



PIA Technical Bulletin TB-262
Parachute Industry Association Publications
July 14, 1989

USPA/PIA Ram Air Static Line Test Jumps

(Below is a scanned copy of the 1989 report.)

PIA Technical Committee Report, July 1989

USPA / PIA Ram-Air Static Line Test Jumps

7-1-89 through 7-4-89 Muskogee, Oklahoma

Purpose: to determine the difference between assist vs. freebag methods of direct bag static line deployed ram air main canopies.

To gather data in order to obtain a waiver (eventual rule change) to FAR 105.43,b,2,ii as it applies to ram air main canopies.

EQUIPMENT: For the sake of consistency, 1 turn of Mil Spec 80lb. break tape from the bridal attachment point of the canopy to the static line was utilized in the assist configurations. This was measured to have about 135 pounds of breaking strength.

Number	Harness/Container	Main Canopy	Canopy Color ID
1	Strong Hawk	Mighty Mak	White
2	Sweethog	Spirit 270	Red/White/Blue
3	Briefcase	Manta	Black Rainbow
4	Northern Lite	Laser-9	Blue/White/Silver
5	Racer Elite	Falcon 300	Purple
6	Vector	Manta	Silver/Pink

Static line lengths were approximately 12'. The canopies were packed using the respective canopy manufacturers suggested packing method. Aircraft speed was held at approximately 80MPH. Jumper gross weight ranged from 117 to 274 lbs.

PROCEDURE: 26 jumps were made using the assist method. 25 jumps were made using the freebag method. An attempt was made to get a varied distribution of weights with the various canopies. Most of the jumps were recorded on video tape from a chase aircraft. Many of the jumps were observed from the ground. Where possible, observations from the jumpmasters and test jumpers were noted.

TEST JUMP MANIFEST:

July 1, 1989

Test Jumper	Weight	System	Configuration	Comments
Scott Smith	188/216	Racer	Assist	
Attila Gyuris	166/204	Hawk	"	
Doc Robinson	170/198	Sweethog	"	
Scott Bioko	242/274	Briefcase	"	
Lee Hulett	196/228	Northern	"	
Claude Wilson	210/242	Hawk	Assist	
Bob Corra	170/200	Vector	Freebag	
Dennis Wright	170/204	Racer	Assist	

Kevin Kidd	176/204	Sweethog	
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Kim Byrd	153/179	Sweethog	"
Scott Smith	188/216	Racer	"
Sandy Johnson	105/132	Briefcase	"
Scott Boiko	240/270	Hawk	"
Jan Meyer	154/184	Vector	"
Bob Corra	170/196	Northern	"
Sheila Gruhlkey	105/130	Sweethog	"
Jim Russell	214/245	Hawk	"
Dora Morrison	134/164	Briefcase	"
John Lawler	182/212	Northern	"
Sandy Johnson	105/136	Vector	"
David Morrison	158/186	Racer	"
Scott Boiko	240/270	Hawk	"
Eric Hadley	172/205	Briefcase	"
Bob Corra	170/196	Northern	"
Sheila Gruhlkey	105/130	Sweethog	"
Jim Russell	214/242	Racer	"
Dora Morrison	134/	Vector	Assist
Kim Byrd	153/190	Hawk	Freebag
Dave Morrison	158/193	Vector	"
Sandy Johnson	105/134	Sweethog	

July 3, 1989

John Hopkins	164/193	Vector	"
Kim Byrd	152/181	Briefcase	"
Pat Thyssen	170/195	Sweethog	"
Eric Hadley	172/210	Hawk	"
Sandy Johnson	106/135	Racer	"
Jim Russell	214/240	Northern	"
Scott Boiko	242/270	Briefcase	"
Terry Irving	88/117	Sweethog	"
John Hopkins	164/193	Vector	"
Attila Gyuris	166/196	Northern	"
Joe Taylor	215/250	Hawk	"
Kevin Kidd	186/207	Briefcase	"
Dennis Wright	176/210	Vector	"
Scott Boiko	242/272	Hawk	"
Kevin Kidd	180/210	Racer	"

Jan Meyer	154/180	Briefcase	"
Attila Gyuris	166/196	Northern	"
Kim Jenkins	128/152	Sweethog	"

July 4, 1989

Scott Boiko	240/266	Vector	"
Sheila Gruhlkey	105/132	Sweethog	"
Dennis Rogers	194/224	Racer	Freebag

OBSERVATIONS: Absolutely no canopy damage was noted. Line twists seemed to be caused by the bag spinning prior to canopy extraction. No differences were noted due to deployment configuration. In general, the assist method deployments seemed to be quick and positive, but not overly hard. The canopies typically had the end cell portions blown past the slider and were generally unsymmetrical during initial deployment. The freebag deployed canopies generally opened smooth and soft. The canopies tended to squid behind the slider, in a symmetrical fashion.

