



# PEDAL LAUNCHER

A K&A Models 600-powered Focke-Wulf ready to launch. Build your own Peddle Launcher in an afternoon.

**KENNETH WILLIAMS**

Anyone who has flown Speed-400 or Speed-500 powered models knows how tricky hand launches can be with low wing models or high wing-loading models. With one hand on the transmitter and one hand on the plane, you heave-ho ... usually with mixed results. Some enthusiasts have been using a mini hi-start to launch many of the smaller and lighter Speed-400 airplanes with very good results. However, on larger, 1/12-scale electric airplanes that weigh nearly 40 ounces and carry a wing loading of 28- to 30-oz/ft<sup>2</sup>, the mini hi-start doesn't quite cut it. Using the hi-start method, these models tend to pitch, nose-up, on launch — making them very hard to control. One proven method is to use straight hi-start tubing to launch the plane, but you still have to hold the transmitter in one hand and launch the plane with the other.

Last year, I was visiting one of our local flying fields and noticed someone using a very interesting launcher to launch an EPP foamie glider. The most interesting features were the simplicity of construction and the use of a foot release to launch the plane. When using this step-release launcher, both of your hands stay where they are needed, on the transmitter. This gives you more reaction time at launch and, most importantly, it launches the plane straight and level every time.

Now, I know some of you don't want to spend a lot of money or a lot of time building a launcher for your planes. Well, you won't have to! The launcher itself can be built in about 30 minutes at a cost of under \$70.00. So let's get one built!

*Here is what you'll need!*

- Four** 1- x 6- x 36-inch pine boards (Use 48-inch if you prefer a longer launcher for larger electric planes.)
- One** 3/8- x 4-inch bolt that has 1-inch of thread at end
- Two** 1-1/2-inch galvanized nails # 8 size
- Twenty** 1-1/2-inch finish nails
- Three** 3/8-inch washers
- One** 1/4- x 5-1/2-inch all-thread bolt with washer and nut
- Two** 5/8- x 36-inch (or 48-inch) polyethylene foam pipe insulation
- One** 25-foot-length of 3/8-inch-ID with 1/8-inch-wall-thickness of latex hi-start tubing. The hi-start tubing can be purchased at most hobby stores or Hobby Lobby International
- Three** 1-inch-diameter split-rings
- One** 24-inch-length of heavy-duty kite string or winch line



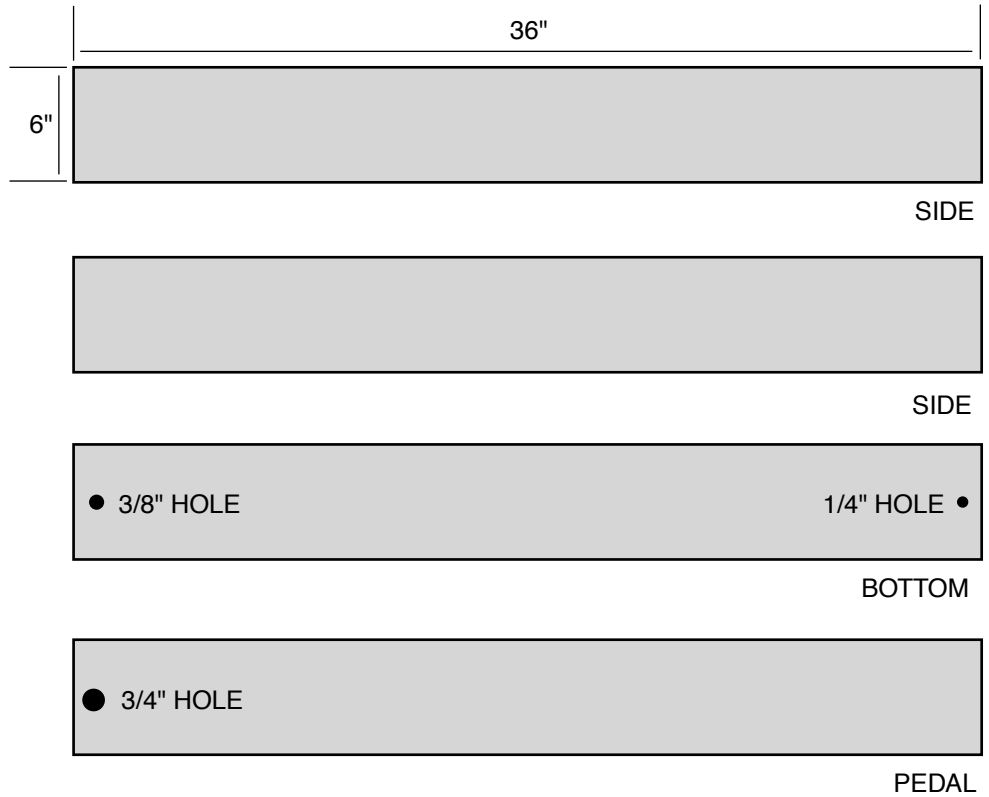
This end of the bungee is staked into the ground.



