

Kit Review

(September, 2003)

Amodel KaSkr-1, kit number 7265, 1/72 scale

A bit of history:

The KaSkr-1 was the first autogyro built by the team of Kamov and Skrzhinsky in the early 1920s. Kamov later went on to create the great Russian helicopter design bureau named after himself.

Knowing that Juan De La Cierva was the originator of the autogyro concept, it only made sense to base their first autogyro on a design similar to what the master himself was using. Kamov and Skrzhinsky used Cierva's C.8 model as the basis of their first autogyro.

The Cierva C.8 was a converted Avro 504, thus the logical starting point for the KaSkr-1 was to do the same thing with a Soviet U-1 biplane, which was a licence-built Avro 504K. This resulted in an aircraft that was very similar to the Cierva C.8. Some 79 test flights were performed with the KaSkr-1, before Kamov and Skrzhinsky moved onto their next autogyro, the KaSkr-2.

References:

You can find information about the KaSkr-1 on the web at

http://avia.russian.ee/vertigo/kamov_kaskr-1-r.html. This was my primary reference for the plane and its markings.

The kit:

This is my first Amodel kit, and I must say that building it was a challenge, that thoroughly exercised my building skills and patience.

The kit comes in the typical Eastern Europe style box - made of thin cardboard which opens from both ends. Inside you find three sprues of light blue-grey plastic containing 39 parts for the aircraft, one clear sprue for the two windscreens, a small decal sheet, and a small instruction sheet.

It is obvious that this kit's layout was planned to allow for future versions, and this is born out by the fact that the KaSkr-2 kit has some sprues in common with this kit - namely those containing the windscreens, the fuselage parts, and the rotor assembly.

The decals are quite good, and have a matt finish. Included are two instrument panels, and four images in Cyrillic script - two with "КРАСНЫЙ ИНЖЕНЕР" - ("RED ENGINEER" in English), and another two with "ВЕРТОЛЕТ КАСКР" - (KASKR HELICOPTER in English).

Inspection of the parts:

A quick run through the instructions shows that the kit's construction should be quite straight forward. It is also obvious from the instructions that the method with which the blades attach to the hub will be a weak point and prone to failure. This also appears to be the case for the landing gear assembly as well.

Looking at the mouldings, the first thing you notice is that the parts look a bit rough, with large injection gates for the low pressure injection employed. A lot of sanding and scraping will be needed, especially on the struts which not only have prominent mould seams but are also extremely thick.



KASKR-1 THE SOVIET AUTOGYRO

PLASTIC MODEL KITS
LIMITED EDITION
CAT.NO.7265

SPAN : 111 mm
LENGTH : 129 mm
PARTS : 32 pieces

SCALE:1/72



The first of these was the KASKR-1 built by the designers N. I. Kamov and N. K. Skrzhinsky. It made its maiden flight on September 25, 1929 at the hands of I.V. Mikheyev, with its designer N. I. Kamov in the rear cockpit. The design of the aircraft resembled the well-known Cierva C-8 autogyro. Shortly afterwards the young designers built an improved model, the KASKR-2 (1930) based on the KASKR-1. NII VVS (Air Force Scientific and Research Institute) specialists participated in the evaluation of the autogyros performance. Between 1929 and 1931 the autogyros made 79 test flights.

Technical and tactical specifications of KASKR-1 :

Length	9,300 m	Diameter of rotor	12,000 m	Start weight	950 kg
Span	8,000 m	Maximum speed	110 kph		
Engine	Le Rhone , developing 110 h.p.				



Первый автожир КАСКР-1, построенный инженерами Н. И. Камовым и Н. К. Скрижинским, поднялся в воздух 25 сентября 1929 года. Пилотировал автожир И. В. Михеев, в задней кабине находился его создатель Н. И. Камов. Конструктивно аппарат напоминал известную модель автожира С-8 Сьера. Вскоре на базе КАСКР-1 конструкторы построили более совершенный автожир КАСКР-2 (1930г.). В оценке летных характеристик автожиров принимали участие специалисты НИИ ВВС. С 1929 по 1931 г. было выполнено 79 испытательных полетов.

