



WHERE TECHNOLOGY » *TAKES FLIGHT*

Personnel Static Line Systems

Matt Zwicker

Chief Engineer

7 Oct 2025



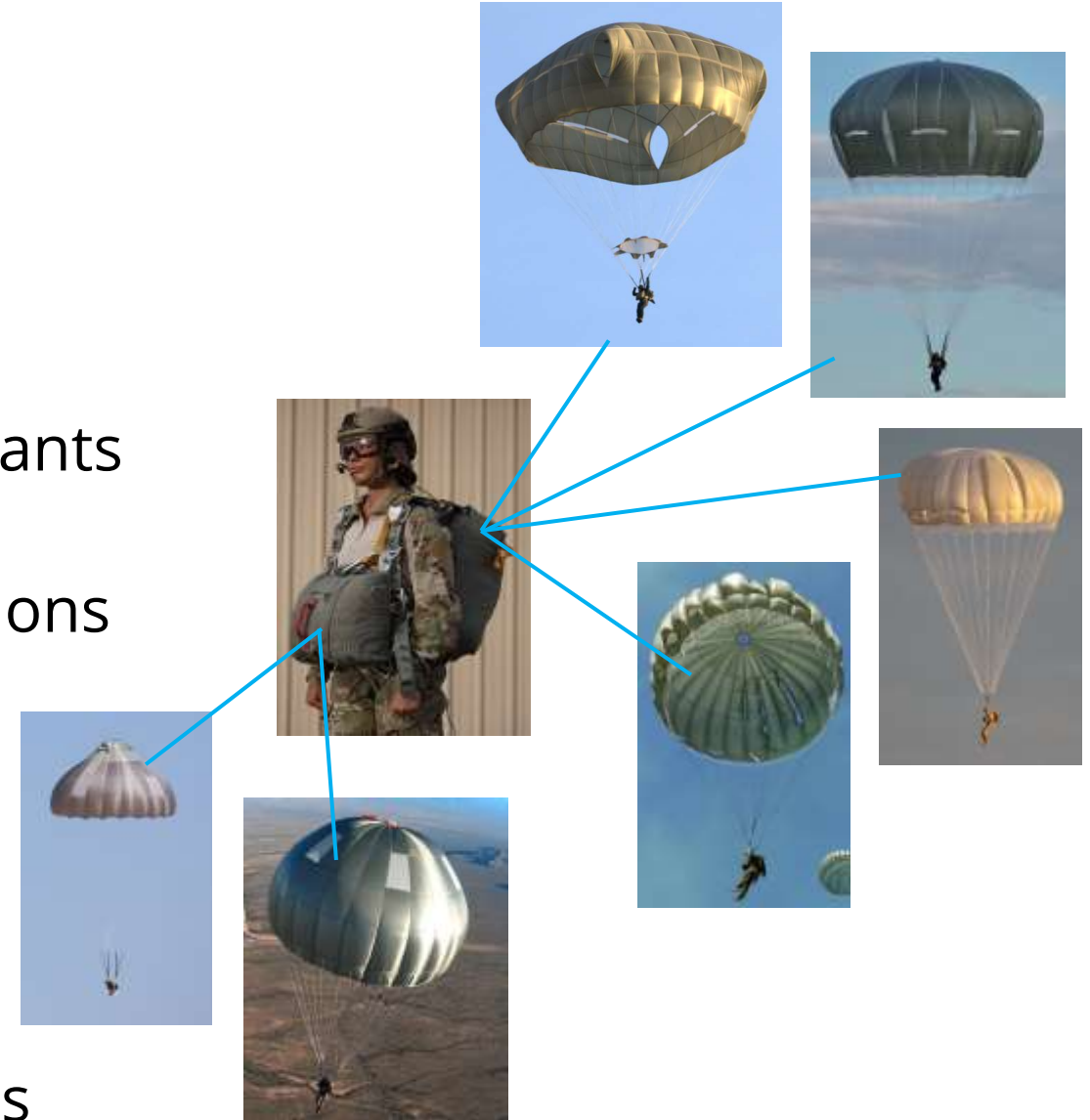
Static Line Systems

- 80,000+ systems fielded worldwide
- Millions of jumps
- Proven safety record, increasing with time



Static Line Systems

- Modular Product Offering
 - Main
 - 2 pack closure methods
 - 4 main parachutes + many variants
 - Reserve
 - 2 container types + handle options
 - 3 mounting positions
 - 2 reserve parachutes
 - AAD available for each
 - Harness
 - Comfort padding variant
 - High/low hookup, many options





Main Parachutes

● ● ● Main Parachute Product Line

- Compatible with any harness/container (scaled to fit)

