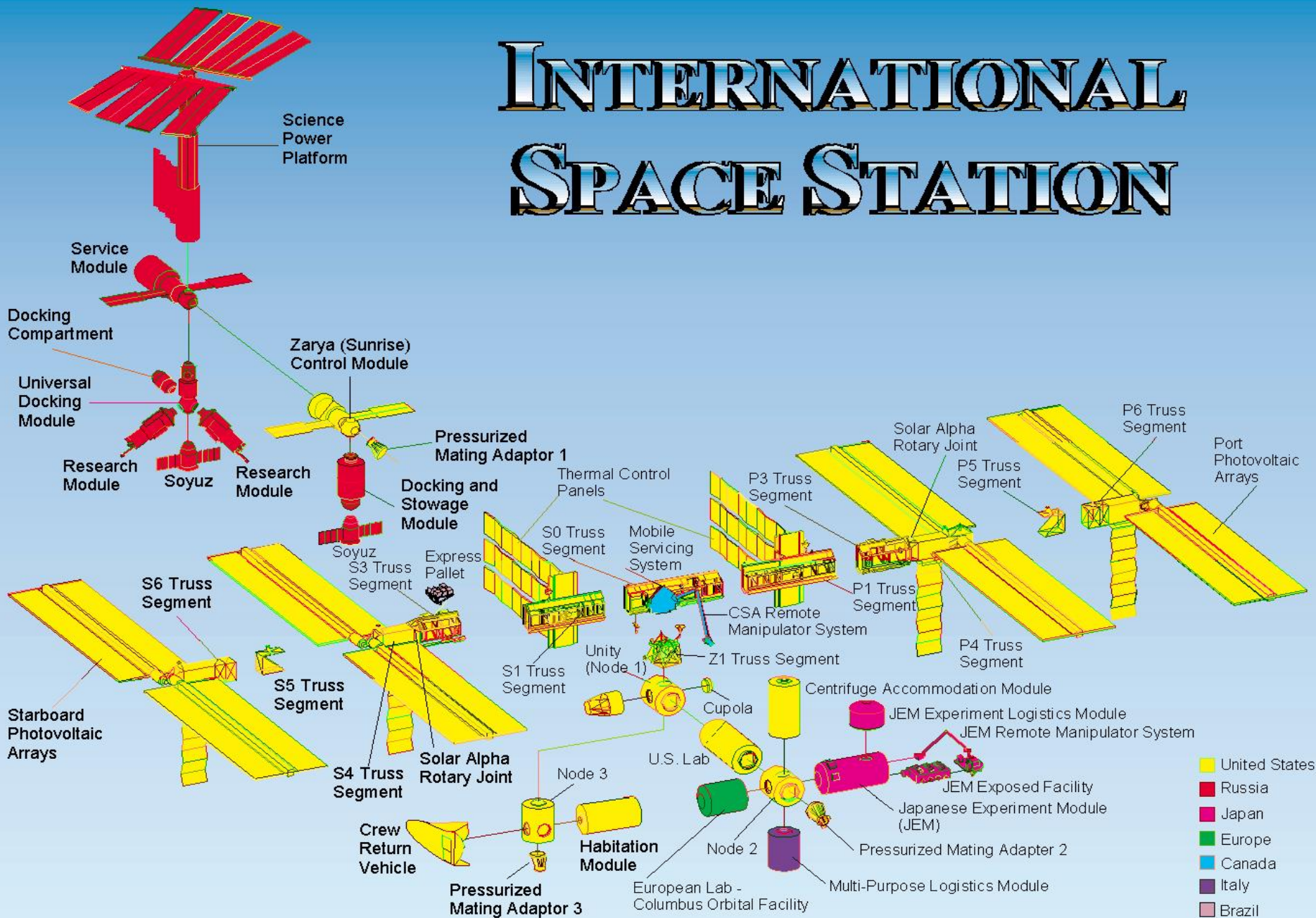


INTERNATIONAL SPACE STATION

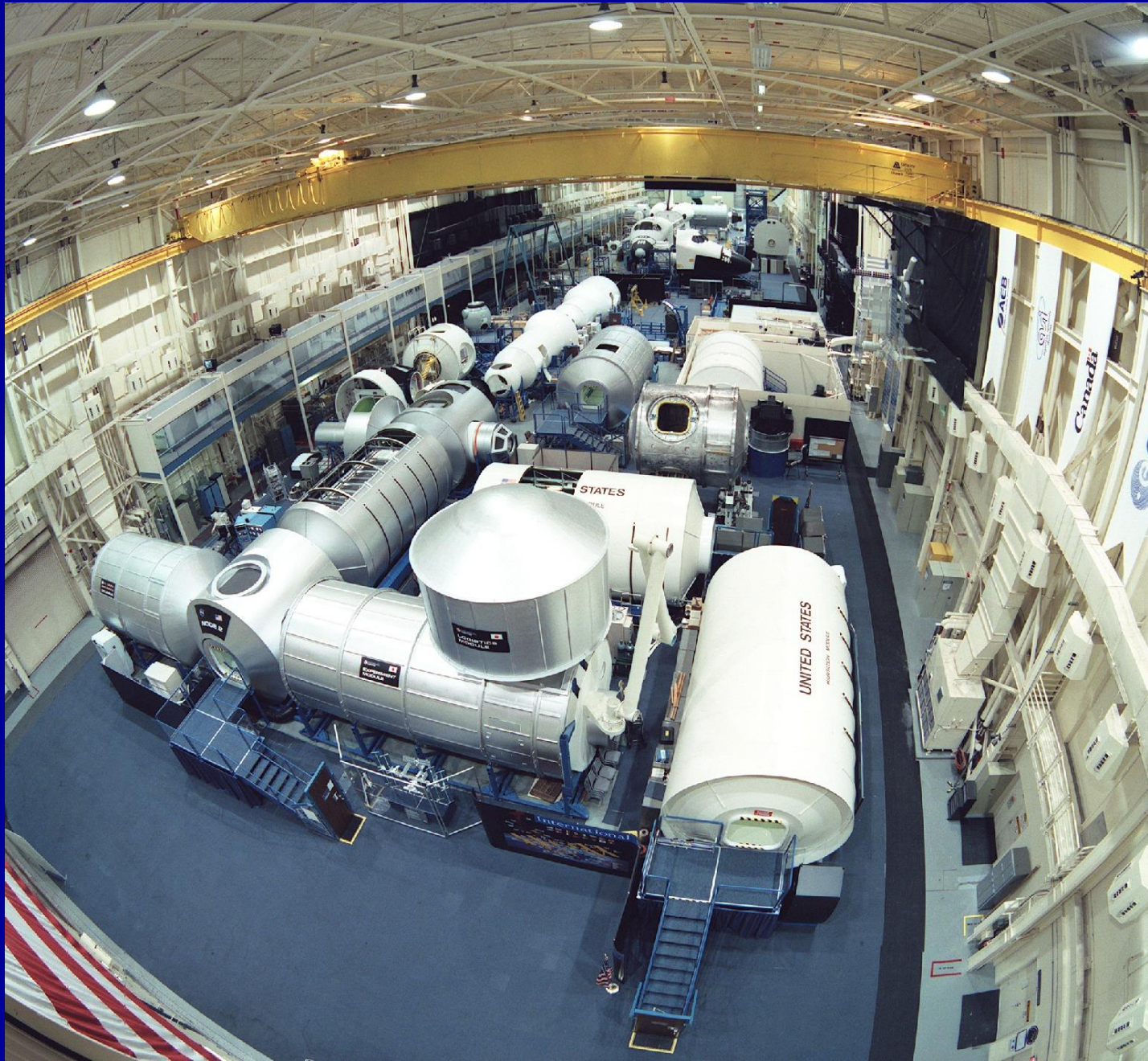


The mission STS-116 a.k.a. ISS 12A.1



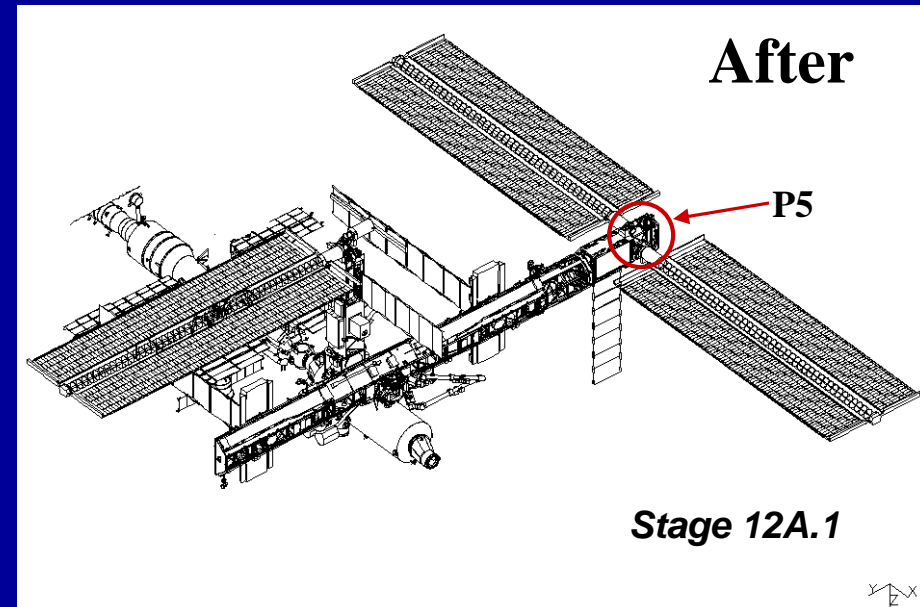
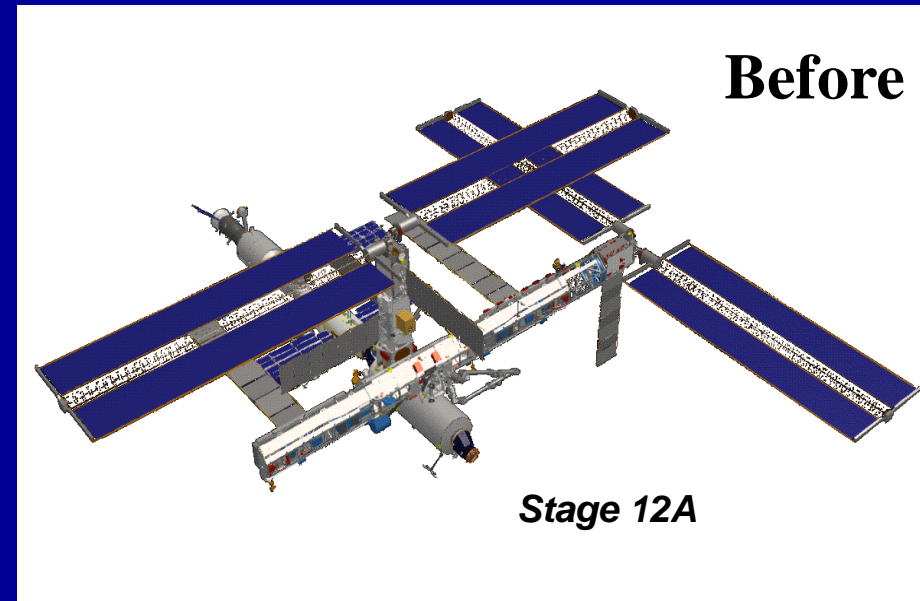
**In Feb 2002, after 10 years as astronaut,
I finally had a flight assignment!**

Training mockups at Johnson Space Center in Houston



ISS Mission 12A.1

- Primary goals:
 - Deliver truss element 'P5'
 - Reconnect ISS's power system
 - Change of ISS crew
- 3 EVAs





”Columbia”

1 Feb 2003, 08:00 CST
60 km over Texas





The "new" STS-116 Crew in 2005

STS-116 Crew

One ISS crew member exchange:
Sunita Williams (NASA 1998) for Thomas Reiter (ESA 1992)



Commander:
Mark Polansky
NASA astronaut
1996
One previous flight



MS4: Joan
Higginbotham
NASA astronaut
1996
No previous flight



MS2: Robert L.
Curbeam
NASA astronaut
1995.
Two previous
flights, three
spacewalks.



