STS-135 / ULF7

FD 03 Execute Package

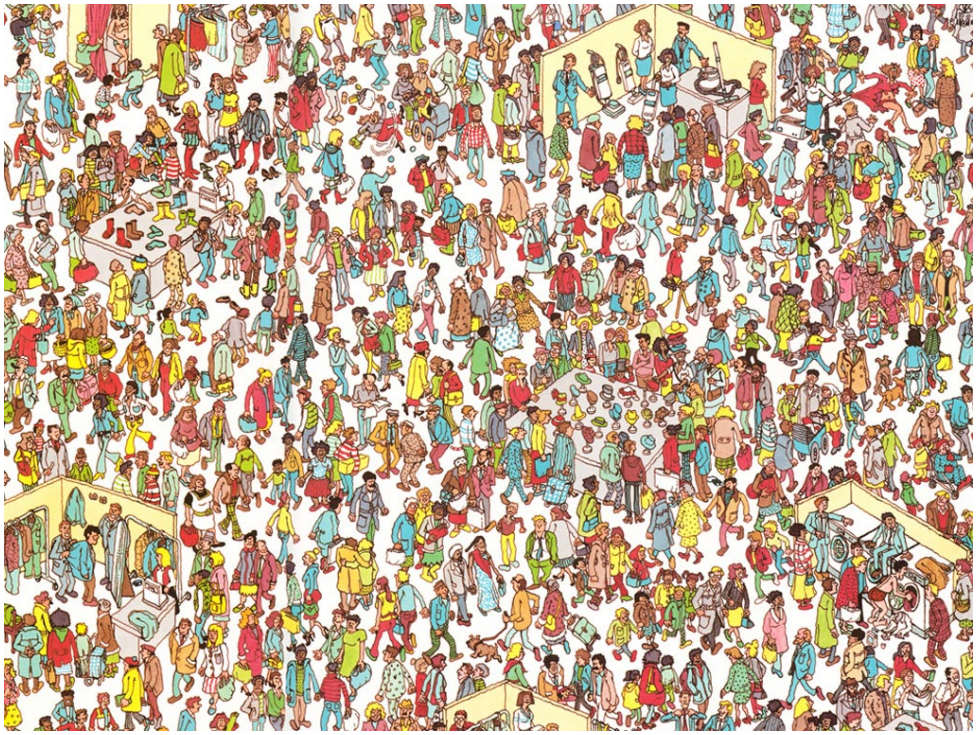
007A	1 - 12	FD03 Flight Plan Revision
008	13 - 15	FD03 Mission Summary
009	16 - 18	FD03 Transfer Message
010	19	STS-135/ULF7 FD03 EVA Deltas
011	20 - 21	Exp 28 and STS-135/ULF7 Emergency Response Agreements
012	22 - 32	ULF7 PEPS Musical Chairs
013	33	FD02 MMT Summary
014	34	STS-135 H2O Ops Cue Card
015	35 - 41	FD03 RNDZ PACKAGE
016	42	Dirt on Lens of Handheld D3s Camera

Approved by FAO:
J. Mintz

Approved by OpsPlan:
K. Howell

Last Updated: Jul 10 2011 6:39 AM GMT
JEDI *(**J**oint **E**xecute package **D**evelopment and **I**ntegration), v3.0*

Shuttle Visual Systems and Activity limitations and SpaceFlight Questionnaire (Backup) CC:



Question: Where is Waldo? Answer _____

MSG INDEX

MSG NO.	TITLE
007	FD03 Flight Plan Revision
008	FD03 Mission Summary
009	FD03 Transfer Message
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011	Exp 28 and STS-135/ULF7 Emergency Response Agreements
012	ULF7 PEPS Musical Chairs
013	FD02 MMT Summary
014	STS-135 H2O Ops Cue Card
015	FD03 RNDZ PACKAGE
016	Dirt on Lens of Handheld D3s Camera

1. For today's cryo config, O2 tanks 1 & 2 and H2 tanks 2 & 4 will be active.

   R1 O2,H2 MANF VLV TK2 (two) - OP (tb-OP)
   O2 TK1 HTRS A,B (two) - AUTO

   A11 CRYO TK4 HTRS O2 A,B (two) – OFF

2. Simo Dump Details
   Today you will perform a simo supply/waste water dump using SUPPLY/WASTE WATER DUMP (ORB OPS, ECLS), p. 5-3. MCC will TMBU limits in steps B and K. Do not perform Step J.

   The supply nozzle open time will be 45 minutes.

   Dump the waste tank to 5%. Nozzle open time will be approximately 15 minutes.

3. WHC Use
   As a reminder, ISS would like all 4 Shuttle crew to use the WHC as much as convenient while hatches are open.

4. H2O Ops Cue Card
   MSG 014 is the CWC-PWR portion of your H2O Ops Cue Card. The CWC-I Cue Card will be uplinked prior to the start of the first CWC-I fill, currently planned for FD8.

5. **To All:** Please reference MSG 012 (28-0479) for a copy of the PEPs musical chairs plan for this flight. We want to point out two things:

   1) A number of the moves will be done as part of the Transfer Plan. Therefore, when PEPs are moved, please inform the rest of the crew and MCC-H to keep the entire team in sync with PEPs locations.
   2) We are actively working to certify some locations to stow PBAs in the FGB as well as the A/L. The final undock plan may look a little different than these charts show. These charts reflect the current certified plan.

6. **Rex:** Please reference MSG 135-010 (28-0482) STS-135/ULF7 FD03 EVA Deltas for an update on QDMA stowage in Post-Docking EVA Transfer and Reconfig.

7. Crew Choice KU Opportunities:

Please allow 1-2 minutes to lock up on Ku-band. Check with MCC before starting playback.

Pre-Sleep Evening of FD03

TDRS	AOS	LOS	Delta (min)	Notes
E-TDS	2/06:33	2/07:08	35	

8. REPLACE PAGES 2-6 AND 2-8 AND 3-22 THROUGH 3-29.

REPLANNED

FD03
GMT 07/10/11 (191)
MET Day 001

12 13 14 15 16 17 18 19 20 21 22 23 002/00
04 05 06 07 08 09 10 11 12 13 14 15

STS-135

CDR FERGUSON	SLEEP			^MNVR POST SLEEP			IMU	GRP B PWRUP	NH^ NC4^ Ti^ ISS RNDZ OPS					APPROACH T/L		
PLT HURLEY	SLEEP			POST SLEEP			O2 VLV CL	RCS*	GRP B PWRUP	ISS RNDZ OPS				APPROACH T/L	DOCKING*	
MS1 MAGNUS	SLEEP			POST SLEEP		OIU ACT	APCU ACT	MCIU	POST SLEEP	APCU DEACT	SSV-3	SMDK	D3S CMRA^	POST SLEEP	TRANSFER UPDATE	ISS RNDZ OPS	PTV02 S/U	P/TV02 DOCK	PTV02%
MS2 WALHEIM	SLEEP			LOG	POST SLEEP	SIMO INIT	POST SLEEP	SIMO TERM	OCA#	POST SLEEP		ISS RNDZ OPS				APPROACH T/L	

DAY/NIGHT

ORBIT: 25 26 27 28 29 30 31 32

TDRS: W E Z

ORB ATT: -ZLV -XVV | -ZLV +YVV | RNDZ

NOTES:
*REG RCNFG
#2 Mbps ^LENS CLEANING
DEACT%

DOCKING 001/23:38*

3

FD03

GMT 07/10/11 (191) 002/00 16 17 18 19 20 21 22 23 07/11 01 02 03

MET Day 002 01 02 03 04 05 06 07 08 09 10 11 12

STS-135 4

| | | |

STS-135/ULF7 FD03

GMT Date 07/10 (191) | W | TDRSE | Z | D/N | ORB | MET Day 001 | STS ATI

CDR Ferguson | PLT Hurley | NOTES

16:00 — 17:00 — 18:00 — 19:00 — 20:00

08:00 — 09:00 — 10:00 — 11:00

27 — 28 — 29 — 30

-ZLV + YVV

RNDZ

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYSTEMS)
√Hum Seps for H2O Accumulation

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYSTEMS)

FD03 EZ ACTIVITIES:
√OCAC FILTER
TEPC STATUS CHECK
Verify display is backlit
HARD REBOOT STS-3(KFX)

IMU STAR OF OPPTY ALIGN (ORB OPS, GNC)

M069M LEH O2 8 vlv - CL
RCS REGULATOR RECONFIG (ORB OPS, RCS)

PRIORITY PWRUP GRP B
(ORB PKT, PRIORITY PWRDN)
Steps 12 (IMU 2),6 (Triple G2), 5

PRIORITY PWRUP GRP B
(ORB PKT, PRIORITY PWRDN)
Steps 12 (IMU 2),6 (Triple G2), 5

RENDEZVOUS TIMELINE
(RNDZ, RENDEZVOUS T/L)

RENDEZVOUS TIMELINE
(RNDZ, RENDEZVOUS T/L)

< NH TIG 18:39

< NC4 TIG 19:26

5

STS-135/ULF7 FD03

GMT Date 07/10 (191) | E | TDRSZ | W | D/N | ORB | MET Day 001 | STS ATI

MS1 Magnus

16:00 POST-SLEEP ACTIVITY
(ORB OPS, CREW SYSTEMS)

A On MCC Go:
R1 PL PRI MNC - ON (tb-ON)
SSP1 √APCU 1,2 CONV (two) - OFF (tb-bp)
APCU 1 OUTPUT RLY - CL
CONV - ON (tb-gray)
√OUTPUT RLY CLOSE tb-gray

17:00 SSP1 OIU PWR - OIU 1 ON (tb-UP)
APCU ACTIVATION A
L17 Check MCIU filter screen
POST-SLEEP ACTIVITY
(ORB OPS, CREW SYSTEMS)

18:00 On MCC GO: SSP1 APCU 1 CONV - OFF (tb-bp)
OUTPUT RLY - OP (tb-bp)
SSV OUTRATE - 3
CGBA UNIT #1,2 STATUS CHECK (CC), STL STATUS CHECK (CC)
D3S CAMERA LENS CLEAN
Ref. MSG 016
POST-SLEEP ACTIVITY
(ORB OPS, CREW SYSTEMS)

19:00 DAILY TRANSFER LIST UPDATE
Ref. Transfer Lists & MSG 009

20:00

MS2 Walheim

SLEEP LOGBOOK (SDBI 1634)
POST-SLEEP ACTIVITY
(ORB OPS, CREW SYSTEMS)

SUPPLY/WASTE WATER DUMP (Init)
(ORB OPS, ECLS)
Ref. MSG 007, Item 2

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYSTEMS)

SUPPLY/WASTE WATER DUMP (Term)
(ORB OPS, ECLS)
Ref. MSG 007, Item 2

RECONFIGURE OCA DOWNLINK RATE (Ch. 2)
(ORB OPS,PGSC) Part D then A (Omit step 4)
POST-SLEEP ACTIVITY
(ORB OPS, CREW SYSTEMS)

RENDEZVOUS TIMELINE
(RNDZ, RENDEZVOUS T/L)

NOTES

UPLINK
TFL 199

MPLM PRESSURE CHECK

UPLINK
TFL 192

STS-135/ULF7 FD03

GMT Date 07/10 (191) | W | T D R S E | Z | D / N | O R B | MET Day 001 | STS ATI

CDR Ferguson | PLT Hurley | NOTES

20:00 — RENDEZVOUS TIMELINE (RNDZ, RENDEZVOUS T/L)

12:00 — 30

21:00 — < Ti TIG 21:00

13:00 — 31

RNDZ

22:00 — APPROACH (Cue Card)

UPLINK
β21+MASK
BOX 30,40

14:00

23:00 — 32

15:00

DOCKING 01/23:38

DK

00:00

7

STS-135/ULF7 FD03

GMT Date 07/10 (191) | E | TDRSZ | W | D/N | ORB | MET Day 001 | STS ATI | MS1 Magnus | MS2 Walheim | NOTES

20:00

DAILY TRANSFER LIST UPDATE
Ref. Transfer Lists & MSG 009

RENDEZVOUS TIMELINE
(RNDZ, RENDEZVOUS T/L)

RENDEZVOUS TIMELINE
(RNDZ, RENDEZVOUS T/L)

