

Introduction.

I have read many model reviews in the major model publications over more years than I can count on my fingers and toes and I've always thought it would be fun to do a model review. My opportunity came one day a few weeks ago at our flying field when one of our members was test flying a new ARF model of the Extra 300 in the 46 Engine size, which he is importing, from Vietnam. Kelsey Spring from Richmond RC Supply Ltd finished his test flight on the VMAR Extra 300 and was giving us details on these new ARF kits when he asked me if I would like to assemble, test fly and do a review on one of his latest imports, a 40 size high wing trainer called the Apache. The kit was handed over to me the next weekend. So off I went on another challenge in my life and the usual excitement of a radio control model aircraft project.

The history of manufacturing of the Apache and 8 or more other VMAR ARF model aircraft kits may be of interest, especially to Canadians. Vimar Nguyen, the owner of VMAR Manufacturing was born in 1948, started modeling in 1963 and has been hooked ever since. In 1974 he came to Canada and was granted Canadian citizenship, worked with a hobby retailer for four years and graduated from the Northern Alberta Institute of Technology in 1984. In 1989 Vimar started Vietnams first commercial model manufacturing plant, building models for movie making and drones for government projects. He now manufactures a large and growing line of low cost ARF models which have shown rapid improvement in quality and sophistication with each new model produced. I've seen a prototype of an upcoming pattern ship that really piqued my interest? more about that another time!

In the Box.

The Apache comes in a sturdy cardboard box with colorful labels and pictures of the Apache. The box measures 4-1/2" x 18-1/2" x 46" and weighs 7-1/2 lbs. The Apache is constructed of balsa wood and lite-ply. The model is sturdily constructed with no warps. The major components are covered with a quality heat shrink covering made in Germany and the three color graphics are printed directly on the white covering making a very colorful finish. The first impression when opening the box is one of quality and of the care taken by the manufacturer to produce an ARF kit that anyone interested in RC would be proud to own and fly. The color scheme is quite detailed and eye catching and is different top and bottom, with more black on the top and more red on the bottom for better orientation when flying. This is a large model for a 40 size with a wingspan of 68-1/2" and a chord of 11-1/2" for a wing area of about 790 square inches. Delving a little deeper into the box reveals an almost completed model aircraft, with each major component wrapped neatly in plastic for protection while shipping. The complete hardware package contains fuel tank, spinner, wheels, wire landing gears, dowels, nylon wing bolts, connectors and a fully assembled tail wheel with a bracket. The tail wheel assembly is a nice touch when you are ready to convert your Apache to a ?tail-dragger? after you've earned your wings and are ready to practice tail wheel take-off?s

and three point landings. The only two hardware or accessory items you'll need to complete the Apache are fuel tubing and a propeller. An instruction booklet is included. The instructions are adequate but require some interpretation. By the time you read this, the instructions will have been re-written for North America and also published on the web at www.richmondrc.com

Assembly.

Assembly begins by joining the two wings with a wing joiner brace and two locating dowels using thirty-minute epoxy. When the epoxy has cured, a self-adhesive covering strip is applied to seal the joint. The ailerons, elevators and rudder are already hinged and glued securely into the wing, horizontal stab and vertical fin respectively.

The next part of the assembly is to install the main landing gear wires with two plastic straps and four screws supplied (see footnote). Only one problem here and that was that the slot in the fuselage was not quite wide enough to accept the two gear wires side by side and had to be made slightly wider. It should be noted that the fuselage bottom is provided with two places for the main landing gear. The rear slot is used for trike gear configuration and the forward slot is for the "tail-dragger" version if so desired.

Installation of the nose gear wire and steering arm is next and the arm is easily connected to the push-rod wire already installed in the fuselage at the factory. The pre-installed push rods are even labeled at the servo end to easily denote which is which. Easy access was top of mind when designing the Apache and they even made a hole in the bottom front face of the nose ring to accommodate a hex screw driver for aligning and tightening the nose gear steering arm. One note here is to mention that all the hardware supplied is metric and it will be necessary to have a 2.5 and a 3.0mm ball wrench.

Final assembly of the major components is to mount the wing to the fuselage. You have a choice here to either mount the wing using rubber bands or hard mount the wing with four nylon bolts. Everything is supplied and pre-drilled to go with either method. You'll need to come up with some #64 rubber bands if you want to go the rubber band route. The novice would be wise to mount the wing with rubber bands using the wooden dowels and clever rubber band holders on ends of the dowels to prevent the bands from sliding off when oily. I elected to mount the wing with the four nylon bolts supplied. The wings and fuselage are pre-drilled to accept the nylon bolts.

After the wing is installed square to the fuselage the horizontal stabilizer and elevator assembly can be trial fitted. When satisfied with the fit of the stabilizer, some of the covering is removed from a pre-marked area and the stabilizer assembly is epoxied into the fuselage slot. The vertical fin and rudder are then epoxied into the pre-machined slot in the top of the fuselage. The elevator and rudder require the installation of a plastic and steel bolt control horn assembly and this is better done before the assemblies are glued to the fuselage.

Mounting the Engine was next and it goes quickly thanks to the clamp type metal motor mount pre-installed in the Apache. The mount has been rotated 45 degrees to help provide easy access and more consistent fuel flow throughout a flight. This is particularly helpful for novices who are not used to working with a high or low tank to engine configuration. Richmond RC provided me with a new MegaTech 46 ball bearing engine. This engine utilizes true ABC construction for strong two-stroke performance and a quiet muffler. This type of engine produces more than enough power for training on the Apache while offering more aggressive sport flyers the opportunity to push the Apache through most aerobatics. I took the MegaTech engine out of box, seated it on the metal mount and tacked it into place with the screw down clamps in order to trial fit the muffler, fuel lines and throttle linkages. Everything fit well and I installed the engine pointing straight ahead and evenly spaced between the mount beams. When you finally fit the Engine after you've installed the tank, remember to connect the throttle control rod while mounting the engine as it will be necessary to remove the engine or take off the carb arm to connect the Z bend rod to the carb arm if you mount the engine before connecting the Z bend rod.