MS3: Christer
Fuglesang.
ESA astronaut 1992.
No previous flight



Pilot: William A.
Oefelein
NASA astronaut 1998
No previous flight.



MS1: Nick Patrick
NASA astronaut
1998
No previous flight

Solar arrays on the US segment.

During flight 12A.1 ISS will be reconfigured from “Early power system” to its final system.

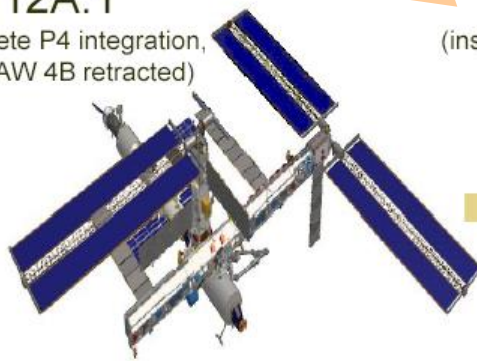
Activation of Main Bus Switching Units (MBSU) and truss segment loads, in particular the two Pump Modules (PM)

ISS in 2005



12A.1

complete P4 integration,
P6 SAW 4B retracted

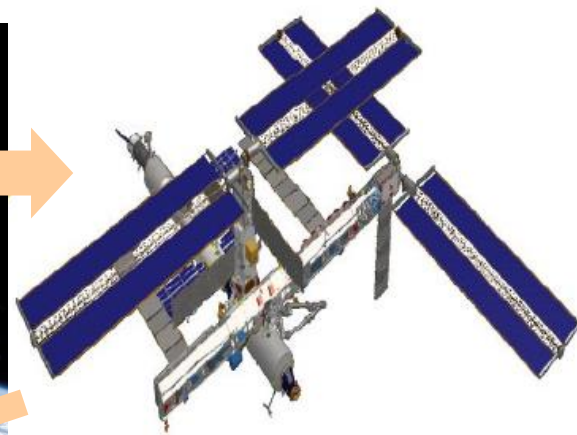


15A

relocated P6, install S6

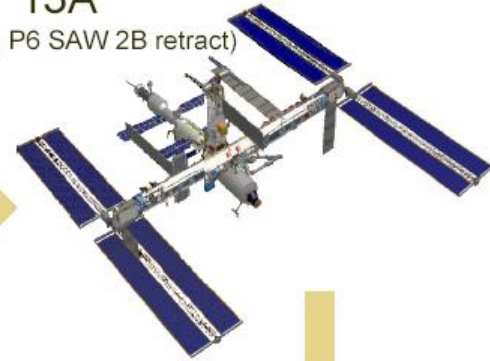


12A
(install P4)
Sep 2006



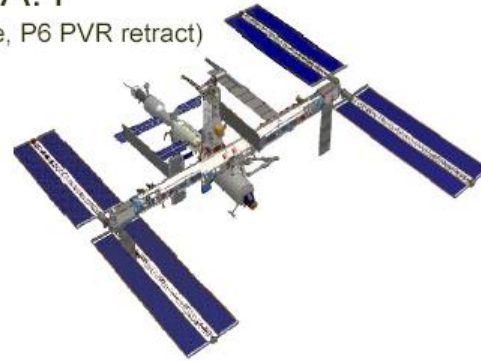
13A

(install S4, P6 SAW 2B retract)



13A.1

(s-band relocate, P6 PVR retract)

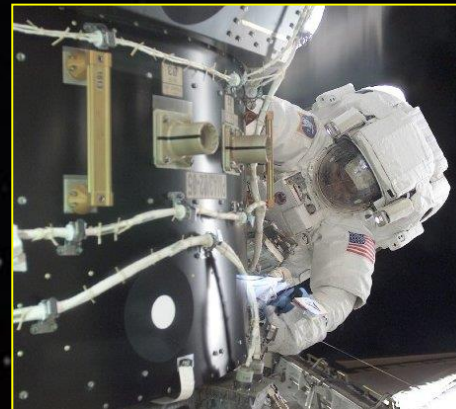


Flight 12A.1 Overview (as planned before flight)

