

BLAINE AIRPORT PROMOTION GROUP

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8891 Airport Road C-2, Blaine MN. 55449



THE EDUCATION COORDINATOR APRIL 12, 2012

An experiment dumped in a thermos of water, on purpose?

The experiment conducted November 17, 1947 at Bell Lab, would solve a theory by inverter Walter Brattain that would prove how electrons act when placed in contact with a semiconductor.

Condensation was forming on the experiment. Walter, in his desire to isolate this problem in a shorter time than it would have taken to place the experiment in a vacuum submerged the whole experiment under water. The wet experiment produced an amplified signal from the device.

The obstacle of building an amplifier was discovered and the beginning of many more experiments moved forward to develop the modern day transistor.

John Bardeen began experimenting with Walter's ideas and on November 21, 1947 produced a tiny bit of amplification from a working model outside the thermos.

Another inventor at Bell Lab, William Shockley, also saw the potential of a transistor and conceived the idea in 1948 that would eliminate the noise and inconsistencies that were inherent in the Brattain and Bardeen configuration.

The Shockley theory was to produce a wafer with three layers using a variety of semiconductor materials. This proved to be a superior product but would take many more experiments and development for a marketable product.

In July of 1951, Bell Lab announced the invention of a working and efficient transistor.

In 1956, William Shockley, John Bardeen, and Walter Brattain were awarded jointly The Nobel Prize in Physics.

The vacuum tube was the primary work horse of the electronic world providing the necessary power for the age of the computer and communications industries and military applications. These devices require a great amount of energy and space.

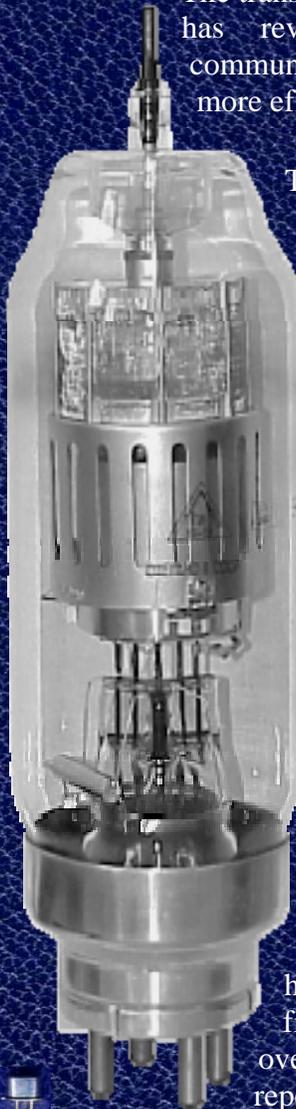
The transistor acts as a switching device that has revolutionized the computer and communications industries making products more efficient and smaller.

High energy needs

The transistor can not compete in areas of high energy needs in transmission of high voltage requirements such as in radar so more powerful yet efficient types of components having the similar electrical configuration are used.

Radio frequency energy transmissions of radar consist of short pulses of energy requiring a special modulator to produce the pulse. A pulse forming network is charged up slowly to a very high voltage then discharged rapidly through a transformer using a Thyrotron modulator.

The Thyrotron is a device that functions as a switch to turn ON and OFF the pulse of high energy in radar applications. The Thyrotron assembly shown here is housed in a glass shell and is gas-filled providing very smooth control over a wide range of voltages and repetition frequencies.



Transister

Thyrotron Modulator

The celebration of the history of flight and the Aerospace adventure is coming to the Anoka County Blaine Airport with a great array of activities including numerous aviation exhibits, helicopter rides, food vendors, pancake breakfast, lunch service on the field. Several booths will be featuring aviation and education and special aviation related themes.

Admission to the airport is free and parking donations are requested to help cover expenses.

A hanger dance is scheduled for Saturday at 8:00 PM. The dance, food venues and rides require a fee.

At this point eight businesses plus the Mankato University have requested booth space. Three product vendors and five food vendors, two air ride companies, classic car displays, and several war birds and civilian aircraft will participate this year. FAA and AOPA Association members will be on hand for pilot update classes.

The American Veteran's Traveling Tribute Wall, an 80% replica of the Vietnam Memorial wall will be on display from noon, June 1st through June 3rd covering an area 400' by 300' on the south-east corner of the field.

Workshop at the airport

The first grade class from University ACES attended a three hour workshop at the Golden Wings Museum on March 8th. A special guest, Astronaut, Curt Brown, gave his story of space flight aboard 6 missions. Also guest instructors were on hand presenting Aerospace information and instructed the students as they moved through several work stations.

Civil Air Patrol Instructors with Astronaut Curt Brown
Richard Sevenberger, Dave McAuliffe, Arlene Henderson



Civil Air Instructor
Kyle Sibley



Instructor, Thomas Lymburn

