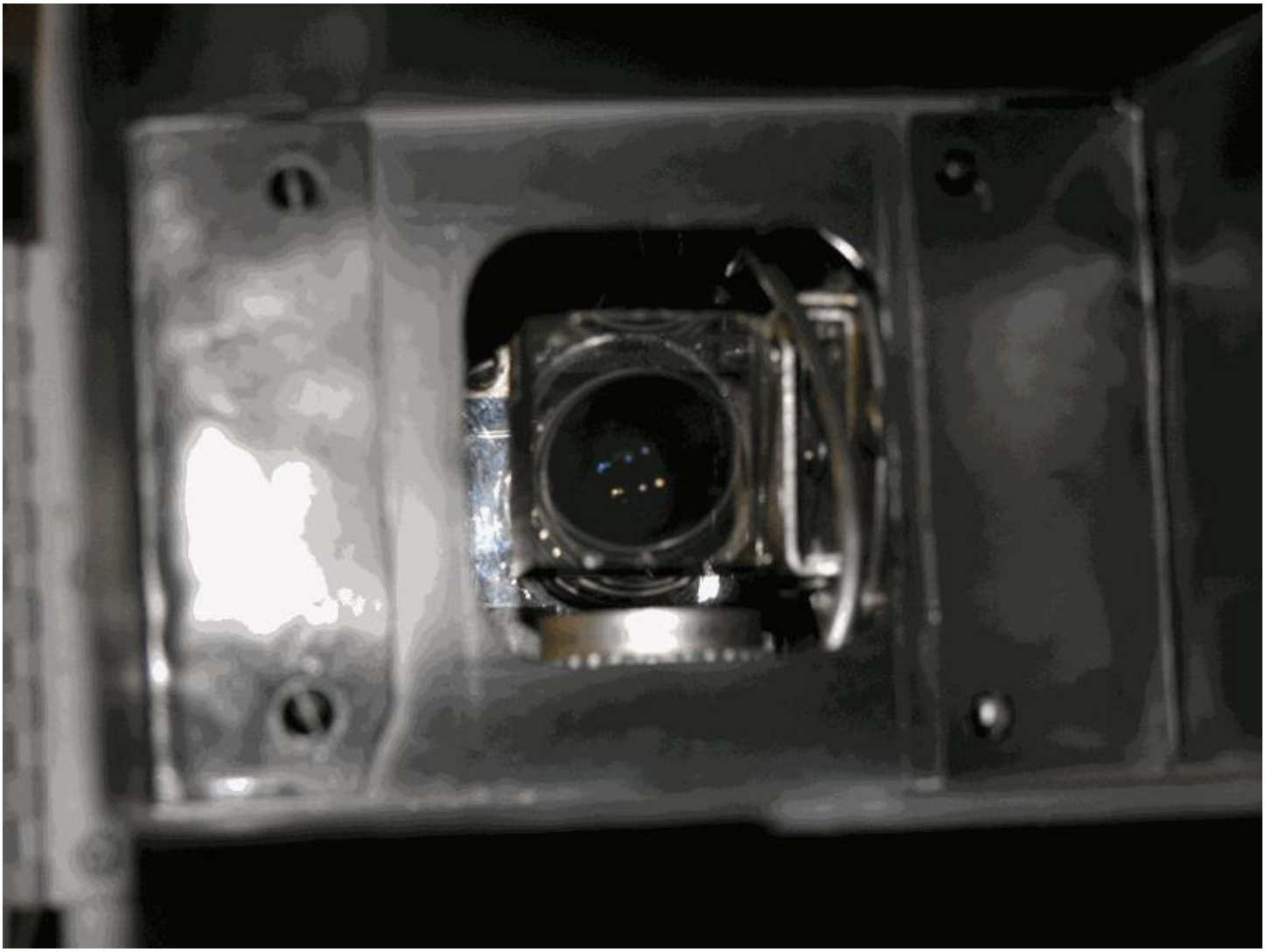

Certificate


WGSF
TELEVISIO
2



GARY DAVIS AND CAMERA IN 1975

BUILD this COLOR TV CAMERA for about $400

Having only two channels of video, this camera produces remarkable color pictures. Any amateur or experimenter can build it for about $400

by GARY DAVIS

INCREASING INTEREST IN CLOSED-CIRCUIT TV and the public acceptance of color have created a need for a low-cost color camera. A complex, high-quality broadcast color camera can cost $90,000 or more. Although recent developments have brought the cost down for educational and industrial use, prices are still out of range for most amateurs and experimenters.

The camera described in this article was developed on the premise that an advanced experimenter or amateur could build a color camera without getting into extremely complex mechanical, optical, or electrical problems. All parts are easy to obtain. The two vidicon tubes are standard low-cost black and white types. Color filters are low-cost and available at any glass company. To keep the cost, weight, and size to a minimum, a small black and white TV set is used to supply all voltages and scanning signals to the camera head. The camera uses only 12 transistors in addition to the black and white TV set. The optical system is extremely simple. The cost of the camera, excluding the case, is approximately $400.

Color processing

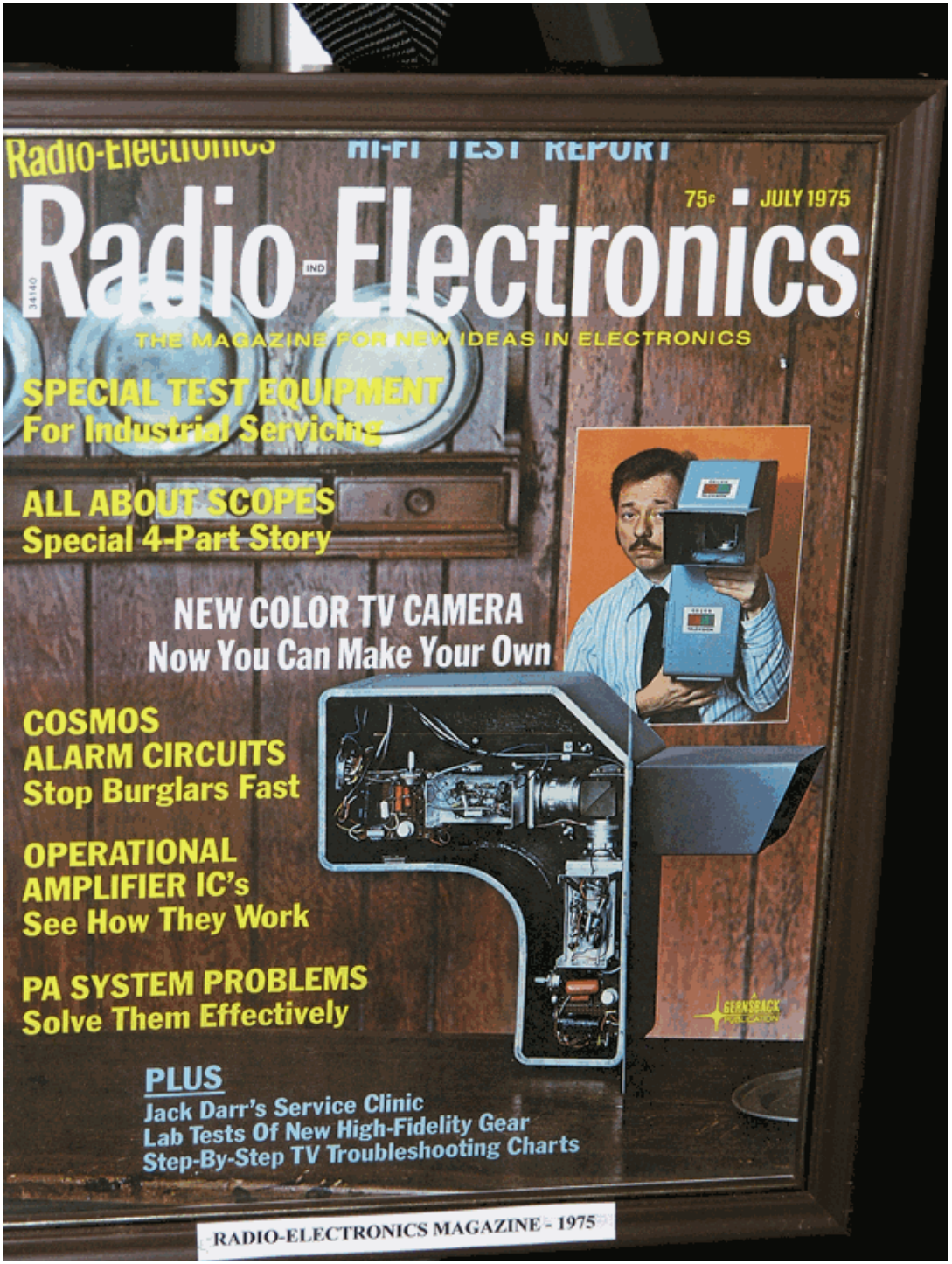
There is a little known process of using only two colors instead of three to generate color images. This theory dates back to 1914 when William F. Fox and William H. Hickley patented a color motion picture process involving a red filtered scene shown alternately with a green filtered scene projected in black and white only while the red filtered scene was projected through a red filter. The effect was later independently re-discovered by Dr. Edwin H. Land in 1955. This phenomenon has since become known as the Land Color Theory after articles by Land appeared in the proceedings of the *National Academy of Science* in 1959 and the May, 1959 issue of *Scientific American*. Dr. Land found that the human eye can perceive scenes in full color when the image is filtered through long- and short-wavelength filters, then recorded separately on black and white photographic film.

To recover the scene in full color, it is then only necessary to project the scene recorded on the two separate photographs, with a long wavelength light source illuminating the long wavelength photograph, and a short wavelength light source illuminating the short wavelength photograph. In Land's process, the colors in the scene arise not from the choice of wavelengths, filters, or overall brightness levels, but rather from the interplay of longer and shorter wavelengths over the entire scene.

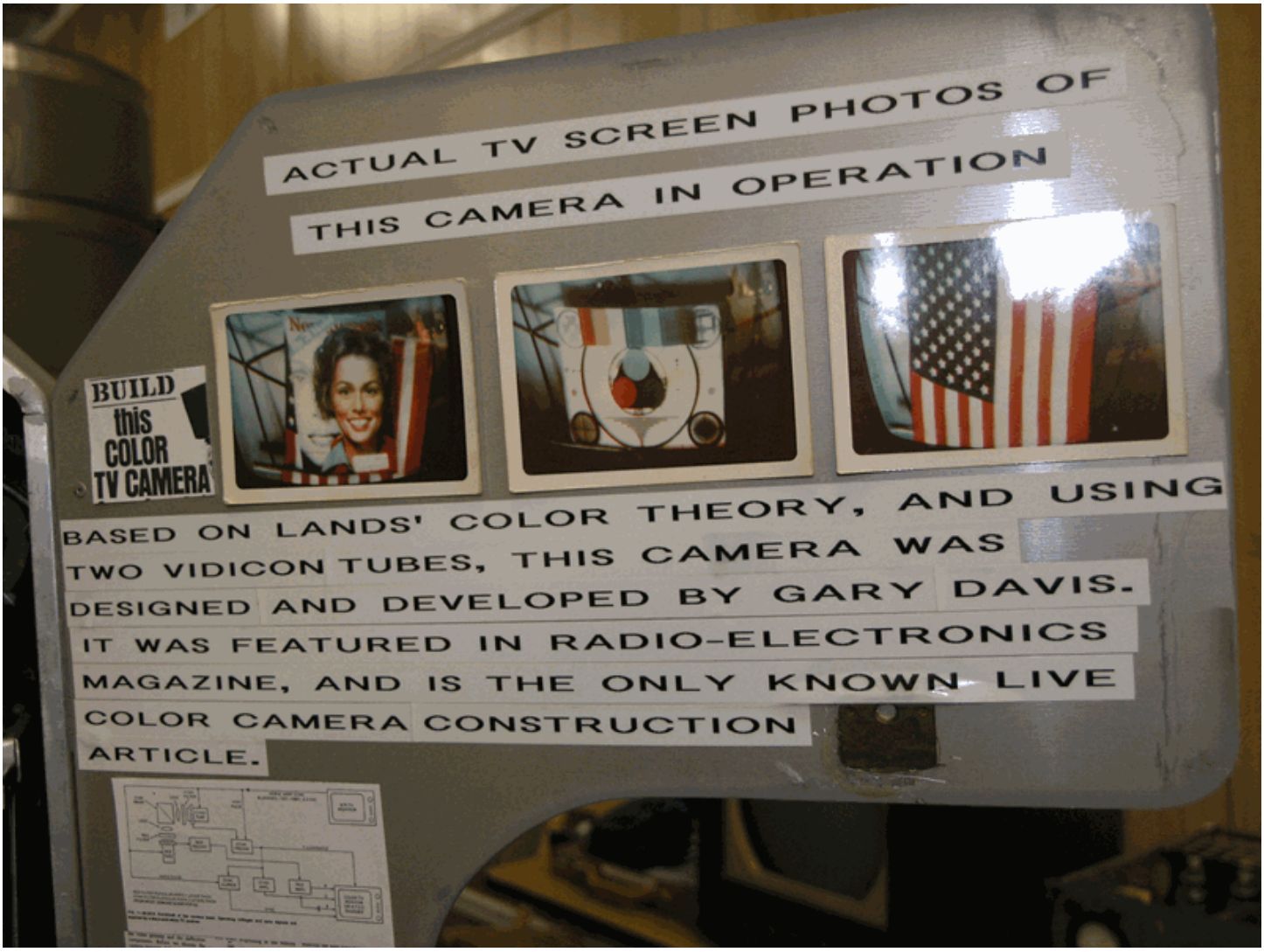
My camera system is similar to Land's process. The two color filter wavelengths correspond to the wavelength or combination of wavelengths generated by the three illuminating phosphor colors in a conventional color picture tube. The filter for the long wavelength image, centered at

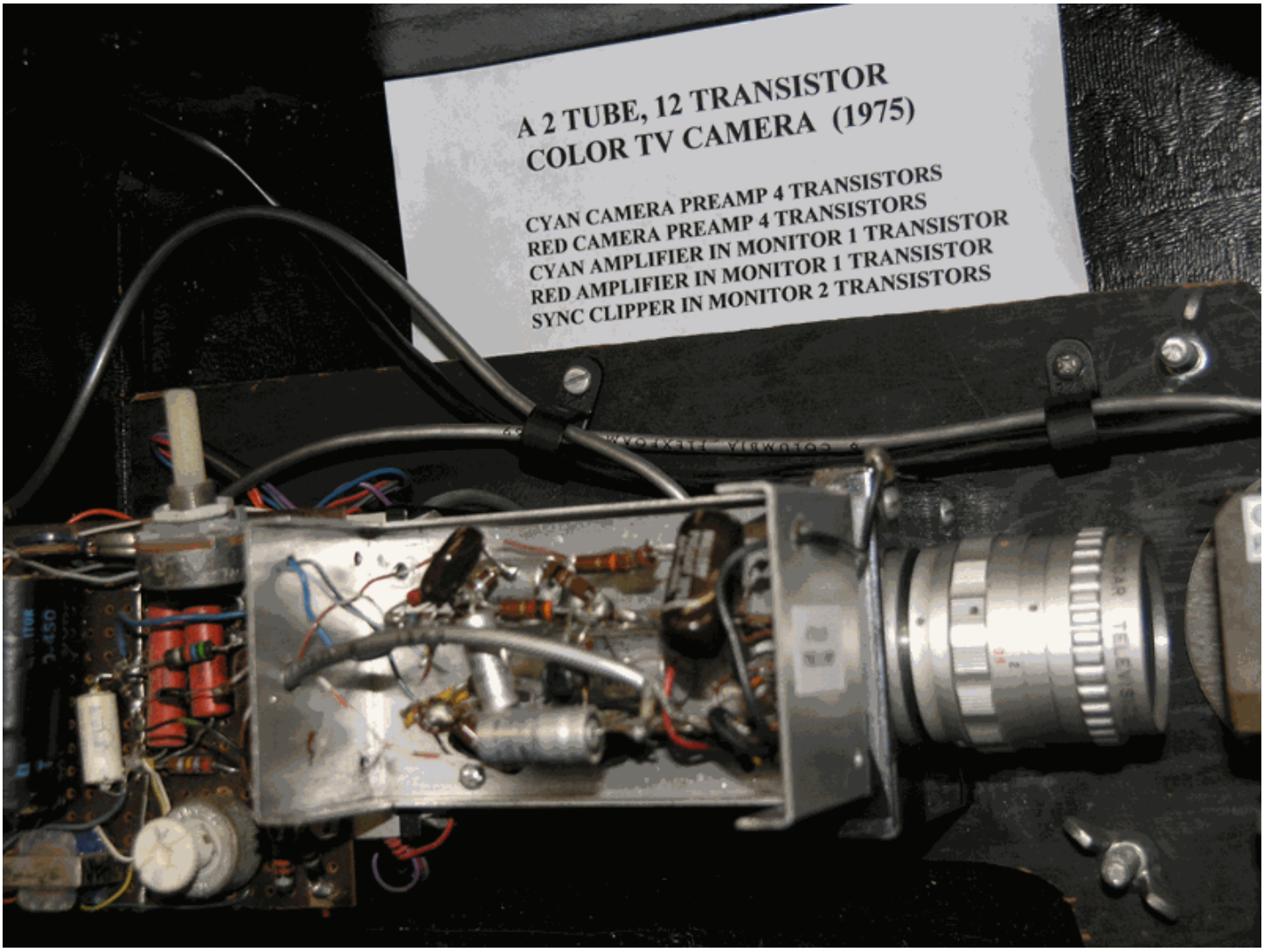
RADIO-ELECTRONICS MAGAZINE – 1975

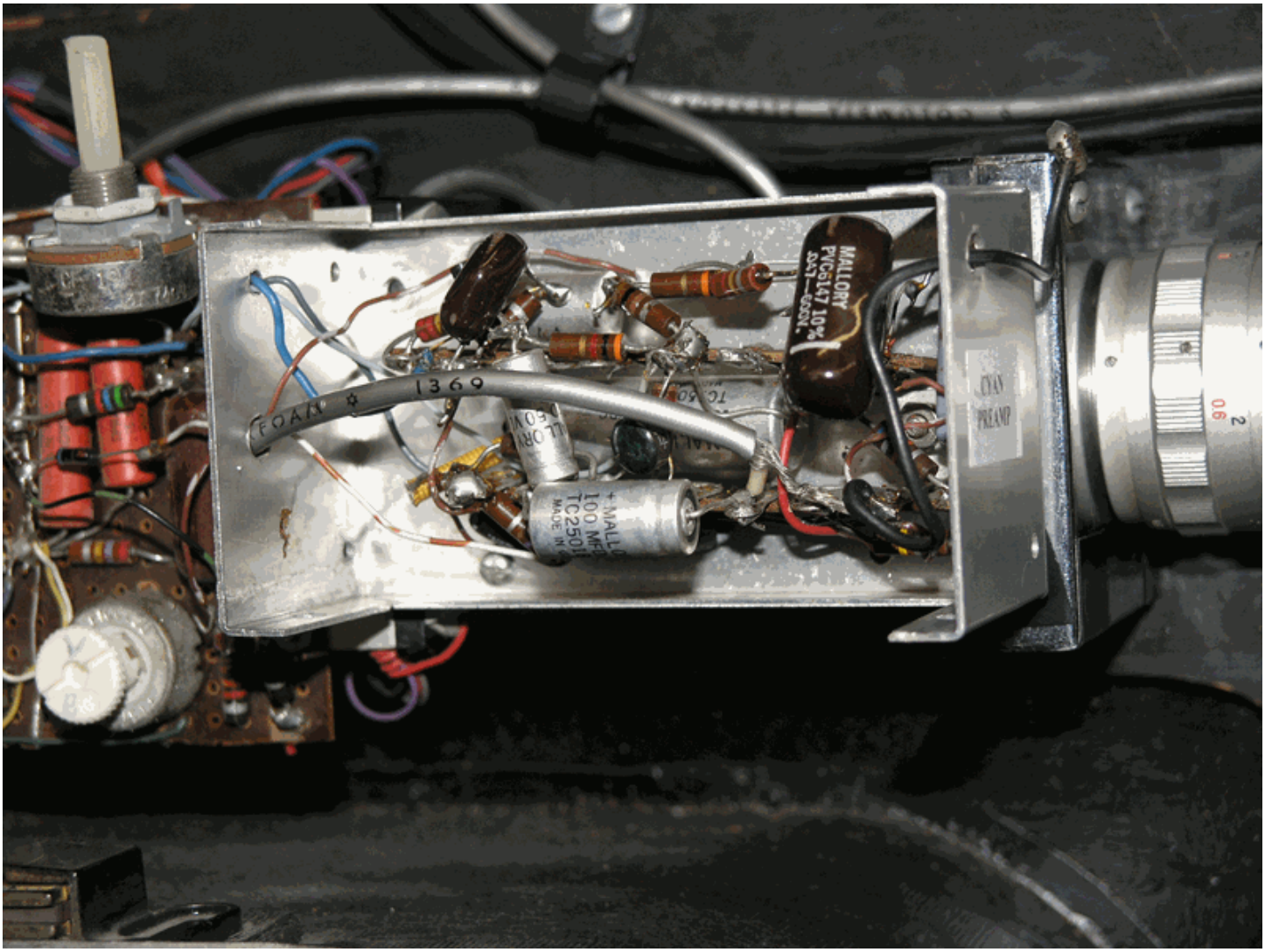
RADIO-ELECTRONICS MAGAZINE - 1975

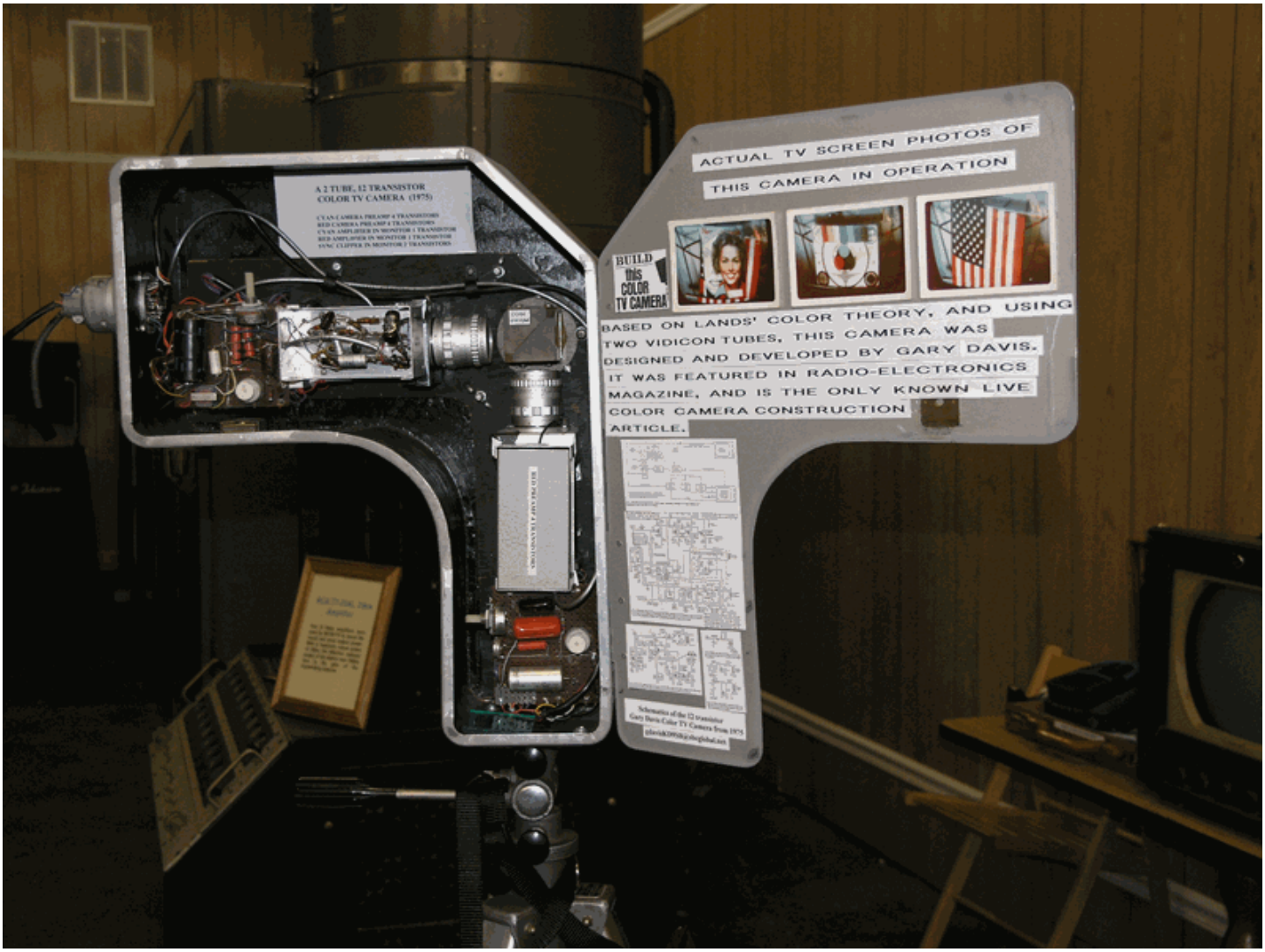


RADIO-ELECTRONICS MAGAZINE - 1975


ACTUAL TV SCREEN PHOTOS OF
THIS CAMERA IN OPERATION
BUILD
this
COLOR
TV CAMERA
BASED ON LANDS' COLOR THEORY, AND USING
TWO VIDICON TUBES, THIS CAMERA WAS
DESIGNED AND DEVELOPED BY GARY DAVIS.
IT WAS FEATURED IN RADIO-ELECTRONICS
MAGAZINE, AND IS THE ONLY KNOWN LIVE
COLOR CAMERA CONSTRUCTION
ARTICLE.


A 2 TUBE, 12 TRANSISTOR
COLOR TV CAMERA (1975)
CYAN CAMERA PREAMP 4 TRANSISTORS
RED CAMERA PREAMP 4 TRANSISTORS
CYAN AMPLIFIER IN MONITOR 1 TRANSISTOR
RED AMPLIFIER IN MONITOR 1 TRANSISTOR
SYNC CLIPPER IN MONITOR 2 TRANSISTORS


FOAM
1369
MALLORY
PVG5147 10%
CYAN
PREAMP


A 2 TUBE, 12 TRANSISTOR
COLOR TV CAMERA (1975)
ACTUAL TV SCREEN PHOTOS OF
THIS CAMERA IN OPERATION
BUILD
this
COLOR
TV CAMERA
BASED ON LANDS' COLOR THEORY, AND USING
TWO VIDICON TUBES, THIS CAMERA WAS
DESIGNED AND DEVELOPED BY GARY DAVIS.
IT WAS FEATURED IN RADIO-ELECTRONICS
MAGAZINE, AND IS THE ONLY KNOWN LIVE
COLOR CAMERA CONSTRUCTION
ARTICLE.

operating position and said boundaries being sufficiently wide to substantially prevent image light to any point of the image-receiving area from simultaneously passing through adjacent filter segments of different color.

PETER C. GOLDMARK.

REFERENCES CITED

The following references are of record in the file of this patent:

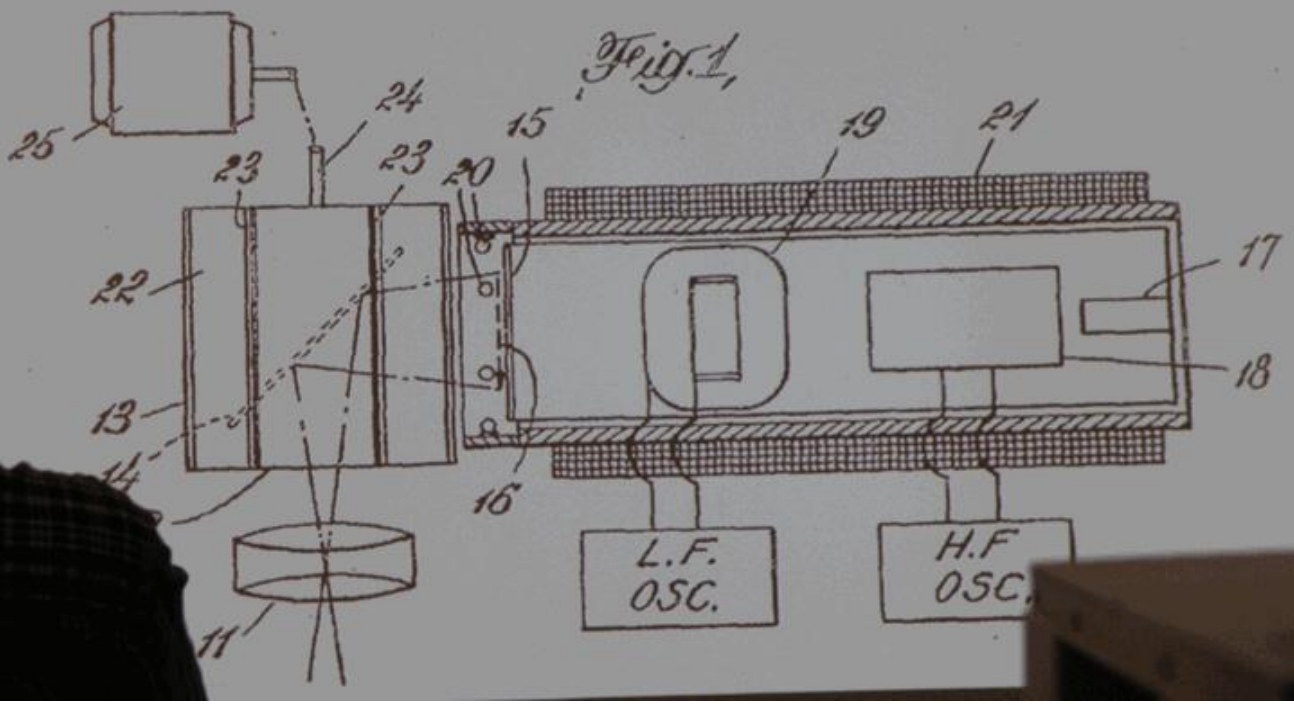
UNITED STATES PATENTS

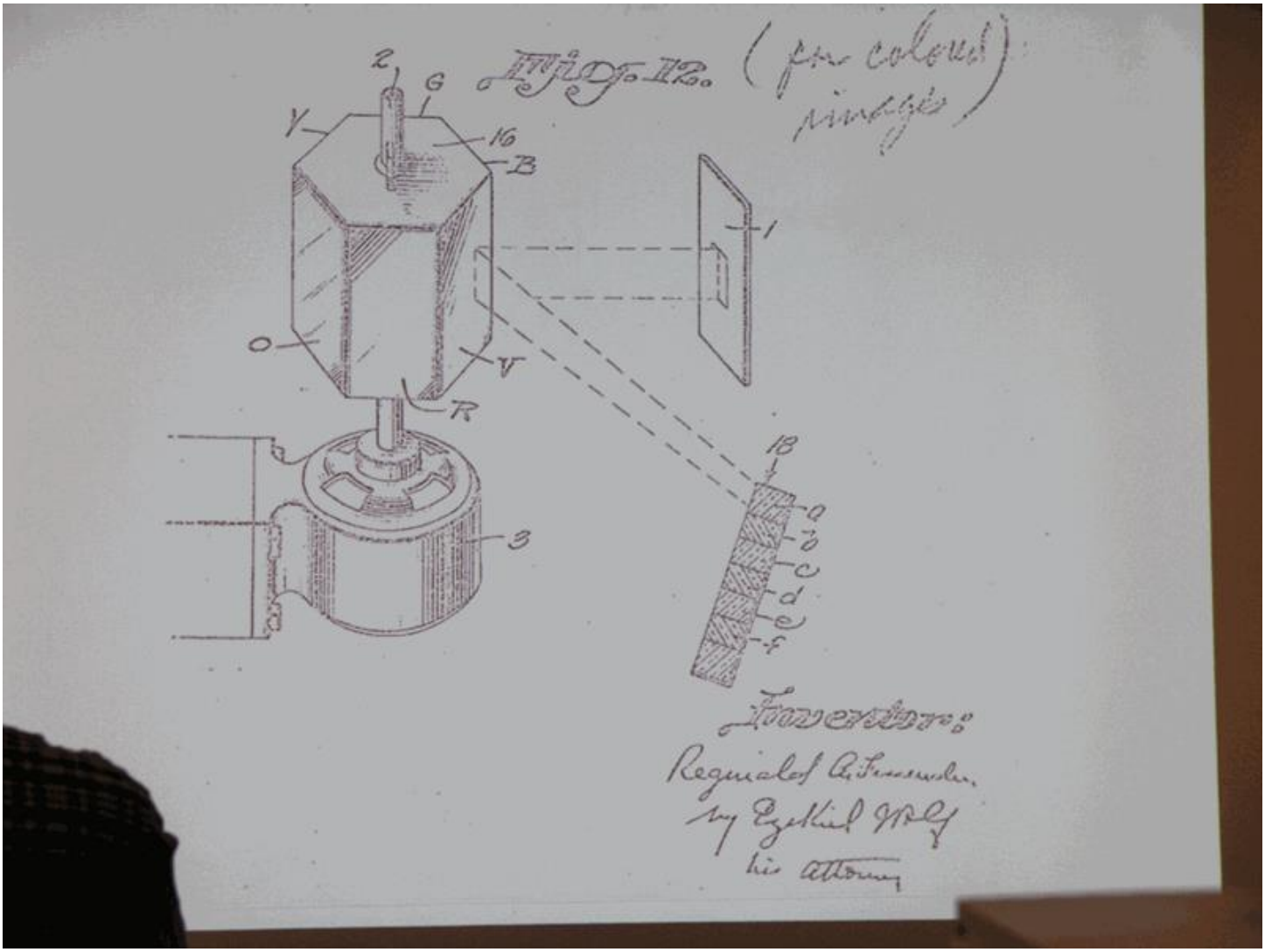
Number	Name	Date
2,173,476	Goldmark	Sept. 19, 1939
059,222	Fessenden	Nov. 3, 1936
		Feb. 9, 1932

