

Pre-Launch Checklist

COM	TIME	PROCEDURE
1	T-00:05:00	<u>Launch HOLD</u> CABIN DOOR to LATCH ENVIRONMENTAL SYSTEM O ₂ SYS to OPEN ENVIRONMENTAL SYSTEM N ₂ SYS to OPEN ENVIRONMENTAL SYSTEM H ₂ O LOOP to OPEN Key in ITEM Select A Key in DPS Select 1 (OPS 1) Key in EXEC BOILER CNTRL POWER (1/2/3) to ON BOILER CNTRL HTR (1/2/3) to ON BOILER N ₂ SUPPLY (1/2/3) to OPEN Key in DPS Select 2 (OPS 2) Key in EXEC

1 cont.		<p>PNEUMATIC He ISOL (LEFT/CENTER/RIGHT) to OPEN</p> <p>APU FUEL TNK VLV (1/2/3) to CLOSE</p> <p>APU SHUTDOWN to ENABLE</p> <p>HYD MAIN PUMP PRESSURE (1/2/3) to LOW</p> <p>APU SPEED SELECT (1/2/3) to NORMAL</p> <p>HYD CIRC PUMP (1/2/3) to GPC</p> <p>APU MAIN POWER to ON</p> <p>APU CNTRL POWER (1/2/3) to ON</p> <p>APU MSTR VLV to OPEN</p> <p>APU FUEL TNK VLV (1/2/3) to OPEN</p> <p>APU /HYDRAULICS (1/2/3) to RUN</p> <p>HYD MAIN PUMP PRESSURE (1/2/3) to NORMAL</p> <p>HYD CIRC PUMP (1/2/3) to OFF</p> <p>Confirm central HUD is on and in <u>Orbit Earth</u> Mode.</p>
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2 Cont.		INTERNAL SHUTTLE SYSTEM POWER - INT PWR TRANSFER to ON
3	T-00:03:00	Key in DPS Select 3 (OPS 3) GLOBAL POSITIONING SYSTEM (GPS- 1/GPS-2/GPS-3) to ON
4	T-00:02:00	APU SHUTDWN to INHIBIT <i>Verify</i> SRB JETTISON is GPC <i>Verify</i> EXT TANK JETTISON is GPC
5	T-00:01:00	AC BUS SENSOR to MONITOR INTERNAL SHUTTLE SYSTEM POWER - EXT PWR DISCONNECT to ON
6	T-00:00:04	Key in EXEC
7	T-00:00:00	

Ascent Checklist

COM	MET	PROCEDURE
8	T+00:00:20	Switch Left MFD back to Surface Mode Key in 9
9	T+00:00:44	
10	T+00:01:10	
11	T+00:02:05	<i>SRB Separation</i> FREON LOOP to OPEN H2O HX to OPEN AIR HX to OPEN
12	T+00:03:00	
13	T+00:04:20	
14	T+00:05:00	INTERNAL SHUTTLE SYSTEM PWR (BAT A / BAT B) to STANDBY
15	T+00:08:00	
16	T+00:08:55	<i>Main Engine Cutoff (MECO)</i>

Orbit Insertion Checklist (Post MECO)

COM	MET	Procedure
17	T+00:09:00	FWD RCS He TANK ISOL (A/B) to OPEN AFT RCS LEFT He TANK ISOL (A/B) to OPEN AFT RCS RIGHT He TANK ISOL (A/B) to OPEN
18	T+00:09:20	<i>Confirm</i> N ₂ CNTRL VLV LEFT (1/2) are ENABLEd <i>Confirm</i> N ₂ CNTRL VLV RIGHT (1/2) are ENABLEd
19	T+00:09:30	FLT CNTRL PWR to INHIBIT ENGINE DAP to AUTO
20	T+00:09:45	MAIN ENGINE POWER (LEFT/CENTER/RIGHT) to OFF
21	T+00:10:00	HYD MAIN PUMP PRESSURE (1/2/3) to LOW APU SHUTDOWN to ENABLE APU/HYDRAULICS (1/2/3) to OFF APU FUEL TNK VLV (1/2/3) to CLOSE

21 cont.		APU MSTR VLV to CLOSE APU CNTRL POWER (1/2/3) to OFF APU MAIN POWER to OFF HYD CIRC PUMP (1/2/3) to GPC
22	T+00:10:30	DUMP ISOL VLV to OPEN H2 RECIRC VLV to OPEN H2 OUTBOARD VLV to OPEN H2 INBOARD VLV to OPEN PNEUMATIC He ISOL (LEFT/CENTER/RIGHT) to GPC O ₂ VENT LINE to OPEN O ₂ OUTBOARD VLV to OPEN O ₂ INBOARD VLV to OPEN
23	T+00:11:00 <u>approximate</u>	<i>Advise Mission Control when OMS Burn Initiated</i> BOILER N ₂ SUPPLY (1/2/3) to CLOSE BOILER CNTRL HEATER (1/2/3) to OFF BOILER CNTRL POWER (1/2/3) to OFF

