Monitor Launch Activities Goal Writeup

Actor: Flight Control Director
Starting with the Launch Countdown, and continuing through the final stage separation, the Flight Control Director (Flight Controller) monitors the Launch Activities.

1. Monitor Pre-Launch Activities
2. Initiate Launch (at least monitor Launch Initiation)
3. Monitor Launch Activities

What does it mean to "Monitor Pre-Launch Activities"?
Up until the Launch Initialization (countdown reaches 0):

1. Monitor the Countdown
2. Monitor the Data Important to a launch
3. Communicate with flight engineers about launch data
4. Communicate with Astronauts about the launch data
5. Select which launch data is important enough to view for more scutiny

What happens if the System Reports a problem (Capsule, Rocket, Fuel Delivery, etc.)?
The Flight Controller can chose to

1. Hold the Countdown–The Flight Controller can chose to resume the countdown. If the Flight Controller choses to resume the countdown, the countdown continues at the place it was stopped.
2. Scrub the Launch–The Pre-requisite of this is **Hold the Countdown**. Once the Flight Controller holds the Countdown, the Flight Controller can chose to Scrub the Launch: At which point the Countdown is eliminated.

Is the Countdown automated?
The Countdown must be initialized by the Flight Controller and only the Flight Controller, the Launch Initializatoin can be automated.

Can the Flight Controller view all the Mission Data simultaneously?
Yes

Can the Flight Controller chose which Mission Data to view?
Yes, the Flight Controller can chose Mission Data to focus their attention. The Flight Controller can change that during the Pre-Launch Activities

What does it mean to "Initiate Launch" or "Monitor Launch Initiation"?

Once the Countdown reaches 0, the Launch is initialized. This means the Countdown cannot be aborted (only the Launch) and the engine ignition is complete. Once Started, the engines cannot be stopped. The System monitors the mission data, and once the System determines

1. The Engine thrust is stable
2. The Engine thrust is high enough to lift the Rocket and Payload
3. The Fuel Delivery System is stable

The System Lauches the Rocket (or advises the Flight Controller to release the Rocket) by releasing the holds on the Rocket preventing it from thrusting up. The Initiate Launch Activities are completed once the Rocket is launched.

If the System determines the Rocket is not in a stable state for lauch, the System will advise the Flight Controller to abort the Launch–or abort the Lauch automatically (depending on it control of the System).

What does it mean to "Monitor Launch Activities"?
Monitoring the Data pertaining to the Launch.

1. Monitor Data important to the Launch
2. Communicate with the flight engineers about the laucnch data
3. Select which launch data is important enough to view for more scrutiny

This is all similar to the **Monitor Pre-Launch Activities**. Once the capsules/payload separates from the final stage, the Launch is complete.

The System advises the Filght Controller on the Stability of the launch: advising the the Filght Controller to abort the Launch, and/or aborting the Launch themselves based on the control offered the System if the Launch is unstable (as similar to **Monitor Pre-Launch Activities**).