

Making it Work... by Glover Robinson

In approximately January 1967, the 501 S-1C was erected on Launch Umbilical Tower (LUT) No. 1. The formal S-1C/ Hold Down Arm Interface Drawing was delayed due to the late engineering requirement for the control release devices to the extent that the S-1C was erected before the hold down arm protective hoods were installed; therefore the hoods could not be tested due to interference with the S1-C.

The hood system on each hold down had many pneumatic/ hydraulic components. A high level official (probably Don Buchanan) from KSC and a high level official from MSFC (probably Wernher von Braun) met in the VAB or at Pad A and **agreed to install a rope** from the lower end of the S1-C to each of the hold down hoods. The rope was designed to break at approximately 1500 pounds. When Apollo 4 and subsequent vehicles lifted off, the ropes pulled the hoods over the hold down arms before the ropes broke.

The agreed to design change eliminated many components and made the subsystem very simple and reliable. Mr Buchanan was an exceptional, creative designer who focused on reliability and in keeping the KSC systems as simple as possible. I believe that Mr. Buchanan had a tough time dealing with the contractor's striving to make the systems complex but reliable in order to justify his manpower and profit.