Feb. 17, 1948. P. C. GOLDMARK 2,435,963

COLOR TELEVISION

Filed Dec. 13, 1940 2 Sheets-Sheet 1





Inventor:
Reginald A. Fessenden
by Ezekiel Wolf
his attorney

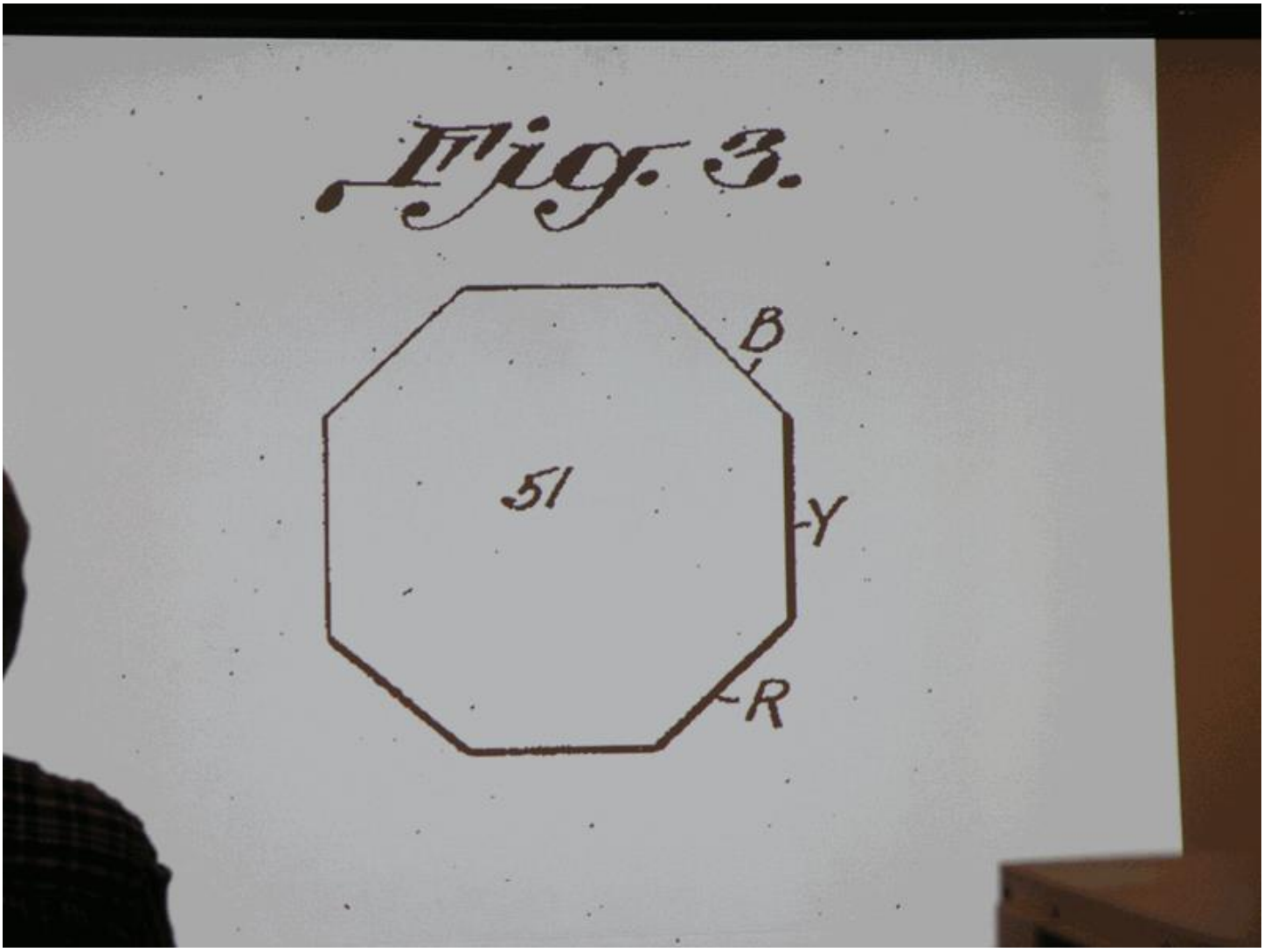


Fig. 3.
B
51
Y
R

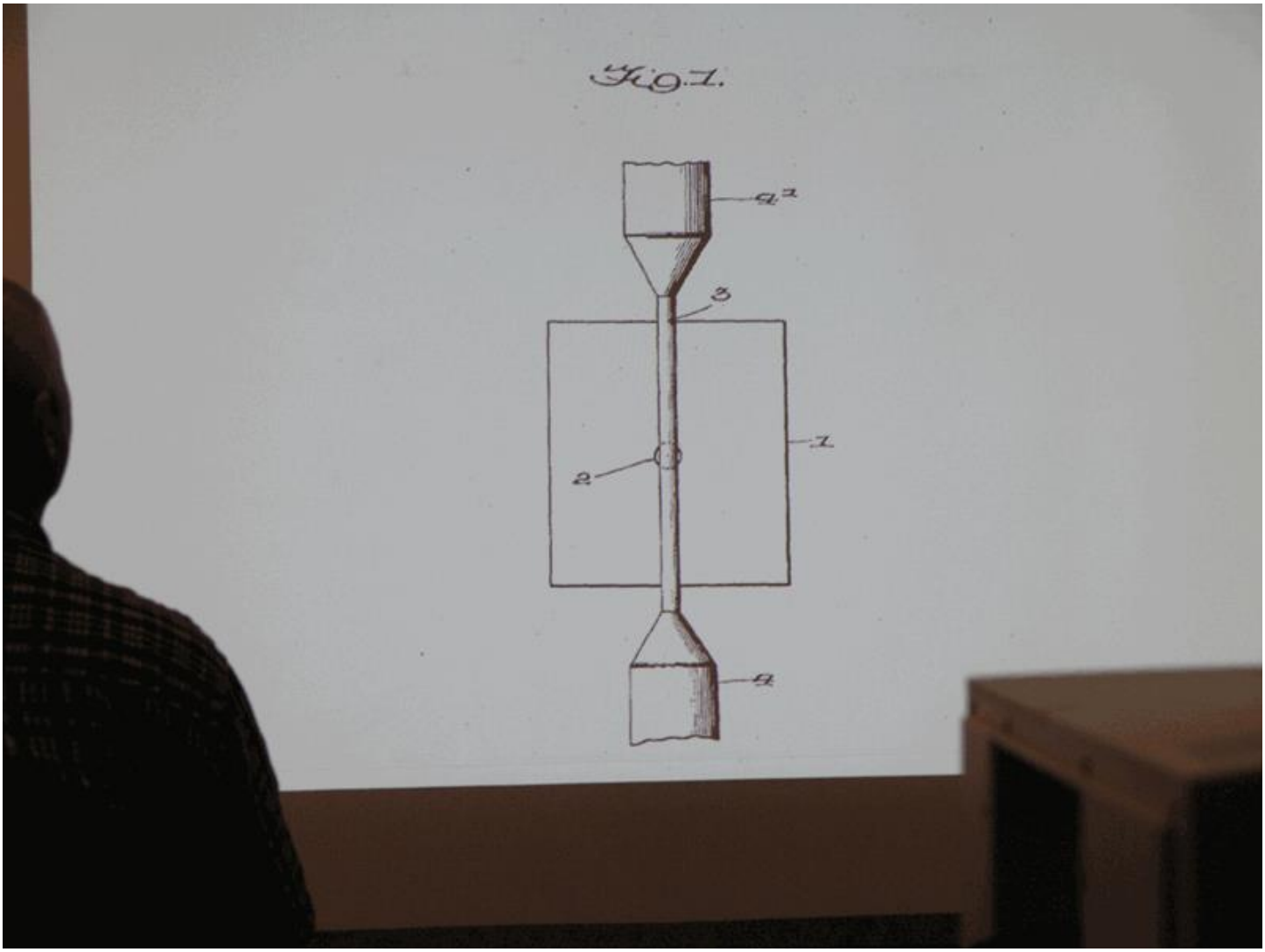
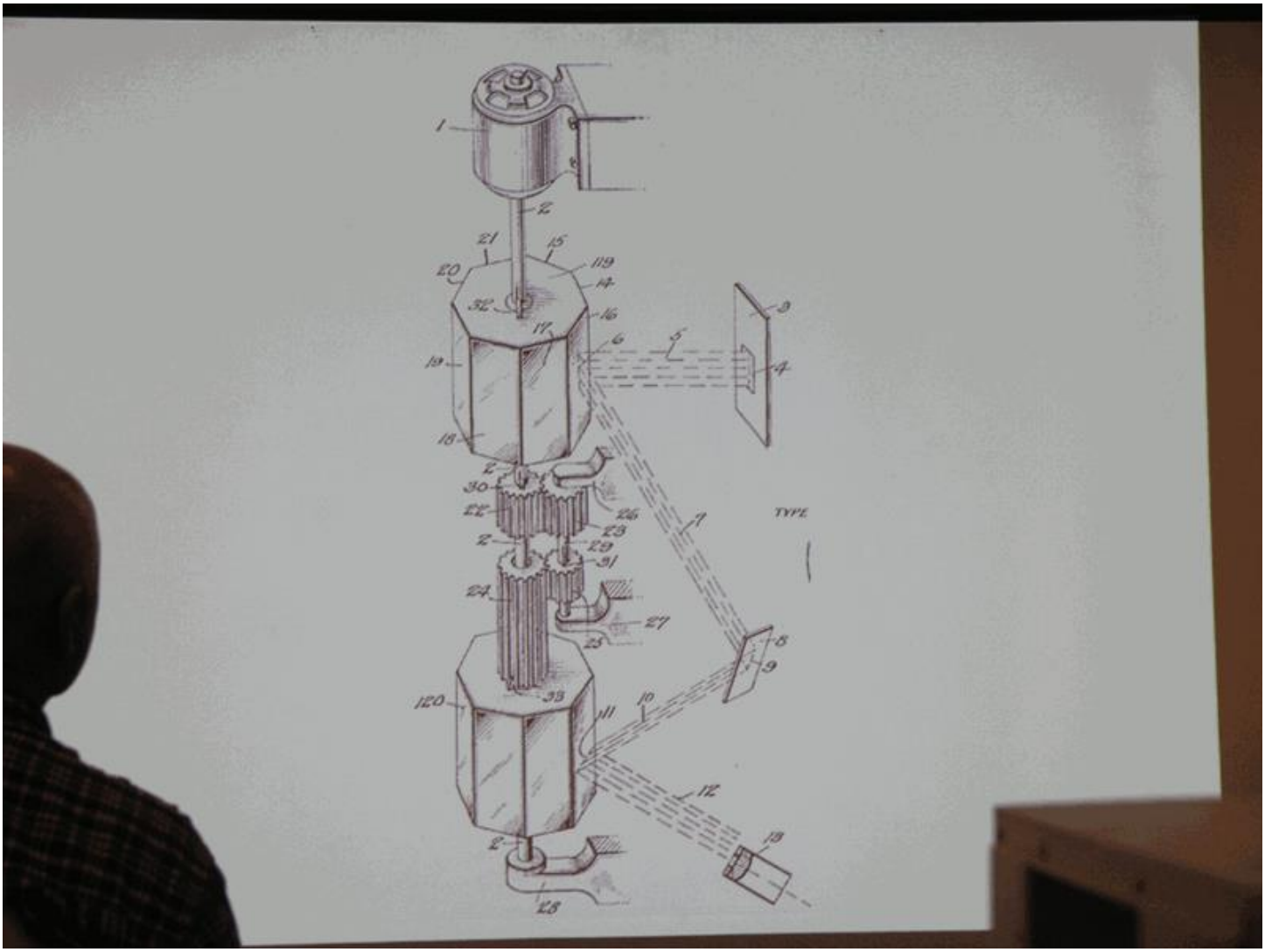
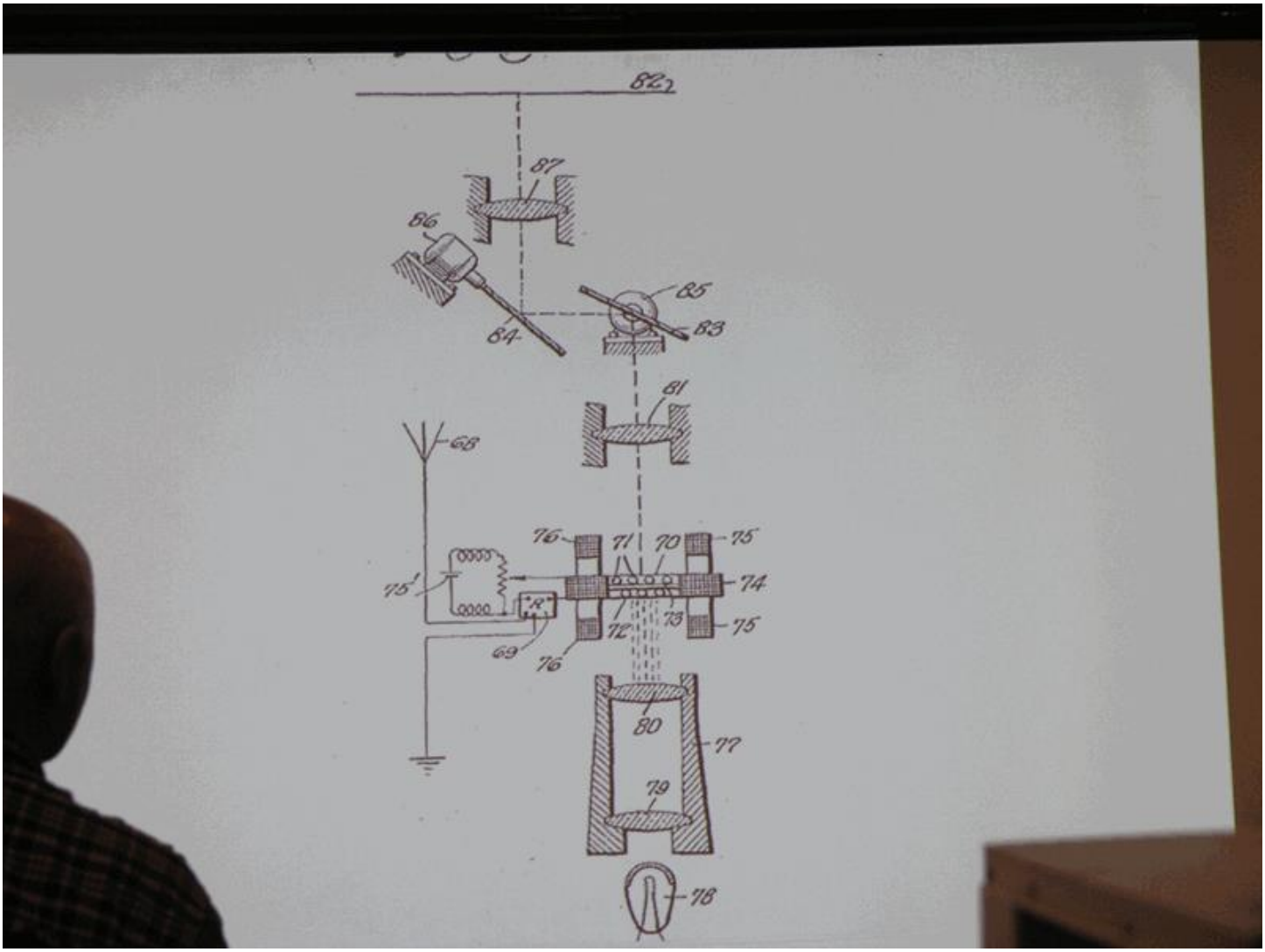
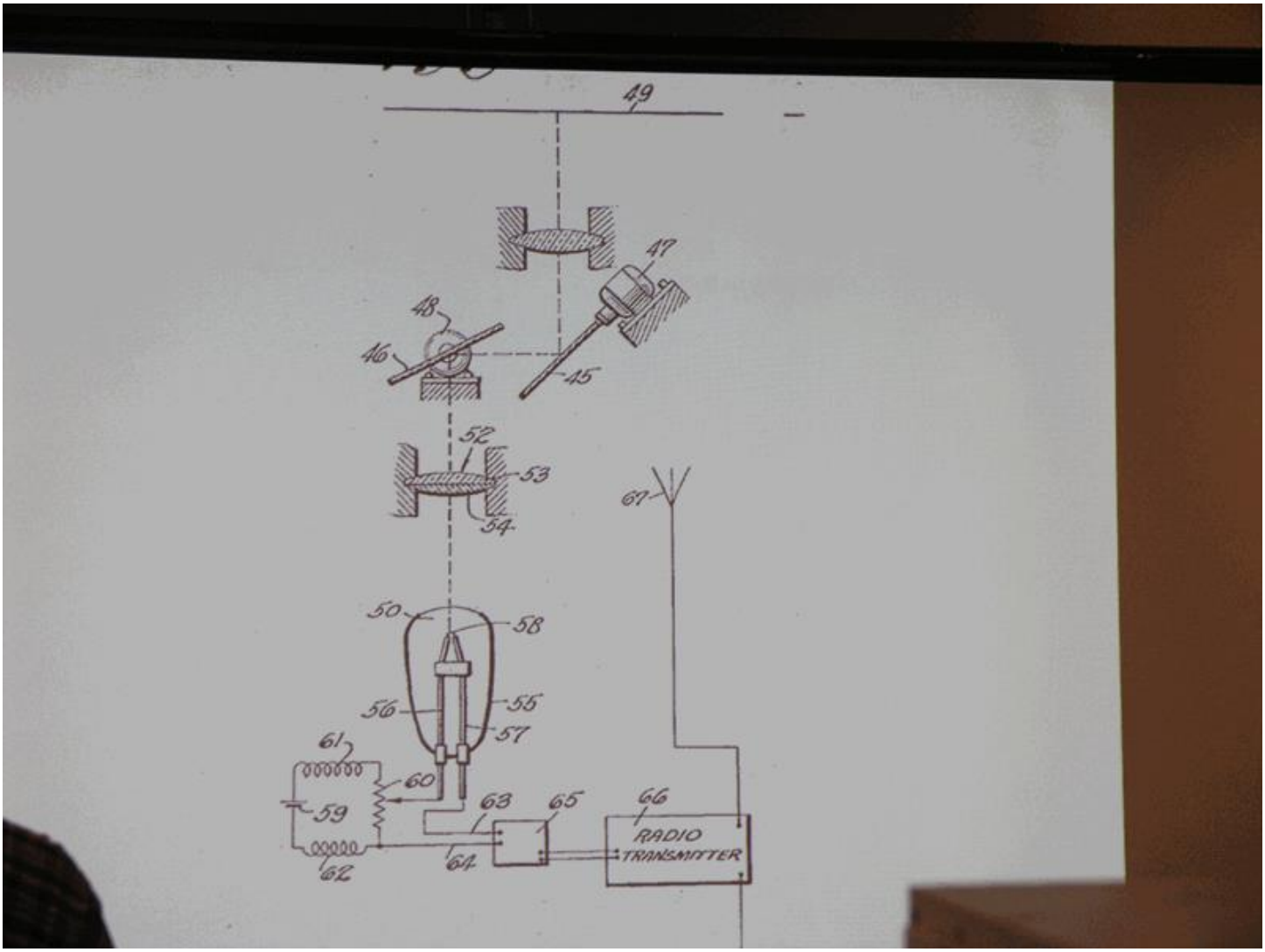
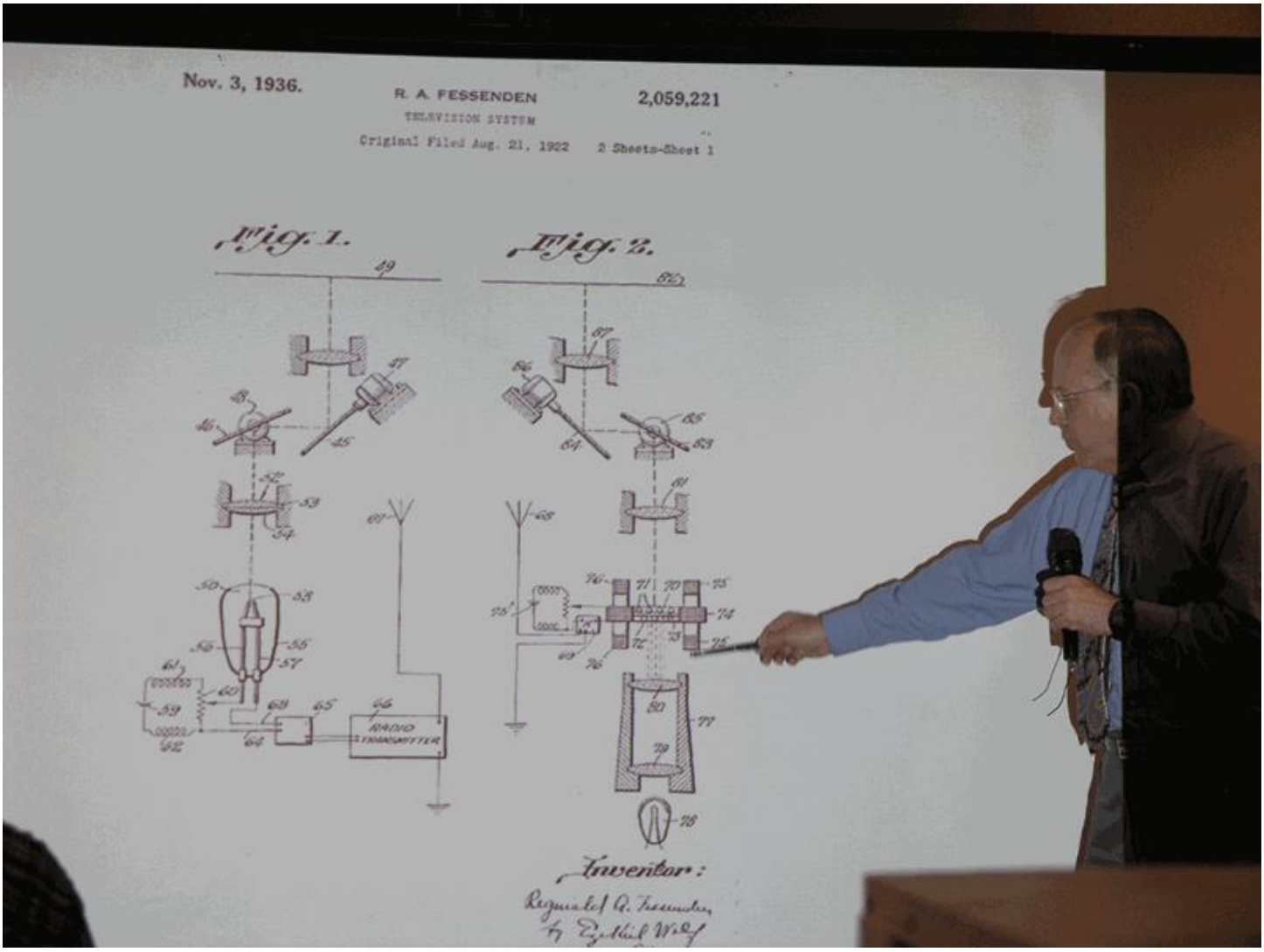


Fig. 1.
a²
3
1
2
4


1
12
21
15
119
20
14
32
16
17
6
5
3
4
19
18
30
26
22
23
29
31
24
27
25
8
9
120
33
10
111
12
13
28
TYPE


82
87
86
85
84
83
81
68
76
71
70
75
74
75'
72
73
75
69
76
80
77
79
78


49
47
48
46
45
52
53
54
67
50
58
56
55
57
61
60
59
63
65
66
RADIO
TRANSMITTER
62
64



Nov. 3, 1936. R. A. FESSENDEN 2,059,221

TELEVISION SYSTEM

Original Filed Aug. 21, 1922 2 Sheets-Sheet 1

Fig. 1.

Fig. 2.

Inventor:

Reginald A. Fessenden,

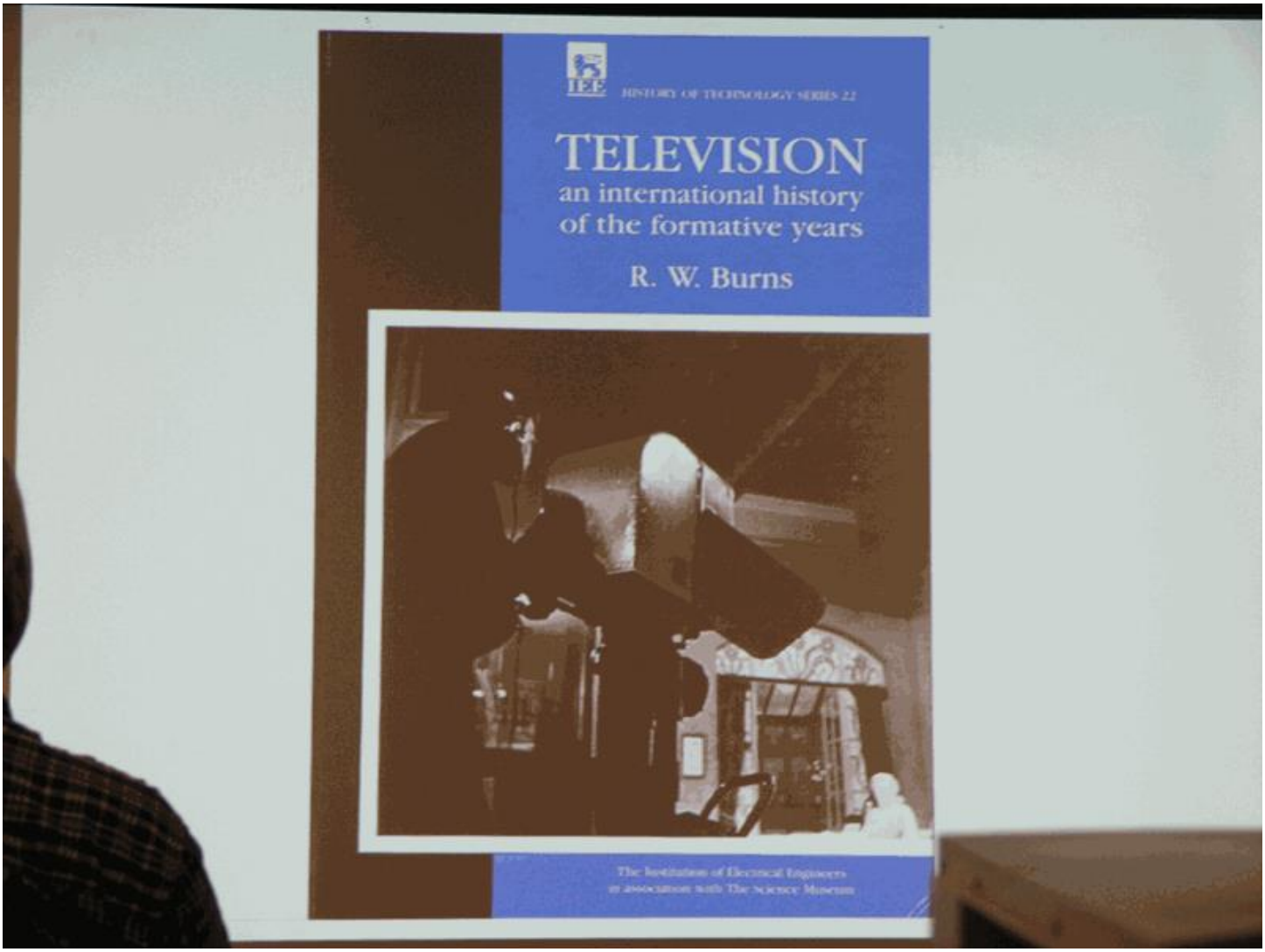
by Dyrenforth Wolf

RADIO TRANSMITTER

Nov. 3, 1936. R. A. FESSENDEN 2,059,221

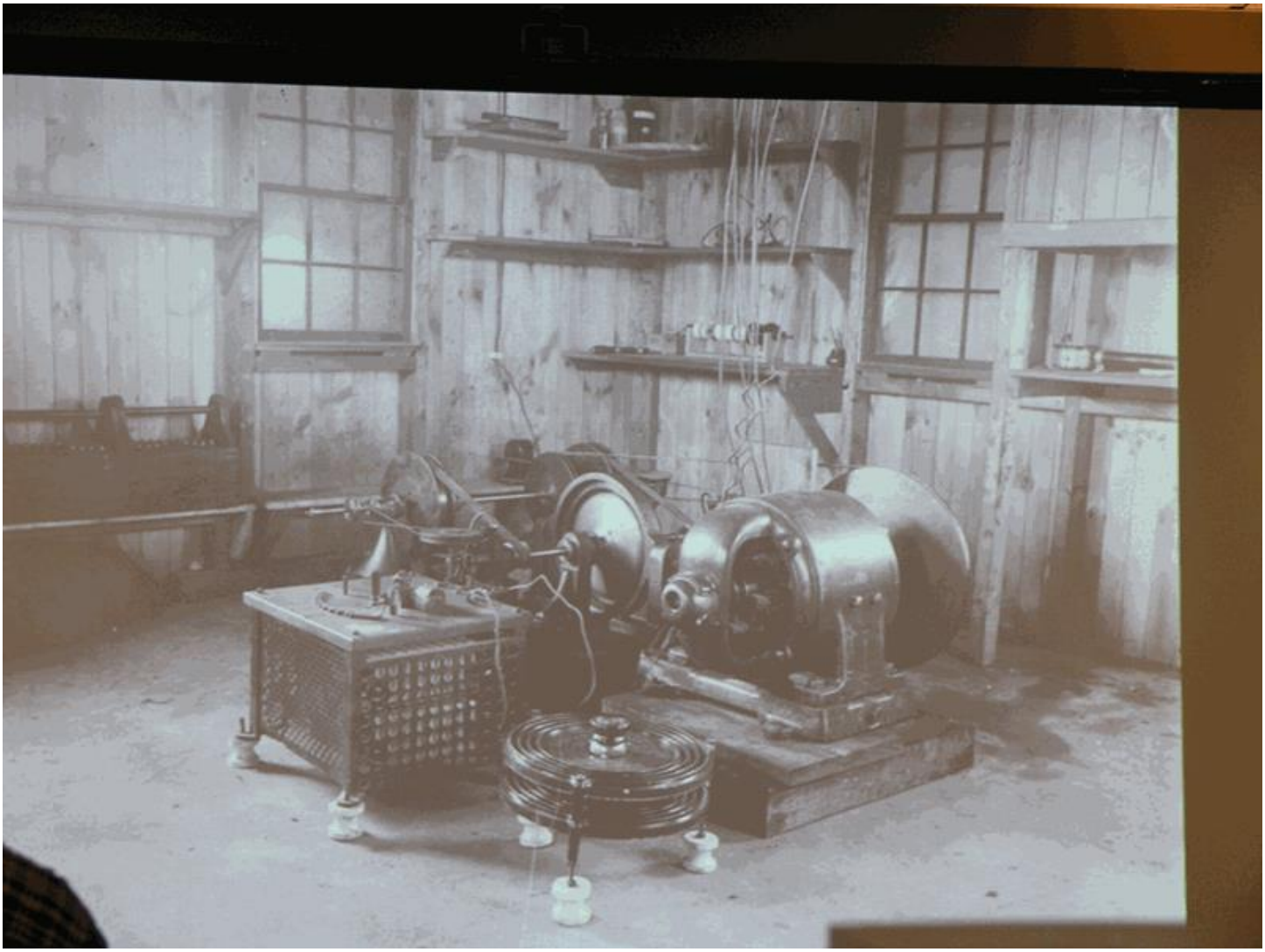
TELEVISION SYSTEM

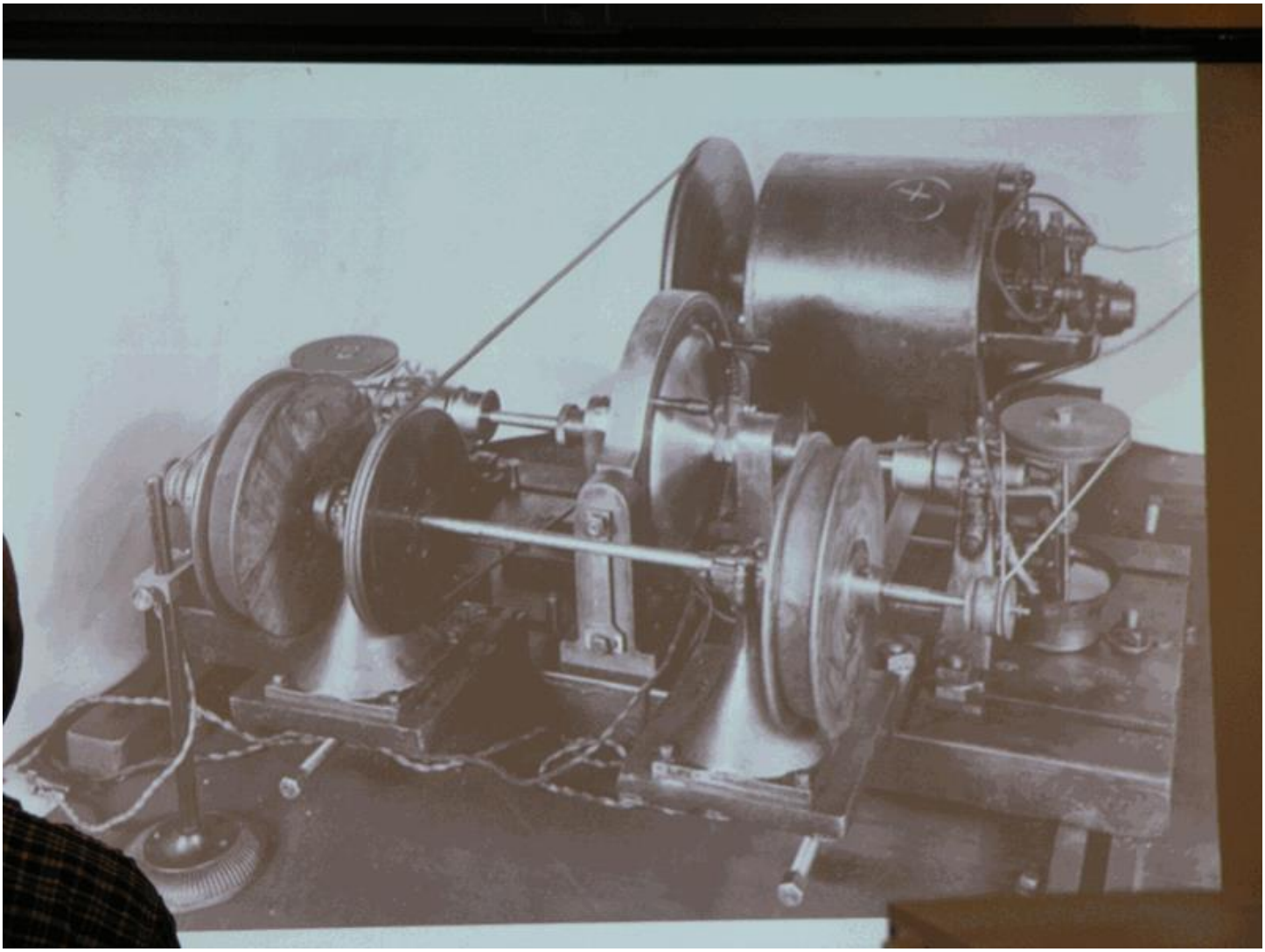
Original Filed Aug. 21, 1922 2 Sheets-Sheet 1

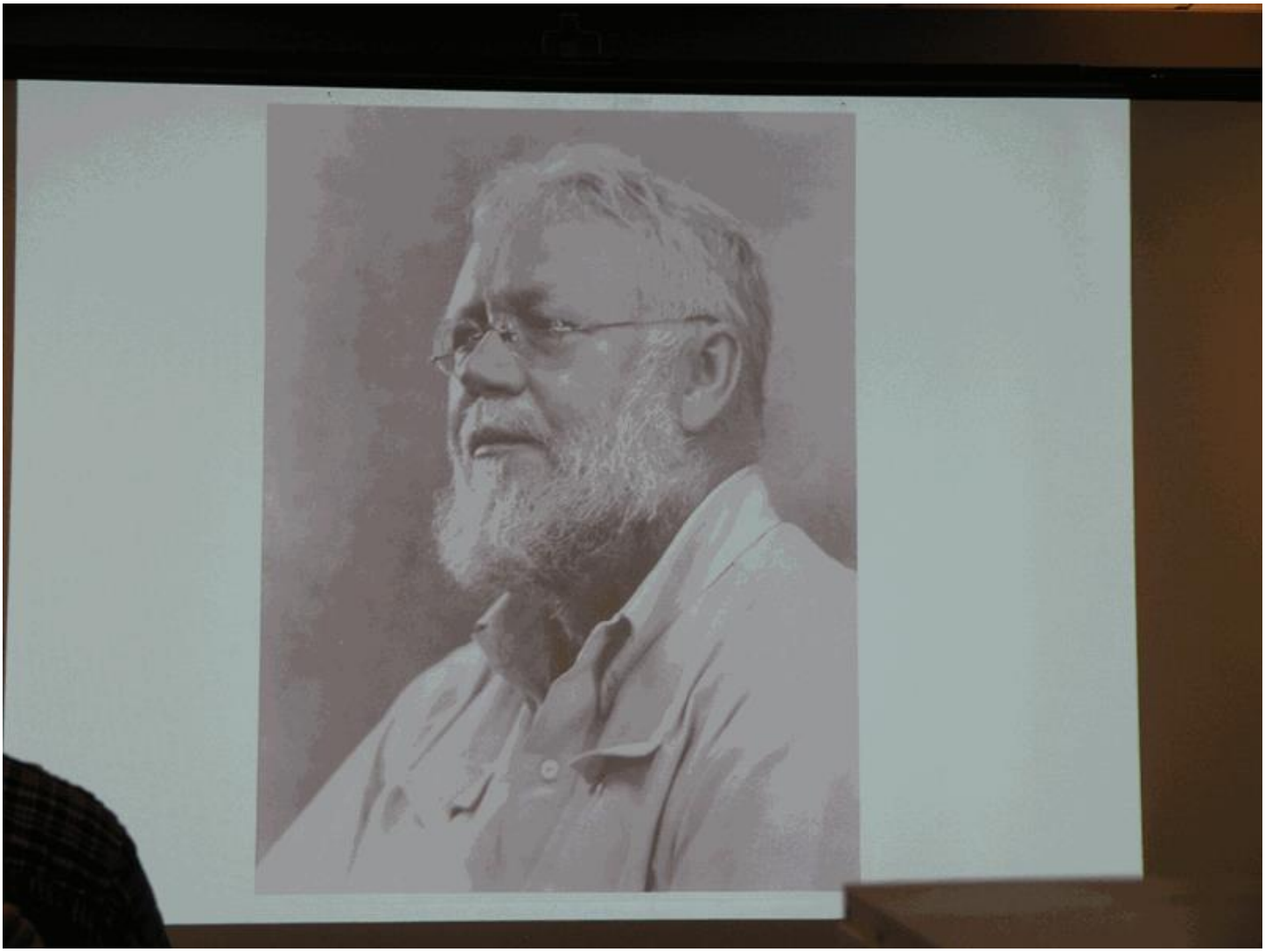

IEE
HISTORY OF TECHNOLOGY SERIES 22
TELEVISION
an international history
of the formative years
R. W. Burns
The Institution of Electrical Engineers
in association with The Science Museum

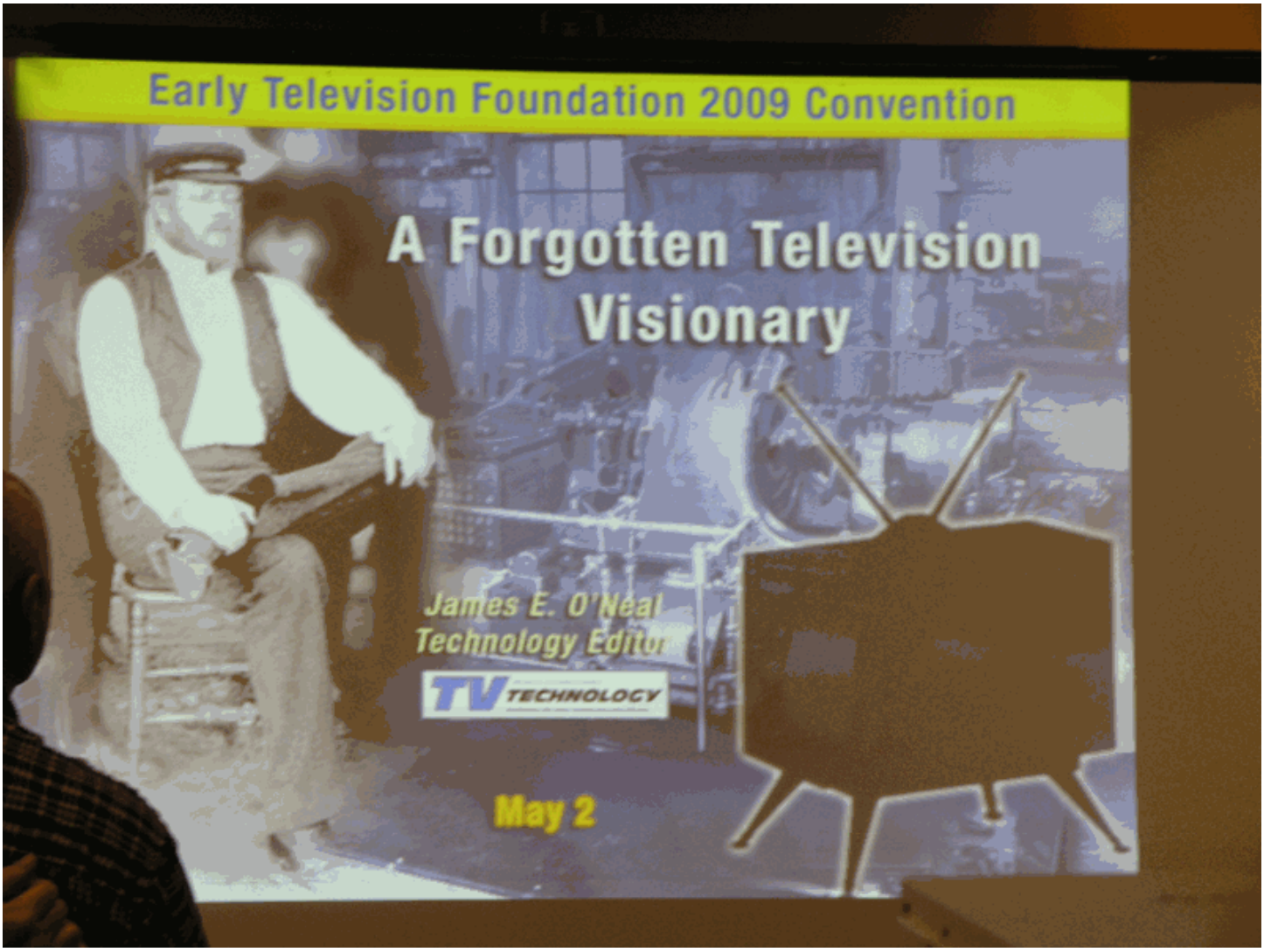
Early Television Developments:

- **Rosing**: took out patent for hybrid mechanical/electronic television system in 1907; by 1911 could transmit "luminous bands."
- **Swinton**: described electronic television system in 1908; expanded on concept in 1911 lecture
- **Jenkins**: disclosed "prismatic rings" in 1920; wirephoto transmissions in 1922; claimed to have transmitted silhouette images in June 1923; first public demo—1925
- **Baird**: began work in early 1923; first demo--Jan. 1924
- **Zworykin**: suggested television project to Westinghouse's director of research in spring of 1923.
- **Alexanderson**: began thinking about television in mid-1924; demo for GE officials--January of 1925
- **Ives**: started experimentation at AT&T in 1925; first demo — 1927

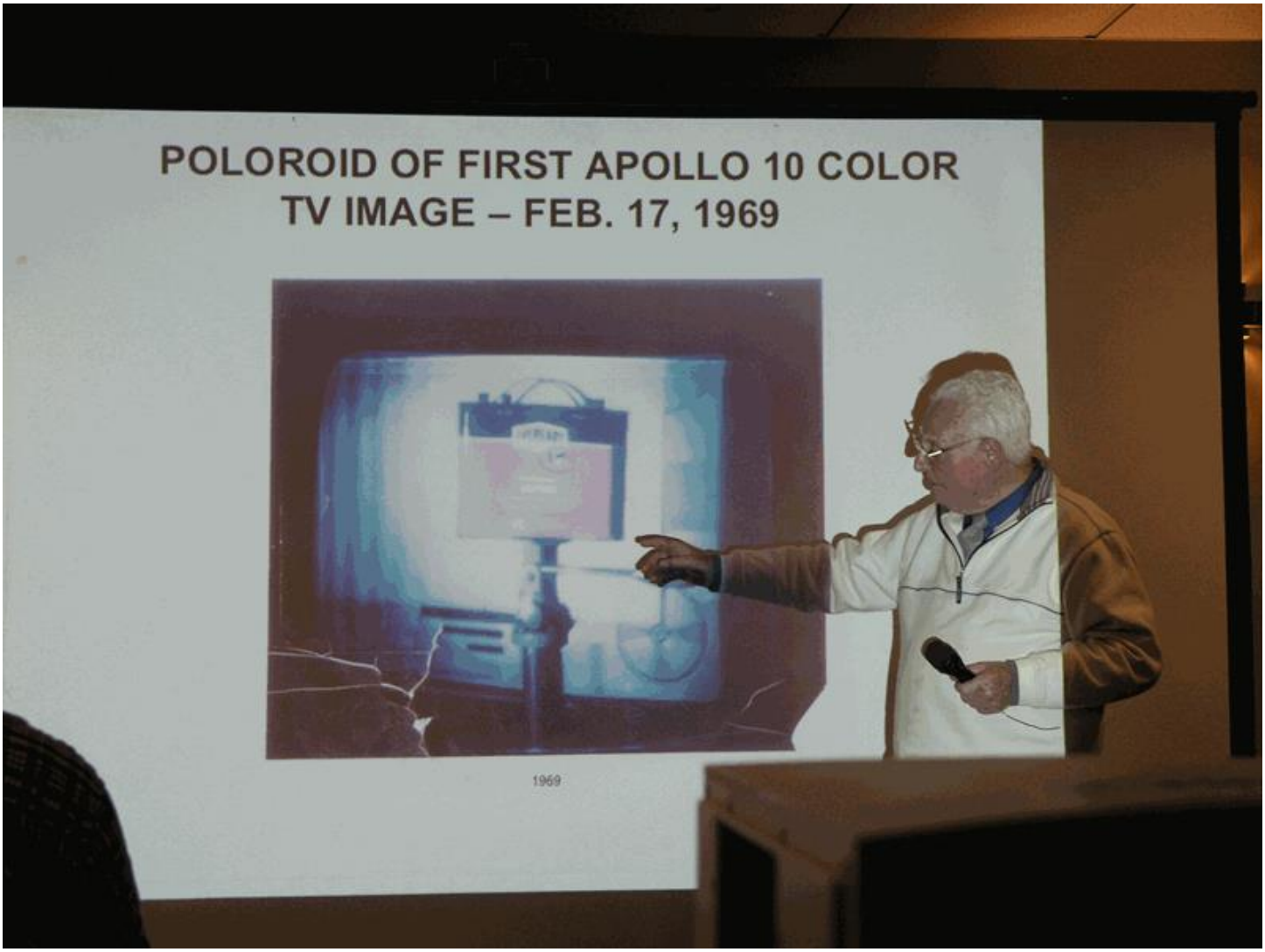




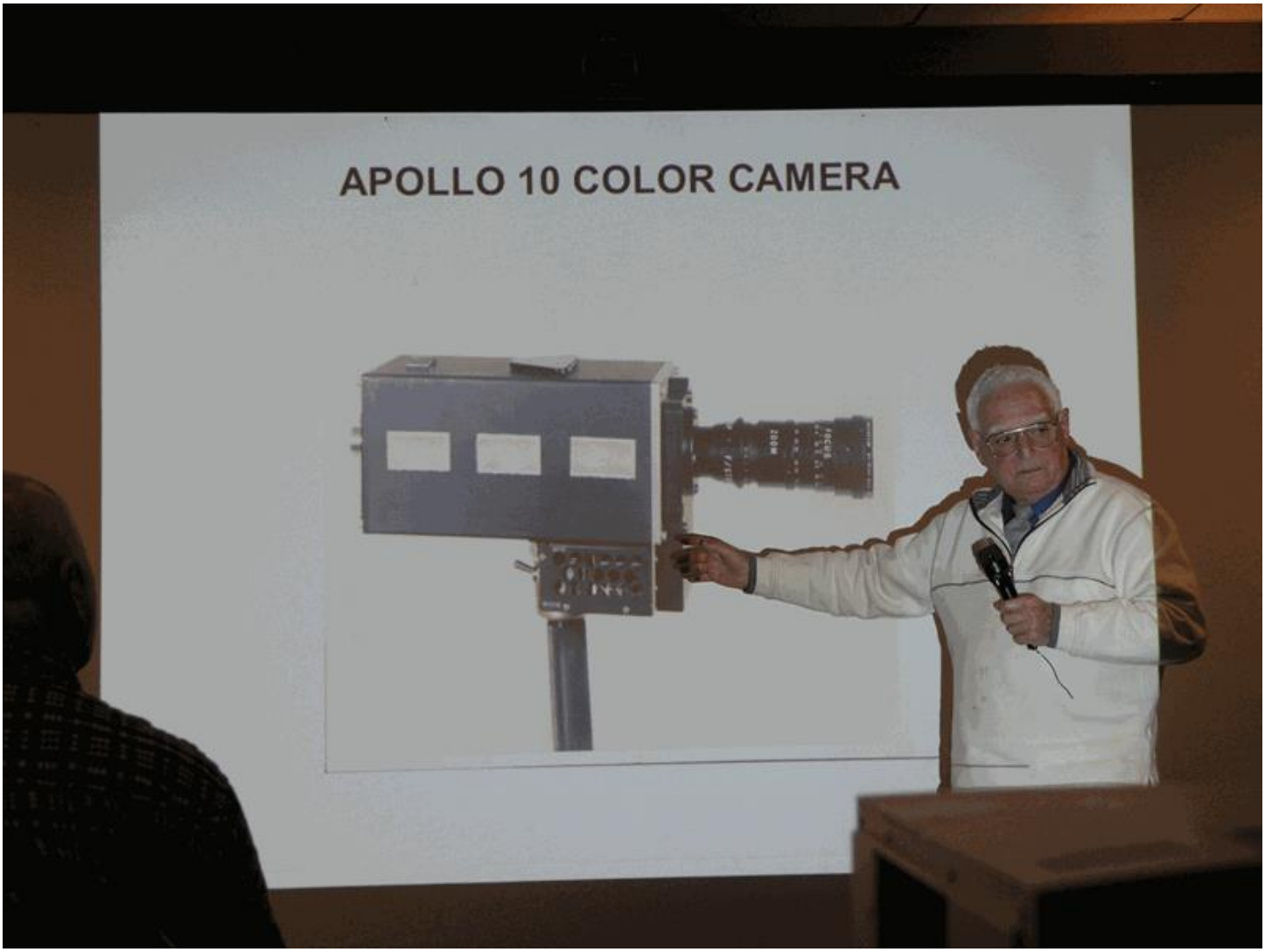



Early Television Foundation 2009 Convention
A Forgotten Television Visionary
James E. O'Neal
Technology Editor
TV TECHNOLOGY
May 2


CAMERA COLOR FILTER WHEEL


POLOROID OF FIRST APOLLO 10 COLOR
TV IMAGE – FEB. 17, 1969
1969

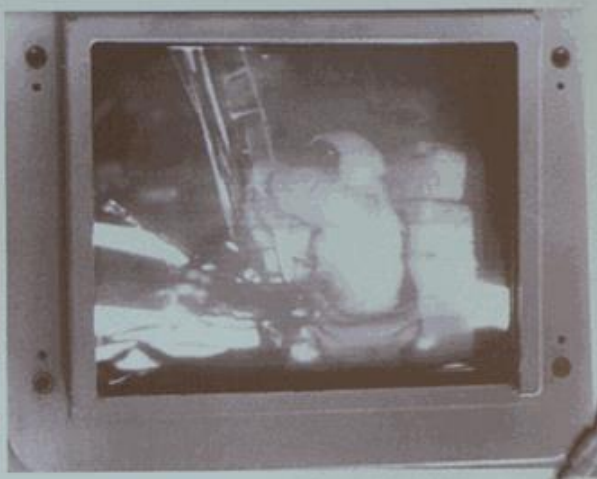

APOLLO 10 CAMERA & COLOR WHEEL


APOLLO 10 COLOR CAMERA


COMPARISONS
After and Before Scan Conversion
Parkes
can converted video at Houston
verted picture.
of TV at Houston.
Goldstone
– slow scan TV monitor at Goldstone
Slow scan picture.
Mounted Polaroid, taken
(Photo with thanks to
GET 110:41:48

COMPARISONS

After and Before Scan Conversion



Goldstone
– scan converted video at Houston

...converted picture.
...e of TV at Houston.

Honeysuckle Creek
– slow scan TV monitor at Honeysuckle

Slow scan picture.
Handheld 35mm SLR photo, taken at Honeysuckle Creek.
(H5K-TV05)

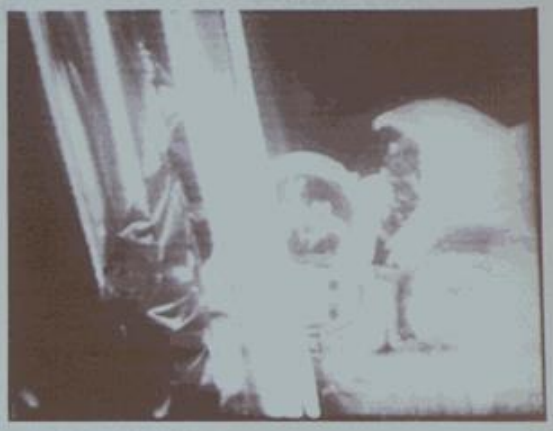
GET 109:29:18
Armstrong installing the LEC on the secondary strut.

COMPARISONS

After and Before Scan Conversion

Parkes
– scan converted video at Houston

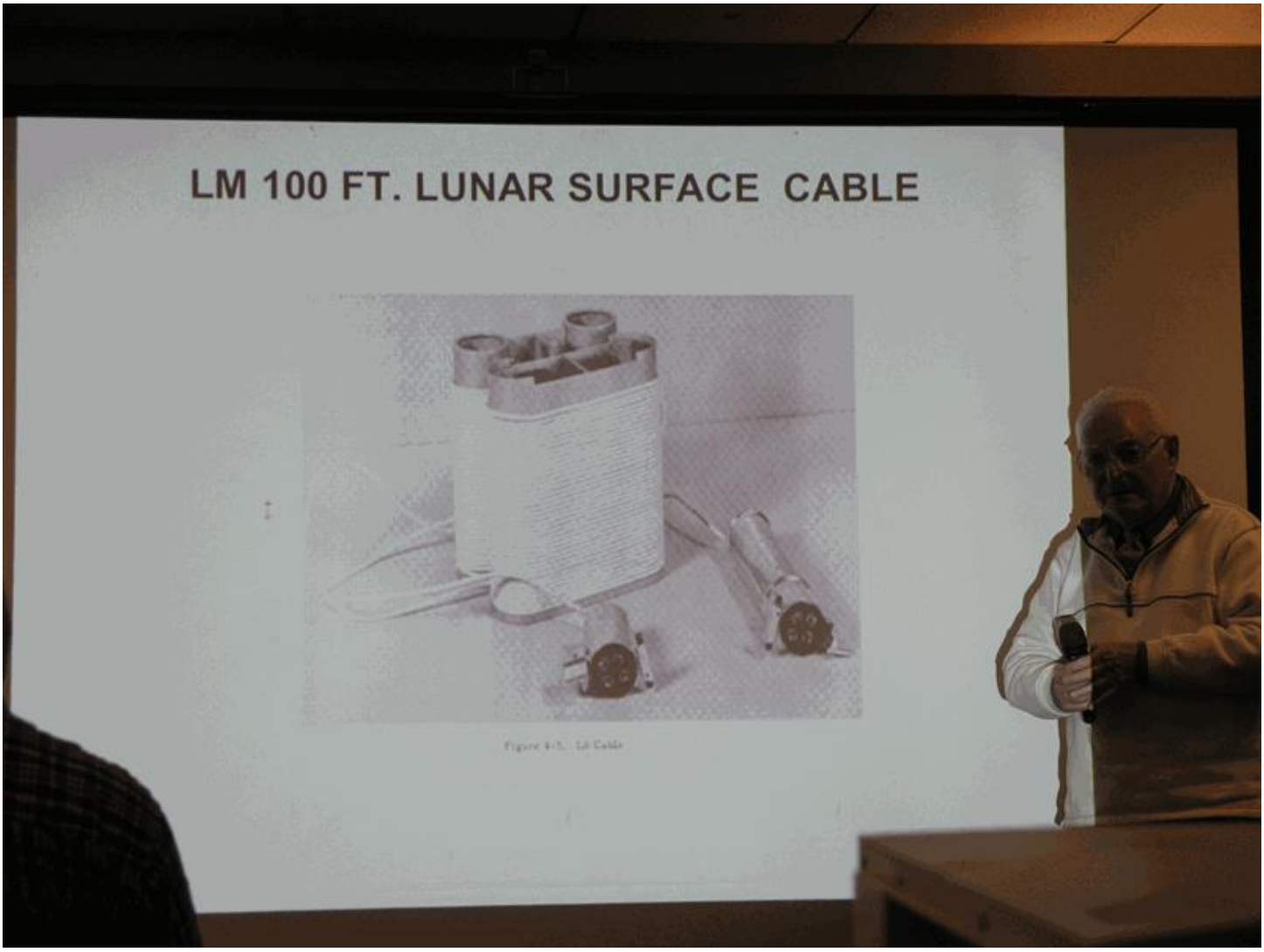
Scan converted picture.
...ope of TV at Houston.

