Hard Pull BOC

Earlier this year, the APF received an incident report describing a hard pull on a BOC: "BOC total. Hard pull on BOC handle, cutaway/reserve." At the time, John Chapman made the comment that checking whether you can pull the BOC before putting the rig on should be a fairly simple procedure. Since then, Australia has experienced a few more of the same. Lisa Perdichizzi, who had the above-named incident, has since written more information about the circumstances of the incident.

"This is the second malfunction of this kind that I have had in two months (August & October 2002) and both times the rig was packed by someone other than me. The rig concerned is a Javelin Odyssey NJ size and the main canopy used is a 99 Extreme original which is ~10% bigger than the recommended size, however certainly not tight when putting it in the container. The rig was new at March 2002 and when first packing this rig it was obvious that the spandex pilot chute pocket was very tight, especially at the neck where there is more elastic. Because of the bigger canopy, the pack tray bulges out a bit at the bottom stretching the pilot chute pocket around it in a curve.

The first time I packed this rig I changed my pilot chute packing technique to suit - a long, skinny pilot chute - otherwise it was difficult to get in the pocket. I never had even the slightest of hard pulls using this technique, until the first mal 100 jumps later which was packed by a friend. Before this mal I was doing camera for a rel jump and therefore had first attempted to deploy at 4000ft. Knowing I had extra time, I used the next 2000ft trying as hard and as many ways as I could to pull the pilot chute out and it didn't even come out a little bit! On the second mal I attempted to deploy at 2500ft and without the extra time, gave it two really good tries then resorted to the reserve.

After landing from both mals, once I was standing on the ground still wearing the rig with the pilot chute still all in the pocket, I was able to pull the pilot chute out without a problem - probably due to the release of pressure from the reserve not in the container anymore - how frustrating! I then checked the way the pilot chute was packed. The common factor was the length of the packed pilot chute - it was half the radius of the flattened out pilot chute.

As John says, it is easy to test if the pilot chute can be pulled, however tests with this rig will allow the pilot chute to slide out without a problem, even if a hard-pull is packed. The pull-out test can be done while I'm wearing the rig on the ground (standing up and arching on the ground) and shows no cause for concern. Of course, I was more wary of the potential for a second mal of the same type after the first incident, so I began to include a visual check when packed by someone else. I would look at the pilot chute pocket to see whether the pilot chute took up the whole length of the pocket and was not bulging anywhere - indicating (I thought) that a long skinny pilot chute had been packed.

I can only conclude that the short, fat packing technique was the cause of the hard pull problem, coupled with the strain on the rig being worn in freefall. Perhaps the new style, cut-in back straps on the Odyssey model cause the rig to curve around the body in such a way that tightens the pilot chute pocket further.

This rig is one of a set of five team rigs manufactured at the same time. All of the other rig owners have reported hard pull problems from when the pilot chute was packed at half the length.

As you can imagine I'm extremely paranoid about having ANOTHER mal of this type. I always pack my own pilot chutes now - regardless of who's packed it or how much of a hurry I'm in - it only takes ~20 seconds. I've never had a problem with the long, skinny method. Believe it or not, people who should know better, and know that I've had 2 of these mals still try to pack me short, fat pilot chutes... I've even seen them struggle to get it in the pocket and not think twice about it! That worries me.

I also own a Talon 2 and I still pack that pilot chute with the short, fat method. It's more appropriate for that rig."

Lisa Perdichizzi F620

Comments from Greg Sitkowski (Parachutes Australia)

We picked up the potential (of a tight BOC) in prototype before launch of the Talon FS. The FS utilises a fairly short/wide BOC pocket that we have actually had to taper to a point narrower at the mouth of the pocket to keep the pilot chute contained. We also pretension the 1" elastic that runs inside the spandex at the opening to increase the life of the opening tension. I don't think the cut in back strap can cause a pilot chute lock. We discovered that the wrap-a-round side flap that forms the bridle cover can play a big part in the pilot chute extraction. The incorrect relationship between bridle cover and the placement of the BOC's opening edge can cause problems. During manufacturing this area an incorrect tension setting on the bridle cover can also have ill effects.

Comments by Chappo

A few years ago we were all talking about the dangers of loose pilot-chutes partly due to new, slippery materials and looser pockets which were causing concerns with freefly jumps. Packing for security was recommended (which usually meant short, fat packed pilot chutes).

Now it seems that the rig manufacturers have caught up with this potential problem with tighter BOC pockets and better protection. It looks like the combination of the older method of packing fat pilot chutes and the newer, tighter rigs are not compatible. Jumpers need to look at their specific equipment, read the manufacturer's manuals and recommendations, test their deployment systems before jumping and if any doubt still remains, talk to a Rigger.