100 Years of Flight:
A Chronicle of Aerospace history
1903-2003
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Published by the American Institute of Aeronautics and Astronautics,
In association with the Smithsonian National Air and Space Museum
2003, 524 pages, oversize

This is a grand, celebratory tome, profusely illustrated, issued in the honor of the centennial of the Wright Brothers first heavier-than-air flight. To page through it is to relive the high points of human flight over the previous century.

Enjoyable it is, and inspirational – but I found it to be too riddled with technical errors in the space sections (I could not judge the aviation sections) to be dependable as a reference, or even as a first introduction to key features of technology and history.

Historical overviews as densely packed as this work can be expected to have errors slip through, and there has to be a little slack cut for projects forced to meet a calendar deadline. And the book does carry a warning: "Data and information appearing in this book are for informational purposes only. AIAA is not responsible for any injury or damage resulting from use or reliance."

The level of misspellings and typos is entirely acceptable, as for examples: p. 476, Henen for 'Hennen', Viktoenko' for 'Viktorenko'; Pp. 415-416, Kerwin is repeatedly misspelled 'Kirwin'; P. 457, 'Kaptusin Yar' for 'Kapustin Yar'. Some other textual hiccups: "electric reconnaissance" for "electronic reconnaissance" (p. 442). These are the nits that space nuts love to catch, and none of them is significant or misleading in the slightest.

But there are far more serious factual flaws dealing with some fundamental features of space, flaws that one really wishes had been caught during review. The following is a superficial list I put together based on a fast afternoon's skim through the space sections. Balancing the level of their seriousness against the overwhelmingly awesome grandeur of the book's layout is a 'judgment call' I don't want to make – but these problems need to be documented, at least, to encourage other historians to assess (and as needed correct) the criticisms, and feel the need to make their own reviews of the original book to seek additional problems with it.

Page 300: An item on Sputnik-2: states that "the dog is to return to Earth after an undisclosed number of orbits." But no such recovery was ever planned, or attempted.

Page 300: In the same section, it mistranslates the official title of Sputnik-1, 'Sputnik Zemli', as "Earth Traveler", when it means "Earth Satellite" (Sputnik is sometimes translated as

'companion', which had a humorous parallel to 'fellow traveler', a euphemism for a Western communist sympathizer).

P. 302, calls Pioneer-1 (October 1958) the "country's first attempted space probe", overlooking the first attempt in August. And a year earlier, several high-altitude probes were launched from balloons under 'Project Farside'; for some reason, the book (p. 299) claims the launchings occurred over Minnesota [actually, from near Eniwetok in the Pacific].

p. 303: "Venera-1 got within 62,000 miles of Venus before communications failed" – it actually lost communications much earlier, and the Soviets only estimated that it later passed within 100,000 kilometers (an estimate) of Venus. Direct conversion from metric to English of a number originally highly uncertain, that adds unjustified significance (i.e., looks like it's between 61,000 and 63,000 miles), misstates the certainty of the measurement, and at best the number should have been given as 'about 60,000 miles'.

p. 307, on April 13, 1958, "after four months in orbit", Sputnik-2 burns up (it was launched Nov 3, five months earlier).

Editorial judgments were made on what to include and what to leave out. This section also overlooks first unmanned Vostok recovery in 1960; the Nedelin disaster in October 1960; the first manned orbital launch failure, April 5, 1975; the first manned pad abort (Sep 1983) of an orbital mission, and others.

Page 305 and 321 have the same photograph of Echo-1.

Page 328 re Titov's Vostok-2 flight: "Unlike Yuri Gagarin, Titov ejects from the capsule and parachutes back to Earth." Historians struggled for a decade to painfully unravel Soviet propaganda about this enigma, and determined Gagarin had ejected as well but Moscow lied about it. The soviets later admitted this. For this book to revert to the original Soviet lie is an insult to history and to the historians who dug out the truth.

