



WHERE TECHNOLOGY » *TAKES FLIGHT*

Military Freefall Harness/Containers



Families of Harness/Containers (HCs)

RA MMS HH-MMS



PS-2/EMMPS Gemini



Instructor/I-Raider



- HC “families” share features, overall structure, some components

Canopy – HC Compatibility

Canopy	Harness/Container			
	RA	MMS	HH MMS	EMMPS/ PS-2
RA-270	X			
RA-300	X	X	X	X
RA-360 / RA-1	X	X	X	X
Marauder-270	X			?
Marauder-300	X	X	X	X
Marauder-360	X	X	X	X
Hi-5 300	X	X	X	X
Hi-5 370	X	X	X	X

Canopy	I-Raider/ Instructor
I170	X
I190	X
I210	X
I230	X

Canopy	Gemini
Gemini 430	X
Gemini 530	X

Deployment Options

Deployment Type		RA	MMS	HH MMS	EMMPS/ PS-2	Gemini	Instructor
Pilot Chute	Over-the-Shoulder (Spring PC)	X	X				
	Student Ripcord, BOC (Spring PC)	X (RA-270 only)					
	Bottom of Container	X	X	X	X		X
Double Bag Static Line (DBSL)		X	X	X	X		
Direct Static Line		X	X	X	X		
Drogue	Self-Set		X	X	X	X	
	Jumpmaster Assist		X	X	/	/	
	Static Line		X	X			
	Release-Away Static Line		X	X			



All Harness/Containers

Fit & Comfort

- Every harness has adjustable:
 1. Main lift web
 2. Lateral
 3. Leg strap
 4. Belly band
 5. Chest strap



Other Features

- Windows to check pins, plastic is easily replaceable



- Tough-tek in high-wear areas



- Magnetic riser covers



Tube Connectors

- Oxygen pocket
 - One-sided or bilateral
- Radio pocket

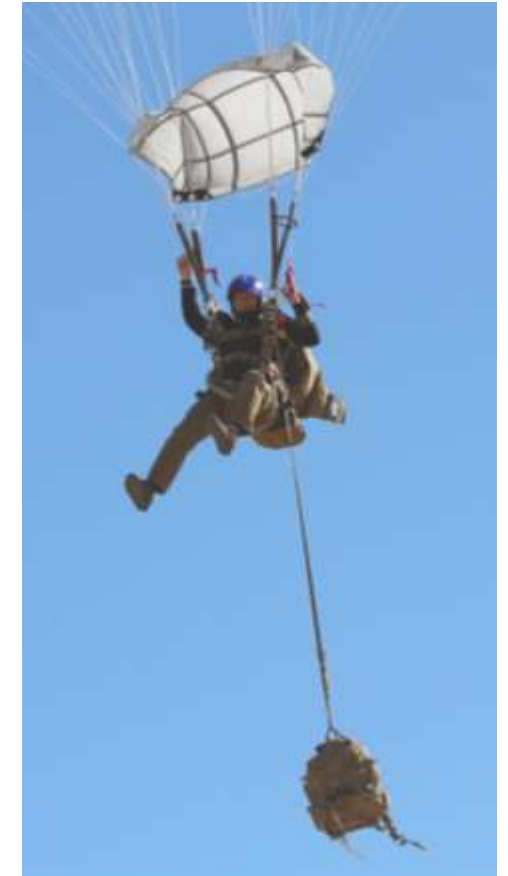


Seats & Rucks (except Instructor)

- Seat



- Rucksack/drop-bag



K9 Carrier

- Only with high hook-up HCs
 - HH MMS
 - EMMPS/PS-2/Gemini
- Integrates with working dog harness

