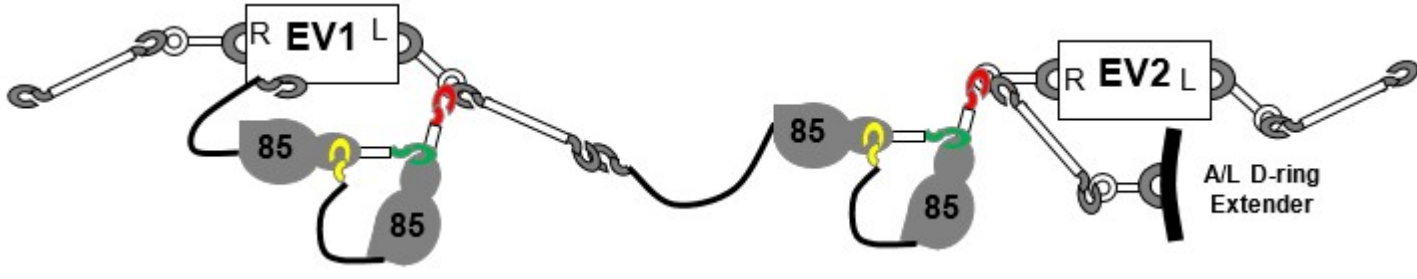


## STS-134 EVA 1 - Summary Timeline

|       | EV1 (DREW)                                 | EV3 (TAZ)                          |       |
|-------|--|------------------------------------|-------|
| 00:00 | EGRESS/SETUP (00:45)                       | EGRESS/SETUP (00:45)               | 00:00 |
| 00:30 |  |                                    | 00:30 |
| 01:00 | MISSE 7 RETRIEVE (01:00)                   | MISSE 7 RETRIEVE (01:00)           | 01:00 |
| 01:30 |  |                                    | 01:30 |
| 02:00 | MISSE 8 INSTALL (00:40)                    | S3 CETA LIGHT INSTALL (00:25)      | 02:00 |
| 02:30 | P3/P4 NH3 JUMPER INSTALL (00:35)           | STBD SARJ COVER 7 INSTALL (00:25)  | 02:30 |
| 03:00 |  | P3/P4 NH3 JUMPER INSTALL (00:25)   | 03:00 |
| 03:30 | P5/P6 NH3 JUMPER INSTALL / N2 VENT (00:35) | P3/P4 NH3 JUMPER TEMP STOW (00:35) | 03:30 |
| 04:00 | EWC ANTENNA INSTALL (02:20)                | EWC ANTENNA INSTALL (02:45)        | 04:00 |
| 04:30 |  |                                    | 04:30 |
| 05:00 |  |                                    | 05:00 |
| 05:30 |  |                                    | 05:30 |
| 06:00 | VTEB CLEANUP (00:25)                       |                                    | 06:00 |
| 06:30 | CLEANUP / INGRESS (00:30)                  | CLEANUP / INGRESS (00:30)          | 06:30 |
| 07:00 |  |                                    | 07:00 |

