

# Southeastern PA Cold War Historical Society

Celebrating  
our 16th  
year



*Preserving History Through the Memories  
of Those Who Created It*

# The Greater Philadelphia Region has a rich aerospace heritage!

To celebrate **America250**, we'll be sharing some of the region's aerospace heritage throughout 2026!  
Look for our monthly posts and Happy Birthday America!



**250 AMERICA PA**  
NONPROFIT AFFILIATE



**250 AMERICA PA**  
BUCKS COUNTY

# Did you know?

## The Radio Corporation of America (RCA)

Led by the legendary David Sarnoff for nearly 5 decades from its founding until 1970, RCA was the dominant electronics and communications juggernaut in the US. In the early 1920s, RCA was at the forefront of the burgeoning radio industry as a major manufacturer of radio receivers. In 1926, the company founded the National Broadcasting Company (NBC), the first nationwide radio network. During the 1920s and 1930s RCA also pioneered the introduction and development of broadcast television—both black and white and especially color television.

**But did you know that RCA Camden, NJ played a significant role in the Space Race?**



"Nipper"



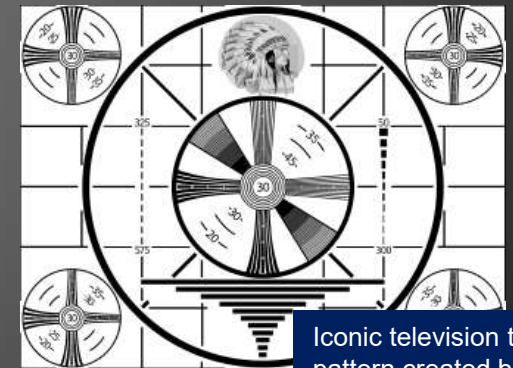
"HIS MASTER'S VOICE"

This trademark and the trademarked word "Victrola" identify all our products. Look under the lid! Look on the label!

VICTOR TALKING MACHINE CO., Camden, N. J.