Тактико-технические характеристики КАСКР-1 :

Длина	9,300 м	Диаметр ротора	12,000 м	Полетный вес	950 кг
Размах	8,000 м	Макс. скорость	110 км/ч		
Двигатель	Le Rhone, мощностью 110 л.с.				

The model is executed on technology short run and is intended only for experienced modelers
Word-wide distributor for AMODEL kits :
IBG, Warsaw, Poland
Fax:(4822)842-56-29 ; E-Mail:ibgsc@ibg.com.pl

Модель выполнена по технологии short run и предназначена только для опытных моделистов
Дистрибутор моделей AMODEL :
IBG, Варшава, Польша
Факс:(4822) 842-56-29 ; E-Mail:ibgsc@ibg.com.pl

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Almost all the parts were removed from the sprues to be scraped and sanded in advance of being used. But be careful, the soft plastic is easy to damage when cutting with a knife, and the smaller parts snap easily. I broke parts 15 and 17 while sanding. To ensure a good fit between the fuselage halves, their mating surfaces should be sanded level on a piece of sandpaper mounted on a flat surface.



USED SYMBOLS / ИСПОЛЬЗУЕМЫЕ СИМВОЛЫ

1	STAGES OF ASSEMBLY ЭТАПЫ СБОРКИ	1	NUMBER PARTS НОМЕР ДЕТАЛИ	A	TO PAINT ОКРАСИТЬ	1	APPLY DECALS НАНЕСТИ ДЕКАЛЬ
	DON'T GLUE НЕ КЛЕЙТЬ		DETACH WITH KNIFE ОТДЕЛИТЬ НОЖОМ	2X	QUANTITY OF OPERATIONS (PARTS) КОЛИЧЕСТВО ОПЕРАЦИЙ (ДЕТАЛЕЙ)		GLUE КЛЕЙТЬ
							OPTIONAL НА ВЫБОР