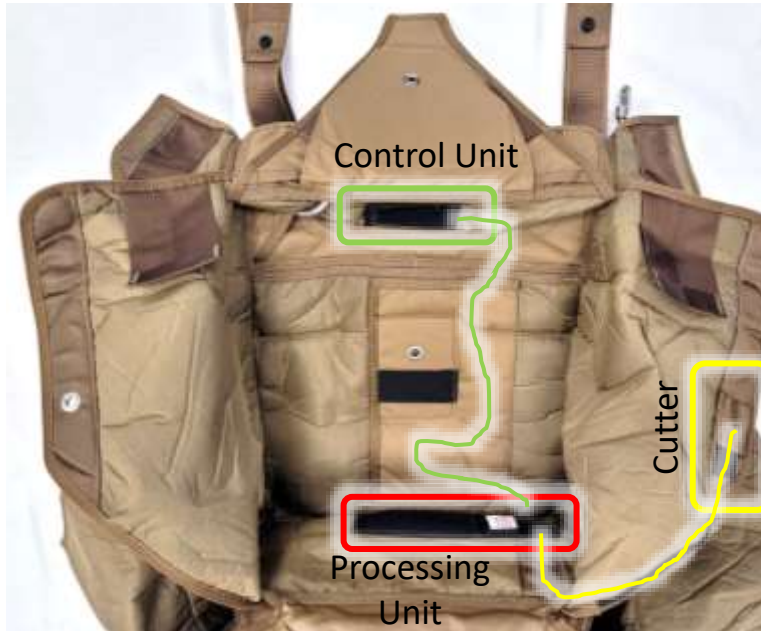




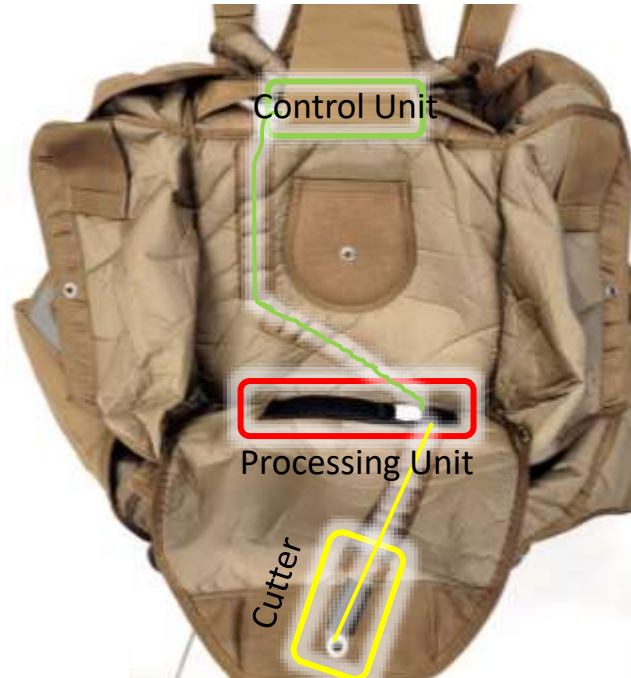
AAD & MARD

- CYPRES or Vigil AAD

RA / MMS / HH MMS / Instructor



EMMPS / PS-2 / Gemini



- Flip MARD



RA / MMS / HH MMS



RA



HH MMS



MMS

History

- Developed from “Raider2” harness/container
- RA-1 adopted by US Army in 2011, fielded in 2014
- Termed “RA-360” for commercial orders (\approx RA-1)
- Different sizes: RA-270, RA-300
- Modified for additional capability:
 - MMS (multi-mission system)
 - HH MMS (high hook-up MMS)





Canopy Compatibility

Canopy	Harness/Container		
	RA	MMS	HH MMS
RA-270	X		
RA-300	X	X	X
RA-360 / RA-1	X	X	X
Marauder-270	X		
Marauder-300	X	X	X
Marauder-360	X	X	X
Hi-5 300	X	X	X
Hi-5 370	X	X	X



Deployment Options

Deployment Type		Harness/Container		
		RA	MMS	HH MMS
Pilot Chute	Over-the-Shoulder (Spring PC)	X	X	
	Student Ripcord, BOC (Spring PC)	X (RA-270 only)		
	Bottom of Container	X	X	X
Double Bag Static Line (DBSL)		X	X	X
Direct Static Line		X	X	X
Drogue	Self-Set		X	X
	Jumpmaster Assist		X	X
	Static Line		X	X
	Release-Away Static Line		X	X

Fit & Comfort

- Bio-contour
- Padded backpad and leg pads



Deployment Options – Pilotchute

Bottom-of-Container Hand-Deployed
Pilotchute (BOC HDPC)



Spring-loaded pilotchute,
over-the shoulder (OTS)

(not HH MMS)



Deployment Options—Pilotchute

Spring loaded pilotchute (RA-270 only, student):

Back of right hip:



Front of right hip:



Deployment Options – DBSL & Direct Bag



Deployment Options – Drogue

MMS or HH MMS only (not RA)

Self-set



Jumpmaster Assist



Static Line



Release-Away
Static Line



Deployment Options – Drogue

- Drogue components are attached to loops at bottom of container



Deployment Options – Drogue

- Drogue release handles:

MMS

Right shoulder



Left BOC

HH MMS

Right chest



Left BOC

- 3-ring drogue release:



- Suspended by bottom-of-container:



Equipment Hook-Ups

- Equipment D-rings
 - 6 total: RA & MMS
 - 8 total: HH MMS
- 2 rings for seat

RA & MMS



HH MMS



Ripcord Handles & RSL

- RA & MMS: inboard emergency handles
- HH MMS: outboard emergency handles
- Left side reserve static line (RSL)



EMMPS / PS-2 / Gemini



Small



Gemini



Large

History

- Designed to meet US Marine Corps requirements, contract won in 2018
- EMMPS = Edge Multi-Mission Parachute System
 - Called “PS-2” by the USMC
- Two sizes: Large and Small
- Gemini 430 and Gemini 530 evolved from EMMPS





Canopy Compatibility

Canopy	Harness/Container	
	EMMPS/ PS-2 Small	EMMPS/ PS-2 Large
RA-270		
RA-300	X	
RA-360 / RA-1		X
Marauder-270	?	
Marauder-300	X	
Marauder-360		X
Hi-5 300	X	
Hi-5 370		X