Pedal board up.

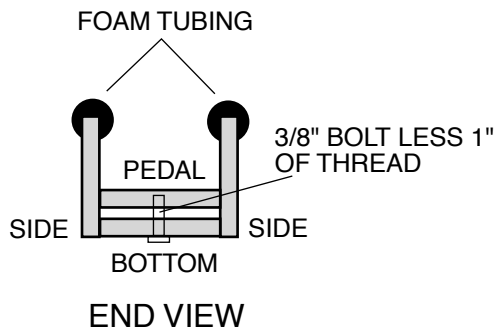
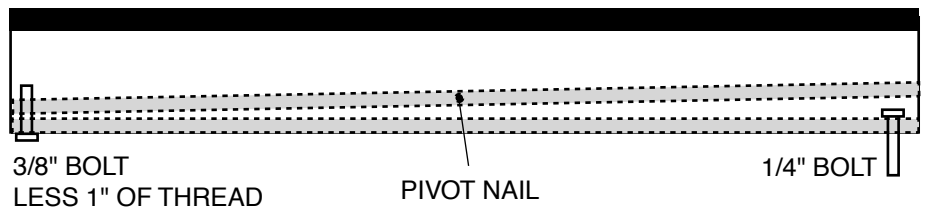


Pedal board down and ready for the bungee to be attached.



WOOD PLANKS

SIDE VIEW



Ready to attach the model. The bungee is stretched and is attached to the Pedal Launcher release pin with a split-ring. The heavy-duty string is attached to a towhook located in the model with a similar split ring. When the opposite end of the pedal board is pressed, this end pops up, releases the bungee and catapults the model into the air.



## DAVE'S AIRCRAFT WORKS

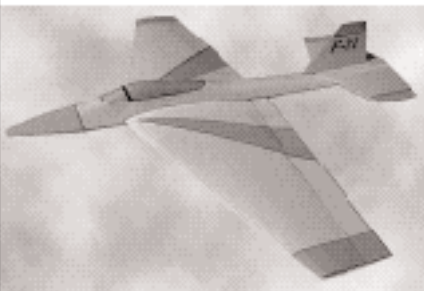
KA-6



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**DON'T STAND IN FRONT!** The model leaves the Pedal Launcher with instant airspeed.