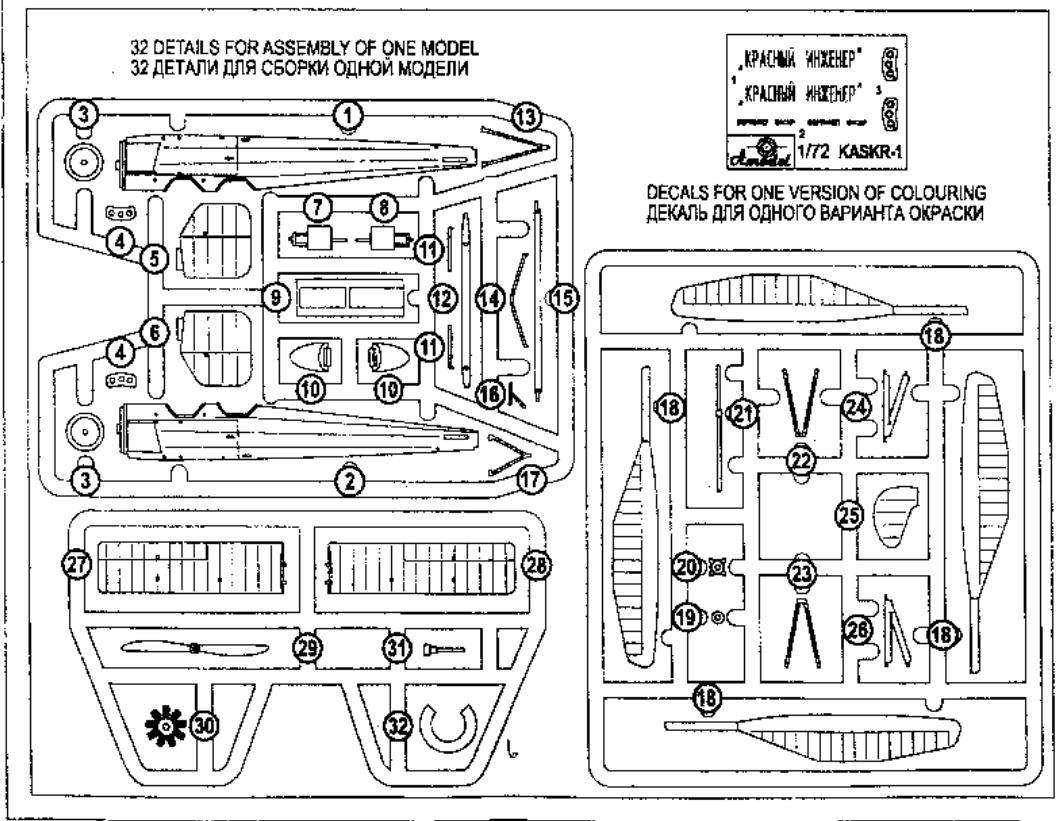


USED PAINTS / ИСПОЛЬЗУЕМЫЕ КРАСКИ

A	<i>No match</i>	B	HUMBROL 65 LIGHT BLUE СВЕТЛО-ГЛЮБОЙ	C	HUMBROL 33 BLACK ЧЕРНЫЙ	D	HUMBROL 64 LIGHT GREY СВЕТЛО-СЕРЫЙ
E	HUMBROL 102 OLIVE GREEN ОЛИВКОВО-ЗЕЛЕНЫЙ	F	HUMBROL 110 WOOD ДЕРЕВО	G	HUMBROL 145 MEDIUM GREY СРЕДНЕ-СЕРЫЙ		<i>grill grey</i>



COMPLETE SET / КОМПЛЕКТНОСТЬ



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The clear parts are thick, and not very clear, and not worth worrying about. I replaced them with clear plastic sheet cut to size.

Construction:

As in most cases, the building of this kit starts with the interior. There is no interior rib detail to the fuselage halves, so this needs to be created from scratch, which I did from thin plastic rod. Instrument panels, floor board and seats are the only interior details.

The interior was brush painted and the decals applied to the instrument panels. I put the decals on the backside of the panels, since I didn't like the idea of placing them over the moulded in depressions on the face. The panels were mounted to the fuselage and the two fuselage halves were joined.

Once the fuselage is together you will notice that the bottom of the fuselage has a small depression down its centre. I filled this in as much as I could with layers of super glue and baking soda followed by much sanding between layers. The plastic is thick here so it will tolerate quite a bit of sanding and scraping to get the bottom flat. The two panel lines across the bottom will be obliterated, but they are easy to re-apply in the soft plastic.

Next were the wings and tail planes. The tail planes went on reasonably well, with only a little trimming needed to get an acceptable fit at the fuselage join. The main wings were a bit more problematic, but trimming, sanding and removal of some of the locating pins allowed a reasonable fit. Usually I avoid adding many struts to a kit until the final phase of construction, but I chose to add the main wing brace struts at this point. I was not happy with what I was seeing for dihedral on the wings, so I figured that gluing the braces to the wings would force the wings to the same angle. This worked well enough. Then I added the tail plane brace struts. I figured that these would be a real problem to add later and the only drawback would be the extra effort to mask around their attachment points on the fuselage when it came time to paint. Part 14, proved to be a hassle, being a bit too long, but some judicious trimming and trial fitting got it to cover the mounting holes on the underside of the tail planes and also fit into the slot located beneath the fuselage.

