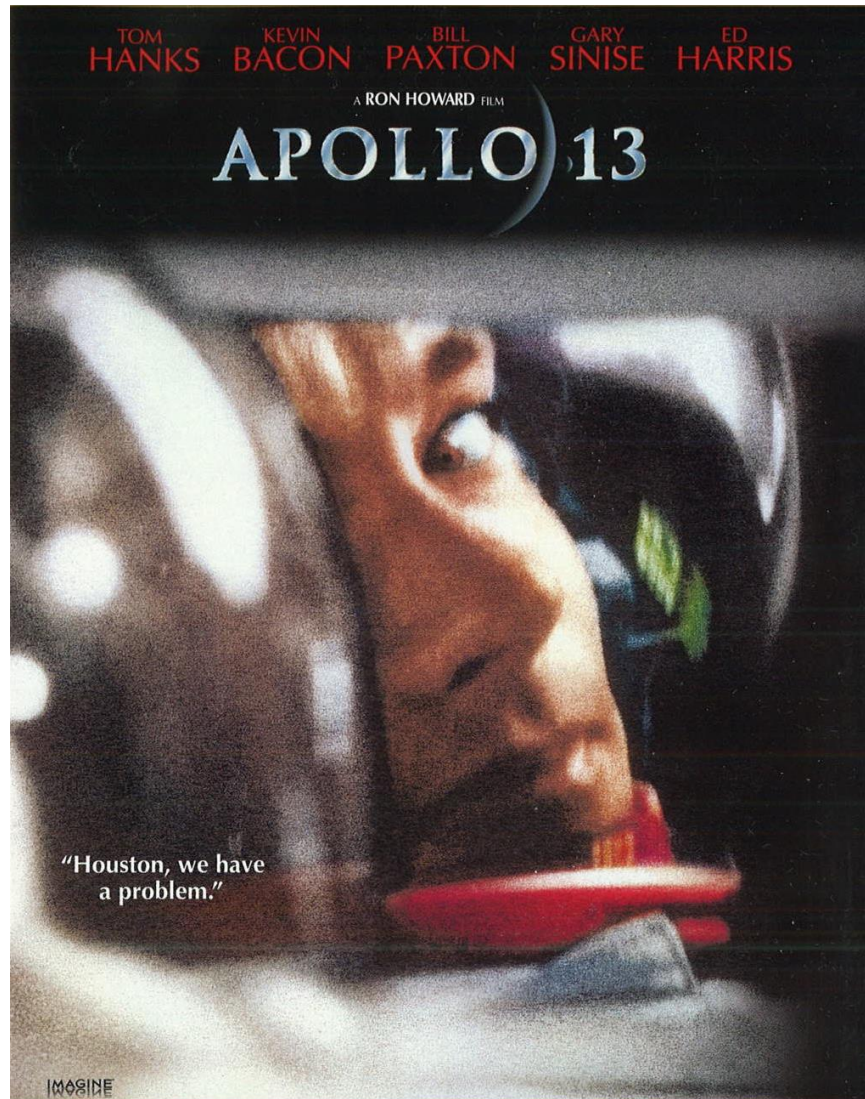# Movie Discussion Guide for Apollo 13

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Summary

Apollo 13 is a film about the United States third mission to land on the moon. The spacecraft of three astronauts suffers an unexpected explosion that causes their oxygen and power supply to slowly deplete. This explosion causes them to abort their mission to land on the moon and focus solely on getting back to earth alive. The astronauts and entire NASA workforce are in charge of figuring how to get the team back to earth while the spacecraft is running out of resources and time.

Discussion Questions

- **The greatest amount of innovation displayed in the movie was depicted by the NASA flight director Gene Kranz when he said, "I don't care what anything was designed to do, I care about what it can do". What are some examples where innovation was displayed in the movie?**

    One example was when the Mission Control rescue team had to make a square air filter canister fit into a circular hole in order to reduce the amount of carbon monoxide being released into the spacecraft by the team's respiration. NASA technicians replicated a box of supplies found on the lunar module and dumped it on a table. The rescue crew had to utilize only these items to create a makeshift filter to retard the ever-increasing levels of carbon monoxide. The next order of business was for the Mission Control team to create the steps necessary for the fix and subsequently relay that sequence to the astronauts.

    Another example was when the three astronauts worked as a team to navigate the spacecraft back into the earth's atmosphere without computer guidance controls. They had to manually guide the spacecraft and fly it in a fashion "that would make Sir Isaac Newton proud." The crew would have bounced into outer space had they failed to meet the target re-entry pattern. Additional example of deliberate innovation surrounding the Apollo 13 flight can be cited at Innovative Thinking on Apollo 13.

- **Who do you think exhibited the highest degree of innovation through collaboration in the film?**

    Collaboration is a major theme within the movie, that without it, the Apollo 13 flight would have never been dubbed a "successful failure." Countless scientists and engineers combined years of research and experimentation along with all of their skills to accomplish a goal set by President Kennedy in 1960 to put a man on the moon. While there was no one specific identifiable hero in this group Apollo 13 a love song to collaboration, the end result could not have been possible without their innovative efforts as a team.

