



AMICA International

Automatic Musical Instrument Collectors' Association

Honor Roll

Edwin Link

Edwin Link

by Harvey Roehl

The AMICA, V18, No 9, Nov 1981

Ed Link was a neat guy.

In writing for a group of people who enjoy all sorts of things mechanical - musical and otherwise, there just isn't any better way to describe the man! When Bob Bowerman proposed that Ed be made an honorary member of AMICA, his thought was that we should recognize that he was apparently the last surviving member of any family (at least in America) that had been engaged in the manufacture of coin-operated pianos.

Thus an era ended when Ed left us at the age of 77 on Labor Day of 1981, his body unable to keep up with a still active, fertile, and imaginative mind. He had wanted very much to attend the Convention in Pasadena in 1980, and had in fact made tentative plans to travel there, but last-minute medical problems prevented him from doing so ... and it is thus regrettable that many of our members did not have the privilege of meeting him personally.

Ed was born and raised into the coin-op piano business, for his father was involved with the Schaff Brothers Piano Company in Huntington, Indiana - and occasionally today a Schaff Piano can be seen with a decal under its lid specifying conditions of warranty, affixed with the signature of Edwin A. Link (sr.). When Ed (jr.) was 5 years old, his Dad went to Binghamton, New

York, to see what he could do to protect the interests of a group of creditors for the Binghamton Automatic Musical Company, a firm which purchased pianos from mid-west piano-makers, and who then installed all the music-roll mechanisms and coin slots and noise makers, for re-sale to "route operators."

The senior Ed liked what he saw, for he purchased the firm, changed the name to the Link Piano Company (later the Link Piano and Organ Company), and from then until the firm went under in the late 1920's proceeded to ship their instruments all over the United States.

His son was never much for school, and in fact never graduated from high school. Rather, his interests lay amongst mechanical things and tinkering with them, and by the time the theatre organ market began to amount to something, Ed was old enough to travel around the country, installing them in the picture palaces of the day. He honed his inherent mechanical skills during this period, to the point where his inventions were legion in later life, and this writer likes to consider him as being a great "backyard inventor" in the finest American sense of the word.

The invention which was to bring him fame and fortune was, of course, the famous aviation flight trainer for which basic patents were granted in 1930 when Ed was in his early 20's. He had wanted very much to fly, and the cost of flight training was such that he reasoned that there had to be a way of providing much basic instruction right on the ground. The trainer which resulted became well-known around the entire world during World War II, when at least *hal f-a-million* pilots received instructions in it.

In the original patent applications (which, by the way, suggests that the device could also be used as an amusement device) the main drawing shows a vacuum supply source as the familiar back-and-forth Link piano pump! And the azimuth motor, which enabled the airplane-like machine to turn about a vertical axis, was the same vacuum motor as used for player piano roll drives. Production versions of this motor for the thousands of trainers (often referred to by pilots as the "Blue Box") had motors supplied by Gulbransen.

Ed was never one to talk much about his accomplishments, for after all, they spoke for themselves. However, he once told this writer, in answer to a specific question, that the one which brought him the greatest personal satisfaction and pride had to do with a speech that Winston Churchill made to Parliament during World War II's Battle of Britain, wherein the Prime Minister made it clear - without mentioning Link by name - that his trainers had made and were making a very significant contribution to the winning of that battle.

Ed had thousands of friends all over the world, not just through his fame in the field of aviation, but also for his later work in Oceanography which is an entire story in itself and won't be recounted here. This writer considered it a real privilege to be one of those thousands, because for all his association among the high and mighty /he had several honorary degrees and was considered a real captain of industry) he was just as common

and ordinary a person as one could ever hope to know. In the 30 years of reading the two daily newspapers in Binghamton, New York, I cannot recall anyone who had ever been eulogized in as many pages as was Ed when he left us. He was extremely well-regarded in his home community by those who knew him and just knew 'of him,' and his nature was such that this would have been the case even if the industry he founded had not been the employer of several thousand, not only in Binghamton but around the world.

But for all his fame (AMERICANS who attended the Convention in Dayton, Ohio, will recall seeing the plaque honoring him in the Aviation Hall of Fame, just outside the entrance to the room where Pauline Alpert staggered all of us with her pianistic ability), Ed was always the happiest when he was in work clothes, tinkering with some new device or gadget in his workshop.