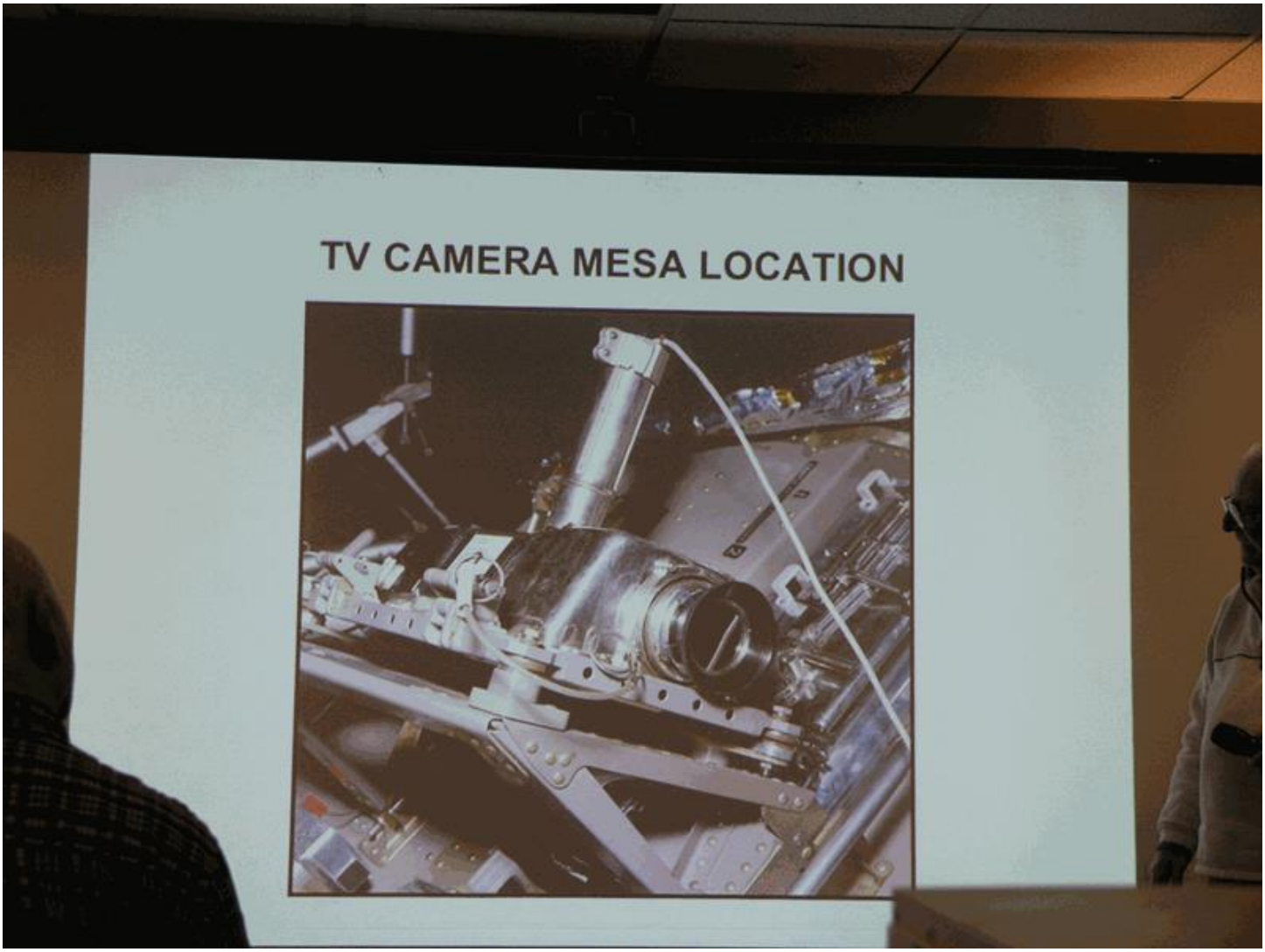


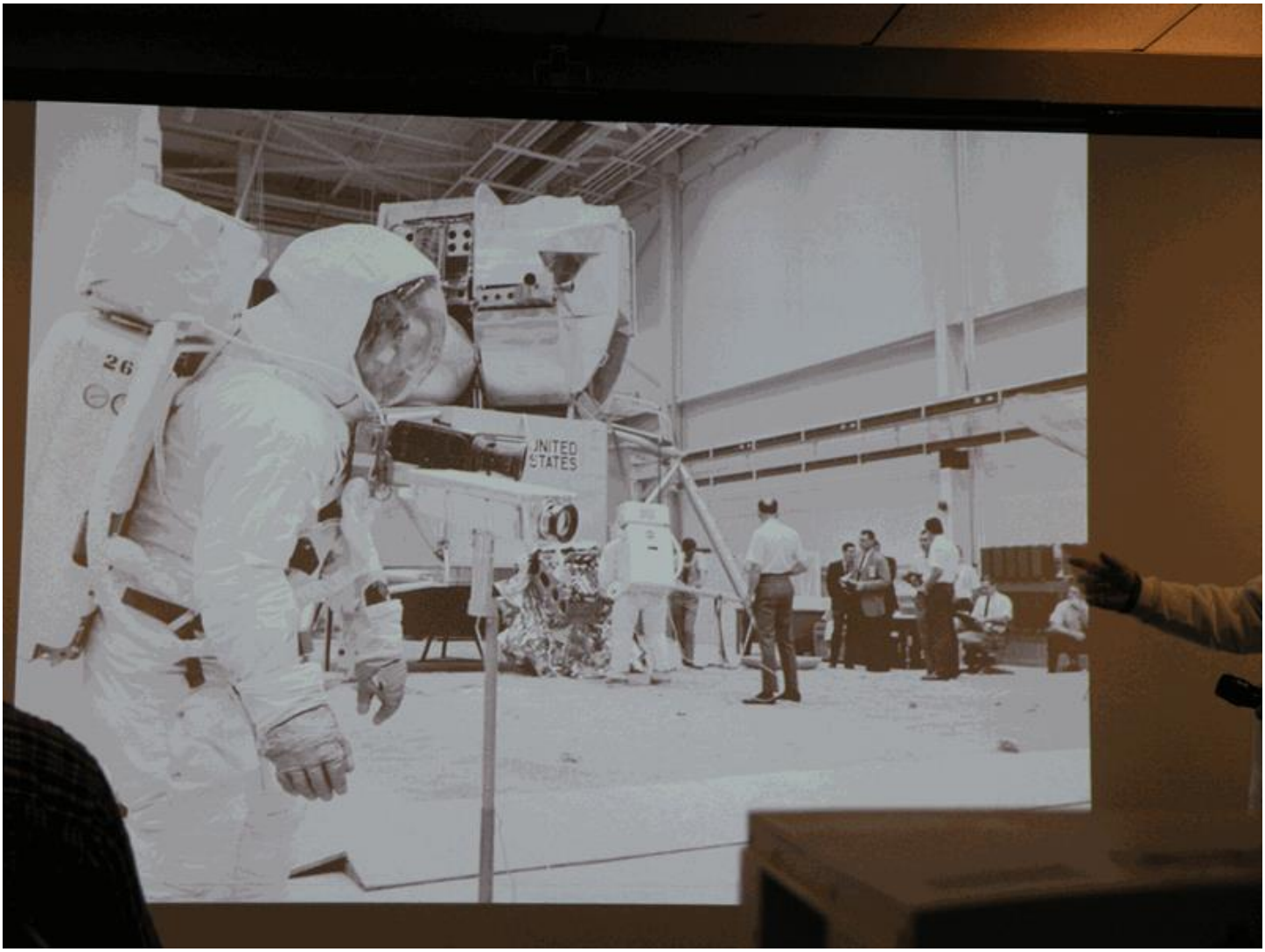
Parkes
– slow scan TV monitor at Sydney Video

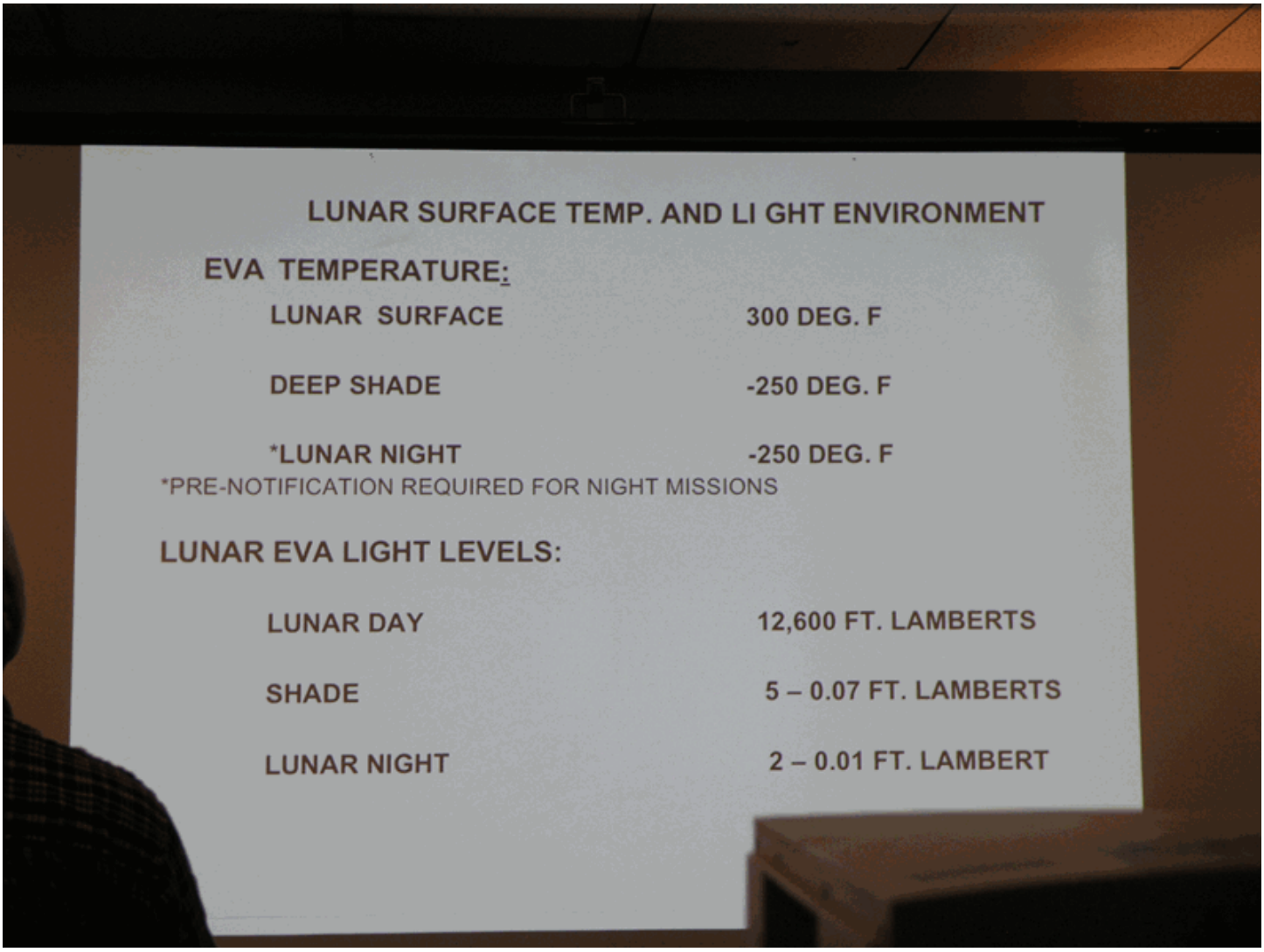
Slow scan picture.
4 x 5" Polaroid taken at Sydney Video.

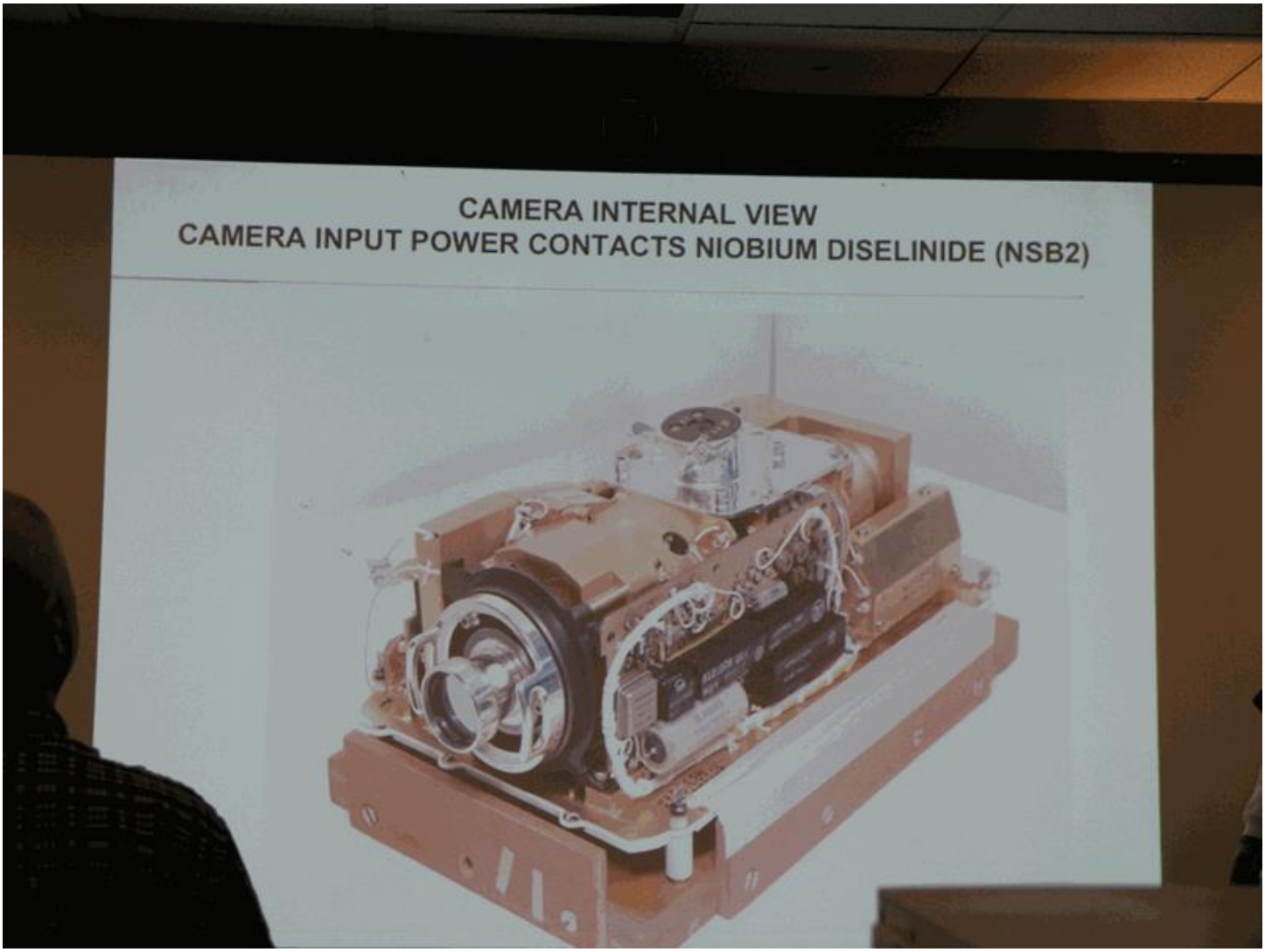
GET 109:52:40
Armstrong (foreground) and Aldrin unveil the plague.

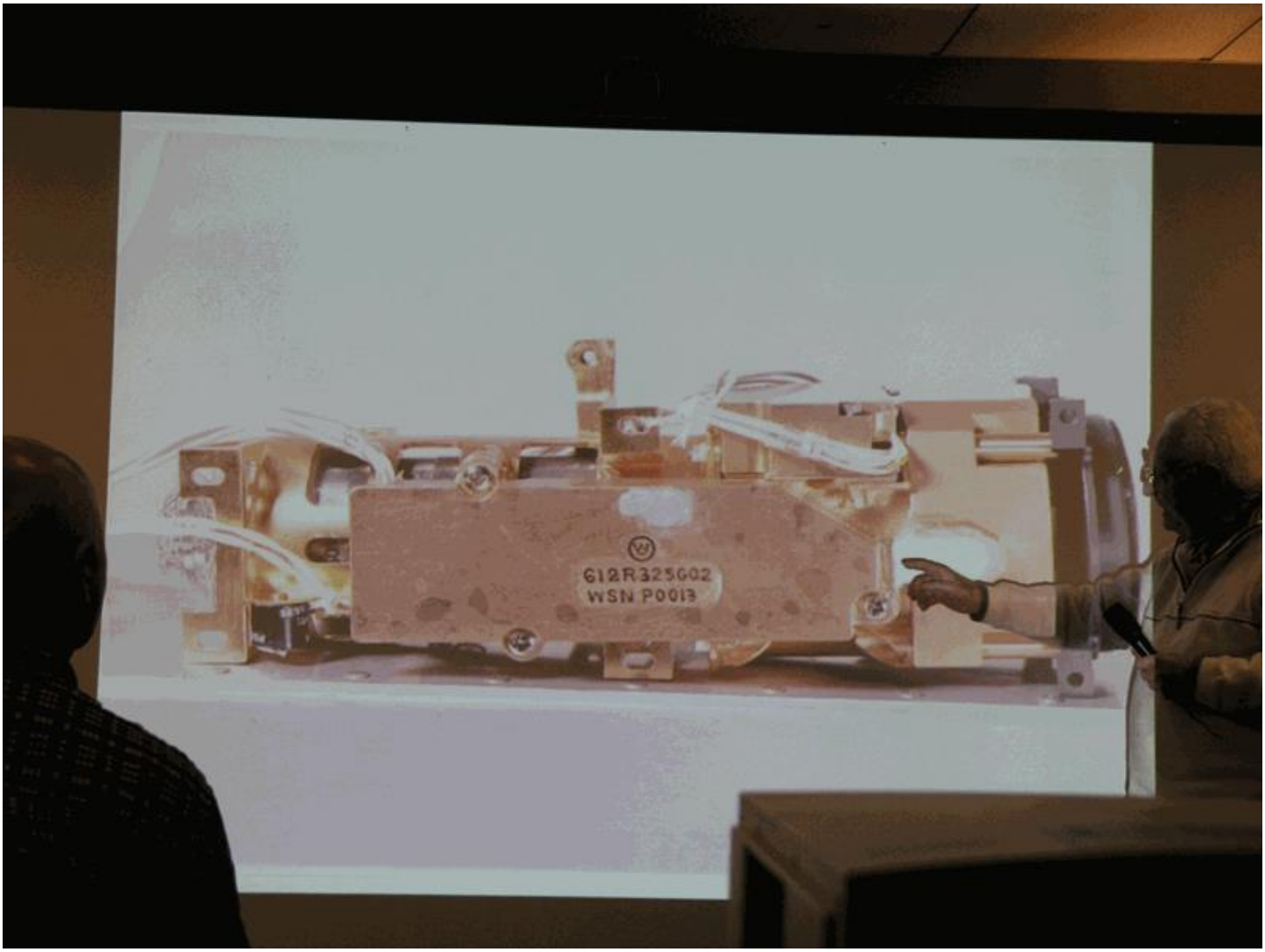

LM 100 FT. LUNAR SURFACE CABLE

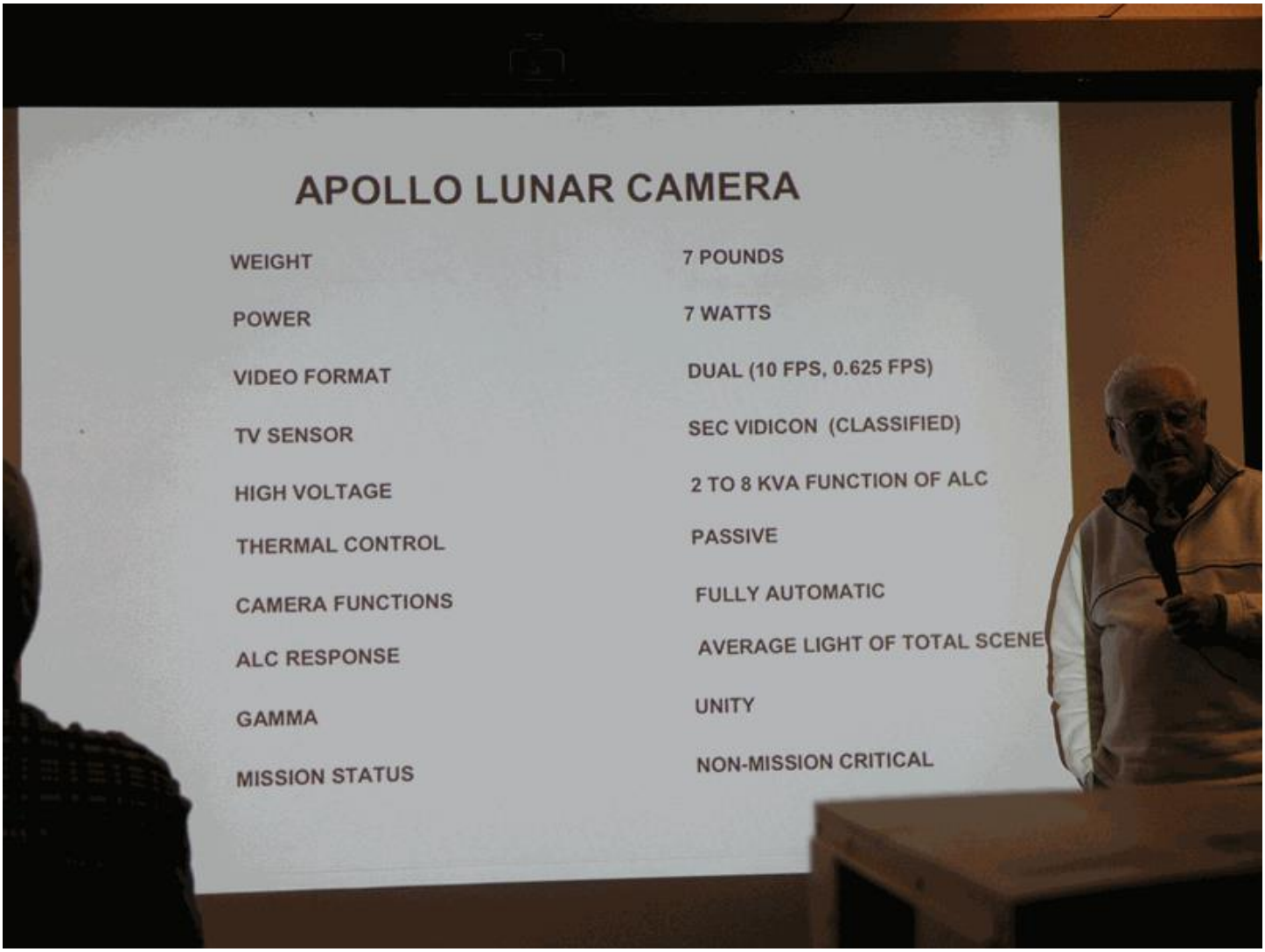

TV CAMERA MESA LOCATION

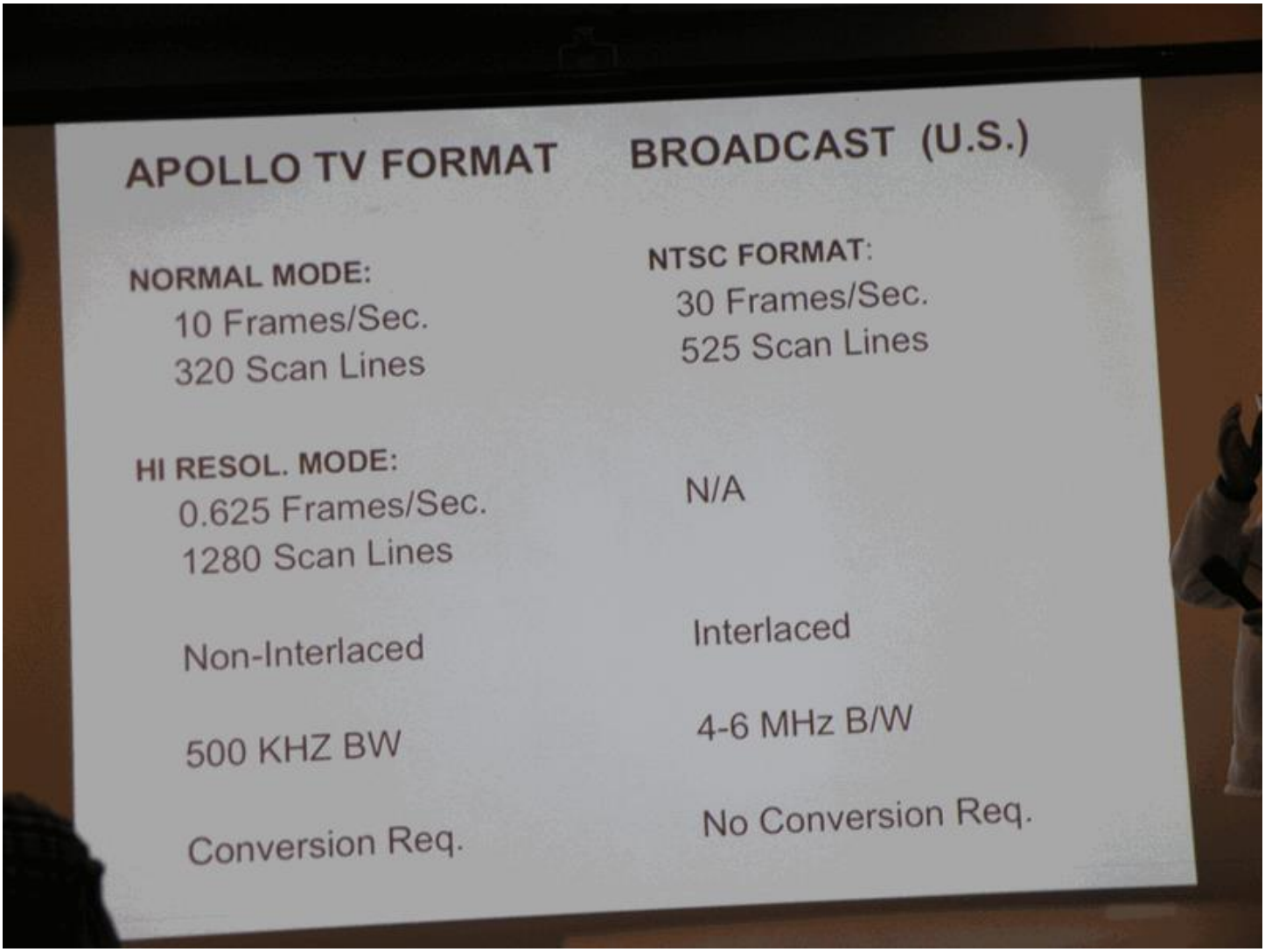

26
UNITED
STATES


LUNAR SURFACE TEMP. AND LI GHT ENVIRONMENT
EVA TEMPERATURE:
LUNAR SURFACE 300 DEG. F
DEEP SHADE -250 DEG. F
*LUNAR NIGHT -250 DEG. F
*PRE-NOTIFICATION REQUIRED FOR NIGHT MISSIONS
LUNAR EVA LIGHT LEVELS:
LUNAR DAY 12,600 FT. LAMBERTS
SHADE 5 – 0.07 FT. LAMBERTS
LUNAR NIGHT 2 – 0.01 FT. LAMBERT

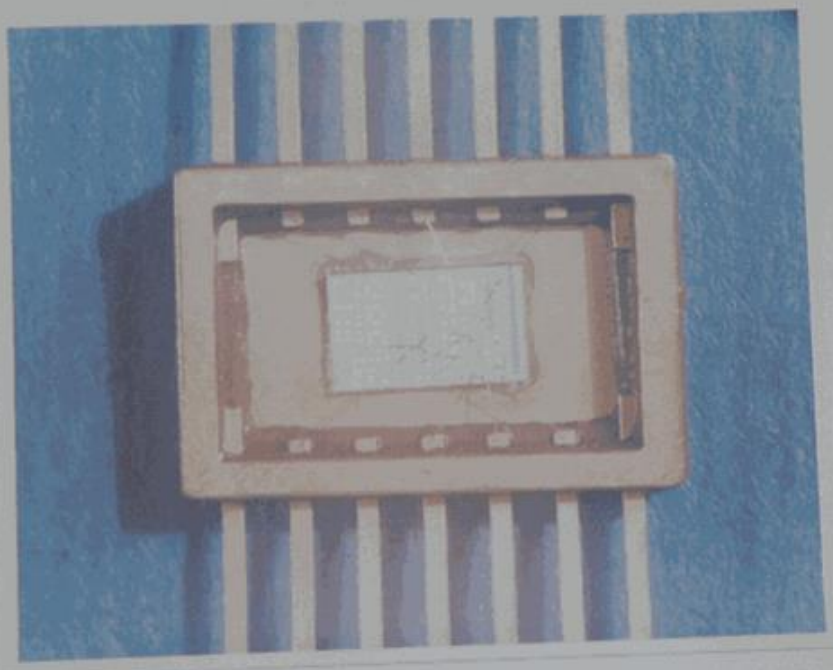

CAMERA INTERNAL VIEW
CAMERA INPUT POWER CONTACTS NIOBIUM DISELINIDE (NSB2)


612R325002
WSN P0013


APOLLO LUNAR CAMERA
WEIGHT
7 POUNDS
POWER
7 WATTS
VIDEO FORMAT
DUAL (10 FPS, 0.625 FPS)
TV SENSOR
SEC VIDICON (CLASSIFIED)
HIGH VOLTAGE
2 TO 8 KVA FUNCTION OF ALC
THERMAL CONTROL
PASSIVE
CAMERA FUNCTIONS
FULLY AUTOMATIC
ALC RESPONSE
AVERAGE LIGHT OF TOTAL SCENE
GAMMA
UNITY
MISSION STATUS
NON-MISSION CRITICAL


APOLLO TV FORMAT
BROADCAST (U.S.)
NORMAL MODE:
10 Frames/Sec.
320 Scan Lines
NTSC FORMAT:
30 Frames/Sec.
525 Scan Lines
HI RESOL. MODE:
0.625 Frames/Sec.
1280 Scan Lines
N/A
Non-Interlaced
Interlaced
500 KHZ BW
4-6 MHz B/W
Conversion Req.
No Conversion Req.

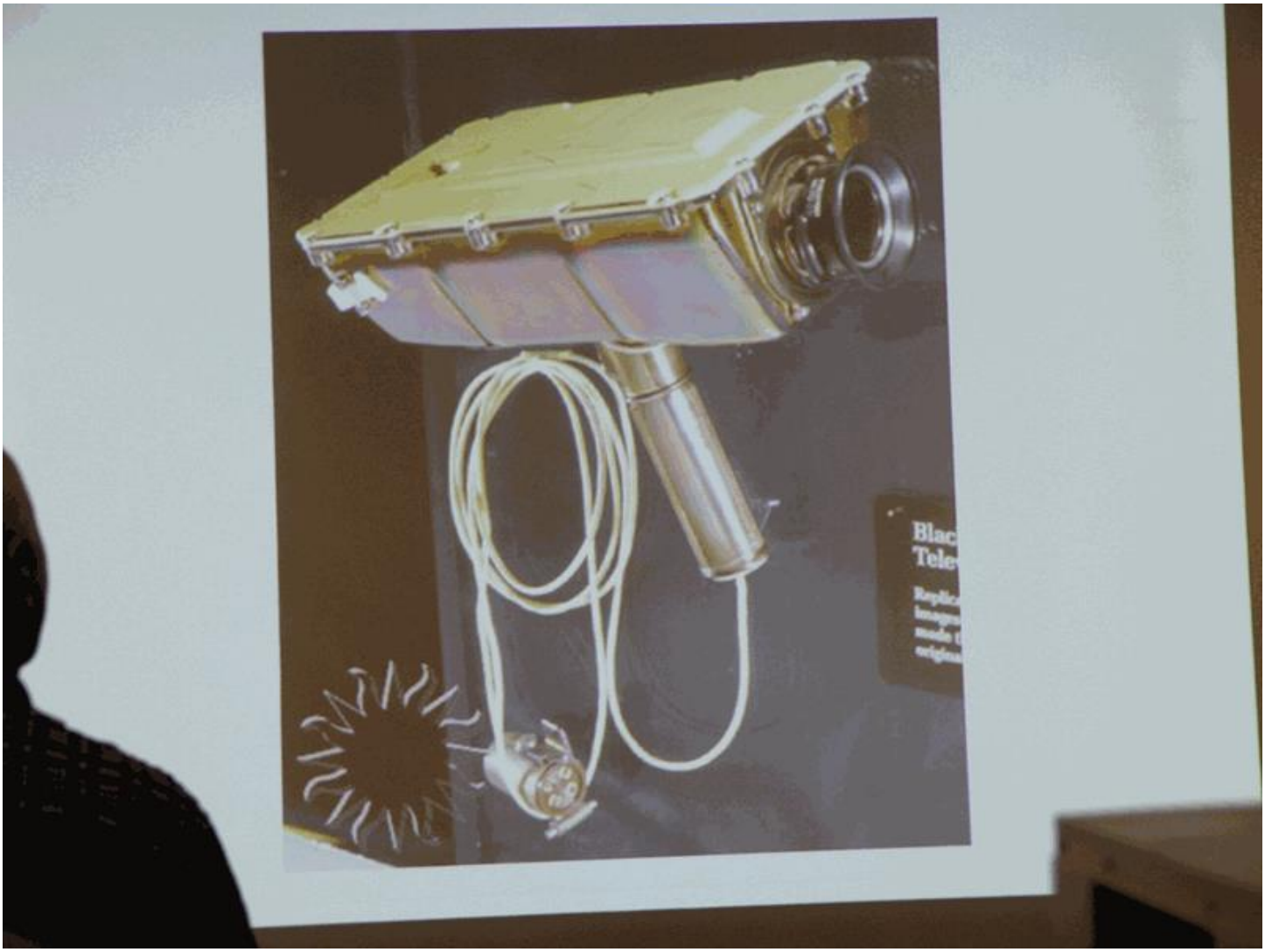
WESTINGHOUSE LSIC

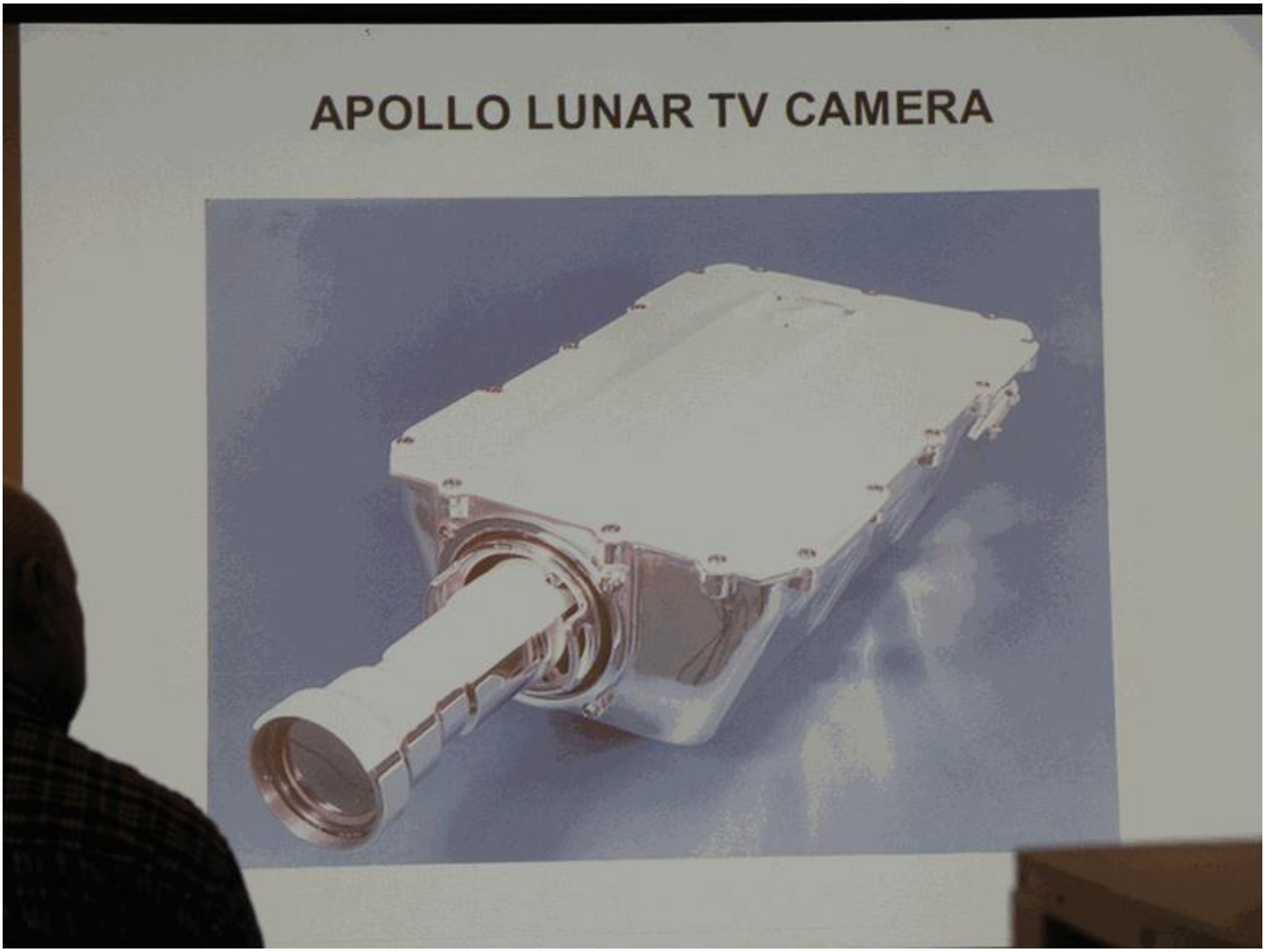


CAMERA COMPONENTS

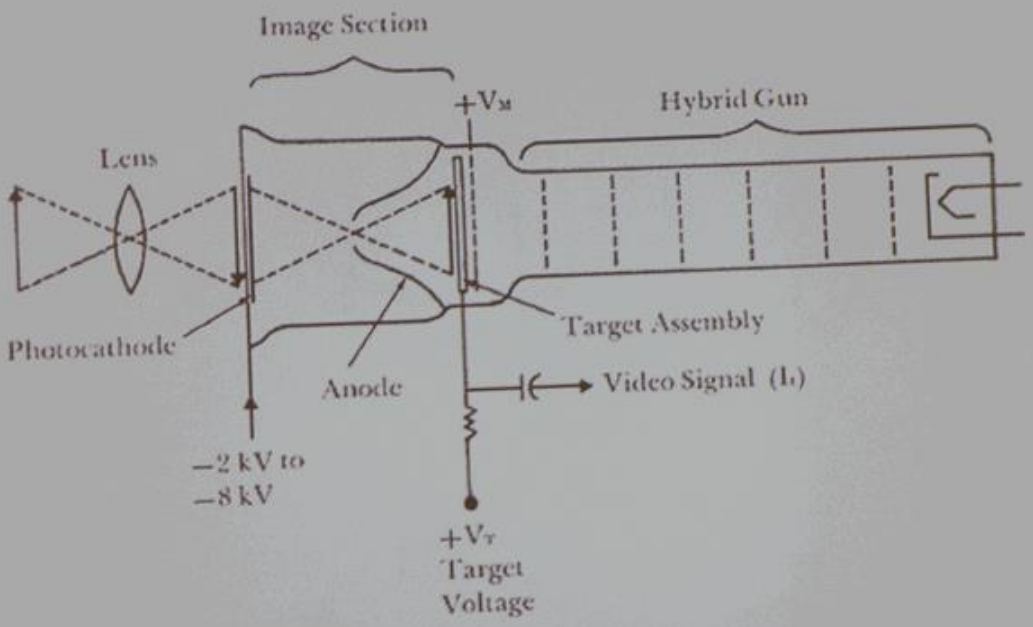
80% OF THE TOTAL COMPONENTS WERE CUSTOM IC'S

- TOTAL OF 28 CUSTOM IC'S DESIGNED FOR TV CAMERA
- THE 12 MOST DIFFICULT MADE AT WESTINGHOUSE BALTIMORE
- THE BALANCE MADE BY 4 COMPANIES, EACH DESIGNED 4 IC'S
- TYPES OF IC'S INCLUDED:
- LSIC, SSIC, SMALL MONOLITHIC, LSHYBRID




APOLLO LUNAR TV CAMERA

SEC VIDICON TV TUBE



WHY WESTINGHOUSE

DESIGNED TV FOR MILITARY HIGH SPEED AIRCRAFT, SHIPS, SUBMARINES, TANKS, ARMY FIELD USE

1. MILITARY CAMERA REQUIREMENTS:

   SMALL COMPACT PACKAGE-NO EXTERNAL CONTROLS

2. MEETS EXTENSIVE MILITARY SPECIFICATIONS

   MUST OPERATE IN HARSH ENVIRONMENTAL CONDITIONS

3. INTEGRATED CIRCUIT DEVELOPMENT IN-HOUSE FACILIY

   REQUIRED ADVANCED LSIC BEYOND EXISTING STATE OF THE ART

4. ARMY DEVELOPMENT SEC LOW LIGHT LEVEL TV CAMERA TUBE


APOLLO 11
40th Anniversary
1969 - 2009

APOLLO TV CAMERAS

Apollo, Skylab and Apollo Soyuz Test Project

Neil Armstrong To Aleksey Leonov

Stan Lebar

Westinghouse Electric Company, Retired
Program Manager
Apollo TV Camera Systems

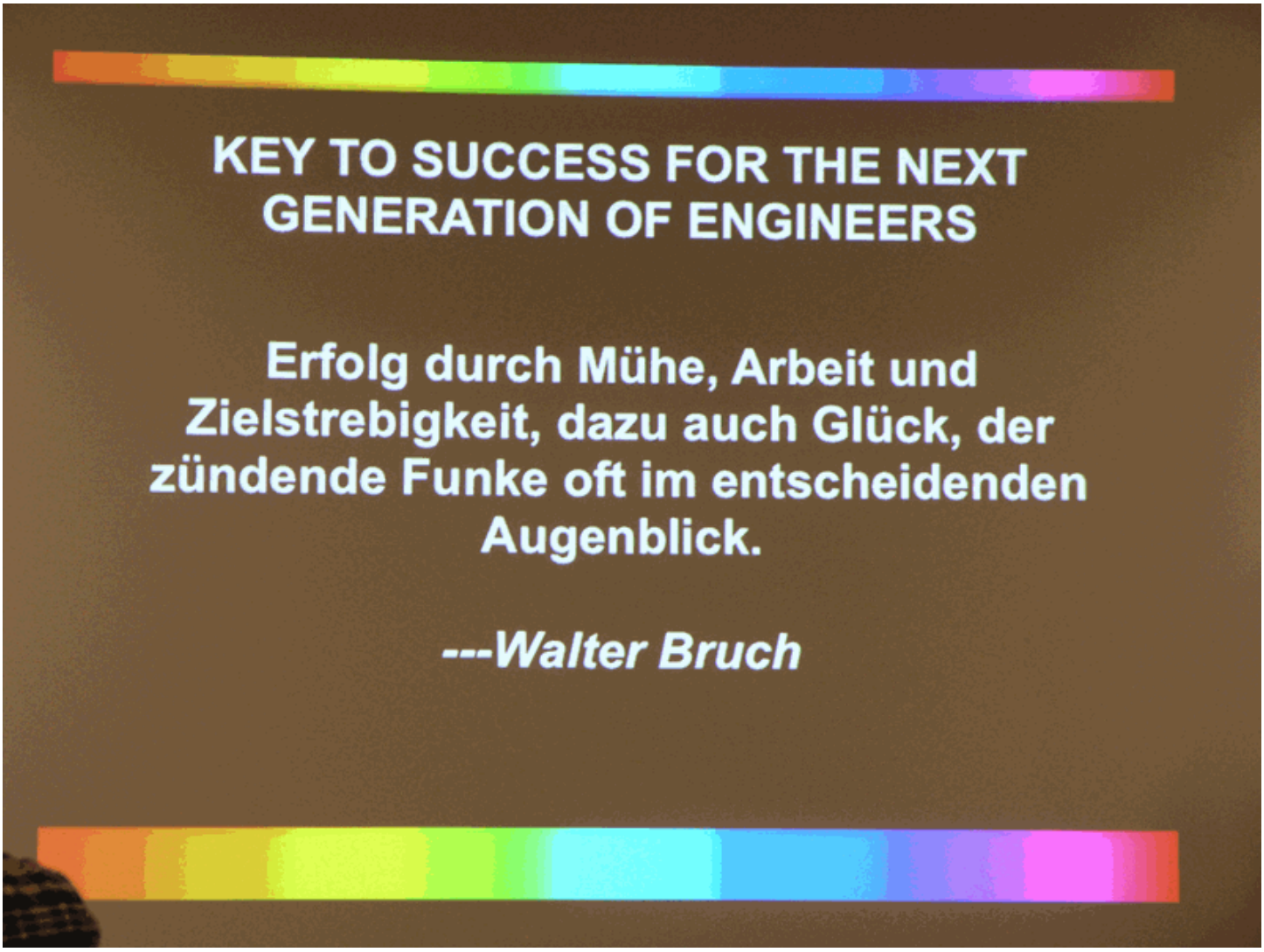
2009 Early Television Convention

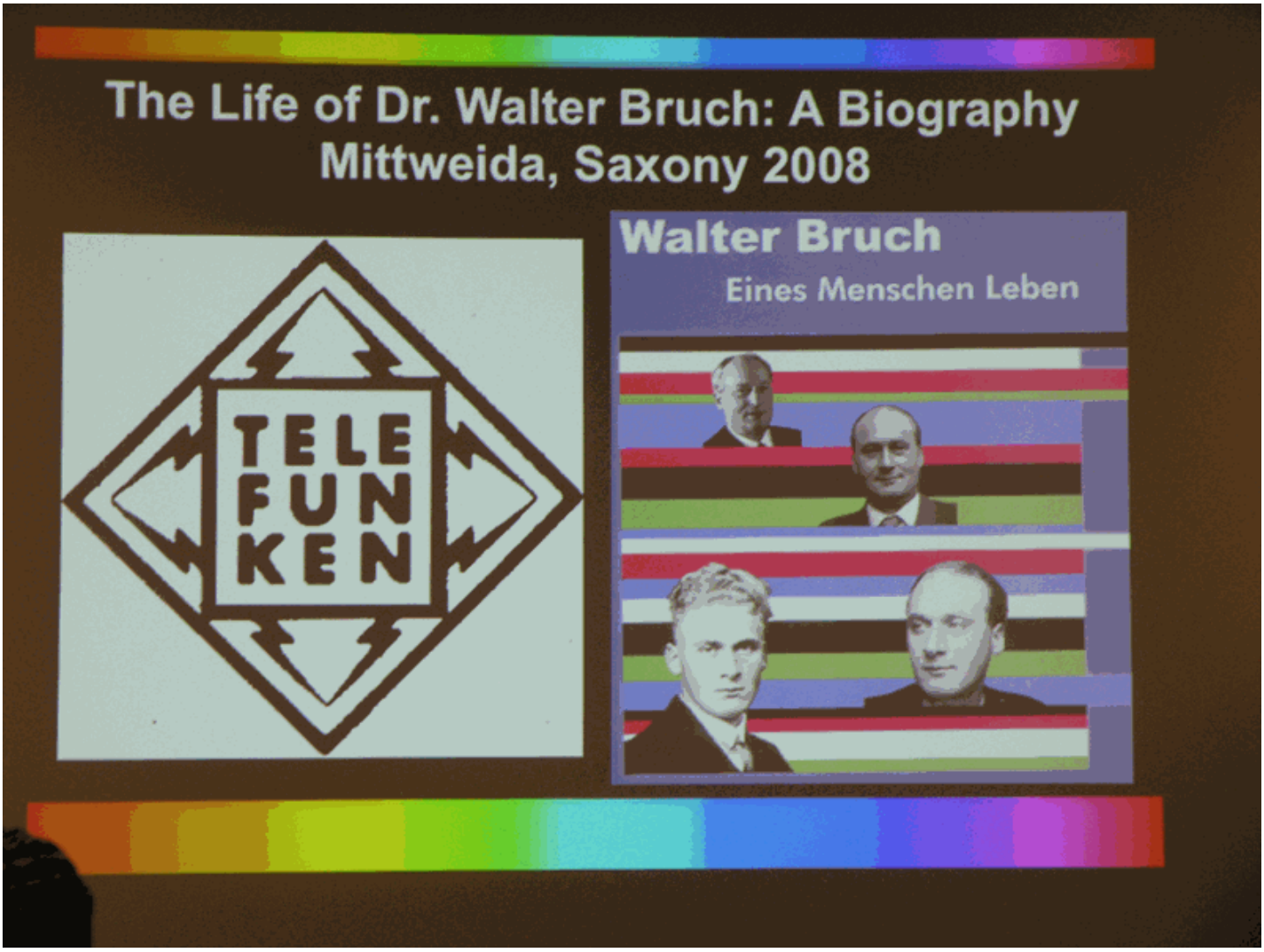

Westinghouse
LUNAR TELEVISION


NO NAME


NO NAME
DVD_VIDEO_RECORD
ER
31 set.Backup
31 set.BOM
1931 Field...ematic.pdf
BOM Form
RCA Title Block.cwk
Title text 1.psd
Title text 2.psd


Makoy


KEY TO SUCCESS FOR THE NEXT GENERATION OF ENGINEERS
Erfolg durch Mühe, Arbeit und Zielstrebigkeit, dazu auch Glück, der zündende Funke oft im entscheidenden Augenblick.
---Walter Bruch


The Life of Dr. Walter Bruch: A Biography
Mittweida, Saxony 2008
TELE
FUN
KEN
Walter Bruch
Eines Menschen Leben


EW GENERATION
an Bruch.


