



CAPITAL  
MARKETS  
AND US  
VICTORY  
IN THE  
SPACE RACE,  
1957-1970

1957



4 ОКТЯБРЯ

*в Советском Союзе произведен  
запуск ПЕРВОГО искусственного  
СПУТНИКА ЗЕМЛИ*

3 НОЯБРЯ

*в Советском Союзе произведен  
запуск ВТОРОГО искусственного  
СПУТНИКА ЗЕМЛИ*

By Peter Kline

THE SPACE RACE, a period of American and Soviet technological competition spanning longer than 20 years, was a large and highly-lucrative source of business for American aerospace and related technological firms. Boeing, TRW Inc., the Grumman Corporation and others eagerly participated in, and profited from, the technological race. Stock market valuations of those companies, however, were sometimes buffeted by non-financial, geopolitical news including the launch of Sputnik, JFK's moon speech, the success of Apollo 11, the near-disastrous systems-failure of Apollo 13 and the cancellation of the Apollo program.

One might surmise that such significant

geopolitical events would have caused large stock price gyrations, but in fact few did. In some cases, investors correctly anticipated events, muting their effect on stock prices. In other cases, they correctly judged the hidden benefits of ostensibly bad news. The overall efficiency of the stock market invited investment, dollars that the big three aerospace corporations and other major government contractors used to build the technologies that won the Space Race and ultimately the Cold War.

United States aeronautics and aerospace firms Boeing, Grumman, North American Aviation and TRW were all founded earlier in the 20th century, and each contributed to the Space Race in important ways. Grumman built the Apollo Lunar Lander, TRW built or collaborated on several different satellites, Boeing was heavily involved in the Apollo program and the construction of the Saturn V Rocket, and North American Aviation contributed to the construction of both the Saturn V

rocket and the Apollo program's Command Module. Members of the Grumman team that designed the Apollo Lunar Lander are still venerated in the scientific community for their achievements.

The successful launch of the first man-made satellite, Sputnik I, by the Soviet Union on Friday, October 4, 1957 sparked the Space Race by creating the widespread perception that the US had fallen behind the Soviets both technologically and militarily. The nation's star struck and fearful response proved a pivotal one in American history because it led directly to greatly-increased federal government involvement in higher education and scientific research and development. It also provided the political cover needed to fund direct human exploration of the lunar surface.

Sputnik did not encourage sky high confidence in American industry. This was reflected in the stock market at large when on Monday, October 7, 182 companies posted record lows while no companies

Left (top): Astronaut Buzz Aldrin stands beside an American flag on the moon, 1969. Left (bottom): Illustration celebrating the launch of Sputnik I and II, 1957.



Certificate from one of the top US aeronautics firms, North American Aviation, 1956.

on the NYSE reported a yearly high. The aeronautics companies were not immune to this damaging effect. Boeing lost one and a quarter points, equivalent to 3.6% of the company's worth, by the close of the day following Sputnik's launch (the NYSE opened on Saturdays back then). Grumman's stock, by contrast, did not suffer as badly at first, but the remainder of the following week was not kind to either company. With the majority of companies on the NYSE posting negative results for the week after October 4, Boeing lost nearly another 4% of its stock value and Grumman plummeted almost 10%.

The apparent Soviet dominance in the Space Race continued in April 1961 with the successful launch and return of Yuri Gagarin, the first human in space. This remarkable achievement, a much better demonstration of Soviet capabilities than the launch of Sputnik, failed to have the same type of impact on the markets or upon the American psyche that the launch of Sputnik created. Boeing gained just under 1% of its value while Grumman lost 2% and NAA gained 2% during the days following Gagarin's pioneering trek. While some newspapers carried stories about how this was a further demonstration of Soviet leadership in the Space Race, the acknowledgement of Soviet leadership by the American government and public generally (not a passive sentiment, to be sure) made Gagarin's feat less of a shock than the utter surprise that was Sputnik.