## STS-134 EVA 1 - EGRESS/SETUP (00:45)

| IV/SSRMS   | EV1 (Drew)   | EV3 (Taz)   |
|--|--|---|
|    |  |   |
| <ol style="list-style-type: none"> <li>Record PET start time ____:____ (Pwr to Batt)</li> <li>Start WVS Recorders</li> </ol>   | <p><u>INITIAL CONFIGURATION</u> (00:05)</p> <ol style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>✓ All gates closed &amp; hooks locked</li> <li>aq ✓ R Waist Tether to EV3 Blank hook</li> <li>bq ✓ Red hook on L D-ring ext</li> <li>cq ✓ Yellow hook on Green ERCM</li> <li>dq ✓ Green hook on Red ERCM</li> <li>eq ✓ Blank hook on MWS</li> </ul> </li> </ol> | <p><u>INITIAL CONFIGURATION</u> (00:05)</p> <ol style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>✓ All gates closed &amp; hooks locked</li> <li>fq ✓ All gates closed &amp; hooks locked</li> <li>gq ✓ R Waist Tether to A/L D-ring ext</li> <li>hq ✓ Red hook on L D-ring ext</li> <li>iq ✓ Yellow hook on Green ERCM</li> <li>jq ✓ Green hook on Red ERCM</li> <li>kq ✓ Blank hook to EV1 R Waist Tether</li> </ul> </li> </ol> |
| <ol style="list-style-type: none"> <li>Start Hatch thermal cover clock PET (30 min)<br/>____:____</li> </ol>   | <ol style="list-style-type: none"> <li>this is a crewA and crewB step for demonstration of Maestro only</li> <li><u>EGRESS/SETUP (00:25)</u> (00:00)</li> <li>Open hatch thermal cover</li> <li>Egress A/L</li> </ol>  |   |
|  | <ol style="list-style-type: none"> <li>Receive EWC ORU bag from EV3, stow on BRT w/RET</li> </ol>  | <ol style="list-style-type: none"> <li>Transfer EWC ORU Bag to EV1 <ul style="list-style-type: none"> <li>lq Position CETA ORU bag near hatch</li> </ul> </li> <li>This is a step</li> </ol>  |
| <ol style="list-style-type: none"> <li>Post crew egress, WVS Software: <ol style="list-style-type: none"> <li>select page - RF camera.</li> <li>Sel 'Advanced Controls'</li> <li>S-Band Level (two) - Max</li> </ol> </li> </ol> |  | <ol style="list-style-type: none"> <li>Perform buddy checks <ul style="list-style-type: none"> <li>mq MWS tabs up</li> <li>nq BRT tab up</li> <li>oq tether configs</li> </ul> </li> <li>Verify SAFER config <ul style="list-style-type: none"> <li>pq ✓ L handle down (MAN ISOL Vlv - Open)</li> <li>qq ✓ R handle down (HCM - Closed)</li> </ul> </li> <li>✓ WVS - Green LED</li> </ol>   |

# **STS-134 EVA 1 - EGRESS/SETUP (00:45)**

| IV/SSRMS   | EV1 (Drew)  | EV3 (Taz)  |
|--|---|--|
|  | 16. Perform buddy checks<br>rq MWS tabs up<br>sq BRT tab up<br>tq tether configs<br>17. Verify SAFER config<br>uq ✓ L handle down (MAN ISOL Vlv - Open)<br>vq ✓ R handle down (HCM - Closed)<br>18. ✓ WVS - Green LED   | 19. Perform buddy checks<br>wq MWS tabs up<br>xq BRT tab up<br>yq tether configs<br>20. Verify SAFER config<br>zq ✓ L handle down (MAN ISOL Vlv - Open)<br>aaq ✓ R handle down (HCM - Closed)<br>21. ✓ WVS - Green LED |
|  | 22. Translate to S0 Port Struts<br>23. Attach EV1 <b>**BLANK**</b> hook to port-outboard strut<br>bbq ✓ Gat closed, hook locked, reels unlocked, release RET<br>24. Attach EV3 <b>**BLANK**</b> hook to port-inboard strut<br>ccq ✓ Gate closed, hook locked<br>25. Release EV1 R Waist Tether from EV3 <b>**BLANK**</b> hook | 26. Retrieve CETA ORU bag, stow on BRT with RET  |
|  | 27. Give <b>**EV3 GO**</b> to release Waist Tether  | 28. On <b>**EV1 GO**</b> , EV3 release right Waist Tether from Airlock internal D-Ring   |
|  | 29. Translate forward along Lab.<br>30. Stow EWC ORU bag on Lab HR 0260, 0259 with hinge ISS aft<br>31. Translate to S1 Face 1, zenith - MISSE 7 Retrieve   | 32. Close hatch thermal cover<br>33. Perform translation adaptation<br>34. Translate to S1 Face 1, nadir - MISSE 7 Retrieve  |
| 35. Stop Hatch Thermal Cover clock PET (30 min)<br>____:____ |   |  |

