

THE INSPIRATION

As LEGOLAND has proven for over 40 years, you can build just about anything with LEGO bricks—from buildings and windmills to ships and cable cars. With the launch of LEGO TECHNIC in 1978, it became possible to build mechanical devices that used gears, axles, and motors. Since then, LEGO has been launching new and innovative TECHNIC elements that make it easier and more fun to build whatever you dream of. Yes, even a Paper Plane Launcher.

Like the Candy Coated Catapult and the Ping-Pong Cannon, this model uses non-LEGO parts that either are household items or are readily available in stores. It's especially fun to build models that incorporate familiar items in unusual, new ways, and it's always amazing when you see what you can build with a bunch of plastic parts. Most people can fold a sheet of paper into at least a couple of cool looking planes, and even if your paper airplanes don't fly very well on their own, the PPL will make them soar.

THE DESIGN

Our goal was to make this model as simple as possible without using a motor or batteries. There were three challenges in our design:

1. The first challenge was tightening the rubber band. We succeeded with a gear wheel and added an axle to keep the wheel from rolling back—a technique that has been around for a long time in the LEGO world.
2. The second challenge was creating the launch trigger. The trigger needed to be easy to use and easy to reload. Ulrik came up with a particularly neat mechanism: two L-shaped half beams that hold the rubber band in position while you tighten it by turning the gear wheel ratchet. By suddenly removing the angle beam that the L-shaped half beams are resting against, the half beams rotate and the rubber band is released. Voilà!
3. The third challenge was designing the paper plane holder. In order to ensure that the rubber band that launches the plane is guided to the tail of the plane, the plane must be placed very carefully in between the two rubber bands running back to the trigger. This mechanism holds the plane tightly enough so that it won't release inadvertently if you point the model up or down, but not so tightly that the plane will not launch when the rubber band is released.

LEGO RULES BROKEN

This model would be shot down in seconds at LEGO. Not only are you firing something at a very high speed, but the object being fired is not even a LEGO part.

LEGO usually avoids including non-LEGO pieces as part of a model. One reason is quality control—LEGO has very high standards. The other reason is probably ego maintenance. Designers consider it a cop-out to not build everything out of 100 percent LEGO pieces.

Even if LEGO had decided to create the airplane used in this model, it would probably have chosen to build the frame from standard TECHNIC elements and would have used custom-designed official LEGO fabric-like material for the surface of the wings. LEGO would *not* want to encourage children to construct their own paper airplanes.

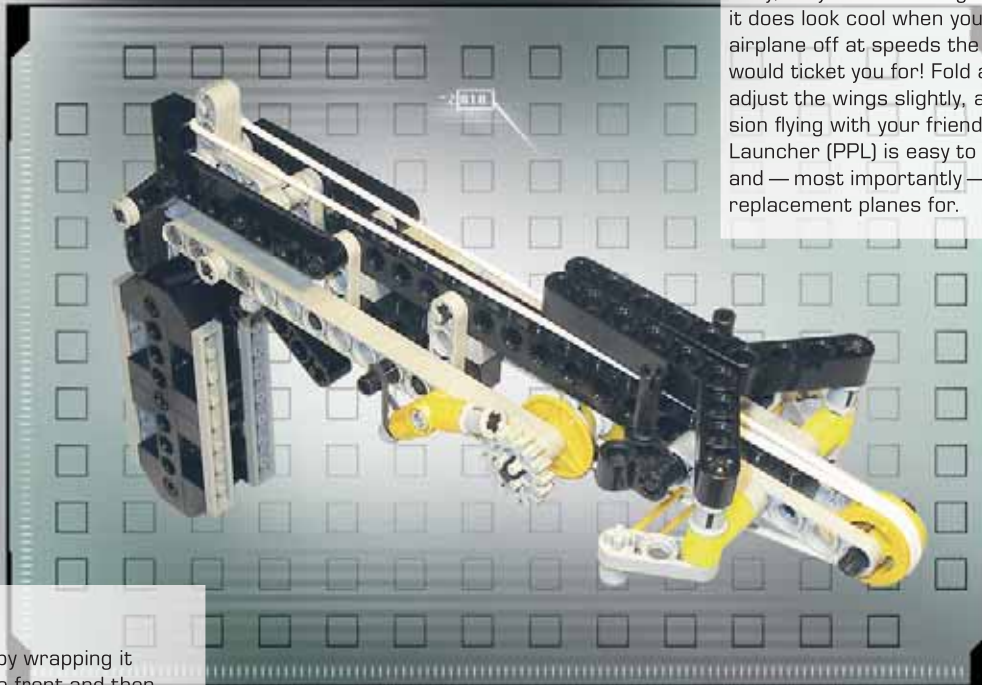
NON-LEGO PARTS USED

We used a stock LEGO rubber band from the Dragster set (#8205) to build the model shown here. However, you can use almost any rubber band, as long as it's long enough and you can fasten it to the drum.