12:00

21:00

13:00

RNDZ

22:00

P/TV02 DOCK
(P/TV, SCENES)
SETUP

P/TV02 DOCK
(P/TV, SCENES)
OPS, Items 1-3

APPROACH (Cue Card)

14:00

23:00

15:00

P/TV02 DOCK
(P/TV, SCENES) DEACTIVATION

DOCKING 01/23:38

DK

00:00

30

31

32

STS-135/ULF7 FD03

GMT Date 07/10 (191) | W | TDRS E | Z | D/N | ORB | MET Day 002 | STS ATI

CDR Ferguson | PLT Hurley | NOTES

00:00

MNVR (TRK) BIAS -XLV -ZVV (Mated TEA)
TG=2 BV=5 P=161.91 Y=359.93 OM=174.12
Init TRK, DAP: FREE > 2 sec, then
DAP: A12/AUTO/VERN

SSV OUTRATE - 2
P/TV04 ISS INTERNAL OPS (HC)
(P/TV, SCENES) SETUP

UPLINK
TFL 184

16:00

UPLINK
β21+MASK
BOX 40,50

When MNVR complete and rates damped:
PRIORITY PWRDN GRP B (ORB PKT, PRIOR PWRDN)
Step 6 (Single G2) B, Step 12 (IMU 2)
O6 S TRK PWR -Z - OFF

When MNVR complete and rates damped:
PRIORITY PWRDN GRP B (ORB PKT, PRIOR PWRDN)
Step 6 (Single G2) B, Step 12 (IMU 2)
O6 S TRK PWR -Z - OFF

33

01:00

When ISS is GO for deadband collapse, DAP: B13
When ISS is GO for attitude cntrl,DAP:FREE
DAP: A12/FREE/VERN, Reload DAP: B12
JOINT OPS: 6.109 HARDLINE ICOM AUDIO Steps 1,5,6
TRIDAR DEACTIVATION (Cue Card)

P/TV04 INGRESS/EGRESS
(P/TV, SCENES) OPS
Ingress, Item 1

NO UNISOLATED
EXERCISE IN
DAP: B13

17:00

BIAS -XLV -ZVV

WLES DOCK/UNDOCK RECOVERY (ORB OPS, WLE SENSORS)

WELCOME

WELCOME

02:00

SAFETY BRIEFING

B In Step 3 of G2 SET CONTRACTION
√MCC or pause ~4 min (DAP Settling)
DAP: as req'd

SAFETY BRIEFING

34

18:00

OBSS HANDOFF FROM SSRMS TO SRMS
(PDRS, OBSS NOMINAL)

OBSS HANDOFF FROM SSRMS TO SRMS
(PDRS, OBSS NOMINAL)

03:00

35

19:00

04:00

STS-135/ULF7 FD03

GMT Date 07/10 (191) | E | TDRSZ | W | D/N | ORB | MET Day 002 | STS ATI

MS1 Magnus

POST DOCKING HATCH LEAK CHECK
(RDNZ, APDS)

AIRLOCK PREP FOR INGRESS - AIRLOCK FAN ACTIVE
(RNDZ, APDS)

JOINT OPS: 2.104 HATCH OPENING & STS/ISS DUCT INSTL
Verify ISS complete through step 2.4
Perform steps 3-9

WELCOME

SAFETY BRIEFING

JOINT OPS: 2.104 HATCH OPENING & STS/ISS DUCT INSTL
Perform steps 10-15; MCC-H will perform
Steps 10.1, 12-13, and 16-18

P/TV05 ISS INTERNAL OPS (HC)
(P/TV, SCENES) SETUP

P/TV06 ROBOTICS
(P/TV, SCENES) SETUP

EXERCISE

MS2 Walheim

POST DOCKING HATCH LEAK CHECK
(RDNZ, APDS)

AIRLOCK PREP FOR INGRESS - AIRLOCK FAN ACTIVE
(RNDZ, APDS)

JOINT OPS: 2.104 HATCH OPENING & STS/ISS DUCT INSTL
Verify ISS complete through step 2.4
Perform steps 3-9

WELCOME

SAFETY BRIEFING

JOINT OPS: 2.104 HATCH OPENING & STS/ISS DUCT INSTL
Perform steps 10-15; MCC-H will perform
Steps 10.1, 12-13, and 16-18

SHUTTLE/ISS H2O CONTAINER FILL (HC) (ORB OPS, ECLS)
Perform CWC FILL #1, Ref. MSG 014
Ref. Middeck Transfer List Items 443.1 & 443.2

EXERCISE

SHUTTLE/ISS H2O CONTAINER FILL (HC)
(ORB OPS, ECLS)
Perform FILL TERMINATION

NOTES

NO UNISOLATED EXERCISE IN DAP: B13

16:00 17:00 18:00 19:00

00:00 01:00 02:00 03:00 04:00

33 34 35

BIAS - XLV - ZVV

STS-135/ULF7 FD03

GMT Date 07/10 (191) | W | TDRSE | Z | D/N | ORB | MET Day 002 | STS ATI | CDR Ferguson | PLT Hurley | NOTES

04:00 — OBSS HANDOFF FROM SSRMS TO SRMS (PDRS, OBSS NOMINAL) — OBSS HANDOFF FROM SSRMS TO SRMS (PDRS, OBSS NOMINAL)

20:00 — NO EXERCISE WHILE DOUBLE GRAPPLED

05:00

PRE-SLEEP ACTIVITY (ORB OPS, CREW SYSTEMS) — PRE-SLEEP ACTIVITY (ORB OPS, CREW SYSTEMS)

21:00

BIAS-XLV-ZVV

06:00 — L9 CHECK ISS AIRLOCK ATU CONFIG PAYLOAD STATION A/G (two) - OFF PRIVATE MEDICAL CONFERENCE VIA A/G 2

PRE-SLEEP ACTIVITY (ORB OPS, CREW SYSTEMS)

22:00

07:00 — NODE 2 NADIR CBM SURVEY (Camera C)

CREW WAKEUP @ 02/15:30

23:00

SLEEP — SLEEP

08:00

35 36 37 38

STS-135/ULF7 FD03

GMT Date 07/10 (191) | E | TDRSZ | W | D/N | ORB | MET Day 002 | STS ATI

MS1 Magnus

MS2 Walheim

NOTES

04:00

EXERCISE

SHUTTLE/ISS H2O CONTAINER FILL (HC) see pg 3-27

CWC TRANSFER
Transfer 1 CWC to ISS

POST DOCKING EVA TRANSFER & RECONFIG
(EVA, AIRLOCK CONFIG)
Ref. MSG 010
Ref. Middeck Transfer List Items 22-27

CGBA UNIT #1,2 STATUS CHECK (CC), STL STATUS CHECK (CC)
AEM UNIT #1,2,3 CHECK (Cue Card)

20:00

NO EXERCISE WHILE DOUBLE GRAPPLED

TRANSFER BRIEF PREP

05:00

ORBITER SSC SETUP
Ref. Middeck Transfer List Item 1

TRANSFER BRIEF
Call down status to MCC

CUBE LAB MODULE-7 DEACTIVATION (ASSY OPS, PAYLOADS)
LMA Pack 2, Tray 3; ONLY deactivate Syringes
with "FD3" labeled arrows on back of trays.

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYSTEMS)

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYSTEMS)

21:00

BIAS - XLV - ZVV

06:00

22:00

07:00

CREW WAKEUP @ 02/15:30

23:00

SLEEP

SLEEP

08:00

35 36 37 38

Good morning Atlantis.

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We're all very proud of the fine job you're doing. As you know, the prime job on FD3, besides safely docking with ISS, is transfer. First, an item of news from the punctuation world along those lines. Item 13409.1, transfer of all available exclamation points, has been deleted. It seems the flight's allocation has been used already. In other news, the city of Philadelphia is arranging for Lincoln Financial Field to cut their turf in the shape of the STS-135 mission patch in Fergy's honor. The mayor was quoted as saying "As long as the NFL lockout is still ongoing and the Eagles aren't playing, we might as well use the stadium for something".

-ACO and FAO

YOUR CURRENT ORBIT IS: 173 X 122 NM

NOTAMS -

EDW - EDW 22L/04R IN USE. EDT 22R/04L EMERGENCY DAY USE ONLY.
EDW - LAKEBED RWYS RED.
NOR - LAKEBED RWYS GREEN.
MRN - APPROACH LTS. OTS.
FMI - TACAN NIM53 DECOMMISSIONED.
ESN - TACAN BAG78 OUT OF SERVICE.
GUA - TACAN UNZ105 OUT OF SERVICE.
NTU - RWY 05L/23R AND **14R/32L** CLSD.
FFA - NOT USABLE. IN CARETAKER STATUS.
YQX - TACAN YQX74 DME ONLY.
YYR - TACAN UYR40 DME ONLY.
YYT - TACAN UYT23 DME ONLY.
YJT - TACAN YJT78 DME ONLY.
BEN - NOT USABLE. NOT SUPPORTED.
IKF - NOT USABLE. NO AGREEMENT.

<u>NEXT 2 PLS OPPORTUNITIES:</u>

EDW22 ORB 33 – 2/00:48 SKC 7 220/08P13
EDW22 ORB 48 – 2/23:51 SKC 7 220/06P12

<u>OMS TANK FAIL CAPABILITY:</u>

PRE NH: YES

POST NH: YES (SHALLOW TARGETS)

POST NC-4: NO

<u>LEAKING OMS PRPLT BURN:</u>

PRE NH: ALWAYS BURN OUT-OF-PLANE

POST NH: BURN OUT-OF-PLANE AN+87 < TIG < AN+25. OTHERWISE, BURN RETROGRADE.

POST NC-4: ALWAYS BURN RETROGRADE

<u>OMS QUANTITIES(%) (Post Ti) :</u>

L OMS OX = 37.94 R OMS OX = 37.73
FU = 38.01 FU = 37.32

DELTA V AVAILABLE (Post Ti):

OMS	359 FPS
ARCS (TOTAL ABOVE QTY1)	27 FPS
TOTAL IN THE AFT	386 FPS
ARCS (TOTAL ABOVE QTY2)	56 FPS
FRCS (ABOVE QTY 1)	39 FPS
AFT QTY 1	86 %
AFT QTY 2	48 %

There are no Failure Impact Workarounds

Good morning, Sandy!

Welcome to your first day of transfer ops! We're looking forward to working with you and the rest of the crew over the next several days. Today you will be transferring EVA hardware, SODF, fresh food, seat bag items, and a couple 5 MLE bags to ISS. You will also be transferring CWCs and Silver Biocide Kits to the middeck in support of today's water transfer ops.

The Transfer List Excel file, FD03_Transfer_List_STS135.xls, locations are:

- Shuttle: **C:\OCA-up\transfer** (KFX machine)
- Station: **K:\OCA-up\transfer**

Transfer Notes

- **Fresh Food for ISS Crew:** Remember to transfer fresh food to the ISS crew today…I'm sure they will be anxiously awaiting it!

- **Pre-pack Ops Status:** The ISS crew did an outstanding job with pre-pack, but there are multiple items they weren't able to complete. Many of these items are already configured for return; however, most of the 600's return items do not have a green label (with return number) attached to them, and they are not necessarily co-located. Therefore we have included extra info and time when necessary for these items.

- **Transfer List Change Pages:** Despite our best efforts to fly a return plan that wouldn't require you to change out many pages, there actually have been several changes which have driven us to uplink replacement pages for the entire Middeck and MPLM return lists. In addition, we have also uplinked the M-bag return drawings and your ISP/endcone return "foamology". Here's to the extra ream of paper we flew!

- **LiOH:** The ISS crew has not been able to locate the 6 *used* LiOH cans (Middeck Return Item 715) that are planned for return, but they are still looking. Although this doesn't affect your shuttle LiOH ops, we are still trying to determine what protection, if any, will be required for the cans you leave on ISS without socks. Expect additional words prior to the FD06 LiOH Swap.