Canopy	Harness/Container	
	Gemini 430	Gemini 530
Gemini 430	X	
Gemini 530		X



Deployment Options

Deployment Type		EMMPS/ PS-2 Small	EMMPS/ PS-2 Large	Gemini
Pilot Chute	Over-the-Shoulder (Spring PC)			
	Student Ripcord, BOC (Spring PC)			
	Bottom of Container	X	X	
Double Bag Static Line (DBSL)		X	X	
Direct Static Line		X	X	
Drogue	Self-Set	X	X	X
	Jumpmaster Assist	/	/	/
	Static Line			
	Release-Away Static Line			

Fit & Comfort

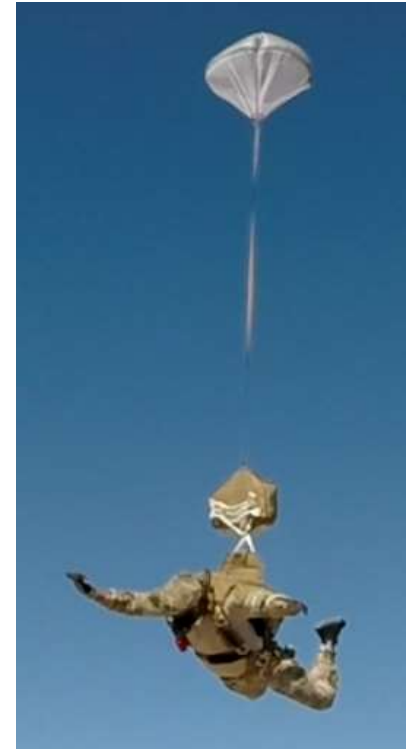
- EMMPS/PS-2 harnesses come in “Small” and “Large”
- Foam padding for comfort



Deployment Options – Pilotchute

(Not for Gemini)

- Bottom-of-Container Hand-Deployed Pilotchute (BOC HDPC)



Deployment Options—Drogue

- Self-set drogue only
- Drogue release handles:



Right Hip

Left
BOC



Inner pocket only on
EMMPS, not Gemini

Deployment Options—Drogue

- “Storm” drogue release



- Suspended by middle-of-container:



- Main deployment bag leaving container always releases drogue



Deployment Options – DBSL & Direct Bag

(Not for Gemini)



Equipment Hook-Ups

- 8 total D-Rings:
 - Above ripcord pocket
 - Below ripcord pocket
 - Front of hip
 - Back of hip
- 2 rings for seat



Ripcord Handles & RSL

- All outboard
- Reserve static line on right side
- Riser release lanyard





Tandem

- Tandem passenger harness
- Adjustable:
 - Main lift web
 - Lower back strap
 - Upper back strap
 - Leg strap
 - Belly band
 - Chest strap
- Extra-cushioned leg pads



Tandem + Equipment



- Or tandem instructor can carry two O2 bottles (one left + one right)



Instructor / I-Raider



History

- Evolved from RA-series HCs
- TSO-ed 210R reserve canopy
- For jumpmasters and free-fall instructors



Details

- Left side RSL
- Step-through leg straps



- One size harness/container fits all main canopies:
 - I170
 - I190
 - I210
 - I230

Fit & Comfort

- Bio-contour
 - Same as RA/MMS



- Padded backpad and leg pads



Deployment Options – Pilotchute

- Bottom-of-Container Hand-Deployed Pilotchute (BOC HDPC)



Equipment

- No equipment D-rings
- Removeable belly band
- Tube connectors
- Oxygen pocket
- Radio pocket



Ripcord Handles

- All handles inboard





Options for all HCs

Water & Low-Level

Can be done on any HC

Available options:

1. Remove foam-backing on liner cloth (standard)
2. Stainless steel hardware
3. Quick-eject chest strap and belly band
4. If low-level only, remove BOC PC pouch



Color

Coyote



FG



Black



Leg Strap Hardware

- Quick-release:



- B12:



Ripcord Handles

- Main release (cutaway) ripcord:
 - Pillow
 - Loop
- Reserve ripcord:
 - Metal (not on EMMPS/Gemini)
 - Pillow
 - Loop
- Main spring-loaded Pilotchute deploy:
 - Metal (RA and MMS)





Customization Examples

RA-300 HH

- RA-300 (not MMS)
- High hook-up (HH)
- Spring-loaded pilotchute



Backpad

- Both bio-yoke from RA and black foam from EMMPS



Color Signifiers



Embroidery





WHERE TECHNOLOGY » *TAKES FLIGHT*

Questions?





Different Sizes

- Backpad: RA-270 is smaller

- Leg straps/leg pads: RA-270 & RA-300 are shorter



RA-270/RA-300 RA-360/MMS



RA-270 Student



MMS



HH MMS



I-Raider/Instructor



EMMPS/PS-2 Small



EMMPS/PS-2 Large



Gemini

