

# NCPP CSM Instrument Panel Manual version 1.0 beta

### Main controls, Panel 1 (*left hand panel*)



- 1 **CMP (Crew Module Pilot) Rendezvous Window**
- 2 **Altimeter:**  
Shows altitude in feet MSL (*Mean Sea Level*). The drogue shutes deploy at about 20.000 ft. The Main chutes should fully open at about 10.000 ft MSL.
- 3 **EMS (Entry Monitor System) Display** (NOT SIMULATED)  
But it can be switched on by using the rotary (4). Click on "ENTRY" will turn on the EMS Display.
- 5 **EMS Delta Velocity Display**  
In NASSP it displays the current altitude of the space craft.
- 6 **G-Meter Gauge**  
Displays the G-acceleration of the space craft during SPS burn's and entry interface. Normal readout during re-entry should be ~6 G's.
- 7 **LV alpha/SPS Pc Gauge**  
Displays the engine pressure of the LV (*Launch Vehicle*) or SPS (*Service Propulsion System*).
- 8 **FDAI (Flight Director and Attitude Indicator)** (NOT SIMULATED).  
Works like an artificial horizon.
- 9 **LV (Launch Vehicle) Launch Indicator**  
The first two needles (left) indicate the fuel quantity of the second stage "SII". The next two needles indicate the third stage (S-IVB) oxid quantity. And the four needles on the right indicate the S-IVB fuel quantity.
- 10 **Launch Lights**  
The 6 launch lights indicate the lift off, LES (*Launch Escape System*) tower jettison and the opening sequences of the CM parachutes for entry and splashdown.
- 11 **LV Engines Lights**  
1,2,3,4 and 5 lights up when all five engines of the saturn's first and/or second stage are running. **LV GUID** lights up when the guidance is controlled by the CMC (*Crew Module Computer*) depending on switch 36 (if it's switched to **AUTO** the guidance is controlled by the CMC auto system, **FREE** disengages the auto guidance). **SII SEP** lights up when the second stage will separate. **LV RATE** lights up as long as fuel flows.
- 12 **Abort Push Button**  
Pressing the abort push button will abort and separate the current stage of the ascent (first stage, second stage and third stage).
- 13 **Master Alarm Light/Button** Shows you that anything is going wrong.

- 14, 15, 16** These switches activate one of the three orbiter's HUD modes. **RNDZ** (*Rendezvous – DOCKING MODE*), **LVLH** (*Local Vertical/Local Horizon – SURFACE MODE*) and **ORBIT** (*ORBIT MODE*).
- 17, 18, 19** These switches turn on or of the SM-RCS (*Service Module-Reaction Control System*) Roll, Pitch and YAW mode, if the SM-RCS is activated (see "CSM-RCS Checklist").
- 20, 21** **20** changes between SM-RCS thrust power 100% (HIGH) and 50% (LOW). **21** changes between TRANSLATION mode and ROTATION mode.
- 22, 23, 24** These switches turn on or of the CM-RCS (*Crew Module-Reaction Control System*) Roll, Pitch and YAW mode, if the CM-RCS is activated (see "CSM-RCS Checklist").
- 25, 26, 27** These switches turn on or of the S-IVB RCS (*Third Stage-Reaction Control System*) Roll, Pitch and YAW mode.
- 28, 29** The two **S-IVB GIMBAL MOTOR** switches turn on or off the PITCH/YAW gimbal motors of the third stage.
- 30** These switch activates the SPS for burn procedures. The four INJECTOR VALVE indicators on panel 3 (right hand panel) should indicate "OPEN"!
- 31, 32, 33, 34** The four switches should be used to enable the SPS gimbal motors.
- 35** Open the guard (right mouse click) and push the button **CSM/LV SEP** to separate the CSM from S-IVB after Trans Lunar Injection or S-IVB shutdown.
- 37** The **SC CONT** switch in **CMC** position activates the orbital monitoring. The engines will cut off when the smallest value of excentricity is achieved.
- 38** **Direct Ullage Light** Direct ullage.
- 39** **Thrust On Light** Thrust is on.