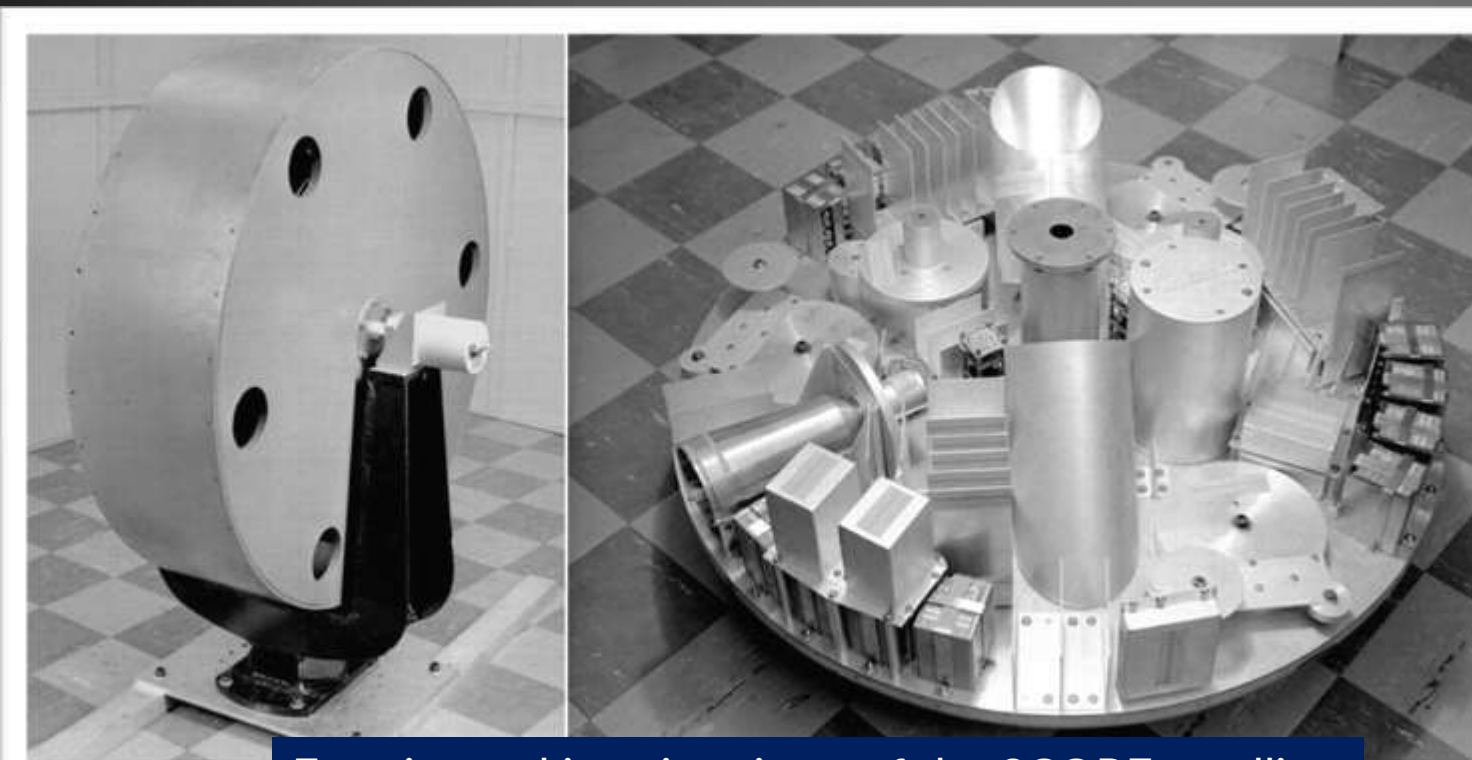
David Sarnoff



Iconic television test pattern created by RCA in 1939



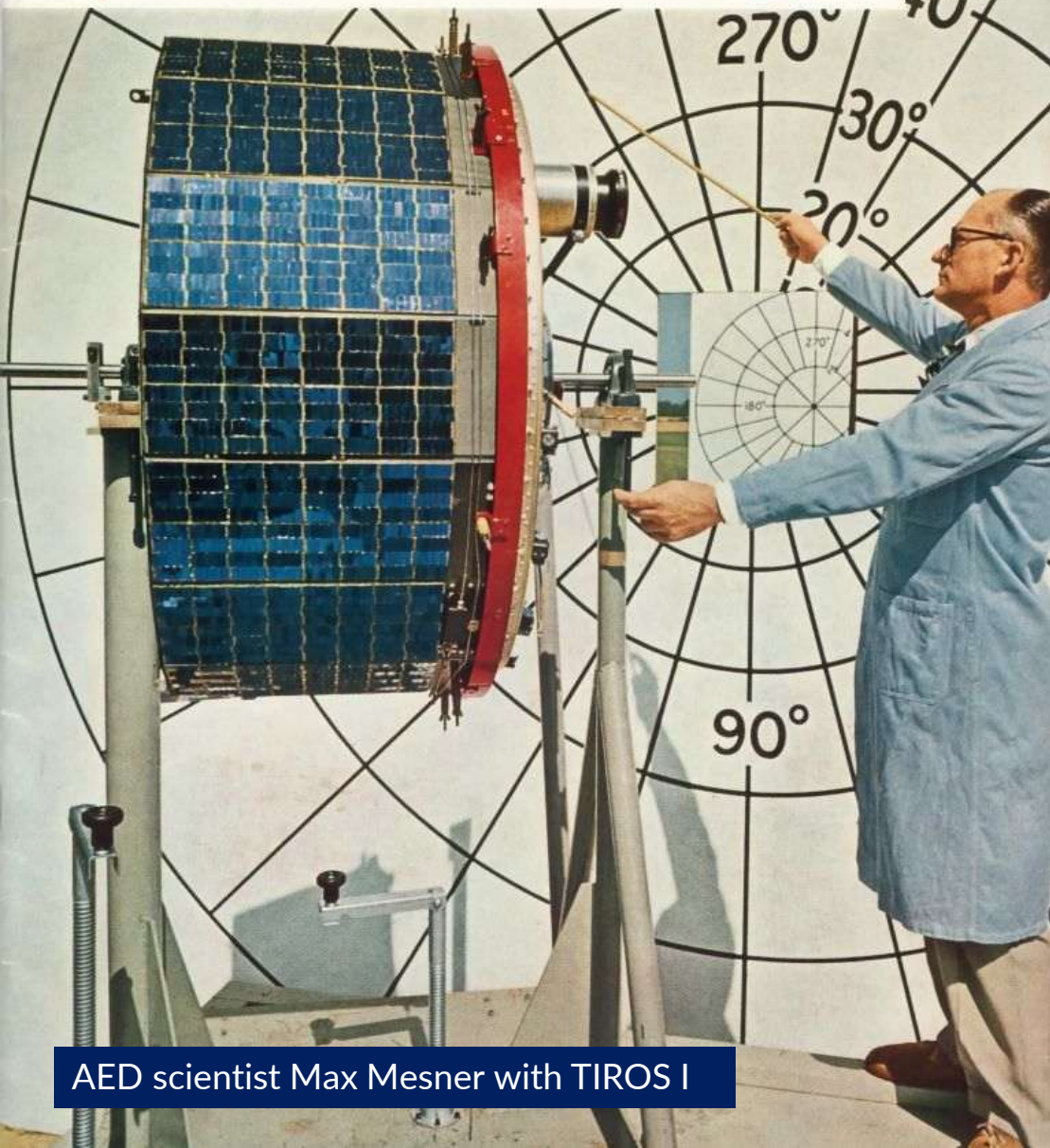
# The RCA Astro-Electronics Division (AED)