	Parachute	Maximum AUW	Pack Weight (incl harness)	ROD @ Max Weight
Ballistic (non- steerable)	T-11	400 lb	37 lb	< 18 ft/s
		180 kg	17 kg	< 5.5 m/s
	T-11 Gen 2	450 lb	37 lb	< 18 ft/s
		204 kg	17 kg	< 5.5 m/s
	Octo-11	450 lb	37 lb	< 17.5 ft/s
		204 kg	17 kg	< 5.2 m/s
Gliding (steerable)	MC-6	400 lb	29 lb	< 17 ft/s
		181 kg	13 kg	< 5.1 m/s
	MC-6+	450 lb	32 lb	< 16 ft/s
		204 kg	14.5 kg	< 4.8 m/s

T-11 Main

- Fielded more than 70,000 systems globally
- Compatible with broad range of aircraft
- Durable, high structural margin
- Damage tolerant, easy to repair

Maximum Exit Weight	400 lb 180 kg
Packed Weight	37 lb 17 kg
RoD at Max Weight	< 18 ft/s < 5.5 m/s



T-11 Main Gen2

- Higher weight capacity
 - Change in skirt shape increases drag
 - Plenty of structural margin in original design
- Anti-inversion slits
- Removed slider
- Faster opening (6 → 4 second count)



Maximum Exit Weight	452 lb 205 kg
Packed Weight	37 lb 17 kg
RoD at Max Weight	< 18 ft/s < 5.5 m/s

● ● ● Octo-11

- No slider
- No packing tabs – traditional round packing
- Mesh in all corner vents
- Anti inversion net or slits (option)
- Rotate to land option

Maximum Exit Weight	450 lb 204 kg
Packed Weight	37 lb 17 kg
RoD at Max Weight	< 17.5 ft/s < 5.2 m/s



Octo-11 with RTL

- Left and right toggles for intuitive direction change
- 6 of 8 corner vents are still covered with mesh
- Opening and descent characteristics unchanged

Maximum Exit Weight	450 lb 204 kg
Packed Weight	37 lb 17 kg
RoD at Max Weight	< 17.5 ft/s < 5.2 m/s



MC-6

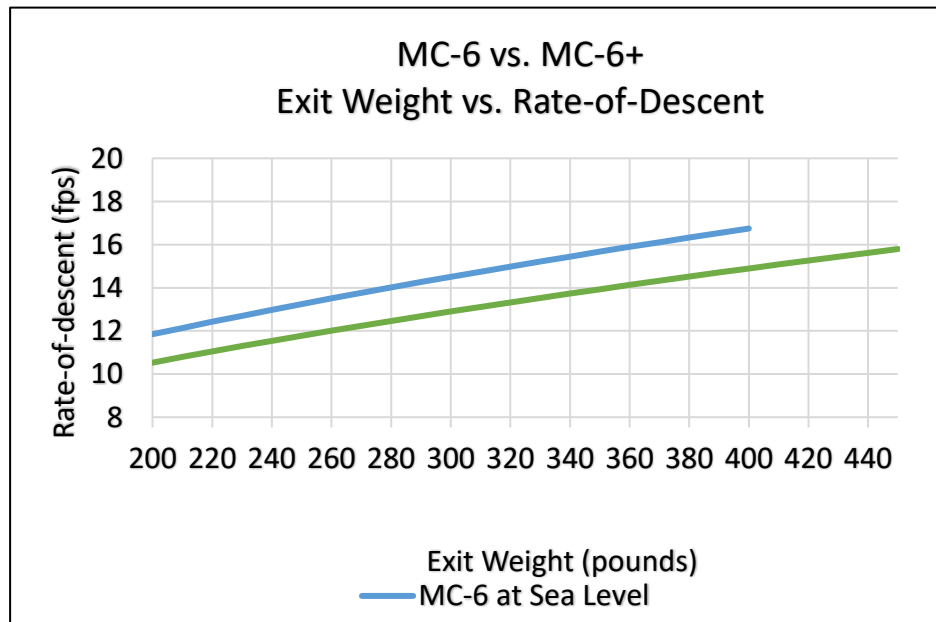
- Global standard for steerable rounds
- Fast opening
- High turn rate
- Capable of backward flight
- Low pack weight

Maximum Exit Weight	400 lb 181 kg
Packed Weight	29 lb 13 kg
RoD at Max Weight	< 17 ft/s < 5.1 m/s



MC-6+

- Increased weight capacity (450 lb / 204 kg)
 - Match freefall system exit weights
 - Lowest ROD of any ASNA static line parachute
- Turns are more docile than MC-6 (larger)
- All MC-6 training and procedures apply



Maximum Exit Weight	450 lb 204 kg
Packed Weight	32 lb 14.5 kg
RoD at Max Weight	< 16 ft/s < 4.8 m/s