- FD 2
 - Thermal Protection System Inspection
- FD 3
 - Rendezvous and Dock to ISS
- FD 4
 - EVA 1 (Curbeam & Fuglesang)
 - P5 Installation, Camera R&R
- FD 5
 - Solar Array P6 4B retract
- FD 6
 - EVA 2 (Curbeam & Fuglesang)
 - Power Channel 2/3 reconfig., CETA cart repositioning.
- FD 8
 - EVA 3 (Curbeam & Williams)
 - Channel 1/4 reconfig., SMDP transfer.
- FD 10
 - Undocking



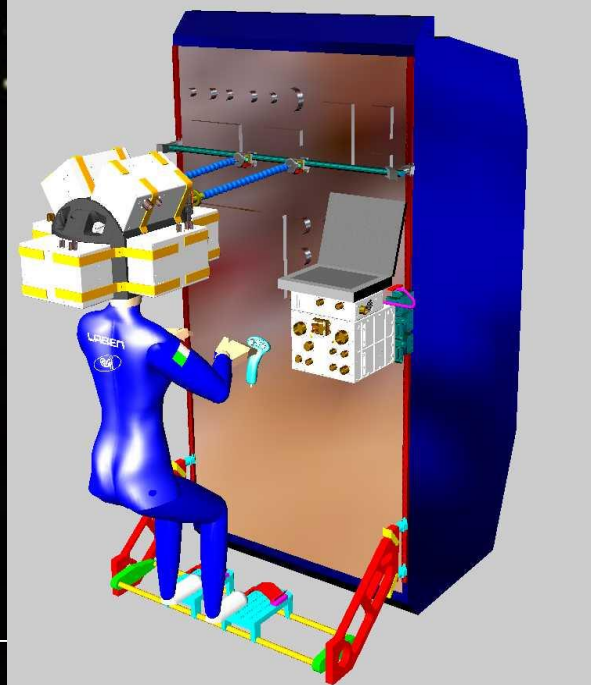
**Dock and ingress ISS
Flight Day 3**



**EVAs :
Flight Days 4, 6, 8**

Some science

- STS-116 is an assembly flight, nevertheless Christer plans some science work
- ESA is sponsoring an experimental session with the ALTEA facility
 - Investigating the radiation environment, Light Flashes, Central Nervous System
- ESA is providing newly developed personal dosimeters, which can be used to measure the extra radiation dose during EVAs. (Possible due to three EVAs in a short flight).
- DoD has three micro-satellites/experiments onboard. Deployed after undock.



ALTEA in the US LAB
(launches in July on STS-121)

Crew Assignments as of 21 MAR 2005

ANY TIME A CHANGE IS MADE TO CREW ASSIGNMENTS THAT CHANGE MUST BE COMMUNICATED TO THE TRAINING MANAGER

Crew Assignments

Crew Assignments as of 21 MAR 2005

TIME A CHANGE IS MADE TO CREW ASSIGNMENTS THAT CHANGE MUST BE COMMUNICATED TO THE TRAINING MANAGER

Orbiter Responsibilities	CDR Po	PLT Of	MS1 Pk	MS2 Cr	MS3 Fg	MS4 Hg	
GNC	P	X		X			
DPS	P	X		X			
MPS		P	X	X			
EPS		P	X	X		X	
OMS/RCS		P	X	X		X	
APU/HYD		P	X	X		X	
ECLSS	P			X			
WATER DUMPS	2	1					
COMM/INST	X	X	X	X		P	
PLBD/RAD OPEN					1	2	
PLBD/CLOSE					2	1	
ABORTS	P			X			
ET DOORS		1	2				
PHOTO/TV			1		2		
CCTV			1		2		
CAMCORDER			2		1		
EVA/EMU				1	2		
IV		1					
MEDIC	1	2					
CREW EQUIPMENT AND STOWAGE			2			1	
CABLE CONFIG			2			1	
COMPUTERS/LAN	2		1		3		
KCA/OCA							
WORLD MAP	2		1		3		
CG MANAGER							
DEORBIT TGTS							
IFM	2	3	1				
WCS	2	1	X	X	X	X	
POST INSERTION					1		
DEORBIT PREP					1		
POST/PRE SLEEP	2	1					
FDF	1	2					
FLIGHT RULES	1	2					
RENDEZVOUS	1	2	3			4	
PROX OPS	1	2					
RPOP		1	3			2	
TCS	3	1				2	
HANDHELD LASER				2		1	
FLIGHT PLAN	1	3		2			
ASCENT MS			1				
ENTRY MS						1	
RECUMBENT SEAT					1	2	

