

MAE 146 Tape Review. Mercury episode.

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The tape was on the mercury space program. Called the *wings of mercury*. It was about the main events during the Mercury space program, and the continued race to space between the US and the USSR.

These are the main points discussed in the tape.

1. In January 1961, President Kennedy takes office. During the election year, Kennedy made an issue of improving the US space program to compete with the Russian.
2. Tape showed a number of mercury launch disasters, indicating that there was many accidents during this program. Chis Craft was interviewed to talk about one such accident.
3. NASA was now facing a bleak future, and it was hard to find a new NASA director as no one wanted the job. Johnston hired James Webb to lead NASA.
4. During this period of time, in late 1950 and early 1960, USSR was leading the US in the space program with the launch of sputnik and by 1959 the Soviets reached the moon with an unmanned vehicle and took close pictures of its surface. But there was a major space accident in the USSR which was not publicized or made public where dozens of people were killed.
5. Despite these dangers and accidents, both countries pressed ahead with the space race.
6. One major issue was how to handle weightlessness in space for extended periods of time and its effect on the human body. An interview with John Glenn was on this subject with John talking about some possible health problems that they could face that might affect eye sight and body balance.

*Course taken during Spring 2003.

7. The Mercury space vehicles are design to fly unmanned. A point was made on how chimpanzees were used in the initial test flights.
8. In April 12, 1961, the 27 years Russian Yuri Gagarin makes a 108-minute orbit around the Earth. This event showed that the US was still behind the Russians in the space program. This caused more public pressure on president Kennedy to do something. Kennedy reacted strongly to this event.
9. 3 weeks after Gargarian flight, the US Allan Shappared was ready to be the first US to go to space, but there was concern that the flight might fail. NASA administrator John Webb was interviewed about this flight. The space Vehicle was called the redstone rocket. The Flight went ahead, and it was a success. Shappared was in space for 15 minutes and went up 116 miles into space. For the US, this was a great success and Shappared became a national hero.
10. Kennedy has recognized that space is important and was preparing to send a man to the moon.
11. Meanwhile, the Russian were moving ahead in their space program. One flight was in an orbit for one full day, making 17 cycles around the earth.
12. In the US, John Glenn was to take the first space orbital flight. During this flight, and less than one hour into it, a malfunction occurred. The problem was that the heat shield was not locked into place. As reentry occurred, contact with the space vehicle was lost, but John Glenn eventually did land safely. John Glenn mentioned seeing some dust or snow like particles during this short flight.
13. Deke Slyton, a mercury astronomer, was replaced by Scott Carptner due to detecting some heart related problems with Deke. Scott was intrigued to find more about those snow like particles that John Glenn saw. During Scott flight, it was found that fuel consumption usage was being exceeded. Scott sees smoke and oscillation are detected. Flight had to be aborted and he lands with no fuel left, but lands safely.
14. During the last mercury flight, Gorden Copper makes 22 orbital trips around the earth. At the end of this flight, which was full of problems, almost all systems in the space Vehicle are not fully operational. The reentry had to be fully manual.
15. Despite the long mercury space program, the Russians are still ahead in the space race. USSR sends the first woman to space. In October 1964, 3 men crew launched into orbit, then came the first USSR space walk.
16. Now the tape starts talking about the next US space program, which is Gemini. The Gemini space vehicle was smaller than mercury, very crowded and harder for astronauts to get inside it.

17. Gemini 4, on June 3, 1965 carrying Ed White into earth orbit. This was the flight where Ed White made the first space walk by an American. The walk lasted for 22 minutes. Space walk was part of preparation for the eventual trip to the moon. Question was now being raised on how can human survive for 2 weeks (the time needed to go to the moon and come back) in weightlessness and in those space suites.
18. After this flight, there was a 14 days Gemini flight to test endurance.
19. A small interview with Frank Borman, a Gemini 7 astronaut.
20. During Gemini 8 flight, during a docking exercise, a problem developed soon afterwards. Gemini 8 had to detach, but then it started to spin excessively with over 60 revolutions per minutes. After gaining control, the flight had to be aborted and landed to earth.
21. With Gemini 10, space rendezvous, docking and space walk operations are finally perfected. This was important to be ready for the flight to the moon.
22. 2 more Gemini flight occurred after that. The US was now ahead of the USSR in the space program.
23. The tape now goes over why did the USSR fall behind the US in the space program when it was ahead just few years ago? Marcha Smith was interviewed to comment on this. It seems the reasoning was bad policy and decisions by the USSR president over the space program. Whatever the reasons where, the US was now ahead, and was ready to send a man to the moon.