furnished these procedures for review, procedures which we have developed from their basic criteria. We also must generate requirements documents to forecast the support we need both from the Air Force and our own resources, allowing time to plan many months in advance. In turn, support documents are produced which detail how our requirements will be fulfilled.

We then make detailed daily schedules. You will see, when we visit complex 39, our operations control room where these schedules are prepared. Let me point out what this means in terms of laying out our job; that is, of taking all these large tasks and breaking them into meaningful areas of work so that many thousands of people, not only here but in the development centers or at the factories across the country, can support this operation.

We are now ready to begin the checkout itself. In the case of Saturn V we are speaking of a period of time in the vehicle assembly building of approximately 10 to 12 weeks in a normal flow. AS–501 has not been normal in this respect, being the first Saturn V flight vehicle. Specifically, our second stage arrived later than it will on future schedules.

What is the mission of AS–501? What do we want it to do? Our mission rules provide these answers in the form of pre-thought-out actions mandatory for a successful mission. For example, if the flight is to determine certain strength characteristics or heat characteristics, obviously those measurements, that data, are mandatory for that mission. In turn, there is the question of launch conditions. For example, with what winds can we launch? What is tolerable in terms of a ceiling? This all goes into the mission rules.

With our test procedures, our mission rules, and our support documents, we are ready to commence checkout.

Figures B–3 and B–4 illustrate some major tests which are performed on the flight hardware prior to space vehicle electrical mate. The first step in launch vehicle checkout is receiving inspection. Next, certain checks are performed in the low bay of the vehicle assembly building. Following these checks, we then erect and mechanically mate each stage in the high bay. This is the first time these stages see each other. We go through compatibility checks in which we check the compatibility of the smallest modules by attempting to make systems checks. We do not want to go into the component level. They have been checked out at the factory, either at the Michoud plant, or Huntington Beach plant, or Bethpage, in the case of the Lunar Module.

Now, our job is to put these systems together. Therefore, our testing is aimed at verifying the total electrical mate of the space vehicle. These are systems tests, a series of tests that allow the checkout of the launch vehicle. We use the same checkout philosophy with the spacecraft, with one difference—the flight crew. So our tests leading up to the altitude chamber tests are much the same as those for the launch vehicle. The first tests involving the crew are performed in the altitude chamber, where we take the spacecraft being tested to an altitude of over 200,000 feet. These tests are laid out jointly between our test people and the astronauts themselves. Normally, these tests run from 12 to 16 hours at altitude.