## DSKY, Abort and Separation Controls, Panel 2 (center panel)



*Right click for opening switch guards!*

- 1 **EDS (Emergency Detection System).** The EDS provides automatic abort if an engine failure occurs before 100 sec flight is achieved.
- 2 **CSM/LM** final separation. No LM (*Lunar Module*) docking possible after separation. Docking probe separation!
- 3 **CSM/LM SEP 2** separates the LM from CSM without separation of the docking probe. Re-docking to the LM is possible!
- 4, 5 Use these two switches to separate the SM from CM before entry interface.

- 6** Once you have docked the CSM to the LEM after S-IVB/CSM separation, use the S-IVB/LM switch for lunar module extraction from S-IVB!
- 7, 8** The two TWR JET switches jettison the launch escape tower (*LES*) manually after first stage interstage separation, when the LES doesn't jettison automatically.
- 9** Use these switch to separate the SII from S-IVB if you want to abort second stage without pressing the abort push button.
- 10** **X-LUNAR INJECTION** is used to activate and fire the S-IVB for Trans Lunar Injection.
- 11** **MAIN RELEASE** opens the main parachutes manually after entry interface if they doesn't open automatically.

## Docking Probe and SM-RCS Controls, Panel 2 (*center panel*)



- 1 This indicator indicates the temperature (left scale) and He press (right scale) of the SM-RCS. Simulation not realistic yet!
- 2 This indicator indicates the propellant He press/propellant quantity of the SM-RCS.
- 3-10 **SM RCS HELIUM 1** and **2** switches are used to pressurize the SM RCS Helium tanks. They should be switched to **CLOSE** before activating the SM RCS.

**11-18** The propellant switches should be switched to OPEN before activating the SM RCS.

**19** Once you have docked the CSM to the LEM open the guard of the DOCKING PROBE switch and switch it to EXTND/REL. The TB (*Talk Back Indicator*) should change from gray to BP (*Barber Pole*). Before CSM/LM separation switch it back to RETRACT.

See “CSM-RCS Checklist” for activating the SM RCS!

### Caution and Warning System, Panel 2 (*center panel*)



**1** C/W lamps are not simulated yet. But the lamps can be light up during a test by switching the test switch (**2**) to LAMP TEST.

**3** **Mission Timer**



## Cabin Pressurization and EVA, Panel 2 (center panel)



The simulation of the cabin pressurization is still very simple on version 1.0 beta.

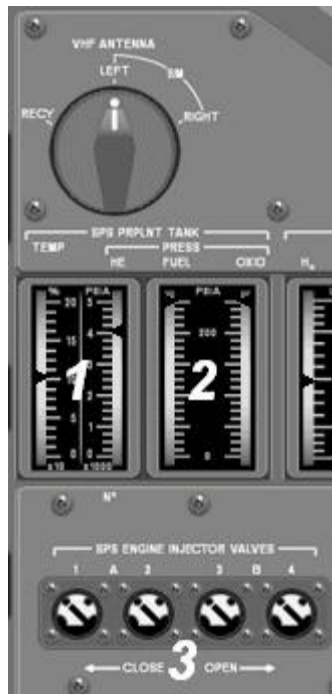
EVA :

**1** switch the cabin press to decrease. The indicator needles of gauge 4, 5 and 6 (CABIN, CABIN and PART PRESS O2) go down. Then simply open the hatch (**2**) and start you EVA (**3**).

Switch **7** and **8** are used to switch on or of the cabin fans. You can here them!