Exterior and interior views of the SCORE satellite

Around the time the USSR launched the first satellite, *Sputnik*, in 1957, RCA was already involved in space research. Its first *ad hoc* space research team was formed in 1957 out of scientists and engineers from the **Advanced Technology Laboratories in Camden, NJ and RCA Laboratories**. In March 1958, RCA established Astro Electronic Products (AEP) as a division of RCA Defense Electronic Products. AEP was soon renamed the Astro-Electronics Division (AED). The facility was also referred to as the RCA Space Center.

On December 18, 1958, RCA's first satellite was successfully launched from Cape Canaveral, FL. Called SCORE (Signal Communications by Orbiting Relay Equipment), it was the world's first communications satellite. In line with RCA's expertise in communications, AED designed and built dozens of communications satellites over the next few decades.



AED scientist Max Mesner with TIROS I

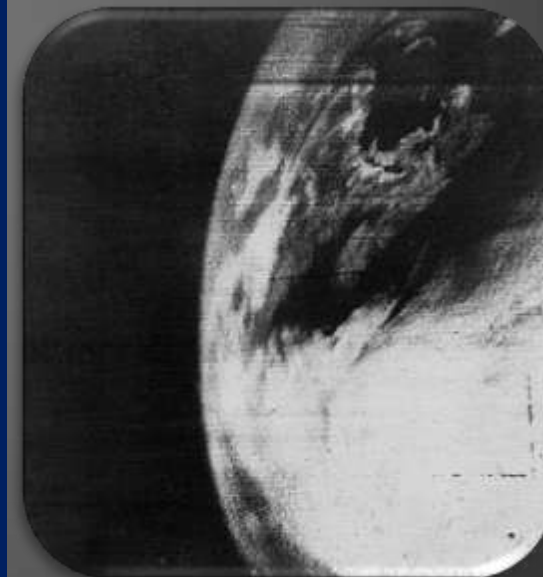
AED was best known for its pioneering and highly successful series of weather satellites, beginning with TIROS I.

Made of aluminum alloy and stainless steel, the eighteen-sided disk-shaped TIROS I was covered with 9,200 solar panels to power its camera and data-storage devices. Launched on April 1, 1960, TIROS I was plagued with problems, but it proved the feasibility of video observation of weather by satellites

The TIROS program, by then run by Lockheed Martin, ended with the launch of the 43rd satellite (NOAA-19) in 2009.



