



The NPL book of Water Rocket Launchers

Version 1.00

July 2008

Warning:

Water Rocketeering is a potentially dangerous activity and individuals practicing it do so at their own risk.

Exclusion of liability:

NPL Management Limited cannot exclude the risk of accident and, for this reason, hereby exclude, to the maximum extent permissible by law, any and all liability for loss, damage, or harm, howsoever arising.

The NPL Water Rocket Challenge - held annually at Teddington - pits the wits of schools and other groups to land their rockets exactly 70 metres' distance.

All images in this publication were taken by Dr Michael de Podesta at the 2008 NPL Water Rocket Challenge.

We hope that it will help inspire you to create and customise your own launchers.

There are several technologies involved. The 'Maplin' launcher is evident (though sadly no longer available). Rokit is another commercial launcher used widely. The latter does not have a securing mechanism making the control of launch and consistency in pressure impossible. A more home-made 'crown of cable ties' design appears repeatedly, as does guttering for initial direction stabilisation.



We offer no recommendations based on the following images but look forward to seeing your launchers at our annual event where we have previously presented awards for interesting and ingenious launcher designs.

We also give awards for any number of other things including team costume (see here).



Bay 1: A Rokit launcher with a launch ramp.



Bay 2: Rokit launcher with a launch ramp.



Bay 3: A Rokit launcher with a launch ramp.



Bay 4: a Rokit launcher with a launch ramp.



Bay 5: Cable tie launcher with launch tube on a frame.



Bay 5 detail.



Bay 7: Unknown launch mechanism with nice overhead launch rail



Bay 8: Cable tie launcher with launch tube.



Bay 8 detail.



Bay 9: Cable tie launcher with launch tube very similar to Bay 8.



Bay 9 detail.



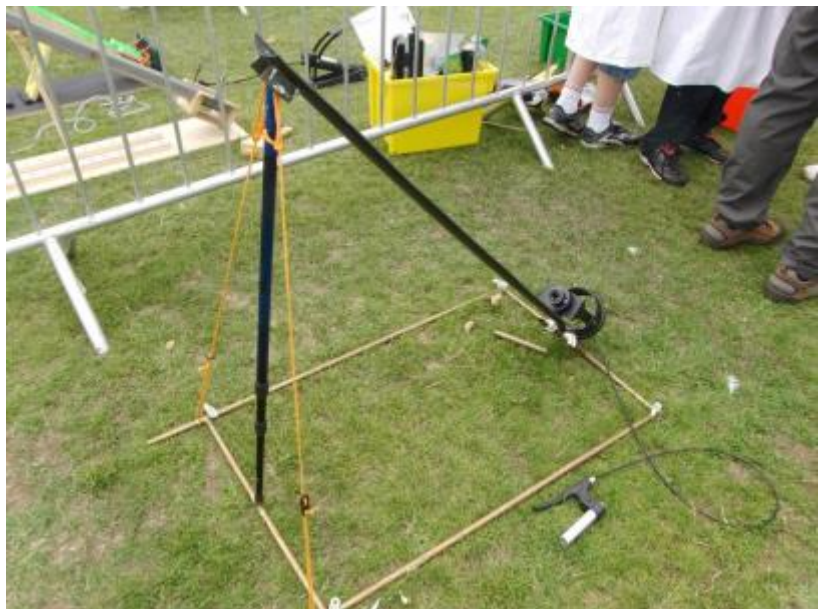
Bay 11: Maplin launcher with nice angled launch support.



Bay 10.



Bay 12: Maplin launcher with launch rail held in frame made of copper plumbing tube.



Bay 13: Two nice launch rails for an unknown launch system.



Bay 16: Cable tie launcher with launch tube and launch ramp held on a modified tripod.



Bay 16 detail.



Bay 17: Compact launch rail with a modified Maplin launcher.



