

Mystic 30

**RCM&E builds the latest Almost Ready To Fly
aerobatic kit from EZ**

DATAFILE

Kit Specifications

Name	MYSTIC 30
Aircraft Type	Aerobatic
Manufactured By	EZ
Mfg. Sug. Retail Price	£165.95
Available From	Irvine stockists
Wingspan	52"
Wing Chord	9.5"(mid)
Total Wing area	465.sq.ins.
Fuselage Length	43.5"
Tailplane Span	21"
Total Tailplane Area	110.25sq.ins.
Mfg. Rec. Engine Range	.23-.35
Rec. Fuel Tank Size	6oz
Recommended No of Channels	4/5
Rec. Cont. Func	Aileron, rudder, throttle (+retracts)

Basic Materials Used in Construction

Fuselage	Balsa, Liteply, foam skin
Wing	Balsa, Liteply, foamskin
Tail Surfaces	Balsa, foamskin
Instruction Manual	Yes
Construction Photos	Yes
Radio	Sanwa Excellence
Engine	Irvine Q40
Tank	EZ 6oz
Weight, Ready to Fly	69oz
Wing Loading	21.36oz/sq.ft.

Last month, in our article defining the various merits of Almost Ready To

Fly kits, we promised to bring you reviews of some of the latest kits. What better place to start than with the latest model in the EZ range manufactured by the Sports Aviation Co. of Japan.

The Mystic 30 is a 52" scaled down version of Hanno Prettner's most recent F3A aerobatic plane, with smooth modern styling that promises a potent aerobatic performance. This does, however, greatly depend upon the 'piston package' under the cowl and EZ's preferred choice is for a piped two stroke in the .25 -.35 size range, or a .40 -.48 four stroke. Of course, if your engine collection does not include such exotic hardware then fear not as any modern sports engine should give pleasing results, particularly one near the .35 mark. This is because the EZ construction process results in a remarkably light airframe.,

Read the instructions first

This is sound advice with any kit and the comprehensive EZ booklet did not reveal any hidden surprises. The whole construction process is entirely conventional and any modeller with sufficient experience to fly the Mystic should have no trouble at all. After all, this isn't a beginners kit! The step by step instructions, printed in Japanese and English, are accompanied by numerous photos and sketches. All easy to follow stuff, but some of the photos could do with a little more contrast to show up the smaller wooden and plastic parts.

A look inside the box reveals the poly-bagged airframe components, which feature a balsa/liteply structure covered in a laminated foam/plastic skin. This skin is preprinted with the green, red and yellow colour scheme and looks really snazzy.

Other contents include a wealth of vac-formed plastic for the cowl, wing centre covers etc., plus lots of high quality accessories including sponge wheels, a metal engine mount, a nylon spinner (with aluminium backplate) and a plastic sprue containing all of the clevises and control horns. Everything you need is there, all bar the engine, radio and glue.

Let's get cracking!

First job in the instruction book is to hinge and join the wings. The hinges are circular, pinned brass affairs which





MPA trainers, both equipped with Q40s, were due for their annual strip down and service.

Whilst they were grounded we took advantage of the situation and borrowed an engine!

This was soon fitted, the mounting holes for the cast mount being clearly marked on the firewall. The mount is angled to enable a tuned pipe (if fitted) to run in a tunnel in the plastic mouldings on the underside of the fuz. Conventional silencers will have to hang out in the breeze, as usual!

A neat fuel tank is supplied, which is shaped to fit snugly into the front former. On occasions, fuel tanks supplied with kits can be prone to leaks, but in this instance the quality is very good and we had no hesitation in using this item. The parts include a large neoprene ring which fits over the neck and fittings, preventing the engine mounting bolt heads on the firewall from biting into the front wall of the tank. It also serves to stop oil and fuel from getting through the hole in the firewall and doing nasty things inside the structure. Neat!

A couple of weeks of leisurely evenings should have the Mystic 30 completed and in flying trim. Below: The aileron controls are short and slop free. Foot of page: A well used Irvine Q40 gave the Mystic superb vertical performance!

are epoxied into generous slots cut into the ailerons and trailing edges. No problems here, but do run a some Vaseline into the pin area to prevent excess epoxy from stiffening up the works!

Flight loads are absorbed by a tapered balsa joiner, faced with 3mm ply. The taper runs backwards to allow for the gentle sweep of the leading edge. So far so good, but prospective builders should also note that the underside of the joiner is also slightly tapered to follow the decreasing thickness of the wing towards the tip. Get it right and you end up with a nice straight wing. Get it wrong and your version of the Mystic will have built in anhedral! Guess how we found out about this?

We soon learnt just how tough that joiner was – it took a long time to dig it out of one wing panel! Luckily there were enough pieces left to allow us jigsaw the lot together and to work out the dimensions and angles of that double taper. One home made joiner later and we were back in business, this time with everything the right way up. That'll teach us to build models with one eye on the telly!

