

RCM PRODUCT TEST

Kato Model Aircraft MATTLAS 40



The first comment I must make is that this is a beautiful kit but is not a kit for the new or inexperienced builder. Nor is the aircraft for the new and inexperienced flyer, so kit and flyer should match well. However, don't let my first comment detract from the high quality of this kit and its flying performance --- it's worth the effort.

This began as a simple review of a model aircraft kit and blossomed into a review of about everything associated with it such as the engine and covering material. All are "newish" items on the model market and I feel that this Product Review column should speak to them.

Open the Mattlas kit and you'll find a delightful assortment of parts in classic Japanese fashion. The die-cutting is superb and the pieces fit together properly. Indy R/C and Kato are well made partners for this venture. Indy is the sole importer and sells direct by mail — or drop in, they have a great place — and through franchised dealers.

Okay, you've counted all the parts and hardware and found that you'll need wheels, tank, and pushrods, but not much more. I looked at the wing bolt set provided and concluded that I'd make my own, not because the supplied items were deficient, but because I thought that they used metric bolts and I could not find spares if they broke (perish the thought). **I was wrong.** They are 1/4 x 20 standard U.S. hardware. This is an example of a simple detail that can make a kit less of a hassle for the builder. The supplied hold-down devices also bolt to the plywood sides of the fuselage to prevent pull-out on over-torque. By the way, all measurements and parts are in the metric convention so you can get metricated early. Get a metric ruler.

Let's start construction with the fuselage and at the onset you'll notice the area in which the new builder may be stymied, and that is in the lack of verbal instructions. The folded plans are very detailed and show order of assembly details with exploded drawings. If you read plans well you should have no trouble as nothing is left out. A couple of points of interest on the fuselage should be made. The design calls for the pedestal style nose gear to be mounted to a plywood base with wood screws. I suggest the use of blind nuts and 4 x 40 hex head machine screws for added security. Our review kit was built for fixed landing gear but the plans clearly show retract details and additional wood hardware is provided to allow for the installation. The motor mount and firewall system builds separately from the fuselage and is then glued in place. Use care in assembly as the alignment angles of the pieces are key to the flying characteristics. While still in the nose, I filled in the area behind the nose gear which was designed to hold the retracts. It cleans up the front end a bit. I also chose to drill though the fuselage behind the motor mounts (under the engine) and used Nylok machine screws and nuts to hold in

IMPRESSIONS	E	G	A	F	P	IMPRESSIONS	E	G	A	F	P
Packaging	●					Pre-Shaped Parts	●				
Plans		●				Parts Match to Plans		●			
Written Instructions			NA			Overall Parts Fit		●			
Quality of Hardwood	●					Ease of Assembly		●			
Quality of Fiberglass			NA			Fidelity to Scale			NA		
Other Materials	●					Flight Performance	●				
Accessories		●				Overall Appeal	●				
Die-Cutting	●										

E=Excellent / G=Good / A=Average / F=Fair / P=Poor

SPECIFICATIONS

Name	Mattlas 40
Aircraft Type	Competition
Manufactured By	Kato Model Aircraft (Japan)
Sole Importer	Indy R/C 10620 N. College Indianapolis, Indiana 46280
Mfg. Suggested Retail Price	\$42.95 from Indy
Available From	Indy R/C & Indy dealers
Mfg. Recommended Usage	Competition
Wing Span	1350 mm
Wing Chord	244.4 mm
Total Wing Area	33 dm ²
Fuselage Length	1180 mm
Radio Compartment Dimensions	(L) 300mm x (W) 63mm x (H) 65mm
Wing Location	Low Wing
Airfoil	Symmetrical
Wing Planform	Double Taper
Dihedral (each tip)	5 mm
Stabilizer Span	600 mm
Stabilizer Chord (incl. elev.)	150 mm
Total Stab Area	9 dm ²
Stab Airfoil Section	Flat
Stabilizer Location	Mid-Fuselage
Vertical Fin Height	210 mm
Vertical Fin Width (incl. rud.)	180 mm
Mfg. Rec. Engine Range	.40
Recommended Fuel Tank Size	8 Ounce
Landing Gear	Tricycle
Recommended No. Of Channels	3-5
Recommended Control Functions	Rudder, Elevator, Throttle Ailerons, Retracts (optional)

Basic Materials Used In Construction:

Fuselage	Balsa & Ply
Wing	Balsa & Ply
Tail Surfaces	Balsa
Hardware Included In Kit	See text
Plan Size	1018mm x 820mm (1 sheet)
Building Instructions on Plan Sheets	No
Instruction Manual	No
Construction Photos	Drawings
Kit Includes	Die-Cut & Shaped Parts
Mfg. Rec. Flying Weight	2200 gms.
Wing loading based on rec. flying wt.	66.66 gms./dm ²

RCM PROTOTYPE

Weight, Ready To Fly	1988 gms.
Wing Loading	60.24 gms./dm ²
Covering & finishing materials used	Indy Skin II, RS Perfect Paint
Engine Make & Disp.	Como .40
Muffler Used	Super Tigre
Radio Used	Valair
Tank Size Used	8 Oz.

