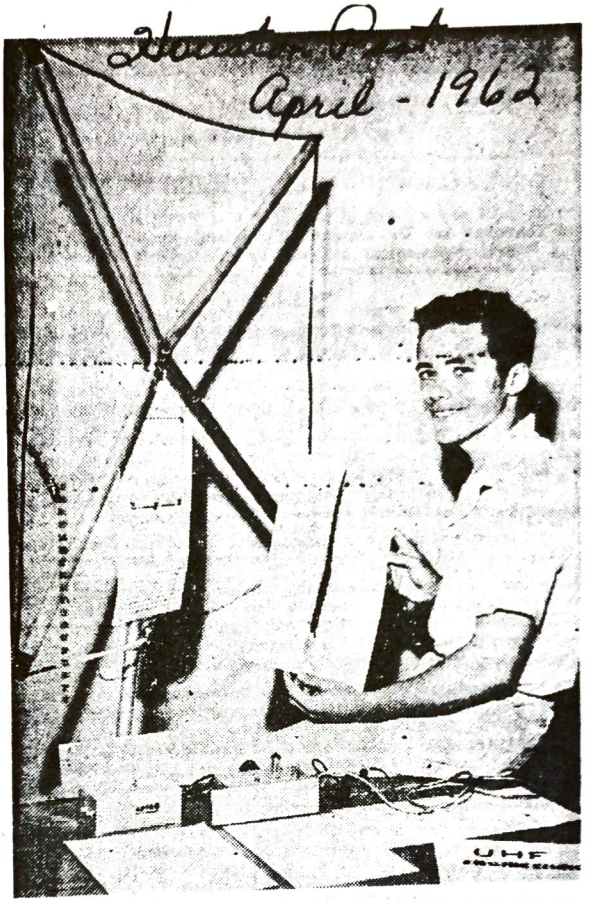
PAT FLANAGAN

Guided Missile Detector

The Missile Detector was never patented. However, Pat Flanagan won the 1959 Greater Houston Science Fair with the device, which he developed at age 11. At that time, numerous reports were made of the detector, a few of which are enclosed. Pat Flanagan was in Jane Long Junior High School when he received his first call from the Pentagon. He was called to the Principal's office over the PA system of the school, and began the communications which led to negotiations on the device with the Air Research Development Command. A copy of the non-disclosure agreement which was sent Pat is enclosed. Pat Flanagan let the ARDC have the missile detector device in return for guidance in his interests at the time. The files at Wright Patterson no doubt still hold copies of correspondence between Pat and the ARDC.

Houston Post
April - 1962



PAT AND HIS MISSILE DETECTOR MACHINE
He Made It for a School Science Fair
- Post Photo by Bob Verlin

8TH GRADER SCORES

Boy's Missile Finder Attracts Corporation

BY RON MOSKOWITZ

A 14-year-old Long Junior High School eighth-grader who designed a portable device which detects missiles and atomic blasts within a 4,000-mile radius may have it produced by industry.

The eighth grader, Pat Flanagan, said Tuesday that two engineers from a major corporation had seen the missile detector and told him they would consider producing it if he would have it patented.

HE QUOTED THE engineers as saying that the government had patented a similar machine, but that the circuit in Pat's was more efficient and economical. Pat spent four months working on the gadget for a science fair "and for my own curiosity."

Using spare parts left over from a "ham radio" set he built, the very compact detector cost "about $5," Pat said.

"Even if you had to go out and buy the parts new," he added, "it would only cost about $30 to build."

IT CAN BE used for detecting guided missiles even if the missile does not contain a radio transmitter, without the use to radar or infrared devices.

It is able to accomplish all of this because it works on the theory that missiles discharge electron waves which can be picked up by his machine.

"As a missile takes off," he said, "there is a highly violent motion of the atmosphere due to the violent motion of the charged particles in the high velocity exhaust of the rocket motor.

"This created a discharge potential between the earth and the atmosphere by the vertical column of intensely ionized gases which are left behind the missile. This column also acts as a vertical antenna for nature's radio waves. These waves are produced by the electrons in this column bouncing around back and forth.

"The frequency of these waves, however, is very, very low. From about 4,000 to 16,000 cycles per second. There is trouble in receiving these signals at 4,000 cycles per second since the wavelength is 75,000 meters, compared with about 300 meters used by a commercial radio station."

PAT SAID THAT an antenna, in order to pick up these low waves, would have to be 112,500 feet long — much too cumbersome to be practical.

So, out of an old television antenna, Pat designed crossbars, wound 3,000 feet of wire the diameter of a human hair around them. It took him 12 hours to make the 275 turns of wire.

He attached this to a circuit of his own design and to a receiving set. The receiver is designed for attachment to an automatic chart graph machine which would show any sharp rises in the amount of electron velocity being clocked.

Pat said that two machines could also be set up on revolving platforms so that when the needle jumped — indicating a missile launching or an atomic explosion — the two antennas could pinpoint the exact location of the launching or blast, by using an automatic electric computor.