With the wing in one piece, it was time to fit the wing mounting plate in the fuz and to drill through the trailing edge for the wing bolts.

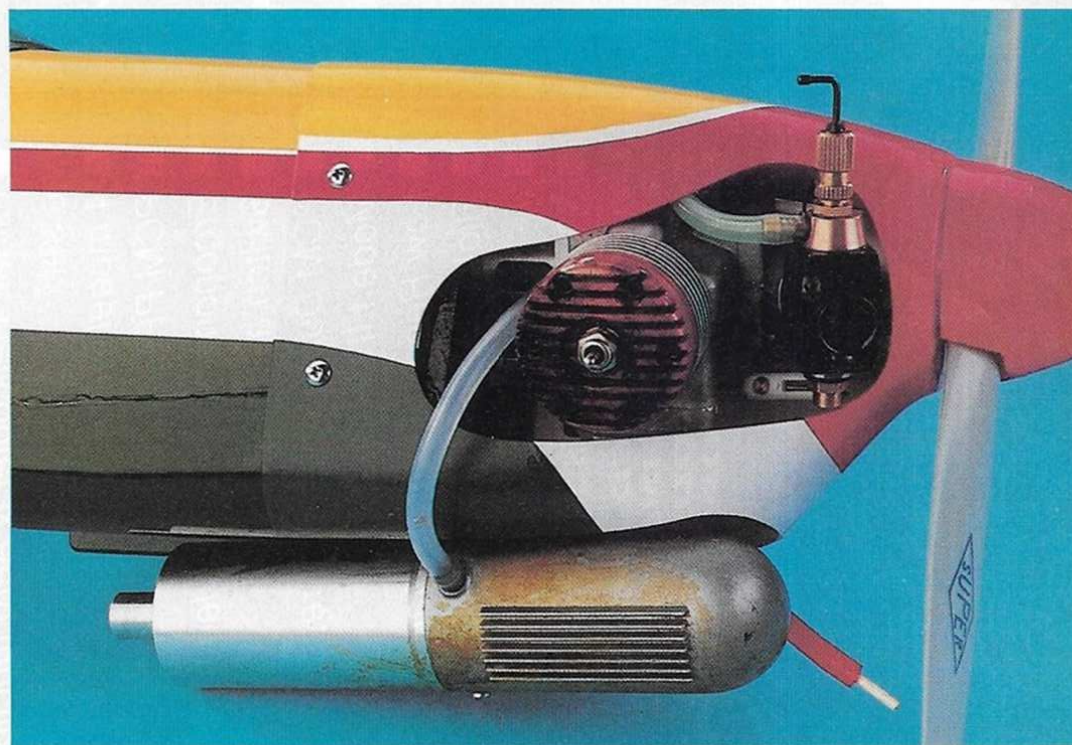
The kit contains parts for fitting optional retracts or a fixed undercarriage. We chose the latter since our local flying patch is not blessed with the smoothest of surfaces. Either way, you should have little problem in giving your Mystic something to stand on!

In with the engine

EZ models are imported by Irvine Engines, so it seemed sensible to fit one of their excellent motors. A call to their factory revealed that the Irvine display model was equipped with a Q40, giving it an awesome vertical performance. Whilst building the Mystic, it just so happened that the

Plastic parts

As with all ARTF kits, the Mystic makes generous use of plastic mouldings to add curves to the basic airframe. Work in this department really starts with the cowl which comes in two halves. The moulded guide lines for cutting out the parts from the host vac sheet proved to be accurate and the cowl went together well, with a little help from some cyano and



activator spray.

The real work starts in cutting out the holes to suit your engine, but this is the same with all kits. Rather than leaving the cowling plain white, EZ supply a set of self adhesive trim to match the colours on the rest of the model. These go on well, but they do have to be eased around some compound curves, so a little patience and the odd snip with the scalpel is required to make them conform without wrinkles. Take your time and all should go well.

The next task is to assemble and paint the vac formed pilot's head. This can then be glued in place in the cockpit and the canopy attached. The latter is beautifully moulded and is pre-cut to size. No excuses for a messy job here!

At the back

The fin, rudder and tailplane are from balsa sheet, covered in EZ's plastic laminate. The tailplane is fitted first, being glued in place with 30 min. epoxy for strength and to allow for final adjustments so that it lines up with the wing. The next task is to fit the tailwheel assembly. This engages in the rudder for direct steering. Finally the fin can be added, again using 30 min. epoxy, and the plastic root cover fitted, using thin cyano around the edges to secure it in place.

Radio bay

Rudder and elevator control is via balsa pushrods, the latter having two wire ends for connecting to the split elevators. The 1.8mm wires are meant to be fixed in place with epoxy and heatshrink tubing. Having seen such fixings come loose on another ARTF model, luckily before flight, we took no chances and bound each end with thread before covering with the tubing.