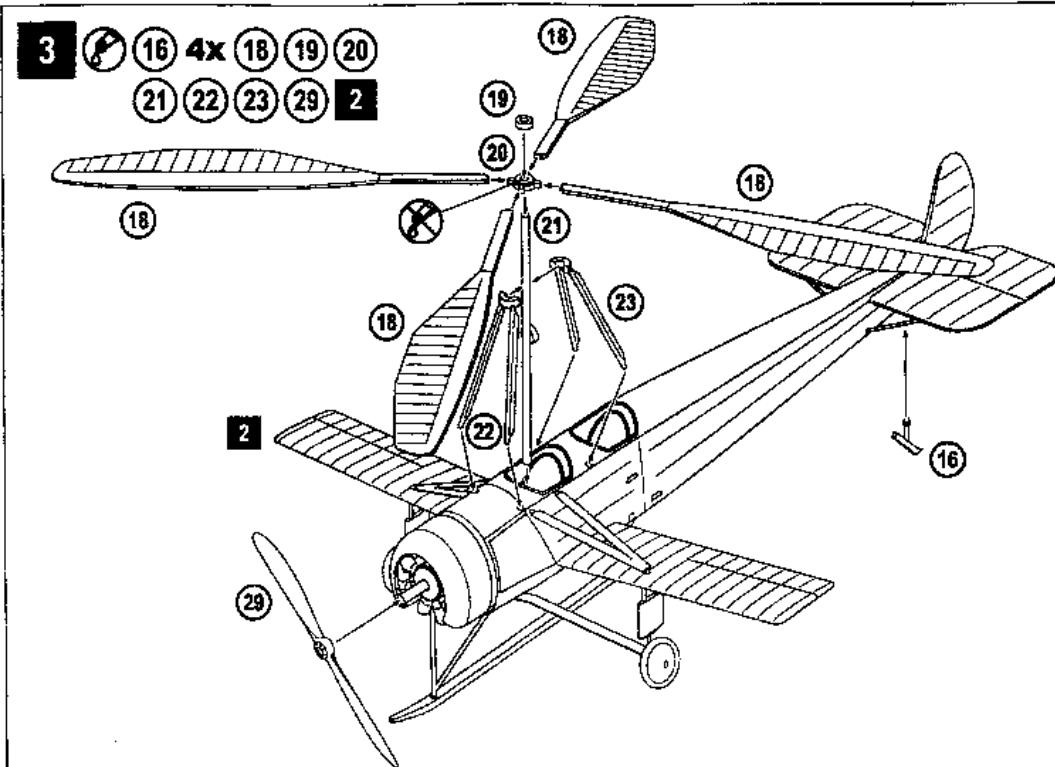
The wheels were discarded. They were not quite round. I considered replacing them with the wheels from the Amodel KaSkr-2 kit since it didn't need them (this aircraft has skis for landing gear), but they were not much better. A pair of wheels from the spares box were used. Parts 25 (rudder), 12,13,15 and 17 (landing gear struts), 16 (tail skid), 30 (engine) and 32 (engine cowl) were all removed from the sprue, scraped and/or sanded as required, and put aside to be painted separately.

The engine cowl is nicely shaped, but it needs some serious sanding to get rid of the high and low points in the moulding. The rotor shaft braces (parts 22 and 23) were glued together, sanded and also put aside for painting.

At the same time as the fuselage was being worked on, the rotor assembly was being readied.

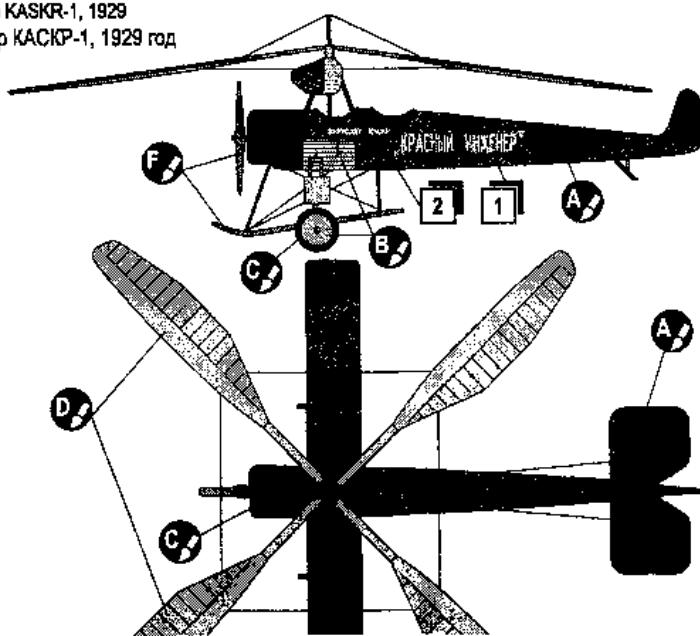
During the construction, something in the back of my mind was nagging at me and it took a few days for me to realise what it was. The rotors in the kit turn one way, while the picture on the box shows them rotating the other way. OhOh!! If the direction of rotation is incorrect then I guess this is as far as the build will go, as I have no desire to correct the rotors to have them rotate in the other direction.

A quick visit to the web proved that the kit has them correct. A closer inspection of the artwork also showed other errors in the box artwork - the shape of the prop is probably incorrect and the script Vertolet KASKR-1 should actually read Vertolet KASKR as found on the decal sheet. So ignore the artwork, except to maybe determine where the rigging is located, and as a painting guide.



