

categorized. The lunar exploration working group of that committee recommends experiments to Dr. Newell. Dr. Newell selects the experiments and recommends them to the Manned Space Flight Experiments board where all the experiments from technology, science, applications and medicine are brought together and a priority is established for their flight and these, in turn, are passed on to the program office for implementation on flights, so the final assignment is by the Manned Space Flights Experiments Board which includes Dr. Newell, Dr. Adams, Dr. Fink of the Department of Defense and General Ferguson of the Air Force, and I am the chairman of that board, so that we have a cross-section of the agency in the selection of the experiments and it is a joint operation of the Department of Defense and ourselves.

That same board, incidentally, is also responsible for assigning science, applications and technological experiments to the Manned Orbiting Laboratory. We have a joint agreement in this area.

With respect to direct results from the flight program, those have been, up to this time in a couple of areas; perhaps the most significant from the standpoint of the man on the street have been the pictures taken by the Gemini crews of the Earth and of the air masses that give you an understanding of the meteorology. It has been found out from the experience of the scientists who have been analyzing these pictures that the addition of color to the kinds of pictures that they were able to obtain from the unmanned satellites has been a significant improvement in their ability to carry out and understand the geology and meteorology of the systems.

One thing, for example, they were able to determine that a crater which had been thought to be an impact crater was in fact caused by erosion effects of a volcanic intrusion and I have another example as I go through this.

I was discussing the training for carrying out the experiments.

An understanding by the crew, not only of the mechanical operation of the experiment, but also the objectives and underlying principles, was required to allow the crew to exercise their selective and visual capabilities. The crew served, literally, as laboratory assistants to the scientists stationed on the Earth. Future flight crews with a scientist astronaut member will provide increased support to the experimenter on Earth. In some instances the scientist astronaut will be the investigator and designer of the experiment.

The integration of the experiments into the spacecraft and into the flight operation is a large, often underestimated, task.

EXPERIMENTS INTEGRATION

The experiments generally have a variety of requirements which often conflicted or interacted. Modifications incorporated in the flight operations had to maintain the integrity of the experiments while at the same time they had to represent a compromise when conflicting activity was involved. Since one major objective of Gemini was to provide an orbiting experiment platform, the conduct of experiments had a priority second only to astronaut safety and mission success.