In 1965, he had fitted the local cultural center with a large (3/10) Link pipe organ that he had installed in Binghamton's Capitol theatre as a young man, having purchased it back when the building was demolished. He wanted the new generations to be aware of the beauties of theatre organ music, and since that time many famed artists have performed on it.

It wasn't enough, however, just to have it there. He wanted school children to know of its wonders when no artist was available to play it, so he saw to it that a roll-playing device was fitted to it - not an original Link player, but one that he paid Fred Beeks to build and install.

Ed's funeral services were private for the family, but his importance in the community required greater in the way of a means for individuals to pay their respects, so two memorial services were held in the Sears-

Harlcness' Hall where the organ resides - one on a Saturday for employees of the Link Company, and one on Sunday for friends of the family. At each service, there were remarks by a local clergyman, comments about Ed's life by one of his close friends, and then - of all things, a theatre organ recital by Searle Wright who is a Professor of Organ in the Music School of the State University of New York, a man who actually had received his first lesson at age 12 on the organ from Ed himself, and on that very same organ!

And sure enough, the planners of the event made sure that at least one number was played by the roll player! As one person commented on leaving the hall, Ed would have loved it.

"Ed Link's contributions to enhancing pilot training and making aviation safer around the world are extraordinary," said Jim Dunn, president of L-3 Communications' Link Simulation and Training division. "As a visionary 75 years ago he recognized the tremendous value a ground-based flight trainer could bring in improving the skills of both new and experienced pilots. By inventing the first pilot training device and continuing to make significant contributions throughout his aviation career, Ed Link spawned the creation of what today is a multi-billion dollar simulation industry." Link's odyssey in becoming the "Father of Flight Simulation" began in 1927 when, at the age of 23, he began working for his father at the Link Piano and Organ Factory in Binghamton, NY. He built pianos and tuned organs, a job that required a thorough knowledge of the pumps, valves and bellows that directed the air power within the instrument. It was during this period that Link, whose passion was aviation, began to wonder if he could create a training device that could give pilots the skills they would need to safely fly.

Link's idea to develop a ground-based flight trainer was given a boost during a chance meeting with a group of fliers at Wright Field, OH in 1927. In a book on his life, "From Sky to Sea," Link said that he watched as a "Major Ocker" tried to help a group of aviators at Wright Field understand the problems with direction that are encountered while in flight.

"He'd blindfold the people and twist them around in this seat a few times, then ask them which way they were turning," Link states in the book. "They invariably said the wrong way and that was one of the things that gave me the idea that you could make a whole airplane to train a pilot to do everything. He (Major Ocker) was merely demonstrating... that you couldn't tell where you were going by sight or feel. You had to have an instrument that told you where you were turning and whether you were flying straight or level."

Over the next 18 months, Link worked in his father's piano and organ factory's basement to create a machine that could mimic the experiences of flying an airplane without ever leaving the ground. Link applied the principles he had mastered in building fine organs to the design of his new flight training device. The pilot trainer's stubby wooden cockpit fuselage was mounted on organ bellows that Link had borrowed from his father's piano factory. An electric pump drove the organ bellows that allowed the trainer to bank, climb and dive as a pilot operated the controls in the cockpit.

Link received a patent for his new pilot trainer on April 14, 1929, the first in a long series of patents that he would receive for continued flight simulation innovations. Link upgraded the trainer in 1933 to include aviation instruments in common use at the time, such as radio aids and gauges that could tell a pilot if he was flying level. From instrument flight training to new navigation techniques to the first trainer designed to simulate flight in a jet-powered aircraft, Link trainers would continue to evolve and set new standards of excellence in pilot training.

Today, Link simulators are providing training for pilots and aircrews on some of the world's most advanced military aircraft. Link has built simulators for aircraft platforms including the B-2, F-117, F/A-22, F/A-18, F-16, C-130, T-45 and a wide range of attack, reconnaissance and transport helicopters.

Link Simulation and Training is a systems integration organization that specializes in delivering and supporting training systems and equipment that enhance operational proficiency. Link has major operations in Arlington, TX; Binghamton, NY; Orlando, FL; Broken Arrow, OK; and Phoenix, AZ.