The fuel tank was assembled from the parts supplied. The metal tubing that goes through the fuel stopper has been pre-cut and bent to make things easier. You will need about 5' of fuel line in the tank. I used Dubro #197. The clunk and metal tubing fit snugly to the fuel line and I checked carefully to ensure that the clunk clears the end of the tank when the stopper is installed and all tightened down. Insert the tank assembly into the hole in the fuselage bulkhead and the hole in the firewall in the middle of the engine mount. I found it easier to connect the feed fuel line and vent line tubing to the tank before installing the tank into the Apache.

Installing the servos was next. Remove the wing from the fuselage to install the aileron servo and the aileron control rods. Depending on which brand and size of servo you use, it may be necessary to file a small semi-circle at the edge of the wing servo mounting hole to allow room for the servo wire and strain relief. The universal servo tray that mounts in the fuselage is a nice feature. Take a few minutes to look it over and you'll find it easy to use. Install the elevator, rudder and throttle servo's where indicated by the pre-applied labels on the tray along with the switch. Mount the tray in the fuselage in the pre-drilled position. Install the EZ connectors to the

servo arms and attach the factory installed control rods and install the servo arms to the servos in the tray. I used all the hardware that came with the kit in the way recommended in the instructions and found the parts to be adequate. As is frequently the case when building a kit, you may want to use your favorite hardware instead of what is supplied. In the case of the Apache, I replaced the nylon clevises on the elevator, rudder and ailerons. The EZ connectors supplied with the Apache work fine and I used them but I prefer the less sophisticated ?no way it will come apart? method using Goldberg Snap-R-Keepers.

The next step was to install the wheels, propeller and spinner. I found that the wheel collar holes were a bit too small for the chrome plated gear wires and I had to enlarge the holes to get make the collars fit. The screws in the wheel collars would clear the wheel hubs better when you are trying to tighten them if they were a little shorter.

Finally, I installed the receiver and battery pack and final fitted the MegaTech engine by tightening down the motor mount clamps. I initially balanced the Apache with no fuel and the battery in the fuselage close to the recommended CG position and then moved the battery forward to the fuel tank compartment to make it a bit nose heavy and easier to handle when out of fuel. With a full tank of fuel the Apache balanced slightly nose heavy which is just right for the first flights.

Flight-Testing.

To flight test the Apache, I fitted an APC 10x 6 Scimitar prop, filled the tank with ten percent sport fuel and did a range test check on the radio. Everything checked out fine. The manufacturer of the MegaTech 46 Engine recommends that you run through about 8 ounces of fuel on the ground and then adjust the engine before flying. This was done. After refueling and starting the engine again, I adjusted it to a slightly rich setting and taxied out to the active runway, did a control movement check, ran up the engine and prepared for take-off into a 20kph wind that was almost straight on the nose from the southeast. I gently advanced the throttle and the Apache proceeded down the runway and took off straight and true with a gentle touch of up elevator. After some preliminary control response checks, I checked for balance, did a loop, a roll and a slow throttle fly-by to check out the balance? all without touching the trims except for a bit of up elevator trim in preparation for the first landing! By this time, a couple of the fellows from the club had gathered round and we found the Apache?s ?out of the box? trim and performance unbelievable! With a float fly coming up in a months time we are now planning to install a pair of Goldberg Floats (#GOL-296) on to the Apache and see how it likes the water. With the big wing span, large chord and almost 800 square inches of wing area, the Apache should take to the Goldberg floats like a duck to water!

Summary.

Apache ARF 40

Written by Administrator

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With the release of the Apache, VMAR Manufacturing has supplied modelers with another low cost, high quality model aircraft. The amount of work and detail done at the factory is terrific and reduces assembly time to a minimum. The Apache flies like a dream and is perfect for anyone seeking an easy to build; easy to fly trainer that won't let you down.

Hits - Size (almost 800 square inches of wing area) and stability make for easy flying - Trimmed up clean right out of the box - Goes together in about 6 hours including engine, radio, setup and balancing. - Made of wood? repairable with ZAP-A-GAP and Ultracote - Pushrods pre-installed and identified with labels - Universal labeled servo tray - Fuel lines pre-bent and installed in fuel tank stopper - Sturdy metal clamp type engine mount pre-installed - Can be set up as either Trike or Tail Dragger - Ailerons, elevator and rudder ends sealed with molded end caps - Antenna outlet and fairing installed in the top of fuselage behind the wing. - Nice details and three-color trim on white covering. - Attractive graphics and color scheme make for easy orientation when flying. - Pre-applied decals showing travel of control surfaces

Misses - Holes in wheel collars too small for chromed gear wires. Collar screws should be a bit shorter. - No confidence in plastic clevises and screw down EZ connectors - Tires on hubs do not run true - Binding of elevator control rod in plastic fairing took a few minutes to loosen up.

Specifications as Measured.

Span: 68-1/2 inches. Area 790 sq in. Length: 46 inches front firewall to rudder trailing edge
Weight: 5 lbs 10 ounces (complete without fuel). Loading 16.4 oz/sq foot without fuel. Radio: 4 channel Engine: MegaTech 46 ABC #MTC-4600

Tools Needed.

- Phillips Screwdriver - 2.5mm (DUB-2129 or DUB-450) & 3.0mm (DUB-2130 or DUB-451) ball wrenches

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