Page 335, Vostok-3 and -4, "The two capsules rendezvous within 3 miles of each other. The main significance of the flight is the rendezvous." This claim totally misrepresents the nature of 'rendezvous', which is when two spacecraft arrive close to each other at essentially identical velocities; this is a difficult technological feat, that was not even attempted on this Soviet mission involving two spacecraft launched into space 'near' each other, but unable to maneuver to match position and speed.

p. 339, in 1963, "Cooper completes the longest manned space flight to date," actually just the longest US flight.

Page 341: The 1964 Polyot test mission is presented under its Soviet cover story, part of Russia's manned lunar program. At the time, this was a lie from Moscow to conceal the true purpose, which was a prototype 'killer satellite'. Historians laboriously dug this truth out over the following decades; it is frustrating to see this book bury it again.

Page 346: The photograph of the 'Voskhod-1' crew shows only one of them, and also includes one of the backup pilots, Boris Volynov, instead.

Page 349, a full-page photo of a museum mockup of Leonov's spacewalk is presented as an authentic spacewalk photo with a star background later added in. Also, the spacewalk is described as using an umbilical to supply the suit with oxygen. Actually, oxygen came from an autonomous backpack, something the Soviets always asserted, and later confirmed.

Page 356: The first space rendezvous, Gemini-6 and -7, is described inaccurately, as the two vehicles coming "within 40 meters of each other" [they actually were closer than 2 meters].

Page 369: in 1967 Surveyor-5 and Surveyor-6, both on the Moon's surface, were later reactivated. The craft "will exchange signals", presumably with each other. Actually, each only exchanged signals independently with Earth.

P. 369: USAF "Manned Orbiting Laboratory" astronaut trainee Bob Lawrence, killed in training in December 1967, misidentified as "chosen by NASA" – particularly serious because when this error appeared in the Aeronautics & Astronautics, I wrote to Winter and he responded gratefully to acknowledge the original error.

Page 370, Zond-4 – 'Western observers believe the target to be the Moon'. No, it flew past the moon on a mission to test interplanetary communications and control, and the target of the hardware was Mars and Venus.

Page 380: The 1969 crew exchange on Soyuz-4 and -5 is described as the spacecraft "each with two cosmonauts" [actually, one had one, the other three].

Page 381, the Feb 21, 1969 launch of the first 'N-1' moon rocket is described as failing when two engines shut down after ten seconds, causing the rocket to fall back onto the launch pad (that actually happened on the second flight in July, while this flight flew for more than a minute and fell far from the pad).

Page 390, the Soyuz-6,7,8 flight in October 1969, "All three spacecraft rendezvous and orbit the Earth in formation," but the text states that experts believe it is a failed attempt to assemble the first space station. Actually, they did not rendezvous successfully, any one with any other, and there was no 'permanent space station' intended for this mission.

Page 399, on April 22, 1971, Soyuz-10, "the cosmonauts return safely to Earth on April 24 following the successful completion of their mission." Actually, they returned after a failure of their docking mechanism to Salyut-1. Moscow claimed it was a successful mission, but that original statement was a lie; it is distressing to see it resurrected.

Page 400, a photograph is presented as showing the three cosmonauts who died on Soyuz-11 in 1971: Dobrovolskiy, Patsayev, and Volkov. It actually shows the Soyuz-7 crew (1969): Filipchenko, Gorbatko, and Volkov.

P. 436, describes the “six week mission” of Soyuz-21, which actually lasted 49 days which is seven weeks.

P. 442, calls Salyut-6 (1978) the “first four-man space station”, and it is “the last major manned program of the Soviet Union before it dissolves.” Salyut-6 was a two-man station that would have four people aboard during brief visits. Furthermore, it was followed not only by Salyut-7 but by the next generation space station, Mir, all during Soviet days. Neither Mir, nor Buran, nor any Soviet vehicle is listed in the “index of notable craft” on p. 523.

p. 454, STS-8 was the first shuttle launched at night, “to determine if the DoD can launch missions at short notice at night”. No, this intention had nothing to do with the launch time scheduling.