FD03 Choreography

- **Item 10:** Transfer 3D Camcorder at hatch open
- **Items 443.1 and 443.2:** Transfer pre-gathered Silver Biocide Syringe Kits and CWCs to middeck prior to first CWC fill
- **Items 38 and 900:** Transfer SODF
- **Items 47 thru 54:** Transfer seat bag hardware
- Transfer the following EVA items to ISS:
  - **Item 22:** ECOK (Fs/Ga)
  - **Items 23 and 24:** EVA Systems Transfer Bags 1 & 2
  - **Item 25:** PMA3 Cover
  - **Items 26 and 27:** EMUs 3006 & 3015 to COL1O2/O3
- **Items 9 and 21:** Transfer Bags C and I (Ext A/L Floor Bag) to JPM1F2
- **Item 1:**Transfer SSC13 to shuttle for SSC SETUP activity

Please incorporate uplink pages as follows (we've listed the updates in the order they printed out for you):

MIDDECK TRANSFER LIST BOOK

In the Middeck Transfer List **RESUPPLY** tab
Replace the following pages:
Resupply 5
Resupply 8

Add the following page:
Resupply 9

Pen & Ink on the following pages:
Resupply 2 – Item 11: add "rack front" to Stowage at Undock location
Resupply 6 – Item 35: update Stowage at Undock location
WAS: LAB1D4_A2
IS: LAB1D4_B2

In the Middeck Transfer List **RETURN** tab
Replace all pages with:
Return 1 thru 10

MPLM RESUPPLY TRANSFER LIST BOOK

In the MPLM Resupply Transfer List **A4 RSP** tab
Pen & Ink on the following page:
Resupply 20 – Item 135: update Stowage at Undock location
WAS: PMM1A2 rack front
IS: PMM1P2 rack front

In the MPLM Resupply Transfer List **P1 RSR** tab
Pen & Ink on the following page:
Resupply 30 – Item 210: update Stowage at Undock location
WAS: PMM1P1_D
IS: PMM1P2_Aft

In the MPLM Resupply Transfer List **P2 ISP** tab
Pen & Ink on the following page:
Resupply 31 – Items 218 & 219: update Stowage at Undock location
WAS: PMM1A2 rack front
IS: PMM1P2 rack front

In the MPLM Resupply Transfer List **P4 RSR** tab
Pen & Ink on the following page:
Resupply 33 – Item 235: update Stowage at Undock location
WAS: PMM1P1_D
IS: PMM1P2_Aft

In the MPLM Resupply Transfer List **S3 RSR** tab
Pen & Ink on the following page:
Resupply 43 – Item 305: update Stowage at Undock location
WAS: PMM1P4 rack front
IS: JPM1O2_B1

In the MPLM Resupply Transfer List **S3 RSR** tab
Replace the following page:
Resupply 44

In the MPLM Resupply Transfer List **S4 RSR** tab
Pen & Ink on the following page:
Resupply 47 – Item 343: update Stowage at Undock location
WAS: Crew Pref
IS: PMM1A4_Aft

MPLM RETURN TRANSFER LIST BOOK

In the MPLM Return Transfer List **LAYOUTS** tab
Replace the following pages:
L-2 thru L-10

Add the following pages:
L-11 thru L-50

In the MPLM Return Transfer List **RETURN** tab
Replace all pages with:
Return 16 thru 30

In the MPLM Return Transfer List **MPLM FOAM** tab
Replace all pages with:
Return 31 thru 35

FD04 Choreography

- Transfer unconstrained middeck resupply and return items.
- **Middeck Resupply Items 32 and 33:** Transfer Micro 4 samples to ISS.
- MPLM Setup:
  - **Middeck Resupply Item 30:** MPLM Pivot Pin Bracket (qty 1)
  - **MPLM Resupply Item 100:** PBA to MPLM
  - **MPLM Resupply Item 101:** PFE to MPLM
  - **MPLM Resupply Item 102:** MPLM Pivot Pin Brackets (qty 7)
  - **MPLM Resupply Item 294:** Sandy's MPLM Tool Kit
  - Retrieve pre-gathered empty 2.0 CTBs from PMM1S2.
  - Retrieve pre-gathered tools from NOD2D2.
- **MPLM Return Item 416.1:** Pack PCDF EU for return.
- **Middeck Return Item 440.1:** Pack GSC for return following MPLM Ingress ops.
- **Middeck Return Item 726:** Pack WPA Waste Water Sample for return.
- **Middeck Return Item 727:** Pack Condensate Samples for return.

Have a great day and let us know if you have any questions! - STS-135 Transfer Team

Rex & Mike,

'Post Docking EVA Transfer and Reconfig' procedure, step 5 (FS 2-9) has you "Check MCC-H for stowage location of old masks". These old quick don mask assemblies (QDMAs) (2) are being swapped out for the new Prebreathe Masks (2). Below is the stowage information for the old QDMA masks, no need to verify with MCC-H unless you have questions.

1. Retrieve a spare JSB from PMA1 inside Soft Container B/C 00038558R
2. Put the 2 QDMAs from the PHA kits (s/n 1035, 1038) in the JSB
3. Stow JSB in NOD1S4_A2 ZSR locker

The following points summarize the joint emergency response agreements between STS-135/ULF7 Commander Ferguson and Expedition 28 Commander Borisenko.

General

- JEE cue cards will be posted in A/L, inside PMA2.
- An initial call will be made on Page to ensure all crew are aware of the situation; subsequent calls will be made on the Big Loop for ground awareness as well.

Shuttle Crew Specific Responsibilities

- Ferguson - comm, flight deck, SRMS safing.
- Walheim, Hurley – Responsible for retrieval of EMUs, which will be stowed on the rack fronts of COL1O2 and COL1O3. This will NOT be performed in an Ammonia case.
- Magnus, Walheim – Responsible for hatch portion of the JEE.
    - Rex and Sandy will use the 22’ and 28’ hoses coiled in the ditch if masks are required during JEE execution. (Rex retrieves his mask while Sandy closes the Node 2 Forward hatch, then Sandy retrieves her mask.) As a backup, it is ok to use the EHTK in the Node 2 Port EMER locker.
- Hurley - Assist with O2/N2 and duct disconnect if not needed on the flight deck.
- Walheim - head count.

SSRMS Operations

- If the SSRMS is grappled to OBSS or MPLM while in MPMs (PRLAs), Shuttle crew will execute JEE, and Houston will take over SSRMS operations.
- If SSRMS is supporting EVA operations, Shuttle crew will execute JEE, and Satoshi will take over SSRMS safing actions.
- For other situations, we’ll assess in real time to determine whether crew or ground should complete robotics operations.

Depress

- If Shuttle crew sense a pressure change, they will coordinate with an ISS crewmember to annunciate a depress alarm.
- Joint Emergency Ingress cuecard will be posted on the Shuttle side of the ODS hatch.

Fire

- For ISS Fire:
    - Shuttle crew will egress per the JEE unless they determine that doing so would expose them to an unacceptable level of risk (e.g. in a severe oxygen-fed fire).
        - On their way forward, Shuttle crew may close the hatch to any smoke-filled radial module (COL, JLP, JPM, A/L, Node3, CUP) after making sure the module is unoccupied.
        - Shuttle crew may delay other JEE steps after closing the Node 2 Forward hatch while the situation on ISS is assesed. This will be a real-time call.
        - During an EVA, Shuttle crew may delay egress in order to assist with A/L ingress if it is safe to do so.
    - Shuttle crew can push the Fire button for any fire with visible smoke or flame. For burning odor only, Shuttle crew will talk to ISS crew before pushing the Fire button.

    - If Shuttle crew see a rack fire LED illuminated, they will alert ISS crew or Houston.
    - Shuttle crew may use ISS fire extinguishers to fight an open cabin fire if it blocks their egress path; in all other cases, ISS crew will fight ISS fires.
- For Shuttle Fire:
    - ISS Crew will call “Fire on Shuttle” via Page or Big Loop, then the ISS FIRE alarm will be manually initiated. The goal is to stop ventilation before (or as soon as possible after) using the Shuttle fire extinguisher, so that no Halon reaches ISS.
    - Forward IMV may be closed, and booster fan stopped, if needed to stop ventilation.

Toxic Atmosphere

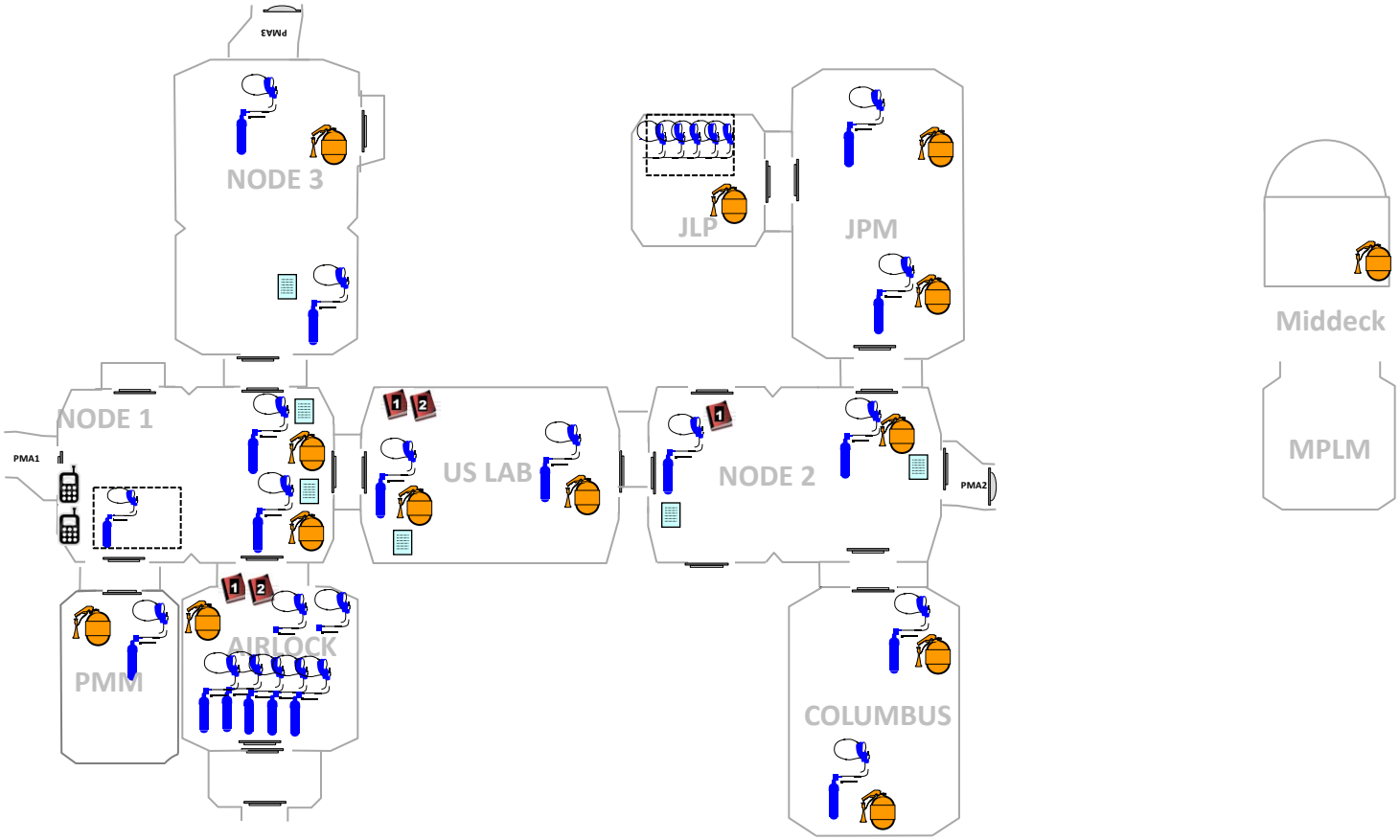
- For Ammonia Leaks:
    - Each CDR will make sure all crewmembers have reached the correct vehicles before closing their respective hatches. Chris and Andrey will look for either a “bail out” signal from each other, or a closed hatch on the other side, before closing their respective hatches.
    - As mentioned above, Shuttle crew will NOT retrieve EMUs in this case.
- For other odors or spills:
    - Shuttle crew will notify ISS crew. Shuttle crew will not push the TOX ATM button.
    - Crew may decide to close the Node 2 Forward Hatch while the spill is assessed.
    - ISS crew will perform any required response or clean-up steps.

