

I WAS THERE!

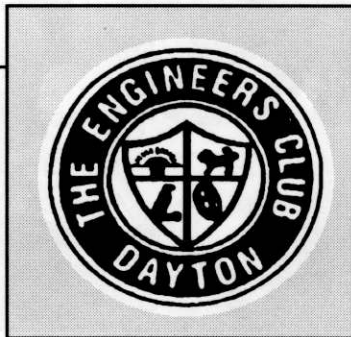
by Wilson Charbonneaux

As you board or leave a commercial airliner, and you glance into the cockpit, you can see a vast array of instruments. In the center console are the suite of engine instruments. In today's airplanes, the engine instruments all look alike, whether they display RPM, fuel flow, exhaust gas temperature, or engine pressure ratio. In fact, they are all made by the same manufacturer, making them easy to read. That wasn't always the case. Before the Boeing 747, each indicator was made by the manufacturer that made the corresponding sensor or signal conditioning unit. This was confusing to the pilots, a nightmare for the maintenance personnel, and a logistics problem for the purchasing function of the airlines.

Captain Scott Flower, chief test pilot for Pan Am, wanted the situation changed. Captain Flower was the type of person who got his way. As a young Engineering Manager with GE Aircraft Instrument business, I made a call on Scott at his office in NYC. He told me what he wanted. I told him the reasons it couldn't be done. He showed me the door and said not to come back, unless I had some ideas as to how to

achieve his concepts. With much chagrin, I started developing ideas with my very capable engineers. I then made a point of visiting Scott every month—first with sketches, then with paper models, and finally with prototypes and specifications. There were enormous hurdles to overcome, not only from the viewpoint of design, but also to work out the technical interface with the competitor's sensors.

With much help from Scott, we held a two-day seminar for all the airlines from throughout the world that had ordered or were about to order the 747. They all came, as well as representatives of Boeing. We built two complete cockpit simulators, one with conventional instrumentation and the other with our proposed concepts. Boeing saw the positive impression the new instruments made on the airlines and decided to provide them. To be fair to all their suppliers, Boeing used our technical information to prepare a procurement specification, and went out for bids. After a pricing battle, GE won the contract and went on to win the L1011, DC8, Airbus 300 and the B1. The basic concepts of engine instrumentation were changed forever.



Valley of the Giants

Ardo M. (Art) Friend

c.1915 - 1969

When you walk through the Engineers Club, it would be hard to miss the A.M. Friend Multimedia Center. Over the years, the A.M. Friend Multimedia Center has been an important area of computer activity for Club members and staff.

Born c.1915, Ardo M. Friend was the son of Mr. and Mrs. Maurice Friend. He graduated from the University of Michigan with a degree in engineering. After college, Ardo joined the Army where he earned the rank of Captain. While serving in the Pacific, he was awarded the Bronze Star for his work with an engineering construction battalion.

In 1946, he began working for the Ralph L. Woolpert Co. He served as a sanitary engineering consultant to various counties and municipalities in the Miami Valley and served on national committees. His advice was frequently sought on sanitary problems on the federal and local level.

Mr. Friend was a member of the Engineers Club, Temple Israel, Meadowbrook Country Club, American Sanitary Engineering Intersociety Board, American Waterworks Association and The Consulting Engineers of Ohio.

Mr. Friend passed away on August 9, 1969, in West Palm Beach, Florida. At the time, he was survived by his wife, Jeannette; his daughter, Lizette; his brother, Harrison; and his parents, Mr. and Mrs. Maurice (Morris) Friend.

Following his death, an effort was put forth to establish a sanitary engineering library in his memory. The A.M. Friend Memorial Sanitary Engineering Library and the A.M. Friend Multimedia Center can be found on the second floor of the Engineers Club.

It is with pride that we can place the name of A.M. Friend upon the roll of our treasured VALLEY OF THE GIANTS!