

# What's in your Range Box?

By Jack Komorowski

Have you ever been to a launch, where you couldn't seem to get things to go right, because you did not have something you needed? Things like extra igniters, needle nosed pliers, a wooden dowel, even a pencil, or ink pen, to fill out a flight card? Ah, the lowly pencil. How many times have I heard someone say to the RSO, or LCO, can I use your pen? The answer should be "no," as they need it to perform their duties, and YOU, the rocketeer should be equipped for the launches you are attending. Holding up a launch, because you are not equipped, is not respectful of others who are trying to perform their job on the flight line.

What is a range box, anyway? Well, it can be anything from a simple cardboard box, or an in-expensive tool box, to a rolling carryall. It all depends on what you plan to carry in it, and how much you want to invest in it. It should be big enough for you to carry items that you will need, and to effect repairs, if necessary.

So, what should go into your range box, besides your lunch? The following items will give you some basic ideas. The rest is purely personal, meaning it is up to you to decide what is, and is not, important to you.

A well equipped range box is a continuous work of expansion and contraction, meaning that you are always adding to, or subtracting from, the material you put into it, based on YOUR experiences. In some cases I will give an explanation as to why you should have this item. At other times, the article mentioned should be enough for you to see why, or be self evident.

Please keep in mind that we, the club members of SoJARS, are here to assist you, to answer any questions you may have, and direct your course of inquiry to the proper sources. We endeavor to be as helpful as we can, but we cannot provide you with the engines and igniters for your rocket, nor the other things that you will need. A little investment of time and money, on your part is needed.

Extra engines you may wish to fly, depending on weather conditions. There are times you may wish you used a smaller motor when you see your rocket drift into the next town. Spare igniters, you can never have enough igniters

Pencils and ink pens. Actually, it is a good idea to have a couple of each, ink will run out, or dries up, and pencils can break. A wooden dowel of 1/4 inch diameter, it least 18 inches long. This dowel is extremely useful for getting engines that are stuck in an airframe, where needle nosed pliers cannot access the engine casing, because it is flush to the end of the rocket. You just inset the dowel into the front end of the rocket, and push the engine out.

Masking tape, for friction fitting a motor into a rocket, so it doesn't kick out at ejection, possibly

failing to eject the recovery system, and allowing the rocket to come in ballistic.( A big no-no, and can be dangerous to anyone around that isn't paying attention ). It is useful to make engine rings in larger motors. Super glue or fast drying yellow glue. What if your launch lug falls off? What if a fin cracks on landing, or you need to replace a shock cord? You can't always use masking tape for these problems.

Spare parachutes, of different sizes, already made up. Spare streamers. Extra shock cords. Shroud lines. Cheap baby powder, to keep those plastic parachutes from sticking together, especially in cooler weather. It is also a good idea to have some of your own wadding, in case the club does not bring all of the gear. Please keep in mind, YOU are responsible for your own launch not the club. The club has equipment to allow multiple launches, but is NOT responsible for the necessities of your flights. Wadding is provided as a courtesy.

Tracking powder. This is simply colored marking chalk. It is used to "track" high altitude rockets. At ejection, the chalk is dispersed, causing a "cloud" that can be seen. Useful stuff, if used, and red or blue chalk is best, shows up dark against the sky.

If you are using your own launch pad, do you have spare batteries for the controller? Do you have extra igniter clips, in case yours are too corroded from so many launches? It only takes three to four jet blasts to start corroding your clips, especially if you do not clean them. This is where you would like to have some sandpaper or nail sanding files. Clean those clips. Replace them when they get corroded, or too rusted. Get a dish scrubbing pad for cleaning your launch rod. Used with WD-40, this is a good way to keep your launch rod slick and clean. NEVER use sandpaper on a stainless steel launch rod. Wood or plastic clothes pins, used to keep your rocket off the blast deflector, and to keep the igniter leads from shorting out.

Keep a razor knife, or exacto knife handy, to cut body tubes that are damaged. A pair of small scissors is great for shock cords, cutting out plastic parachutes, or making spill holes in them, for a more stable, or faster descent.

Lunch? Well that is up to you. You can put your lunch in the range box, but I don't recommend you put any soft drinks or water bottles in there. They have a tendency to gum up the works and make a soggy mess if they leak. Ewww!

After a few launches, you will become more aware of what you need to have a successful launch. Even experienced rocketeers, like yours truly, have "left home without it." And, oh, does that get your goat, and some good natured ribbing from your fellow club members.

You will make mistakes, you will forget something, you will do something wrong, you will wish you stayed home, but, it is all part of it. Relax. Have fun. Ask for an igniter. Pay back with a favor to someone else who needs glue or a small 'chute or streamer, etc. You will quickly learn what works for YOU, and what lunch, or snack, goes best with a launch.

It is your range box. Only your experience can tell you what you need. I have outlined the basics of what you need, or should have. Let's review: 1. Engines of various types, for what

you are flying. 2. Spare igniters. 3. Wood dowel. 4. Needle nosed pliers. 5. Extra parachutes various sizes, streamers. 6. Spare shock chord material, and shroud lines. 7. Pens and pencils. 8. Super glue, and yellow glue. 9. Sand paper, nail files, scrubbing pad. 10. Baby powder. 11. Spare batteries for your controller. 12. Your own launch pad for those launches the club decides to use the 'Misfire Alley" set up, which means, bring your own pad and controller. 13. Extra wadding. 14. Spare igniter clips. 15. A good hobby knife and or razor knife, with spare blades. 16. Anything else that you think you may need.

There you have it, your own range box. Equipped and ready to go, ready for most contingencies. Let's go fly rockets! By the way, does anyone have an extra igniter I can use? Ahh, how about an engine to go with it?