

Mr. RUMSFELD. Thank you.

Mr. TEAGUE. Mr. Roudebush?

Mr. ROUDEBUSH. In conjunction with Mr. Gurney's line of questioning, I wonder how the number of failures in the Apollo that you have experienced so far compares with the number of failures you had in Gemini and previous to that in Mercury before your first flight?

Dr. MUELLER. I am trying to gather that data together right now.

Mr. ROUDEBUSH. Will you submit it for the record?

(The information as requested is as follows:)

In conjunction with Mr. Gurney's line of questioning, I wonder how the number of failures in the Apollo that you have experienced so far compares with the number of failures you had in Gemini and previous to that in Mercury before your first flight?

Answer: Summarized in the table below is a direct comparison of the number of failures prior to the first manned flight in the Apollo spacecraft, to the Mercury and Gemini programs. (Notice there was an error in the original number of 20,000 failures for the Apollo CSM. This number is more accurately subscribed to the total Apollo spacecraft.) The increase reflects the increasing size and complexity of the programs. There are, for example, 21,600 drawings of 1,500,000 parts and assemblies on Apollo as contrasted with 6,100 drawings of 268,000 parts and assemblies on Gemini.

| Item                                     | Mercury | Gemini | Apollo |
|------------------------------------------|---------|--------|--------|
| Failures—prior to 1st manned flight..... | 1,300   | 4,600  | 15,100 |

The use of the term failure can be misleading. The failure reporting system makes no distinction between a material defect, a broken part, a procedural error, or out-of-specification operation. Each failure report does mean, however, that a senior member of the appropriate engineering staff reviews the item for proper action.

Mr. TEAGUE. A newspaper article said they were practically the same—about either Gemini or Mercury.

Dr. MUELLER. I believe that we will find that certainly with respect to the complexity, if you take into account the difference in complexity of the vehicle, it is better in the Apollo than it was in Gemini or Mercury.

Mr. FUQUA. There were press reports since the Apollo tragedy that the prime contractor was doing a very important job and there was some feeling in NASA that maybe another contractor should take over that job.

I wonder if you could add a little light to this?

Dr. MUELLER. Well, the prime contractor in the Apollo program is at this point in time doing a creditable job in my view.

Mr. FUQUA. At this point?

Dr. MUELLER. At this point in time. Now, I think that one has to put this in perspective and look at what happens to each of our experiences with each of our major contractors.

You have got to recognize that we really are learning a new technology. We are also learning how to manage very large programs, programs that are different than any program that the Nation has undertaken in the past.

The program that we are doing is one that is producing a very complex system and we are only producing something like 15 Saturn V's and 12 Saturn I-B's and the requisite spacecraft, so you don't