Assuming you have the four 1- x 36-inch boards cut to length, take two of them and clamp them together one on top of the other. Measure 2-1/16 inches from one end and drill a 3/8-inch hole through the center of the boards. Now, take the clamps off of the boards and enlarge the 3/8-inch hole in one of the boards to 3/4-inch and set aside. At the opposite end of the board that has the 3/8-inch hole, center drill a 1/4-inch hole set in 1 inch. Next, using the board that has the 3/8-inch hole at one end and the 1/4-inch hole at the opposite end as the bottom of the launcher, take the two remaining boards and make a three sided box or a channel out of them. This means you will have a bottom and two sides. Make sure the bottom board has the 3/8-inch and 1/4-inch holes in it. Secure the sides to the bottom board using the

**K&A Focke Wulf attached to Pedal Launcher. Flip it over and you're ready to go. Place the towhook as far forward as practical for the model. Towhook should not be as long as a glider towhook. Keep it short and open for an easy release.**



finishing nails. Refer to the drawing.

Next take the 3/8- x 4-inch bolt and cut the 1-inch of thread off using a hack saw. Place one of the 3/8-inch washers over the 3/8-inch bolt and using 5 minute epoxy, glue the bolt into the 3/8-inch hole that was drilled in the bottom board. Make sure the bolt is sticking up into the box and not sticking out the bottom. Now locate the 1/4- x 5-1/2-inch bolt with nut and washer. Place this bolt through the 1/4-inch hole that was drilled into the bottom board so that it sticks out the bottom of the board. Secure the bolt in place using the washer and nut.

Next, you will need to make two shims that measure 3/4 inch in height. Place one at each end of the bottom board. Now place the board that has the enlarged hole to 3/4 inch on top of the shims so that the 3/4 inch hole is over the 3/8-inch bolt. Hold the board in place using masking tape at the ends. Lay the box on it's side and measure from end to end to the center, and mark. Now measure from the bottom up 1-7/8 inches, and mark. Do this for both sides.

Once marked, use a hammer and the two galvanized nails to secure the center board in place. Now you can remove the masking tape and the two 3/4-inch shims. If done correctly, the center board should rock from one side to the other. If the center board is too tight, simply take a screw driver and pry the sides slightly away from the center board. The use of a 3/8-inch washer on each side of the center board at the nail locations will also allow the center board to move more freely.

Locate the 2-5/8- x 36- or 48-inch polyethylene foam pipe insulation pieces and open up the pre-cut side and slip them over the top edges of the sides of the box. You may want to use some House Hold Goop® to secure them in place. At this point, you need to set up the hi-start tubing. At both ends of the tubing, you need to secure a metal split-ring. One split-ring is used to stake the tubing into the ground and the other is attached to the airplane's towhook. Attach each split-ring by feeding the tubing through the split-ring and folding the tubing over onto itself. Use a strong kite string to wrap around the tubing and then use thin Cyanocrylate glue (CA) to secure the string in place. On the end that will attach to the plane, tie an 8-inch piece of nylon string to the split-ring and

secure it using thin CA. At the end of the nylon string, tie another split-ring and secure it with thin CA.

### Into The Wild Blue Yonder

Here's how the launcher works. Stake one end of the tubing into the ground. Walk the launcher about 25 to 30 feet past the end of the tubing. Place the launcher on the ground and press the rear 1/4-inch bolt into the ground. This secures the launcher in place. Now, pull the hi-start tubing to the launcher. With the centerboard lifted at the rear, the 3/8-inch bolt is exposed. Place the eyelet that is directly attached to the hi-start tubing onto the 3/8-inch bolt. Next, place the split-ring that is on the nylon string onto the towhook on the bottom of the plane. The placement of the towhook on the model is very important! The farther forward the towhook, the better. We have our hooks located approximately 1-inch forward of the leading edge of the wing. Make sure you mount the towhook securely to the plane so that it will not get ripped out when launching the model. You are now ready to launch.

You will probably have to adjust the tension of the hi-start tubing according to the weight of the planes you are launching. Locally, we have a good number of pedal launchers in use, and everyone who has seen one work is quite amazed at its performance and simplicity in design. I have yet to find the person who originally designed the launcher, but I have found people using launchers similar to this one all around the country. If you fly electric airplanes that must be hand launched, there is no better way to do it than the Pedal Launcher. ■

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