John F. Kennedy's speech before a joint session of Congress on May 25, 1961 galvanized the American effort to gain technological mastery over the Soviets in the Space Race. At the beginning of the 1960s, many thought the Soviets were in the lead by a span of several years. JFK admitted as much and argued that in order to have a fighting chance of catching the Soviets, the nation had to commit itself to the tough goal of landing a man on the moon by the end of the decade.

A year and a half after JFK's speech, prominent members of the American scientific community continued to predict the Soviets would win the race to the moon, barring a "sudden breakthrough." So clearly JFK's speech was not an instant turning point for the aeronautics industry or the nation as a whole, but has come to be seen as such due to America's eventual success in the Space Race. This conclusion is bolstered by analysis



Commuters read newspapers with headlines announcing the failure of US Vanguard missile, 1957.

of aerospace company stock prices, which were detached from the President's speech.

Boeing's stock rose only one-eighth of a point after the speech, suggesting that investors considered the speech more bluster than the harbinger of big government contracts. Similarly, TRW's stock experienced the typical daily fluctuations, showing no significant reaction to JFK's speech (it fell marginally the day after). Grumman's stock jumped 1.8% on the day of the speech, but the increase appears to have been independent of the President's soaring rhetoric. Aerospace stock did not increase dramatically immediately following the speech because NASA's planning had already put the US on a slightly longer but very similar deadline, with circumlunar (moon orbit) flights planned for late in the decade and manned missions to the lunar surface not long after. Moving up this deadline served as little more than an increased logistical challenge to the engineers behind the project and a nice bit of PR for JFK and the United States.

Apollo 11, the first mission to land a human being on the moon, was a major event in American and world history. Such a remarkable occurrence, however, had little discernible effect on the stock prices of the big three aerospace companies. TRW, Boeing and even Grumman suffered losses over the course of the week following the historic mission. It might have been expected that the perfect performance of Grumman's groundbreaking Lunar Lander would have shone favorably upon the company, but it lost almost 4% of its value over the following week. Boeing's value fell by 2.4% over the same period. Clearly investors had anticipated the success of the mission and already priced it into the valuation of the aerospace companies. What concerned investors in the warm afterglow of the landing were emerging macroeconomic difficulties and the possibility that successful completion of a manned lunar mission might reduce public interest and the juicy government contracts that accompanied it.

Apollo 13 was a near disaster but was touted as a huge success because the astronauts returned home alive. Apollo 13 was, if nothing else, an excellent demonstration of how human ingenuity and determination can overcome even Murphy's Law.

For the private companies who were not caught up in the spotlight of the Apollo 13 rescue, however, the mission brought relatively minor trouble. During the week of the disaster (April 14–18, 1970) each of the three big companies posted losses, with Boeing losing 5.5% of its value, TRW's value dropping by about 2% and Grumman's value sinking 1.3%. The companies which designed some of the equipment associated with the failed mission took hits too, though not catastrophic ones. North American Aviation, which built the Command Module that suffered the malfunction, lost only 3.5%.

In September 1970, the final three Apollo missions were cancelled, leaving only two more scheduled. The cancellation indicated that the mission objectives of Apollo (to put humans on the moon and to discover more about our celestial neighbor) had been accomplished, and also that the space program was preparing to move on to different projects, including Skylab and the Space Shuttle.

Skylab was already in the works and helped to carry the space program from the close of the Apollo missions in 1972 to the 1981 launch of the Space Shuttle, the re-usable orbiter that remained the defining feature of the American space program for the next 30 years.

During the week of the Apollo cancellation, Boeing's stock jumped 10%, and TRW's and Grumman's stocks rose 7.3% and 8%, respectively. The companies apparently benefitted from the revelation that NASA and the government would be turning their sights (and dollars) on other programs in which the companies would vie to play large roles.

