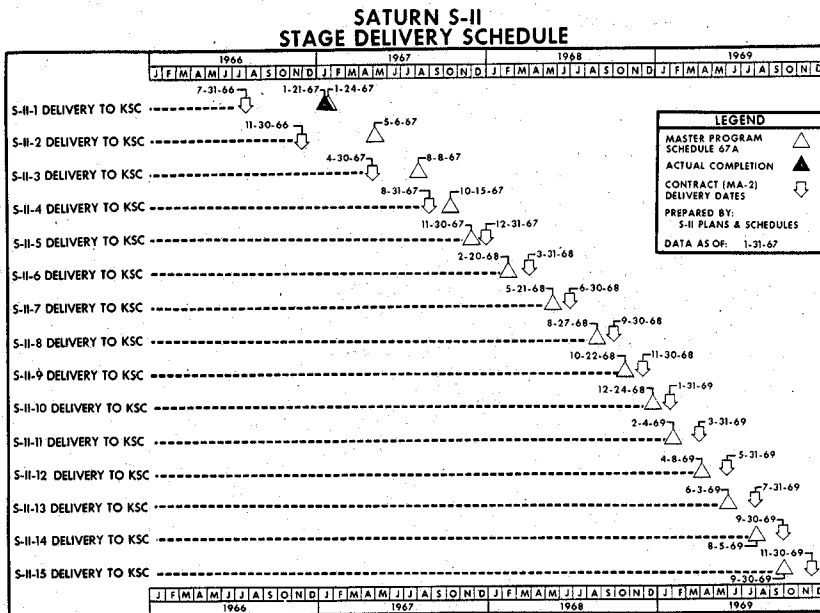




SLIDE 13. SATURN S-II STAGE DELIVERY SCHEDULE

couple of months—two and a half; by the fourth stage, we are very close, and finally, by the fifth, you will notice these two symbols reverse themselves. Then from the fifth item down to the end, we are currently running on a schedule that will deliver ahead of our contract schedule.

Now, we'll take a broad look at the problems that caused the bad schedule position I showed you on the last chart (slide 14). The first major problem is the insulation I mentioned earlier that goes on the outside of the stage to keep the hydrogen from boiling off. This was a new technology, as far as we're concerned. There are other stages, the Douglas S-IVB and the Centaur, that have used the insulation for liquid hydrogen; but we had a new approach to this, a lightweight approach, and we have had quite a few problems with it. None of them were really fundamental problems, but very much in the nuisance category—the kind of thing you can lose an awful lot of time on. Whenever you have to make a repair on this; for example, there are long cure cycles for bonding—48 hours just to make the simplest repair in this insulation. Where there is a pin hole or a rent, it takes you 2 or 3 days just to repair that simple defect.

LARRY WINN, JR. Mr. Greer, excuse me. Could you give us a little more information about the insulation? You say it's a new lightweight; what are you talking about, what type?

Mr. GREER. First, looking radially out from the stage it's about 1.6 inches thick. It's a plastic resin honeycomb. If you look down at it, looking in, you see a lot of little hexagonal cells about three-fourths inch across. On top of that there are two sheets of nylon