TIROS I



First  
image of  
Earth  
from  
TIROS I

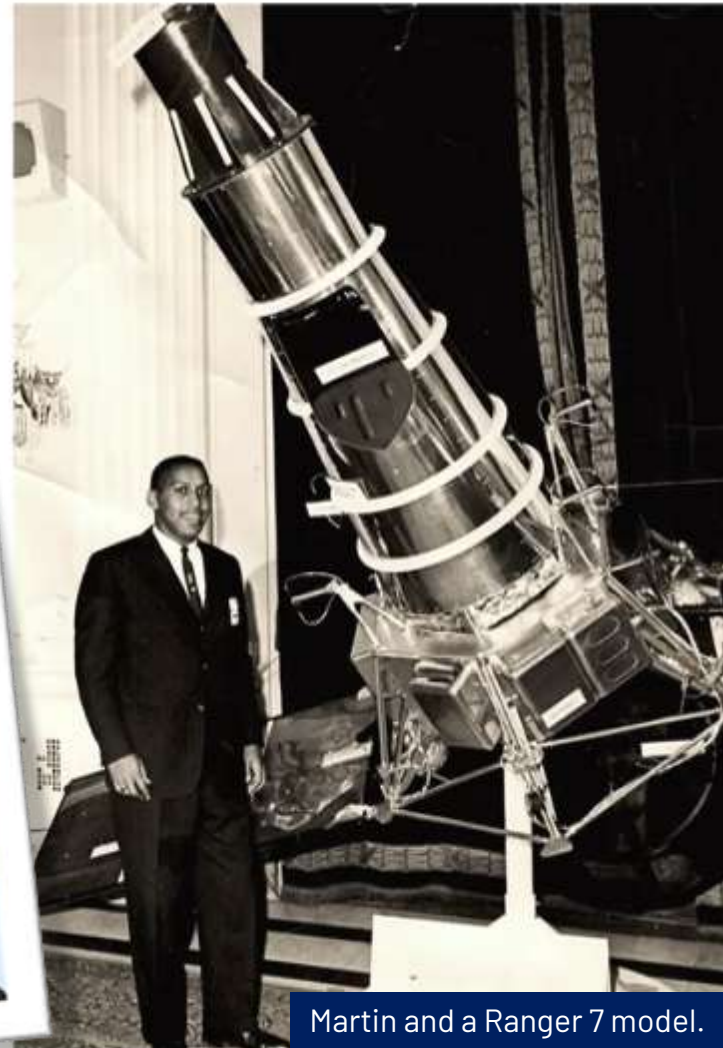
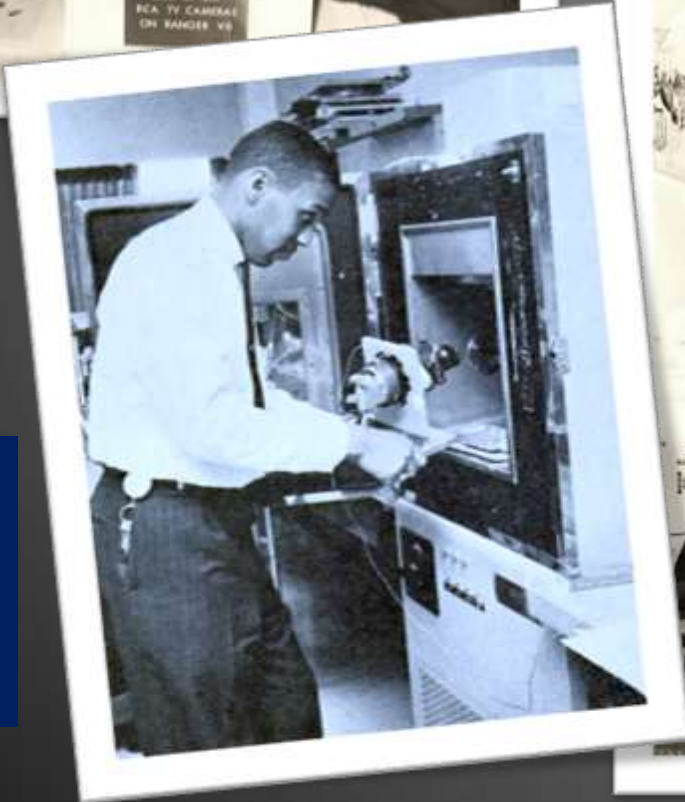
# James E. Martin

Employee  
spotlight

James E. Martin with an RCA TV camera like the six cameras on Ranger 7.



