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Interview with Dale Myers, Associate Administrator for Manned Space Flight, NASA, FOB-10B, 31 March 1970, by RS.

The continuation of my interview with Dale Myers (see 17 March memo) lasted forty minutes. It covered a number of subjects, from Apollo 13 backward to the North American contract awarded in 1961.

Apollo 13 looked like a good one, according to the Administrator's briefing this morning. Everybody must be confident to plan a launch in April, when the window is open only one day, I said.

"It just worked out that way to make April 11 the only day," replied Myers, "It does mean we have increased confidence in our ability to launch. A lot of people are paying a lot of money to go down there for one day. If we can't make it on that day, we'll have to wait until May, of course." Myers added that Petrone was "a good man, growing into the job. He had a good briefing this morning." I mentioned that Dr. Paine praised Petrone's report, and asked what it was. "A report on Apollo 13 as of L-minus three weeks, with safety evaluation. It's an excellent report."

Did Myers get frightened before every mission, as so many people in NASA seem to do? "On every mission. You know it's so extremely complex, and so many things have to go right. You know something could happen. You realize as you go through one of these check-outs that a large number of things could go wrong, but you tell yourself that you always have a back-up. You live with it every day."

On which mission was Myers most apprehensive? "Apollo 8. I mean the safety of it, not the success of the mission. There were so many new factors in going to the moon -- the single point failure of the SPS engine. There are two ways out of earth orbit; from the moon there is only one."

To become philosophical, I said, what were the main factors in reaching the moon "in this decade?" The single most important factor, he said, was "people."

"We had an outstanding combination of people -- the top technical people of the country. We had the dramatic administration of NASA. Everybody was dedicated in their drive to the goal. The way they organized -- bumping and churning and bouncing ideas off the wall. In their drive they had the support of Congress and the people, which provided the necessary funding for the program. I would also mention the involvement of industry."

That brought up North American, for which Myers worked until last fall. How badly was the company's morale affected by the 204 fire? "I don't know

how you measure morale, but I know that North American turned to harder than ever after the fire -- men working 16 hours a day. It was a tremendous emotional experience. Industry doesn't frighten as easily as some others (MEANING NASA?). Some broke under the strain, but most worked with both feet and both hands."

At this point I asked several questions regarding the fire.

1) Now that three years have elapsed, do you have any theories or subsequent knowledge that would shed any light on the cause of the fire? "No new knowledge at all. The investigation was so thorough I don't think anybody has done anything on the subject since then."

2) Would a fire extinguisher have been useful in the 204 spacecraft? "My guess is a fire extinguisher wouldn't have stopped the fire. You know it started down in the lower bay, and it spread too fast."

"Yes, the Block II spacecraft has a fire extinguisher. It has a better chance of working in 5 p.s.i. than in 17 p.s.i. It is a foam extinguisher developed by MSC and Midwestern Research, I think. It is a canister about five inches in diameter and seven or eight inches high. It will fill two or three cubic feet of space. I think there is only one in the s/c, maybe two. You got to pick your bay to put it in." (NOTE: The Apollo Spacecraft News Reference says the portable fire extinguisher's nozzle can be inserted through ports to douse a fire behind the new protection panels which isolate a fire).

3) How much did the fire cost North American -- some reports said $15 million, others 10 and 12 million? "There's no way to figure it out. I guess you mean how much in profits. You know, after the fire we went from incentive to CPFF, and that cost us a lot. I've heard higher figures than those. Bob Carroll and Earl Kunz would know. (EARL BLOUNT CHECKING) Some are hard numbers; we made some deals with Webb which caused a big loss. There were secondary losses, too." Myers added: "The loss of time was a big factor. When someone asked Atwood how much sooner we'd have got to the moon, he said, 'Six months.' I cringed at that one. I knew we'd lose more time than that because of the fire."

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NA had the s/c contract nearly a year before the LOR decision was made. How much difference did it make to the CM? "I wasn't in the Apollo program at the time. But I know that eventually it did make some difference in the top deck. The Block I couldn't have accepted the LM. That was one change

that had to be made. That meant the parachute system had to be changed, too. And a few communication systems.

"These changes must have been expected. There was no known way to reach the moon."

Could the early Block II have accepted the LM? "Yes, I think so. It was compatible." (I INTENDED TO ASK IF IT WERE TRUE THE FORWARD (DOCKING) HATCH WAS ONCE TOO SMALL FOR A MAN TO PASS TO THE LM. EARL BLOUNT WILL CHECK).

"Late in the program VHF ranging was brought in to measure the difference between the LM and CM (a redundancy for the LM's radar). But is that to say it couldn't handle the LM?"

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I mentioned that Myers had told me in July, 1968, that each spacecraft had a personality of its own. Could he give me examples?

"Yes, each spacecraft has a character of its own. A vehicle will develop weakness in one system but not in others. 101 had all the problems of the first child. 103 was a better spacecraft but it had parachute compartment troubles. 104 had environmental control troubles. 107 was a mature vehicle; our guys knew enough by then. It had little problems but its personality was understood. "I felt very confident on 107 /which was Apollo 11/. I'm sure George Jeffs /who succeeded Myers/would tell you that each spacecraft has its individuality nowadays, too." **(SEE CLIPPED PAGES OF LOW NOTES FOR** REFERENCES TO INDIVIDUALITY OF VARIOUS SPACECRAFT).

"Jeffs was one of those who worked night and day for six months, as interaction between the 204 Fire Board and North American." Jeffs was a member of the board briefly, until they decided an NA man shouldn't be on it.

In July 1968 Myers had told me /Notebook 195, p.46/that he thought 109 would be the CM for the first moon landing ("although 108 had a fair chance"). When did he conclude that 107 would be it? "I'm a conservative," he said, laughing, "I really thought the LM would be the reason for the delay." I said many people in headquarters believed Grumman to be the luckiest company in the world.

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Did Myers know anything about the unanswered letters found in Joe Shea's desk after the fire, which Atwood called to Webb's attention (see Webb interview). No, never heard of them, "but if they were there I suppose some of them were signed by me." Myers is a partisan of Shea's: "It was too bad they made him the goat. He's a brilliant man." When I showed Myers the exchange of letters between Shea and Hilliard Paige, September 30 - December 5, 1966, he said, "Hummm." He was interested, too, in Bland's

report of 23 November 1966, stating that "Those assessments, which are now complete, indicate that our inherent hazards from fire in the spacecraft are low."

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Myers mentioned the fire last week at the Cape which burned up three cars 1800 feet from the Apollo 13 spacecraft -- "melted one of them." This peculiar fire also was discussed at the briefing this morning. Apparently oxygen spilled down from the pump, becoming gaseous, of course, then floated on the fog and dew to the cars, where it ignited. There wasn't a breeze anywhere, yet something transported the oxygen. Von Braun said he had heard of a pocket of hydrogen exploding in similar fashion.

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What were Myers's observations on the battle between the scientists and the engineers?

"It's a bridge we can cross. It has been bitter, because of Apollo. The scientists feel they got short-changed in the drive to the moon. With Apollo 11 we brought them a bit of moon dust; Apollo 12 carried some more scientific experiments.

"I believe now we have had a real change of attitude. Rocco Petrone and Lee Scherer and MSC are doing a real turn-around. Apollo 13 will help a lot, as you saw at the briefing this morning. I'm doing more interaction with OSSA than George Mueller ever did.

"George was the symbol the scientists were against, because of his dedicated approach to go to the moon. I can understand his approach. Now the manned program is moving strongly toward Science and Applications. Just watch."

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It wasn't the most informative interview I've ever had, but it wasn't the worst, either, especially for a reading of attitudes.