THE ANTENNAS, to accomplish this, would have to be set a few miles apart. So Pat also designed a very compact transmitter and receiving apparatus to facilitate communication between men manning the two stations.

Pat has been working with electronics for two and a half years — ever since he got interested in ham radio operating. He is now helping his father, G. C. Flanagan, get a ham radio license. Pat teaches a course at his home on Wednesday nights in electronics and Morse Code so that his friends can become licensed also.

The Flanagans came to Houston four months ago from Billings, Montana. They now live at 5307 Grand Lake St. Pat's father is an oil scout and technician for Shell.

SAYS PAT: "I just like to work with unusual electronic apparatus."

Says Mrs Ellen Richardson, his science teacher: "I can't take any credit for this project at all. He did it on his own. I learn things from him every day."

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AIR RESEARCH AND DEVELOPMENT COMMAND
U. S. AIR FORCE

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6. Unsolicited articles or disclosures are submitted and received in accordance with this Policy Agreement notwithstanding any contrary or inconsistent conditions imprinted on or submitted together with such articles or disclosures, or orally expressed.

7. Reports covering the results of evaluations or tests will be furnished to submitters upon request. Such reports shall not be construed as an indorsement of articles or of the subject matter of disclosures by the Government nor shall they be used in whole or in part for advertising purposes.

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9. The terms of this Policy Agreement shall apply to the articles and disclosures listed below, and shall also apply to all unsolicited articles and disclosures submitted hereafter until this agreement is terminated in writing or revised.

Ionization Missile Detector

Written description to be submitted upon receipt of instructions.

CERTIFICATE

I, Pat Flanagan (P. C. Flanagan, Father), certify that I have read the policy of the Air Research and Development Command set forth above and understand and agree to the terms and conditions thereof.

I further certify that I am *(check and complete appropriate box)*: ☑ sole owner of all articles and disclosures submitted for evaluation or testing; ☐ a member of the partnership or association known as _____ and have full authority to bind said partnership or association; ☐ an authorized representative of the corporation known as _____ and have full authority to bind said corporation.

RECEIVED BY	SIGNATURE
SYMBOL	TITLE
DATE OF RECEIPT	ON BEHALF OF
ADDRESS	DATE OF SIGNATURE

Inventor Diligently Training To Explore Out Of Space

By EMILY EATON

Daniel Boone's endless yearning to tame and harness the unbroken frontiers obviously didn't pass away when he did.

Pat Flanagan, one of Boone's decendants, has inherited his love of adventure in the unknown for his ambition is to become an astronaut and contribute to the world's conquest of space.

A versatile and talented sophomore, Pat enjoys many interest, most of which are directed toward his career. At the moment, he is eagerly looking forward to the Junior Olympic competition in San Antonio this month, where he will compete in high bar, parallel bar and tumbling events. Handstands too are one of Pat's specialities. As to why he practices standing on his head Pat says, "Most people are so accustomed to being up-right that they would have no control of themselves if turned upside-down. This co-ordination is especially important to an astronaut."

Yoga Boy

Pat also spend time on yoga a philosophy of life which trains the mind and body by exercise and meditation.

"I believe that yoga is beneficial to every part of the body," Pat commented. "It develops excellent control of nerves and muscles. I practice yoga because a pilot astronaut must have fast-conditioned reflexes."

His life-long ambition to fly has finally been realized. Recently he acquired a student pilot license, which allows him to fly, but without passengers. Pat feels being able to fly is essential, for an astronaut must have a high degree of co-ordination and excellent visual perception.

Not all his interests are directly connected with flying. Others include music, weight-lifting, chemistry, photography and electronics.

Ham Operator

In the electronic field, Pat is a ham radio operator and a television technician for the TV center. He won the 1959 Greater Houston Science Fair with his invention of an electronic missile-detecting device.

This invention, which took about three months to complete, detects radio frequency by the missile's exhaust gases. He says the location of this missile is found then by radio direction finding.

Government Interested

As a result of this, Pat became a special interest of the United States Government, which bought his invention. The Aeronautic and Space Administration has kept in constant touch with him, sending him material and evaluating many of his ideas concerning missile detection, gravity in space and physical fitness.

Bellaire High School Newspaper

Bellaire, Texas

DIPL.-ING. WILHELM HENNIG

NIEFERN
(Kreis Pforzheim)
Friedhofstraße 16a

8. November 1959

Western Germany

Mr. Pat F l a n a g a n

B e l l a i r e , Texas

Dear Pat,
in "electronics" of Oct. 16,1959 I am reading that you won the grand prize at the Houston Science Fair. I congratulate you and I wish you the best for your future.

It's very interesting for me, that a young boy like you has built this missile detector and it will be of great interest too for the youth in Europe. Therefore I intend to write thereabout in youth-magazines. Please, be as kind as to send me a photograph of you and of your detector, if possible of both in one picture.

Are you pleasured in mail-stamps ? I would be glad to send you some of Western Germany.

With my best wishes I remain

sincerely yours

Wilhelm Hennig