Martin testing the performance of one of the cameras in extreme temperatures.



Martin and a Ranger 7 model.

Joining RCA's Astro-Electronics Division in the early 1960s, James E. Martin was directly involved in developing technologies for America's Moon program. He helped build the Ranger 7 spacecraft's camera system, which sent back over 4,000 detailed images in less than 17 minutes before crashing into the Moon in 1964.

Here's a recent Smithsonian Air and Space Museum blog on Martin: [James E. Martin, the Engineer Who Captured America's First Images of the Moon's Surface | National Air and Space Museum](#)

Photos & copy source: NASM



The August 1969 issue of *Electronics World* featured an article describing the communications system used for the first moon landing.

RCA was also an important subcontractor on larger space projects, including the cameras for the Ranger lunar probes in the 1960s, communications equipment for the *Viking* Mars probes in the 1970s, and various subsystems for the Space Shuttle program.

However, the proudest achievement for many RCA scientists was their participation in developing cameras and other equipment for the *Apollo* program.

RCA and the Space Race

Employee  
spotlight

# Jack Yanosov

Invented the compact EVCS radio transmitter that allowed Apollo astronauts to communicate while on the moon



Jack Yanosov shown testing the extra-vehicular communications system radio in 1969.

RCA was contracted by NASA to develop and incorporate new technology and to do the engineering work for space applications. "It was an exciting time to be an engineer," he said.

RCA was loaded with engineers and technicians who were hams, so it was only natural that RCA would get the contract to design the radios that would be used by the astronauts while walking on the moon.

Jack Yanosov's project was to design, develop and produce working models of two AM VHF transmitters for the Apollo 11 flight. (259.7 and 296.8 MHz.) They

had to be lightweight, use solid-state components and consume minimal power, and they had to be small. See the two photos of his radio. One is top view, and the other is bottom view. They worked flawlessly.

His transmitters would become part of the 6.5 pound extravehicular communications system (EVCS), shown in the photo. His radios are the two small matching units near his left hand. This unit was mounted in the top of the backpack, located just behind the astronaut's head. You can see the antenna sticking up in the photo.

Each EVCS consists of a VHF transceiver in each astronaut's backpack. Each one measures 14 by 6 by 1 1/4 inches and weighs only 6.5 pounds. It contains two AM receivers, two AM transmitters, either an FM transmitter or an FM receiver, plus telemetry instrumentation to transmit astronaut biomedical data and spacesuit system status. All of this was fed over the VHF link to the Lunar Mod-

ule (LM) for uplink via UHF S-band microwave back to earth. The astronauts could talk to each other directly or through the LM for redundancy.



Jack Yanosov's transmitter, side 1.



Jack Yanosov's transmitter, side 2.

# The EVCS transmitters were placed in the portable life support system backpacks the Apollo astronauts wore while on the lunar surface