Portable Emergency Equipment Locations

ULF7 Docking

***NOTE: These charts do not portray EVA Prebreathe Mask movement**

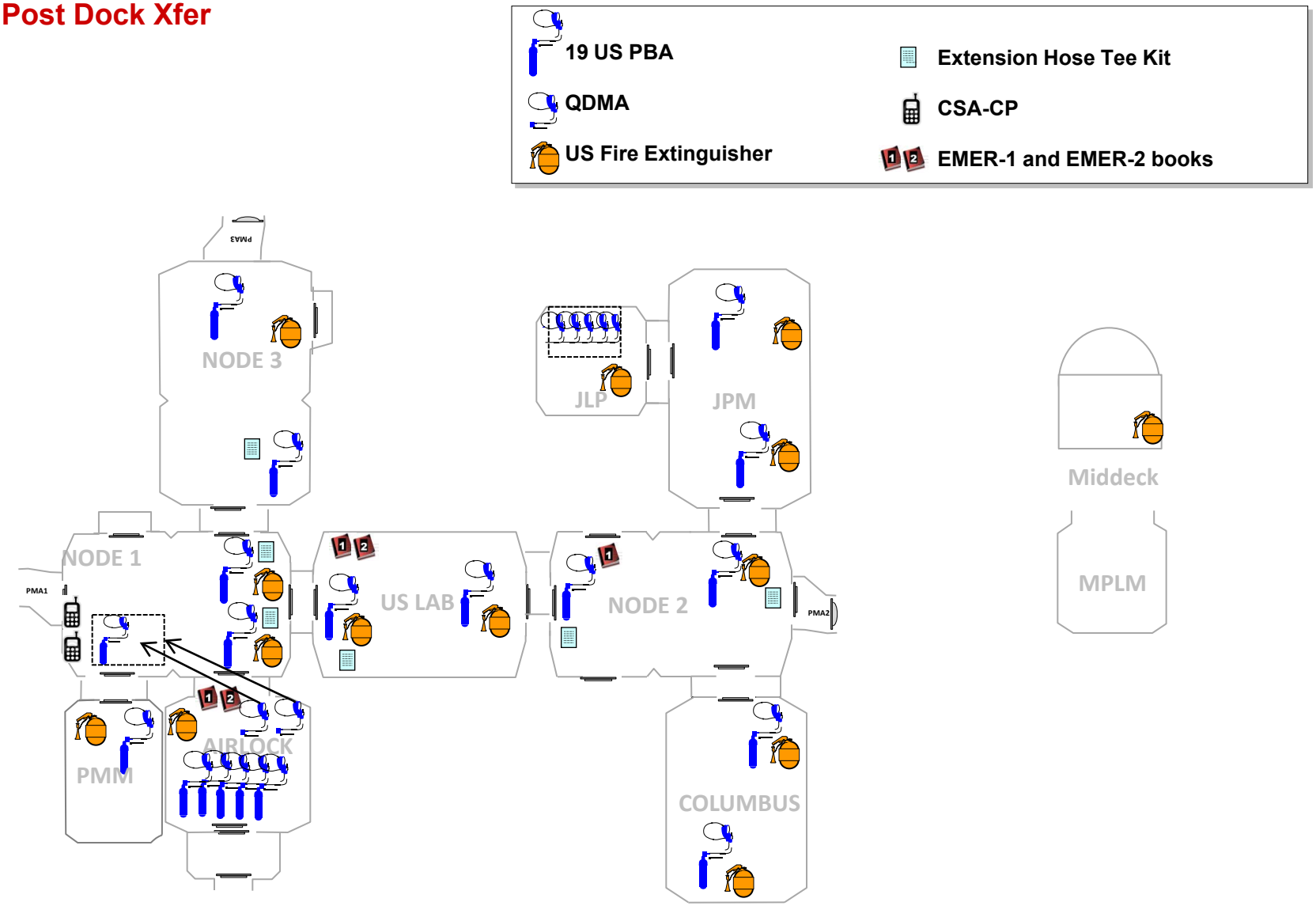
- 19 US PBA
- QDMA
- US Fire Extinguisher
- Extension Hose Tee Kit
- CSA-CP
- EMER-1 and EMER-2 books



Disclaimer: This is not an official document. These locations represent expectations for equipment locations. Since the items shown are portable, their locations may change.

Portable Emergency Equipment Locations

FD3 EVA Post Dock Xfer



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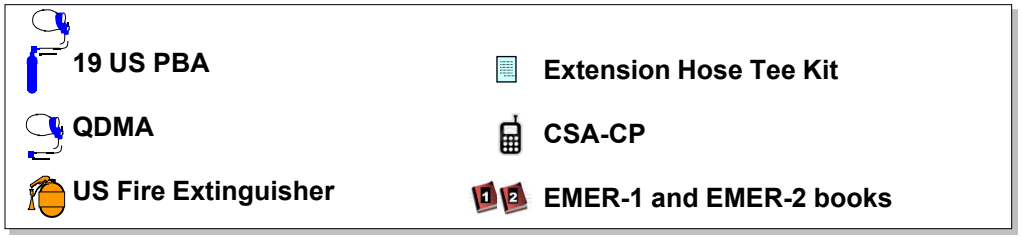
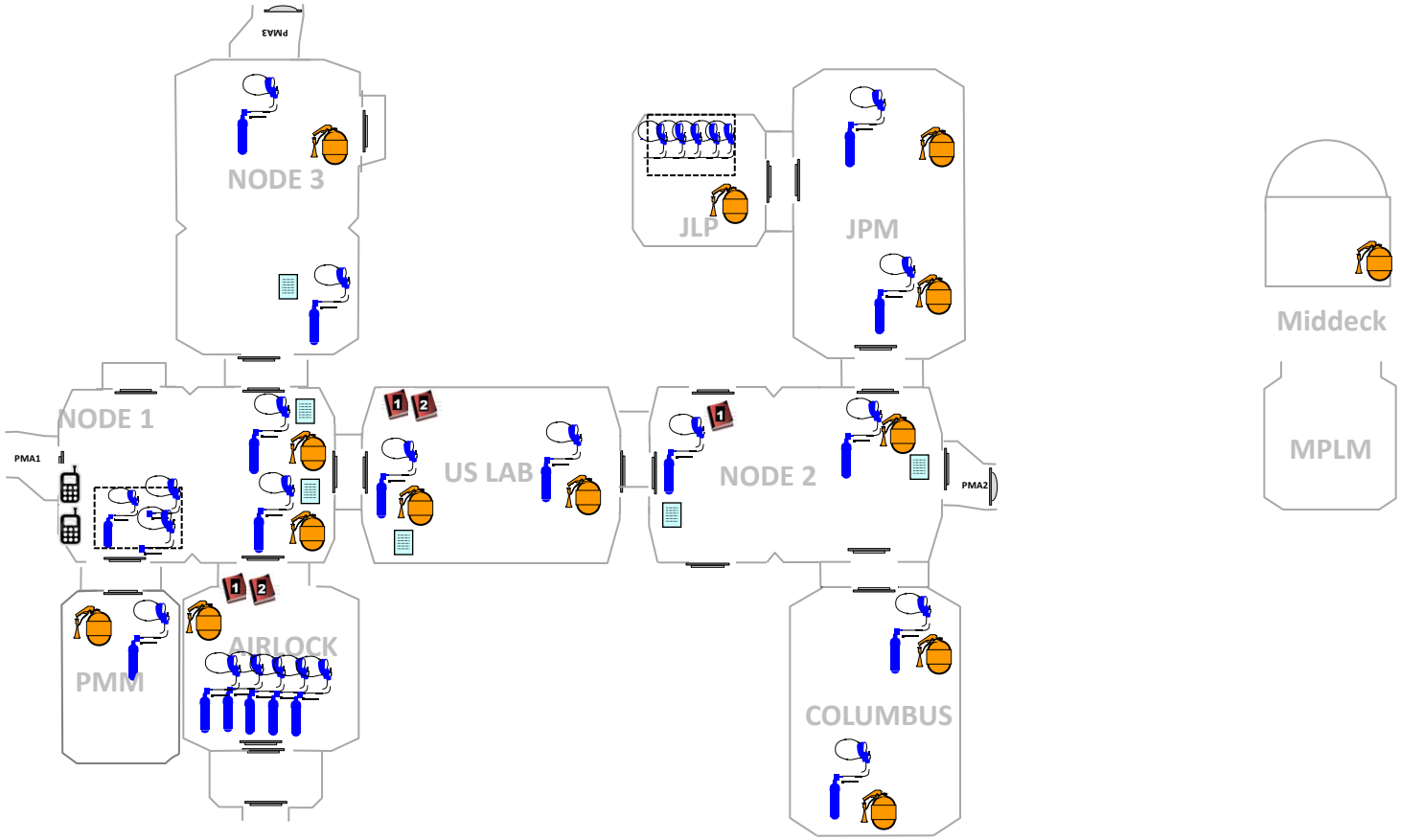
Portable Emergency Equipment Locations

Evening of FD3





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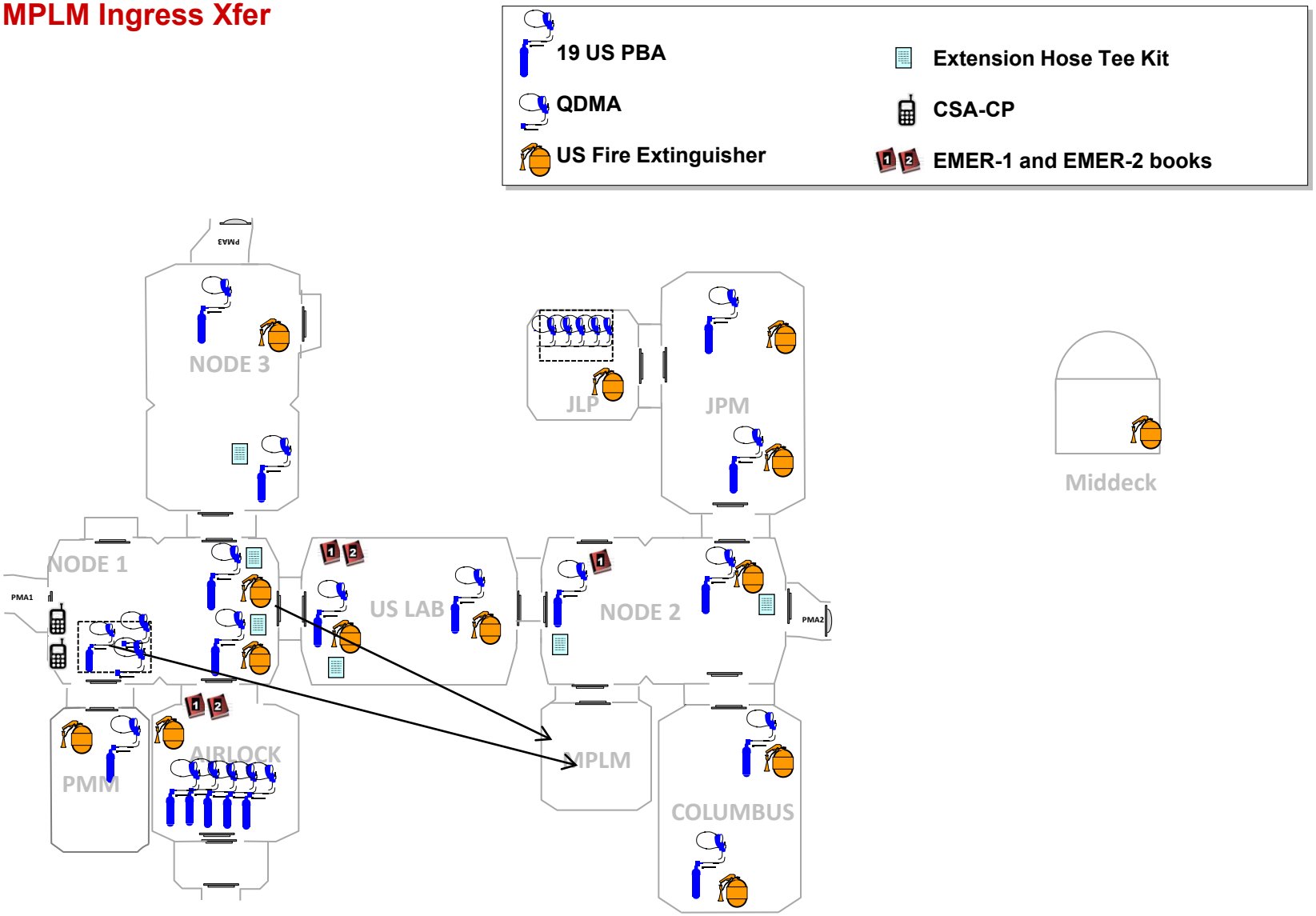
Portable Emergency Equipment Locations