Investors were not disappointed. Since the days of the Space Race, the big aerospace companies have continued to thrive on government contracts. Boeing is still a major player in the aeronautics field and acquired North American Aviation. Grumman Corporation was acquired by Northrop to form Northrop Grumman Corp., one of the largest defense contractors in the world today. TRW Inc. was acquired in part by Northrop Grumman, which wanted its defense industries. The

non-defense side of the business was spun off into TRW Automotive, which primarily works to make cars safer through the development of new technologies.

The major events of the Space Race and the stock value of the companies involved in the aerospace industry were deeply intertwined. While unanticipated events such as Sputnik or the announcement of the cancellation of the remainder of the Apollo program had the anticipated positive and negative effects on the markets and on the aerospace firms, events such as the Apollo missions that had been scheduled and anticipated by investors had already been taken into account in the valuation of Boeing, Grumman and TRW and, therefore, did not affect the companies' stock prices with nearly the same punch that geopolitical surprises packed.

The Space Race and the Apollo program had a major effect on the American economy by harnessing the talents of hundreds of thousands of Americans, thousands of companies and hundreds of universities. Although some of the Space Race's most gripping moments were surprises, a majority of the Race was a planned, dedicated effort of which the public and investors were kept well aware. Markets fluctuated as new information became available, but they were rarely shaken to the core. As a result, investors continued to pour their savings into the market and, thereby, finance the big companies whose engineers won the Space Race.

America's foe, despite its early lead in the race, lived under a very different set of rules that in the end could not command the resources necessary to win the Space Race or the Cold War of which it was a part. Although it achieved a few successes, including Sputnik and Gagarin's flight, the Soviet government wasted precious resources, manpower and ingenuity on projects with more political appeal than practical military or economic sense.

In the 1930s, for example, it expended a substantial part of its R&D budget in a failed attempt to develop aircraft powered by steam turbines. During the Space Race, America quickly drew even with the Soviets scientifically and militarily, while the Soviets were content to trounce the US only in the propaganda department. By January 1960, seven of 15 satellites launched by America were still orbiting Earth, while only one of three Soviet devices still roamed the skies, a fact

that should have dispelled some of the abundant American discomfort about the Soviet "lead" in the Space Race.

The American focus on scientific and technological value, even if that meant smaller satellites and lower lift capacity rockets, clearly turned out in the long run to be a much better tactic than the Soviet's emphasis on larger but less useful technologies.

The financial crisis of 2007–9—and subsequent recession and attendant human suffering—revealed that capitalism, that complex and ever-evolving mix of free markets, democracy and big government, is far from perfect. The Space Race reminds us, however, that it was superior to communism, its main 20th century rival. Despite its warts, perhaps capitalism is still the best system available. \$

*Peter "Sander" Kline is an undergraduate student at Augustana College in Sioux Falls, SD. The Thomas Willing Institute provided Sander the opportunity to study and write about the Space Race, a childhood fascination he maintains to this day.*

## Sources

- Anon. "Space Foundation Publishes Apollo 11 Recollections." *UPI Space Daily*. July 10, 2009.
- Anon. "Spiked Horns of Dilemmas." *Economic and Political Weekly*, Vol. 5, No. 32. August 8, 1970.
- Baldwin, Hansom W. "Neglected Factor in the Space Race." *The New York Times*. January 17, 1960.
- Ertel, Ivan D. "Apollo." *The Southwestern Historical Quarterly*, Vol. 73, No. 2. October 1969.
- Hughes, James J. "Confusion over Space." *The Journal of Social, Political and Economic Studies* Vol. 36, No. 1. Spring 2011.
- Kennedy, John F. "Special Message to the Congress on Urgent National Needs." May 25, 1961.
- Launius, Roger D. "Saturn V: The Complete Manufacturing and Test Records plus Supplemental Material." *Air and Space Power Journal* Vol. 22, No. 3. Fall 2008.
- Mathews, Melissa and Beth Dickey. "Apollo Lunar Lander Team to Share Lessons Learned with NASA." US Fed News Service, Washington DC; July 5, 2007.
- Samuelson, Robert J. "It's Sputnik Time Again." *Newsweek*. May 30, 2005.