

# VMAR Pilatus PC9

## KIT REVIEW

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<b>MODEL NAME:</b>
Pilatus PC9
<b>MANUFACTURER:</b>
VMAR
<b>TYPE:</b>
Semi-scale ARF
<b>WINGSPAN:</b>
57-3/4 in. (1497 mm)
<b>WING AREA:</b>
540 sq. in.
<b>WEIGHT:</b>
5.5 - 6 lbs. (dry)
<b>LENGTH:</b>
47 - 50 in.
<b>NO. OF CHANNELS REQUIRED:</b>
4 channels with 4 servos
<b>ENGINE SIZE RECOMMENDED:</b>
.46 - .61 cu. in.
<b>AIRFOIL TYPE:</b>
Symmetrical
<b>Main Gear:</b>
WIRE
<b>COWL:</b>
Fibreglass

The Pilatus PC9 — what a great aircraft to reproduce in a 45-60 size R/C model! The full size aircraft is a single engine, two-seat trainer capable of aerobatics and jet-like speeds. Built in Australia by or under license from Pilatus Aircraft Ltd., the PC9 is powered by Canada's Pratt and Whitney PT6A-62 turbo prop engines rated at 850-1100 shaft horsepower. It is a pre-jet trainer used by countries such as Canada, the USA, Switzerland and Australia. Australia also uses the PC9/A in their national "Roulettes" aerobatic team.

I'm always looking for interesting scale models, and when I saw the Pilatus PC9 advertised I had to see it. This is a 45-60 size semi-scale rendition of a modern military trainer, and it comes as an ARF (Almost Ready to Fly). Another great feature is the availability of four different liveries: Canadian (Harvard II), USA (Texan II), Australian (PC9), and Swiss (PC9).

I fly RC models for the Canadian military to use as target drones in their anti-aircraft target training. Always wanting to keep things as realistic as possible, they appreciate the models being scale. Back in 1999, VMAR supplied our first aircraft — the U-Like-Stick-60, which performed very well, and I wanted to order the PC9 to illustrate a potential fast-moving target. Although I think the Harvard II is the best looker of the bunch, I figured the Canadian military would not feel right shooting at an aircraft in Canadian markings! We selected the Swiss version with its high-contrast red wingtips to help us keep track of its orientation.

### What's in the box

The PC9 was packaged well, no shipping damage was found anywhere and all the parts were included. VMAR has gone up a notch or two both in their quality and instructions since their old original U-Like-Stick 60's of five years ago.



### Construction

I trial fitted everything and was pleased with how well the wings matched. One thing I would do differently from the instructions is to use cyanoacrylate or quick setting epoxy to glue (and let dry) in the two dowels which line up the wing halves, "prior" to assembling them. This way they don't slide out when pushing the two wing halves together and fall into the inner wing. Also, there was no mention (at least that I could find) about adding the single "wing hold down dowel" at the leading edge of the wing. The dowel was included, just not mentioned in the instructions. I installed the centre dowel when assembling the wing halves together so any excess epoxy would flow into the hole securing it.

A nice feature, which I appreciate, is the extra thickness of wood at either end of the servo cutout in the wing, providing plenty of wood for the servo screws to bite into. The clevises are different than the popular name brand clevises, but they appear to be strong and provide a secure connection. A nice touch was the pre-bent landing gear, which had semi-scale struts already installed on them.

The instructions often showed pictures of models other than the PC9, but I found no trouble understanding what steps needed to be taken in spite of that. After two one-hour sessions, the wing was complete with the servo installed.

Next, I went to the fuselage. The most obvious item here is the "VMAR Power Module" system, which includes a removable firewall supporting the engine, nose gear and fuel tank. Being able to fix a problem with a tank is easy with this system — you can buy another module and try different quick-change engine/engine mounting configurations. The instructions recommend an inverted engine for scale realism and clean cowl lines, and I decided to build as per the plans for this review but I also plan to make a second module which has a side mounted engine for comparison.

The fuel tank is included and needs to be assembled. Instructions here are well written and easy to follow. Mounting the engine takes a little more think-



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ing. The manual shows the engine mounted inverted with the mount installed upright. I attached the engine onto the mount then positioned the assembly with the machined face of the mount aligned with the mark on the firewall. Then centered the assembly horizontally, marked the holes and drilled. This positioned the engine properly for the thrust line and fiberglass cowl. The mounts come with all the screws needed, but I did use thread lock to ensure nothing would vibrate loose.