ULF7 FD4 MPLM Ingress Xfer



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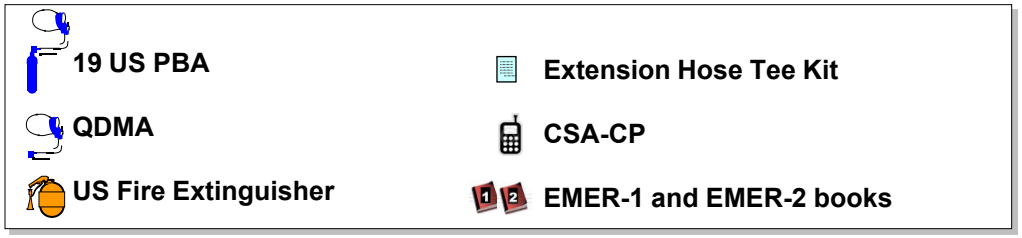
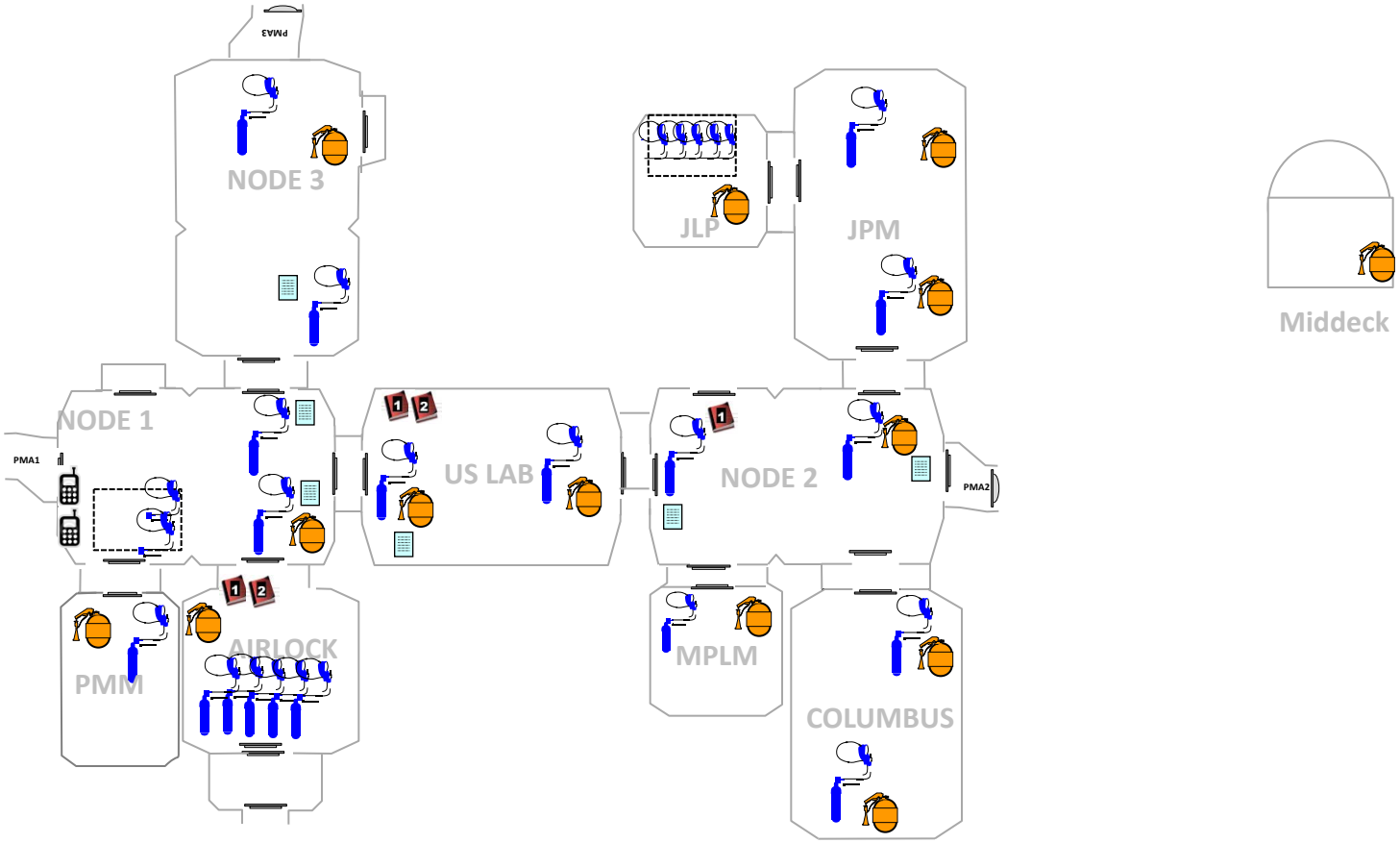
Portable Emergency Equipment Locations

ULF7 FD4 MPLM Ingress





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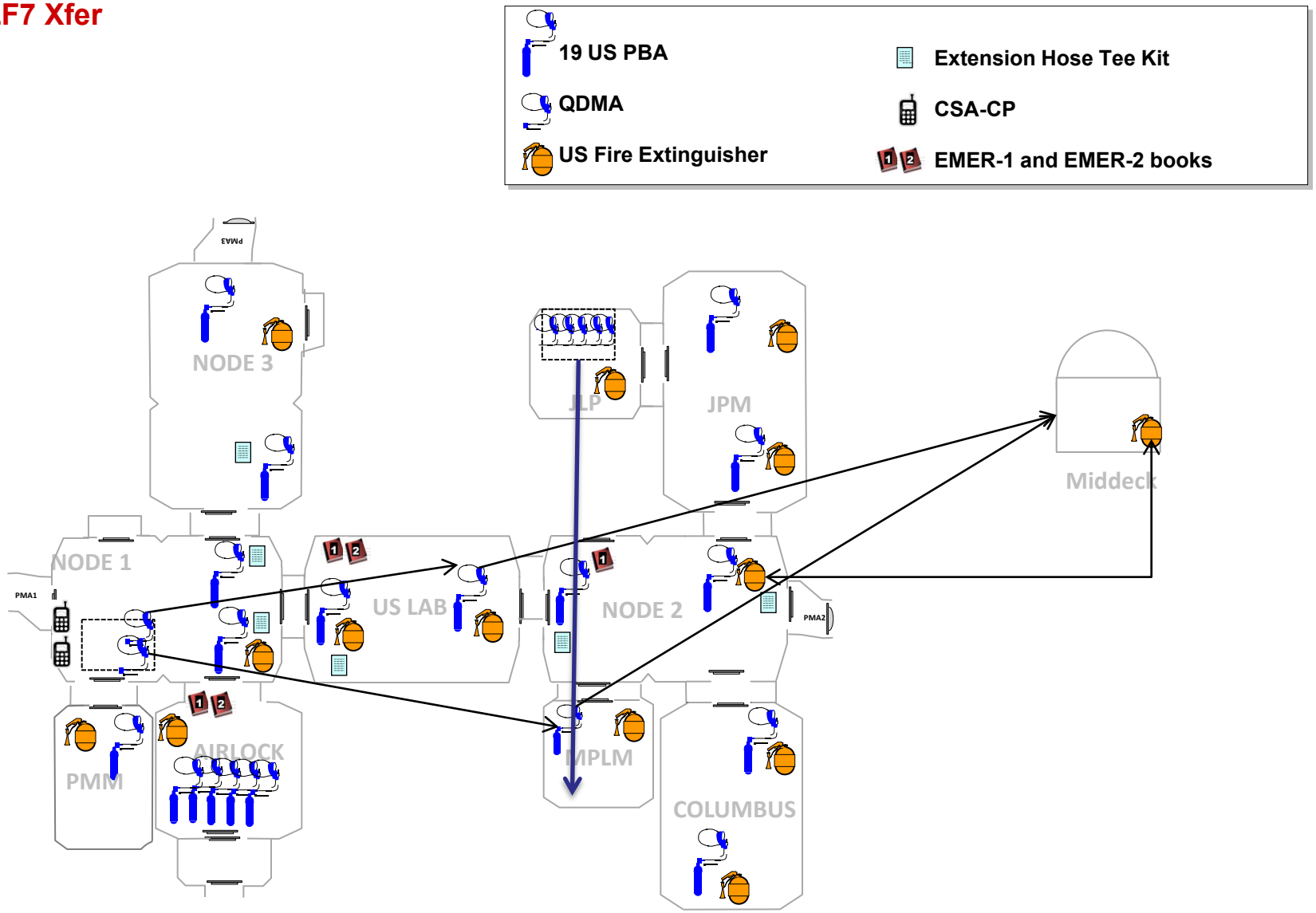
Portable Emergency Equipment Locations

Part of ULF7 Xfer



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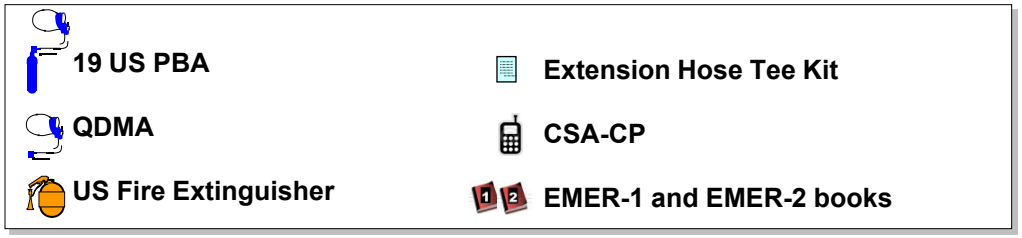
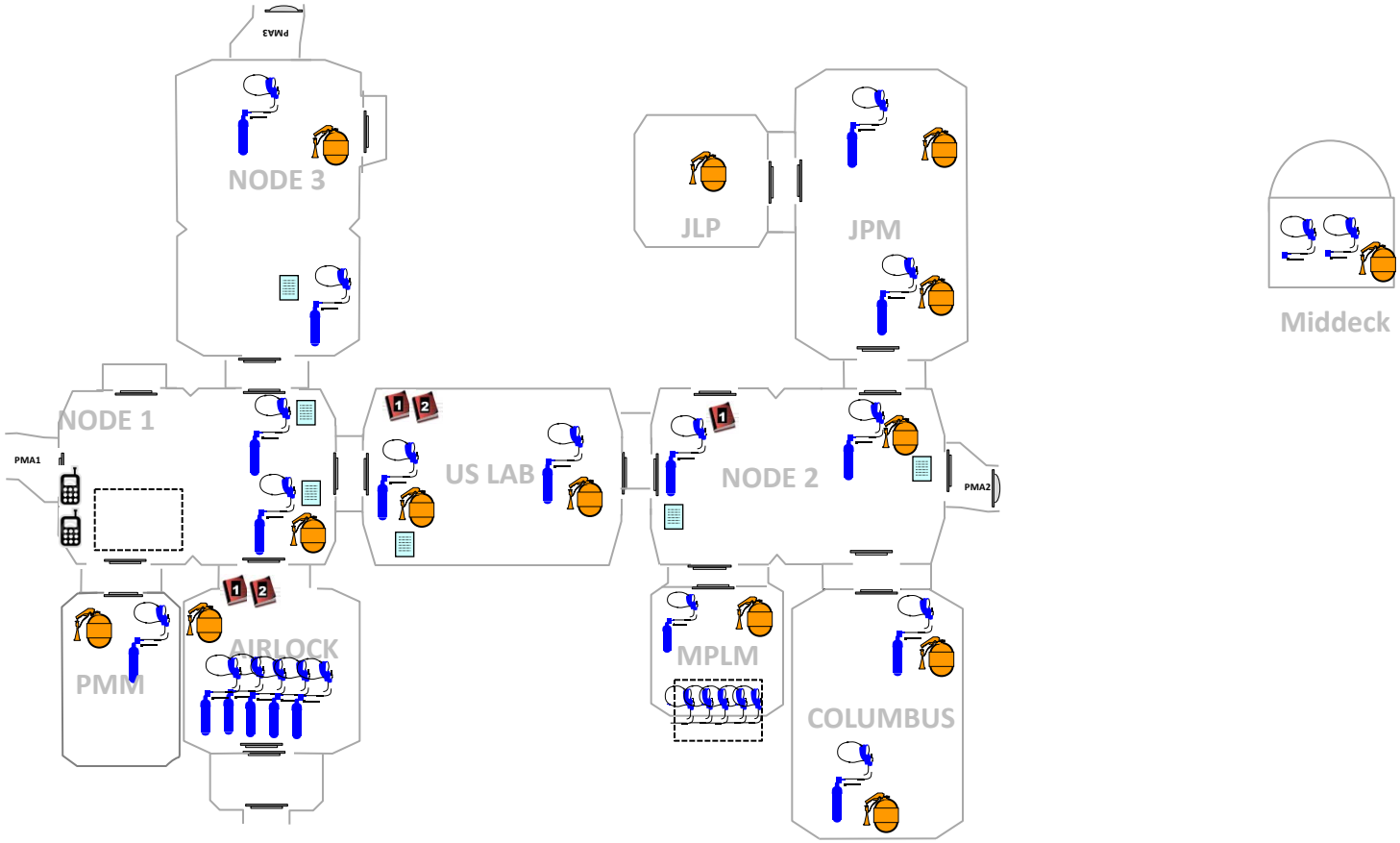
Portable Emergency Equipment Locations