STS-134 EVA 1 - MISSE 7 RETRIEVE (01:00)

| IV/SSRMS  | EV1 (Drew)  | EV3 (Taz)   |
|---|---|---|
| 1. Verify inhibits in place<br>a. ✓ Stbd SARJ locked<br>b. ✓ MISSE/ELC-2 inhibits |   |   |
|   | <div>✓<br/>A<br/>F<br/>F<br/>I<br/>R<br/>E<br/>D<br/>C<br/>2.<br/>D<br/>C<br/>A<br/>U<br/>T<br/>I<br/>O<br/>N<br/>3.<br/>B<br/>4.<br/>A<br/>5.<br/>A<br/>6.<br/>T</div> | <div>✓<br/>A<br/>F<br/>F<br/>I<br/>R<br/>E<br/>D<br/>C<br/>7.<br/>D<br/>C<br/>A<br/>U<br/>T<br/>I<br/>O<br/>N<br/>8.<br/>A<br/>9.<br/>T</div> |

# **STS-134 EVA 1 - MISSE 7 RETRIEVE (01:00)**

| IV/SSRMS | EV1 (Drew)  | EV3 (Taz)   |
|----------|---|---|
|          | 10. Translate to S1 Face 2, zenith route<br>aq Fairlead on S0 HR 3467 (bay 1)<br>11. Attach <b>"GREEN"</b> hook on S1 HR 3208 (bay 17)<br>bq ✓ Gate closed, hook locked, reels unlocked, release RET<br>12. Translate zenith to ELC-2<br>cq Fairlead on S3 HR 3052 (face 1)<br>13. Photograph deployed PECs<br>a. PEC 7B (✓ Ram/Fwd side, ✓ Aft side)<br>b. PEC 7A (✓ Zenith side, ✓ Nadir side)<br>c. ✓✓ Overall View (2 angles) | 14. Translate to S1 Face 6, nadir route<br>15. Attach <b>"GREEN"</b> hook on S1 HR 3217 or Xo 5790 (bay 17)<br>dq Gate closed, hook locked, reels unlocked, release RET<br>16. Translate outbd to bay 19<br>17. Stow CETA ORU bag on S3 HRs 3046, 3038<br>18. Translate zenith to ELC2                          |
|          |   | 19. If EV1 complete with photos of PEC 7B, close PEC 7B<br>eq All 4 PIP pins are re-installed<br>20. Disconnect connector from PEC 7B<br>fq RET, remove cap from dummy connector J7B<br>gq Demate connector from PEC<br>hq Mate connector to dummy connector J7B (✓ no FOD, pins)<br>iq Install cap onto PEC 7B |
|          | 21. Close PEC 7A<br>jq ✓ All 4 PIP pins are re-installed  | 22. Disconnect connector from PEC 7A<br>kq RET, remove cap from dummy connector J7A<br>lq Demate connector from PEC<br>mq Mate connector to dummy connector J7A (✓ no FOD, pins)<br>nq Install cap onto PEC 7A  |
|          |   | 23. Release PEC 7B (2 PIP pins), stow on BRT w/RET (nadir HR)<br>oq Reinstall Socket PIP pins (2)<br>24. Release PEC 7A (release 2 PIP pins), stow on BRT w/RET (RAM HR)<br>pq Reinstall Socket PIP pins (2)  |

