

Apollo 1 launch catastrophy



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identification (all above optional - if you need them) The Apollo I Launch Catastrophe The NASA space program aimed to place a manned space mission onto the surface of the moon before the USSR space program was able to do so. In order to fulfill this aim, millions of dollars were spent and the cost to human life was extremely high. Although the astronauts involved in these missions would have said that it was worth it, the question remains whether it was worth the cost in human life to have beaten the Cold War enemy. One of the disasters that cost three men their lives was the catastrophe that occurred on the launch pad of Apollo I. Ironically, the accident occurred not in an actual space launch but in a simulation launch on Friday, January 27, 1967. Three astronauts, Virgil Grissom, Edward White and Roger Chaffee, were on board the spacecraft, 012, by 13: 00 they were seated on the couches in the spacecraft after their preparations were complete Everything leading up to the launch simulation had gone well. There had only been short delays due to the communications systems, but according to the astronauts and the technical crew the other systems had been faultless. All 1000 crew members, as well as the three astronauts, had been preparing for months, and the process was anticipated to go smoothly. The system and the spacecraft were in excellent condition. The knowledge and familiarity of the crew and the astronauts with the spacecraft was faultless. Only one other problem (apart from the communications systems) was anticipated: the environmental system had been faulty but was by then in good repair. One of the astronauts, Grissom, did report, though, that as they entered the capsule, a strange smell, like sour milk could be sensed. The astronauts were sealed into the capsule, and their biomedical sensors, communications systems, and the environmental control systems were

checked. The cabin was then drained of all gases except oxygen, in preparation for the launch sequence. By six that evening, communication systems again caused some delay, and the actual launch sequence was delayed for ten minutes. At 6: 31, however, from inside the capsule, a shout was heard - reporting that there was a fire. Ground crew scrambled to get the astronauts out of the craft but as they watched, a sheet of flame could be seen. In the room adjoining the capsule, crew battled the flames, and tried to unseal the locks to open the entrances. The astronauts, it was later found, could not have explosively unsealed the entrances to the command capsule from the inside. Only five and a half minutes after the fire had been reported on the communications system, could the hatches be opened. Inside, the astronauts' bodies were burnt, but it was concluded that they had not died in the flames - they had died from inhaling toxic gases. At exactly the time that the three astronauts were being buried, and investigations into the accident were beginning, a second similar disaster occurred. Two men at Brooks Air Force Base were conducting experiments on animals in a space chamber, and a fire broke out without warning, spreading rapidly through the chamber and killing both men. While other astronauts had died in the general NASA space program, none of them had died in events directly related to the space flight program. The difficulty of continuing with the program became to convince the federal government that it was necessary, and more importantly, that NASA had not been negligent in their preparations and caused the deaths. The reports after the catastrophe mention that conditions were extremely dangerous at the site of the test, but that NASA had been unaware of the danger. The procedures in the case of such emergency were not in place, and the crew had no way to get out of

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the capsule in the event of such an emergency. The gases in the capsule and in the preparation rooms around the capsule were not anticipated to be flammable. In short, the success that NASA had been having with this type of environment - oxygen - had led to some carelessness in ensuring the safety of personnel. In addition, the safety and emergency procedures had not been fully planned nor trained for. Only after this disaster were recommendations made to reduce the flammable substances in capsules, and to ensure that the hatches could be opened in the case of emergencies of this kind. Many changes were subsequently made to anticipate and prevent similar disasters, but the tragedy of three men dying has not been erased. Even the subsequent successes of the NASA space program cannot compensate for this and similar tragedies. The cost of the space program has been incredibly high. References Brooks, Courtney G., Grimwood, James M., and Swenson, Loyd S., Jr. (1979) Chariots for Apollo: A History of Manned Lunar Spacecraft. (Washington, DC: NASA SP-4205, 1979) available at <http://history.nasa.gov/Apollo204/> Accessed June 12, 2011