THE SCHEME OF COLOURING / СХЕМА ОКРАСКИ

Autogiro KASKR-1, 1929
Автожир КАСКР-1, 1929 год



A		HUMBROL 102 OLIVE GREEN ОЛИВ.-ЗЕЛЕНЫЙ
B		HUMBROL 65 LIGHT BLUE СВЕТЛО-ГОЛУБОЙ
C		HUMBROL 33 BLACK ЧЕРНЫЙ
D		HUMBROL 64 LIGHT GREY СВЕТЛО-СЕРЫЙ
E		HUMBROL 110 WOOD ДЕРЕВО

The rotor hub and all the blades were separated from the sprue and cleaned up. The rotor trailing edges are a bit thick, but in my mind it wasn't worth the effort to try and thin them. There is a tiny hole in the underside of each rotor blade, for a small stub post for rigging. These posts are not included in the kit, so four were cut from stretched sprue and one glued to each blade.

Final prep was to brush apply some Testor's Medium Grey paint along all seam lines and joins. This was allowed to dry, and the seems and joins were sanded to remove the majority of the paint. What paint remained was left as a filler. Following this, the cockpits were masked, then the entire model and all the parts that were set aside were given a coat of Testor's Light Grey as a primer. Defects in the finish were removed with sandpaper. One area that was not fixed was the topside of one of the rotor blades, which revealed a small wave in the plastic. To fix this would have been too much trouble since it passed through most of the ribbed surface detail, which probably would have been destroyed if I attempted any major amounts of sanding.

Now I was ready to paint. All colour references were to Humbrol paints. I avoid using Humbrol paint, so I went with my favourite - Aeromaster enamels. The rotor and blades were painted Light Gull Grey(9056), the uppers in Russian Topside Green (9073) and the lowers in Russian Underside Blue (9074).

The engine panels and cowl were given a coat of Testor's Flat Black. Once dry this was followed with two coats of Testor's Gloss Black, with appropriate drying time between coats. The black was masked, and then the green was applied to the topside. A light coat of Testor's Glosscoat went over the green, and then the uppers were masked, and the undersides then sprayed light blue. Once dry, all masking save that over the black was removed, and the aircraft was given another light coat of thinned Testor's Glosscoat.

Next came the decals. I followed my usual practice of perforating the decals with a very sharp pin before placing them in the water. This works very well, especially with decals of unknown quality and responsiveness to solvents. The decals were a bit stubborn in coming off the sheet. Don't rush them or they will crack and separate. Each decal was given liberal doses of Microsol (approximately 3 applications). To my surprise they sat down extremely well.

The home stretch...

This was going to be the tricky part. How do I put all the separated parts and the fuselage together without causing grievous damage and extreme cursing? And how do I assemble the rotor? After much thought, one

thing was obvious. The rotor assembly needed to be built separately and had to be the last item added to the kit, except for rigging. I don't usually put any kind of rigging on a kit, but in the case of the rotors, I felt it was imperative, since it would provide extra strength for the whole assembly. Out came the crazy glue, and the final push was on.

First came the seats, then the scratch built control stick. Here I found that the space was more limited than I thought and the control stick was difficult to add. Glad I put the seats in first.

Next the rotor shaft and brace struts were added. Looks like I was right in my assessment of its affect on the front cockpit. Since the rotor shaft is anchored in the front cockpit, there ain't no room to put in a control stick. Next came the rudder.

At this point the final coat of Aeromaster Acrylic flat (1003) was applied, and the masking over the black was removed. A coat of Kleer acrylic floor wax was applied to level the black paint and provide a nice uniform shine. No more spraying was planned after this point. Now I returned to the airframe construction.

First item was the landing gear. Other than small round holes, there are no alignment guides, to help with the placing of the parts, so make sure that your crazy glue sets slow enough to give you time to put the pieces together and then hold them for a few minutes in their correct position until the glue sets.

The landing gear is a three phase build. First do the oleo legs (parts 7 and 8) with the connecting bar (part 15). The only way that this will fit properly is to have the oleo legs splay out towards

the wing tips ever so slightly. Next put the skid together using parts 12, 13 and 17. Make sure that part 13 splay forward enough to place part 17 perpendicular to the fuselage. Finally add the wheels. Don't put any undue pressure on the landing gear. It is a very fragile structure.

Next was the rotary engine and the cowl, then finally the rotor assembly, which was put together before it was added to the rest of the model.