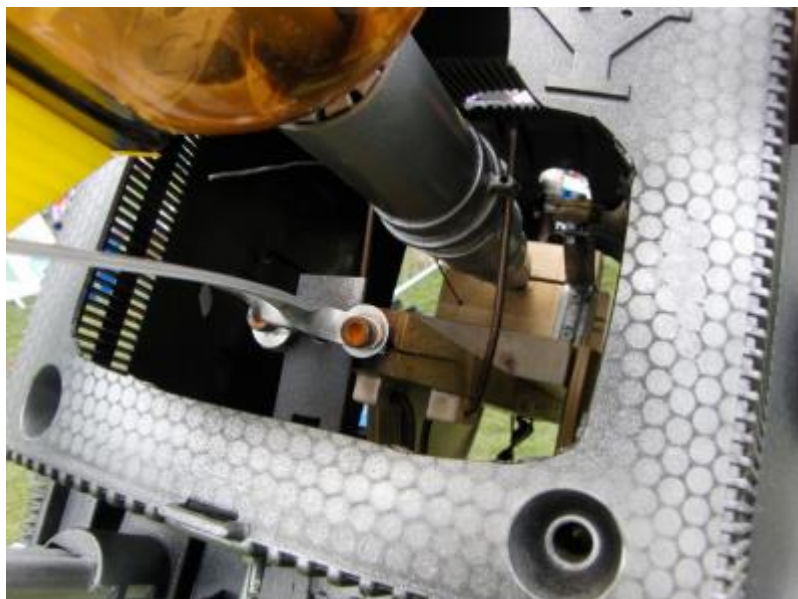
Bay 18: Manually released Hozelok launcher.



Bay 19: Cable tie launcher with launch tube.



Bay 24 detail.



Bay 24: OMG!
It's a Droid.



Bay 25: Cable tie launcher
with launch tube on
foldable frame.



Bay 26: Contestants who
were keen to be
photographed.



Bay 26 detail.



Bay 26: Rokit launcher with launch ramp.



Bay 28 detail.



Bay 28 detail.



Bay 28: U-pin launch retainer with a clever wooden frame.



Bay 29 detail.



Bay 29: I can't figure out how this works.



Bay 30: Cable tie launcher with launch tube and ad hoc clamp stand support.

This arrangement is now not permitted by the NPL competition.



Bay 31: Maplin launcher. We have found these foot pumps don't work very long.



Bay 34: Cable launcher with launch tube in very nice wheeled platform.



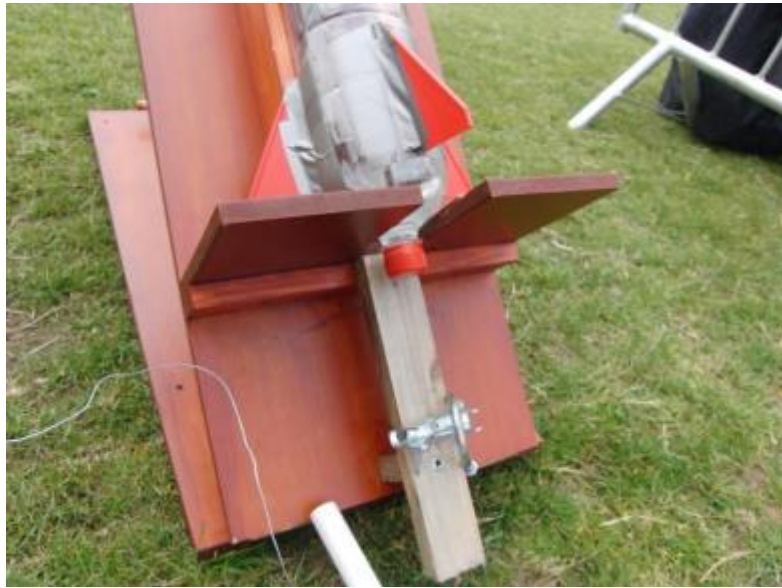
Bay 34: Detail showing streamlined rocket design.



Bay 35: Cable tie launcher with launch tube in Einstein's shadow.



Bay 36 detail.



Bay 36: Unknown launch mechanism with beautifully engineered wooden launch ramp.



Bay 37 detail.