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... the power plant, rather than the provided hardware. Blind nuts could also be used to avoid the holes in the nose. These comments are just personal choices and not evidence of kit deficiencies.

If you venture beyond the recommended .40 size, we suggest some fibreglass in the nose to provide some additional strength. Be sure to use the metal strips provided to avoid compressing the engine mounts.

When installing the balsa sheets on the fuselage top, I found that the recommended dimensions for the sheets (you'll need your metric ruler here) were just large enough to allow custom fitting. I recommend that you use ammonia water to pre-shape the pieces in place and allow to dry before gluing. A Sullivan 8 oz. Round fits into the tank space with very little work to shape the tank supports. Don't forget to fuel proof the fuel tank compartment prior to putting on the floor of the "cabin" or you'll not be able to do a complete job later.

The wing is a straightforward double taper built on a flat plan sheet. That's not much fun unless you have a wing jig. This could prove to be a trouble spot for the Mattlas but not so. Simply lay a piece of 1/4" square balsa on the plan behind the main wing spar. Now lay the lower trailing edge 2 x 25 cap strip on the plan, glue on the trailing edge over it per the plan, and install the ribs per the exploded view but laying the lower edge of each rib on the 1/4" square balsa. Install the top main spar, leading edge and leading edge planking plus the rib cap strips. You can now turn the wing over and finish the bottom in the same manner. The wing will build straight and true with this procedure. The rest is easy and straightforward.

Finishing did require some filling to gain the sleek look you want and the Mattlas demands. I used Fibre Glass Evercoat's new 5-Minute Lightweight Polyester Filler. It handles well, sands beautifully, and mixes well. Caution: make little batches so you don't waste any due to unwanted set-up on the mixing pallet. The entire aircraft was

sealed with one coat of Balsa Rite and the covering was Indy Skin II. The first version of Indy Skin left something to be desired but the current offering is just fine and is very economical. Don't forget to clean the lap joints and trim areas with dope thinner to clean off the manufacturing oils.

The landing gear wire is supplied in metric sizes. Wheel collars are no problem -- use 1/8" collars for the mains and drill 1/8" collars to 9/64" for the nose gear. 2.25" wheels work just fine for the specified 50 mm size. The mains may seem a bit weak at first glance but I had no trouble at all. If you are really worried, there is ample room in the mounting block to adjust for 5/32" wire, though you'll have to bend your own and you really don't need to worry.

Well the proof is in the flying and this machine is a jewel. Specifications call for a flying weight of 2200 gms (4.8 lbs.). Our prototype weighed in at 1988 gms (4.375 lbs.). It would appear that there is ample weight available for the retract system. A new Indy R/C Como .40 RC engine proved to be a perfect match with a 10/6 prop. The engine features PDP porting and Super Tigre carburetion. The result is an exciting power plant that either roars or ticks. I have seen the engine with a tuned pipe and the results are no less than spectacular. You'll not need a pipe for your Mattlas. With the Super Tigre silencer provided with the engine there is sufficient power to perform the FAI maneuvers. Experimenting showed that by reducing the exhaust extension on the muffler to 1/4" beyond the reducing cone provided the best power with no noise increased to the ear. By removing the cone and shortening the transition to the extension even that last bit of bite is extracted. The aircraft is quite nimble when controls are commanded but nicely stable straight and level. Rolls are on the wire and loops track extremely well. Snap rolls in the air are unbelievably fast but don't worry about landing or take-off. Treat these maneuvers as for any high performance aircraft and you'll have no problem. A transmitter with dual rates would be ideal for this machine to capitalize on the controlability and stability for contest work. Test aircraft controls were set as follows on the supplied horns. Aileron — 1/3 from top; Elevator — midpoint; Rudder — Full in. Rudder and elevator used short servo arms and the aileron was a long arm. Outer holes were used. C.G. was 1/2" ahead of plan position but no adverse effects were noted. It was still possible to hold the nose off the ground during landing roll out. We prefer sensitive controls, so you may want to reduce your throws. Elevator is the only one we recommend. The kit states for 3 or 4 channels, however, using only 3 channels (minus rudder) would be an injustice to this machine. □