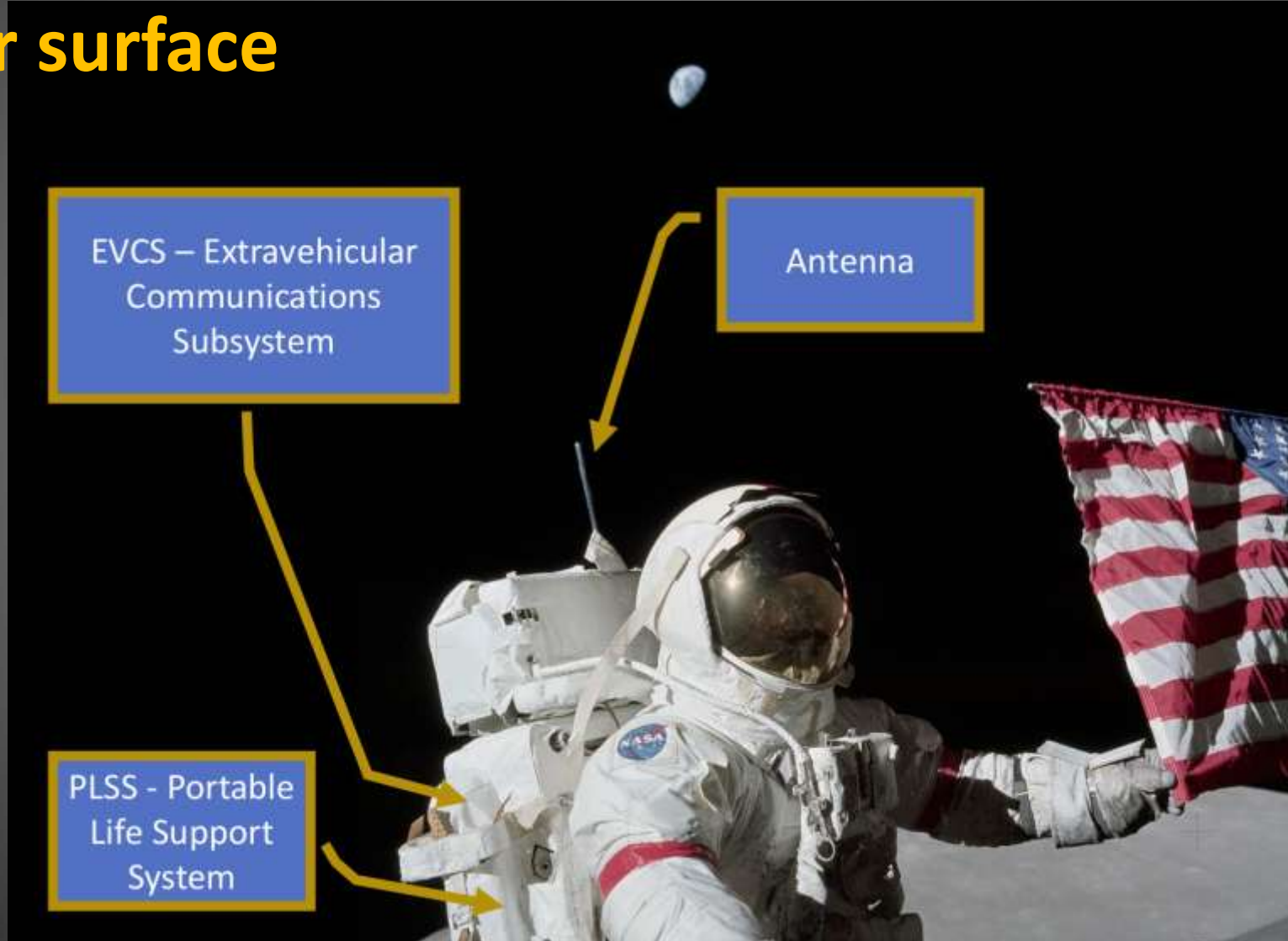
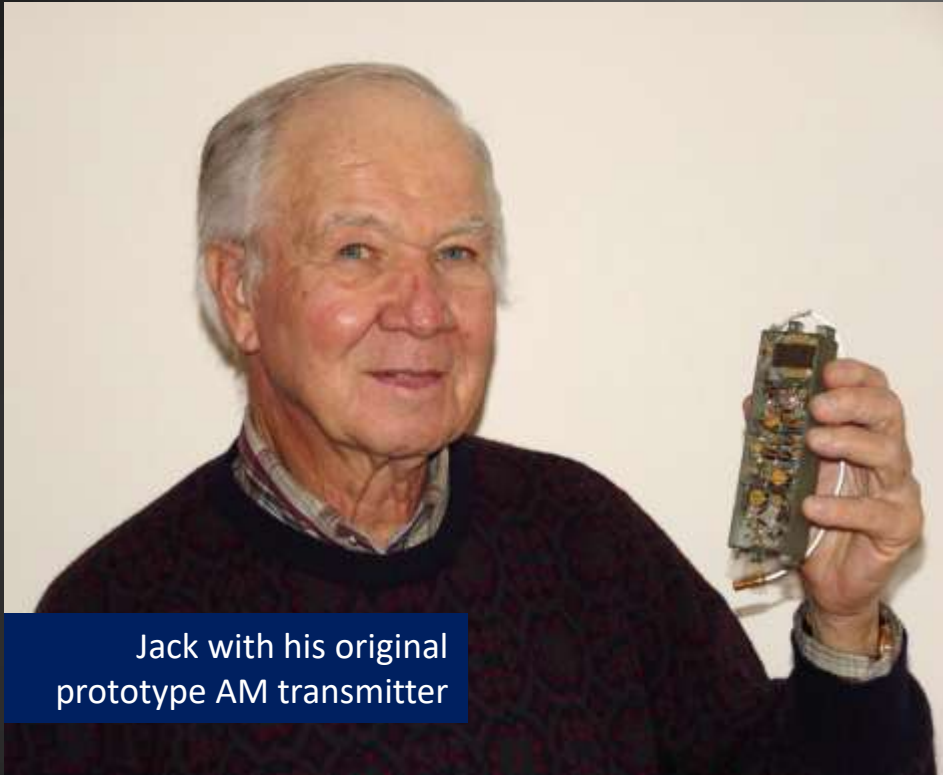