    On the other hand, Ken Mattingly can be identified as a hero as a result of his collaborative efforts with the Apollo 13 rescue efforts. Ken's untimely removal from the space crew was due to his potential exposure to measles. This removal from the team could have left anyone bitter and disconnected from the rescue efforts of his former teammates. Mattingly, in conjunction with the mission control team worked in unison to resolve critical issues that would have prevented the space crew from returning to earth alive. Ken created a seemingly impossible computer startup sequence for the command module utilizing power from part of

the ship that was ultimately going to be discarded. His solution provided additional power to the command module that resulted in its' safe landing on earth. All of the other technicians said this task was impossible. Ken displayed his innovative skills to illuminate that just because there isn't a written plan, one can always think outside the box in order to accomplish the once thought impossible.

- **In order for the three astronauts to get back into the earth's atmosphere, they all had to work as a team to perform a task that had never been accomplished before. Can you think of situations where teamwork created an example of innovation?**

    This film depicts how it is better to work as a team as compared to working individually. From the technicians who developed the carbon monoxide filter, to the engineers who found ways to conserve the power supply needed for re-entry, teamwork was vital throughout the movie in order to bring about a successful landing. It would be hard to conceive that any single person could have solved these problems individually.

    [Apollo 13 lessons from the successful failure](#).

- **The astronauts were in a life or death situation, do you think this sparked innovation or made it more difficult for them to come up with a useful solution?**

    The pressure of this situation obviously caused a lot of stress throughout the team, it forced them to be an innovative group given their time constraints for survival. Without the time constraints they wouldn't have put such extreme effort into producing viable solutions to their dire situation. This   can be compared to someone owning a business. The success or failure of a business may not be a life or death situation. However, if the business is not successful, the owner may not be able to produce results that can support their life style or their family. Success should be a must for all entrepreneurs, just like getting the astronauts home was a must for Gene Kranz and the NASA Flight team.

- **What commonalities do innovators and the Apollo space program share?**

    One might say that these terms are interchangeable. Each starts off with concept creation that may take place on a napkin or a drawing board. Each concept goes through a development and testing phase that often times requires a substantial amount of funding. In the case of the Apollo program, bringing the product to market was highly time sensitive in that loosing the race to the moon with Russian was not an option

    [The Space Race](#). Daniel Lockney, the editor of NASA's annual publication was quoted as saying that the Apollo space program "has yet to be rivaled." There are countless examples of innovative ideas that have achieved extreme success, yet not many of them have been tied to a life or death situation such as the events surrounding the Apollo 13 space flight.

- **In the movie Apollo 13, the media decided not to telecast the third attempt of an America spacewalk and moon landing. Had spacewalks already become routine for the Americans or**

was there another reason why the big three television companies chose not to broadcast this event. Do entrepreneurs and innovators face these same types of media challenges?

        The Americans had beaten Russia to the moon, NASA was facing extreme budget cuts from congress and the American public had already witnessed two lunar landings along with several other successful trips into space. Could it be safe to say that space travel had become an ordinary event? Had the excitement (brand awareness) worn off enough that television executives resorted to traditional programing and advertising to maintain revenue flow for the stations? It is quite possible that lunar travel had lost its' appeal (brand appeal) to the general public, thereby reducing the possible television viewership and revenue generation by the Big Three broadcasters.

Society moves at such a quick pace today that what was new and exciting a few short days or weeks ago may now be old news and off the media and consumer radar. Media attention is drawn to material that grabs one's attention and generates revenue through increased readership or ratings. This creates an environment where every business strives to keep itself in the spotlight through new products or concept reinvention. In Apollo 13's case, a tragedy captured worldly attention as the flight returned as a "success failure." [Apollo 13 CBS Special News Report](). Unfortunately, this series of events cannot be experienced by every business as a negative event can lead to a prompt demise before a resolution can be implemented.

- **It seemed that the media was aware of every little nuance that was taking place within NASA and the Apollo 13 flight. The media knew exact details that where unfolding within the organization during this flight. In any organization, this type of media leak could be extremely damaging. Why is it important for businesses to put in place practices that prevent the inadvertent release of critical program information?**

        The military uses special procedures and conducts training to prevent the leak of important information in order to stop adversaries from obtaining operational information that could have adverse consequences on a mission. [US Military Bans Physical Media To Curb Leaks](). Conversely, an information leak could be beneficial to the public as the leak may inform them about information that they should be aware of. A recent example of this would be the open publication of sensitive information by Edward Snowden.

- **Businesses are always improving their end products because of either defects being identified after the item rollout or finding ways for product enhancement. What are some examples that demonstrate this process of defect detection and product improvement?**

        Even though Apollo 13's crew landed safely, there was potential for a catastrophic event to take place. There have been many unforeseen incidents in the history of spaceflight to include the loss of 18 astronauts to date. The process of re-engineering in order to identify a problem that caused a specific malfunction or product failure can be extensive. [Cognex Vision.](). Design oversight or improper manufacturing of parts as simple as an O-ring can lead to catastrophic failure. Occasionally, events like Apollo 13 save the lives of countless others

because the re-engineering process produces better products or in NASA's realm, better spacecraft.

Another example of product improvement can be found in the countless upgrades of cell phones. The constant evolution of cell phones can be, in some cases, attributed to the detection of defects in previous models. The availability of new technology has revolutionized the cell phone industry spawning exponential improvements and functionality of previously designed models.

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