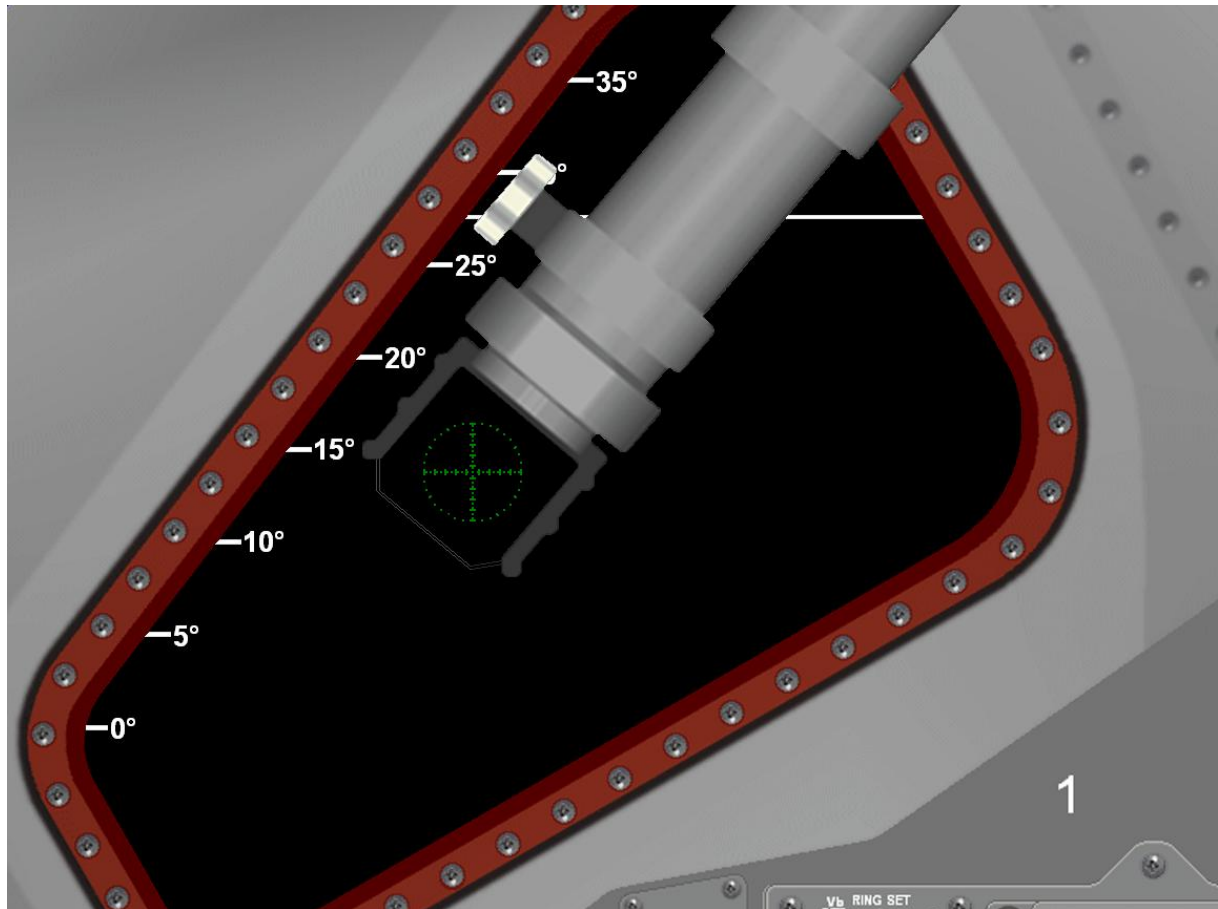


### SPS Gauges, Panel 3 (*right hand panel*)



- 1 Indicates the temperature and He press of the SPS fuel (not realistic yet).
- 2 Indicates press and quantity of the SPS fuel and oxid.
- 3 The **SPS ENGINE INJECTOR VALVES** should indicate OPEN when the SPS THRUST switch on panel 1 (left hand panel) is witched to DIRECT ON. To activate the SPS for burn and/or midcourse corrections simply switch the SPS THRUST switch to DIRECT ON.

## Docking Window View (STRG + ARROW UP)



The docking window is 1152x864 pixels for those who using 19 inch monitors. With a resolution of 1152x864 it works perfect. For a resolution of 1024x768 the docking procedure should work as followed:

Simply scroll to the upper left corner. The COAS (*Crewman Optical Align Sight*) should point the right way to the LM docking target.

That's it, so far...

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