Reserves

T-11R

- Originally fielded (UK) as Low Level Reserve Parachute (LLRP)
- Adapted to T-11 system for US Army ATPS contract
- High reliability and long proven

Maximum Exit Weight	400 lb 180 kg
Packed Weight	15 lb 6.7 kg
RoD at Max Weight	< 27 ft/s < 8.2 m/s



Spartan Reserve

- Capable of safe landing at 200 kg exit weight
- Provides lower ROD at all weights
- Closer in scale to static line main parachutes
- FAA TSO Approved (2 Oct 2025)
- Optional extractors 48" or 60" (122 cm or 152 cm)
 - Optimized for low or high speed

Maximum Exit Weight	452 lb 205 kg
Packed Weight	17 lb 7.7 kg
RoD at Max Weight	< 23 ft/s < 7 m/s



Spartan Reserve Test Program

- Passed all TSO tests, including:
 - Precondition 180°F (82.2 ° C) for 18 hrs. under vacuum
 - Precondition -40 ° F (-40 ° C) for 16 hrs. (actual -80 ° F)
 - Overload at 540 lb (245 kg) and 180 KIAS
 - Intentional line twists
 - Live jumps at terminal freefall condition
- Advantage: no rubber bands in reserve pack



Spartan Reserve Test Program

- Additional tests not required by TSO:
 - Live jump, 2-out tests with all main parachutes
 - Deployment next to flagging mains



T-11R vs Spartan Reserve

- Increased exit weight to match future demand
- Reduce risk of injury in reserve-only landing scenarios

Reserve Parachute	ROD at 400 lb (181 kg)
T-11R	< 27 ft/s < 8.2 m/s
Spartan Reserve	< 22 ft/s < 6.7 m/s

→ Capable of 450 lb



T-11 Compatibility with Reserves

- Extensively tested
- Capable of 450 lb with T-11 Gen 2 variant only

Main Parachute	Reserve Parachute	Maximum Exit Weight
T-11	T-11R	400 lb 181 kg
T-11 Gen2	T-11R	400 lb 181 kg
T-11	Spartan Reserve	400 lb 181 kg
T-11 Gen2	Spartan Reserve	450 lb 204 kg



T-11 with T-11R



T-11 with Spartan

Octo-11 Compatibility with Reserves

- Tested at weight limits
- Live jump 2-out tests

Reserve Parachute	Maximum Exit Weight
T-11R	400 lb 181 kg
Spartan Reserve	450 lb 204 kg



Octo-11 with Spartan
Live jump test



Octo-11 with T-11R
Minimum weight test

MC-6 Compatibility with Spartan Reserve

- Live jump 2-out tests
- Verifies function and docile interaction between canopies

Reserve Parachute	ROD at 400 lb (181 kg)
T-11R	< 27 ft/s < 8.2 m/s
Spartan Reserve	< 22 ft/s < 6.7 m/s



MC-6+ Compatibility with Spartan Reserve

- MC-6+ is designed for 450 lb AUW
- Achieved by pairing with Spartan reserve
- Live jump 2-out tests

Reserve Parachute	Maximum Exit Weight
T-11R	400 lb 181 kg
Spartan Reserve	450 lb 204 kg





Harness/Containers

Many Options

- Main Parachute – pack tray sized accordingly
- Reserve Parachute – choose pack type/config
- Ring configurations
 - Equipment ring locations
 - Reserve ring locations
 - Lowering line attachment
 - Belly band options
- Select comfort padding options



Pack Closure Options

- Example (A) Options:
 - ¼" cotton (80#) break tie closure
 - 1" elastic static line stows
 - Stow bar cover flap
 - Snap hook pocket side of container
- Example (B) Options:
 - Curved pin closure
 - External rubber band stows
- Works with any main parachute

(A)



(B)



Harness Options

- Example (A) Options:
 - Traditional harness (T-11 style)
 - No padding
 - Large range of leg loop adjustment
 - Minimum weight
 - Ease of maintenance
- Example (B) Options:
 - Padded leg loops
 - Shoulder yoke
 - High comfort for long wear times
- Customization is available

(A)



(B)



Pins and Cover Flaps

- Example (A) options:
 - Traditional curved pin (T-11)
 - Solid cover flap
- Example (B) options:
 - High retention curved pin
 - Window in cover flap
- High retention curved pin
 - Increased force to release
 - When partially displaced, pin moves back to correct position

(A)



(B)





Reserve Containers

Reserve Container Variants



SF-10R with rigid center handle



SF-10R with optional soft handle

All options are
available for both
T-11R and Spartan



T-11 Reserve with soft handle, high hookup



Spartan Reserve with soft handle, high hookup