Post ULF7 Xfer





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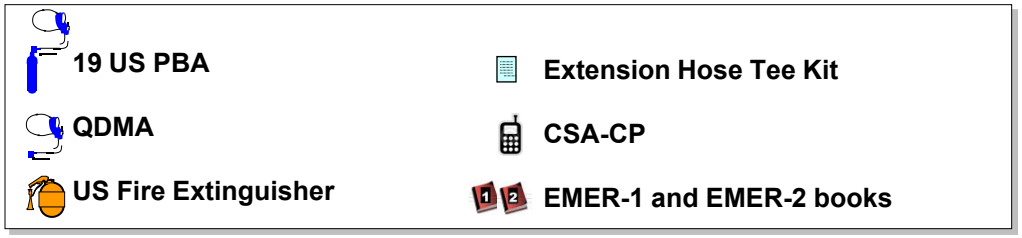
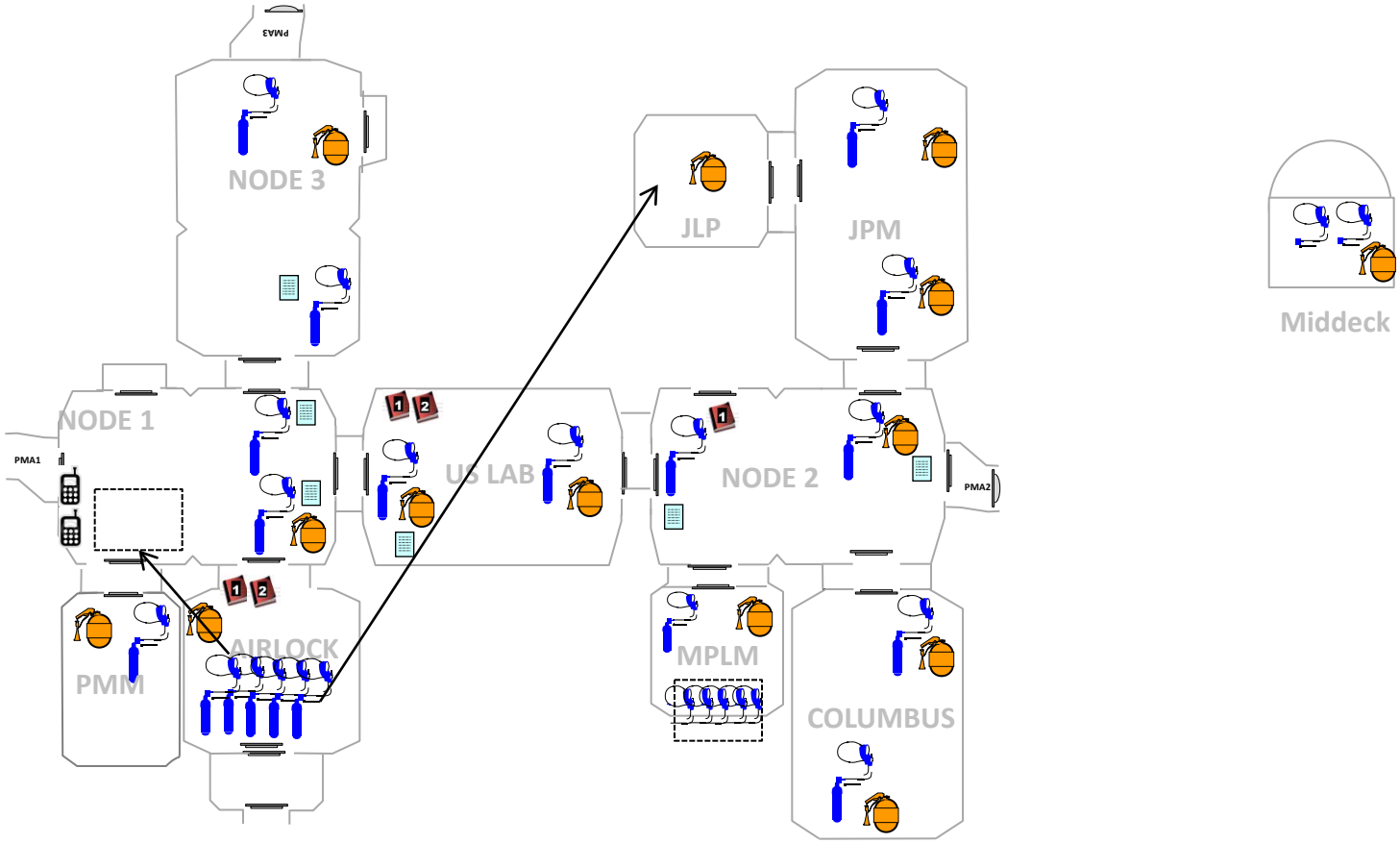
Portable Emergency Equipment Locations

ULF7 ORCA R&R Xfer





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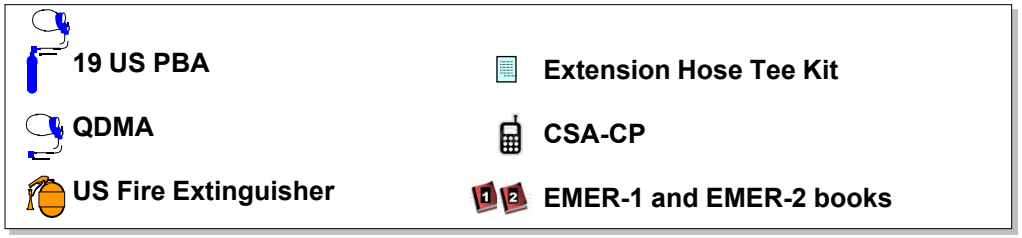
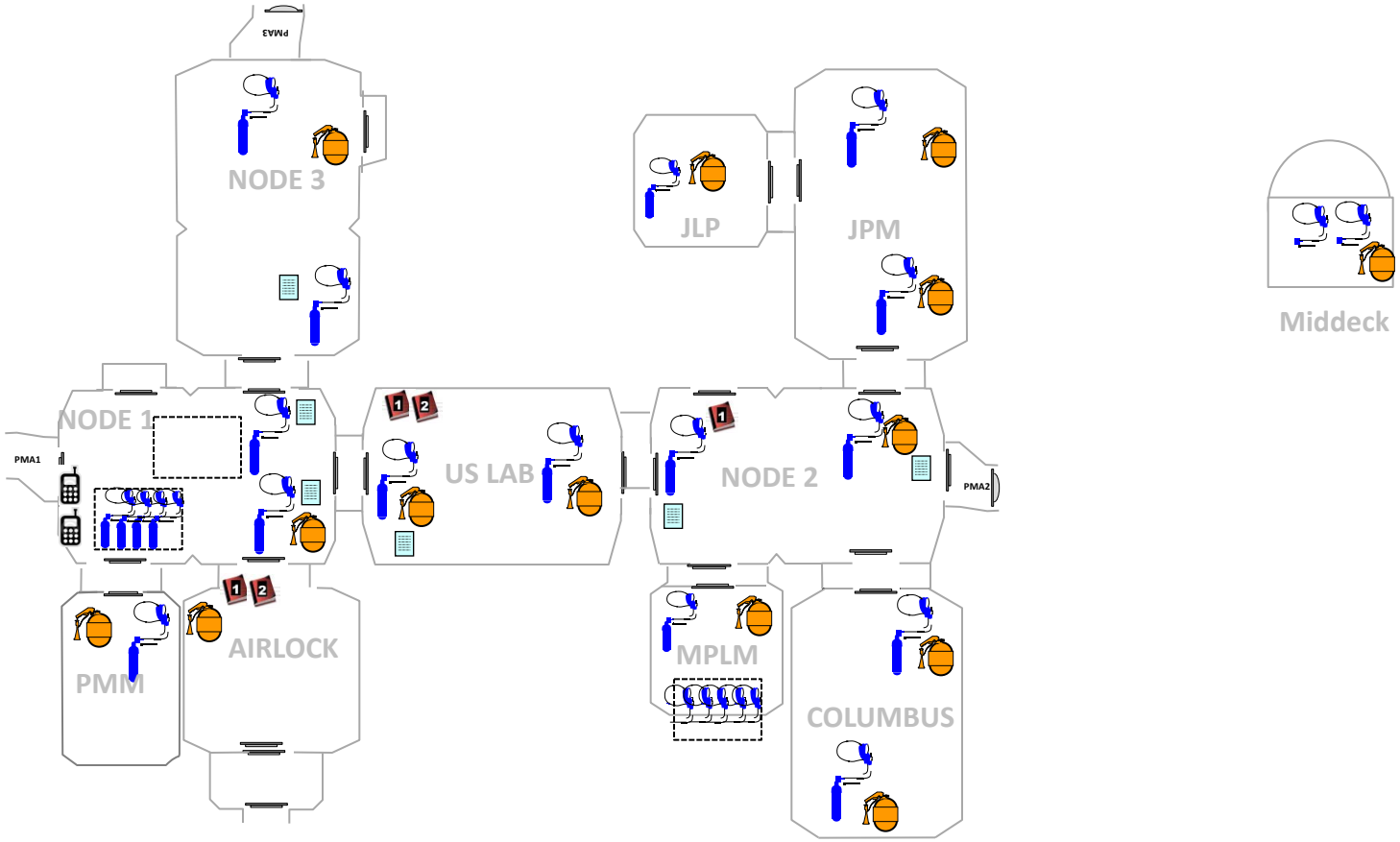
Portable Emergency Equipment Locations

