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Its daybreak on a summer morning in 1960 at the Anoka County Airport (now Blaine Airport), and the Physics Department of the University of Minnesota is preparing a launch of a high altitude research balloon. Its purpose is to gather information such as cosmic rays, solar terrestrial phenomenon and other items of interest in preparation for the coming space exploration. These balloon flights took place for several years.

The balloon is several hundred feet in length and is laid out in a straight line along the runway. Attached to the balloon are parachute and gondola containing an array of measuring instruments and 300 feet of trailing antenna. Only a small amount of gas is pumped into the top portion of the balloon creating a bubble which provides enough lift to raise the balloon and its contents. As it rises, the gas will expand until it fills the entire balloon which will level off at an altitude of 100,000 feet or more. After a pre-determined time period, the timer will release the parachute and the gondola will be safely lowered to earth.

Launching requires careful handling by a number of personnel to keep the fragile balloon from scraping on the airport runway and tearing a hole in the material. Beginning at the inflated top portion, the balloon is gradually released by individuals, one by one, until the whole assembly is off the ground and on its way.

Very early efforts in balloon design included paper, cloth, and cellophane, for construction and hydrogen as a lifting agent. As interest in achieving greater heights surfaced, new methods of balloon construction prompted search for better designs and materials.

By the mid-thirties, engineers were finding success with plastic but began using helium rather than hydrogen as it was much less flammable and therefore, safer. But helium only had 92% of the lifting capacity so a larger balloon then available, was necessary to lift the required loads. The first attempt was a cotton cloth fabric cut into easily handled pieces and glued together with rubber cement. This process was successful but its weight limited the altitude to which it would ascend. A new kind of balloon was necessary that was both lighter and durable at high altitudes.

This balloon technology came through the efforts of Otto and Vera Winzen who founded Winzen Research Inc. in Minneapolis. Otto pioneered the use of a polyethylene resin in the manufacture of his balloons which were light, fairly inexpensive and unaffected by ultraviolet radiation. He was able to get the material so thin the plastic measured only .002 inches thick. Hence the extreme caution necessary during launch so as not to puncture the balloon.

Most efforts were conducted in the summer when the winds at over 100,000 feet in altitude, were from the East at only a few miles per hour. After the launch the balloon would begin its ascent and drift eastward with prevailing westerly winds but as it approached higher altitudes the winds would gradually shift to the east and the balloon would then move in a westerly direction. Typically, the balloon would stay aloft for the remainder of the launch day plus the next day until 4 PM when the timer would release the parachute over the Dakotas or even Wyoming or Montana.

When balloons were launched in the winter, the balloons would travel easterly, at all altitudes, and were timed to drop the load the same day so as to land in Wisconsin; presumably to avoid any chance of losing everything in Lake Michigan.

It was important, of course, to retrieve the parachute and gondola. The direction the balloon was travelling was monitored from the University facilities so it was known about where it would be located when the parachute was dropped. Aircraft from the University Flight Facilities at the Anoka County Airport, where dispatched to be on location at that time of the drop.

On the morning of the drop an aircraft with a University of Minnesota pilot and technician from the Physics Department would head West (or east in winter) in the direction where the balloon was likely to be located. A transmitter located on the balloon gondola sent a signal which would eventually be picked up by an instrument on the aircraft known as an ADF (Automatic Direction Finder). This ADF indicated the direction of the transmitting signal measured from the nose of the aircraft. By keeping the ADF on “0” or “360” degrees, the pilot would be flying directly toward the balloon. When the ADF swung around to”180” degrees, it meant the aircraft had passed directly underneath the balloon.

The crew would land, refuel, and plan to have the balloon located when the parachute was released at 4 PM. In order to avoid running into the parachute as it descends (especially on overcast days) the pilot would begin an orbit around the parachute by flying with the parachute on a wingtip (“90” degrees on the right or “270” degrees on the left on the ADF).

The parachute would take about an hour to descend and when it was visually sighted, it would be followed down to the landing site and its position noted on a map. It was also important to watch for the balloon itself, for after the parachute was released, the balloon would rise until it bursts and then would flutter down, usually in the same area. No attempt was made to recover the balloon.

Most flights were conducted in a Cessna 170, with a main landing gear and a tail wheel, which allowed for landings either on a road or in a field to retrieve the parachute and its load. If neither of these options were practical, or if the flights were in an aircraft not suitable for such landings, the crew would proceed to a nearby airport and obtain a truck or car to complete the rescue.

Once loaded, the crew began the long trip back to Anoka County Airport, arriving in the dark—usually after midnight. Interestingly, at night WCCO radio cranked up its transmitting power westward and its signal could be picked up by the ADF as far away as the western parts of the Dakotas providing an easy means of navigation all the way home.

By Don Uhlenberg

Blaine Airport Promotion Group (BAPG) was formed in 2010.

The original vision statement in 2010 was shaped by a need to promote public awareness of the values of the Blaine airport within our community as well as the communities that the airport serve. Economic impact studies show a snap-shot of an airport that provides a vast infrastructure of job and career opportunities and economic benefits to a wide area of our local communities as well as the entire Upper-Midwestern States. General Aviation Airports continue to be a National Asset.

In January 2011 the BAPG set in motion an initiative to connect with Aerospace schools that were developing curricula for the mandated STEM (Science, Technology, Engineering, Mathematics) programs. The Anoka-Hennepin School District 11 was introduced to the airport with the help of Civil Air Patrol, Major Shelly Kaufman with her introduction of the ACE curriculum (Aerospace Connections in Education). Anoka-Hennepin School District's Magnet School has provided advisory and support in establishing school tours of the airport and workshop programs that involve introducing K-12 students to the basics of General Aviation and aviation history. A number of schools from districts around the Twin Cities have participated in educational tours that provided hands-on experience using aviation related tools, games and aircraft displays. Through the cooperation of airport businesses, school Integration Coordinators and Blaine Airport Promotion Group the program provided planned activities that supported the classroom curricula for each group. These activities were also coordinated with a variety of summer school tours that included complete tours of the airport as well as the hands-on activities.

These programs would not have been possible without the support of businesses and airport residence that provided tours and the use of their facilities during busy work day hours; Twin Cities Flight Training, Cirrus Flight Operations, R.C. Avionics, Key Air, Bolduc Aviation Specialized Service, Inc., Golden Wings Museum, American Wings Museum, Anoka County Composite Squadron Minnesota Wing Civil Air Patrol, Airport Manager, Shop crew and Tower Controllers, T-6 Thunder North American Flight Team, Experimental Aircraft Association, Life Link III.

K-12 schools developed STEM curricula to address the deficit in job and career skills in the work place. The BAPG developed and provided a hands-on approach in teaching students the primary structure of an airport as well as history and development of the aerospace industry in an actual operational airport setting. An average of 1200 K-12 students a year have visited the Blaine airport through this program.







The BAPG was supported by monthly meetings that attract numerous school officials, education integration coordinators and airport business interests to share and advise the group on education and airport events that introduced STEM Initiatives that would ultimately provide the outreach we felt the airport community needs. Periodic events were part of the day-to-day and year-to-year activities that the BAPG organization was involved with. Any event that brings value or interest to the community will benefit the Blaine Airport's objectives of promoting aviation to the greater community.

The Aerospace industry is a cooperation of public and private industries that research, design, manufacture, operate, and maintain vehicles that move through the air and space.