20-Foot Vertical Spin Tunnel

Utilization by Customer, Project and Year Tested (9/93 through 12/98)

Customer	Configuration	Test Technique	Year Tested (occupancy hrs)
1. USAF/Lockheed Martin	F-22	free spin	93 (87), 94 (247), 98 (115)
2. USAF/Lockheed Martin	F-22	rotary balance	93 (320), 94 (923)
3. USN/ McDonnell Douglas	F-18E/F	free spin	93 (189), 94 (30), 95 (64), 98 (38)
4. USN/ McDonnell Douglas	F-18E/F	rotary balance	93 (599), 94 (1186), 95 (163), 98 (22)
5. USAF/ McDonnell Douglas	F-15E	free spin	93 (59), 94 (60), 95 (2)
6. USAF/ McDonnell Douglas	F-15E	rotary balance	94 (163)
7. USAF/USN/ Cessna	JPATS trainer candidate	free spin	93 (95), 94 (34)
8. NASA LaRC	F-18 HARV	free spin	93 (21), 95 (37)
9. USAF/USN/ Rockwell	JPATS trainer candidate	free spin	94 (186)
10. NASA LaRC	X-31	free spin	95 (265)
11. Lockheed Martin	X-23	rotary balance	95 (772)
12. NASA LaRC	X-29A	statics/Re # effects	95 (37)
13. NASA LaRC/JPL/ Lockheed Martin	Stardust sample return capsule	dynamic stability	96 (108)
14. NASA LaRC	generic flying wing	tumble	96 (33)
15. USA/Aerojet/ Alliant Techsystems	SADARM rotating parachutes	force/stability	96 (84), 97 (101)
16. Cessna	business jet	rotary balance	96 (80), 97 (203), 98 (133)
17. USN	F-18C/D	rotary balance	96 (121), 98 (94)
18. NASA/JPL	MABVAP Mars Balloons	stability	97 (37)
19. USAF/USN/USMC/ Boeing	Joint Strike Fighter	rotary balance	97 (665)

20. NASA/LaRC/JPL	Mars Sample Return capsule	dynamic stability	98 (219)
21. USAF/USN/USMC/ Lockheed Martin	Joint Strike Fighter	free spin	98 (215)
22. NASA/JSC	X-38	stability	98 (16)
23. Piper	General Aviation	rotary balance	98 (64)
24. NASA/LaRC	generic flying wing	rotary balance	98 (189)
25. PACUSA/ Lancair	Columbia GA airplane	free spin	98 (89)