Radio installation usually takes the most time to complete, but is easier than usual in the PC9 because it includes a removable universal servo tray and pre-installed push rods to the tail surfaces. I took out the servo tray, installed my servos and switch and put the whole assembly back in. The push rods to the tail are solid steel in guide tubes and very strong; there was absolutely no tendency to flex under load, saving me from opening the bottom to add supports.

The nose-wheel and throttle pushrods are always an interesting job. Routing them takes a little time but it's not hard to get frictionless movements. I did install balsa supports for the nose-wheel pushrod near the servo and midway to the nose. I found that "not" supporting the push rod at the firewall allowed for the best friction-free operation. I used the parts supplied with complete success.

Installing the receiver and battery was simply a matter of wrapping each component in foam rubber and literally stuffing them into the fuse. The heavier 61 size engine makes for a slightly nose heavy condition than you would find using a more 45-50 size engine. Re-positioning the battery to the rear of the radio compartment allowed a satisfactory center of gravity.

Attaching the tail surfaces took only moments. Well-written instructions here explain how to align and prep the parts prior to gluing. They "key-in" to fit perfectly and it's almost impossible to get this wrong. After the glue has dried, the structure is solid and strong. A real nice feature is that all the hinges are real, are pre-installed and are pinned. After removing some excess hinge glue, I found the control surfaces operated smoothly.

I left the installation of the cowl to the very end. It is made of fiberglass, is pre-painted, lightweight and strong. However, there are no instructions for this part of the building process. It is a matter of measuring and marking the holes where necessary and using your rotary grinding tool to carve out the openings for the cylinder head, muffler and needle valve. Some typical cutout templates are available at VMAR's website at [www.richmondrc.com](http://www.richmondrc.com). A black anti-reflective strip is supplied for the top of the cowl. All other markings and detailing are pre-applied by the factory.



### Flight Characteristics

Now the best part ... flying! With the controls checked, CG within limits and the used military-issue O.S.61 FX warmed up, we were "go for flight". The PC9 has a nice high stance that provides the 12 X 6 propeller with plenty of clearance. The model accelerated quickly, tracked well with just a slight rudder input and climbed out smartly. The climb was solid and the scale outline in the sky was different than anything our field has seen. The correct thrust was definitely needed due to the torque from the powerful 60 engine in the nose. This model can fly fast, is very nimble and stays where you point it. I found the other

members of my club really took notice when it was throttled back and flown in a scale like manner. It does some of the best slow rolls. I used the excess power for some smooth Cuban 8's and big, I mean BIG, round loops. The aircraft will snap roll, do knife-edge and very nice tumbling manoeuvres, which yes, are scale! Full throttle dives and hard pullouts showed no tendency of flutter. When we wanted to get some pictures, we put the

aircraft into many "unconventional attitudes" ... low and slow, and the PC9 remained stable. Landings are done with nice nose-high, main-wheel touchdowns.

### Conclusions

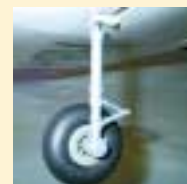
The detail on this model is unbelievable. The large canopy contains not one but two pilots, painted with seatbelts — and instrument panels are already installed. The covering comes with panel lines, hundreds of rivets and authentic nomenclature all without any extra work and no decals. An extra little wing-let on the vertical stab rounds off the scale-like appointments. Thanks to Mike Bortolin for taking the pictures with his digital camera and helping me with the flying review. The total time building this model was 10 hours, which includes making a second Power Module and stopping for pictures. I'm sure I could do the next one in five or six hours. Someone looking for a move up from their trainer would do great with the PC9 and a good 46 engine. Put the 60 on it and anyone with a few years experience will have a blast. ➤



Cockpit detail

### Hits

- ☑ *Real pinned hinges*
- ☑ *Fibreglass cowl, which is included*
- ☑ *Scale-like landing gear struts*



- ☑ *Excellent detailing*

### Misses

- ☒ *No instructions for installing cowl (templates available on Richmond RC's website)*
- ☒ *Missing note about hold down dowel for wing (soon to be rectified)*