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Editorial : Enabling the Dream of Flight

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To invent an airplane is nothing. To build one is something. But to fly is everything.
—Otto Lilienthal (1848–1896)

MAN has long envied birds and other flying creatures, wanting to emulate them and leave the Earth. Icarus attempted to escape the Labyrinth in which he was imprisoned with his father, Daedalus, by building wings from feathers and wax. Despite Deadalus's warning not to fly so low as to get the feathers wet, nor so near the sun as to melt the wax, Icarus flew too high, the wax did indeed melt, and he fell to his death.

In 1809, a Viennese watchmaker named Degen claimed to have flown with similar apparatus. In reality, he only hopped a short distance, and was supported by a balloon. Many early attempts at mechanical flight involved the use of aircraft with wings that flapped like a bird's and ultimately failed.[1]

It was only when inventors such as Otto Lilienthal, building on the work of Cayley, moved away from directly mimicking nature, and adopted fixed wings, originally as gliders and later as monoplanes, and eventually as aircraft with wings and a tail, as Cayley had identified was needed for flight,[2] that success was achieved.[3] Even then, early aircraft had very limited success (the Wright brothers' historic first powered flight at Kitty Hawk, North Carolina, in 1903 only lasted 12 seconds and 120 feet[4]), and required the addition of a gas-powered engine for thrust and the Wright brothers' identification of an effective means of lateral control, for a feasible heavier-than-air craft to be possible.

The telescope (as Galileo Galilei named his device in 1661, although his was not the first actual telescope) afforded man the opportunity to observe the planets and the stars as never before, although offering nothing of the power nor sophistication of the Hubble Space Telescope or the James Webb Space Telescope.

During the opposition of 1877, Giovanni Schiapare identified lines on Mars that he termed *canali*. Mistranslated as "canals", people mistakenly thought there was civilization on Mars and the idea of "little green men from Mars" was born.

On 4 October 1957, the USSR launched the first satellite, *Sputnik I*, which was soon followed by the failed US launch of *Vanguard*. The Space Race had begun.

Our advances in Aerospace have been phenomenal. Supersonic commercial flight has been possible for more than four decades; unmanned aerial vehicles are widely used in exploration and surveillance applications; we are soon to replace the Space Shuttle with the next generation of crew launch vehicles, the Hubble Space Telescope—the most powerful telescope to date and the source of much of our data about our universe—with an even more powerful replacement. We have already been to the Moon, and both the US and China have plans to return there. Even going to Mars is now a possibility.

A number of scientific and engineering disciplines have made significant contributions to advancing our knowledge of space and of our universe and to enhancing our capabilities in the aerospace domain. Significant discoveries in the physical sciences and engineering have made flight and space travel possible. We must, however, also remember the significant contributions of information technology, communication technologies, computer science and engineering, and several related disciplines. The contributions of these enabling technologies, and research in these areas, have allowed us to achieve what would have simply been the pipe-dreams and aspirations of scientists otherwise.

Journal of Aerospace Computing, Information and Communications publishes papers on state-of-the-art developments in computer science, engineering, information and telecommunications technologies and other areas, with emphasis on their application to advancing developments and research in aerospace.

In 2008, we plan to have special sections on "Integrated First Responder Technologies for the Global Transportation Industry" guest edited by a highly distinguished panel of Guest Associate Editors, led by Gerard Parr; "Intelligent Systems" based on best papers from the track at InfoTech@Aerospace 2007, guest edited by Kelly Cohen; and

a special section on "Sensor Technology in Aerospace Systems" organized by SENTC (Tim Howard and Greg Adamovsky). We also hope to have an update on the DARPA Urban Grand Challenge, following up on Chris Rouff's special section published in December 2007.

Thank you for your continued support of JACIC. We look forward to your continued submissions, contributions and comments.

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