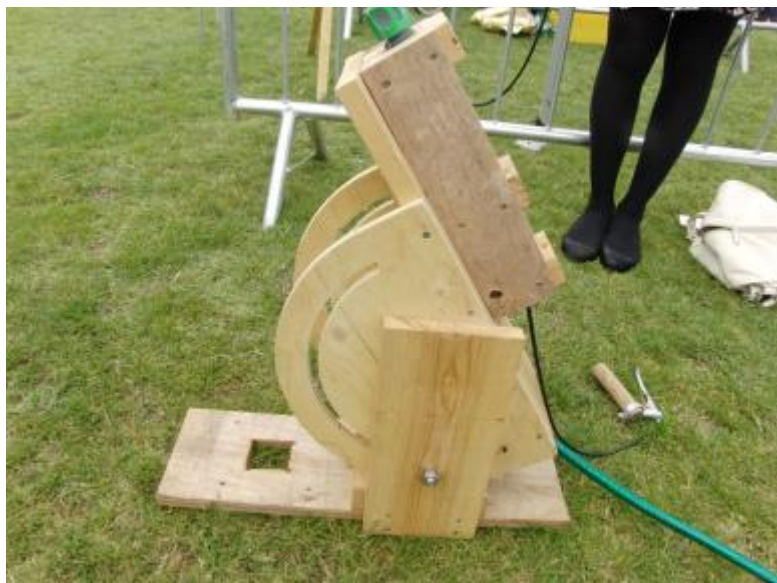
Bay 37: Simple frame with scissor launcher.



Bay 38 detail.



Bay 38: Modified Hozelok launcher.



Bay 39: Cable tie launcher with launch tube.



Bay 39 detail.



Bay 39: Ready for the egg challenge.



Bay 40: Cable tie launcher with launch tube based on golf trolley.



Bay 40 detail.



Bay 41: Maplin launcher.



Bay 43 detail.



Bay 43 detail.



Bay 43: Rocket after landing. Looks like a parachute failure.



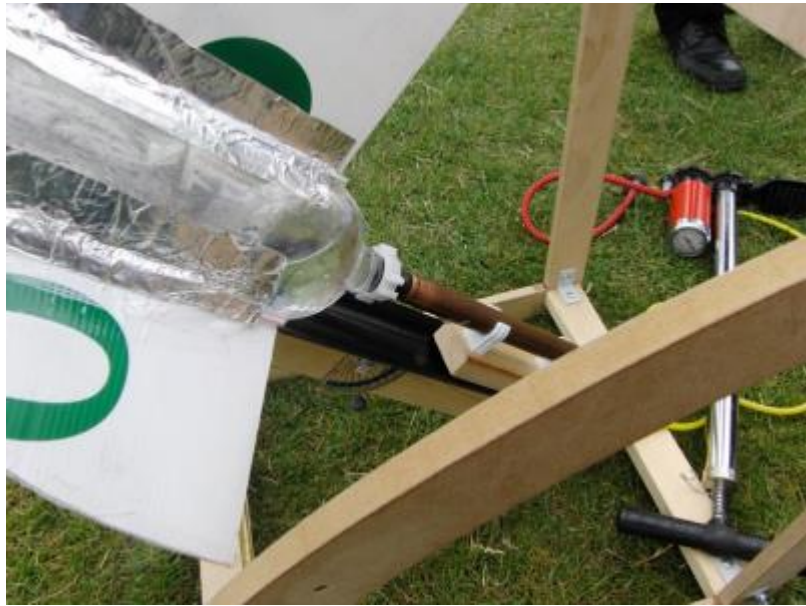
Bay 43: Rocket central part was made of custom formed plastic.



Bay 43: Rotating retainer allowing up to three simultaneous releases on portable trolley.



Bay 44 detail.



Bay 44: Rokit launcher with launch ramp.



Bay 45: Rokit launcher with launch ramp.



The 'Brothers of Doom' cable tie launcher with launch tube.



Brothers of Doom detail of launcher. The cable tie retainer is activated by a lever.