ULF7 Post ORCA R&R





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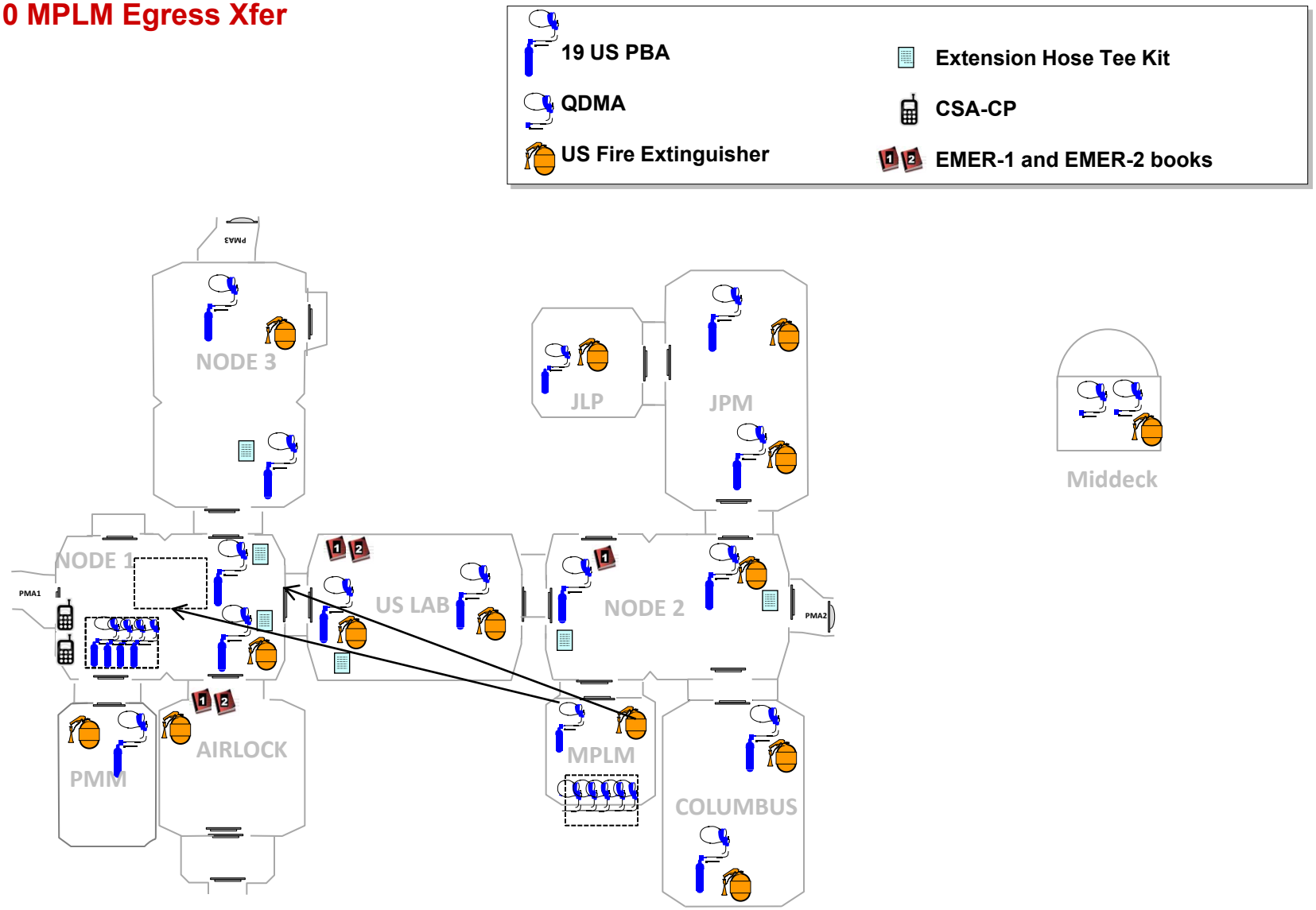
Portable Emergency Equipment Locations

ULF7 FD10 MPLM Egress Xfer



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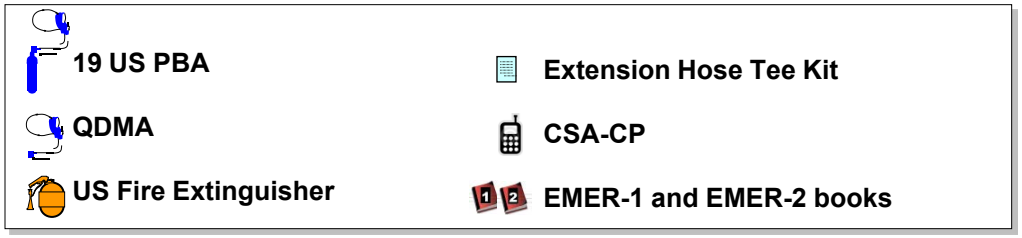
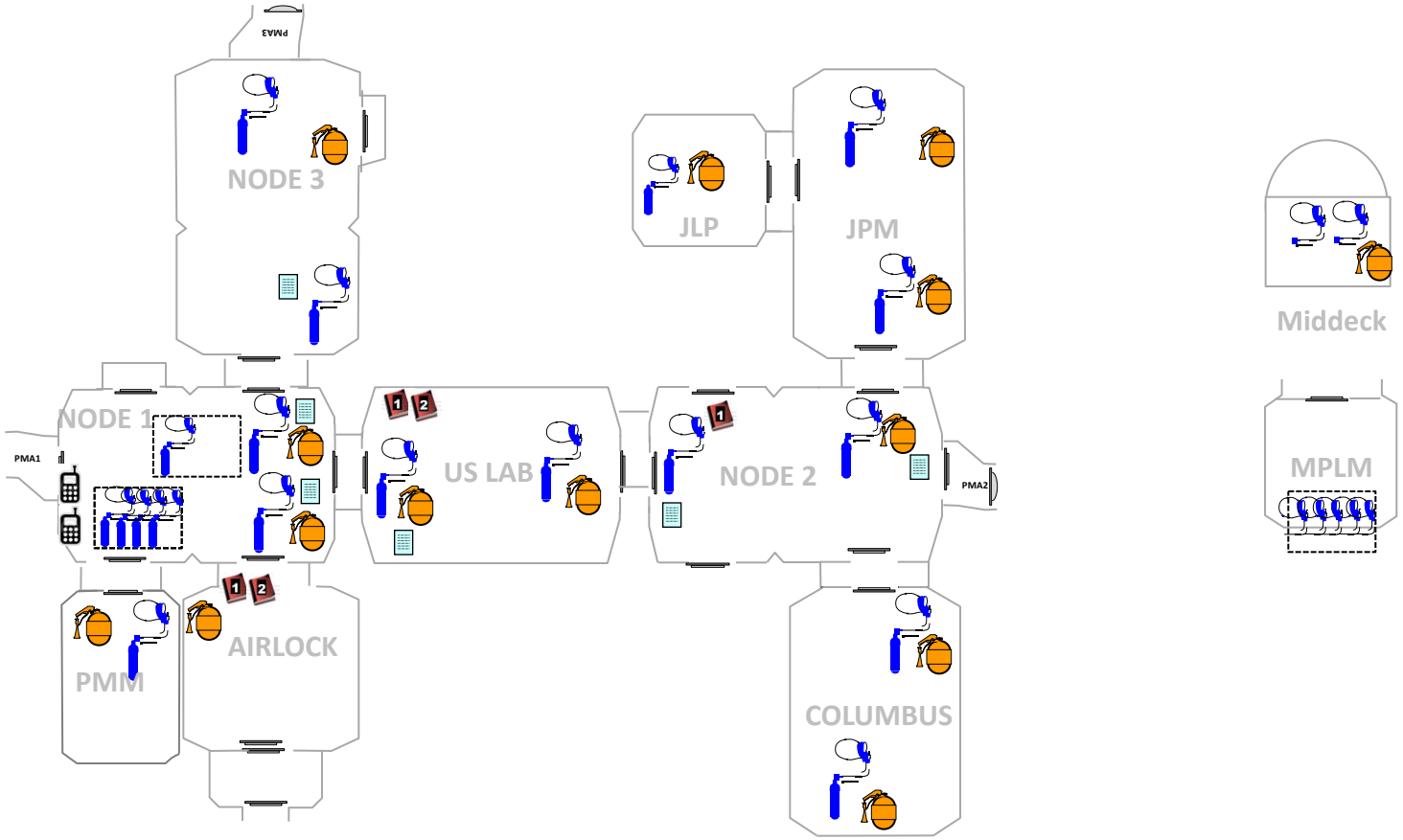
Portable Emergency Equipment Locations

ULF7 FD10 Post MPLM Egress





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STS-135/ULF7 FD02 - MMT Summary

Congratulations on a beautiful launch. Atlantis provided a spectacular show for the biggest crowd ever.

The MMT met briefly today to review orbiter systems and mission progress.

Atlantis performed flawlessly during launch and continues to do so. A testament to all the hard work and dedication by the teams that have readied her for flight.

Tremendous job completing all the timeline activities scheduled in the very packed FD1 and FD2 timelines. The planning teams send their thanks.

The ISS crew and teams are ready and looking forward to your arrival.

CWC AND PWR FILLS

INIT ← Fill Duration ~52 minutes → TERM

	CWC Fill No.	CWC Launch Location	Record S/N Used	Disinfect QDs	Mineral Syringe Kit Ref: Kit Table	Silver Biocide Kit Ref: Kit Table	TERM at MET:	Cap Water Transfer Hose	Sample/Purge Kit Ref: Kit Table	Verify Label In Window	Report CWC S/N to MCC		Transfer To:
☐	1	NOD2O2 (Note D)		☐		☐ S/N 1009		☐		☐ Green	☐	☐	JPM1F6 Rack Front
☐	2	☐ 1093 ☐ 1092		☐		☐ S/N 1009		☐		☐ Green	☐	☐	
☐	3	NOD2O2 (Note D)		☐		☐ S/N 1009		☐	☐ S/N 1001 (Note C)	☐ Green	☐	☐	
☐	4	☐ 1088 ☐ 1084		☐		☐ S/N 1009		☐	☐ S/N 1001 (Note C)	☐ Green	☐	☐	
☐	5	NOD2O2 ☐ 1087 (Note E)		☐		☐ S/N 1009		☐	☐ S/N 1001 (Note C)	☐ Green	☐	☐	
☐	6	NOD2O2 (Note D)		☐		☐ S/N 1009		☐		☐ Green	☐	☐	
☐	7			☐		☐ S/N 1009		☐		☐ Green	☐	☐	
☐	8	☐ 1086 ☐ 1083		☐		☐ S/N 1009		☐		☐ Green	☐	☐	
☐	9	☐ 1079 ☐ 1077		☐		☐ S/N 1009		☐		☐ Green	☐	☐	
☐	10	☐ 1073 ☐ 1065		☐		☐ S/N 1009		☐		☐ Green	☐	☐	
☐	11	☐ 1043 ☐ 1039		☐		☐ S/N 1005		☐		☐ Green	☐	☐	
☐	12			☐		☐ S/N 1005		☐		☐ Green	☐	☐	
☐	13			☐		☐ S/N 1005		☐		☐ Green	☐	☐	JPM1A5 Rack Front

CWC Fill Notes:

A. Rough handling may cause leakage.

B. Fill each CWC for 52 min or Term CWC Fill on MCC call.

C. Stow filled sample bags in MF14E.

D. Some CWCs may still contain residual water. Prior to filling, report if CWC has a significant amount of residuals.

E. As of FD3, this CWC is missing. If CWC not found, this fill will be skipped.

Kit Table

Kit	S/N	Stowage Location	Undock Location
Silver Biocide Kit	1009	NOD2O2 ULF7 Water Sample Ops 0.5 CTB S/N 1100	Seat Bag 6
	1005	NOD2O2 ULF7 Water Sample Ops 0.5 CTB S/N 1100	Seat Bag 6
Sample/Purge Kit	1001	MF28K	NOD2O2 0.5 CTB S/N 1465 inside M-02 Bag S/N 1026

PWR Fill

	PWR No.	PWR S/N	PWR Launch Location	Actions
☐	1	1029	MPL2S3_G2	Fill & transfer to PMM1S1 Rack Front
☐	2	1022	MPL2S3_G2	Fill & transfer to PMM1S1 Rack Front
☐	3	1021	MPL2S3_G2	Fill & transfer to PMM1S1 Rack Front
☐	4	1020	MPL2S3_G2	Fill & transfer to PMM1S1 Rack Front
☐	5	1015	A/L1D1_A2	Fill & transfer to A/L1D1_A2
☐	6	1019	MPL2S3_G2 (Note C)	May be used for a WPA sample. If not, fill & transfer to PMM1S1 Rack Front

PWR Fill Notes:

A. Do not detach PWR (EMU H2O Recharge Bag) QD restraint during PWR ops.

B. Prior to filling, inspect PWR inlet and outlet hose lines. Report any observable scratches/damage to MCC.

C. This PWR is on the transfer list as Resupply Item 310.1. Launch location is MPL2S3_G2, but it is currently marked for transfer to LAB1O4.