CONCLUSIONS: Both methods of direct-bag static line deployment appear to be viable. Information and data will be forwarded to Mike Johnston, so USPA can pursue obtaining a waiver or addition to FAR 105.43 to allow drop zones to use the freebag method of deploying static lined ram-air main canopies if they so desire.

THANKS TO: USPA, Jim Mowrey, Jan Meyer, Al Kruger, the video crew, the test jumpers, the manufacturers who supplied equipment, and the equipment riggers.

Cliff Schmucker, PIA Technical Committee, 7-14-89

CC: George Galloway, Secretary; Sandy Reid, Technical Committee Chairman; Jim Mowrey, USPA Safety and Training Committee; Mike Johnston, USPA.

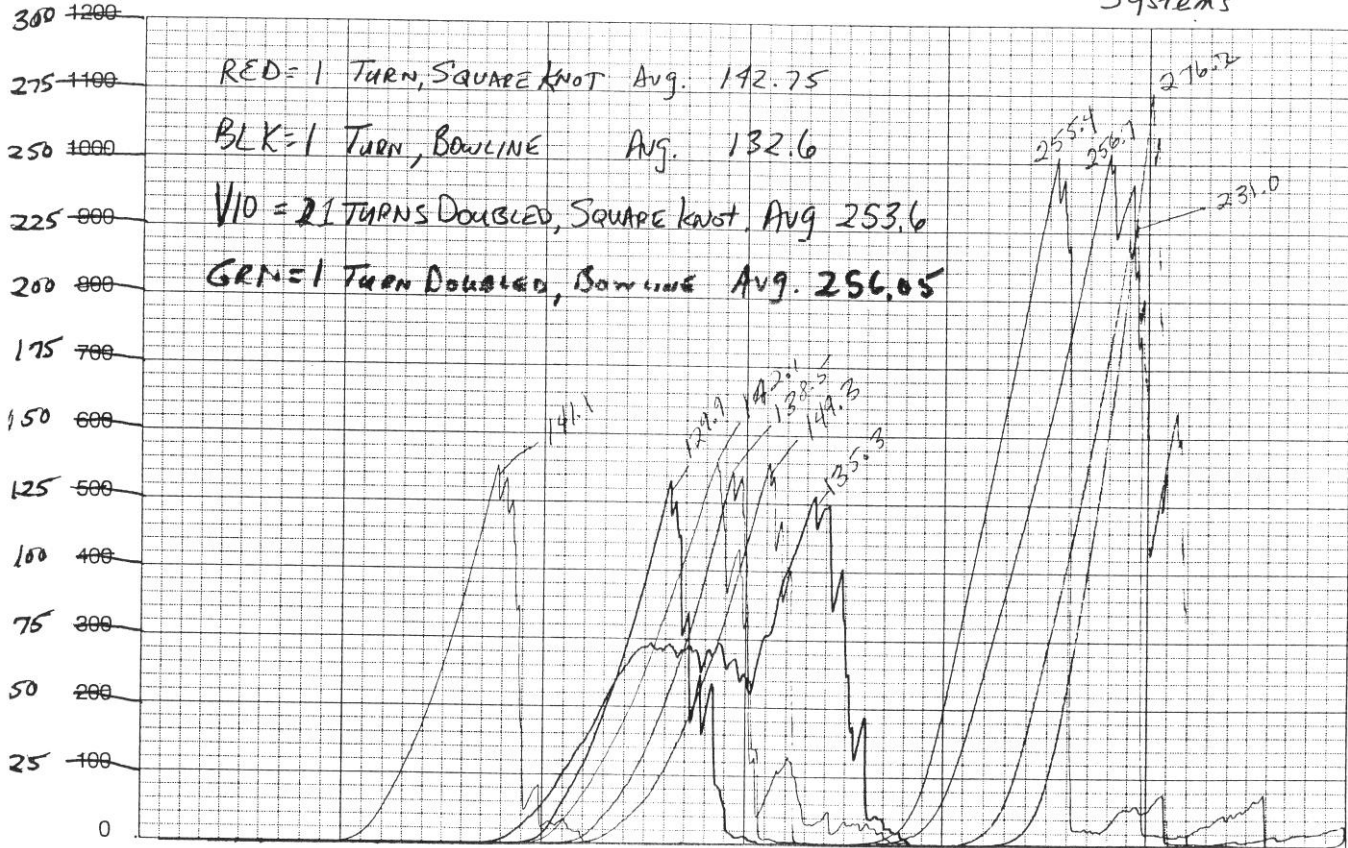
6 MIN

Pounds of
Force

Cotton Cord

Galloway Enterprises, Inc.
Links Test Report

for: Stewart
Systems



Stock # N/A

Date: 6/28/89

Inspector: M. Galloway