Photo: Steve DiMedio

# Jack Yanosov was honored in 2004 by the State of NJ for his accomplishments while working for RCA Camden



Jack with his original prototype AM transmitter

CONTRACT NO. <b>NAS 9-7508</b>		REL.	 <b>RADIO CORPORATION OF AMERICA</b> NEW YORK, N. Y.	
DRAWN <i>Harry J. Knob. Jr. 19 Jul 1968</i>		DATE	<b>CAMDEN PLANT</b>	
CHECKED <i>Harry J. Knob. Jr. 24 Jul 1968</i>		DATE	<b>INTERCONNECTION DIAGRAM COMMUNICATOR, EXTRA VEHICULAR NO. 1</b>	
DESIGN ACTIVITY APPD. <i>J. O. Yanosov 24 July 1968</i>		DATE	SIZE <b>D</b>	CODE IDENT NO. <b>49671</b>
				<b>8659497</b>
SCALE <b>NONE</b>		WEIGHT	SHEET <b>1 OF 3</b>	

Jack Yanosov has had the honor to have his accomplishments read into the *Congressional Record* on July 20, 2004, by US Rep Frank A. LoBiondo of New Jersey. It reads in part:

Mr. LoBIONDO. Mr. Speaker I rise today to commend Jack Yanosov who helped design the transmitters that were used 35 years ago today in the Apollo mission that landed on the moon.

It was a humble rise for Jack Yanosov, who began his career on the RCA assembly line, and would eventually become the lead engineer on the Apollo communications project. It was on a transmitter built by Jack Yanosov that the first words were ever spoken on a planetary body other than earth. It was 35 years ago today, on July 20, 1969 that Neil Armstrong uttered his famous words that would inspire a generation, "One small step for man, one giant leap for mankind."

The good news for Neil Armstrong and the rest of the world, Jack Yanosov's transmitter worked just like it was designed to do.

Today is a special day for our nation. Thirty-five years ago, our country was locked in an arms race during a cold war that threatened to turn hot at any moment. The race for the moon was more than just a prize in the darkest reaches of space, it symbolized our nation's commitment to American ingenuity. We met our goal and made it to the moon, and we did it first. I am proud that a resident of New Jersey played such an important role in this groundbreaking human achievement. I would like to congratulate Jack Yanosov, and thank him on behalf of the people of New Jersey's Second Congressional District and America for a job well done.