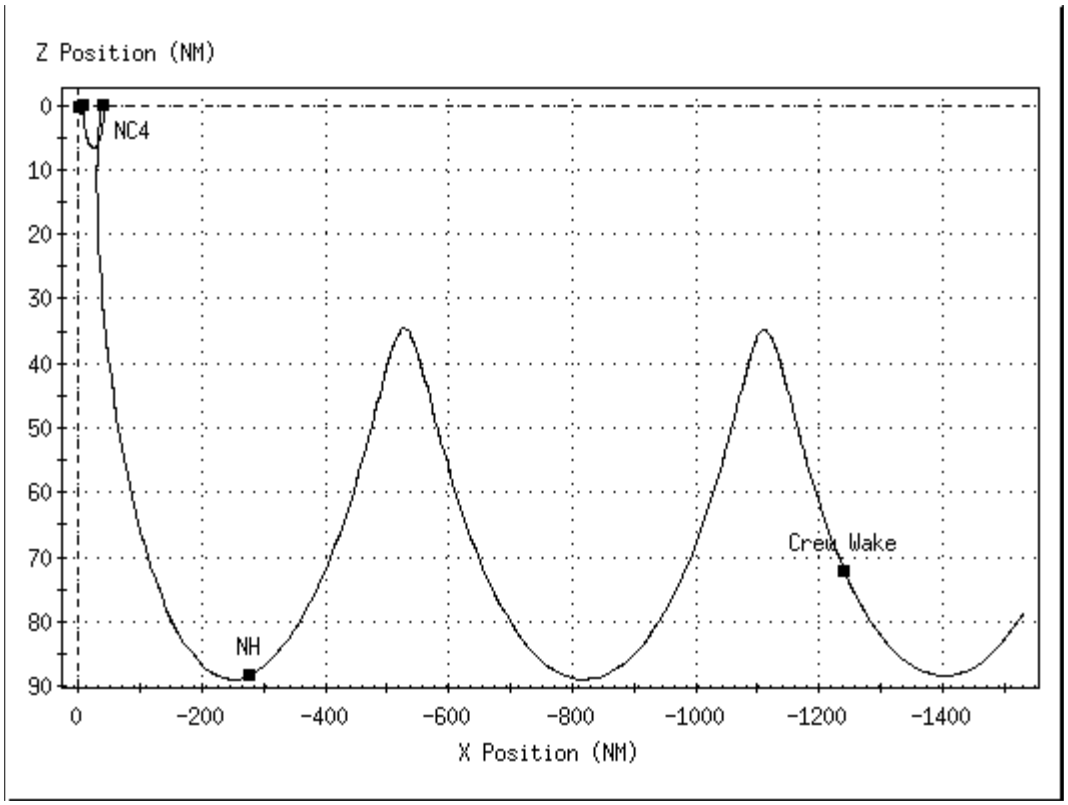
FLIGHT NOTE

TO: FD, CAPCOM, FAO, RENDEZVOUS, PROP, GC
FROM: FDO
SUBJECT: MANEUVER TIGS

COPIES: 1

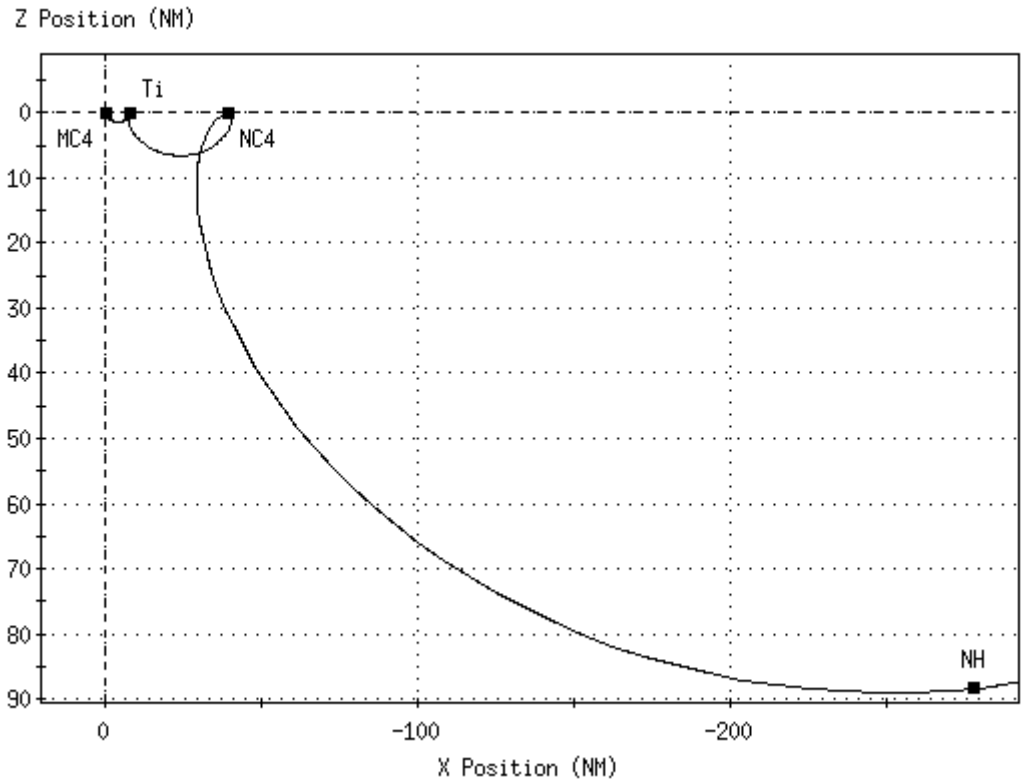
	MET	
NH	001:18:38:51.365	
NC-4	001:19:26:16.845	
NCC	001:20:02:18.000	
TI	001:21:00:00.000	PET = 0:0 ; SS - 36 MIN
MC1	001:21:20:00.000	
MC2	001:21:49:54.000	ET = 0:0
MC3	001:22:06:54.000	MC2 + 17 MIN
MC4	001:22:16:54.000	MC2 + 27 MIN
DOCK	001:23:38:00.000	

MSG 015 - FD03 RNDZ PACKAGE



END OF PAGE 2 OF 6, MSG 015

MSG 015 - FD03 RNDZ PACKAGE



PRELIMINARY ORBIT MANEUVER PAD FOR NH (RNDZ p.3-2)

OMS BOTH	1	X
L	2	
R	3	
RCS SEL	4	
TV ROLL	5	000
TRIM LOAD P	6	(+)0.4
LY	7	(-)5.7
RY	8	(+)5.7
WT	9	249779
TIG	10	01/18:38:51.4
TGT PEG 7 ΔVX	19	(+)060.5
ΔVY	20	(+)000.0
ΔVZ	21	(+)001.5

RCS SEL: [ ] +X, [ ] -X, [ ] MULTI-AXIS

BURN ATT		
R	24	308
P	25	057
Y	26	339

ΔVTOT		060.5
TGO		00:39
VGO	X	(+)058.3
VGO	Y	(+)000.0
VGO	Z	(+)016.1

	HA	HP
TGT	208	(+)123

NOTES

OMS GMBL CK:

	PRE	POST-BURN
L PRI		X
L SEC		
R PRI		X
R SEC		
NONE	X	

RCS I'CNCT:
- [ ] L OMS → RCS
- [ ] R OMS → RCS
- [X] NONE

DOWN MODE OPTIONS:
- [X] 2 OMS → 1 OMS
- [ ] 1 OMS → RCS
- [ ] NONE

OMS HE REG TEST: [ ] NONE

	L GPC	L OP	L CL	R GPC	R OP	R CL
A		X			X	
B	X			X		

-X RCS BURNS:

	BURN ATT		LVLH ATT
P 15	N/A	R	N/A
Y 16	N/A	P	N/A
OM 17	N/A	Y	N/A

ORBIT BURN MONITOR

GPC FILL-INS 1 (3)
- [X] CRIT BURN
- [ ] NON-CRIT BURN

MAX TIG SLIP ___ MIN.
- [ ] DO NOT UPDATE TIG
- [ ] UPDATE TIG AFTER ___ MIN.

NOTES

Treat loss of GPC3 as second gimbal fail on the Right.

PRELIMINARY ORBIT MANEUVER PAD FOR NC-4 (RNDZ p.3-4)

OMS BOTH	1	X
L	2	
R	3	
RCS SEL	4	
TV ROLL	5	000
TRIM LOAD P	6	(+)0.4
LY	7	(-)5.7
RY	8	(+)5.7
WT	9	248295
TIG	10	01/19:26:16.8
TGT PEG 7 ΔVX	19	(+)144.0
ΔVY	20	(+)000.0
ΔVZ	21	(+)007.7

RCS SEL: [ ] +X [ ] -X [ ] MULTI-AXIS

BURN ATT		
R	24	054
P	25	230
Y	26	012

ΔVTOT	144.2
TGO	01:31
VGO X	(+)139.0
VGO Y	(+)000.0
VGO Z	(+)038.4

	HA	HP
TGT	207	(+)205

NOTES

OMS GMBL CK:

	PRE	POST-BURN
L PRI		X
L SEC		
R PRI		X
R SEC		
NONE	X	

RCS I'CNCT:
- [ ] L OMS → RCS
- [ ] R OMS → RCS
- [X] NONE

DOWN MODE OPTIONS:
- [X] 2 OMS → 1 OMS
- [ ] 1 OMS → RCS
- [ ] NONE

OMS HE REG TEST: [ ] NONE

	L GPC	L OP	L CL	R GPC	R OP	R CL
A	X			X		
B		X			X	

-X RCS BURNS:

	BURN ATT		LVLH ATT
P 15	N/A	R	N/A
Y 16	N/A	P	N/A
OM 17	N/A	Y	N/A

ORBIT BURN MONITOR

GPC FILL-INS 1 (3)
- [X] CRIT BURN
- [ ] NON-CRIT BURN

MAX TIG SLIP ___ MIN.
- [ ] DO NOT UPDATE TIG
- [ ] UPDATE TIG AFTER ___ MIN.

NOTES

Treat loss of GPC3 as second gimbal fail on the Right.

PRELIMINARY ORBIT MANEUVER PAD FOR Ti (RNDZ p.3-6)

OMS BOTH	1	
L	2	X
R	3	
RCS SEL	4	
TV ROLL	5	000
TRIM LOAD P	6	(+)0.4
LY	7	(+)5.0
RY	8	(-)5.0
WT	9	244792
TIG	10	01/21:00:00.0
TGT PEG 7 ΔVX	19	(+)009.4
ΔVY	20	(-)000.8
ΔVZ	21	(+)000.1

RCS SEL: [ ] +X [ ] -X [ ] MULTI-AXIS

BURN ATT

R	24	057
P	25	241
Y	26	001

ΔVTOT	009.4
TGO	00:12
VGO X	(+)008.9
VGO Y	(+)001.9
VGO Z	(+)002.5

	HA	HP
TGT	210	(+)207

NOTES

OMS GMBL CK:

	PRE	POST-BURN
L PRI		
L SEC		
R PRI		
R SEC		
NONE	X	X

RCS I'CNCT:
- [ ] L OMS → RCS
- [ ] R OMS → RCS
- [X] NONE

DOWN MODE OPTIONS:
- [ ] 2 OMS → 1 OMS
- [X] 1 OMS → RCS
- [ ] NONE

OMS HE REG TEST: [ ] NONE

	L GPC	L OP	L CL	R GPC	R OP	R CL
A		X				
B			X			

-X RCS BURNS:

		BURN ATT		LVLH ATT
P	15	N/A	R	N/A
Y	16	N/A	P	N/A
OM	17	N/A	Y	N/A

ORBIT BURN MONITOR:

GPC FILL-INS 1 (3)
- [X] CRIT BURN
- [ ] NON-CRIT BURN

TIG SLIP: If Ti not started by nominal TIG + __ min go to Ti DELAY, 5-27

Max Ti DELAY TIG slip __ min.
- [ ] DO NOT UPDATE TIG
- [ ] UPDATE TIG AFTER __ MIN.

Ti DELAY

TGT PEG 7 ΔVX	19	(-)
ΔVY	20	(-)
ΔVZ	21	(-)
NEW Ti (BASETIME)		01/22:32:00.0

NOTES

END OF PAGE 6 OF 6, MSG 015

MSG 016 - DIRT ON LENS OF HANDHELD D3S CAMERA

In the downlinked imagery, the ground noticed that almost all of the pictures from the Nikon D3s, S/N 2007935 (printed on the back of the camera), with the 12-24mm lens contained a 'worm' shaped spot in the lower right corner. We are trying to figure out if there is debris on the lens or on the camera sensor. To help with our troubleshooting, please perform the following:

1. Take a picture with the Nikon D3s, S/N 2007935, and the 12-24mm lens installed.
2. If the spot is present, clean the front and rear elements of the 12-24mm lens and take another picture.
3. If the spot is still present, install a different lens and take a picture.
4. If the spot is still present, set the camera aside and only use if no other cameras are available.

If the debris disappears at any point, continue nominal operations with this camera. Please let the ground know the results of the test.

END OF PAGE 1 OF 1, MSG 016