ESCAPE SYSTEMS

EJECTION SEAT PARACHUTE SYSTEMS

AIM Parachute System

The AIM Parachute automatically controls the inflation characteristics by the use of the Webb chute (a unique type of auxiliary parachute positioned inside the main canopy mouth) plus unidirectional stretch fabric in the crown area of the canopy. These two Irvin developed concepts produce the fastest possible controlled canopy opening consistent with accepted human deceleration tolerance limits, applied dynamic air pressure, and extended deployment speed range. This technology ensures the highest safe deployment speed, optimized recovery trajectory, lower deceleration forces on personnel, high structural integrity and reliability with very effective over-inflation control. Low oscillation rates combined with drive/steering options provide controlled landings for the pilot. The AIM Parachute is in service with RAF in the Harrier and is qualified for use in UPCO S4S and S3S Ejection Seats as well as the Martin Baker MK-10 Ejection Seat on the CF-18 and F-18 aircraft.

MK3 AIM for F-18 Aircraft

The MK3 AIM has been developed for the F-18 Escape System Parachute Upgrade to provide a higher payload capacity. The key features for this enhanced system are:

- Lower Peak "g" (less than 25g)
- Improved Stability (5 – 10 degrees)
- Improved Rate of Descent (less than 22 FT/Second with an all up weight of 325 LB)
- Lower weight and volume
- Faster inflation times.

The MK3 AIM parachute is being considered for other USAF and US Navy programs. It is currently undergoing live jump testing and Canadian Forces qualification testing of the MK3 AIM is ongoing.

IRVIN products have been developed and tested for over 75 years to demanding specifications.
They are in use worldwide and are endorsed by many nations as products of reliability and quality.

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USAF C-9 Canopy Modification

The USAF was not satisfied with the C-9 canopy descent stability and steering and its resultant injury rate to ejected personnel. Oscillation during final descent could be ± 30° or greater from vertical, and unless the four-line release was activated, no alleviation was possible. Limited relief could be achieved by operating the four-line release; however, this requires a pilot to be pro-active, in command of their faculties and have sufficient time to perform this action. Additionally, without the four-line release action, there is no steerability to avoid ground obstacles and to position oneself for an acceptable ground landing roll.

In response to this situation Irvin Aerospace proposed a modification to the C-9 canopy which applied the proven stabilizing and steering design aspects of the Irvin A.I.M. (Automatic Inflation Modulation) parachute to the C-9. The Irvin modifications were incorporated on C-9 canopies and trial jumps performed by both Irvin and USAF representatives produced excellent results. These modifications provided the following improvements:

- Stability improved to ± 15° from vertical
- Minimal drive - approximately 8 ft/sec
- Steering performance - 360° rotation in 20 seconds maximum
- Stability and drive were inherent with the deployed Irvin modified C-9 parachute (i.e. no pilot initiative or awareness required)
- Retention of existing high-speed parachute deployment characteristics
- No appreciable change to packing/rigging methods

Modified systems are now in service in the U.S.