# STS-134 EVA 1 - MISSE 7 RETRIEVE (01:00)

| IV/SSRMS | EV1 (Drew)   | EV3 (Taz)   |
|----------|--|---|
|          | C<br>A<br>U<br>T<br>I<br>O<br>N<br>25.<br>W  | C<br>A<br>U<br>T<br>I<br>O<br>N<br>26.<br>W   |
|          | 27. Retrieve <b>GREEN</b> hook from S1 HR 3208<br>qq Gate closed, hook locked, reels unlocked, release RET<br>28. Translate to Node 2, along port/zenith<br>STOW MISSE 7A IN PLB (00:10)<br>29. Attach <b>GREEN</b> hook on Node 2 HR 0344<br>rq Gate closed, hook locked, reels unlocked, release RET<br>30. Translate to Orbiter, port, bay 4<br>31. Remove SWC latch PIP pins (2)<br>32. Release latch (2) from stow position<br>33. Stow PEC 7A in carrier (HRs out, Probe up)<br>34. Lock fwd latch in landing config<br>sq Install PIP pin<br>35. Retrieve RET<br>36. Lock aft latch in landing config<br>tq Install PIP pin | 37. Retrieve <b>GREEN</b> hook from S1 HR 3217 or Xo 5790<br>uq Gate closed, hook locked, reels unlocked, release RET<br>38. Translate to Node 2, stbd/zenith route<br>vq Fairlead on Lab HR 0247 with wrist Adj<br>wq Fairlead on Node 2 HR 0314<br>xq Face toward Col and Node 2<br>39.<br>\$<br>STOW MISSE 7B IN PLB (00:15)<br>40. Translate to Orbiter, stbd, bay 4<br>41. Remove SWC latch PIP pins (2)<br>42. Release latch (2) from stow position<br>43. Stow PEC 7B in carrier (HRs out, Probe up)<br>44. Lock aft latch in landing config<br>yq Install PIP pin<br>45. Retrieve RET<br>46. Lock fwd latch in landing config<br>zq Install PIP pin |

**STS-134 EVA 1 - MISSE 7 RETRIEVE (01:00)**

| IV/SSRMS | EV1 (Drew)  | EV3 (Taz)  |
|----------|---|--|
|          | 47. Glove and Gauntlet check<br>48. Translate aft to Bay 9 - MISSE 8 Retrieve | 49. **Glove and Gauntlet check**<br>50. ""Translate aft to S3 Face 1 - S3 CETA Light Install"" |

**STS-134 EVA 1 - MISSE 8 Install (00:40)**

| IV/SSRMS | EV1 (Drew) |
|----------|------------|
| 1. TBD   | 2. TBD     |



**STS-134 EVA 1 - S3 CETA Light Install (00:25)**

| IV/SSRMS | EV3 (Taz) |
|----------|-----------|
| 1. TBD   | 2. TBD    |

**STS-134 EVA 1 - Stbd SARJ Cover 7 Install (00:25)**

| IV/SSRMS | EV3 (Taz) |
|----------|-----------|
| 1. TBD   | 2. TBD    |

**STS-134 EVA 1 - P3/P4 NH3 Jumper Install (00:35 / 00:25)**

| IV/SSRMS | EV1 (Drew) |
|----------|------------|
| 1. TBD   | 2. TBD     |

**STS-134 EVA 1 - P5/P6 NH3 Jumper Install / N2 Vent (00:35)**

| IV/SSRMS | EV1 (Drew) |
|----------|------------|
| 1. TBD   | 2. TBD     |

**STS-134 EVA 1 - P3/P4 NH3 Jumper Temp Stow (00:35)**

| IV/SSRMS | EV3 (Taz) |
|----------|-----------|
| 1. TBD   | 2. TBD    |

**STS-134 EVA 1 - EWC Antenna Install (02:20 / 02:45)**

| IV/SSRMS | EV1 (Drew) | EV3 (Taz) |
|----------|------------|-----------|
| 1. TBD   | 2. TBD     | 3. TBD    |

**STS-134 EVA 1 - VTEB Cleanup (00:25)**

| IV/SSRMS |     | EV1 (Drew) |     |
|----------|-----|------------|-----|
| 1.       | TBD | 2.         | TBD |

| IV/SSRMS |     | EV1 (Drew) |     | EV3 (Taz) |     |
|----------|-----|------------|-----|-----------|-----|
| 1.       | TBD | 2.         | TBD | 3.        | TBD |