



## Inspection and Assembly

**FOR MANY YEARS, MY CUSTOMERS HAVE ASKED** me what their new parachute looks like; do I assemble it, or does it come ready to use? In my case, I prefer to do the final inspection and assembly. Even though the factories do a fantastic job, I personally feel a different set of eyes, other than the factory, should do the final assembly.

Whether your parachute comes in a plastic bag or a box or is handed to me, the procedure for inspection and assembly to place it in service should be the same, no matter who does it. Someone has to take all the parts and put them together. That person is usually a certificated parachute rigger or a factory representative. What I've decided to do in this column is give you an idea of how this is done. For this pictorial demonstration, I will be using a 24-foot Preserve 1C canopy manufactured by Free Flight Ent., located in Lake Elsinore, California, and putting it into a Mini Softie back-style harness/container manufactured by Para-Phernalia Inc., located just north of Seattle in Arlington, Washington.

A quick note before I proceed. I follow the procedures I'm about to show you on any parachute I have never seen before that comes into my shop. It may already be assembled and just needs a repack and recertification, but has it been done correctly? When a parachute leaves my shop, it will have my seal of approval on it. The packing data card that accompanies your parachute will also bear my signature attesting to its airworthiness. Don't lose this card—it's the maintenance log for your parachute. In the United States, each certificated rigger has a seal press with a unique symbol. When they seal your parachute, it's embossed onto the lead seal that goes around the bottom rip-cord pin. Mine is JQI. Other countries may vary a bit, but the person who serviced your parachute will be clearly identified. Each certificated rigger (in the United States) must keep a master logbook of the work he has accomplished for a period of at least two years. In the Air Force, where I was a survival equipment technician, our motto was "I'll always be sure." Those are words you and I can live by.

Now let's begin. Photo 1: "Some Assembly Required." I can usually inspect, assemble, and pack a new parachute in about an hour, but this is not a speed contest. Whether it takes one hour or all day is not important. It has to be done correctly. Photo 2: This shows the canopy out of the bag with the pilot chute



Photo 1



Photo 2



Photo 3



Photo 4



Photo 5



Photo 6



Photo 7



Photo 8



Photo 9

next to the suspension lines. I'm preparing to place the rubber bands on the deployment diaper. If you would like more information about deployment diapers, go to my website and click on my "Ask Allen" January 2011 column. Photo 3: I'm ready to attach the lines to the risers of the harness/container, but first I must make sure the lines are in their proper order. When I'm done, a complete line check will have been accomplished to ensure the lines are attached to the risers with no twists and in their proper order. Photo 4: This shows one set of suspension lines attached to the riser and the gold-colored steering handle threaded through but not attached or

tensioned to the steering line. Some parachutes, such as Strong, have red handles. The color may vary and some parachutes have no steering handles. You need to find out what you have and how to identify them. Photos 5 and 6: These show me inspecting the canopy. I will inspect every seam and line attachment for any errors. Most parachutes have hundreds of thousands of stitches. Note the white area in Photo 5 shows one of the three mesh steering vents in this parachute. Two of the vents on this parachute are opened and closed by the gold-colored steering lines attached to the steering handles, making for a maneuverable parachute with



Photo 10



Photo 11



Photo 12



Photo 13



Photo 14



Photo 15

about a 5-mph forward speed. To understand more about steering your parachute, I suggest reading some of the many articles on my website. Photo 7: The canopy inspection has been completed and the steering lines attached. I now run another complete line check. Finally I'm ready to pack this parachute.

Now let's pack this parachute.

Photo 8: The canopy has been flaked out (straightened) and the skirt folded at 45 degrees to the main air channel. Photo 9: I've completed folding the canopy in fifths. Photo 10: The deployment diaper is partially locked/closed. Photo 11: The deployment diaper has been locked shut with three stows of lines in rubber bands. The lines on most parachutes are held in place with rubber bands. Photo 12: The remainder of the lines has been stowed on the deployment diaper. Photo 13: The canopy is being placed into the container. Photo 14: The canopy has been placed into the container according to the manufacturer's specifications and is now ready to close. The (silver and white) spring-loaded pilot chute is lying next to the parachute container. It has a 28-inch-tall spring that I will compress to about 1 to 2 inches as I complete the final steps in closing the parachute container. This particular pilot chute will require approximately 50 pounds of force to compress. Remem-



Photo 16

ber, if you practice pulling your rip cord at home before having your parachute serviced, be careful. I don't recommend doing this next to your Ming Dynasty vase. The pilot chute will fly out several feet. Photo 15: The pilot chute has been compressed on the top and bottom closing flaps. I'm almost done and only the two side flaps remain to be closed. Photo 16: The remaining two flaps have been closed, and the bottom ripcord pin has been properly sealed as required by the FAA. And most importantly, all my tools have been accounted for. Last but not least, the paperwork. I will enter what work I accom-

plished on your packing data card and sign it. As I stated earlier, each parachute must have a packing data card; this is the maintenance record for your parachute. I also will enter the same information into my master logbook. Now you have an idea of how your parachute rigger assembles and packs your expensive cushion.

Most countries require a master rigger to assemble or make major changes to a parachute. In this country, a senior rigger may do this, but only under direct supervision of a master rigger or factory representative. If you have further questions, please call or e-mail (find my information at the website listed at the top of the page).

Fly safe and blue skies.

IAC

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