First the blades had to be attached to the hub. I wanted to drill a hole in the hub and each blade to accept a wire for extra support, but the hub and the shafts of the rotor blades were too thin at their attachment points for this to be done. So I settled on just attaching the blades to the hub with a drop of glue. The blades have some droop when at rest, so to replicate this I sandwiched a piece of narrow tubing between the hub and a large piece of corrugated cardboard and ran a toothpick down the centre of the hub and into the cardboard. Now I had the hub elevated a few millimetres above the top of the cardboard. I then glued each rotor blade shaft to a point on the hub, with the tip of the blade resting on top of the cardboard. Blade alignment was done by eyeballing. Once everything was set I turned over the assembly and glued on lengths of piano wire to represent the shock cords that run between the posts on the undersides of the blades. As it turned out all but one blade was correctly aligned. After all this was done, I figured I had a pretty strong assembly.

Now it was time to put the rotors on the shaft. A pre-fit was done to see how it sits on the shaft. A decision has to be made as to the orientation of the blades. The instructions show that glue should not be applied to the rotor assembly when it is placed on the shaft, but this is ludicrous. The last thing one needs is to have a rotor that is just going to break on the first attempt to move it.

Before gluing the rotor assembly, you need to determine a grasp point on the kit if you wish to handle it with a reasonable amount of safety. I settled upon a position that had the blades in a slightly offset position from being on centre with the top of the fuselage. This allows me to get a couple of fingers on the fuselage sides or on the port wingtip. I'm afraid any weight applied to the blades will cause them to fall off.

The rotor was removed and glue added to the point where the rotor rests on the shaft, and back goes the rotor onto the shaft ... there, got to hold it in place while the glue sets... so far so good... let's look all around to make sure its level... hmmmm, needs a small adjustment here... add a little pressure to level it there... ooops... was that a snap I heard? Gasp!!! I have a rotor blade sitting on the table :-(

Well, it looks like the wires connecting the blades wasn't strong enough after all! I will definitely need to add the wires that run from the top of the shaft to the blades if I want some sort of strength here.

So it's into damage repair mode. I glued the blade back on the hub, and aligned it as best as I could. Once the glue was set, very gently (and I do mean very gently), the model was put onto its back (don't want another blade coming off do we?). Well the braces between this blade and its neighbours is just slightly misaligned. It will need to have the blade pushed and held ever so slightly while the glue sets. After a few attempts the blade is repaired. Some more guitar wire was cut and glued from the top of the shaft to each blade. All the repairs were touched up with some paint to cover the glossy spots caused by the glue.

Finally done, and only one major catastrophe. Not bad, but my nerves will need a rest after this kit is finished.

Accuracy of the kit:

As far as how accurate it is , that depends. On the Helikit News web site, issue 124 (<http://www.5chr.freeserve.co.uk/hkn124.htm>), has this to say about the Amodel Avro 504K, which is the basis of this kit. "Anyone hoping that Amodel would produce a more accurate Avro 504K on which to base their Cierva C6 and C8 conversions will be sadly disappointed. The 'new' Amodel kit #7259 is in almost every regard an exact copy of the old Airfix kit, though the moulding is of lesser quality. There can now be no doubt that the forthcoming KaSkr-1 Red Engineer autogyro will suffer from the same shortcomings."

With that in mind, all I can say is that it looks like the KaSkr-1 photos found on the web and I can live with that. As for dimensions, I did not measure the completed kit because I dare not touch this kit any more than necessary.

Conclusion:

This is an interesting kit. It stands out from all the other models in my display case. As mentioned previously, I have concerns with the strength of the rotor assembly and the landing gear. This kit jiggles all over when it's touched, and I expect it to collapse on its gear some day. The subject is interesting, the decals are good, but the execution leaves something to be desired. This kit took quite some time to complete, as I had to summon my courage to get the delicate and fiddly portions done. Procrastination (caused by fear) was a constant spectre haunting the completion of this kit. But, with patience and determination a nice replica of the KaSkr-1 will result.

After I make the sister KaSkr-2 kit, I will probably never build another Amodel kit again unless quality improves dramatically. I can recommend this kit only to those with the touch of a butterfly and the patience of a saint. If you don't have these qualities - stay clear. You have been warned!