The throttle linkage is taken care of by a 1.2mm wire pushrod, running within a plastic sleeve. This works OK, but we did need to incorporate a large dog leg at the engine end in order to line it up with the Q40 carb. Not ideal, but at least the servo works smoothly!

The ply servo plates are cut out to suit the smaller style of standard servo being supplied with radios these days. Our Sanwa units were just a mite too big, but a couple of minutes work with a sharp scalpel and a Perma-Grit sanding tool soon had them installed. As for the battery, this is meant to be installed under the fuel tank, but we banded ours to the rear servo plate, just behind the CG, to allow for the increased weight of the Q40. The Mystic then balanced at the correct position.

With all the controls hooked up, we invested some time in setting up the throws as recommended in the instructions. These are:

Ailerons 8mm (each way)
Elevator 15mm (each way)



Rudder 45mm (each way)

Time now to sit back and admire our handywork – or rather EZ's – and to wait for some winter sun for the photos!

Flight time

With the final piece of plastic, the lower wing cover, glued in place on a Friday night, we looked forward to a weekend test flight. The next day dawned bright and clear, with a cold, but steady winter's breeze. Keen to enjoy such ideal test conditions while they lasted, we headed for the flying field.

Powering up the Irvine Q40 gave us our first big surprise, the tail lifting instantly, even at low revs. A slight increase in power and the Mystic was hovering in our hands – this plane obviously didn't want to stay on the ground!

Onto the patch and lined up into wind, it was time to let the Mystic go. With full up held in to keep the tail from lifting too soon, the throttle was slowly advanced and she started to roll across the wet grass. Easing off the elevator, and still only at half throttle, our Mystic lifted off the ground, powering away into a straight, gentle climb. Although there was obviously lots more power to play with, common sense prevailed and we let the Mystic cruise around on half power to allow us time to get used to the feel of this good looking flying machine. Even so, she was still travelling around at a fair speed.

Our first impressions can be summed up in one word – the Mystic 30 is 'smooth'! Our local patch is prone to a bit of turbulence, even on the best of days, but if there was any, then it certainly didn't phase the Mystic, which paraded up and down the strip with rock steady wings. Most impressive!

And trim? Well we've never actually built a model that's flown straight off the proverbial and this was no exception, but boy, was it close! Two clicks of up were all that were needed to maintain straight and level, with absolutely no roll correction needed at all – honest!

Time now for a series of manoeuvres. The roll rate at the recommended throws proved to be very comfortable in both directions, being fast enough to prevent the nose from dropping very far without down elevator, whilst still allowing the progress of a well flown roll to be seen when properly corrected using rudder and elevator. The elevator also proved to be well balanced, with wide, graceful loops being particularly effective when combined with the power from the Q40 at the front. At the extremes of

movement the elevators are also capable of making more demanding changes of direction, the Mystic coping well with the rigours of tight square loops. These proved to be easy, but did reveal the need for copious amounts of down elevator during inverted. We shall have to look into this one during future outings, being the only area where trim changes appear to be needed.

With heart rates settling down after the stress of this first flight, it was time to get the adrenalin pumping again by pushing the throttle stick to its limits and pointing the nose skywards. As expected, from our conversation with the importers, our Mystic matched the performance of the Irvine display model, shooting vertically upwards with only the locally imposed ceiling limit for the site stopping the Mystic disappearing upwards into controlled airspace!

With time marching on it was prudent to call a landing and with the Q40 throttled well back, the Mystic was brought down into the circuit. Despite being a sippy shape, it can be slowed up without revealing any nasty habits and greased in for an uneventful landing.

A further flight followed, which only served to reinforce our already high opinion of this model. By the end of it our already large grins had spread from ear to ear!

Conclusions

With the Mystic 30, EZ have scored another winner and one that reinforces their position at the top of the ARTF ladder. The kit is extremely well produced, with all parts fitting accurately together. There are no gaping holes between the airframe and plastic bits, hence the Mystic should provide many hours of fun without fuel and oil getting inside and rotting the structure.

The model goes together easily and should not take more than a couple of weeks worth of relaxed evenings to assemble, even if you rank amongst the slowest of builders. However, it is in the air that the Mystic really comes alive and it must rate as one of the best medium size models that we have ever flown. Such performance obviously owes a lot to the skill of the designer and they don't come much better than Hanno Prettnner, who scores full marks for the Mystic 30. Full marks too to EZ for transforming Hanno's original design into ARTF form without losing any of its flying ability.

We can't wait to try out the 30's big brother, the Mystic 90. How about it Irvine Engines?

At the flying field the Mystic 30 drew many favourable comments from fellow club members. She looks good and flies even better!