Page 464, refers to the 1987 ‘Energiya’ launch carrying a ‘mock satellite’ (actually a prototype anti-satellite beam weapons testbed). The Soviets SAID it was a ‘mock satellite’, but that was a deliberately deceptive cover story, which should not have been repeated in this book.

P. 464, describes 1987 mission of Soyuz TM-3 with “Alexander Alexandrov, the first Bulgarian in space” – but the first Bulgarian flew in 1978 and was named Ivanov (the second Bulgarian WAS named Alexander Alexandrov and he flew in 1988, a year after the second flight of a Russian cosmonaut with the same name). This confusion is understandable, which is why real experts should have been consulted.

P. 477, in July 1992 “Franklin Chang-Diaz is the first Hispanic-American in space”, but he actually first flew in 1986. And Arnaldo Tamayo-Mendez of Cuba flew in 1980.

p. 477, May 15, 1991, ‘Kathryn Thornton becomes the second woman to walk in space (that distinction belongs to Kathy Sullivan, seven years earlier).

Page 481, the impact of Shoemaker-Levy comet pieces on Jupiter is observed by “Hubble and Voyager” (meant to say “Hubble and Galileo”).

Page 482: Norm Thagard in a Russian Soyuz docks to Mir March 14 (correct), then he “returns to Earth March 22” (incorrect – he stayed aboard until picked up by a space shuttle in July). Same page, states that STS-63 “makes close contact” with Mir, the first for the US in 20 years (actually, no contact of any kind – just a close approach test).

On page 483, it describes Shuttle-Mir as preparation for the “International Space Station Freedom [sic!]”. And the ‘index of notable craft’ on page 523, under ‘International Space Station’, states: “See Freedom”. The ‘Freedom’ designation was cancelled in 1993, once the partnership was expanded to include Russia; in later years, ‘Alpha’ became the most common code name for the new project.

Page 483, “Andrew Thomas becomes the first Australian astronaut in space” in 1996 (this overlooks Australian Paul Scully-Power in 1984).

Page 484 describes how Mars Global Surveyor is "able to relay data from the Russian Mars 98 landers" (actually there were no such vehicles; the last Russian Mars lander attempt crashed back to Earth in 1996).

On page 487, relates that Mars Global Surveyor goes into Mars orbit, but then "incomplete deployment [of solar panel] shortens the mission." Actually, failure of the latch-open mechanism delayed the aerobraking maneuvers but the full mission was later accomplished and has been extended year by year ever since.

Pp. 491-2, states that Mars Polar Lander reached the surface of Mars, but 'four days later' contact was lost. Actually, there never was any contact. It probably crashed.

Page 496, the module Zvezda is launched, and then 'docks with the ISS' – actually, it was the ISS that flew over and docked to the Zvezda. This is a nit but deals with the operational accuracy.

On page 497 the photograph to illustrate the arrival of the first permanent crew on ISS shows its configuration before the addition of the module they actually lived in.

Page 501, in October 2001, describes Claudie Haignere's flight to ISS aboard a Soyuz that arrives "four days later" (they all take TWO days to get there).

Page 502, US citizen Michael Lopez-Alegria is identified as "the Spanish astronaut" (he was born in Spain but is a US citizen), elsewhere Pedro Duque is correctly identified as the "first Spanish astronaut".

As I wrote at the beginning, there's got to be a tolerable level of factual oversights, misunderstandings, and other errors in any book of this length and density. These three dozen quickly-spotted errors don't ruin the book, and in any normal publication, would be embarrassing perhaps, but not grounds for serious criticism. But in a project especially dedicated to the flight centennial and sponsored by the two most prestigious flight-history entities in the world – the Smithsonian and the AIAA – I do believe that additional care was called for, and that errors such as these show it was not taken.