

associate contractor relationship, for a number of years. We all have everything to gain if we make a vehicle work, and everything to lose if we don't make it work.

Mr. PETTIS. That's the real key, then.

Mr. DORRENBACHER. I think it is fair to say that the fierceness is there when you are still competing for a contract. But, once the contract is awarded, then you better work together or you're cutting each other's throats and your own too.

Mr. SMITH. Also pertinent is that for the real integration job on these large programs the responsibility has to go back to the Government. They hired Boeing and Chrysler to help them with their task, but basically, we get our direction from the Government rather than another contractor.

Mr. HALL. Ted, I might say that also from the Government viewpoint, we are very much interested in this type of cooperation. I think in the Apollo program, more than any other program, it has forced this mass integration between prime contractors. It's something they each desire to do, and we are very cognizant of any problems in this local area. We maintain a very close interface between the NASA people at North American, at Rocketdyne, and ourselves. We encourage the exchange of information, and the contractors on both sides are very anxious to do that.

Mr. DOUGLAS. Besides that, we have our Apollo executive council, where frankly we wash everybody's linen in front of everybody else. We happened to have been sitting in council when they had this unfortunate accident at the cape. There are no holds barred at these meetings. There is a list of critical items; it may have a Boeing item, a Douglas item, a North American item, or anybody else's. We all know what all the problems are.

Mr. PETTIS. This is something I haven't come across. Thank you.

Mr. SMITH. There is a tremendous integration task, and it is being handled in a very efficient manner.

Now, let's go on to the Apollo Applications program, and orbital workshop. If the primary objectives of the Apollo program are successful enough it's planned that the first Apollo Applications mission will be a four-bird mission with the spent-stage workshop. The way it is presently envisioned (fig. 23), if and when the birds are converted for this purpose, it's first a dual launch, where Saturn I will carry an Apollo command and service module with a mapping and survey module payload. They would go into orbit at the 125-mile level, perform a 4-day mapping and survey mission. Four or five days later another Saturn I would launch the spent stage with an airlock, and various experiments with the equipment to be used in the spent-stage workshop activity (fig. 24).

Mr. TEAGUE. Ted, excuse me 1 minute. Anybody want him to go through this again? Some of us have seen that chart, Ted, but done in a different way. Jerry and I have seen this chart, and Larry and Earl have seen others not quite the same.

Mr. SMITH. I'll rip through this very quickly then, if you are that familiar with it. I would like to point out the participation that we at Douglas are either doing or hope to do (fig. 25).