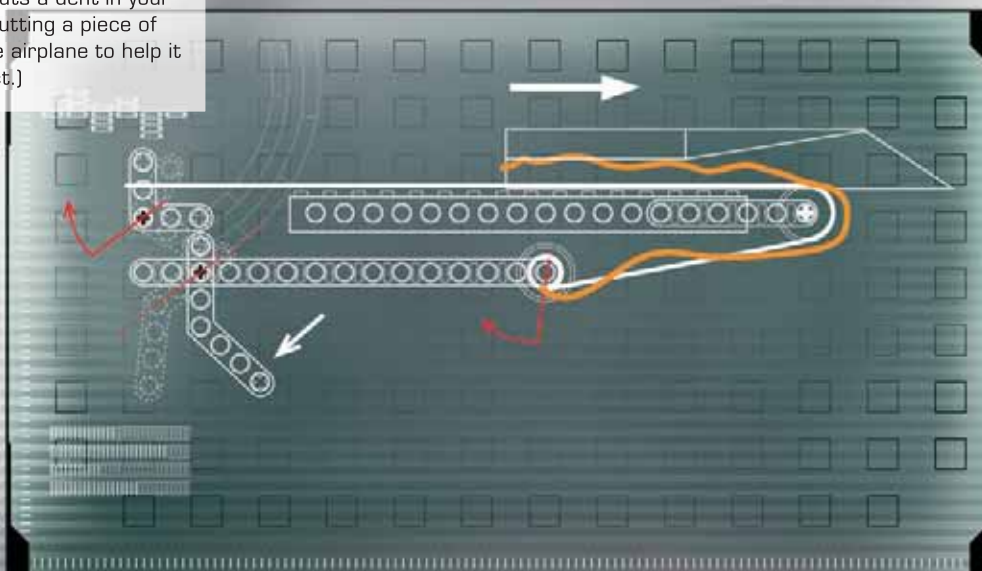
Although we attempted to incorporate everyday household items into all the projects in this book, each part in the PPL project could be found in at least one or two LEGO sets. On the other hand, the whole point of this model is to shoot something that is not a LEGO part: a paper airplane.

PAPER PLANE LAUNCHER**5, 4, 3, 2, 1, LIFTOFF!**

Okay, maybe we're being a bit dramatic, but it does look cool when you shoot a paper airplane off at speeds the Highway Patrol would ticket you for! Fold another airplane, adjust the wings slightly, and practice precision flying with your friends. The Paper Plane Launcher (PPL) is easy to build, easy to use, and — most importantly — easy to create replacement planes for.

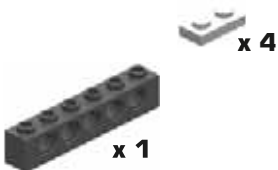
**HOW IT WORKS**

1. Load the rubber band by wrapping it around the wheel in the front and then around the trigger.
2. Mount your paper airplane by sliding it in between the slots.
3. Wind the rubber band until your face turns red, then pull the trigger! (Since you can wind the rubber band to the point where the launcher actually puts a dent in your airplane, we suggest putting a piece of tape on the back of the airplane to help it handle the initial impact.)



BUILDING STEPS

001



x 1

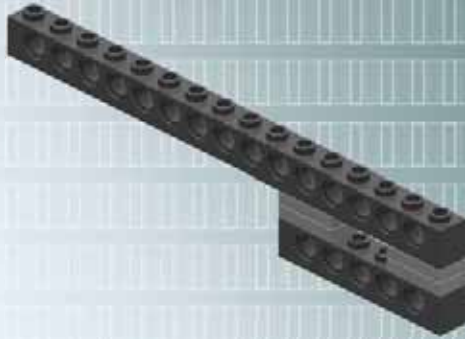
x 4



002



x 1



003



x 2



004



x 2



005



x 2



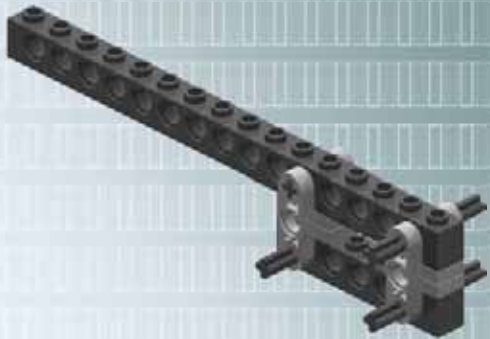
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x 1



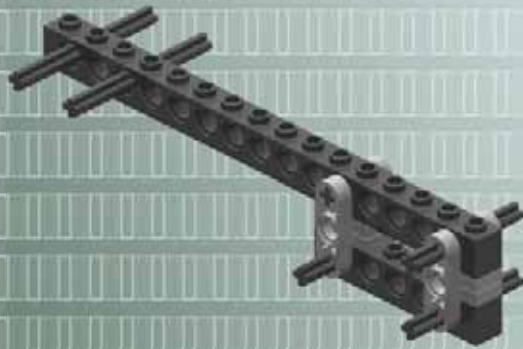
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007



x 2



008



x 2