24	T+00:12:00 <u>approximate</u>	H ₂ INBOARD VLV to CLOSE H ₂ OUTBOARD VLV to CLOSE H ₂ RECIRC VLV to CLOSE O ₂ INBOARD to CLOSE O ₂ OUTBOARD VLV to CLOSE O ₂ VENT LINE to CLOSE DUMP ISOL VLV to CLOSE
25	T+00:14:00 <u>approximate</u>	AIR HX to GPC H ₂ O HX to GPC FREON LOOP to GPC
26	T+00:15:10 <u>approximate</u>	<i>Advise Mission Control when OMS Burn Complete</i> N ₂ CNTRL VLV LEFT (1/2) to DISABLE N ₂ CNTRL VLV RIGHT (1/2) to DISABLE AC BUS SENSOR to AUTO
27	Mission Dependent	Confirm central HUD is on and set to <u>Orbit Earth</u> mode. <ul style="list-style-type: none"> If needed Select 0 (toggle until <u>Orbit Earth</u> HUD is visible) H ₂ RECIRC VLV to GPC

27 Cont.		<p>H₂ OUTBOARD VLV to GPC</p> <p>H₂ INBOARD VLV to GPC</p> <p>O₂ VENT LINE to GPC</p> <p>O₂ OUTBOARD VLV to GPC</p> <p>O₂ INBOARD VLV to GPC</p> <p>ENGINE DAP to MANUAL</p> <p>FLT CNTRL POWER to ENABLE</p> <p>RATE GYRO ASSEMBLY (RG1/ RG2-3/ RG4) to OFF</p> <p>Orient the shuttle to a zero attitude while using the <u>Kill Rotation</u> command (key 4) to stabilize the maneuver.</p>
28	Mission Dependent	<p>PAYLOAD BAY POWER to ON</p> <p>PAYLOAD BAY DOOR to OPEN</p> <p>RADIATORS to DEPLOY</p> <p>Ku ANTENNA to DEPLOY</p>

De-Orbit Checklist

COM	MET	Procedure
29	Mission Dependent	STAR TRACKER to OFF Ku ANTENNA to STOW RADIATORS to STOW PAYLOAD BAY DOOR to CLOSE PAYLOAD BAY POWER to OFF
30	Mission Dependent	BOILER CNTRL POWER (1/2/3) to ON BOILER CNTRL HEATER (1/2/3) to ON BOILER N ₂ SUPPLY (1/2/3) to OPEN
31	Mission Dependent	<i>Position The Shuttle to The Correct Attitude – Retrograde</i> Key in 6 – Retrograde
32	Mission Dependent	DUMP ISOL VLV to OPEN PNEUMATIC He ISOL (LEFT/CENTER/RIGHT) to OPEN

33	Mission Dependent	APU MAIN POWER to ON APU CNTRL POWER (1/2/3) to ON APU MSTR VLV to OPEN APU FUEL TNK VLV (1/2/3) to OPEN APU SHUTDOWN to INHIBIT APU/HYDRAULICS (1/2/3) to RUN HYD MAIN PUMP PRESSURE (1/2/3) to LOW APU SPEED SELECT (1/2/3) to NORMAL HYD CIRC PUMP (1/2/3) to OFF
34	Mission Dependent	PNEUMATIC He ISOL (LEFT/CENTER/RIGHT) to CLOSE DUMP ISOL VLV to CLOSE

35	Mission Dependent	<p>N₂ CNTRL VLV LEFT (1/2) to ENABLE</p> <p>N₂ CNTRL VLV RIGHT (1/2) to ENABLE</p> <p>Engine Throttle to Maximum</p> <p>Engine Throttle to OFF</p> <p>N₂ CNTRL VLV LEFT (1/2) to DISABLE</p> <p>N₂ CNTRL VLV RIGHT (1/2) to DISABLE</p>
36	Mission Dependent	<p><i>Position The Shuttle to The Correct Attitude – Prograde</i></p> <p>Key in 7 – Prograde</p>
37	Mission Dependent	<p>RE-ENTRY SYS CHECK to ON</p> <p>HYD MAIN PUMP PRESSURE (1/2/3) to NORMAL</p>
38	Mission Dependent	<p>FWD RCS He TANK ISOL (A/B) to CLOSE</p> <p>AFT RCS LEFT He TANK ISOL (A/B) to CLOSE</p> <p>AFT RCS RIGHT He TANK ISOL (A/B) to CLOSE</p> <p>AC BUS SENSOR to MONITOR</p>
39	Mission Dependent	

Landing Checklist

COM	Altitude	Procedure
40	35 k	<i>Disengage RCS mode</i> Key in D LANDING SYS to ARM LANDING SYS CHECK to ON LANDING SYSTEM RADAR to ON
41	28 k	<i>(Lift takes affect)</i>
42	25 k	 <i>P – <u>Announce: Kennedy VOR is Acquired</u></i> <i>P – <u>Announce Runway 15/33 ILS is Acquired</u></i>
43	2.5 k	GEAR to DEPLOY
44	0.5 k (500 m)	SPEED BRAKE to DEPLOY
45	Touchdown	DROGUE CHUTE to DEPLOY
46		
47		<i>End of Mission</i>