NERATION
ch.

THE OLD AND THE NEW GENERATION

Ruth and Jan Bruch.

Recognition and Hall of Fame, described as one of the greatest inventors of the 20th century, 1977.

Werner von Siemens Ring awarded to Walter Bruch and Wernher von Braun.

In 1975, example of great success after formidable political and financial opposition.

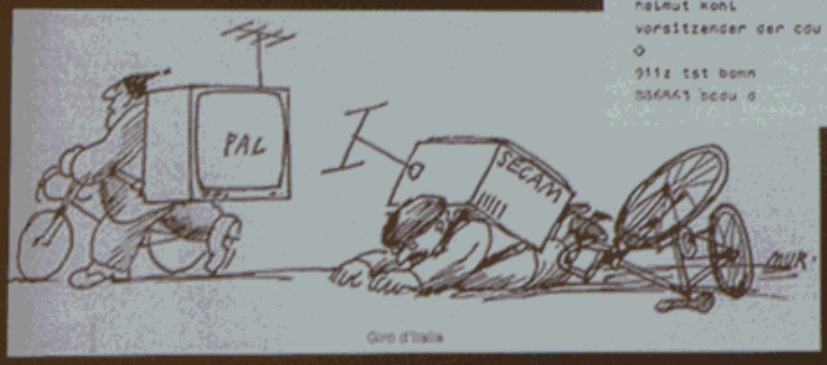
911z tst bonn
886063 bcdu d

=bonn/tlx 12.8.1975 =vbz=
s.e. il senatore dr. giulio orlando ministro delle poste e delle telecommunicazioni viale america roma = eur ===

sehr geehrter herr minister

mit grosser freude haben meine freunde und ich zur kenntnis nehmen koennen dass sich ihr land fuer die einfuehrung des pal-systems entschieden hat ich weiss dass dies vor allem ihrer arbeit zu verdanken ist die sich durch erheblichen widerstand nicht hat beirren lassen sie haben damit einen wichtigen beitrag zu einer noch engeren zusammenarbeit unserer beiden laender geleistet fuer die die staerkung der beziehungen zwischen unseren beiden parteien eine wichtige voraussetzung ist.

mit freundlichen gruessen
helmut kohl
vorsitzender der cdu
o
911z tst bonn
886063 bcdu d



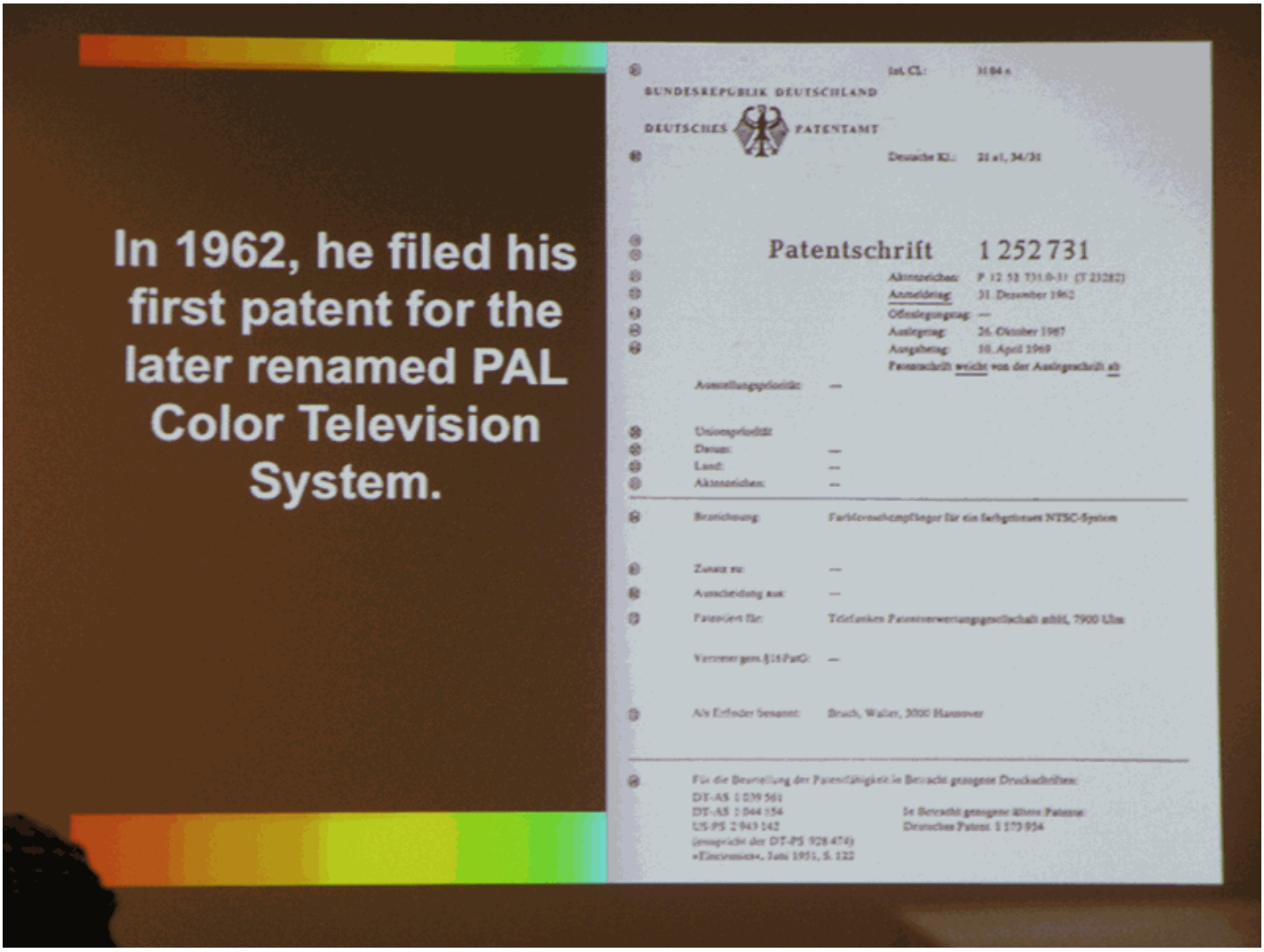
Walter Bruch after receiving the most prestigious award of Germany, 1968

Reinhard, Ruth, and Walter Bruch.

In 1967, German color television inauguration using Walter Bruch's PAL system.

In 1963, first demonstration and historic gathering of the Bruch System at his laboratory in Hanover and first field tests.

In 1962, he filed his first patent for the later renamed PAL Color Television System.



(19) BUNDESREPUBLIK DEUTSCHLAND
DEUTSCHES PATENTAMT

(51) Int. Cl.: H 04 n
(52) Deutsche Kl.: 21 a1, 34/31

(10) (11) **Patentschrift 1 252 731**

(21) Aktenzeichen: P 12 52 731.0-31 (T 23282)
(22) Anmeldetag: 31. Dezember 1962
(43) Offenlegungstag: —
(44) Auslegetag: 26. Oktober 1967
(45) Ausgabetag: 18. April 1969
Patentschrift weicht von der Auslegeschrift ab

(30) Ausstellungspriorität: —

(32) Unionspriorität
(33) Datum: —
(31) Land: —
(32) Aktenzeichen: —

(54) Bezeichnung: Farbfernsehempfänger für ein farbgetrenntes NTSC-System

(61) Zusatz zu: —
(62) Ausscheidung aus: —
(73) Patentiert für: Telefunken Patentverwertungsgesellschaft mbH, 7900 Ulm

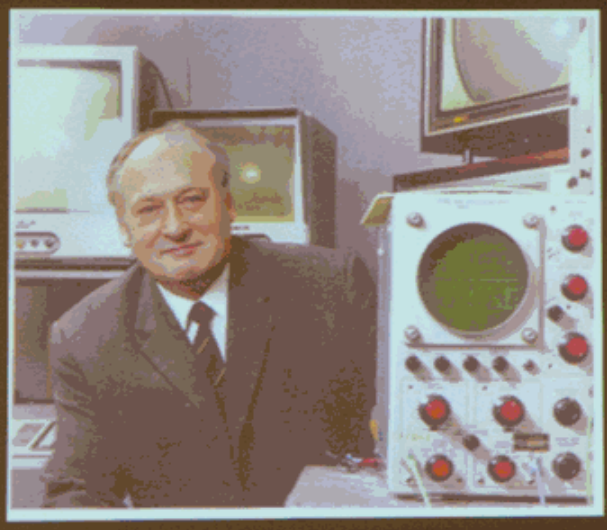
Vertreter gem. § 16 PatG: —

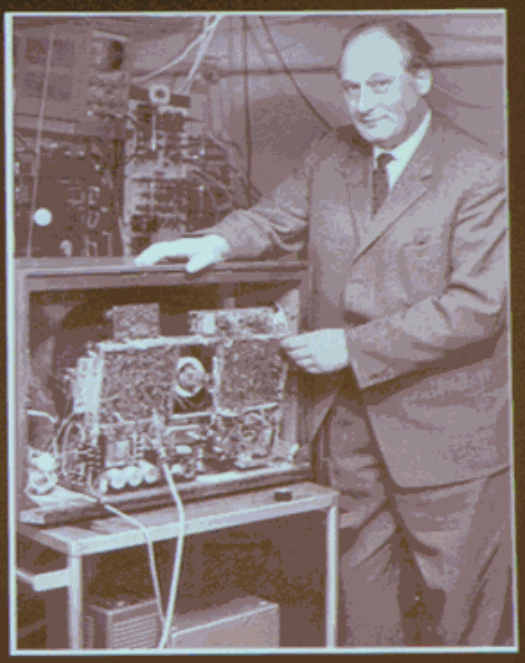
(72) Als Erfinder benannt: Bruch, Walter, 3000 Hannover

(56) Für die Beurteilung der Patentfähigkeit in Betracht gezogene Druckschriften:
DT-AS 1 039 561
DT-AS 1 044 154
US-PS 2 943 142
(entspricht der DT-PS 928 474)
»Elektronik«, Juni 1951, S. 122

In Betracht gezogene ältere Patente:
Deutsches Patent 1 173 934

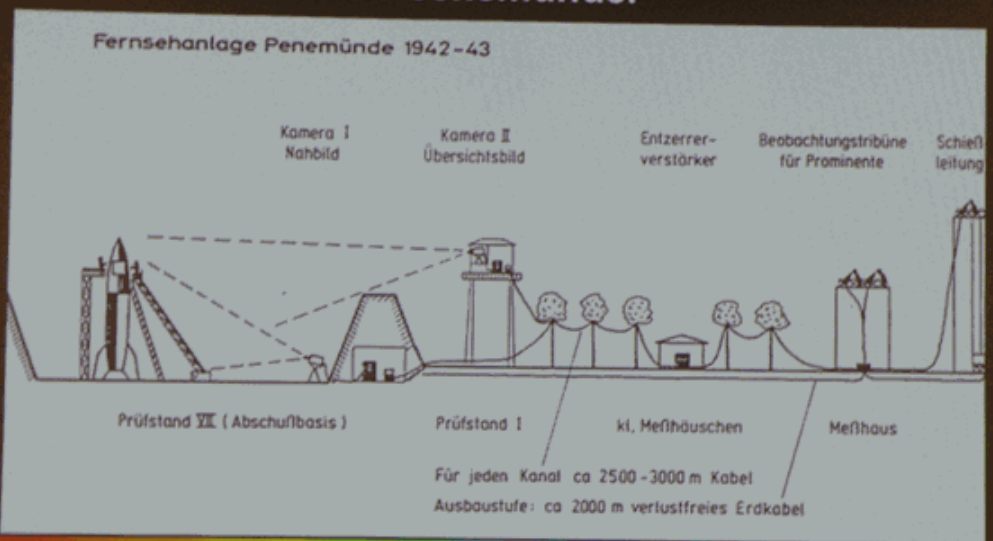
Dr. Walter Bruch in his Laboratory, 1962



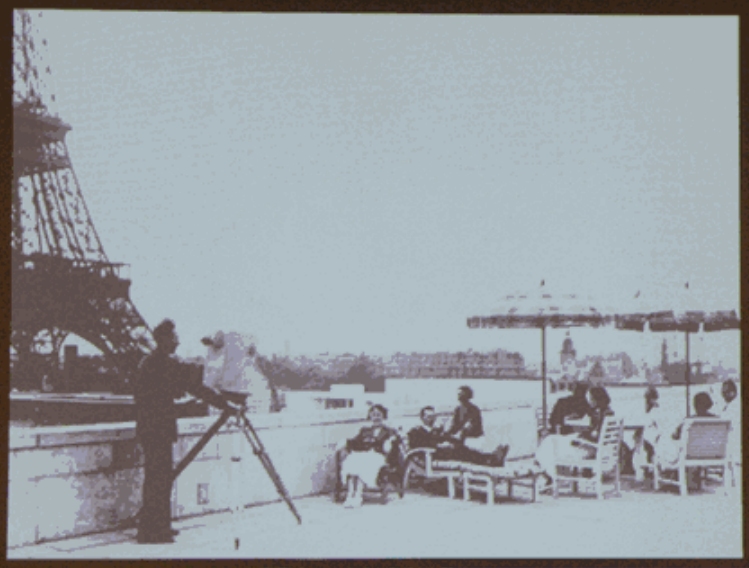


New beginning in Hanover after the second world war: Development in 1950/51 of the first German television set.

During 1942/43 television system and recordings were applied in monitoring the rocket launches at Peenemünde.

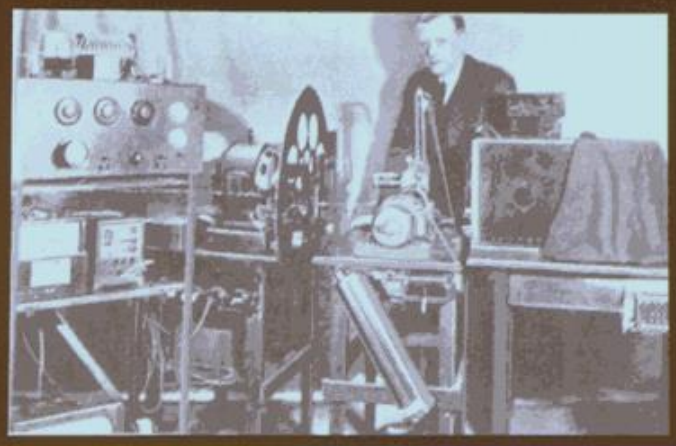


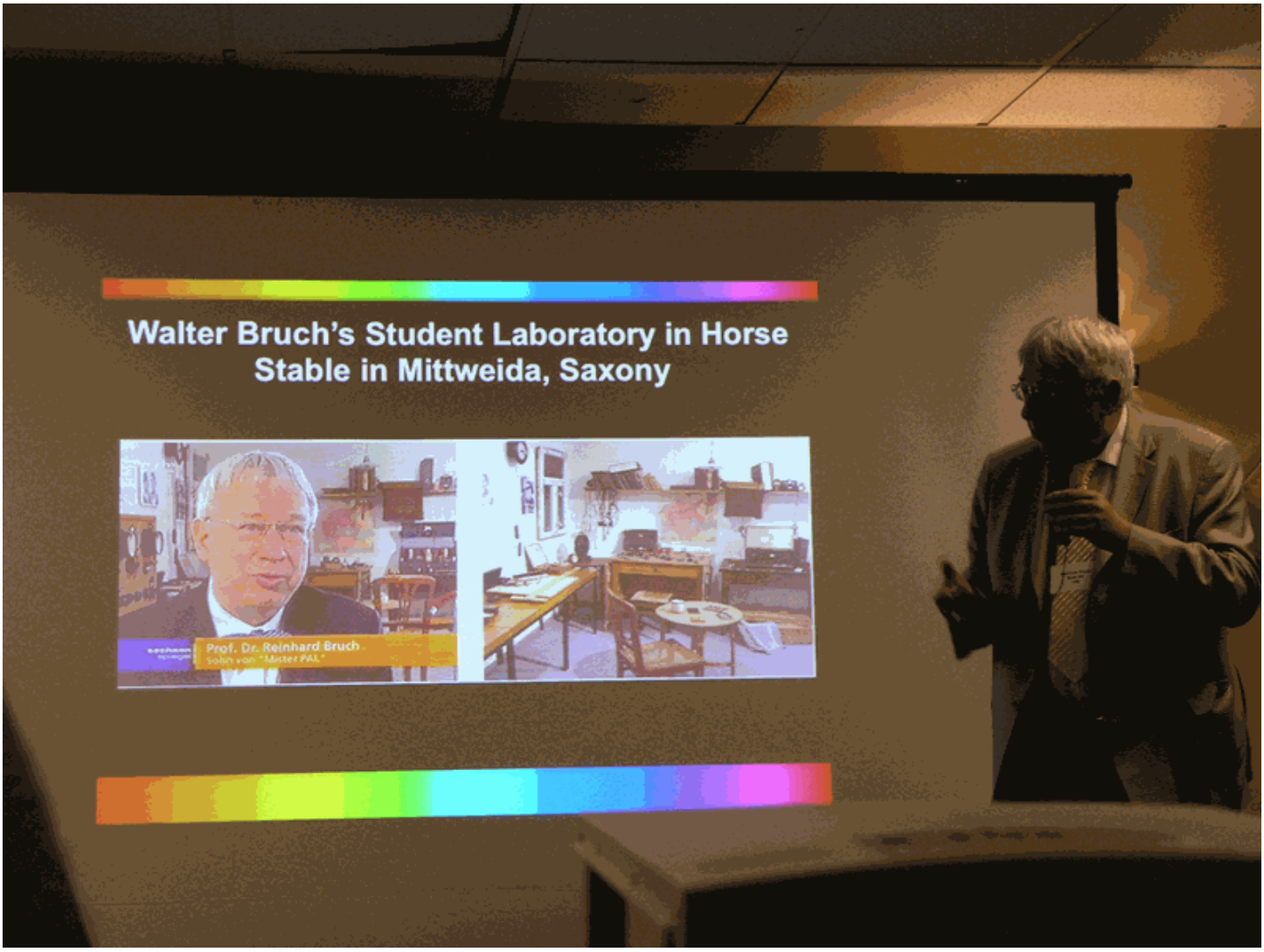
In 1937, he demonstrated 375 line
Television at the Paris International Exhibition



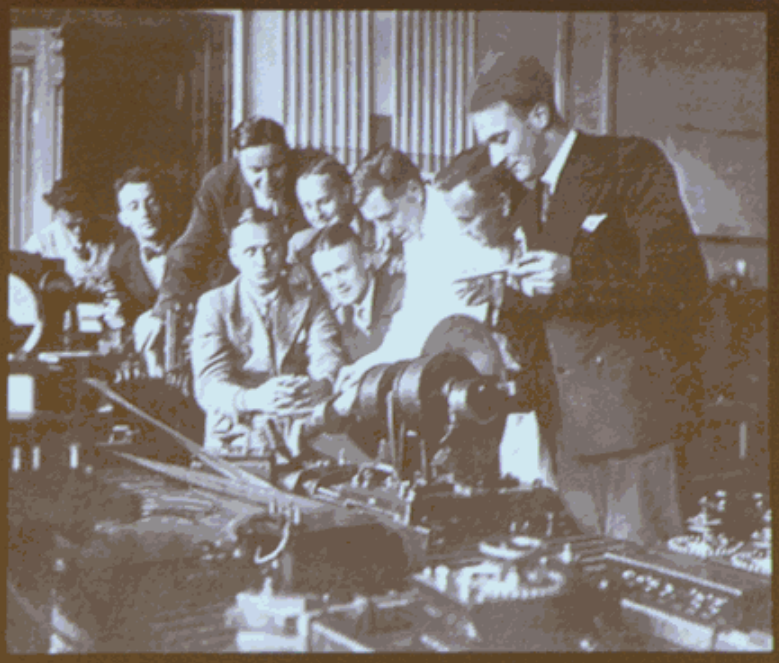
In 1936, he made one of the biggest accomplishments in television history by recording an athletic event at the Hitler Olympic Games with his ionoscope camera.

Walter Bruch started his television career in the early 1930's at the research Laboratories of Dénes von Mihaly, where he met his future wife (my mother).




Walter Bruch's Student Laboratory in Horse Stable in Mittweida, Saxony
Prof. Dr. Reinhard Bruch
Sohn von "Mister PAL"

GENESIS OF A REMARKABLE ENGINEER



"Walter Bruch" in Mitteweida (1929).


PAL
Das Farbfernsehen


uch
tscher
Pionier
Walter Bruch


r Bruch
Ein deutscher
rnseh-Pionier


Makoy
CASTLE


Markoy
CENTER


Makoy
CASTLE

AN INSPIRING, COLORFUL LIFE

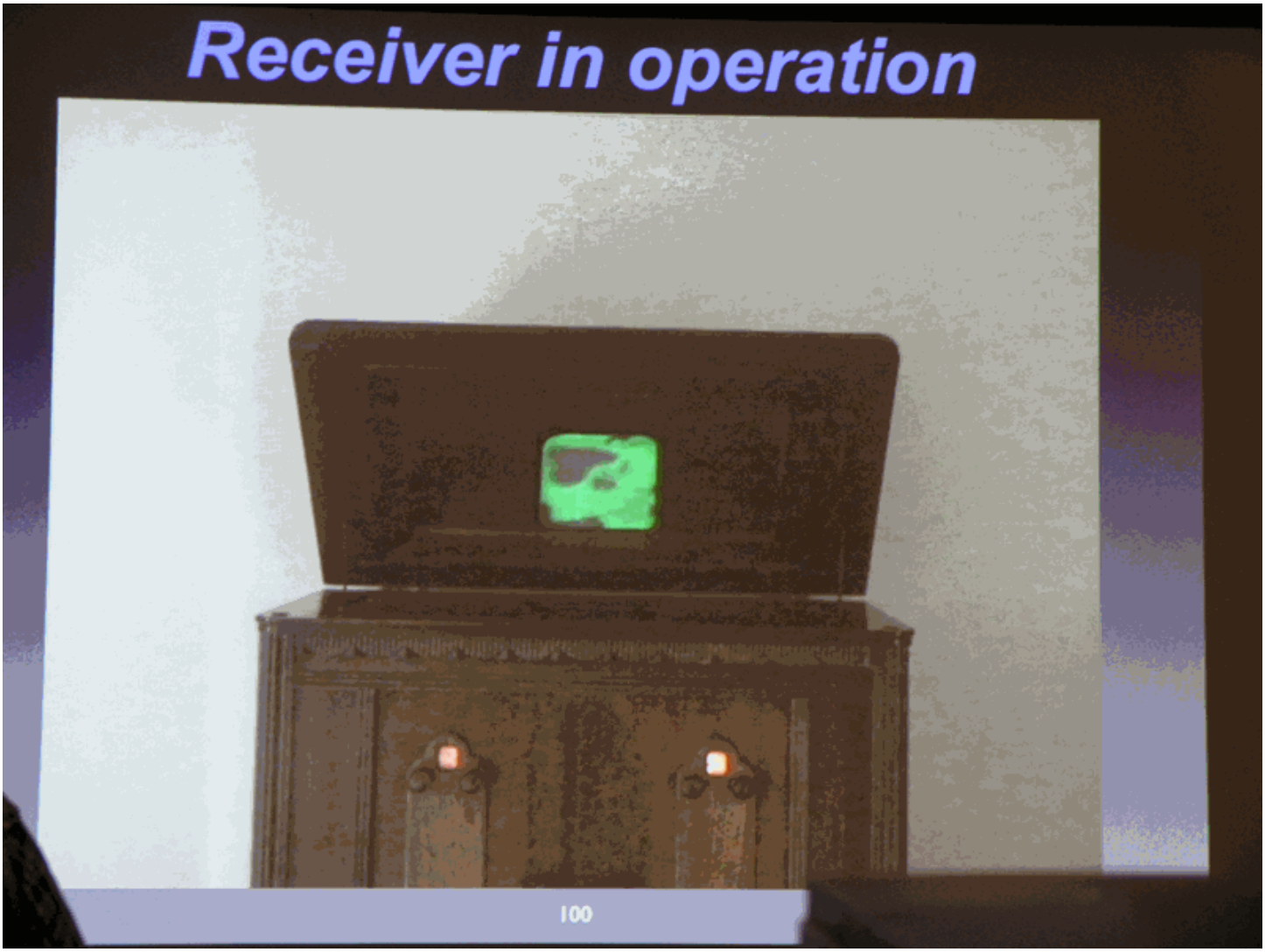
Walter Bruch

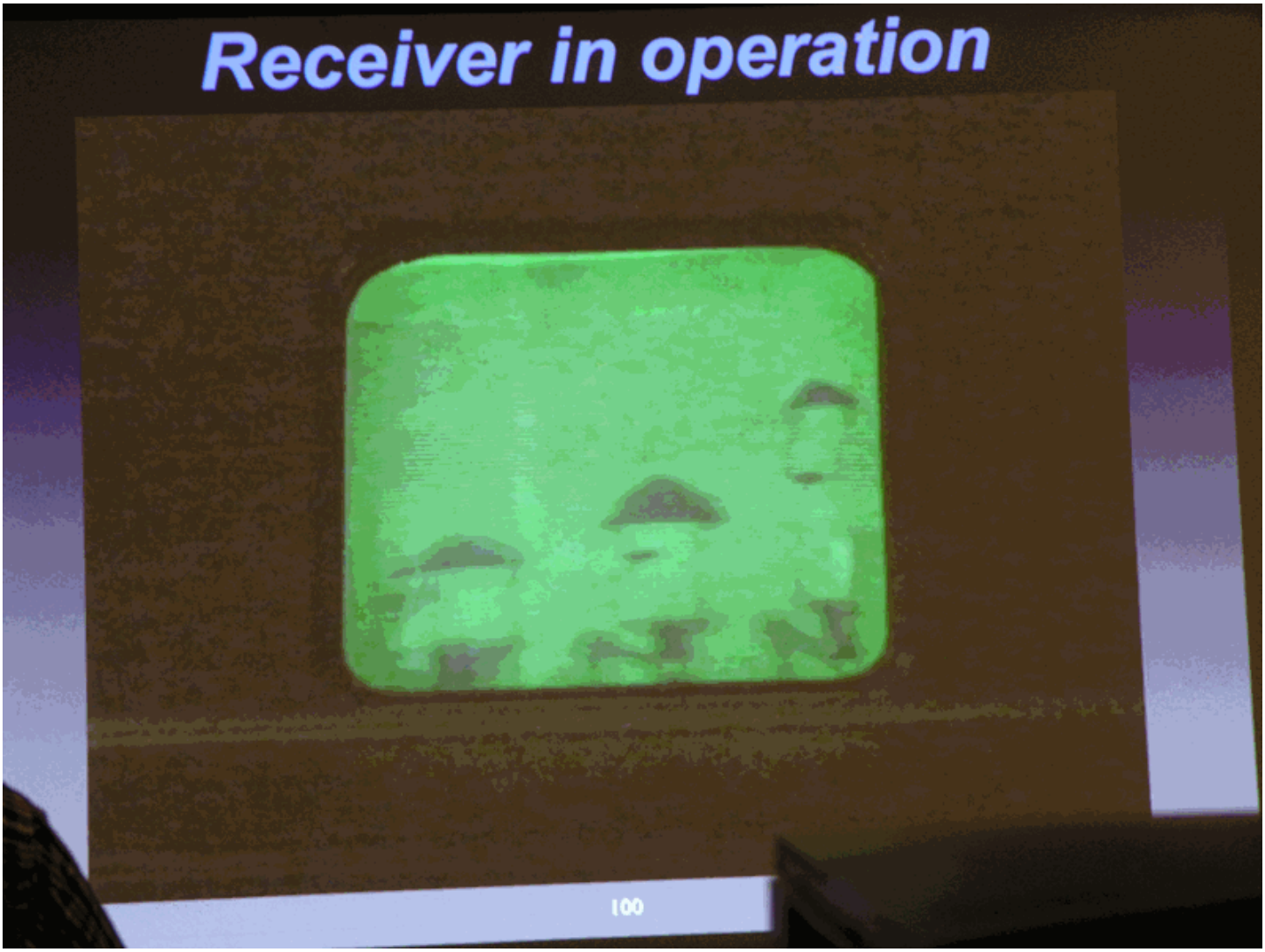
Ein deutscher
Fernseh-Pionier

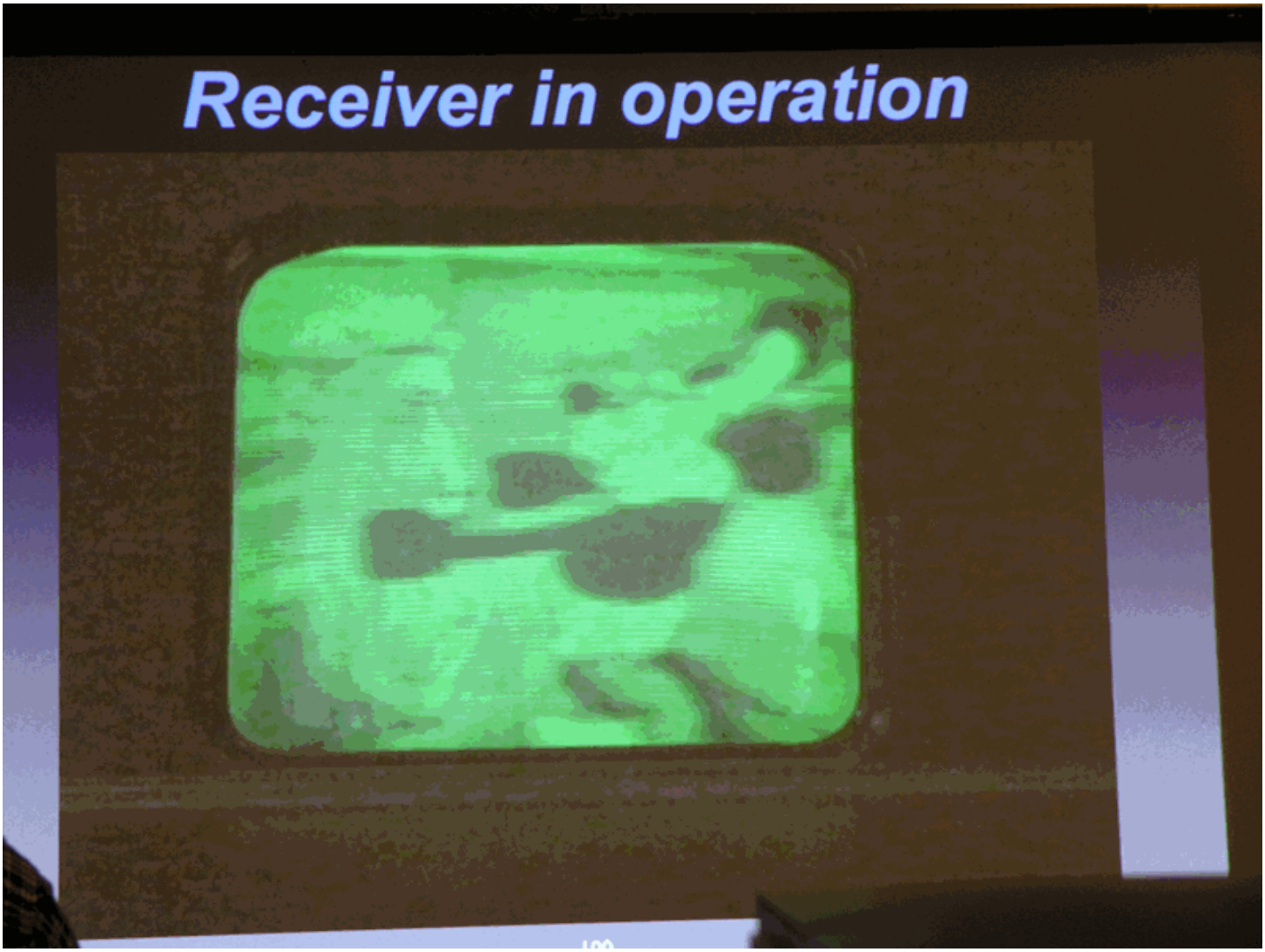

Markoy


Markov

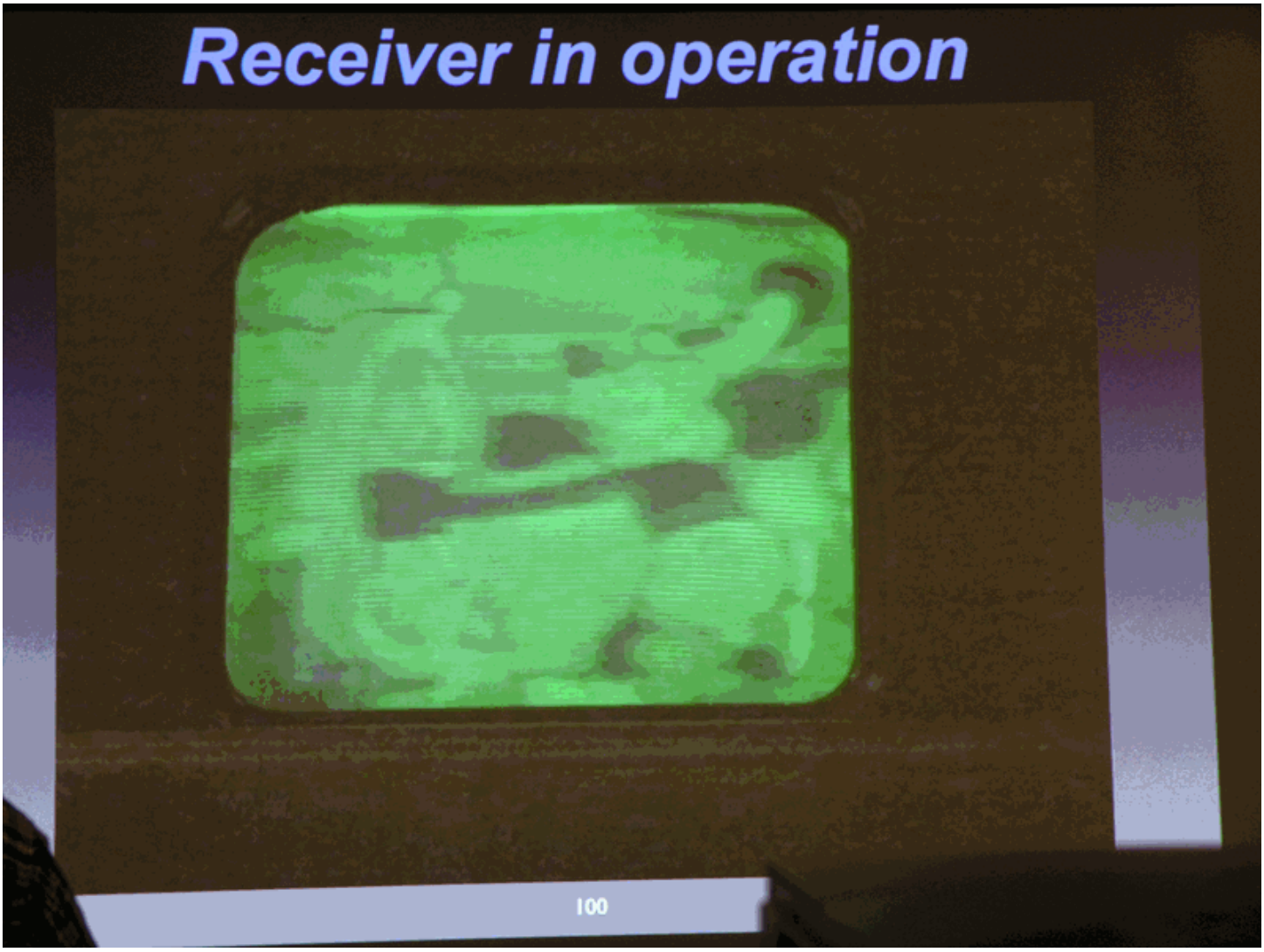
Receiver in operation

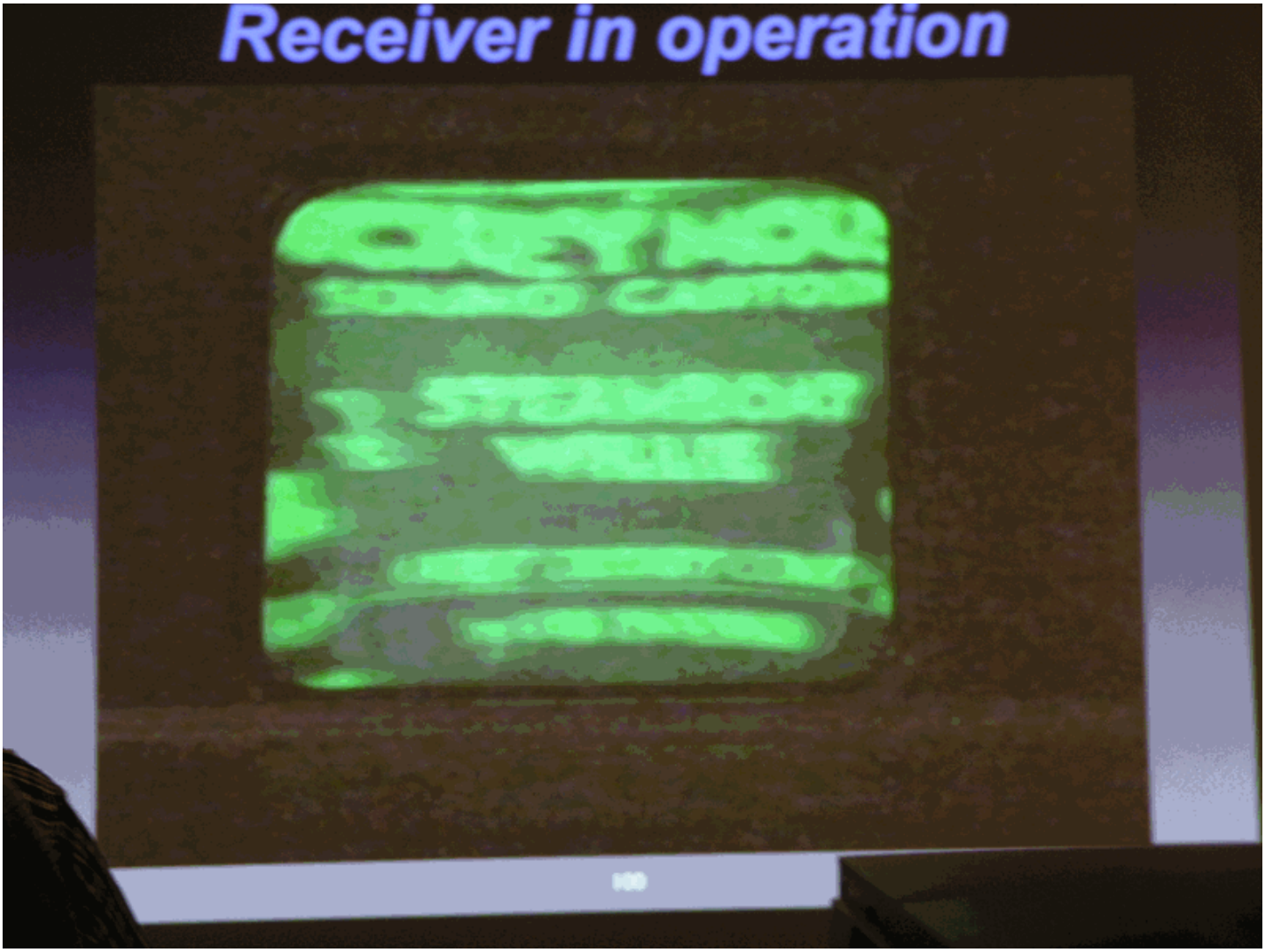


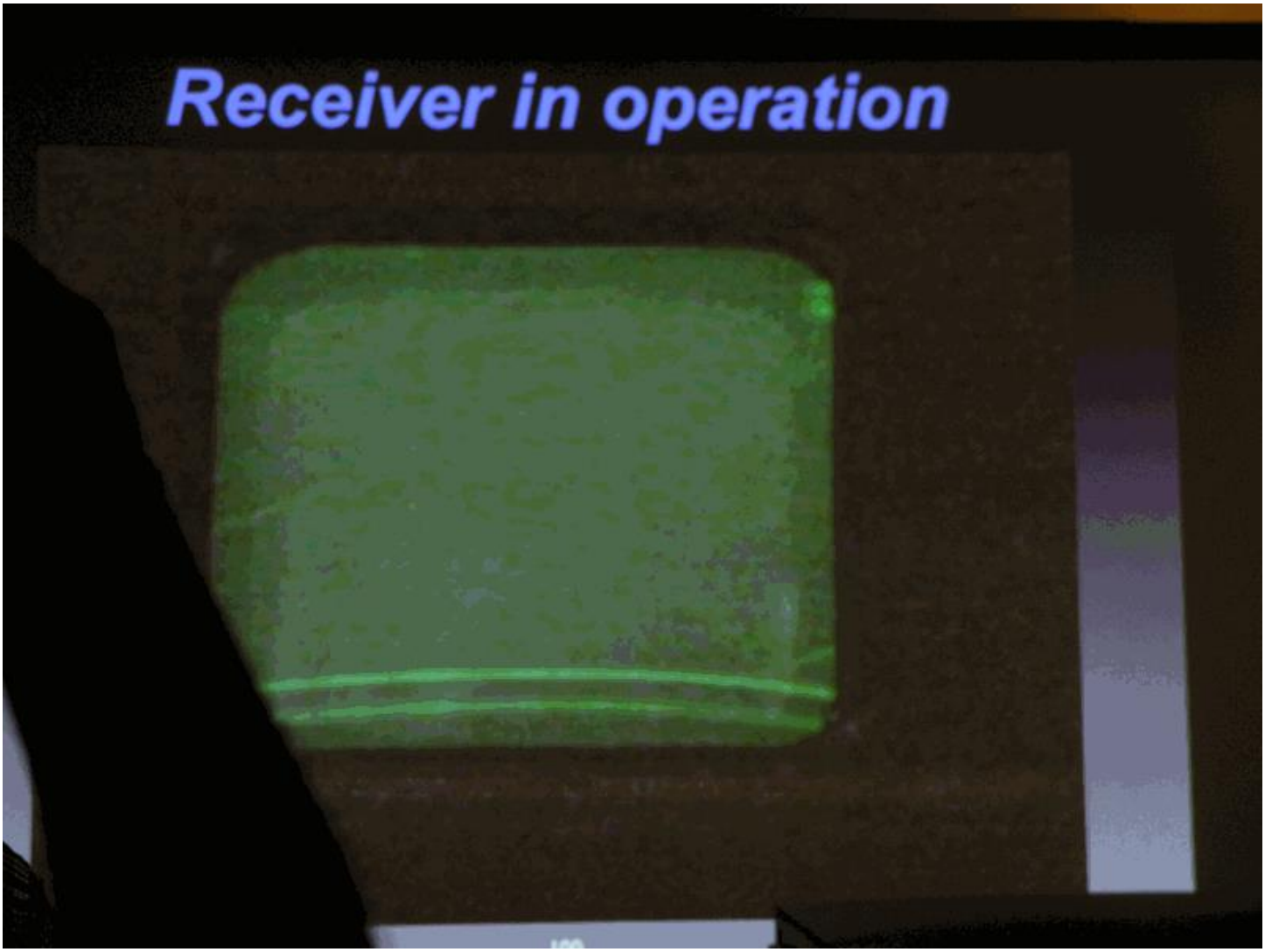

Receiver in operation
100


Receiver in operation

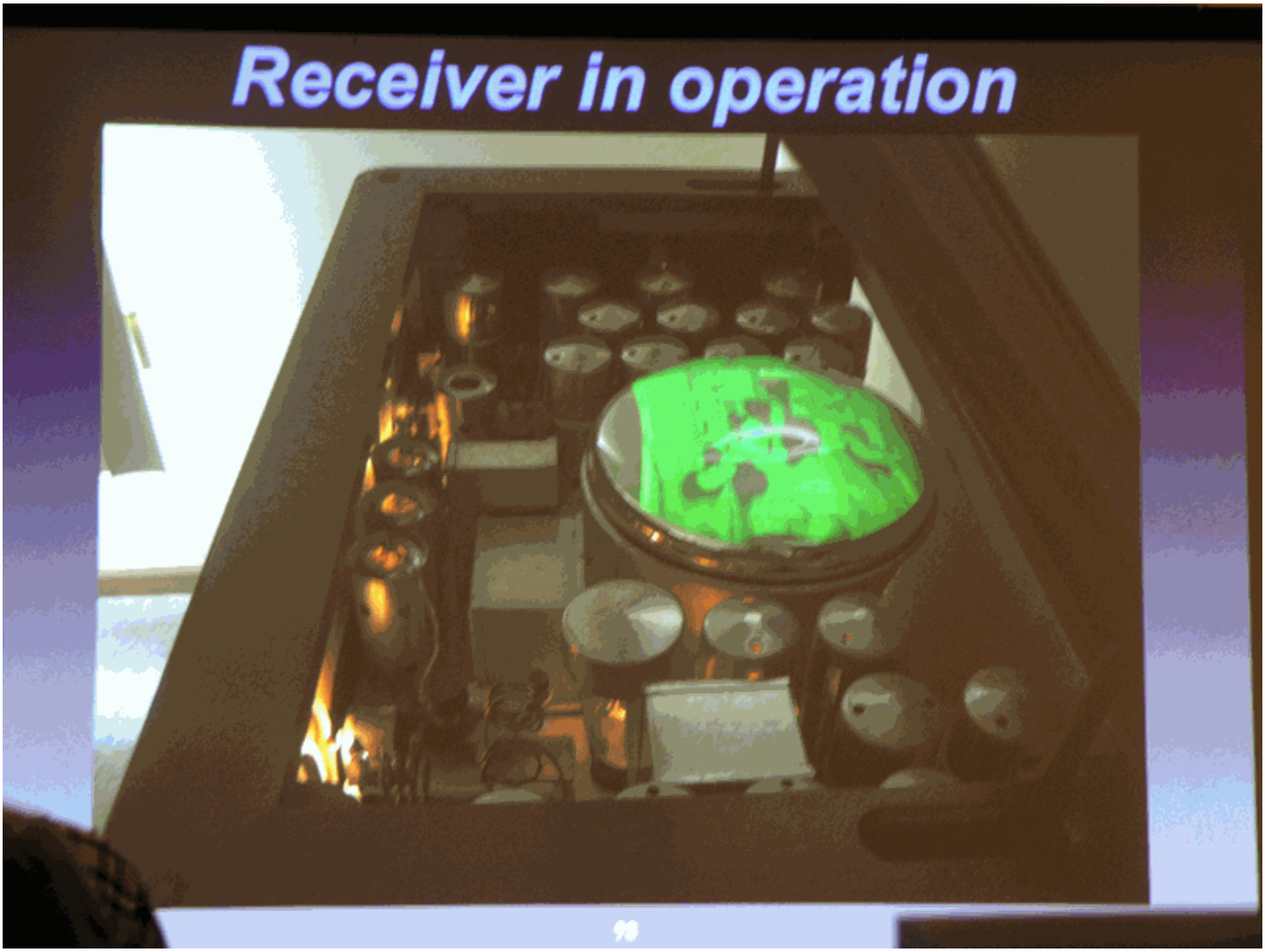
Receiver in operation



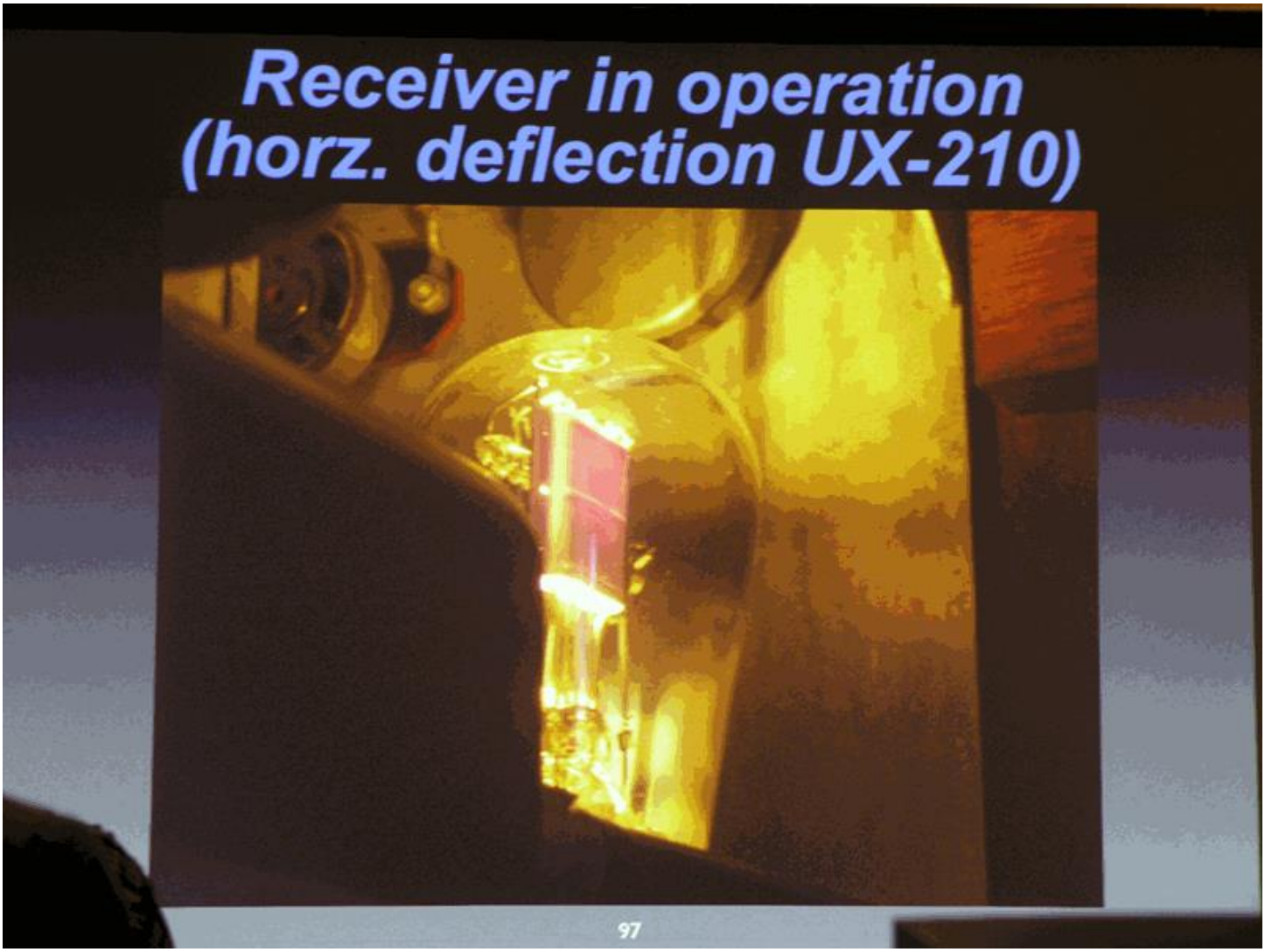

Receiver in operation


Receiver in operation

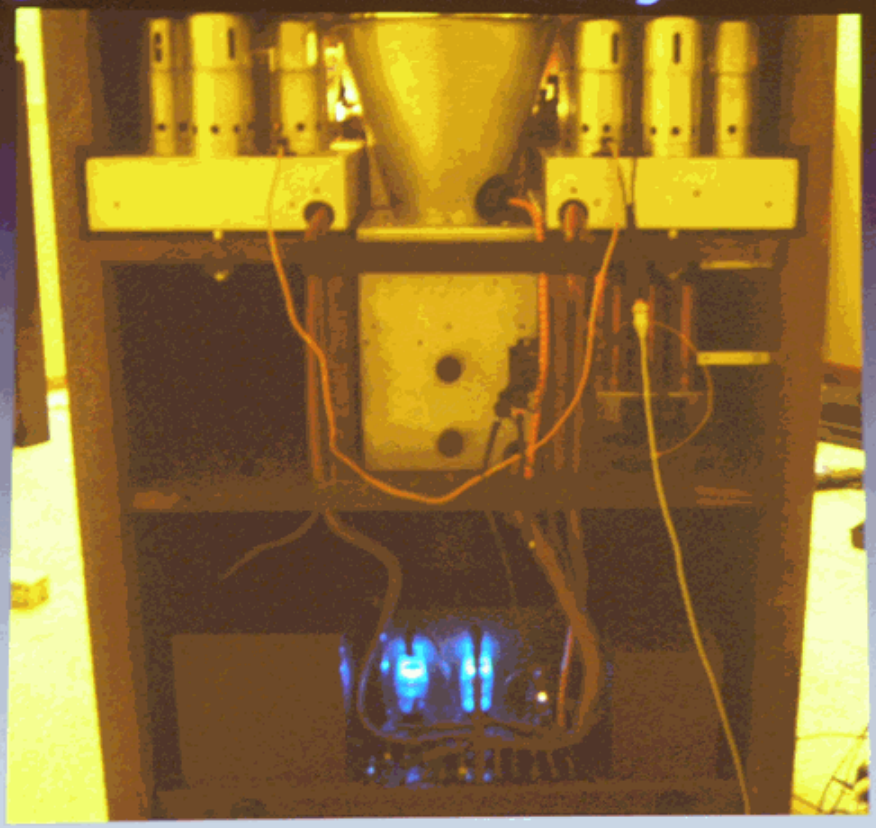
Receiver in operation



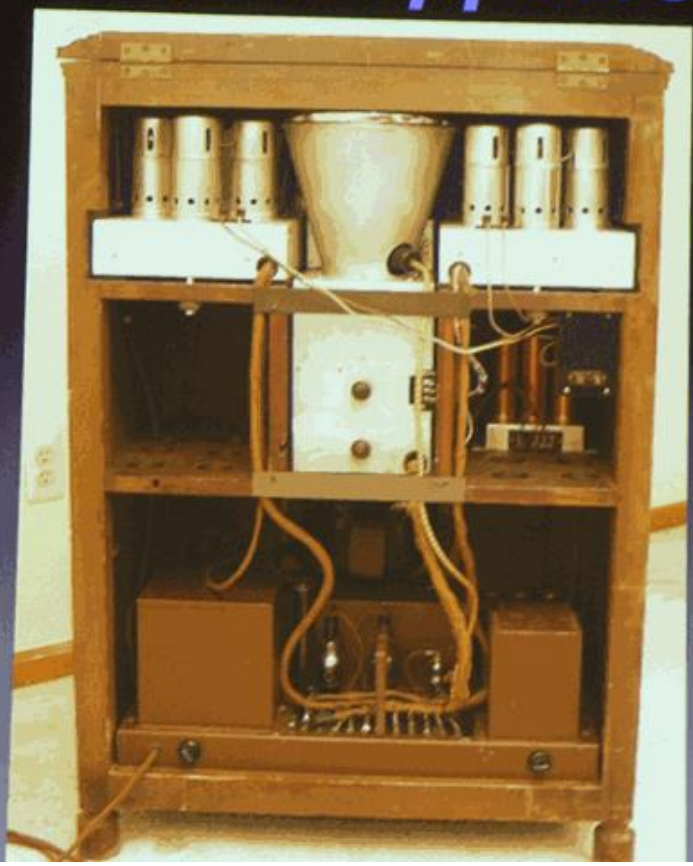
Receiver in operation (horz. deflection UX-210)



Receiver in operation
(blue glow of mercury rectifiers)



Receiver as it appears today



Design Issues

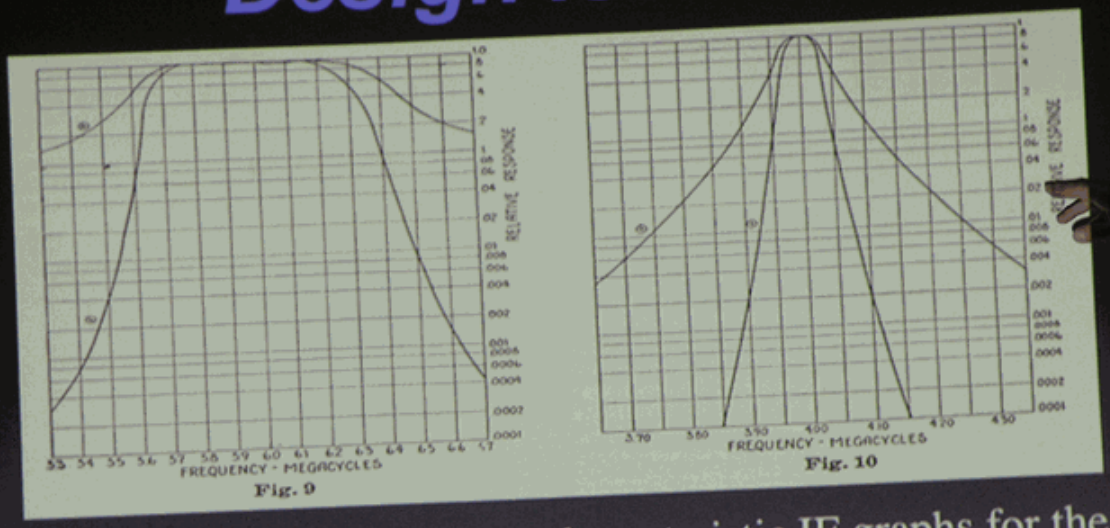
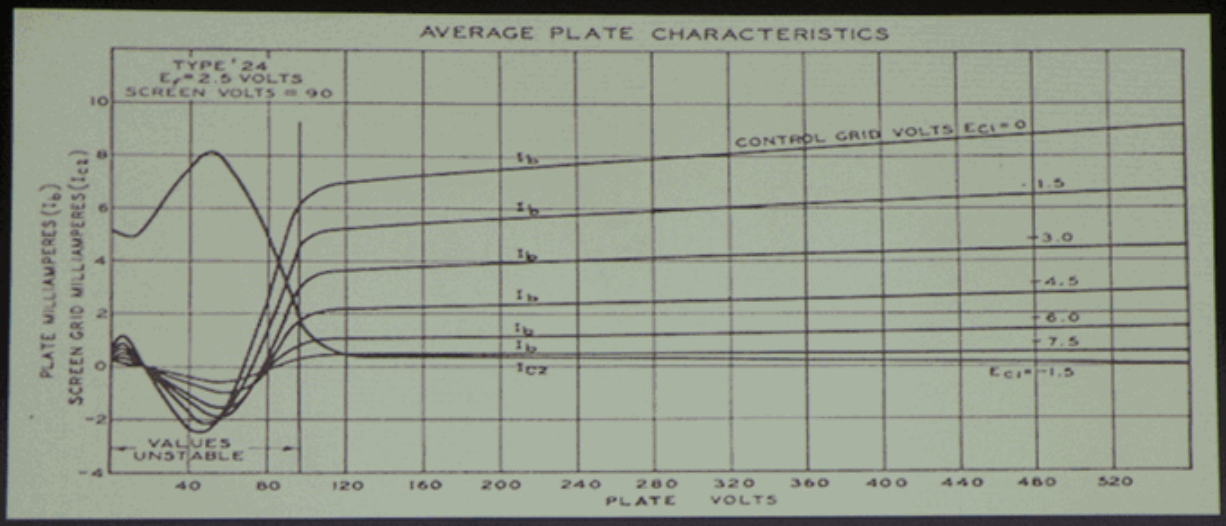


Fig. 9 Fig. 10

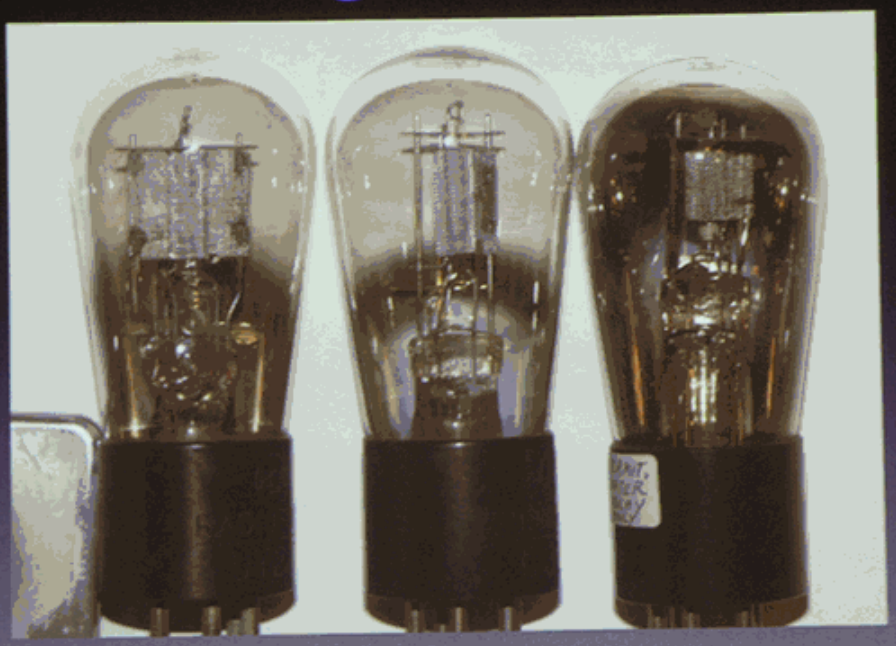
The IRE papers showed the above characteristic IF graphs for the picture and sound receivers. While the reproduction sound receiver perfectly matched the 50kHz width and 8000 gain shown on the right, the picture receiver IF's showed only about 200 gain instead of the stated 7000. It was noticed that the partial schematics showed a damping resistor on the input of each picture IF, yet there were no signs these resistors were ever used on this chassis. This made no sense since the bandwidth was correct.

Design Issues



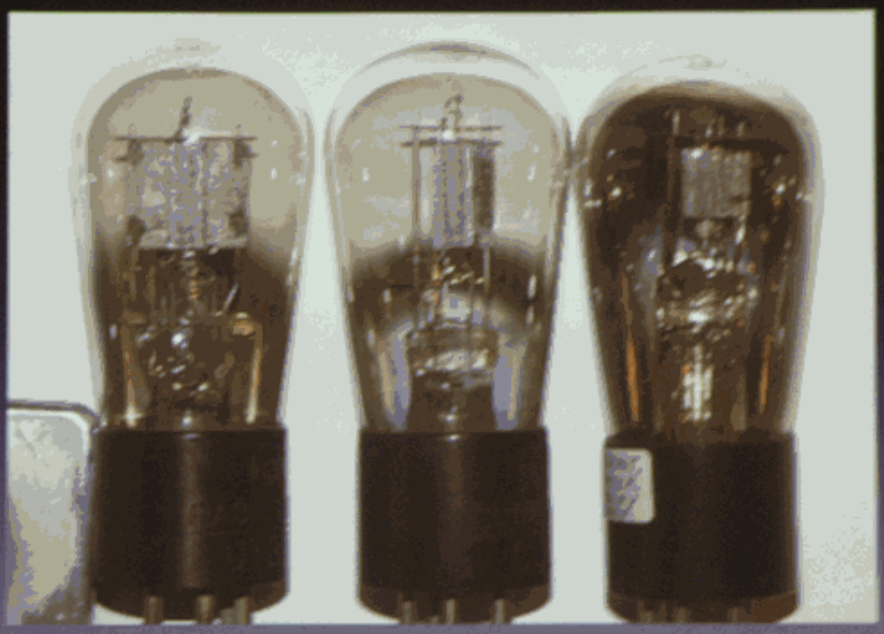
Tetrode's have a unique property that when the screen grid is operated at a higher voltage than the plate, they enter an unstable region of negative resistance caused by secondary emissions. This is what allows the Dynatron Oscillator to work. Later versions of the tetrode (224A) purposely had the plates coated with carbon to reduce secondary emissions and do not work for Dynatron Oscillators.

Design Issues



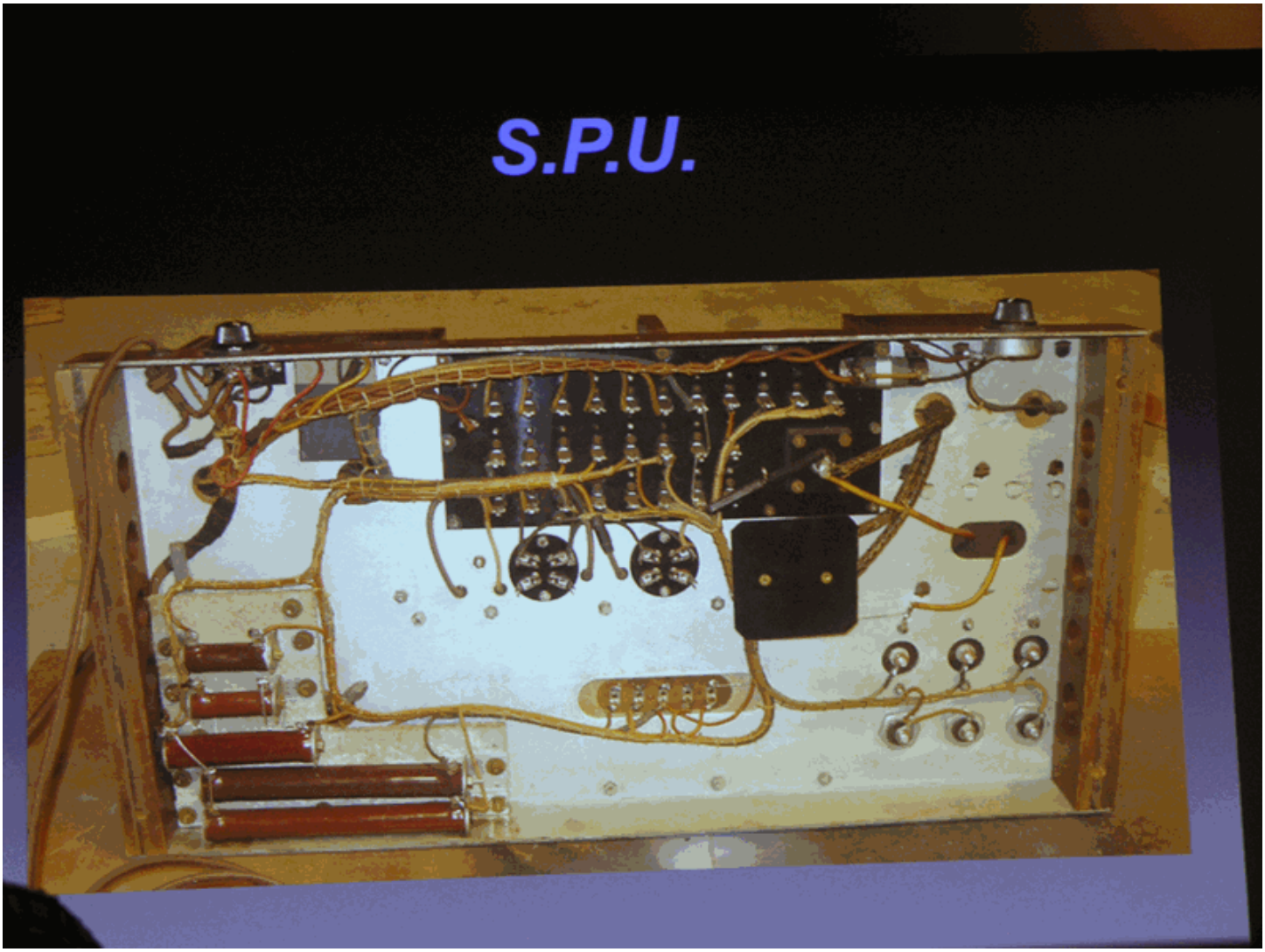
Three types of the UY-227 were available over time denoted by the different plate structures. Any of these types work fine in amplifier applications, but only the early design on the far right with the short plate structure works for the Local Oscillators at up to 80MHz.

Design Issues

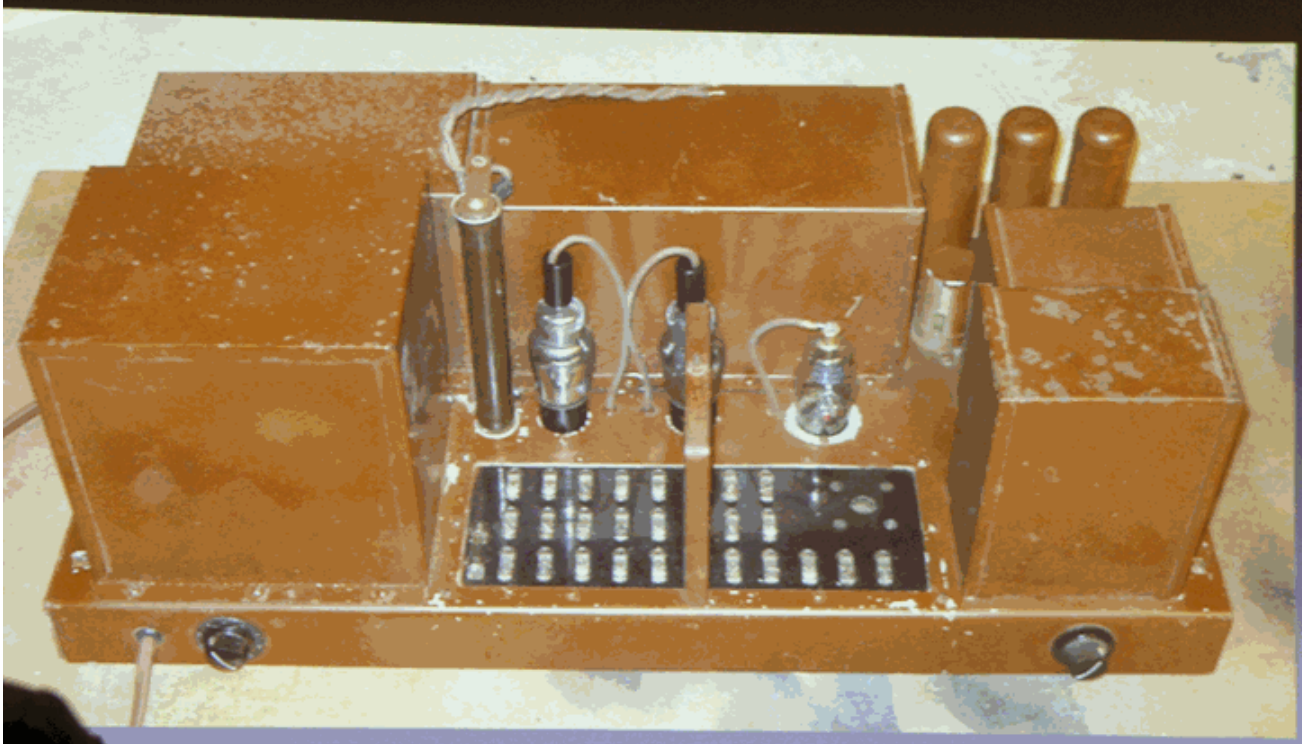


ypes of the UY-227 were available over time denoted
different plate structures. Any of these types work fine
plifier applications, but only the early design on the far
with the short plate structure works for the Local
llators at up to 80MHz.

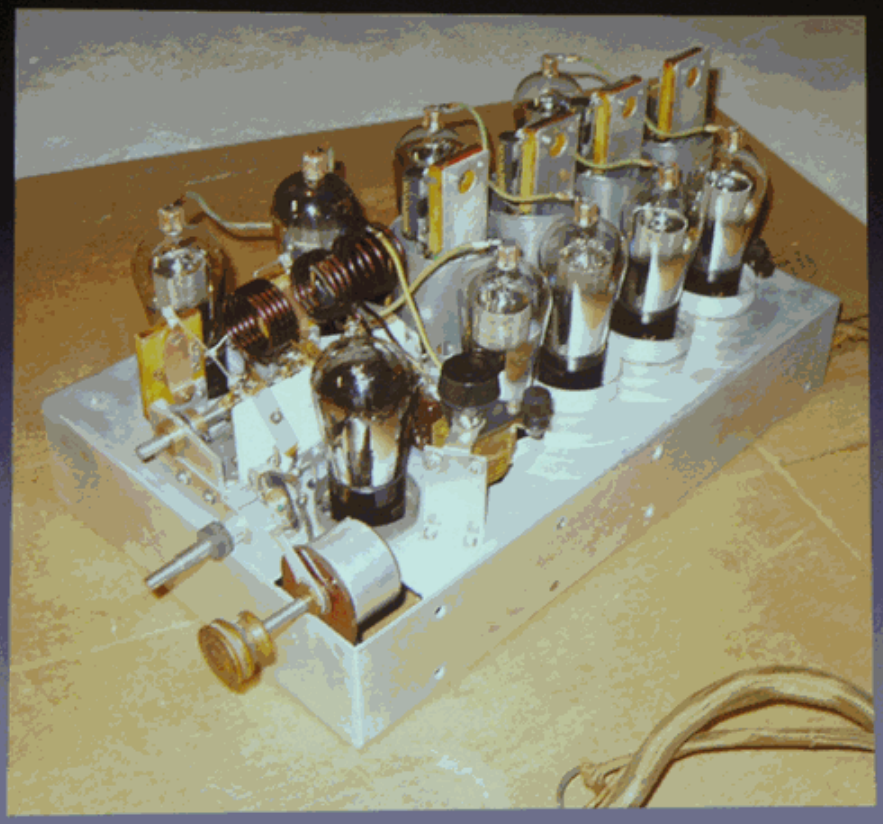
S.P.U.



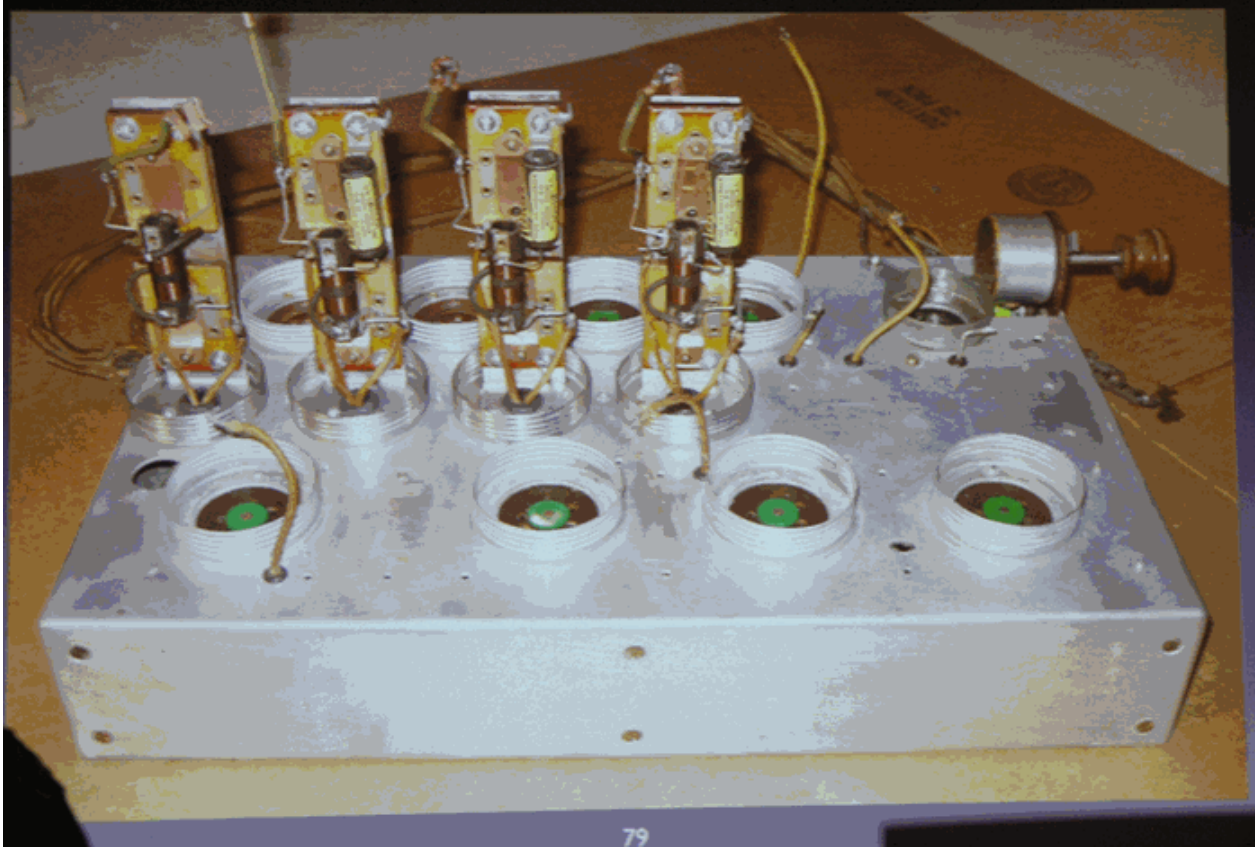
S.P.U.



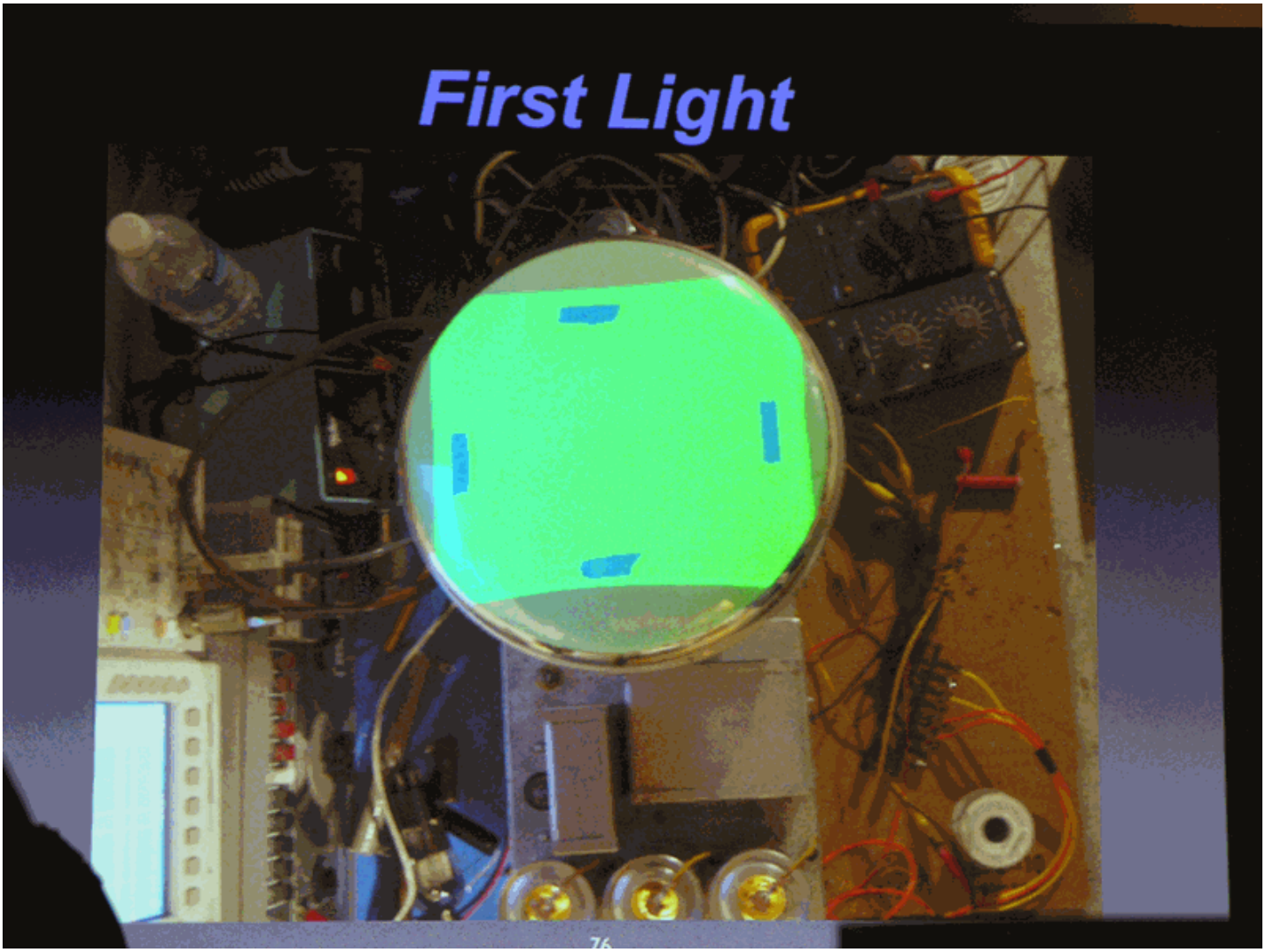
Picture Receiver undergoing Conservation



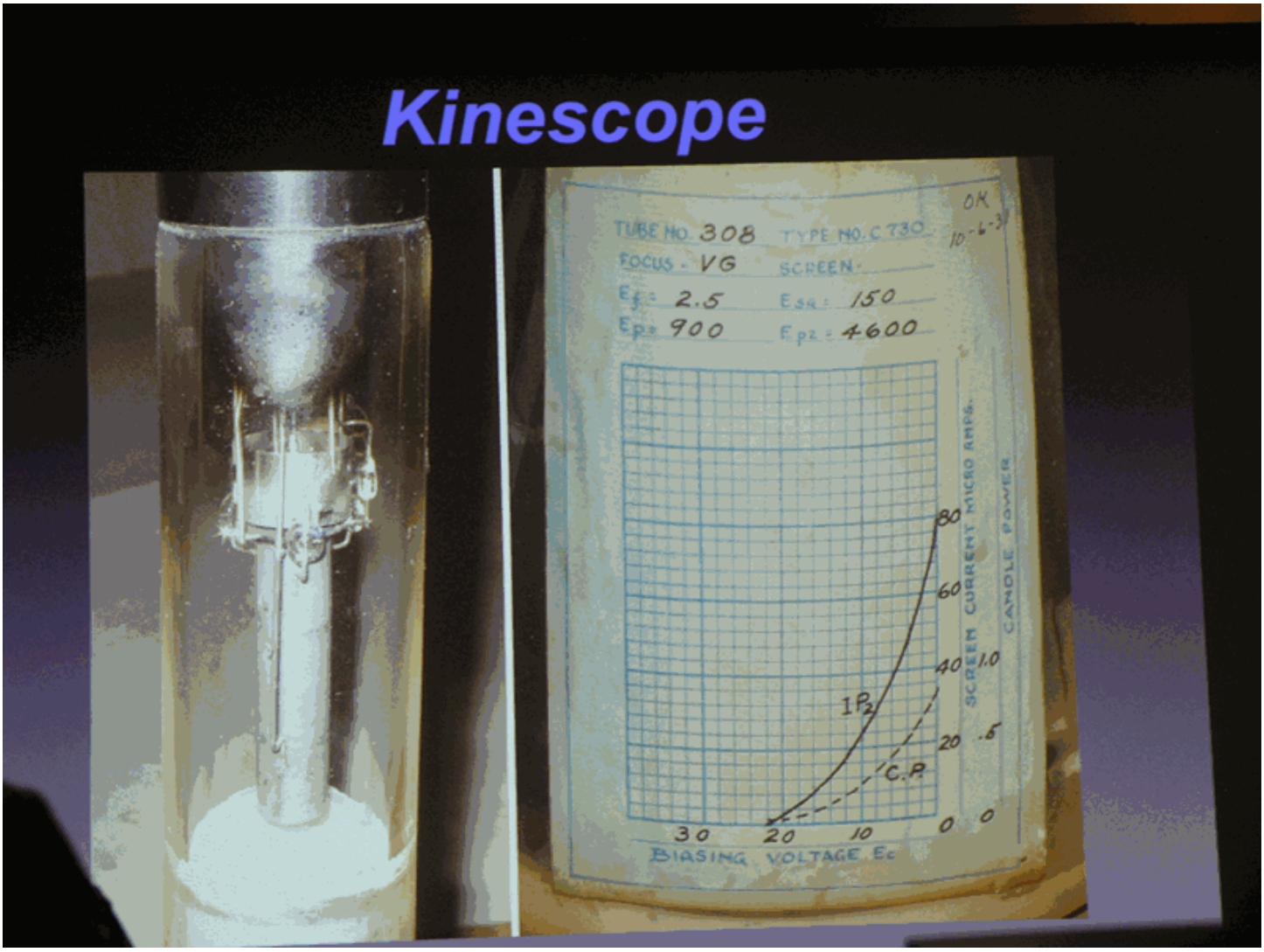
Picture Receiver undergoing Conservation



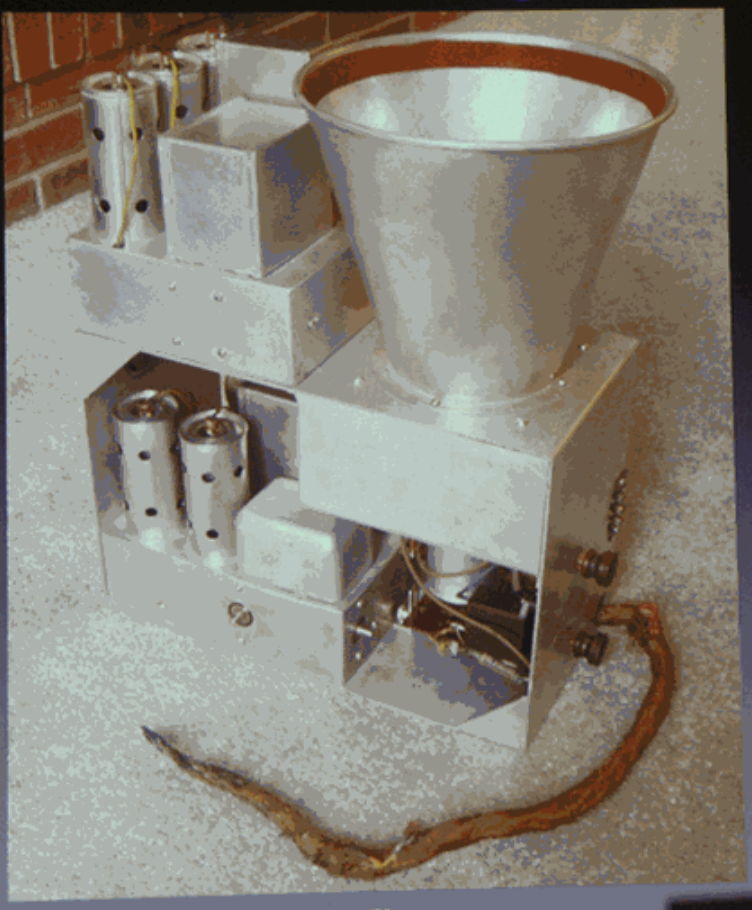
First Light



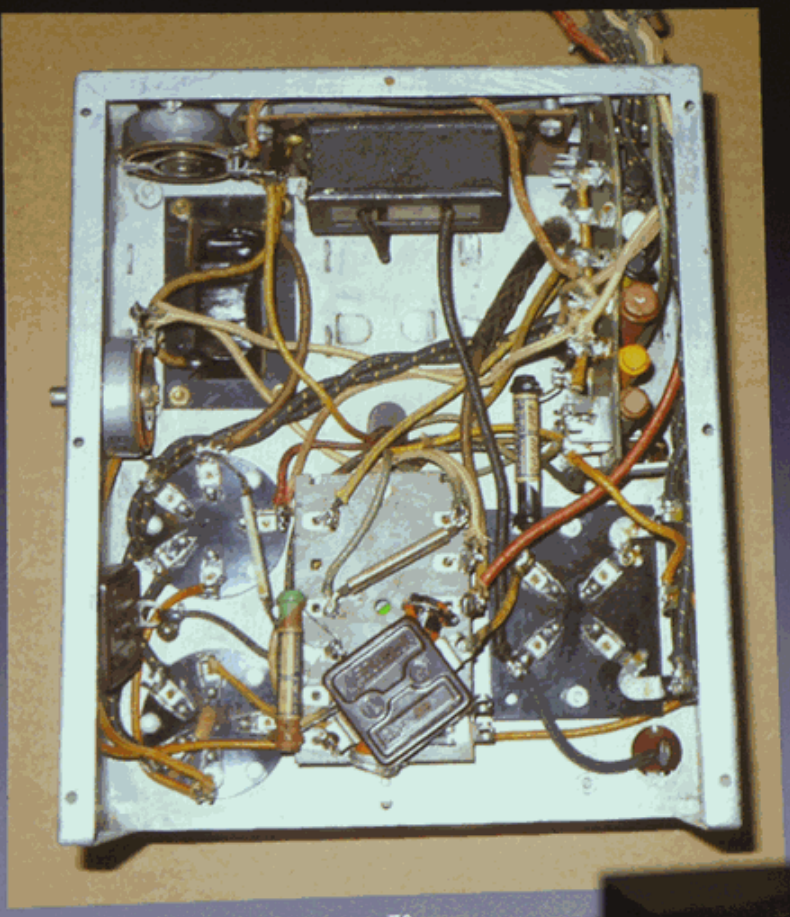
Kinescope


TUBE NO. 308
TYPE NO. C 730
OK
10-6-3
FOCUS - VG
SCREEN -
Ef = 2.5
Esg = 150
Ep = 900
Ep2 = 4600
80
60
40
20
0
1.0
.5
0
SCREEN CURRENT MICRO AMPS.
CANDLE POWER
I_{P_2}
C.P.
30
20
10
0
BIASING VOLTAGE Ec

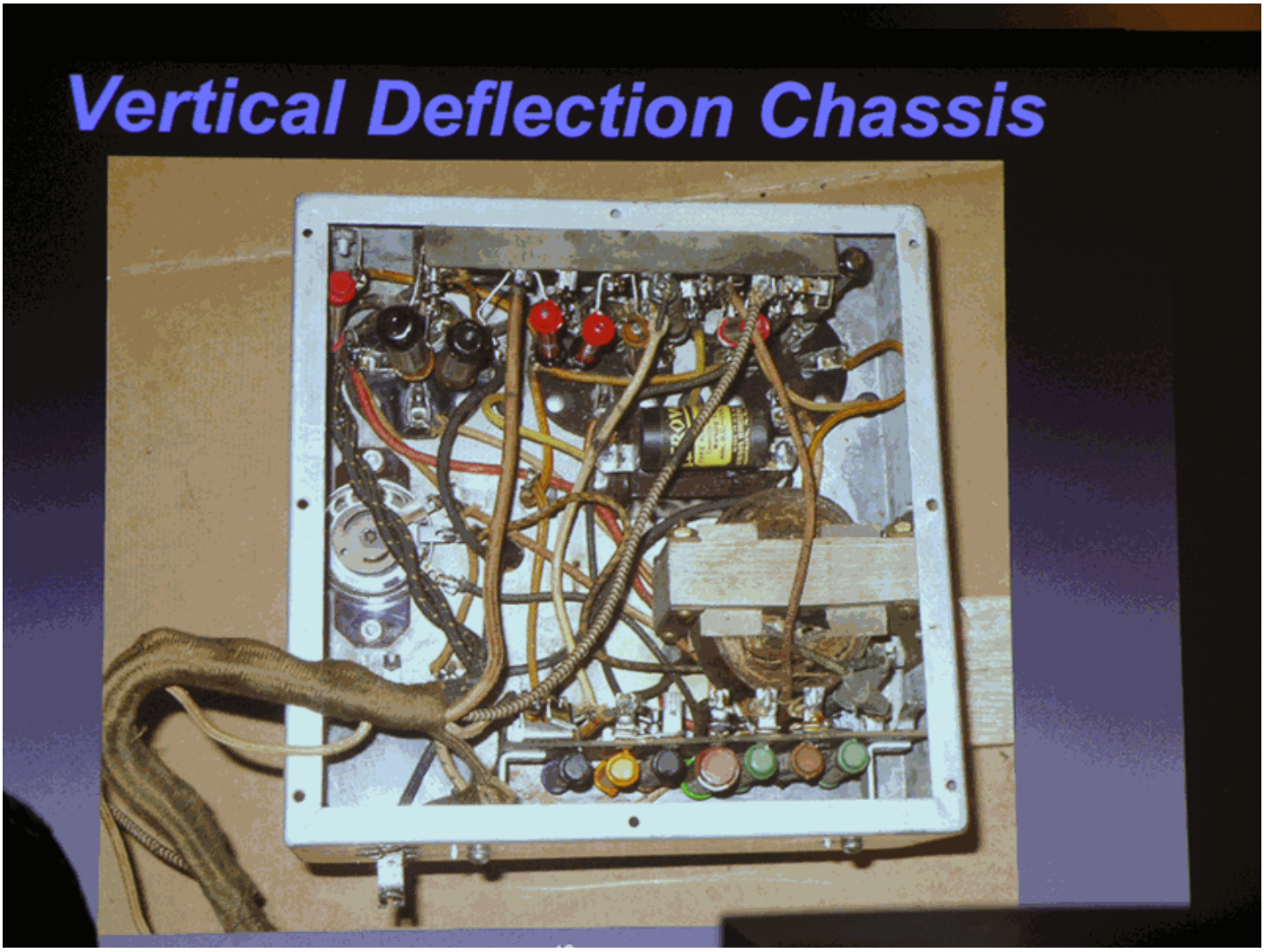
Complete Kinescope Chassis



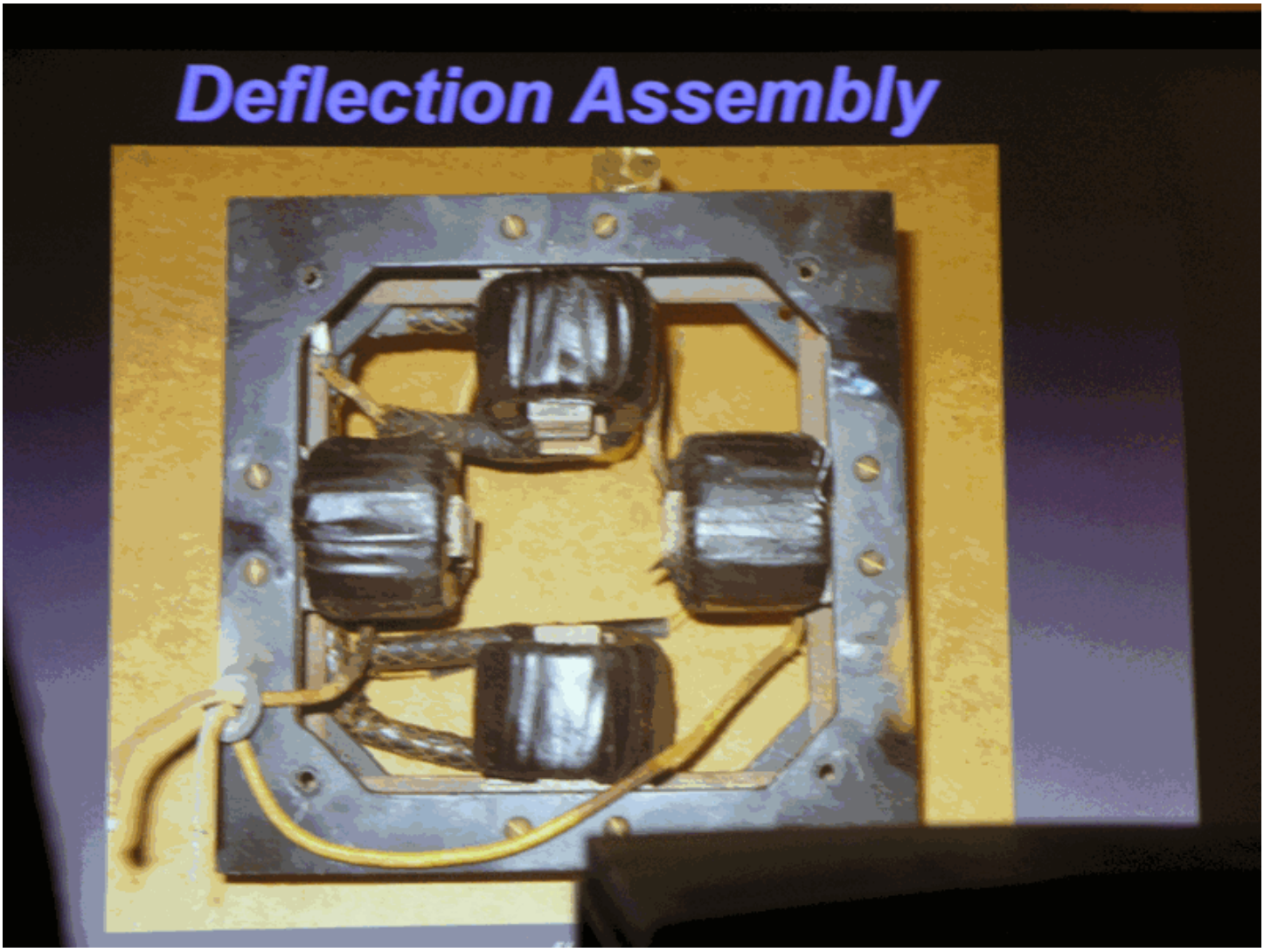
orizontal Deflection Chassis



Vertical Deflection Chassis



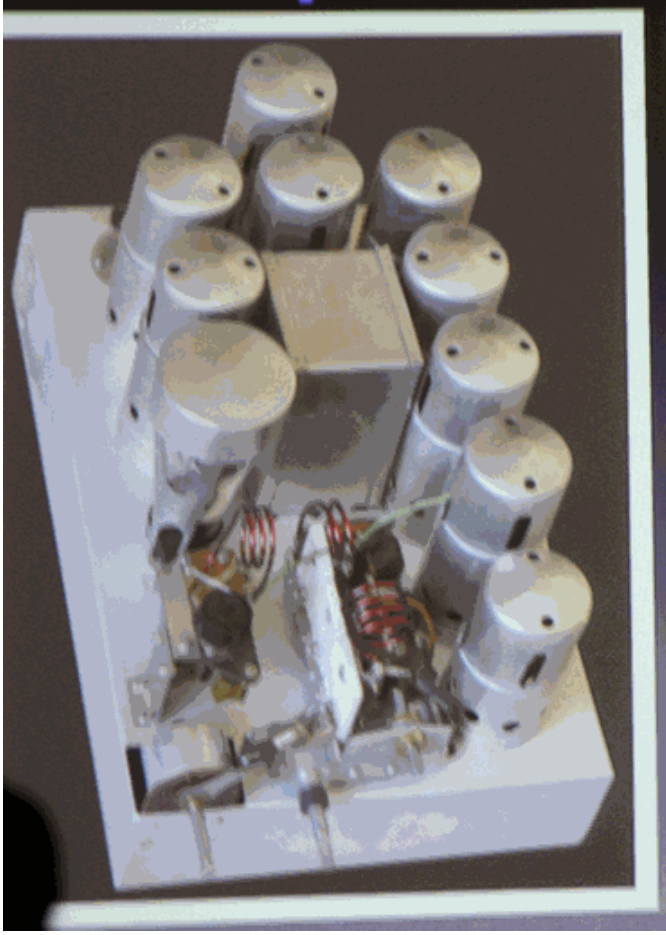
Deflection Assembly

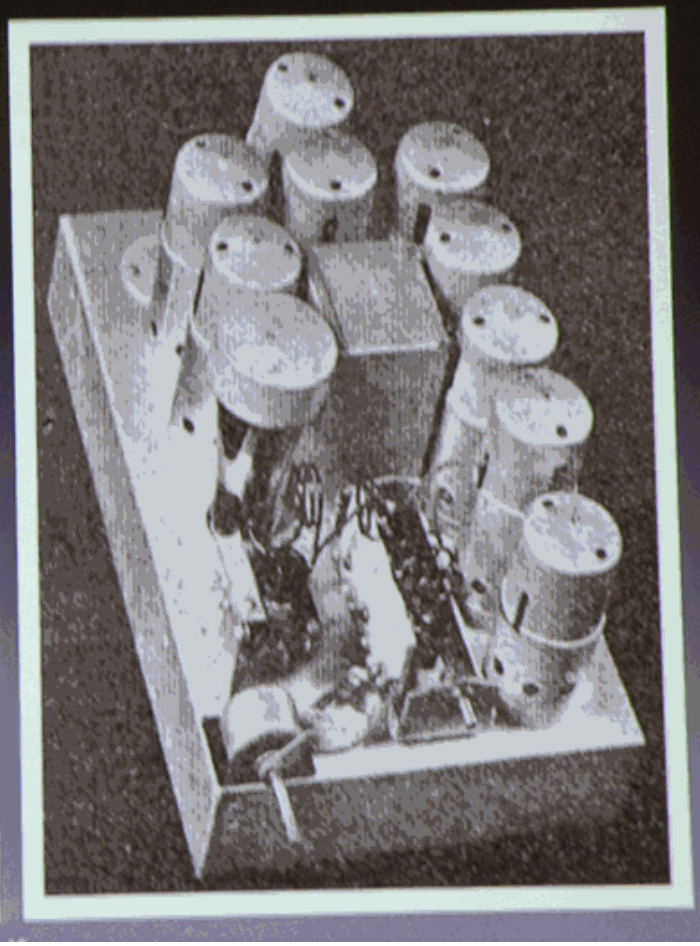


Deflection Assembly

Kinescope Chassis

Complete Sound Receiver

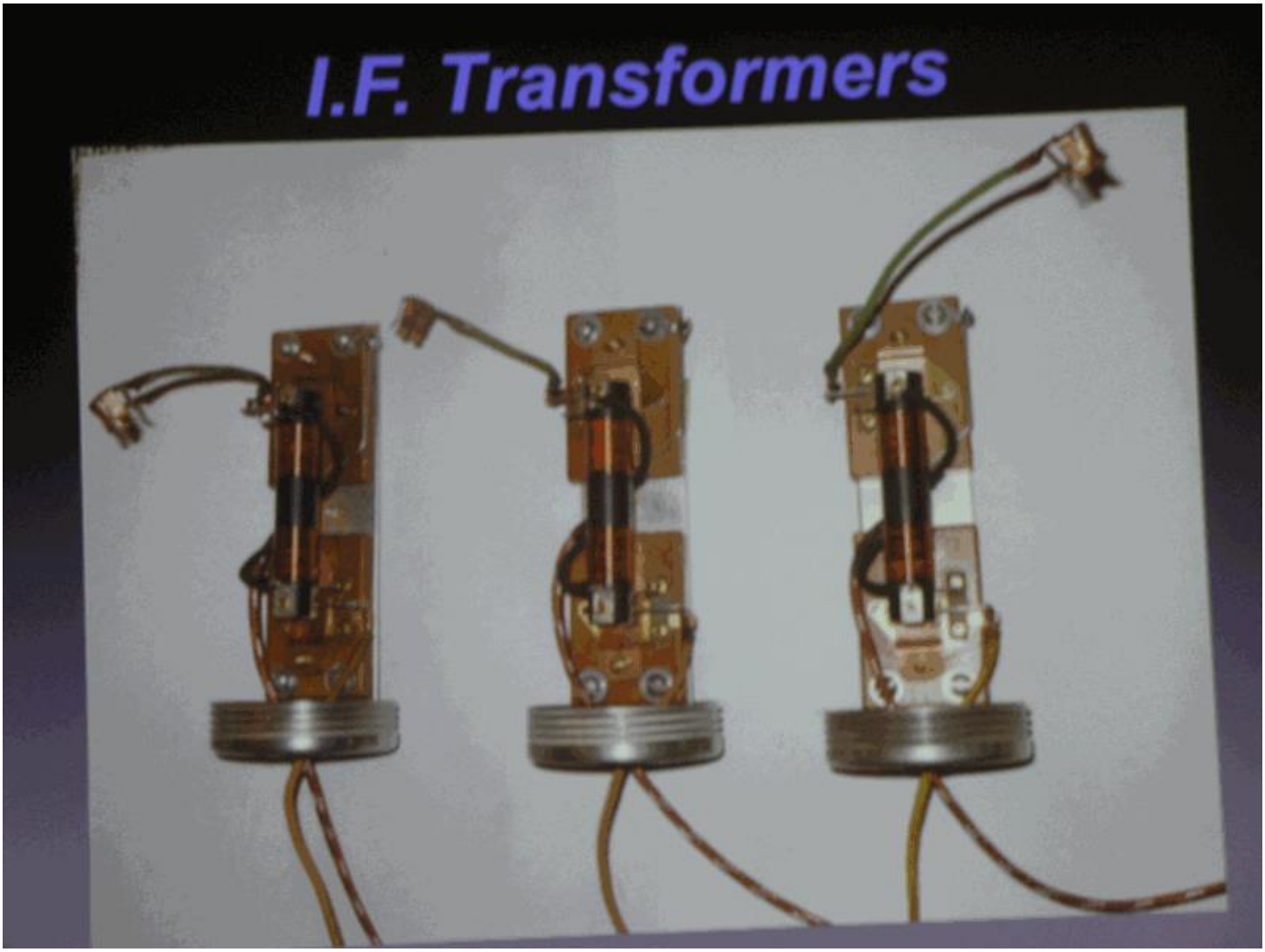


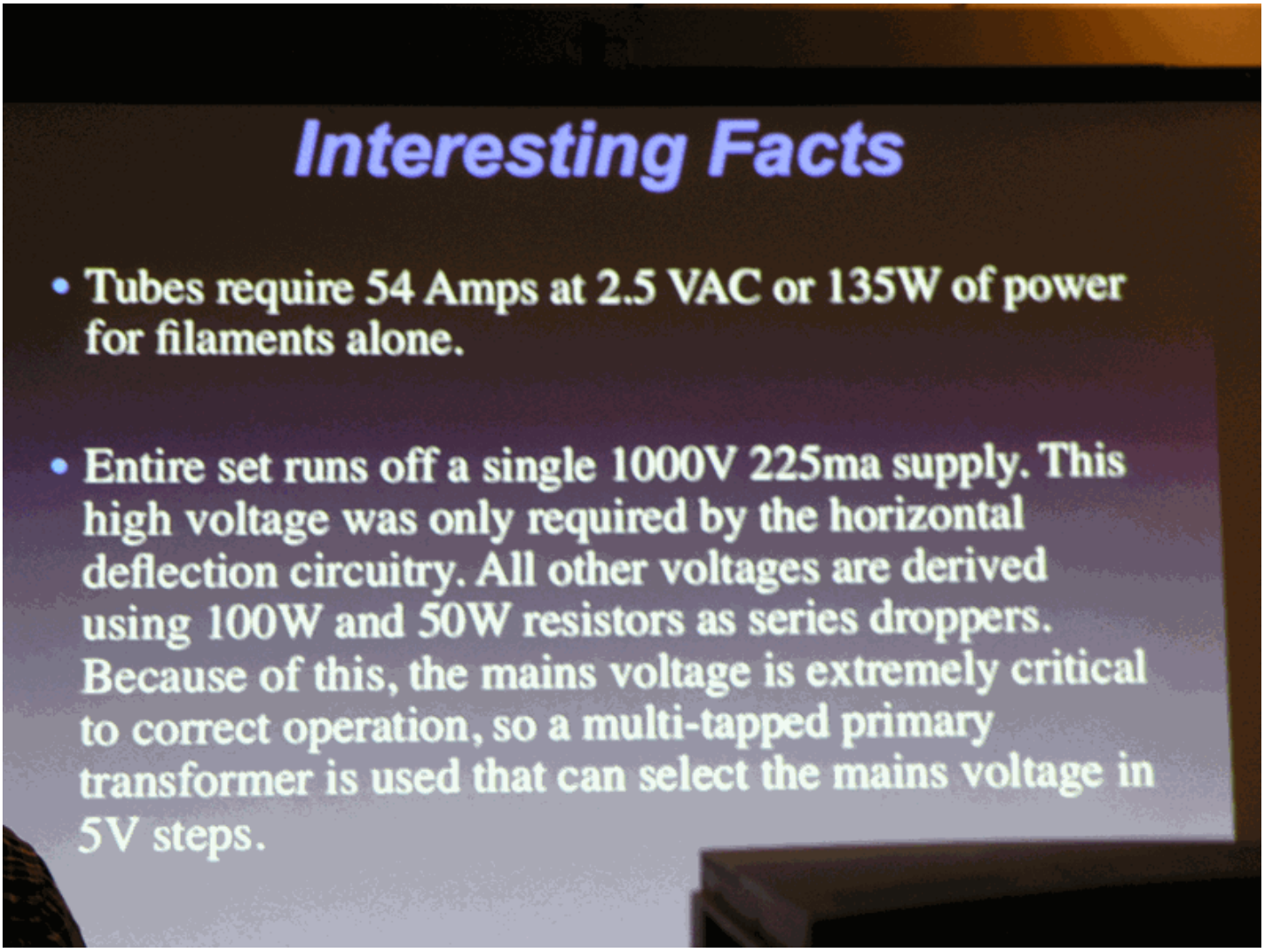


Reproduction Wiring Harness

Terminal Boards Under Construction

I.F. Transformers




Interesting Facts
• Tubes require 54 Amps at 2.5 VAC or 135W of power for filaments alone.
• Entire set runs off a single 1000V 225ma supply. This high voltage was only required by the horizontal deflection circuitry. All other voltages are derived using 100W and 50W resistors as series droppers. Because of this, the mains voltage is extremely critical to correct operation, so a multi-tapped primary transformer is used that can select the mains voltage in 5V steps.

Kinescope/Deflection Chassis'

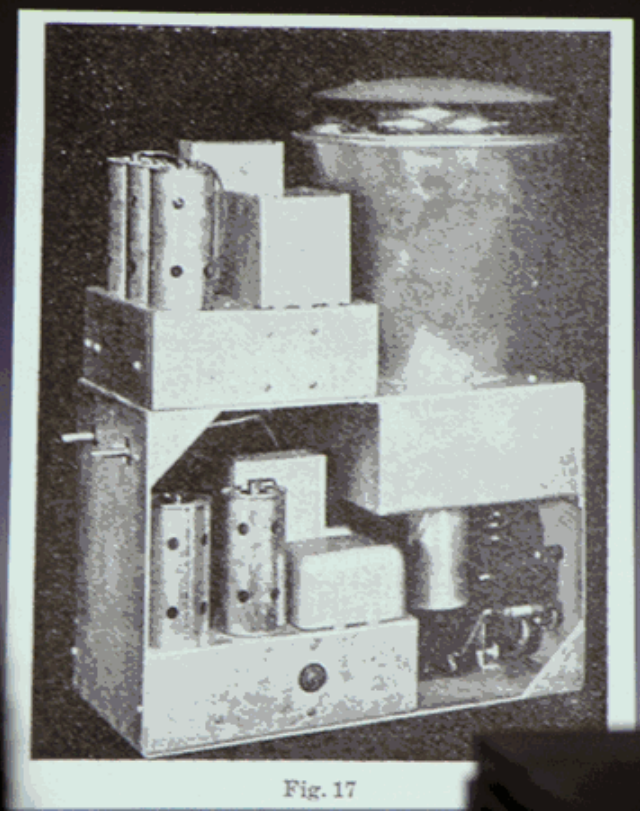


Fig. 17

Receiver Field Strength Tests

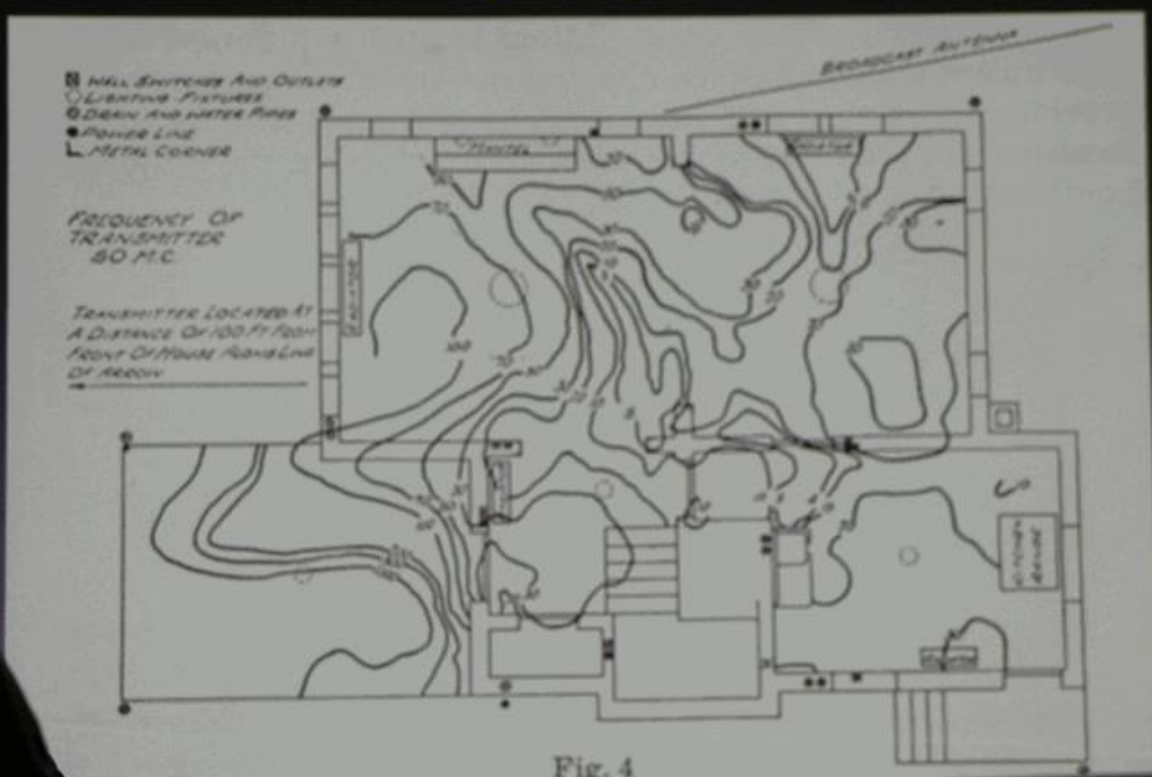
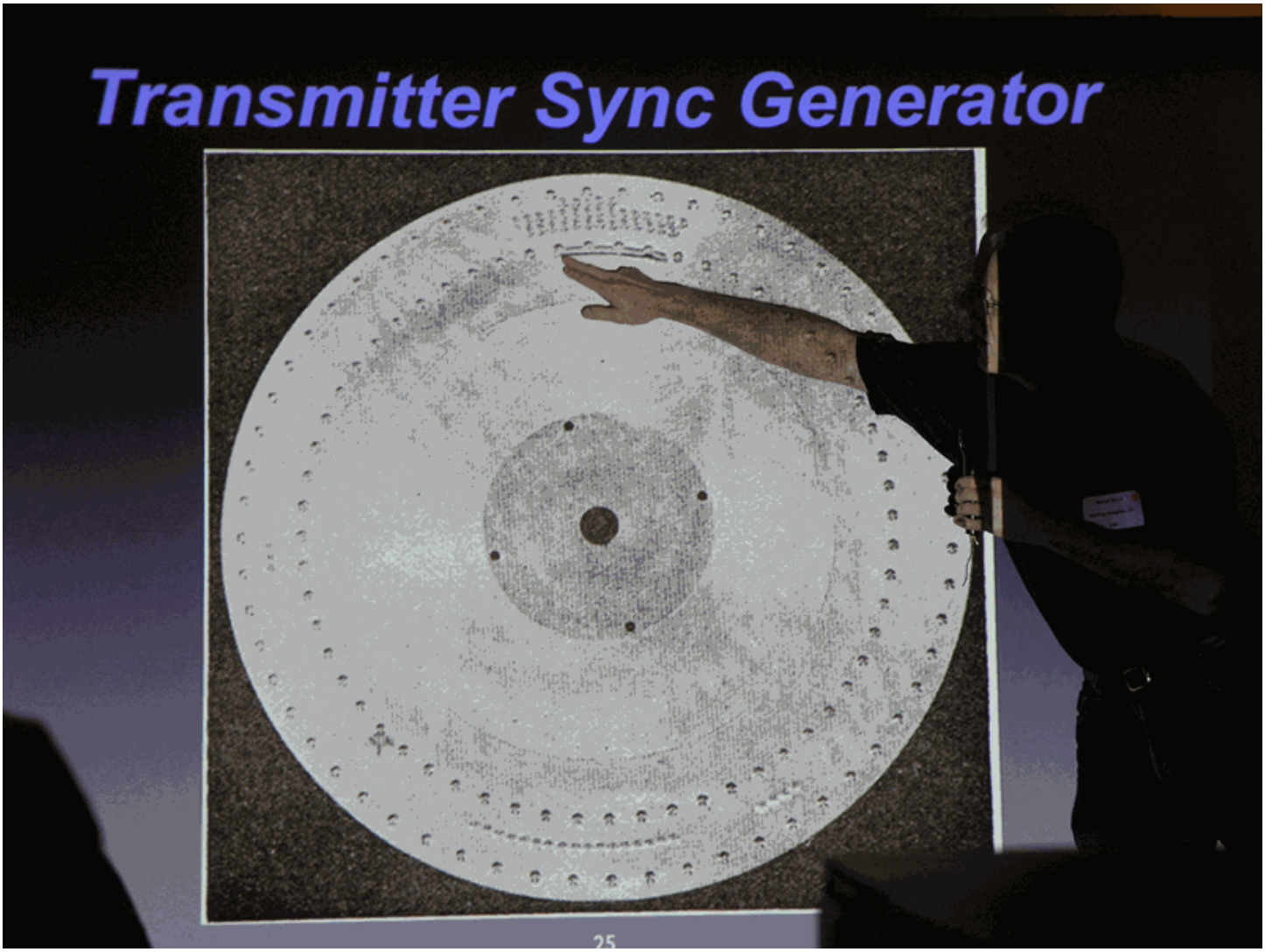
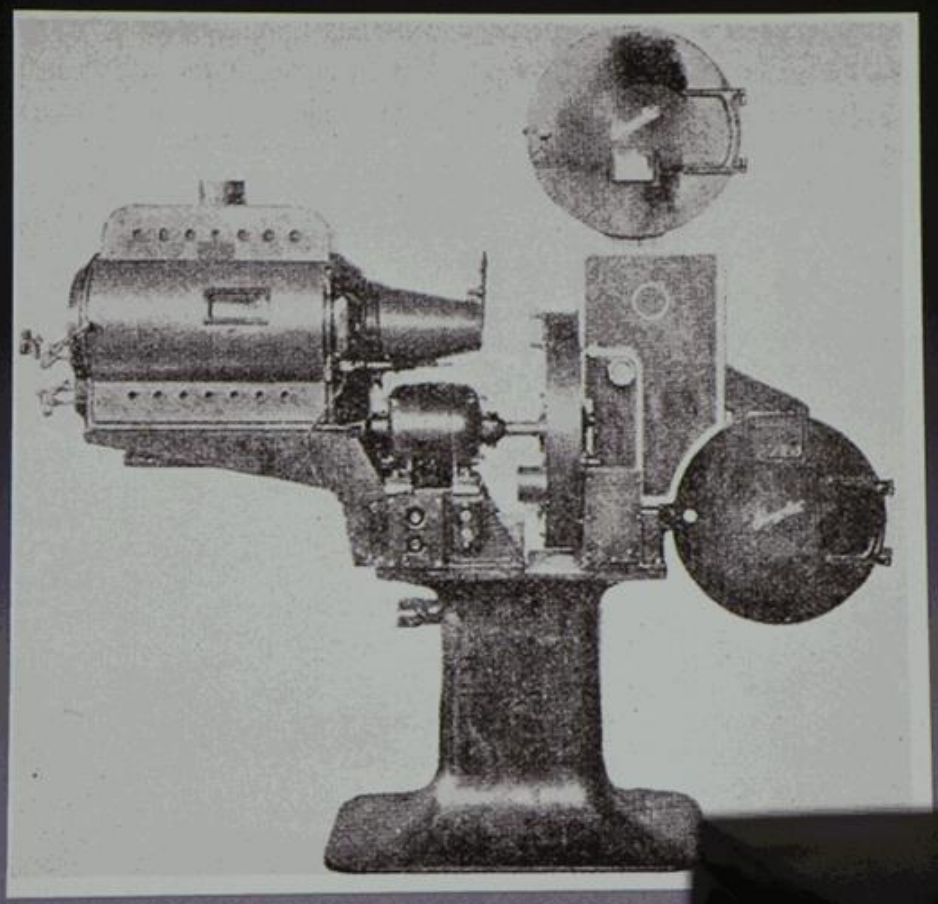


Fig. 4

Transmitter Sync Generator



Transmitter Film Scanner



Transmitter Composite Picture Signal

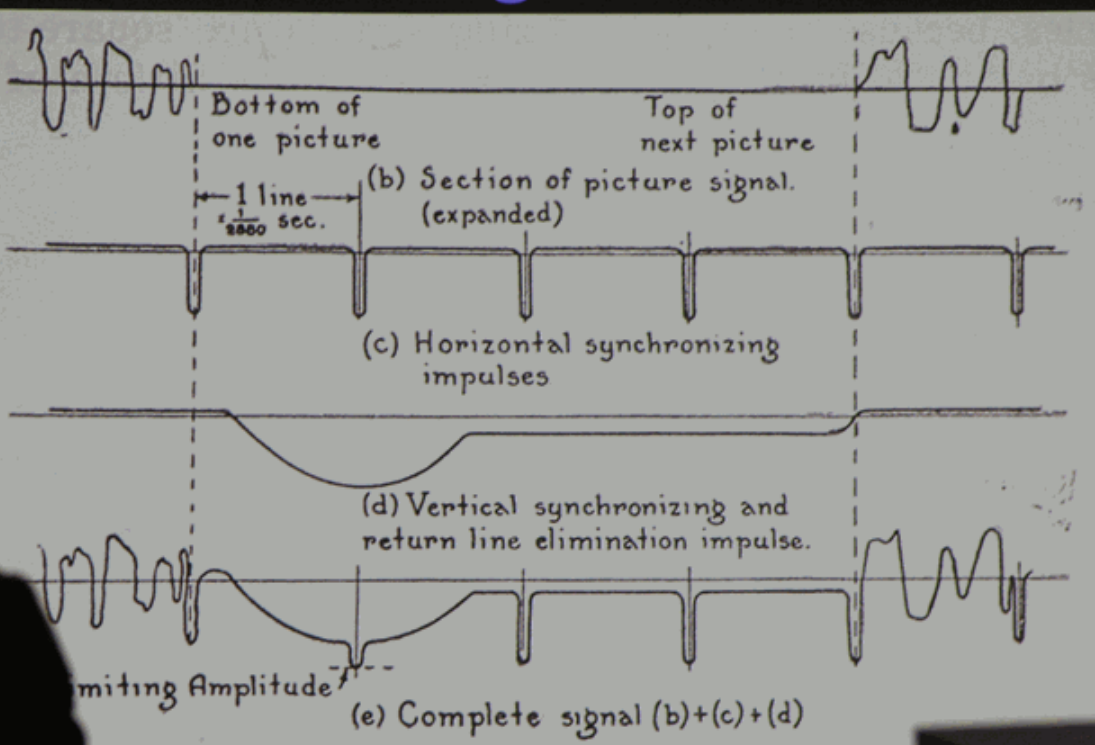
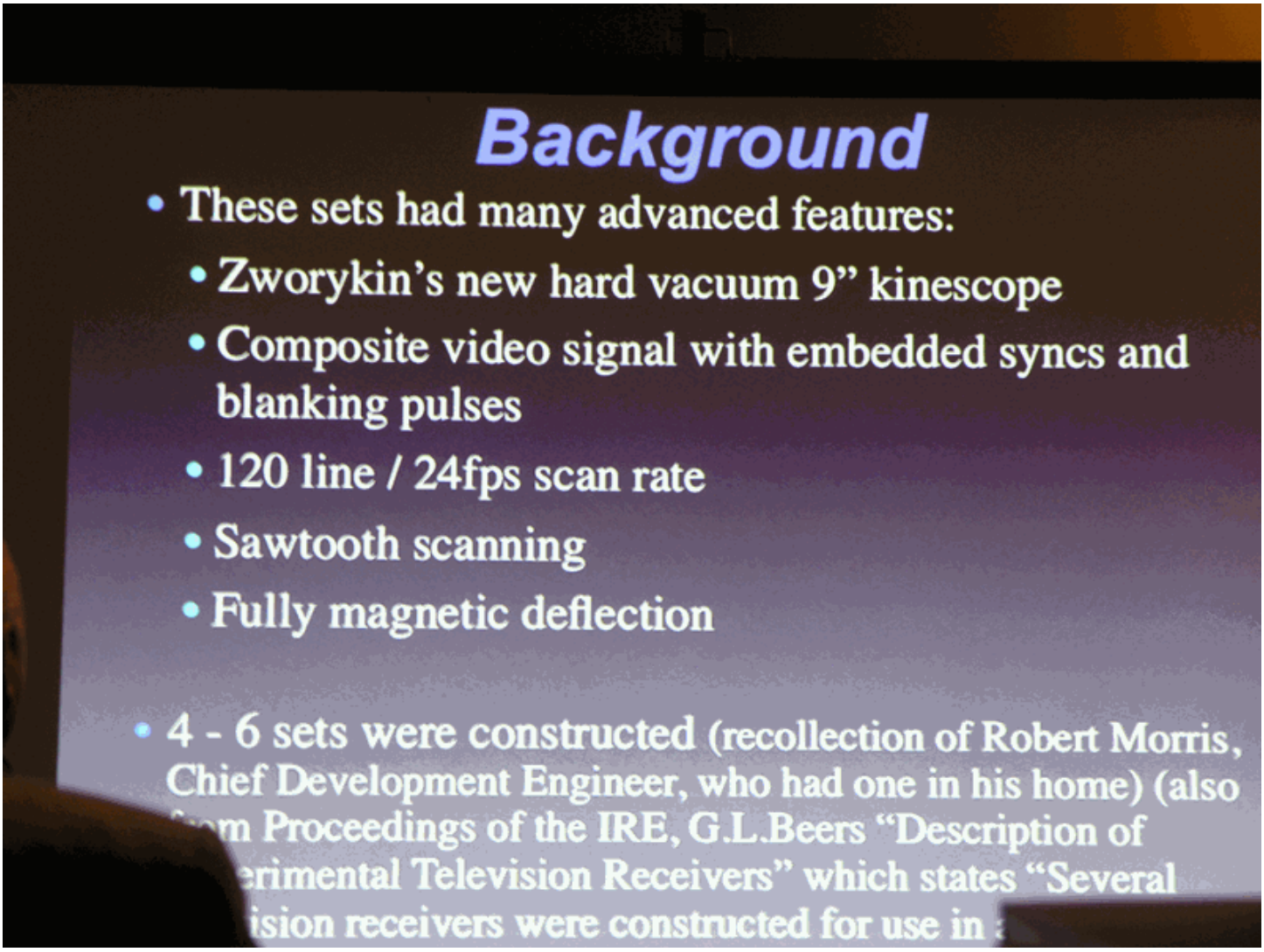


Fig. 2


Background
• These sets had many advanced features:
• Zworykin's new hard vacuum 9" kinescope
• Composite video signal with embedded syncs and blanking pulses
• 120 line / 24fps scan rate
• Sawtooth scanning
• Fully magnetic deflection
• 4 - 6 sets were constructed (recollection of Robert Morris, Chief Development Engineer, who had one in his home) (also
m Proceedings of the IRE, G.L.Beers "Description of
erimental Television Receivers" which states "Several
ision receivers were constructed for use in


Makoy


Makoy


Makoy

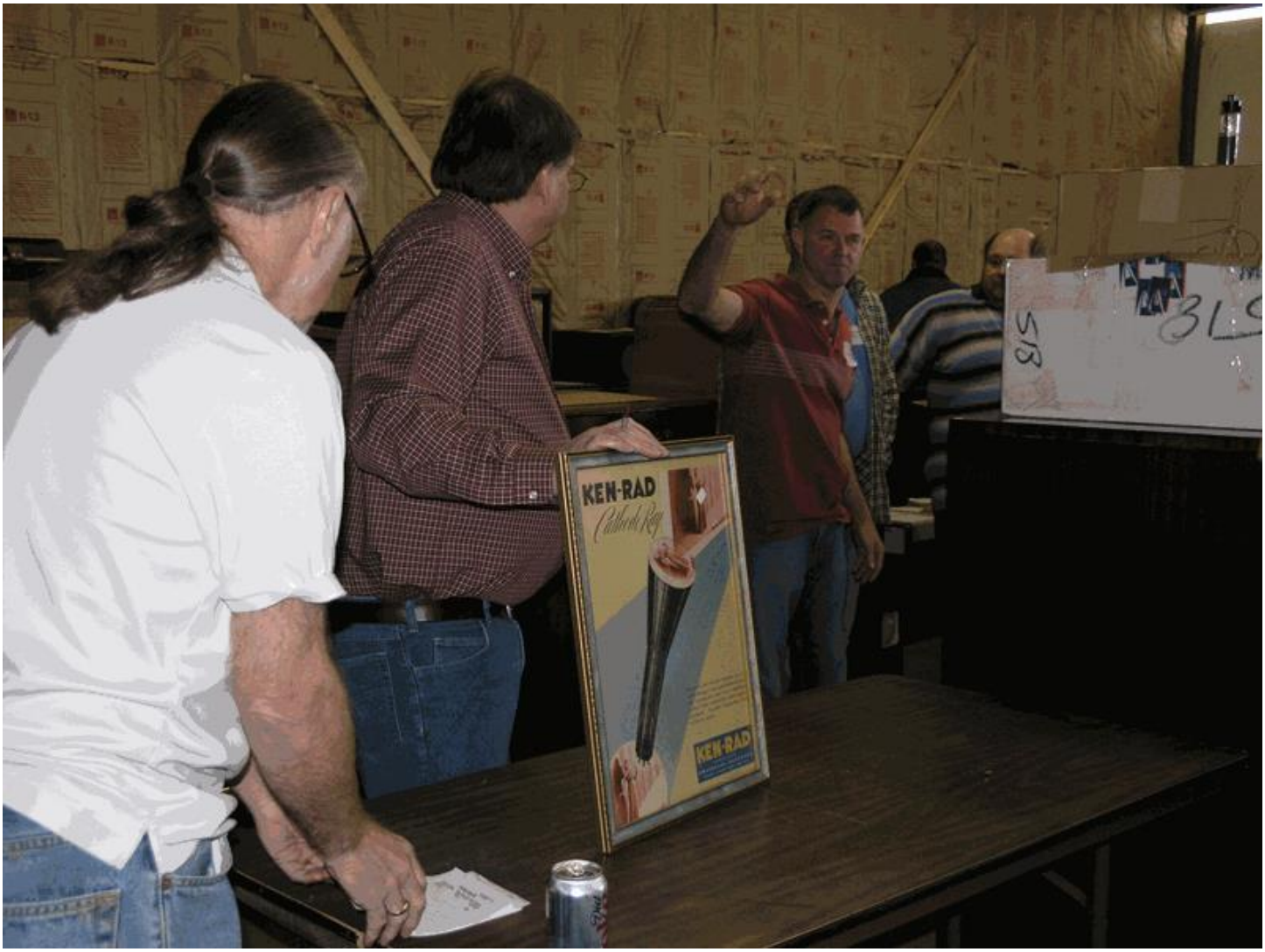

Makoy


Crime at Wounded Moose


NBC-NYC 1955
NBC BURBANK 1955


COLOR
NBC-NYC 1955
NBC BURBANK 1955


NBC-NYC 1955
NBC BURBANK 1955
THE JACK BENNY SHOW


KEN-RAD
KEN-RAD


SB
3LS


Julian Burke
Knoxville, TN
110


COKE


TOYS TOYS


EXIT
Canon


EXIT
Canon


EXIT


EOS DIGITAL


EOS DIGITAL


VIRGINIA TECH


GLASS UP
COKE


2XL


COLOR
Coke


EXIT


TV-13
WGSF
WGSF
2
2


R-13
ZENITH


4 PCS.
TOYS
4 PCS.
TOYS
TOYS
HULK BUSTS
LOOSE GAME

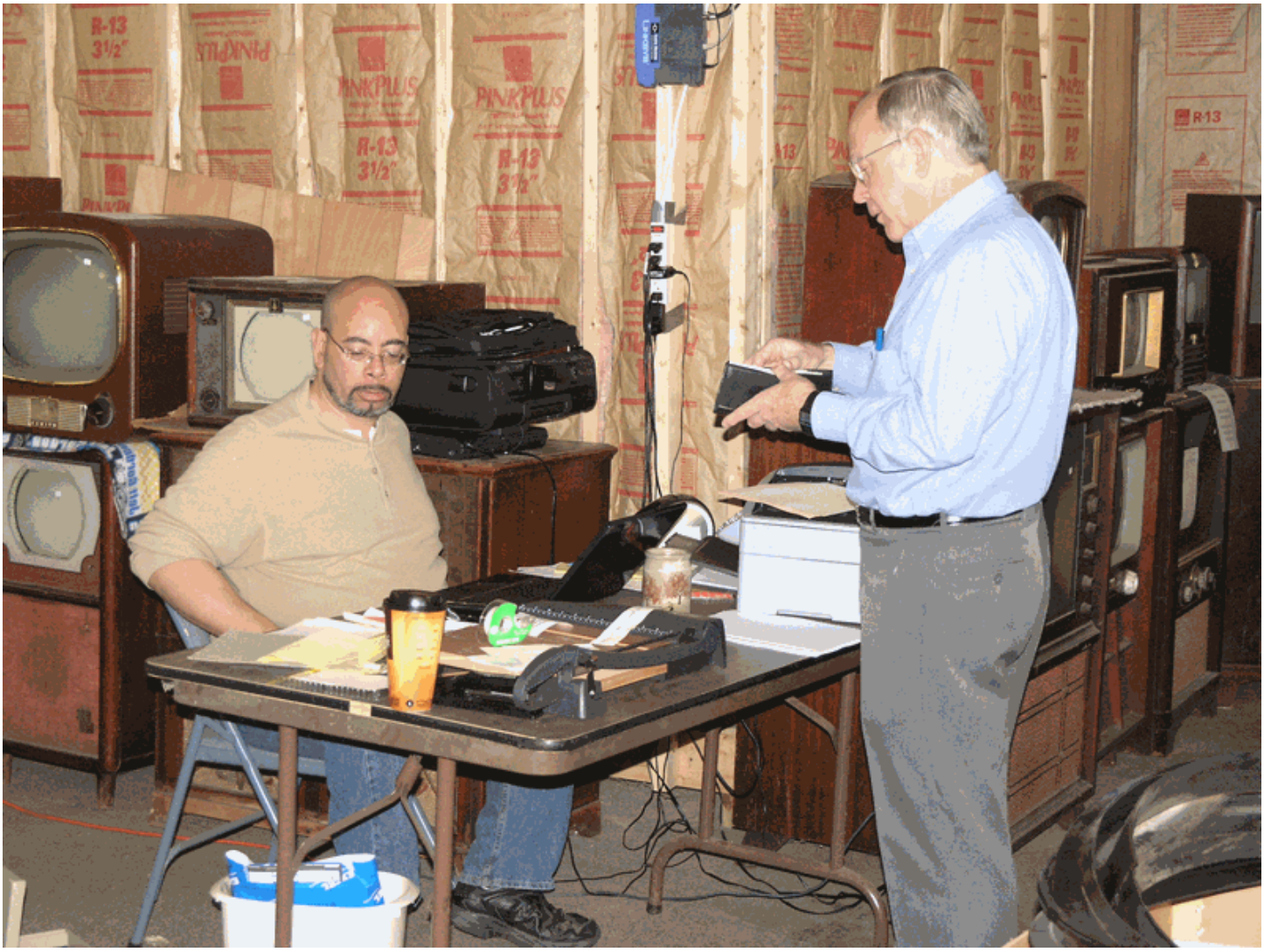

Tektronix

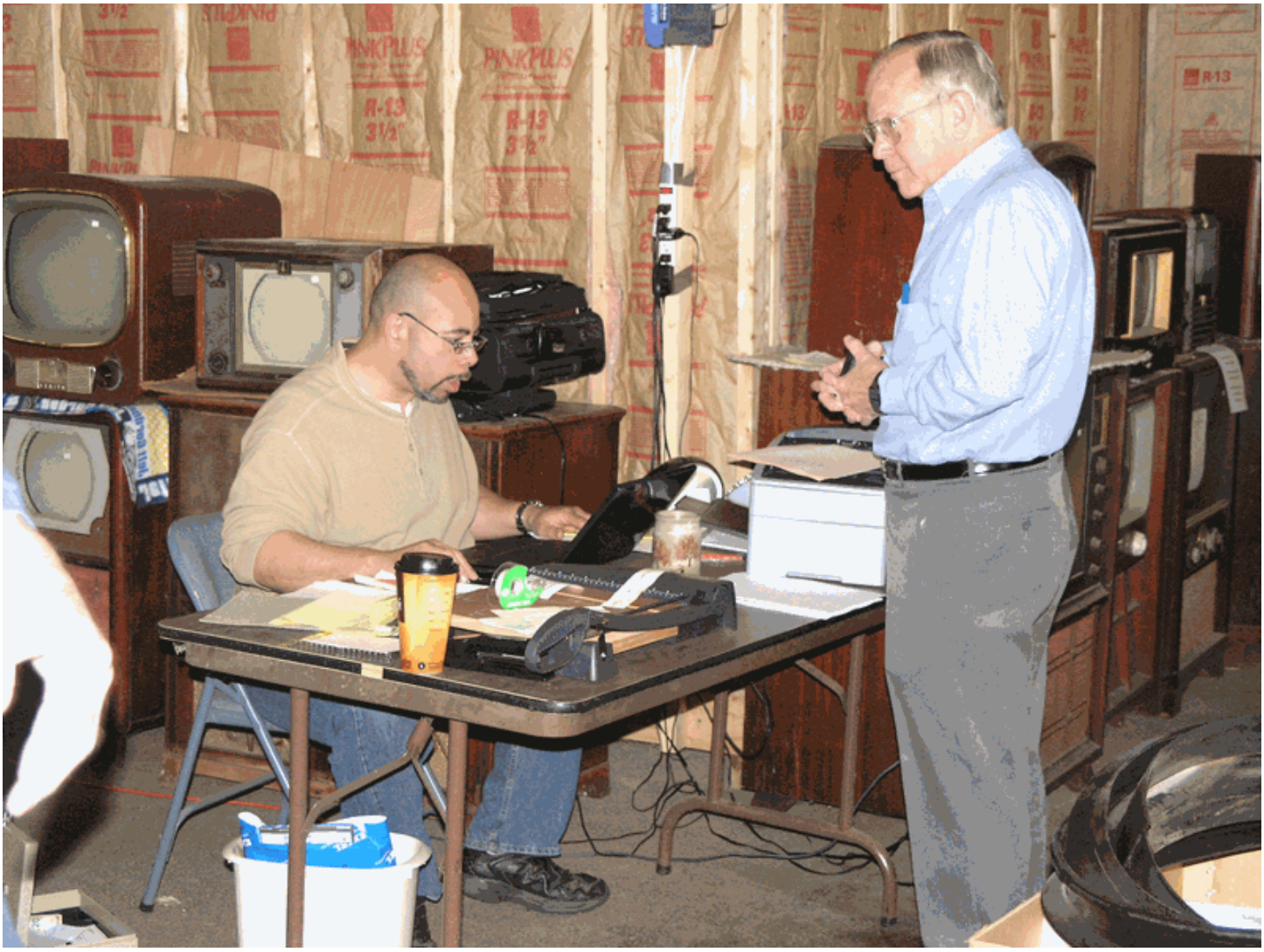

John Horvath
Amtech Technologies
Bepro Backs and HV Cages


R-13
AC/DC

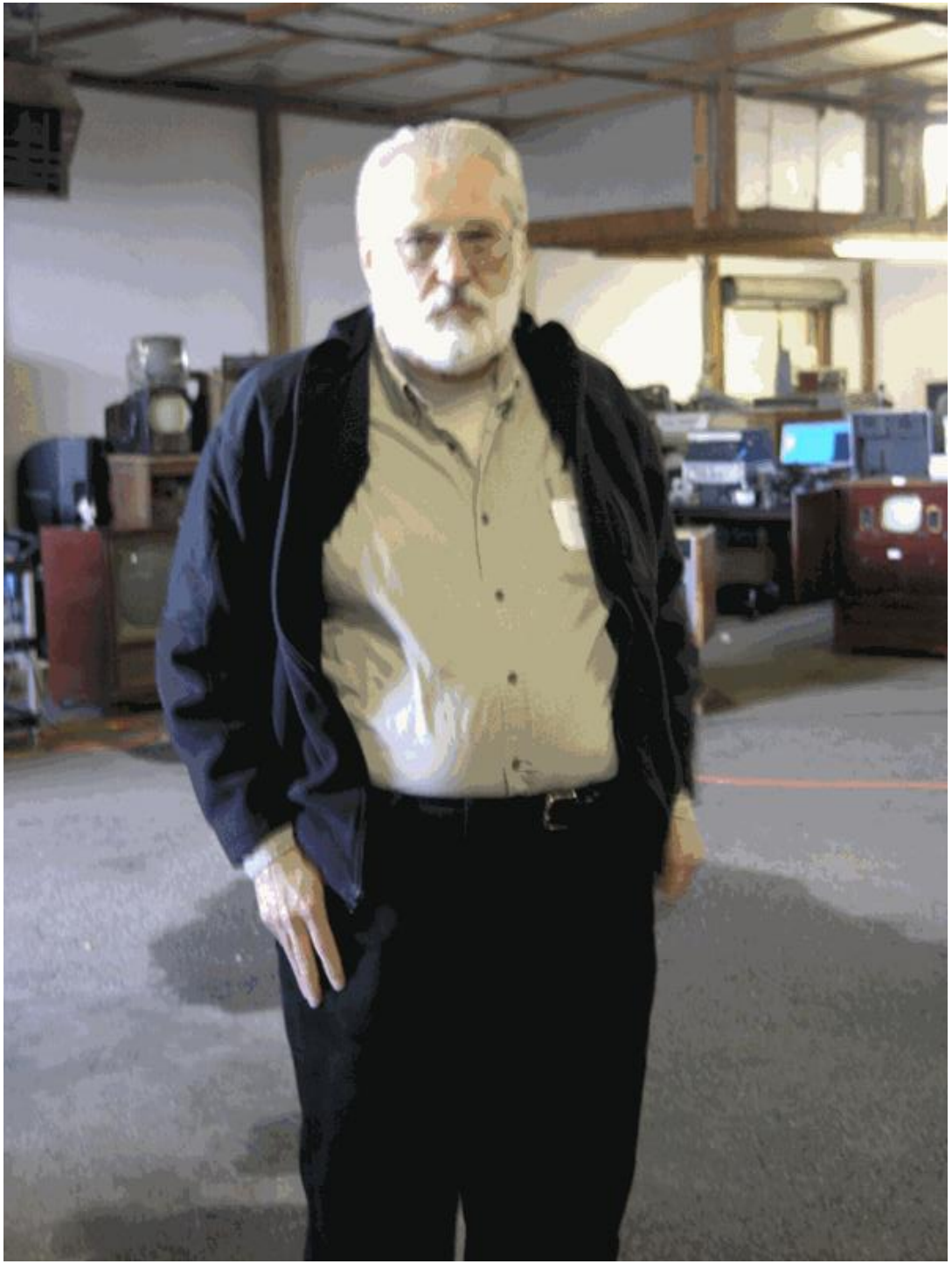

EXIT
TAYLOR


PCS.
4 PCS. 4602-04
OYS TOYS TOYS
HULK™ BUSTS
LOOSE GAME
7DP4


R-13
3½"
PINKPLUS
R-13
3½"
PINKPLUS
R-13
3½"
PINKPLUS
R-13

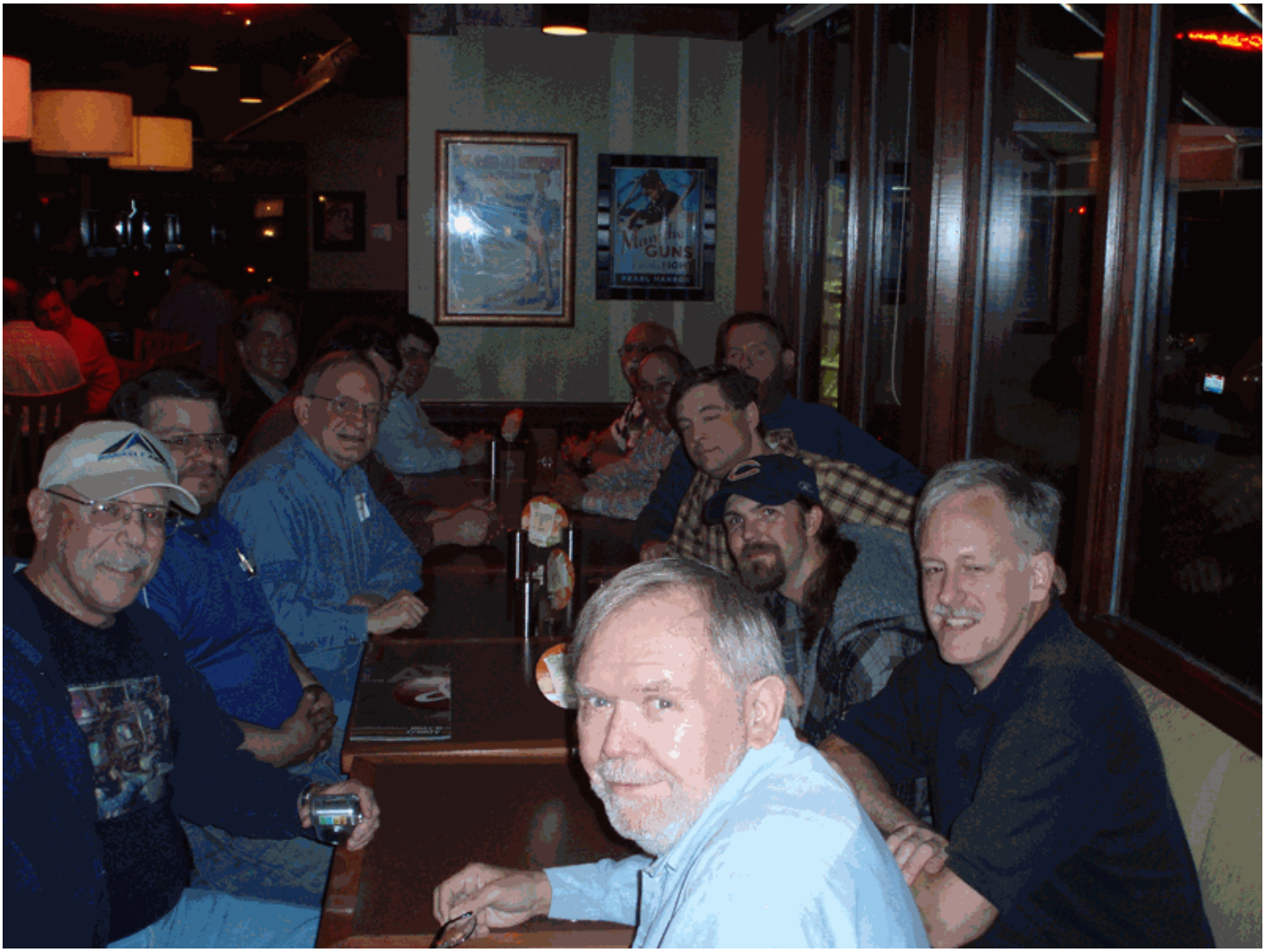

PINKPLUS
R-13
3½"


RCA VICTOR




ACTUAL TV SCREEN PHOTOS OF
THIS CAMERA IN OPERATION


RCA
TK-60

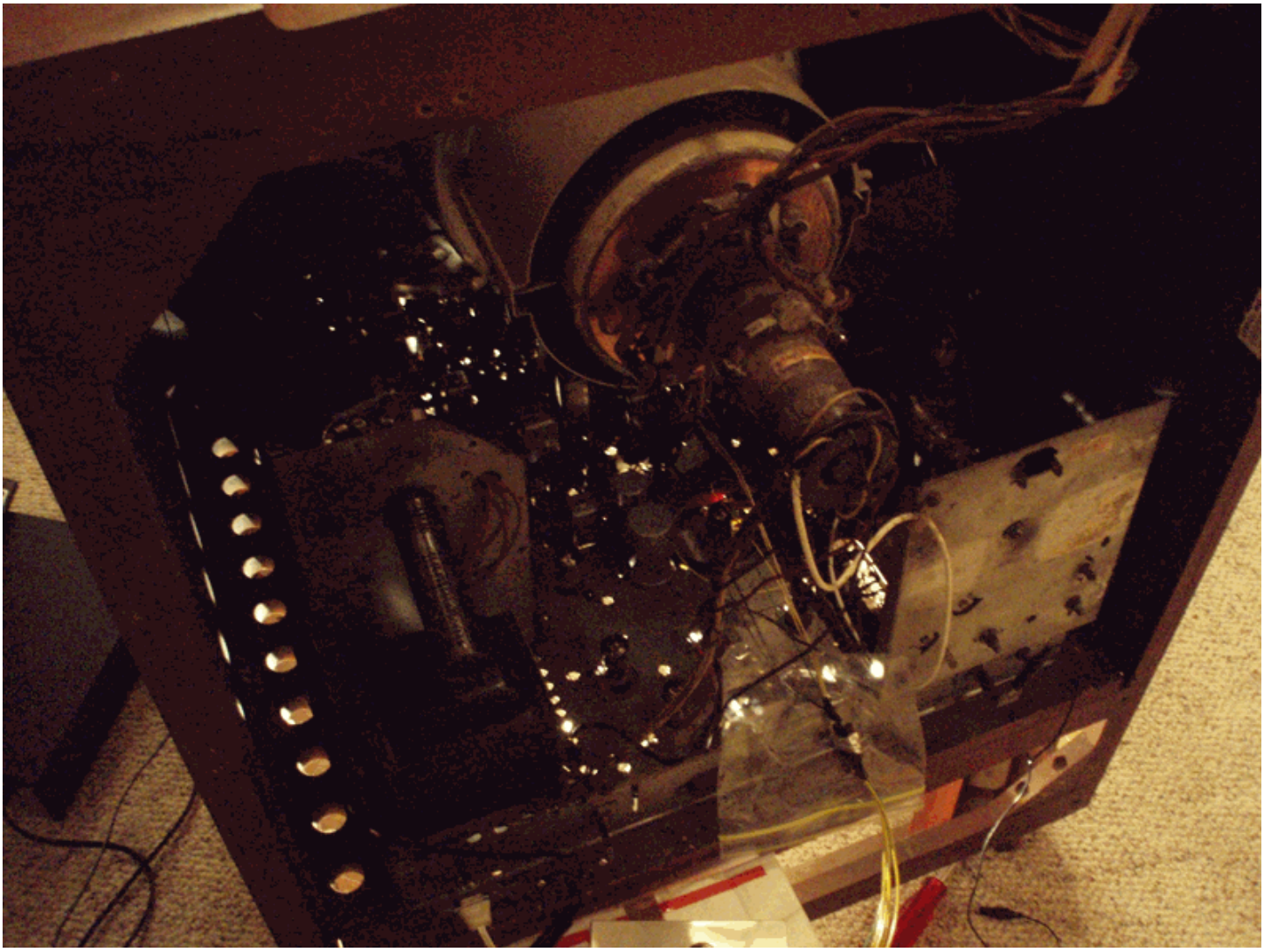

GUNS

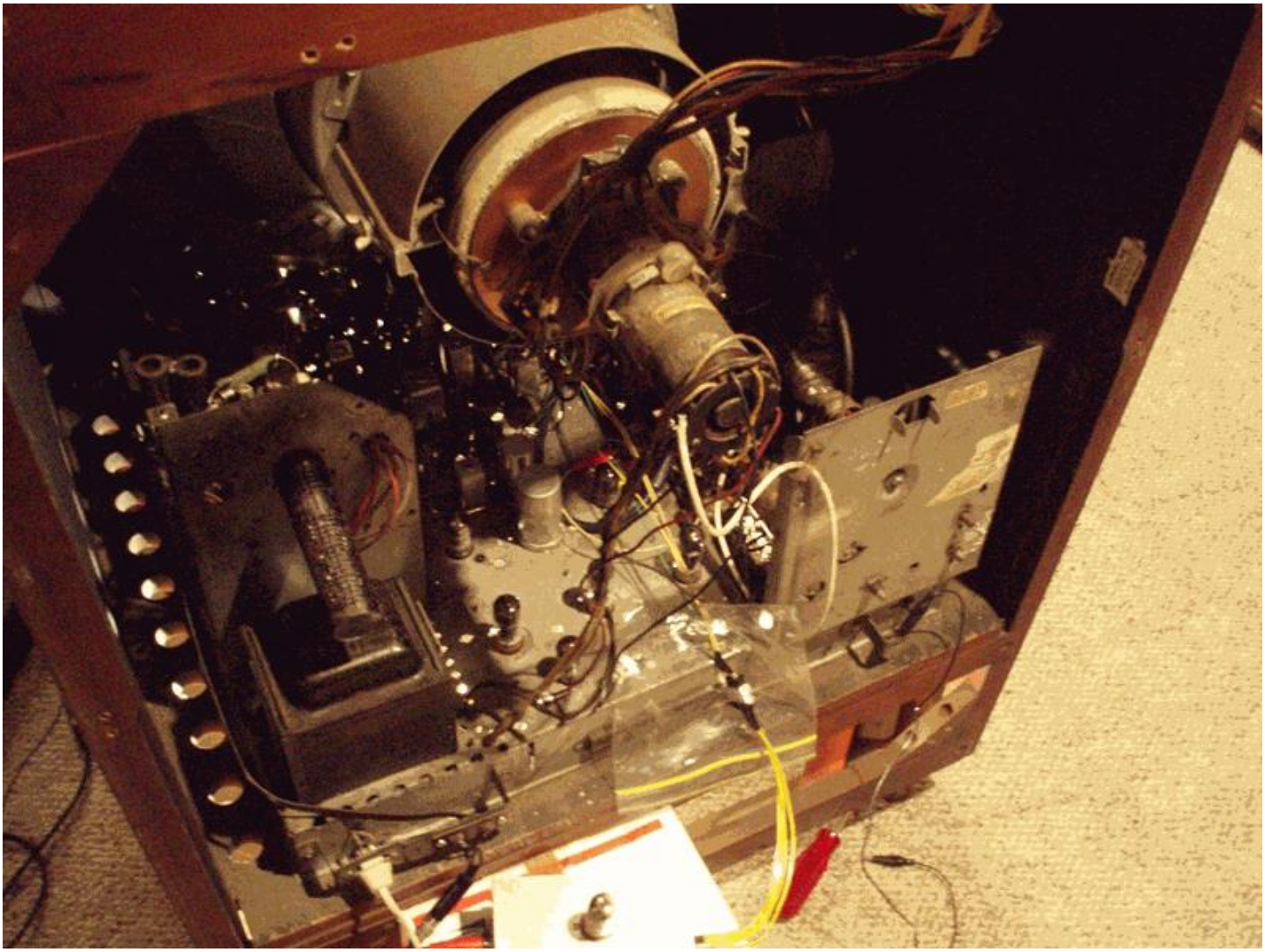

Man the
GUNS
PEARL HARBOR


zenith
old_tv_nut
WAYNE BRETL
ENGINEER


NBC BURBANK 1955


TELEVISION
SHOP

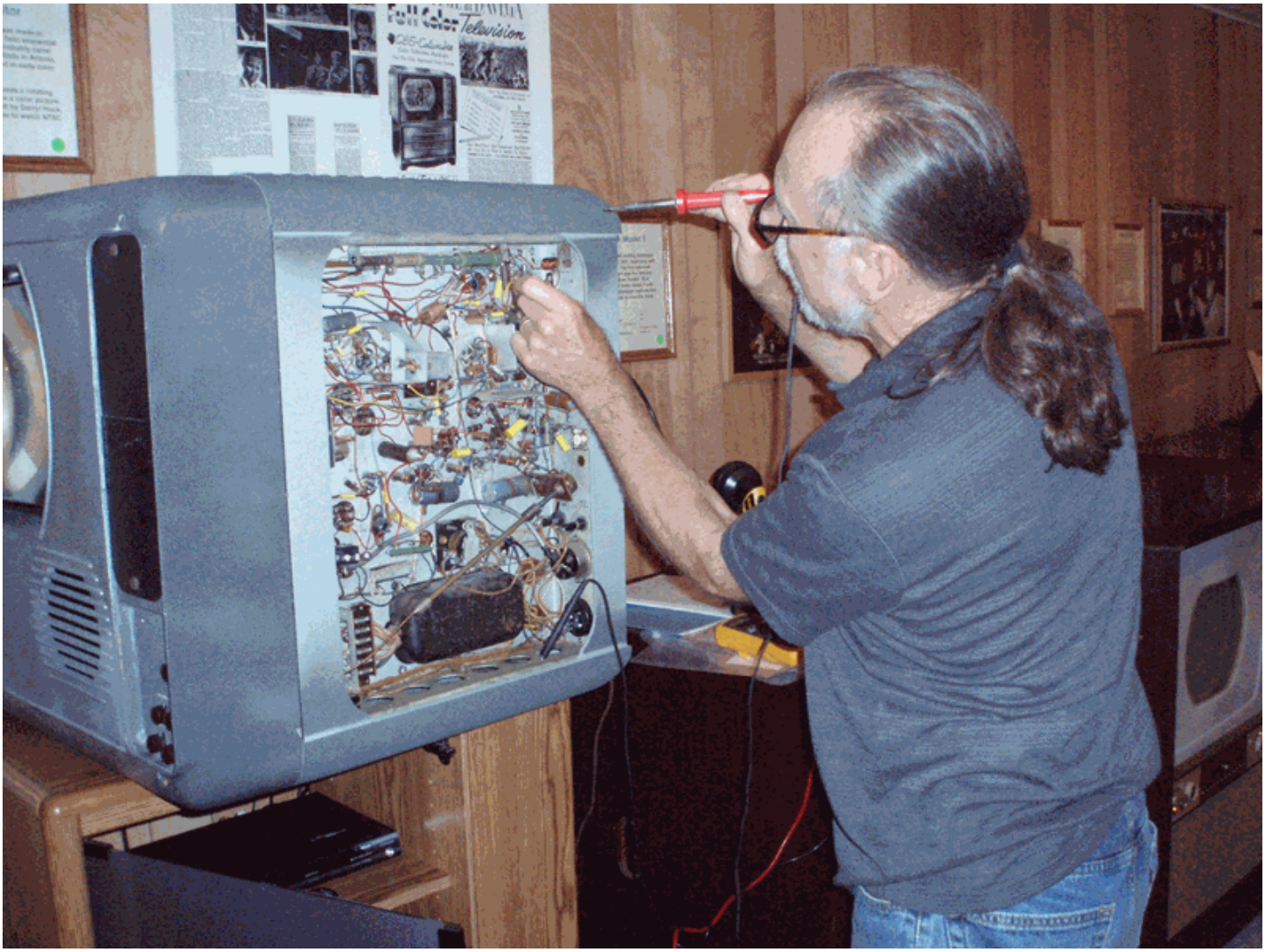





HORIZ. CENT
HORIZ. DRIVE
HORIZ. LOCK
H.V. ADJ.
WATTS
375
FOCUS


ANT
3000 514

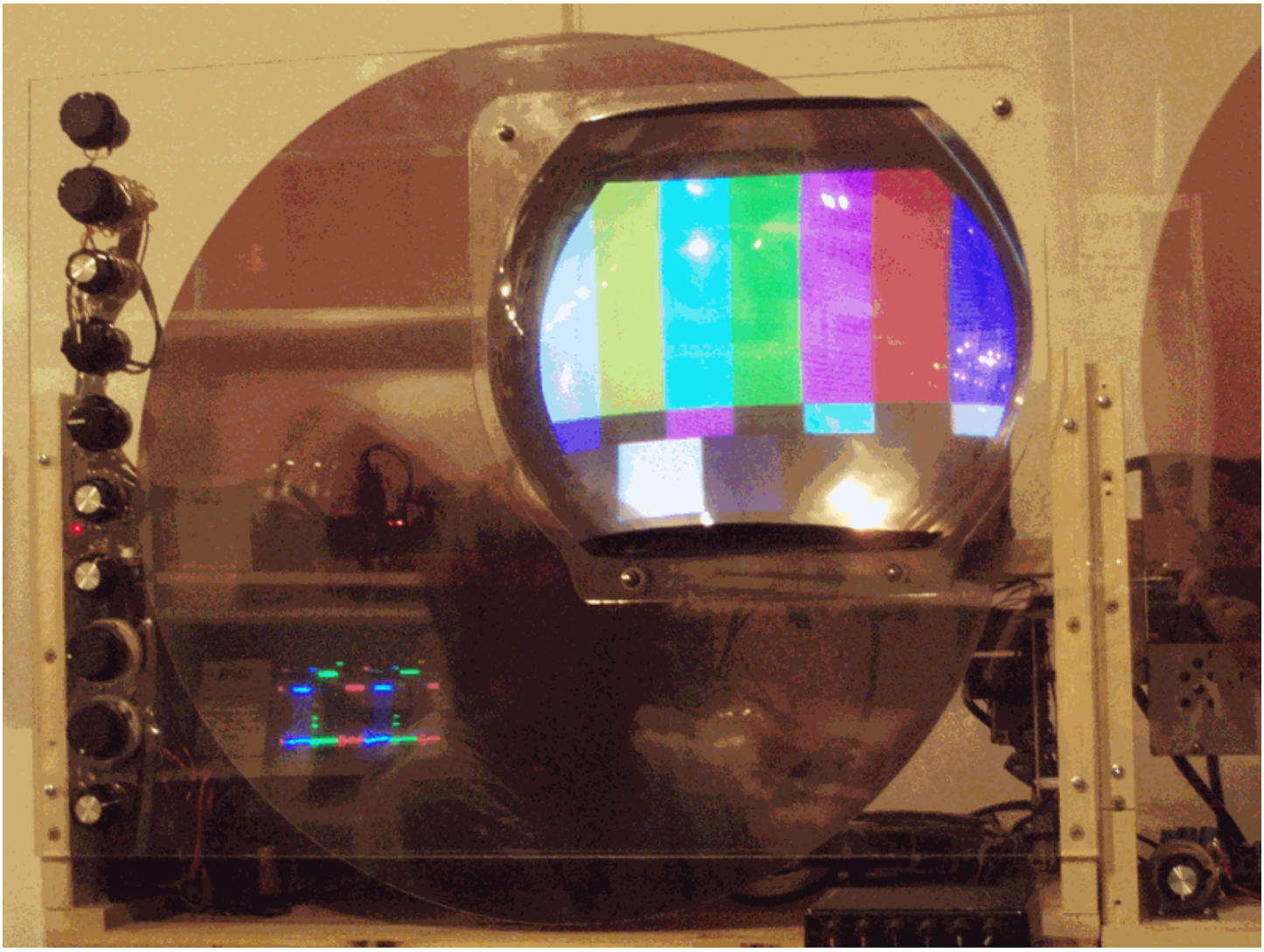

SERIAL NUMBER
T 50879
MADE IN U.S.A.
This Receiver can be adapted to receive UHF Stations, when Standard Coil UHF Conversion Strips coded "UC" with required channel number, is added to tuner.
Sentinel
Model No.
816C
Watts
375
VOLTAGE 110-120 Volt, 60 Cycle Alternating Current (A.C.) only.
This apparatus uses inventions of United States patents licensed by Radio Corporation of America. Patents numbers supplied upon request.
HIGH VOLTAGE
THE BACK COVER IS EQUIPPED WITH AN INTERLOCK TO PREVENT DANGEROUS ELECTRICAL SHOCK. DO NOT TAMPER WITH INTERLOCK OR ATTEMPT TO OPERATE SET WITHOUT BACK SCREWED TO CABINET WITH ALL OF ITS MOUNTING SCREWS.
SENTINEL RADIO CORPORATION, EVANSTON, ILL.

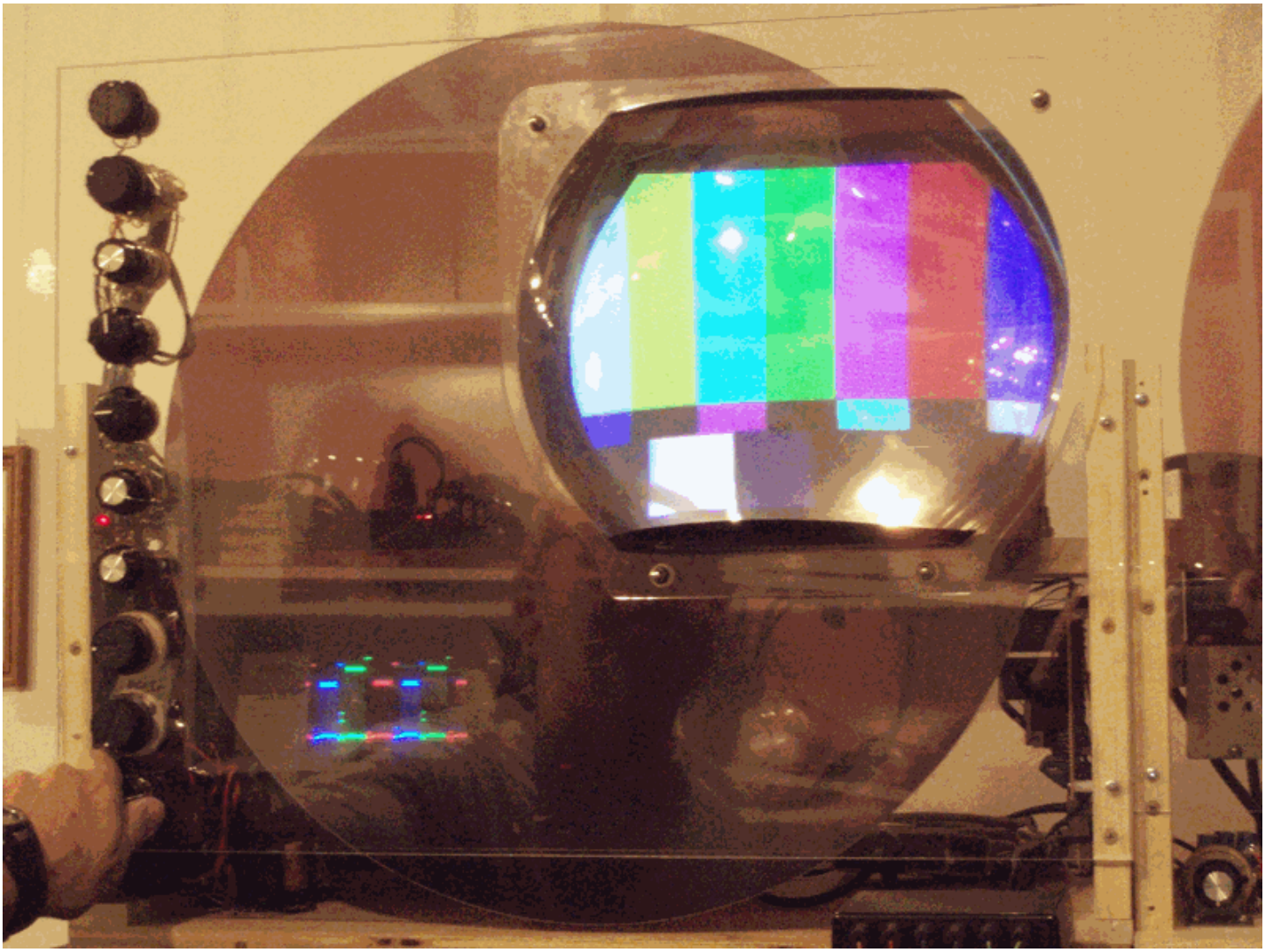

Full Color Television


GLASS UP

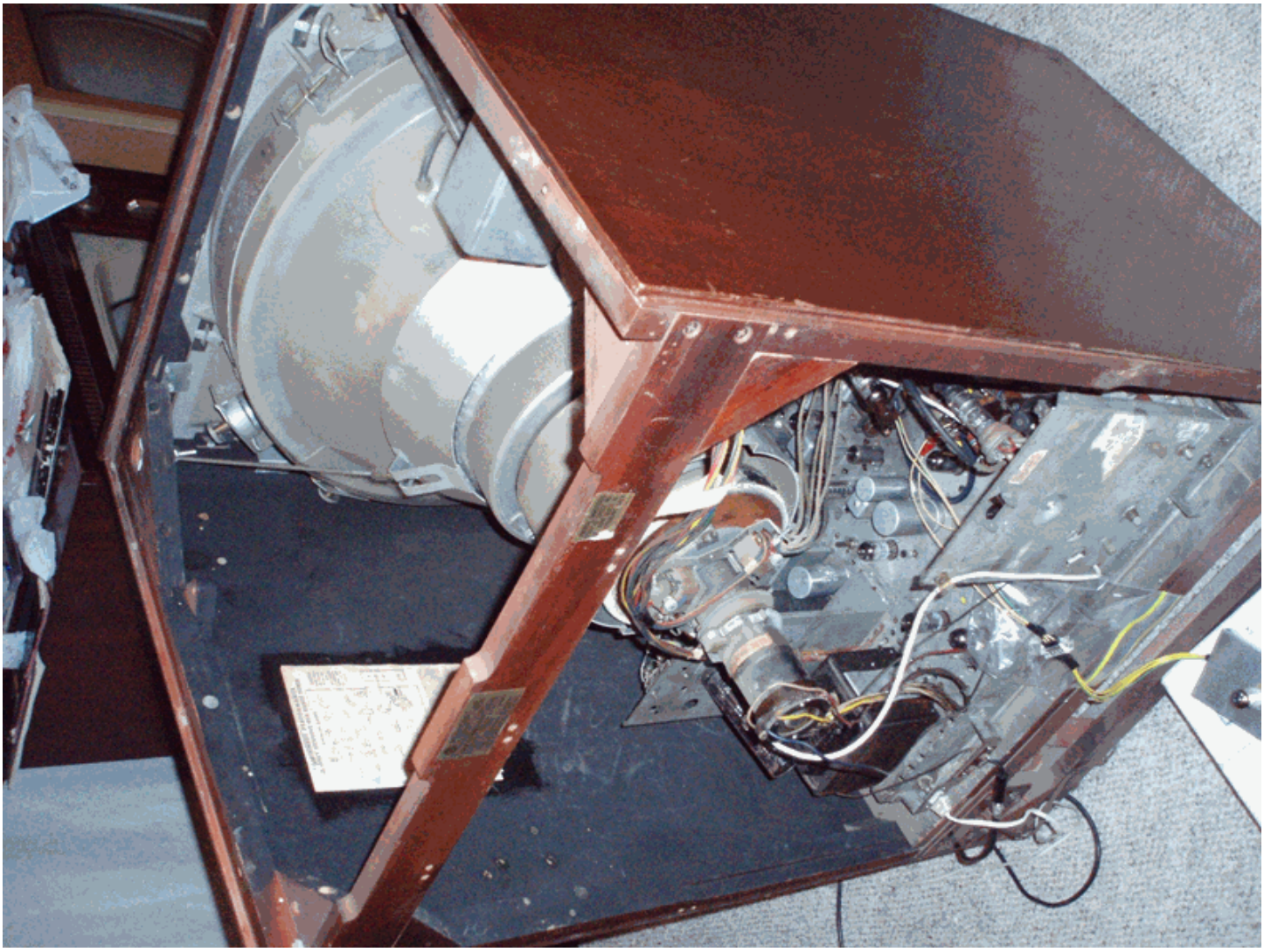

GLASS


TekValley
A GRASSTRONIX COMPANY






Grayburne TV-IF Signal Booster
This device was designed to be used to increase the IF gain in late 40s and early 50s TV sets. One of the IF amplifier tubes was removed, and the booster was plugged in.
Simpson Antenna Alignment Meter
Used to align TV antennas in the late 40s. The meter was attached to the CRT socket and a long cord was run to the roof.
Astatic Booster
In the late 40s there were no TV stations in many parts of the country. Boosters were used to pull in distant stations.
Video Research Labs Booster
Early sets had very poor sensitivity. If the set was located more than about 30 miles from a TV station, the picture would be snowy.
RF boosters were often used to increase the sensitivity. This is a 1952 early one, made about 1948, tuning only channels 1-6.
Video Research Labs FM Converter
magic carpet antenna




No wonder Hollywood Picked G-E
Beats everything in sight!
DAYLIGHT TELEVISION
GENERAL ELECTRIC


RADIO —
ELECTRONICS
Snaider 250
This set was designed to be built into the wall of a living room. The front is wood, but the back is made of sheet metal.

TELEPHONES
COLUMBUS 5-7875-RESTAURANT
VICLE 6-3818-EXECUTIVE OFFICE

BROADWAY-49TH & 50TH STS.
NEW YORK

Jack Dempsey's
BROADWAY RESTAURANT
AND BAR

November 15th 1949

Trad Television Corp
Asbury Park, New Jersey

Gentlemen:

Now that TRADIOVISION has become such an important feature of our business, we deem it a pleasure to be able to advise you that all of the claims and representations that you originally made regarding TRADIOVISION'S success as a business builder were not exaggerated.

Since the time of the TRADIOVISION installation, we have become firmly convinced that the home type television receiver, regardless of its picture size, is passe in apublic place. Keeping this in mind we are happy to advise you that we feel that we took a progressive step in trading-in our Dumont 20" receiver, for which we paid $2500.00 , toward the purchase of your P-13 TRADIOVISION model.

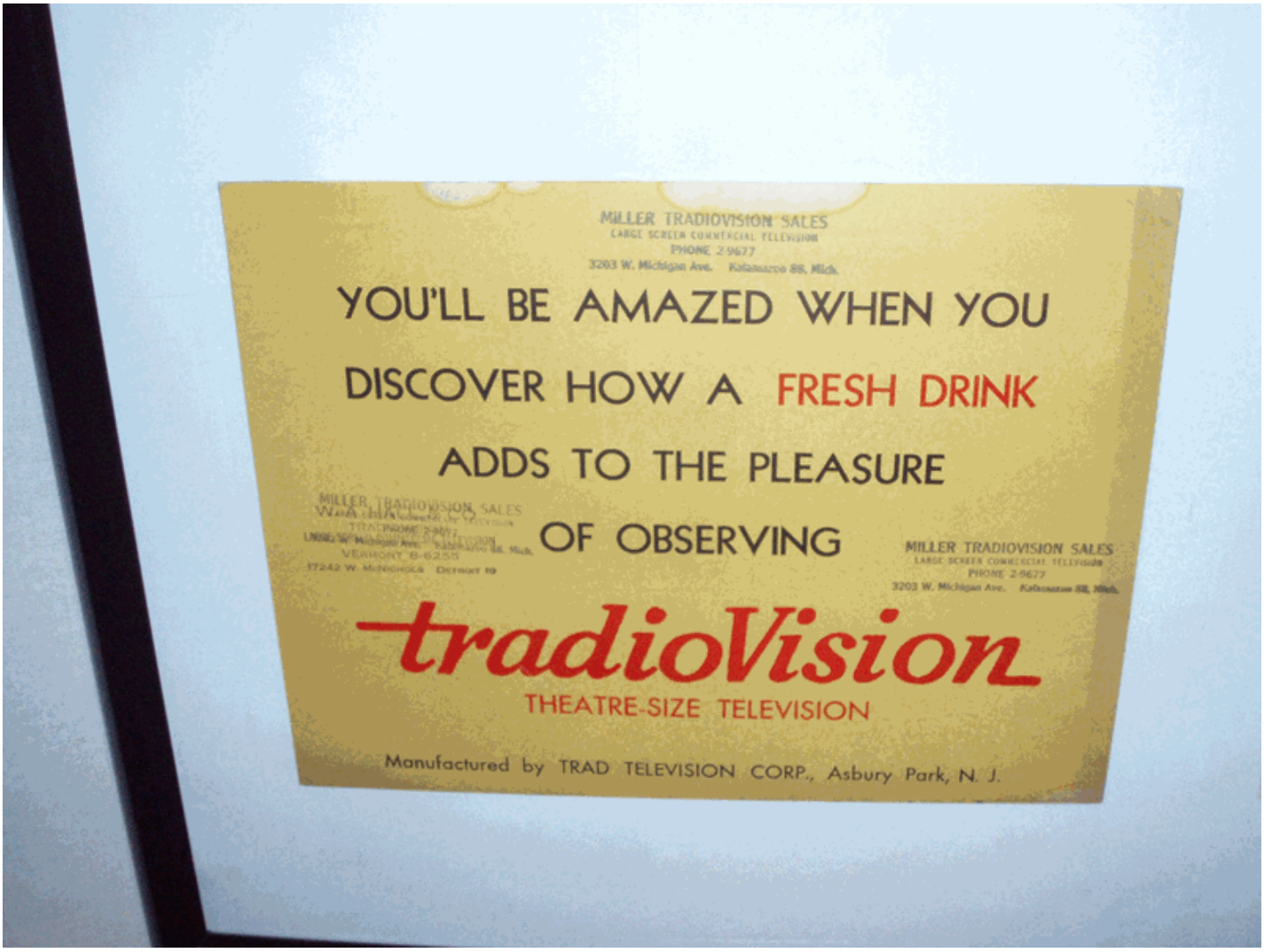
The management staff here at Jack Dempsey's Restaurant have always felt their keen responsibility in providing the public with the newest and the best, in order to retain our high position in our field.

We believe that our decision to install TRADIOVISION is certainly in line with this policy. Therefore, may we make our enthusiasm for TRADIOVISION known to anyone who may now be skeptical over the reality of television with theatre-size images and its effectiveness as a business stimulant.

Kindest personal regards.

Cordially yours

JACK DEMPSEY'S RESTAURANT


MILLER TRADIOVISION SALES
LARGE SCREEN COMMERCIAL TELEVISION
PHONE 2-9677
3203 W. Michigan Ave. Kalamazoo 88, Mich.
YOU'LL BE AMAZED WHEN YOU
DISCOVER HOW A FRESH DRINK
ADDS TO THE PLEASURE
OF OBSERVING
MILLER TRADIOVISION SALES
LARGE SCREEN COMMERCIAL TELEVISION
PHONE 2-9677
3203 W. Michigan Ave. Kalamazoo 88, Mich.
tradioVision
THEATRE-SIZE TELEVISION
Manufactured by TRAD TELEVISION CORP., Asbury Park, N. J.


Come in and enjoy your favorite TELEVISION programs on...
tradioVision
LIFE-SIZE SCREEN, CLEARER by far!
YOU'LL BE AMAZED WHEN YOU DISCOVER HOW A FRESH DRINK ADDS TO THE PLEASURE OF OBSERVING
tradioVision


Tradiovision 13
tradioVision
TRAD TELEVISION CORP
Astatic Boos
JERROLD

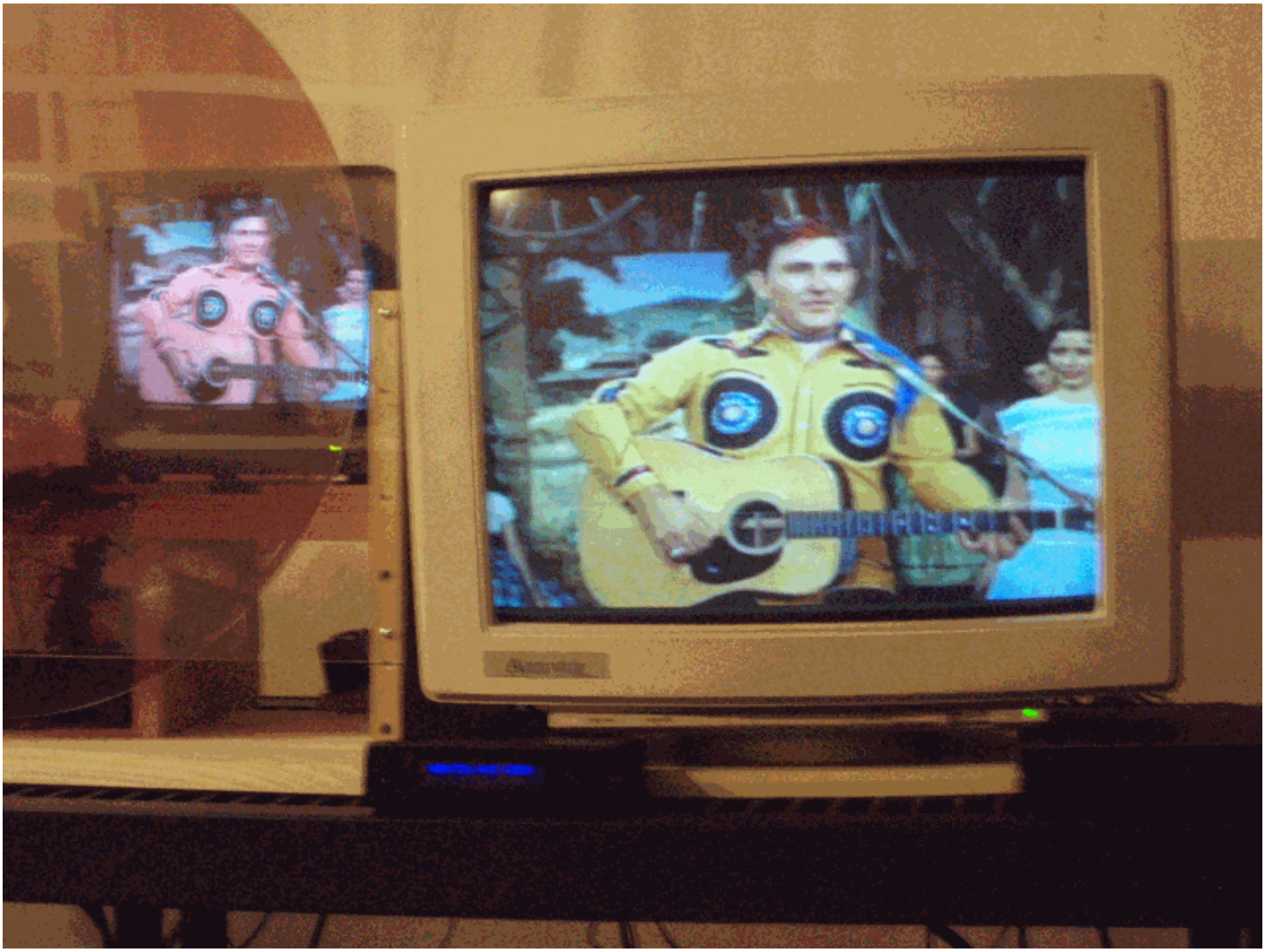

Tradiovision 13
tradiovision
TRAD TELEVISION CORP
Grayburne TV-IF Signal Booster
This device was designed to be used to increase the IF gain in late 40s and early 50s TV sets. One of the IF amplifier tubes was removed, and the booster was plugged in.
Astatic Booster
In the late 40s there were no TV stations in many parts of the country. Boosters were used to pull in distant stations.


Tradiovision 13
tradiovision
TRAD TELEVISION CORP

Televisa

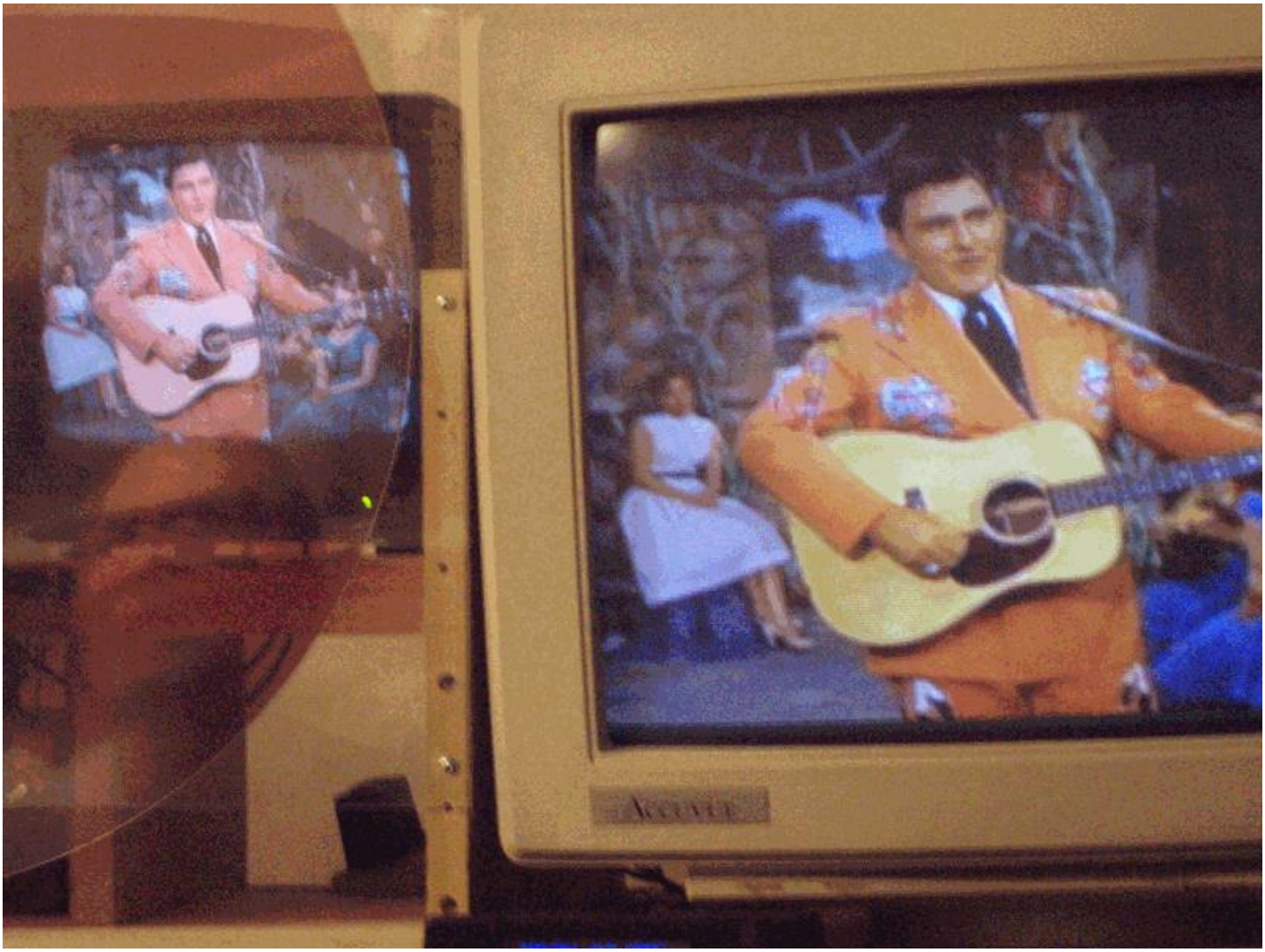

TradioVision

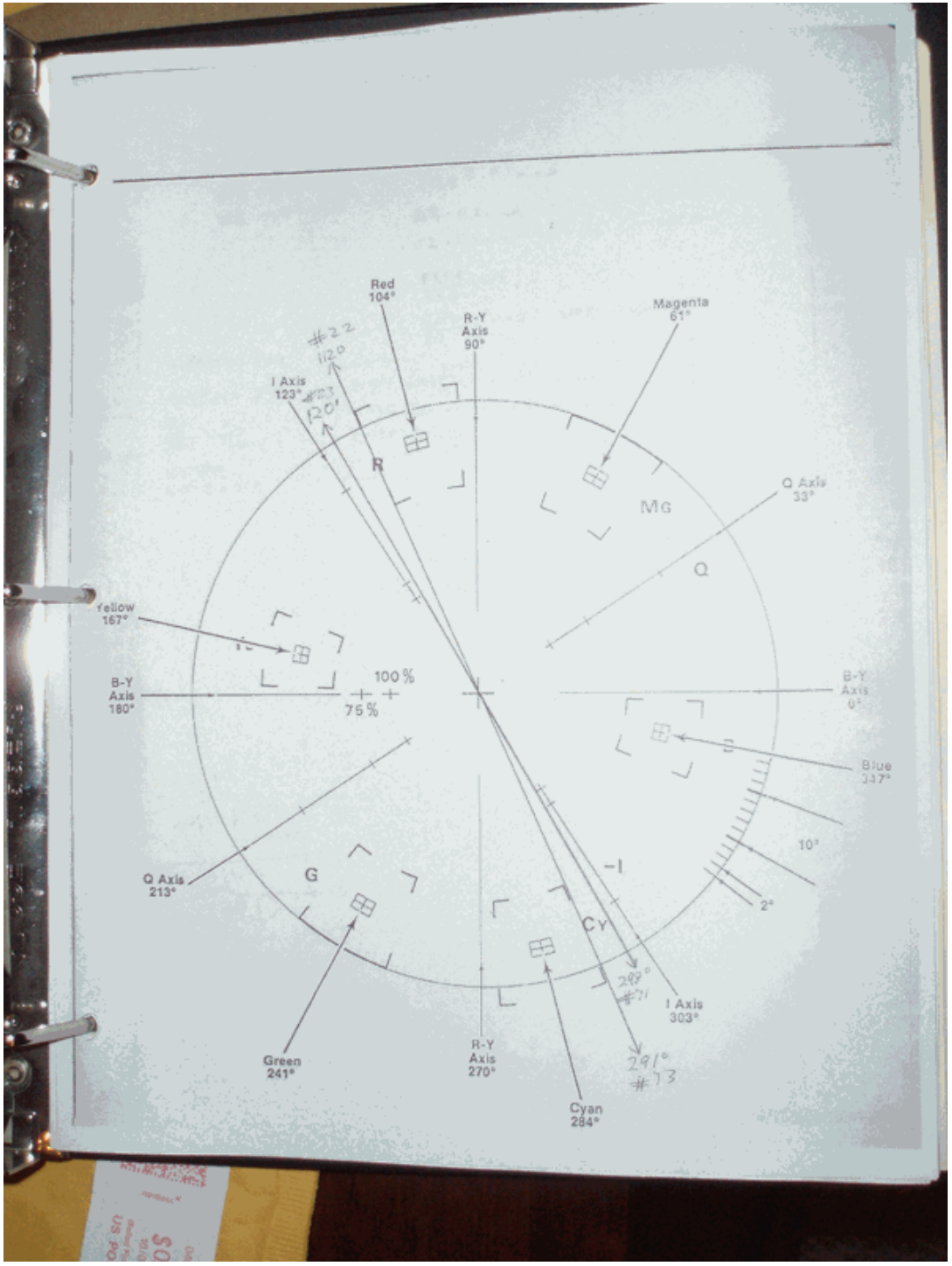

ACCUVUE




ACCUVUE


Accuvue

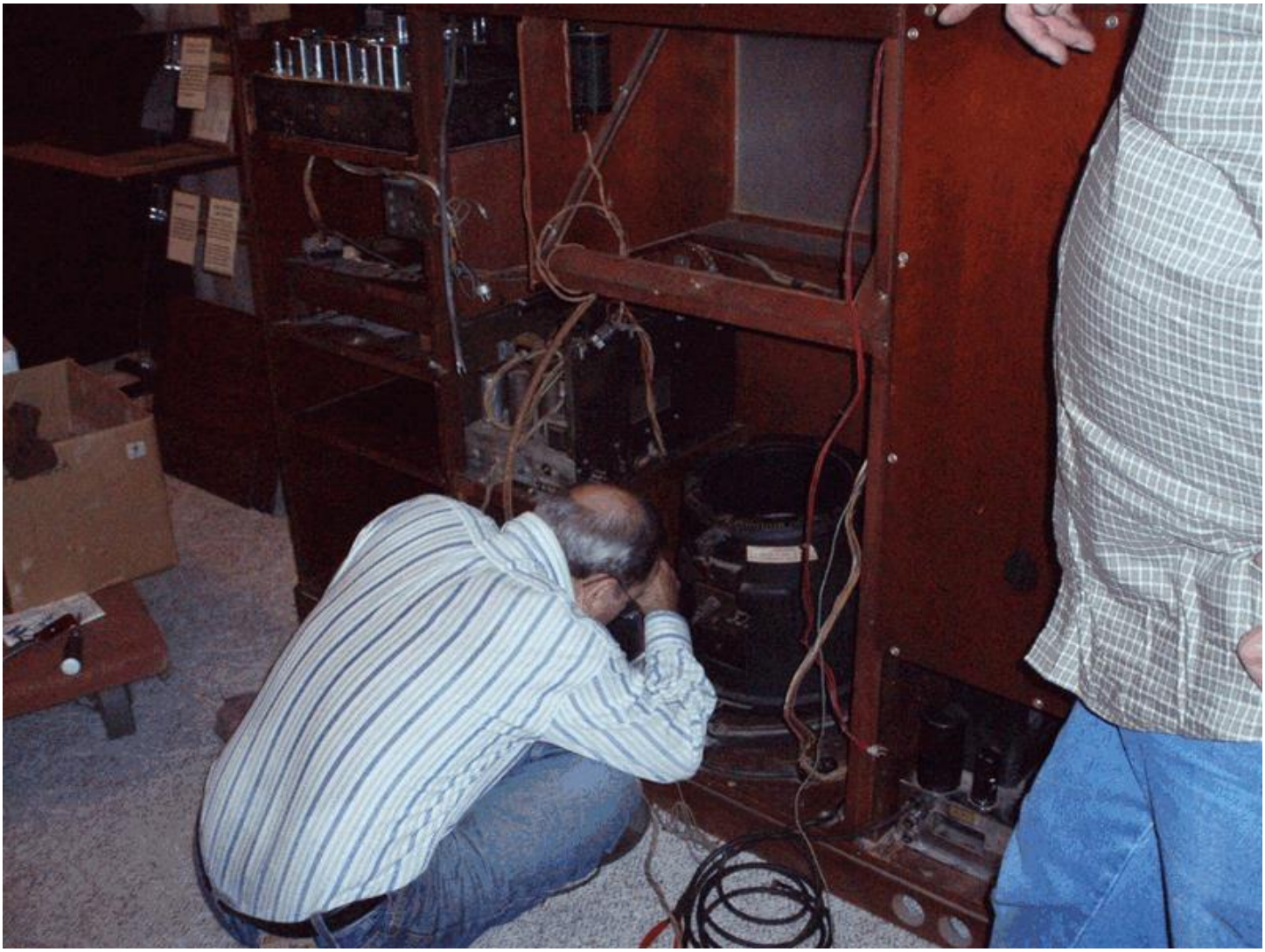

Accuvue


Red
104°
R-Y
Axis
90°
Magenta
61°
#22
120
I Axis
123°
#23
120°
R
MG
Q Axis
33°
Q
Yellow
167°
B-Y
Axis
180°
100%
75%
B-Y
Axis
0°
Blue
347°
10°
2°
Q Axis
213°
G
-I
Cy
291°
#21
I Axis
303°
Green
241°
R-Y
Axis
270°
291°
#23
Cyan
284°


DUMONT
TELEVISION

DUMONT
TELEVISION


National TV-7M
National was another manufacturer of amateur radio equipment. In the late 40s they decided to enter the TV business. This set is built in a cabinet like the ones they used for their ham radio receivers. It has a meter to measure signal strength.
Screen Size 7 inch
Year Made 1949
Cabinet Original
Chassis Not Restored
A.C. VOLTS



Horses / Dad
WALL
Office DEPOT

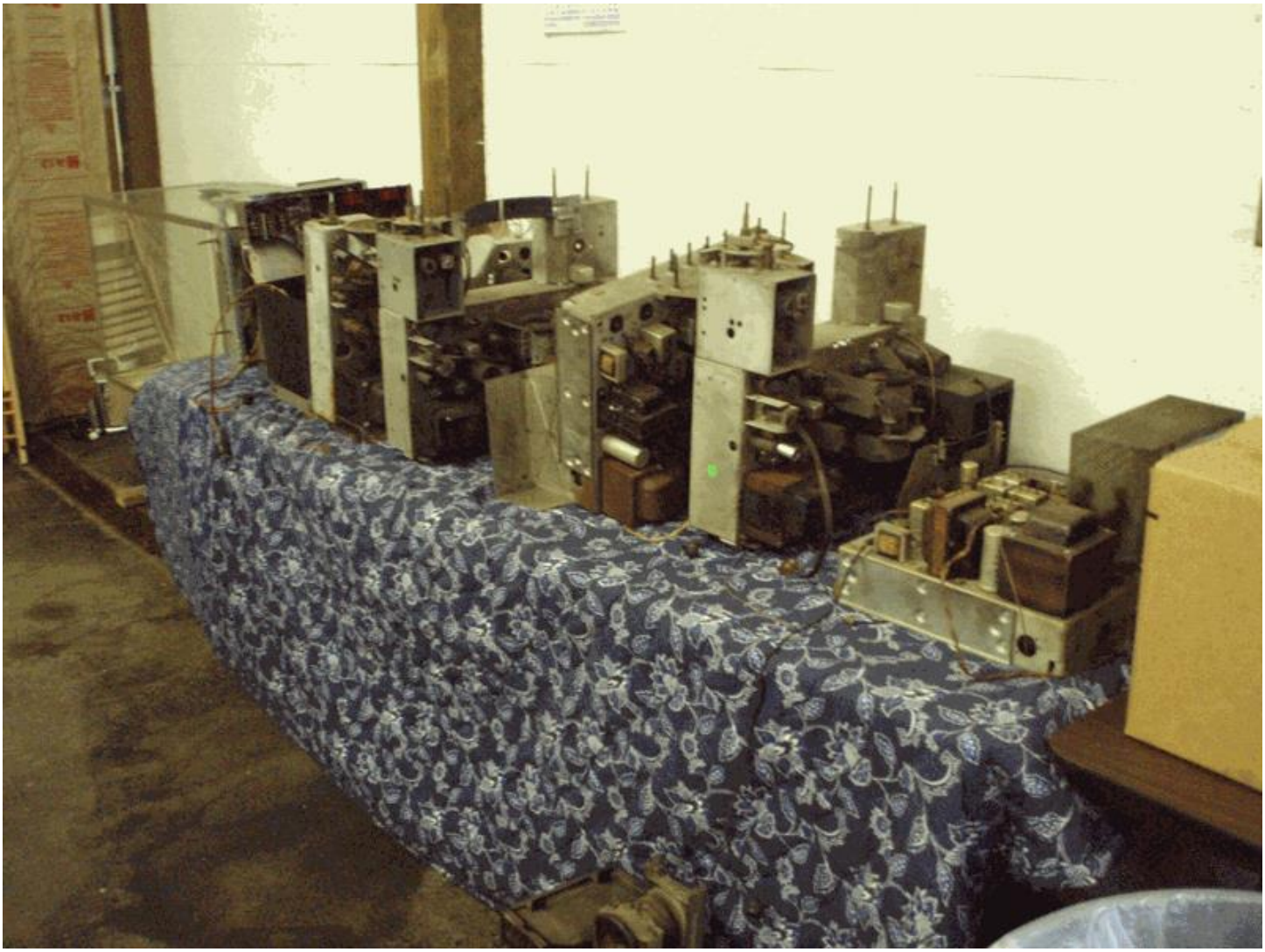

Office depot
Office depot
Office depot


84
SYMPHONIC
MINNI TV

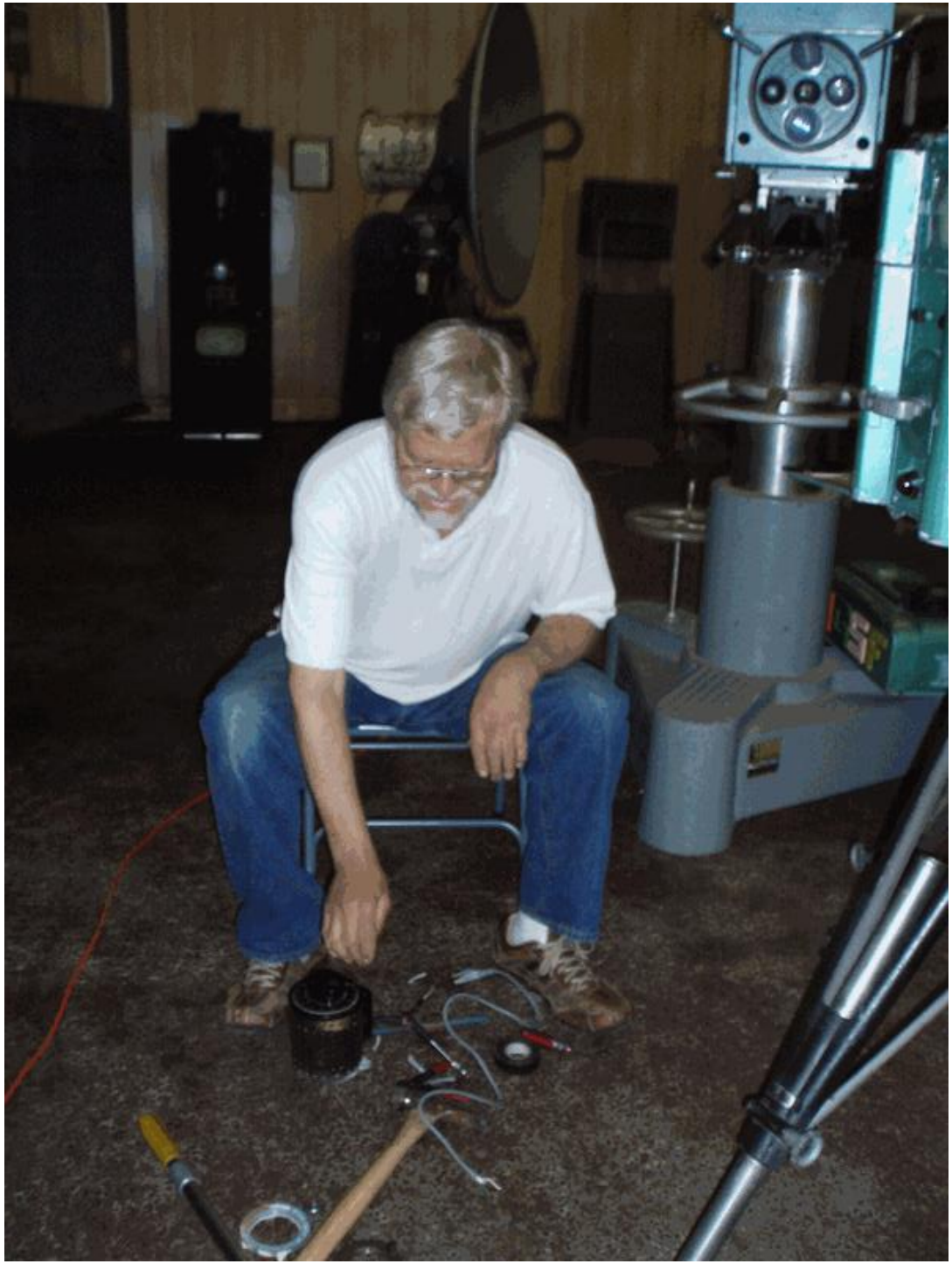

KNIGHTSBRIDGE
UP
HANDLE
WITH
GLASS UP
CATHODE-RAY TUBE


RCA
SYLVANIA


GLASS
CATHODE-RAY TUBE




WEST

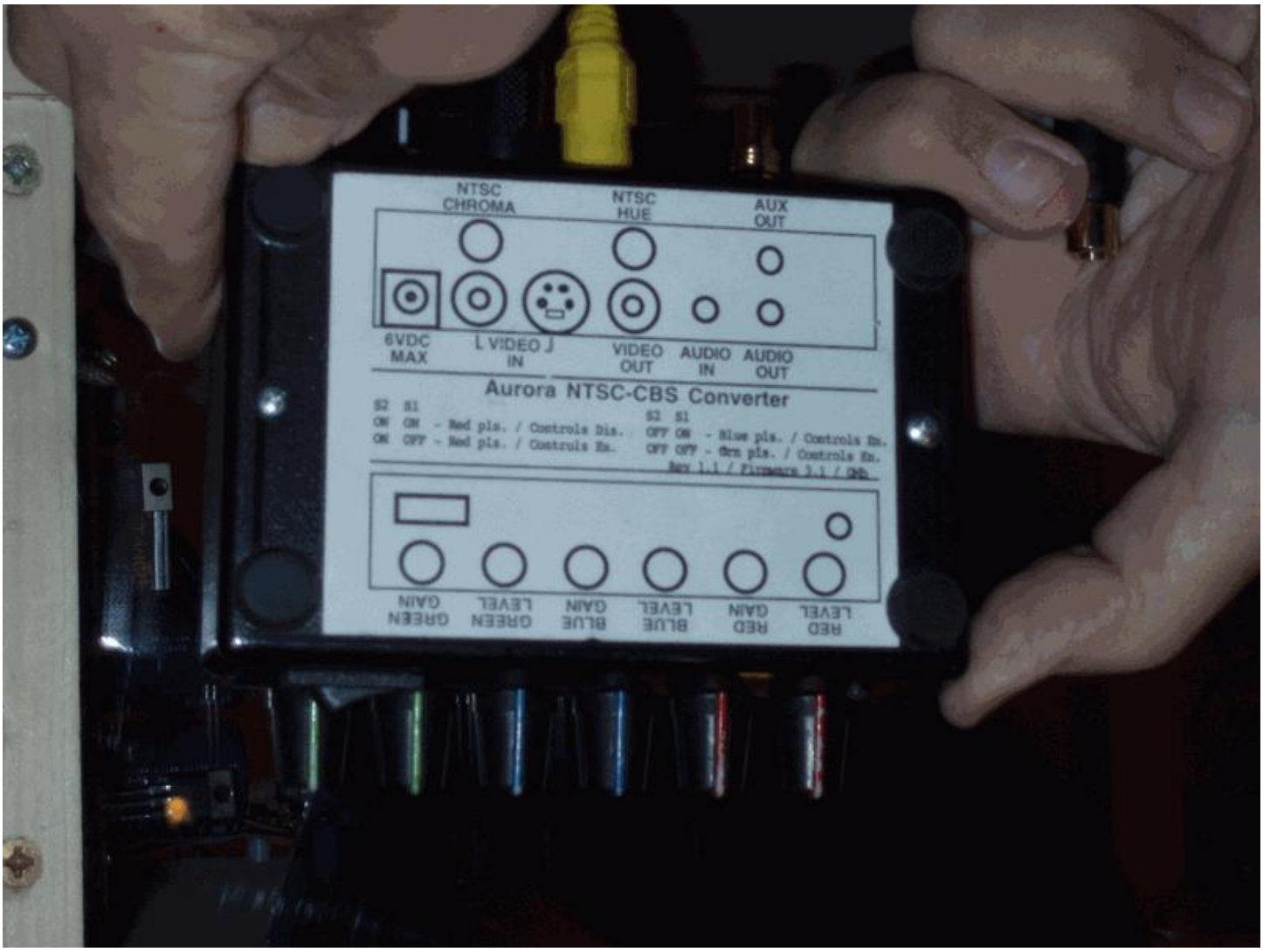



MGM
MGM


WGSF
31

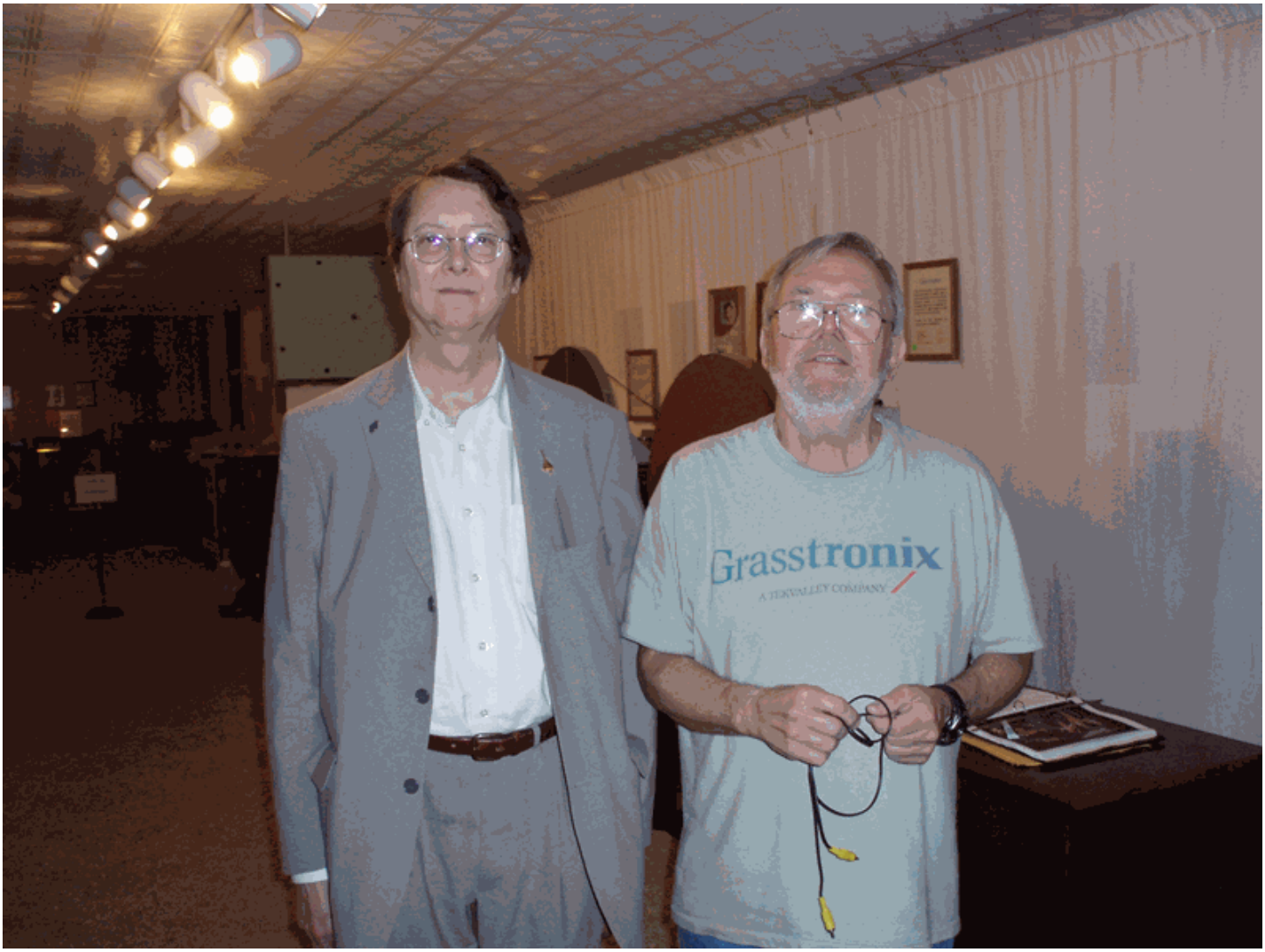

RCA
MGD
Television


WGSF
TELEVISION
TV 13
WGSF

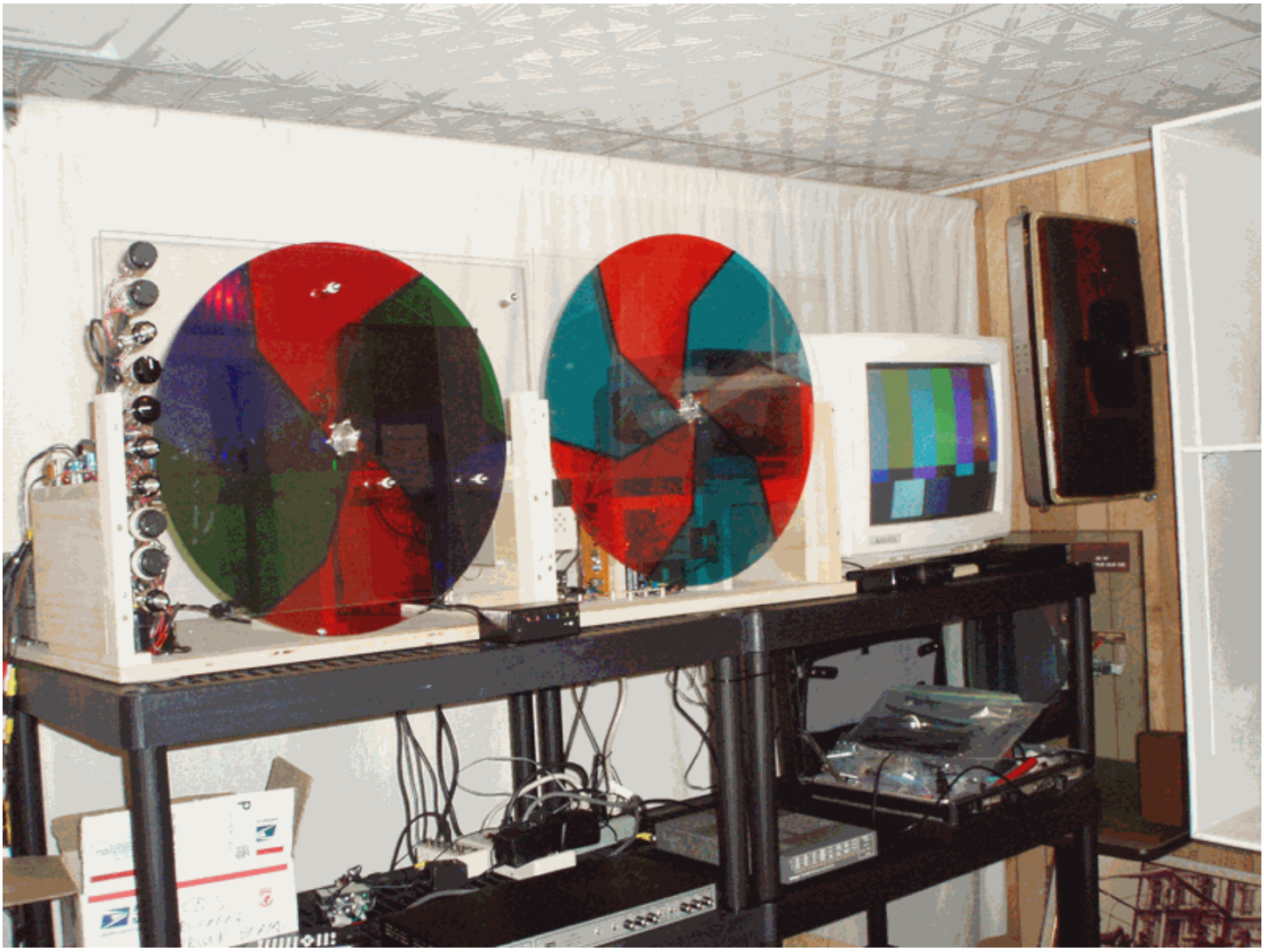

NTSC CHROMA
NTSC HUE
AUX OUT
6VDC MAX
[VIDEO] IN
VIDEO OUT
AUDIO IN
AUDIO OUT
Aurora NTSC-CBS Converter
S2 S1
ON ON - Red pls. / Controls Dis.
ON OFF - Red pls. / Controls En.
S2 S1
OFF ON - Blue pls. / Controls En.
OFF OFF - Grn pls. / Controls En.
RED LEVEL
RED GAIN
BLUE LEVEL
BLUE GAIN
GREEN LEVEL
GREEN GAIN

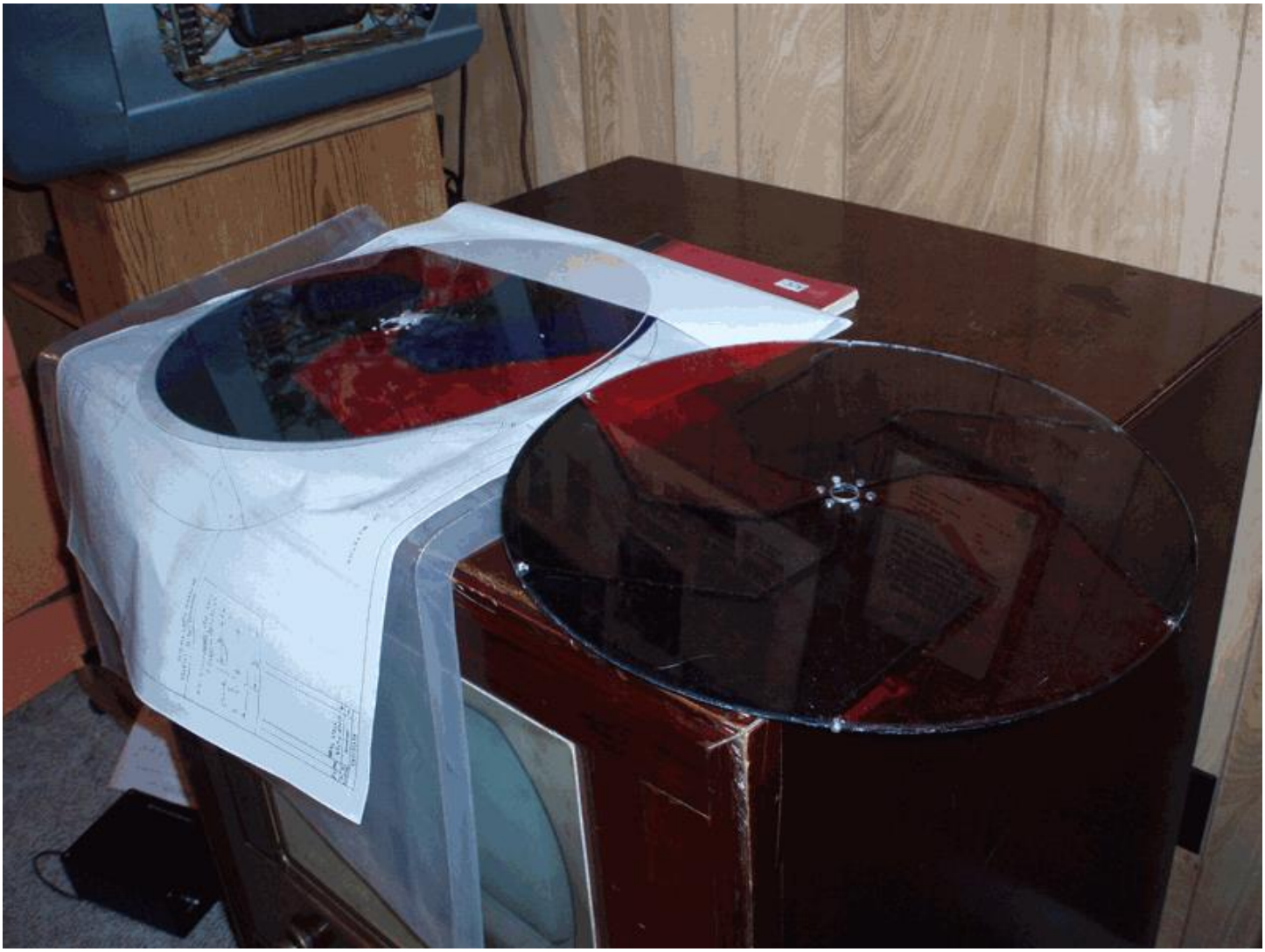

comparable


The Incompara
Munt


Grasstronix
A TEKTRONIX COMPANY

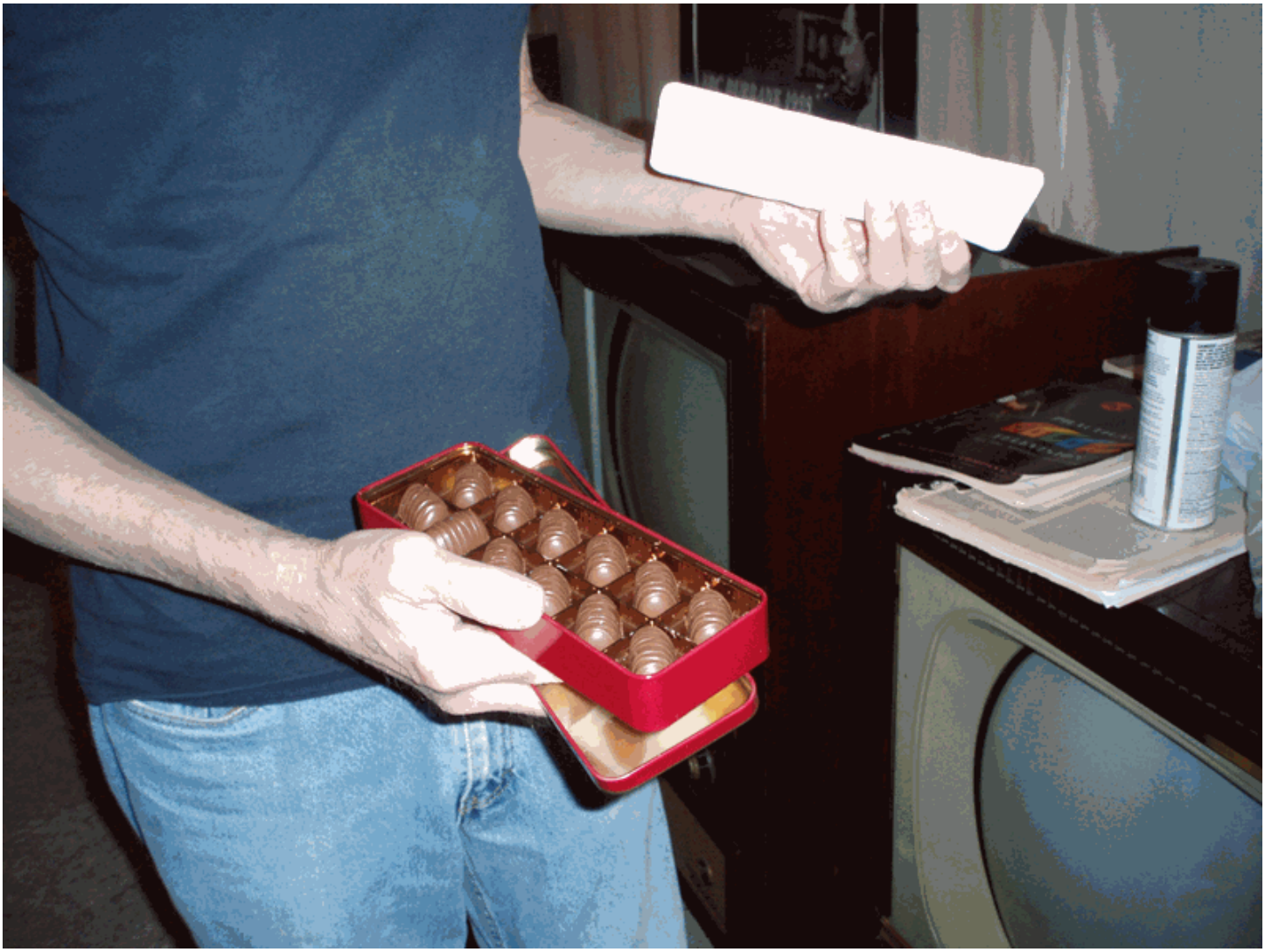

ACCUVUE



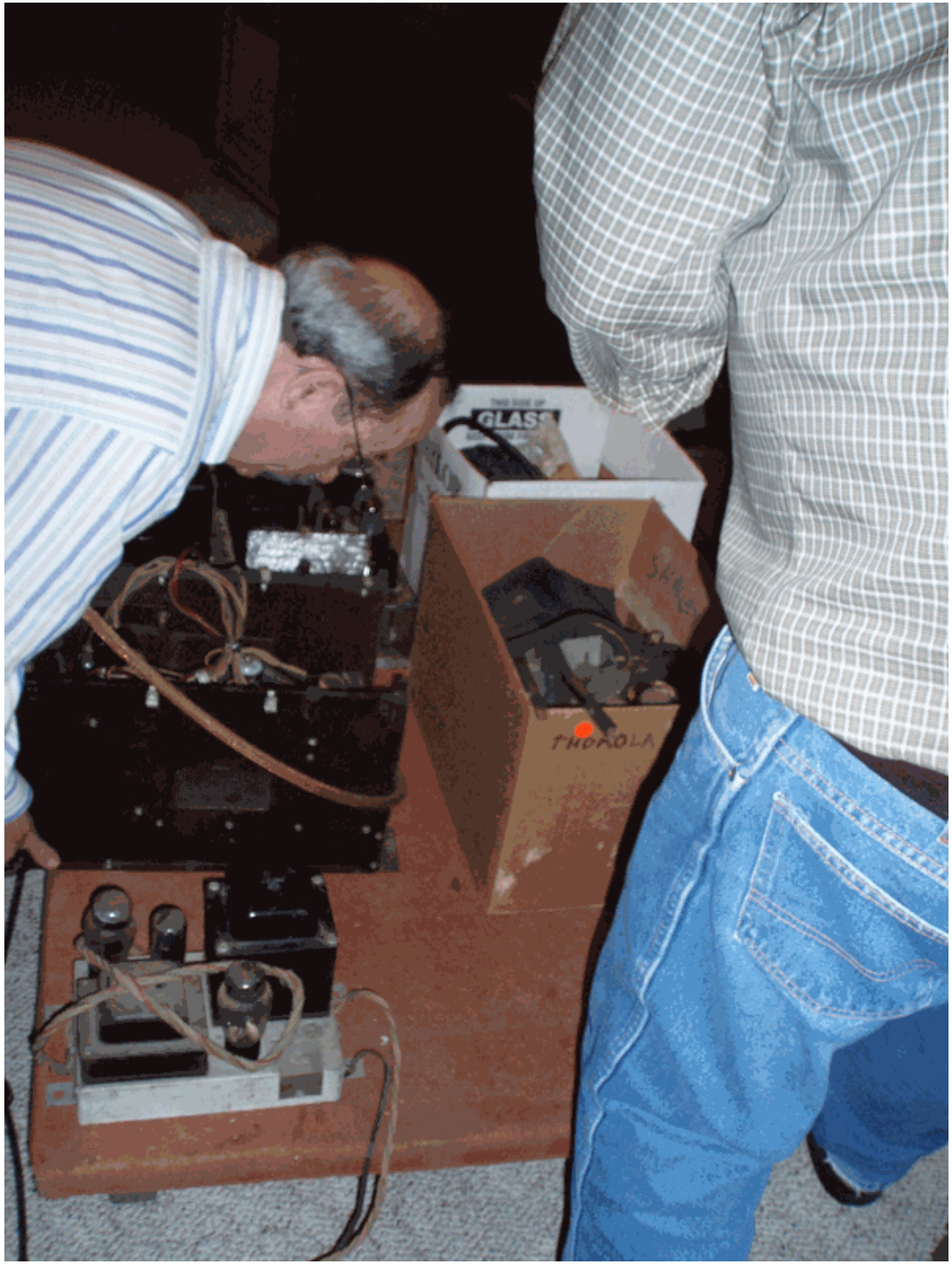


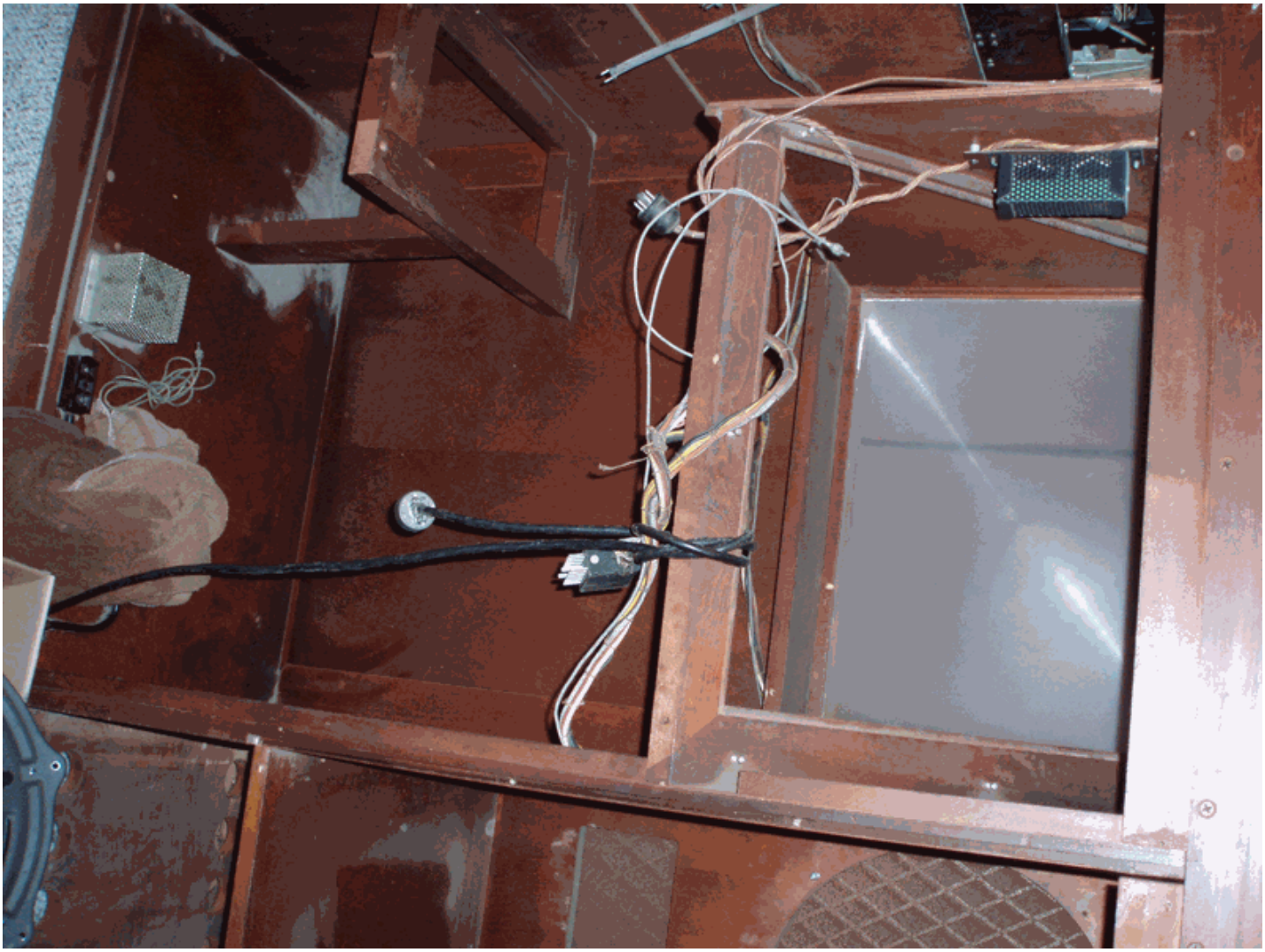

Reflect-O-scope
HELL-CARLSON


Open before Christmas!
here's why:
there's so much
going on in
NBC BIG COLOR TV
...every night!




NBC NYC 1955
NBC BURBANK 1955


GLASS




KOALA BEAR