. The rear of the cockpit was masked to protect the engine, and I sprayed the cockpit and seats for the second time with Testors RLM02 grey enamel paint. The interior of the clamshell was given a couple of coats of Krylon gloss white.

Next I moved on to adding the rear landing gear. The kit's photo-etched parts were scrapped and I rebuilt the struts with plastic rod and used a couple of gear legs from the spare parts box. I added scissors to the legs and I then attached the booms, rear stabilizer and fin/rudder.

I used the kit's photo-etched part for the front gear leg, folded and glued it together, and attached the white metal front wheel. This was put aside to be added later.

The rotor assembly was scratch built. The kit parts on the etched brass fret were totally unacceptable. My first step was to find a suitable three bladed prop in the spare parts box and remove the blades from the hub. A small hole was drilled into each of the ends and a small metal pin was glued into each hole and cut down so just a tiny portion of the pin was exposed. The hub was glued to a circular piece of plastic, and a larger hole was drilled into the center of the hub for the rotor shaft to pass through.

The blades came from the aforementioned Italeri OH-6 helicopter. They were the perfect size. Each blade had its old attachment points removed.

The instruction sheet has you add open-ended jets to the blade tips, but that is incorrect. I added jets to the tips based on the picture below (photo 4). Each jet was made from round plastic rod, glued to the tip, sanded to shape and then an opening was drilled in the end to represent the exhaust. At the other end of each blade I cut a square notch to accept the spoke from the rotor hub. The spoke was made from round plastic rod. A small hole was drilled in one end of each spoke to accept the pins that were previously glued to the hub, and the other end was scraped and sanded down to a taper, to fit into the notches I cut in the blades. The spokes were then super glued to the hub and blades, followed by a light sanding at the joins to smooth them out.



< (photo 4)

Then it was time to paint again. I masked off the interior and sprayed the exterior of the fuselage, clam shell and the front gear assembly overall with Testors RLM71 dark green enamel paint.

While I had the spray brush out I gave the rotor hub and blade tips a coat of Testors RLM66 dark grey. After the grey had dried, I dry brushed Testors silver over the grey to get a metallic sheen. Then the grey areas were masked and the blades sprayed Floquil Engine Black.

A coat of Testors Glosscote was then applied to the complete kit and the masking was removed. Then it was on to the finishing details.

First came the clear panels for the bottom of the fuselage and the clamshell. Both were attached with some super glue.

Photo-etched belts were brush painted and then glued to the seats, and then the seats were added to the interior. The two large pipes running from behind the seats up to the rotor hub were cut and shaped from some solder wire, painted Testors Chrome Silver followed by a wash of thinned acrylic black paint to

tone down the brightness. The pipes were then attached with super glue to a manifold box that I had previously scratchbuilt and added to the rotor assembly.

The kit's white metal prop is not very accurate. I trimmed it for width and shaped the blades to a pointed tip to more closely match the prop as seen in photos. On second thought what I should have done was replace the prop with a scratchbuilt item. Even with the work I did on the kit's white metal part it still doesn't look quite right.

I replaced the windscreen with a piece of clear acetate. I used the existing windscreen as a template by placing it on a piece of paper and carefully tracing around it with a mechanical pencil. The outline was cut from the paper and taped to a piece of acetate sheet. Using scissors I cut around the template. I curved the plastic windscreen where the frames would have been and bent the plastic to shape. The frames were brush painted on with Testors RLM71. Once dry it was super glued to the clamshell.

I finished off the clamshell by adding some thin black lines to its interior using some spare decals.

The clear parts were masked and the kit was coated with Aeromaster Acrylic flat. Using super glue, I added the pusher prop to the fuselage and the clamshell was attached to the front of the cockpit. Adding the clamshell was this was the tensest part of the build, because if I didn't get the alignment correct the whole kit would look unbalanced. Fortunately I got it right and things were looking good at this point. The final step was adding the pitot (from the spares box) to the lower left of the fuselage and the rotor blade assembly.

Conclusion:

Definitely not a kit for the beginner! A reasonably accurate WNF-342 can be built from this kit, but definitely not as supplied by Blue Rider straight from the box. Major work is needed and thus this kit moves more into the realm of scratchbuilding than kit building.