ilities	CDR Po	PLT Of	MS1 Pk	MS2 Cr	MS3 Fg	MS4 Hg
RMS	2		1			
ROBO						1
OBSS INSPECTION	2	3	1			

PAYLOAD RESPONSIBILITIES						
PAYLOAD DEPLOYS			3		1	2
HAB P/L'S:			2		3	1
CARGO TRANSFER	X	X	2	X	X	1
STOWAGE			2			1
DTO:						
DTO:						
DSO:						
RME:						
ERGOMETER:	2	1				
SPACEHAB ACT/DEACT				2	3	1
SPACEHAB IFM	3		2			1
WATER CWC:	1	X	X	X	X	X
ORBITER DOCKING SYSTEM				2	1	
ET PHOTO				F5	PD100	
EARTH OBS						
GEOGRAPHY						
OCEANOGRAPHY						
METEOROLOGY						

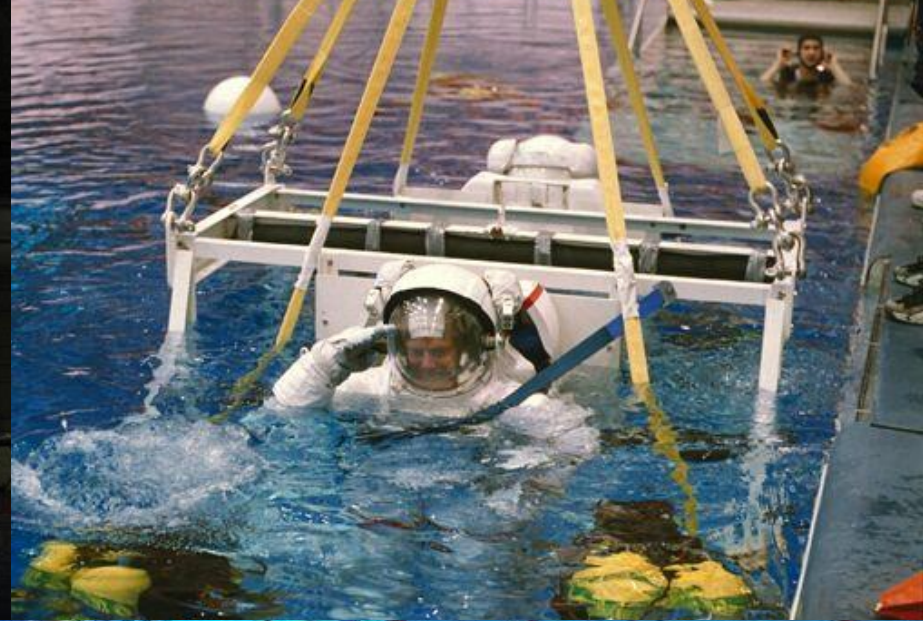
Simulators



Motion Base

Single System Trainer





NBL – Neutral Buoyancy
