



STRATOPEDIA

WINKER, James A. (1928 - 2017)

James A. Winker was an independent aviation and aerospace professional, whom was involved directly or indirectly with almost any scientific ballooning project since 1951.

He was born in Randall, Minnesota on December 1928. His education included the University of Minnesota at Minneapolis, obtaining in 1952 a B.A. in Aeronautical Engineering and in Business Administration. He also attended in 1956 a short course on Aerodynamic Deceleration there. Also he took extension courses in the United States Air Force on the Squadron Officer School in 1964, as Air Weather Officer in 1965 and on Military Management in 1967.



Winker was involved with ballooning since the inception of the activity. As early as February of 1947 he was crew member for the launch and recovery of Don Piccard's flight in a converted Japanese FUGO bombing balloon that was recovered intact in the United States during the Second World War.

In 1951 he entered in General Mills Inc. as Junior Engineer Associated participating in the development of internal pressure balloons, stratosphere balloon design and data analysis. He did also extensive work with small tracer and carrier balloons for hurricane studies and developed particle sizing apparatus for biological agents.



In October 1954 he entered the USAF to work in the Cambridge Research Center, at Bedford, Massachusetts. There, as Research and Development Officer, **he was in charge of the development of small super pressure balloons obtaining performances of up to 8 days aloft. He was also involved in the study of techniques to for launching small pre-inflated balloons from large aircraft.** Another task to which he dedicated his efforts was the development of a system for launching very long balloon load trains (3000 ft) which were carried compacted and then gradually extended while airborne.



In early 1956 Winker was contacted by **Joseph Kaliszewski from Raven Industries Inc.** a balloon manufacturing firm based in Sioux Falls, South Dakota whom invited him to visit the company's

headquarters. During the visit, made in October, Kaliszewski offered him a job as an aeronautical engineer at Raven. As he was retired the month before from the Air Force (with the rank of Major) he accepted the job. **That decision would become a turning point in Winker's professional career as he continued to work at the company for the next 35 years.**

At Raven, from entry to mid 1960s **he was responsible for stratosphere balloon design for balloons up to 9 million cubic feet, for altitudes up to 150,000 ft, and payloads to 4000 lb.** He also developed miniature, low cost balloon systems for delivery of light loads at distances up to 1000 miles and directed development of parachutes for small rocket nose cone recovery as well as expendable cargo chutes.

In June 1960 he was appointed Chief Engineer for supervision of development, test, quality control, and support groups. He had continuing responsibility for balloon design, specifically for extending the capabilities of polyethylene balloons and bringing super pressure balloons to a practical stage. **He also participated in the development of hot air balloons for man-carrying under a special project for the Office of Naval Research (ONR), that eventually will be the foundation of the modern hot-air balloon sport.** He worked on continuing development of special parachutes, including a hybrid parachute-hot air balloon. **He also assisted with preparations and simulations for the first hot air balloon flight across the English Channel performed by Ed Yost in April of 1963, which brought world-wide attention to the fact that the modern hot air balloon was a practical aircraft.**

By the end of 1966 Winker was in charge of the development of new products, improvement of existing products and processes, guidance and monitoring of the Manufacturing Department. This included primarily film and fabric inflatable devices such as balloons (stratosphere, global meteorological super pressure, heavy load transport, hot air and tethered types), inflatable ground structures and storage bladders. He also directed the effort for gaining FAA Type Certificate for hot air sport balloons.

In 1970 he was appointed Vice President of Raven's Applied Technology Division. He was responsible for the direction and coordination of all divisional activities, including manufacturing, sales, and engineering. Product line included all items from previous Balloon Division, plus specialty parachutes and industrial plastic film products.

His last stage in Raven saw him as Vice President of the company. Being involved in a special project to introduce and laid the groundwork for the transformation process to implement the concepts of World Class Manufacturing, Total Quality Management, and Manufacturing Resource Planning to the company.

After retiring from Raven in 1991, he founded his own company REKWIN Co. offering consulting services in the aeronautic and ballooning field. This included from balloon systems, inflatable devices, parachute and decelerator systems designs to expert witness for balloon accidents and lighter-than-air historical research and archiving. In this last area of competence his greatest contribution, was **the creation of the Balloon Technology Database, now called the Balloon Technology Collection (BTC), which was born to provide a single repository for scientific ballooning literature and data.** It consists of technical reports, working papers, proceedings, and journal articles that were collected from

a variety of corporate, private, and published collections by Winker. It is managed by NASA's Balloon Project Office (see in detail below).

Winker **has written numerous Technical Papers which were presented in scientific balloon symposia and sport balloon technical or safety seminars.** He has been **contributor or advisor to approximately 10 books** on the subject of balloons, as well as numerous articles in technical or trade magazines regarding balloons. **He owns near 10 patents of balloon-related inventions** including balloon leaflets release mechanism, new balloon structures, destruction devices, airborne balloon launch device, ballast systems and parachutes. He also co-invented a long-load launch device for balloons an air launched balloon system and a deflation and air control system for hot air balloons.

During his career **he received numerous honors and prizes** including being listed in "Who's Who in Aviation and Aerospace" and "American Men of Science", the **Shields-Trauger Award** for contributions to sport ballooning (1978), and an **Honorary Life Membership in Lighter-Than-Air Society** (1989). Also **he was elected Associate Fellow of the American Institute of Aeronautics and Astronautics (AIAA)** and in 1999 received the **Otto C. Winzen Lifetime Achievement Award** in recognition of a career in the advancement of balloon design and manufacturing and for preserving the history and technology of scientific ballooning through the NASA Balloon Technology Database.

He was an active aeronaut too. His achievements in the field include flying over the Swiss Alps in a gas balloon, serving as an official at the first USSR International Balloon Championship, and launching an experimental balloon made from ancient materials over the Nazca Lines in Peru. He also flew his balloon, "My Blue Heaven," over the opening ceremony of the 1980 Lake Placid Olympics and attended all 21 World Hot Air Balloon Championships that took place from 1973 through 2014 in locations around the globe.

In 2009 he was **inducted into the U.S. Ballooning Hall of Fame** by the Balloon Federation of America at the National Balloon Museum, in Indianola, Iowa.

He died on April 3, 2017 at the age of 88 at his home in Sioux Falls, South Dakota.