

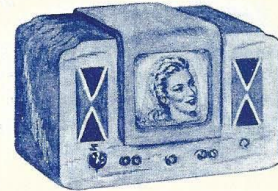
MANUFACTURING

RESEARCH

TRAINING



UNITED TELEVISION LABORATORIES



5th & MAIN STS. — CLAY 3831 — LOUISVILLE 2, KENTUCKY

HISTORY AND PURPOSE OF UNITED TELEVISION LABORATORIES, INC.

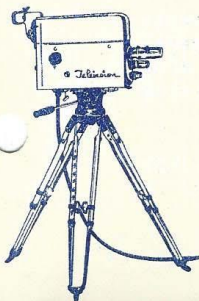
The United Television Laboratories, Incorporated, is a Research and Manufacturing Organization and conducts a Training Division, not only to develop its own personnel, but to help supply the Technicians and Engineers required today. The Industry must have this personnel in order to expand on a national scale.

The United Television Laboratories, Incorporated, is very fortunate in having at its helm men long identified with the Industry -- men, who today, because of their untiring efforts in promoting and keeping alive the interest in television during some of its darkest hours, are seeing the justification of their faith and sacrifices. When the history of television is recorded for posterity the accomplishments and contributions of United Television Laboratories will take their place beside those responsible for the development of the Industry.

The General Offices and all training laboratories of United Television are located in Louisville, Kentucky. This city, because of its geographical location is destined to become one of the key crossroads of the television networks that are now being pushed to enable our nation to enjoy the benefits of coast-to-coast hook-up Television programs.

The present and future plans of our Organization include the manufacturing of television camera links, receivers and other electronic equipment. However, we will continue with the imperative need of the industry foremost in our plans -- that the Industry must develop its trained men before we can have television; and we pledge to maintain adequate training facilities to accommodate those who are qualified and wish to take advantage of the opportunities open in this great new industry. In this respect, our training program is fully covered by the G.I. Bill of Rights.

The United Television Laboratories is a member of the Better Business Bureau and Louisville Board of Trade.



UNITED TELEVISION EMPLOYMENT TRAINING PROGRAM

Consists of at least one hundred assignments covering the science of radio, electronics, and television; the handling, working with, and use of radio receiving and transmitting equipment, television receiving and transmitting equipment, television cameras, and television camera control equipment.

OPPORTUNITIES

The radio and television field offers more diversified opportunities than any other field today. A few of the opportunities offered are listed below: Servicing radio and television receivers; designing radio or television receivers; installation of television receivers; production work--such as, trouble shooting, final testing, etc., of radio and television equipment. Radio transmitter work, as, chief engineer, control operator, recording technician. Television transmitter work, as, engineer, camera man, control operator. Sales engineering--public address work--research--hearing aids. Electronics in industry, induction heating, control devices, inter-office communication systems--vacuum tube and radio part manufacturing--miscellaneous communications systems used by airlines, railroads, police, taxi cabs. Radio altimeters, direction finders, radar. Electro-surgery equipment; electron-microscope; electronic-counting and weighting machines; radio parts distributor; geophysical exploration.

From the above list which mentions only a few of the opportunities offered by the radio, electronic and television fields, it can be seen that a myriad of opportunities awaits the properly trained technician. It is safe to predict that before long, the science of electronics will in one manner or another have a definite influence upon every phase of our lives--social, political, professional, and industrial. It is evident that an industry of such vast usefulness offers opportunities to the ambitious man who has the foresight and perseverance to acquire the "know how".

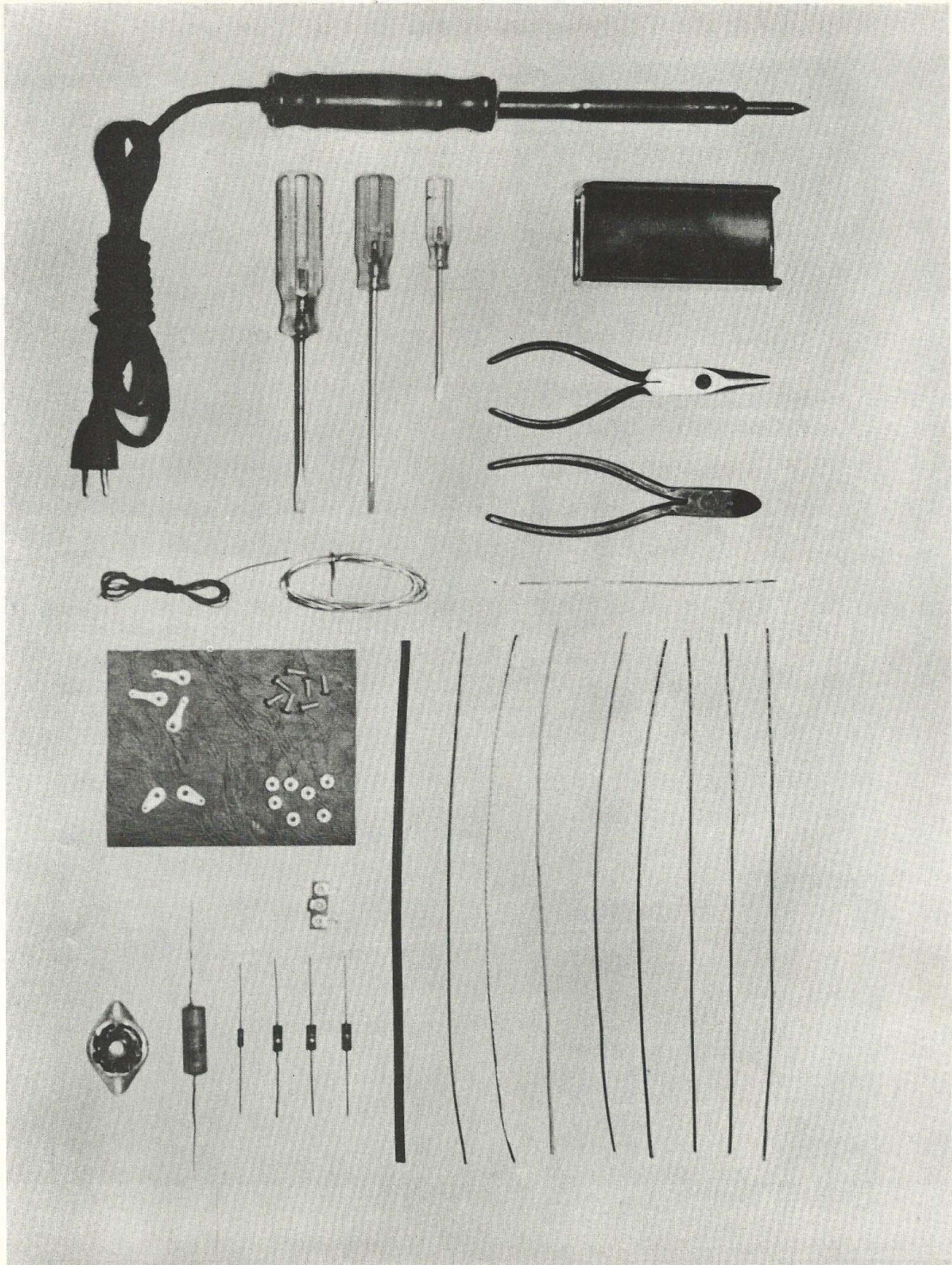
TRAINING WITH EQUIPMENT

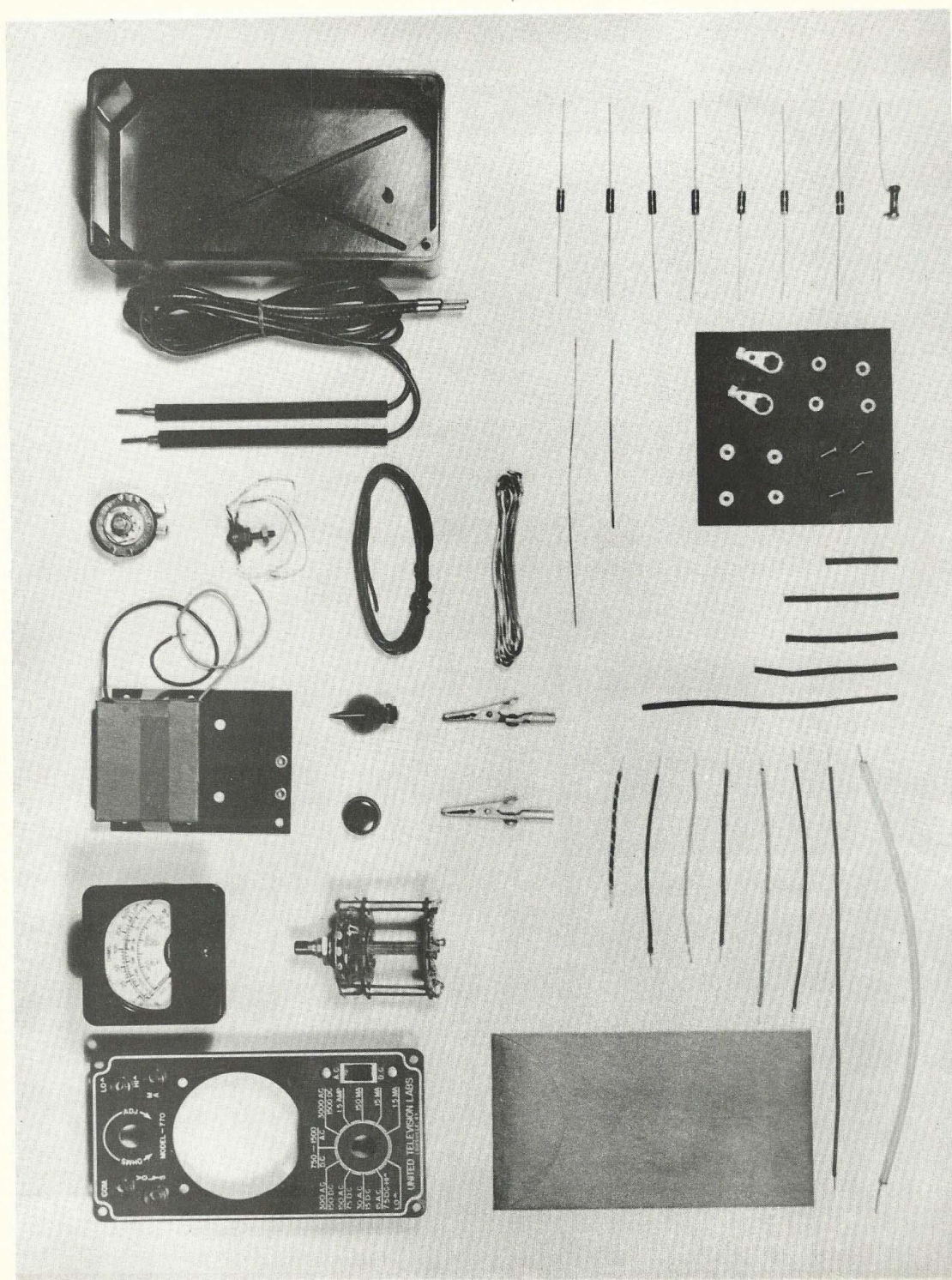
During this program you perform over three hundred experiments with the equipment, including the construction of power supplies, filter circuits, detector circuits, audio amplifier circuits, a complete superheterodyne receiver, incorporating automatic volume control, a complete commercial-type volt-ohm-milliammeter; doing cathode ray tube experiments; adjusting and building cathode ray time base circuits; building a cathode ray oscilloscope; observing the nature of cathode ray television devices; modulating cathode ray beams; controlling cathode ray intensity; magnetic and electrostatic deflection of cathode rays; measuring frequency response of sound and television amplifiers; observing distortion; correcting distortion; and building, testing, and trouble shooting a television receiver.

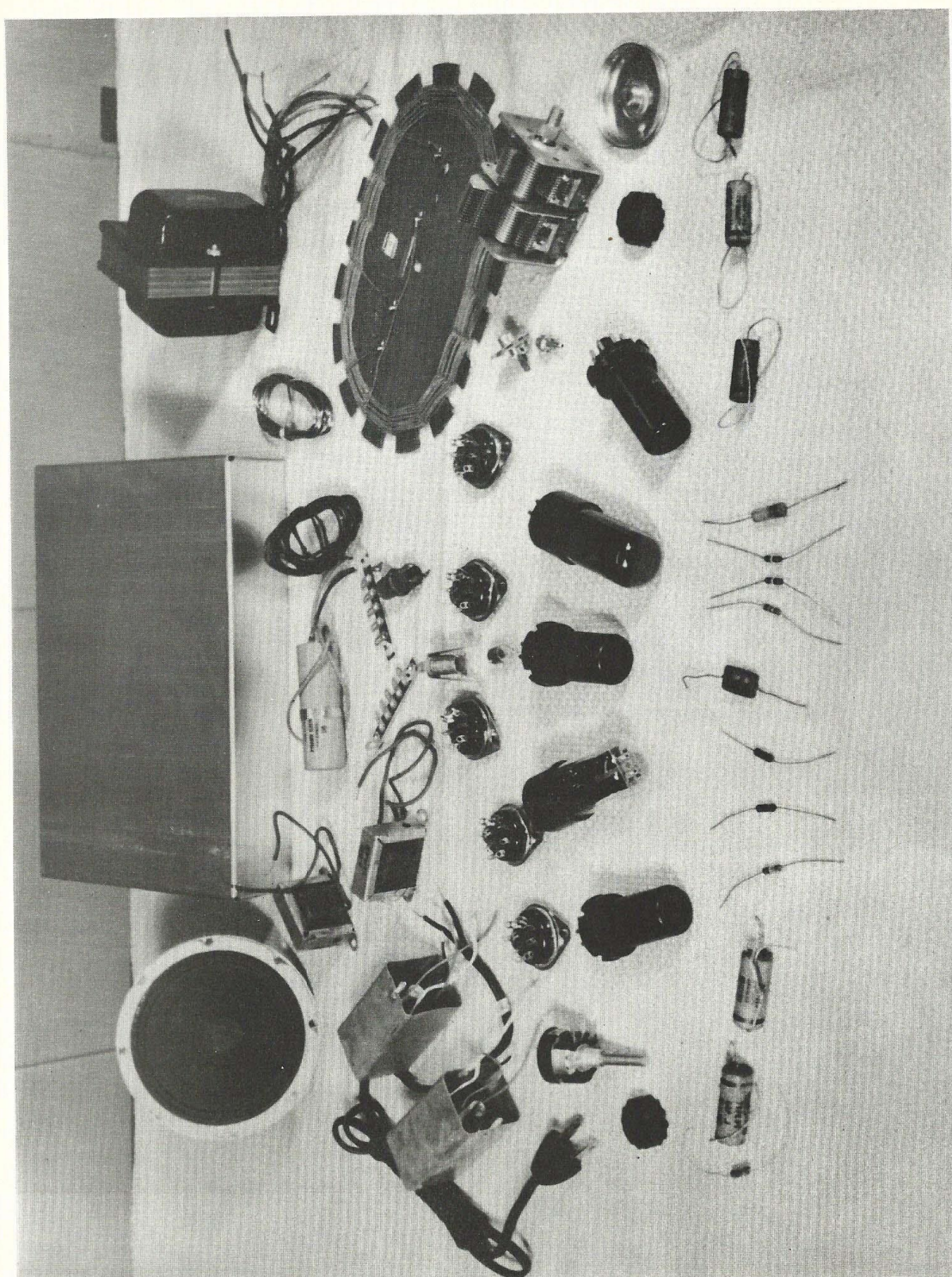
COMMERCIAL LABORATORY TRAINING

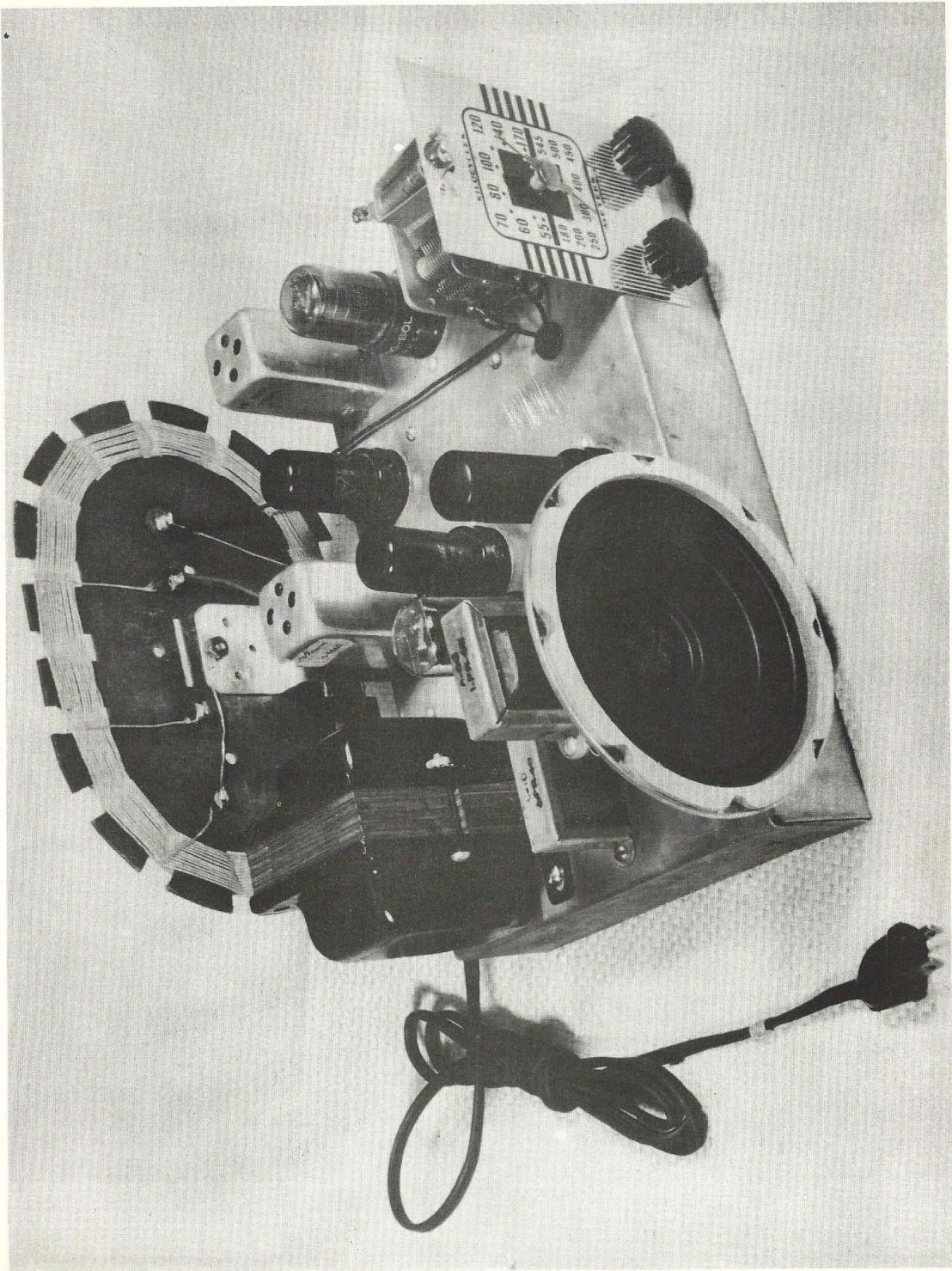
In the Laboratories in Louisville, Kentucky, you will be trained in practical television work with the most modern equipment together with the practical operation of more elaborate test equipment than one is able to use outside of a research laboratory. Here in our laboratories, the final television training is given under the personal direction of our staff engineers.

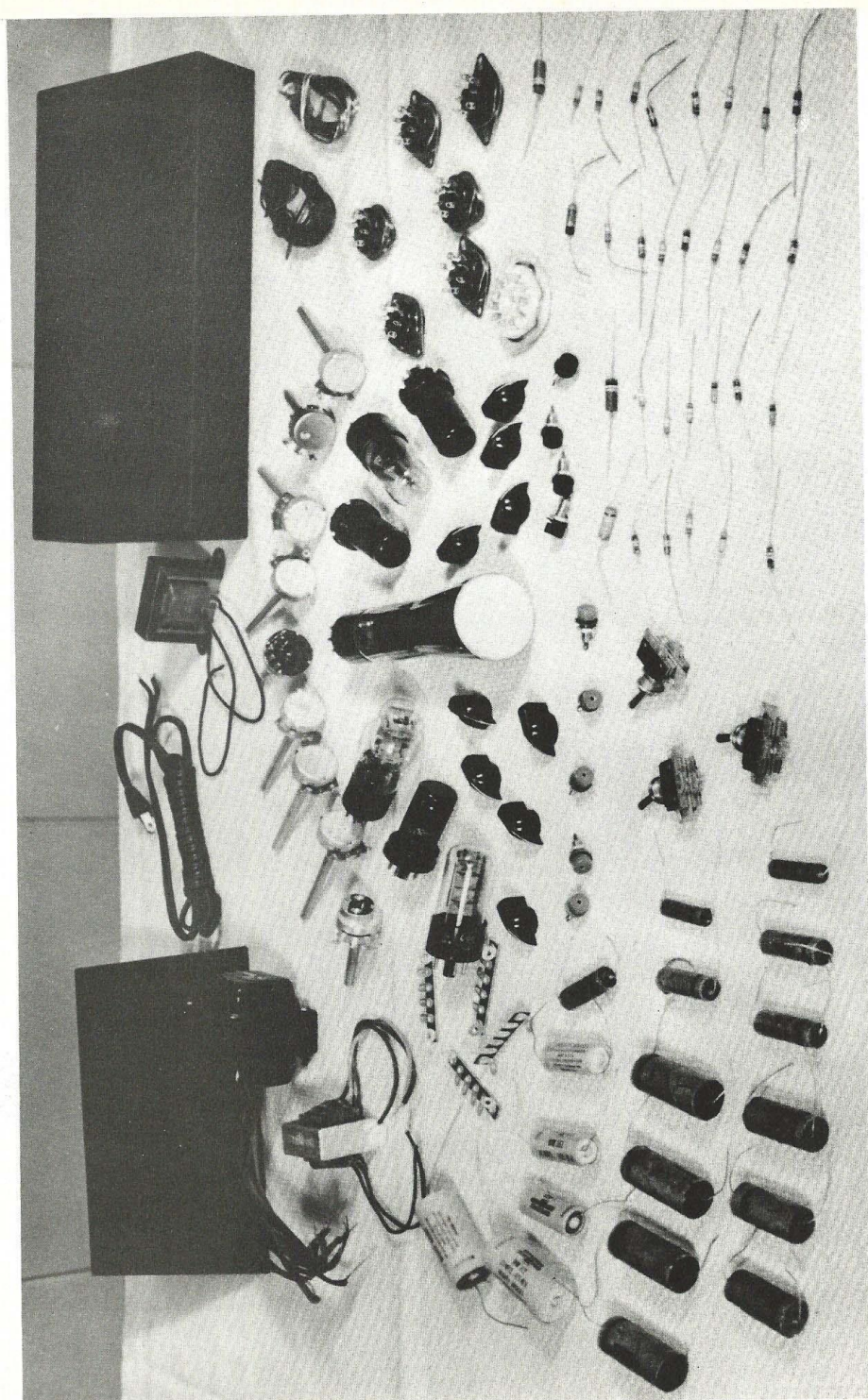
SATISFACTORY COMPLETION OF THIS TRAINING FITS YOU TO PASS A RADIO TELEPHONE FIRST CLASS LICENSE EXAMINATION, WHICH IS THE LICENSE REQUIRED TO OPERATE ANY RADIO OR TELEVISION BROADCASTING STATION.

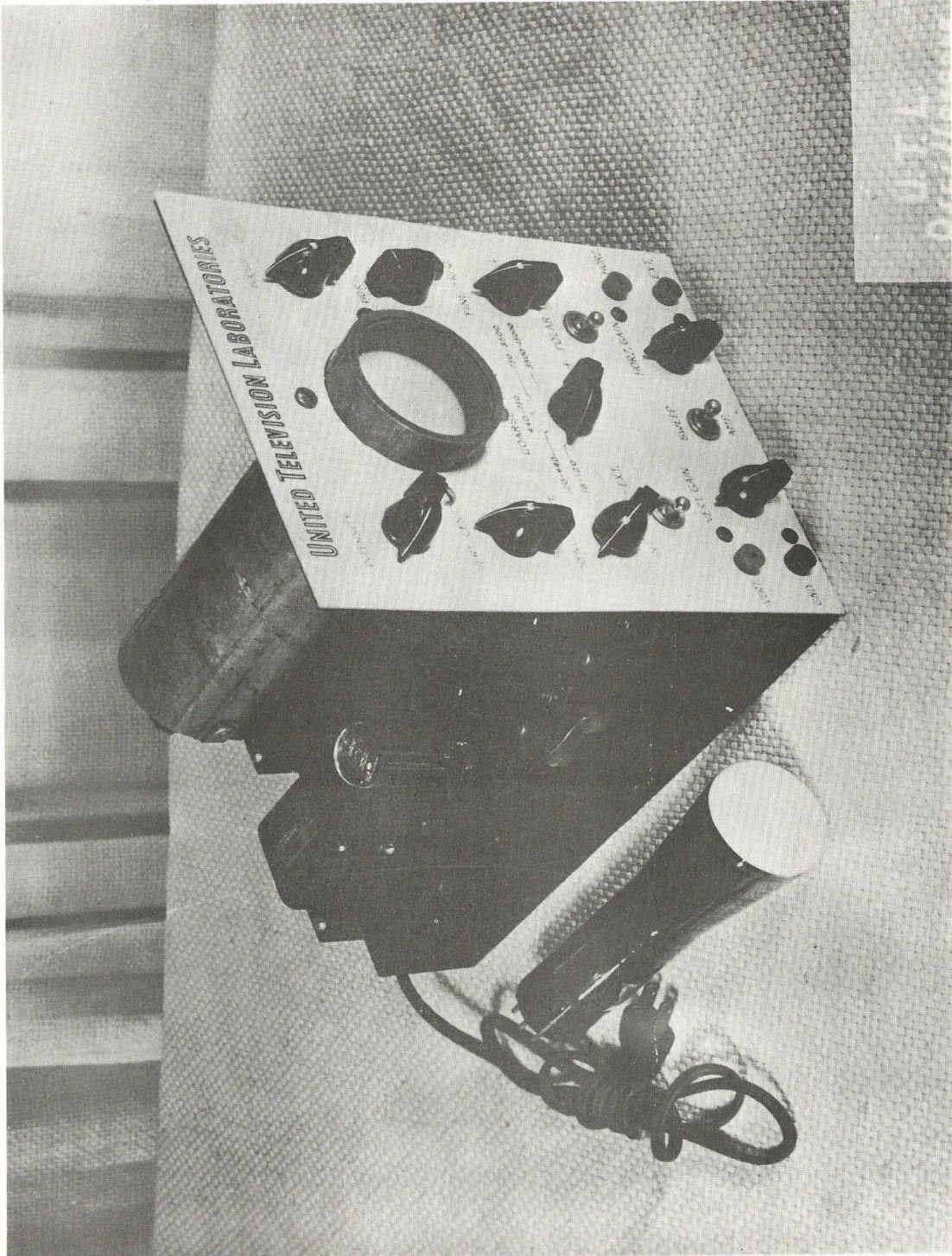


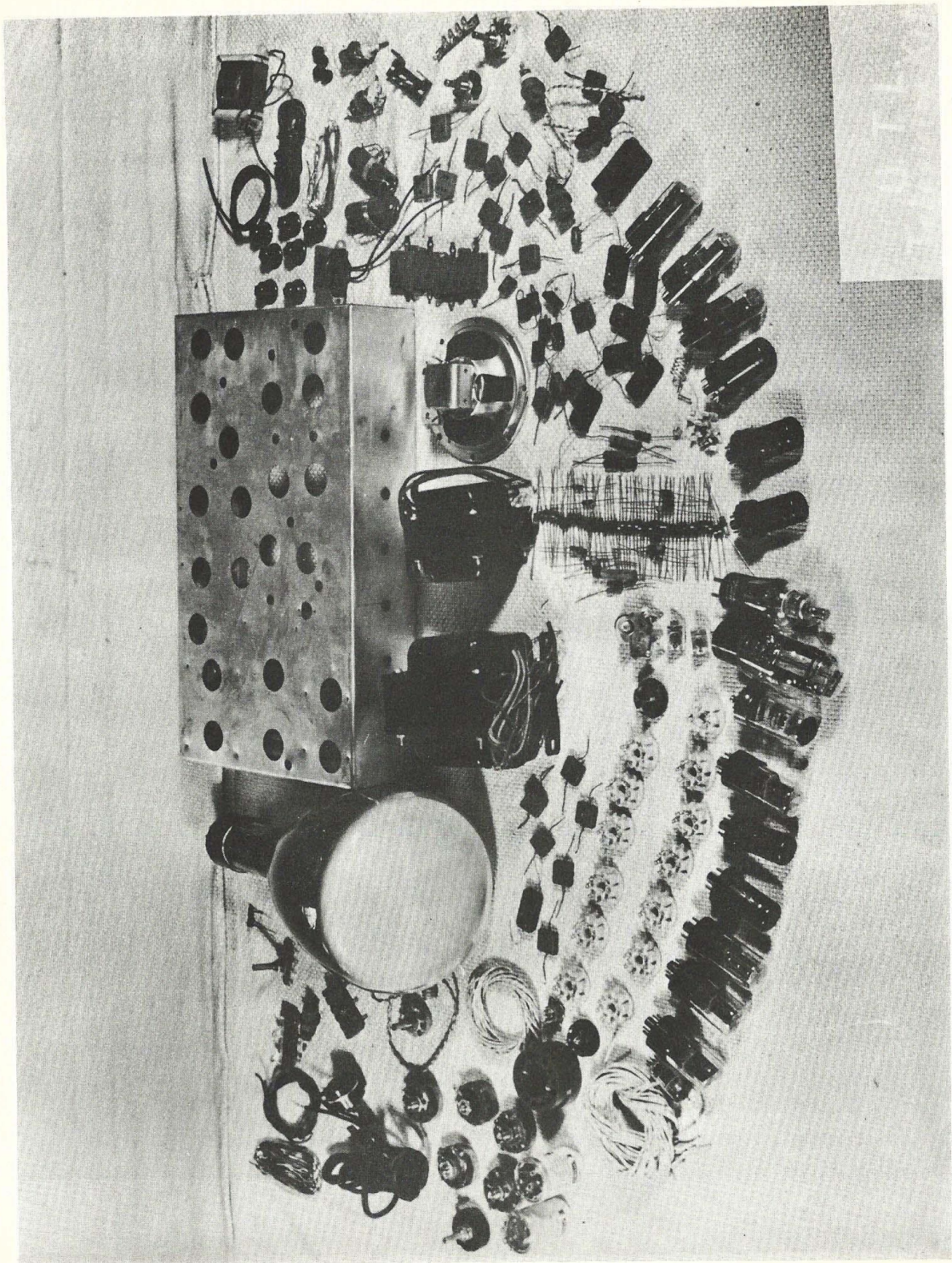












Video Sets in Use Make Large Gains

The number of television sets in the United States increased 460 per cent in 1948, from 1947 to a total of 868,200 and is expected to reach 3 millions this year, Fred A. Compton, sales manager for the Detroit Edison company, said yesterday. He spoke at the annual sales conference of the Edison Electric institute in the Edgewater Beach hotel.

"There are 50,000 sets installed in areas where transmitters are only in the construction stage, the sets having been purchased in anticipation of the construction being completed," he said. "It is estimated there will be 18 million sets in use in the United States by 1953."

Covers 45 Pct. Of Population

About 45 per cent of the population is in areas currently served by television, Compton said. The number of stations in operation is expected to increase this year from the present 51 stations in 31 cities to 131 stations in 69 cities.

Trained Personnel Lacking

There is a shortage of trained service personnel for television sets, he said. Detroit Edison's experience indicates one service man is required for each 200 sets

The rise in purchase of television receivers has been an important factor in the decrease in sales of other types of electric appliances, Compton said. Most persons prefer to spend money for an appliance that entertains than an appliance that saves work.

Big Television Growth Inspires Enthusiasm

By Wayne Oliver.

NEW YORK, N. Y. (AP)—Of all America's major industries, television was the fastest growing in 1948. It promises to grow even faster in 1949.

Industry leaders compare television with the telephone, the automobile and radio as a new development in the American way of life.

For that reason they do not believe its rapid expansion would be halted even if there should be a recession.

They expect it to blossom into a five or six billion dollar a year proposition before too long with the manufacture of sets alone accounting for as much as one billion dollars in retail trade next year.

The number of stations has increased from 17 to 50. The number of sets has increased from 200,000 to about one million. One industry leader recently estimated the public investment in television—sets and stations—at 400 million dollars up to the present.

Dr. Allen B. DuMont, who both makes sets and operates a television network and his own stations, predicts that within five years television will be among the first ten industries in the nation.

Sees Growth.

William S. Hedges, vice president of the National Broadcasting Co., estimates that within the next five years television "may well prove to be a two billion-dollar a year industry."

Hedges breaks his estimate down this way: He foresees an annual production of four million sets at an average retail price of \$350 per set for a total of \$1,400,000,000, plus \$600,000,000 a year for the sale of talent and broadcast time.

Frank M. Folsom, newly elected president of the Radio Corp. of America, is even more optimistic.

"If the returns from television broadcasting and the allied program activities are added to the income produced by television manufacturing," says Folsom, "this new art should add eight billion dollars a year to the national economy five years hence."

"That amount would place the radio-television industry among the ten largest industries in the United States."

40% Coverage.

Folsom adds that with stations due on the air by New Year's Day, approximately 40 per cent of the American people will be within range of television. By the end of 1949 he estimates it will be 51 per cent.

Television is so closely allied with radio it is difficult to separate the two as distinct industries.

But the relation between television and radio production gives another key to the growth of the new form of broadcasting. During the past year, manufacturers have turned out about 16,000,000 radio sets and 800,000 television sets. But in dollars, television represents about 25 per cent of their business.

In 1949 it's expected the manufacturers will make about 12,000,000 radio sets and 1,600,000 to 2,000,000 television sets.

And television is expected to account for half their business in terms of dollars.

More Advertisers.

The broadcasting end of television so far has been a losing proposition, but the situation is expected to change when the number of sets in the hands of the public increases and advertisers become more willing to pay for high budget shows.

Even so, the number of advertisers is growing by leaps and bounds and telecasters are looking hopefully toward an end of red ink operations.

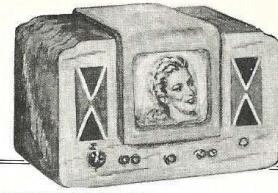
MANUFACTURING

RESEARCH

TRAINING

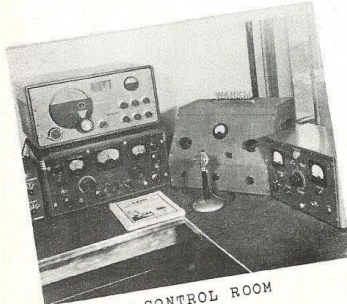


UNITED TELEVISION LABORATORIES

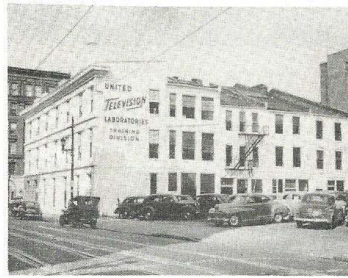


5th & MAIN STS. — CLAY 3831 — LOUISVILLE 2, KENTUCKY

SCENES OF OUR TRAINING DIVISION



CONTROL ROOM
W4NKM

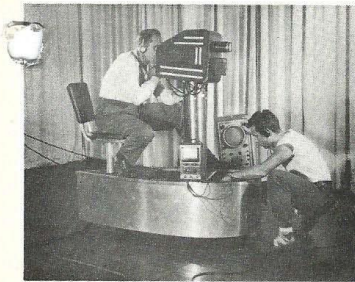


U.T.L. TRAINING DIVISION
REAR VIEW

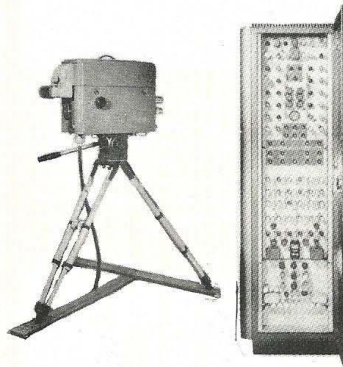
Three minutes walk from main
shopping center. Commercial
lots offer parking at reasonable
rates.



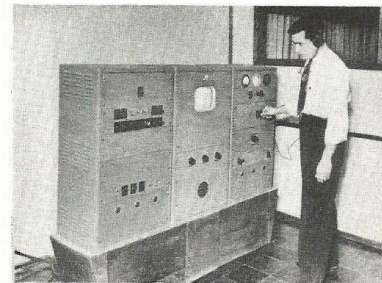
U.T.L. RADIO CLUB'S 1,000
WATT TRANSMITTER



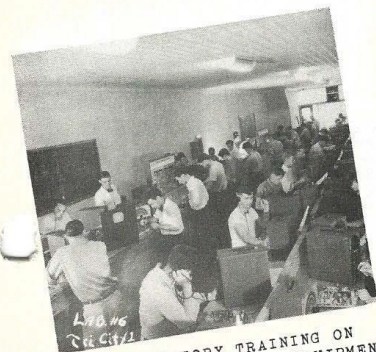
FUTURE ENGINEERS
Checking A Television
Camera.



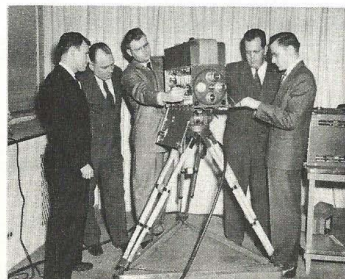
R.C.A. IMAGE ORTHICON
CAMERA & CONTROL
EQUIPMENT IN OUR STUDIO



ENGINEER
Adjusting Camera
Control Equipment.



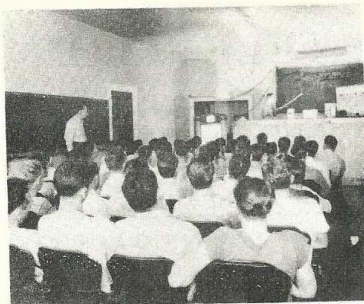
LABORATORY TRAINING ON
RADIO & TELEVISION EQUIPMENT



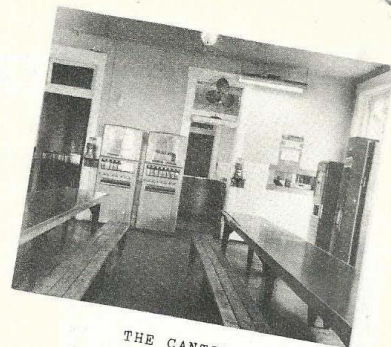
LABORATORY PRACTICE



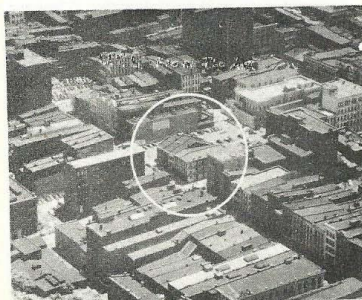
OSCILLOSCOPE
Designed and Manufactured
At U.T.L.



TYPICAL TRAINING ROOM



THE CANTEEN

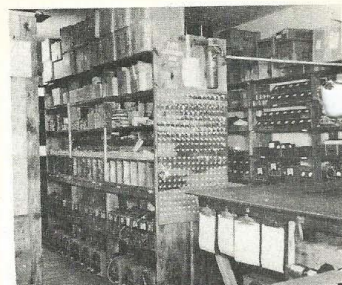


U. T. L. FROM THE AIR

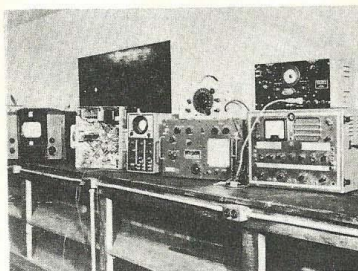
In the heart of Louisville, just minutes to any part of the city with bus lines at our door. Rail & Bus Terminals near-by and just three blocks from the free Municipal Bridge.



VISUAL AIDS
Provided in Classroom
In Keeping With Most
Modern Teaching Methods.



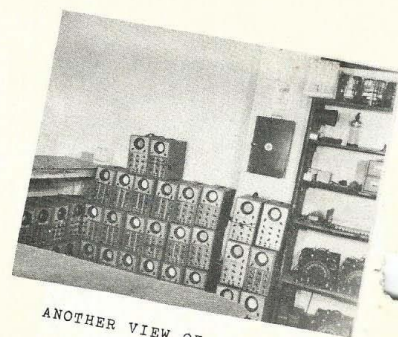
STOCK ROOM



T.V. Test Equipment



ENGINEERING DEPARTMENT



ANOTHER VIEW OF STOCK ROOM

ASSIGNMENT INDEX

Assignment No.

Title

1. Introduction to Radio and Television
2. What Makes Up A Radio Receiver
3. Radio Diagrams And How To Read Them
4. Radio Mathematics - Arithmetic
5. An Introduction To Electricity And The Electron Theory
6. D-C Circuits - Ohm's Law
7. Radio Mathematics--Powers And Roots; And Power Of Ten
8. Magnets And Electromagnets
9. Cells And Batteries - Power And Energy
10. Radio Mathematics - Elementary Algebra
11. D-C Measuring Instruments
12. Conductors And Resistors
13. Two Basic Forms Of Electricity
14. Algebra-Part II - Equations
15. Vacuum Tubes And How They Work
16. Coils In Radio And Television Circuits
17. Iron Core Coils And Transformers
18. Condensers In Radio Circuits
19. A-C Meters And A-C Power
20. Algebra-Part III - Developing Equations
21. Coils And Condensers In Combination - Resonance
22. Vacuum Tube Numbering Systems And Filament Circuits
23. Power Supplies
24. Special Power Supply Circuits
25. Radio Mathematics - Graphs
26. Vacuum Tube Characteristics
27. Wave Motion And Communication Systems
28. Microphones, Headphones And Loudspeakers
29. Audio Amplifiers - Part I
30. Audio Amplifiers - Part II
31. Audio Amplifiers - Part III
32. Detection And Detector Circuits
33. Trigonometry
34. R-F Amplifiers And T-R-F Receivers
35. Oscillators In Radio Receivers
36. Superhetrodyne Receivers
37. Volume Controls And Tone Controls
38. All Wave Receivers And Tuning Aids
39. Receiving Antennas - Noise Reduction
40. Tuning Systems
41. Phonographs And Automatic Record Players
42. Auto Radios
43. How Defective Parts Affect A Radio Receiver
44. Radio Servicing
45. Alignment And Signal Tracing
46. Test Equipment
47. The Cathode-Ray Tube And Oscilloscope
48. Uses Of The Cathode-Ray Oscilloscope
49. Practical Application Of Ohm's Laws - Kirchhoff's Laws
50. Radio Transmitters And Transmitter Oscillators

ASSIGNMENT INDEX

<u>Assignment No.</u>	<u>Title</u>
51.	Transmitter R-F Amplifiers
52.	CW Transmitters And Transmitter Power Supplies
53.	Amplitude Modulation Systems
54.	Amplitude Modulated Transmitters
55.	Broadcast Studio And Control Room Practice
56.	FM And AM Transmitters
57.	FM Receivers
58.	Miscellaneous Communication And Navigational Systems
59.	Transmission Lines
60.	Transmitting Antennas
61.	Rules And Regulations Of The FCC
62.	Ultra High Frequency Techniques
63.	Motors And Generators
64.	Photoelectric Tubes And Devices
65.	Electronics
66.	Introduction To TV
67.	How To Analyze Circuits
68.	R-C Circuits And Time Constants - Part I
69.	R-C Circuits And Time Constants - Part II
70.	Special Circuits Part I
71.	Special Circuits Part II
72.	Principles Of Scanning
73.	Sequential Scanning Systems
74.	Analysis Of The Television Image
75.	General Coverage Of Television Receivers
76.	TV Receiving Antennas
77.	TV Standards
78.	R-F Section Of TV Receivers
79.	Television I-F Amplifiers And Detectors
80.	Video Amplifiers
81.	A.G.C. And D-C Restoration
82.	Sync Separation Circuits And Deflection Generators
83.	Deflection Output Circuits
84.	Power Supply Circuits
85.	Picture Tubes And Sound Channel Circuits
86.	RCA 630-TS Receiver
87.	Projection TV Receivers
88.	TV Test Equipment
89.	Television Receiver Alignment
90.	Servicing TV Receivers
91.	A-C Circuits
92.	Motorola TV Receiver - Model VT71
93.	Philco Model 48-1000 TV Receiver
94.	Television Camera Tubes
95.	The Iconoscope Camera Chain Part I
96.	The Iconoscope Camera Chain Part II
97.	The Sync Generator
98.	The Monoscope Camera Chain
99.	Television Station Equipment
100.	Color Television