Laboratory

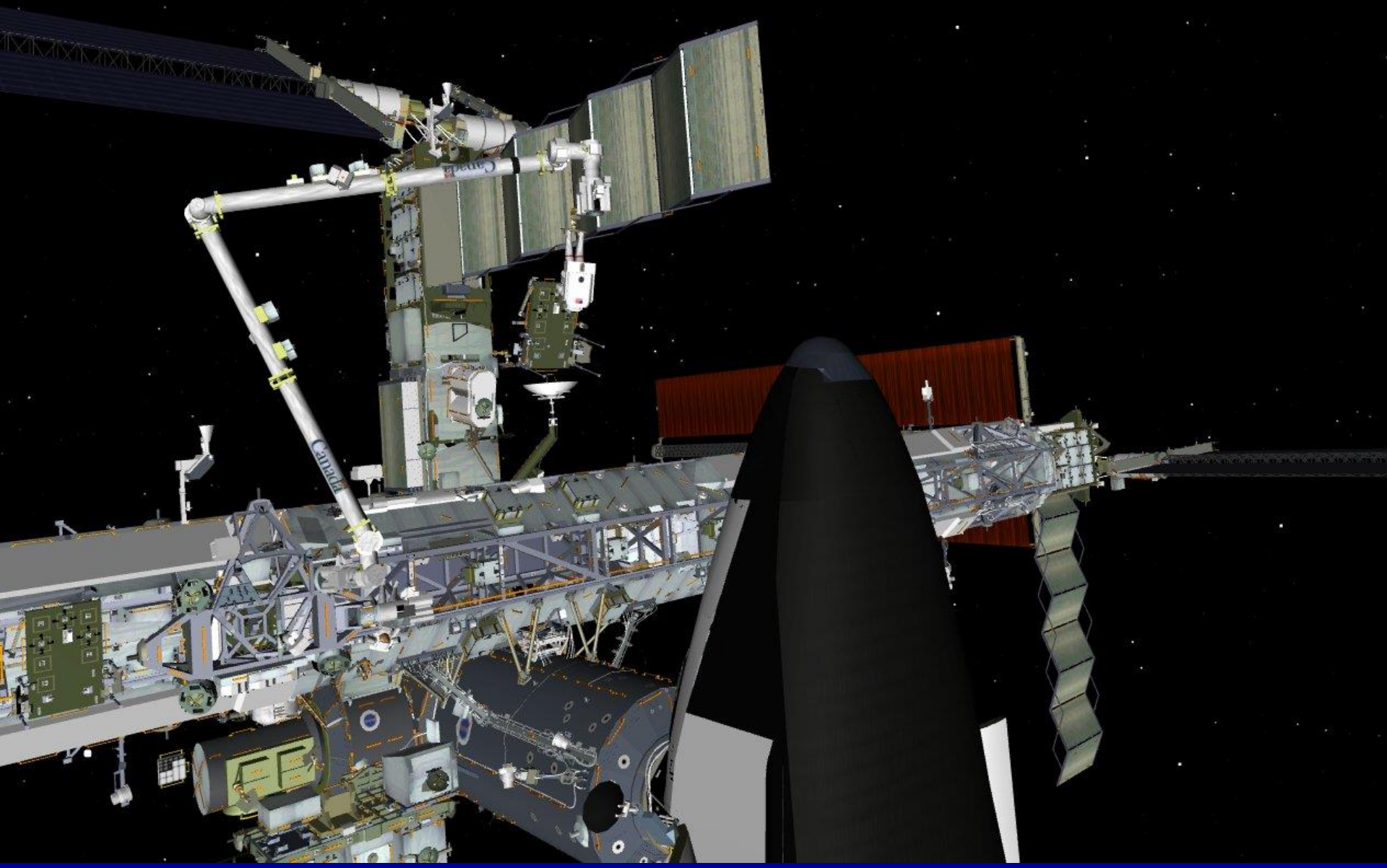
”EVA” – Extra
Vehicular Activity





Attachment P5 –P4

Virtual Reality-lab



P5 inspection at KSC (Kennedy Space Center)



T-38



Expedition & leadership / followership training

Canada, Jan 2004



Physical training



But we did it in the
astro-gym at JSC ☺

Food!



Preparing a meal in the shuttle simulator during a long sim

In the Mir-simulator 1995



Tasting of some 50 items with the crew in 2002

Potty training



WCS – Waste Collection System

Cape Canaveral, Florida, Dec 4, 2006



...och 5 days later:

