

PML Sudden Rush

Choosing the Kit

Before shelling out on my first high powered rocket I did some research. What did I want from the rocket, and what could I get for my budget? The criteria were:

It must:

- Use a range of motors depending on conditions, ideally H, and I
- Be challenging to build and fly
- Be affordable to buy and fly

It should:

- Use CPR, so I can get some experience of flying CPR
- Take J motors to get me to level 2 in the next year or two

I thought about scratch building, but wanted to get a bit more experience before building a larger rocket. I'd built a PML "Tiny Pterodactyl" and had some good flights out of it (I may get a chance to fly it again if 29mm reloads ever reappear in the UK) so I had an idea how PML kits went together. I'd also built and crashed a PML Quasar. The Sudden Rush seemed a reasonable rocket, particularly with the Kwik-Switch motor tube system, but what altimeter should I use? Looking around the market, the lowest risk option was the Co-pilot as it was built for PML. Another consideration was that the handbook was excellent, whereas some lower price altimeters had limited information available.

A few questions to Andy Waddell at PML and I was happy with my choices. The order was despatched.

Construction

A phone call at work told me that a large box had arrived. That evening I opened it and spread the bits out on the table in my "play room". There were over 50 parts, so I spent a pleasant evening checking them against the parts list, reading and re-reading the excellent



instructions, and dry fitting bits together. A little bit of sanding was required to get bits to fit together, particularly the centring rings and tail cone, but soon everything fitted.

To prepare the model for assembly I spent the next evening doing a "dry run" and scuffing all the bits that needed to be epoxied. I soon felt confident to start construction for real.

Each stage of the instructions was clear and, by doing a little bit every evening, the rocket took shape over a couple of weeks. The fiddly bit, common to other PML kits, was the internal filleting of the fins to the motor tube and body tube. No amount of practice makes it any easier. Come on PML, find a better way of doing this, or design a tool to make it easier!

I standardised on slimline motor retainers as these are easy to fit and reliable. These require about half an inch of motor tube to protrude out the back of the rocket, and work well with the Kwikswitch system. The Kwikswitch 54mm tube and 38mm insert were both fitted with retainers, allowing Pro 38 motors to be used and, as an option, 54mm motors.

A lot of piston sanding was required to get a smooth fit, but I'd worked out a good system for this on the Tiny Pterodactyl. Soon the whole rocket went together for the first time. It seemed a lot bigger than the picture in the PML catalogue, but looked really good.

Painting

My wife's the artist. I can just about use a spray can. We looked at the rocket and talked colours, and eventually decided on a red metallic body with black metallic fins and nosecone. The whole rocket was lightly sanded and primed with Plastikote Super Primer, as I knew that these paints adhered well to Quantum Tube. Plastikote metallic paints settled easily on the primer, but I found that they are more prone to "lift" than the usual gloss colours.

Many evenings of spraying, masking, sanding and re-spraying followed. In between coats I spent time playing with the altimeter, bulbs and a switch to get familiar with its operation. To add an individual finishing touch I made some "Supercal" decals for it. To protect the decals and paint I finished it with a coat of Plastikote clear fast dry enamel.

Having no previous experience of CPR I produced a check sheet. This was based around the sheet in the back of the instructions, but included additional steps for testing the Co-pilot altimeter. I did a few dry runs in my play room to familiarise myself with the sequence.

Flying

I finished the rocket with a month to go until UKRA 2003. This would be an obvious place for a test flight. Unfortunately the weather had other plans with the Saturday being a bit overcast and the Sunday well, best forgotten!

The first opportunity to fly it came at the SWARM meet in late June. Arriving early I prepped the rocket on Jim's backroom table. Main chute deployment was set for a cautious 600ft. A Pro38 I205 motor seemed about right for the conditions. It took about 40 minutes to prep, allowing for a few interruptions. It went together really easily, and only needed a bit of tape to tighten up the fit of the nosecone.

Jim RSO'd as I put her on my pad and wired her up. Three beeps from the altimeter, so everything was OK inside. I went back to the launch point, checked the sky, counted down and pressed the button. She lifted off the rail with a roar, and weather-cocked by about 10 degrees into wind. A gentle climb and she arced over and fell and fell and deployed the drogue. Apparently it deployed less than two seconds after apogee, it just feels longer when you're the owner.

Then the unexpected happened, the main chute deployed almost immediately after the drogue. She floated down, and I started the walk to collect her. Laid out on the ground, she was beeping out her altitude, 1990 ft. I checked that everything had fired and turned the altimeter off.

I believe the chute deployed early because the nose cone was too loose. It seemed tight enough, and I'd taped it bit during prep, but I think the momentum of the parachute when the drogue deployed was enough to push the nose off. This was resolved on subsequent flights by tightening the nosecone and slightly increasing the BP charge.



Verdict

Scores out of ten:

Ease of construction:	7	Internal filleting is the main problem
Instructions	10	
Performance	8	Based on six flights
Appearance	10	
Utility	8	A longer motor section would be nice

I suppose the acid test is: if I crashed it, would I buy another? Emphatically yes!