With the West Coast Televisors

by HARRY R. LUBKE

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A brief description of what has been going on out at the West Coast, and why they have led the East with telemcasts.

The Radio Corporation of America purchased the patent rights to television synchronization methods and apparatus from Harry B. Lubke, Director of Television for the Don Lee-Mutual radio networks. This had to do with the maintenance of television receivers in step with the television transmitter. That these keep step is necessary so that the scanning beam at the receiver must be in the same relative position that its transmitting counterpart occupies in the transmitter field of view. The patent covers means utilized at both transmitter and receiver. At the receiver the device operates to separate the synchronizing pulses from the composite incoming signal which contains both image and synchronizing pulsations.

This does away with the old theory that it was necessary for a receiver to be connected to a city power line so as to synchronize the transmitter to it. And to prove his theory practical, Mr. Lubke gave a demonstration to a group of newspapermen. He flew them high above the city of Los Angeles and gave them a view of clear, image reception on his receiver that astounded all skeptics. He definitely proved that with his apparatus there was no need for transmitter and receiver being on the same power line.

Incidentally, let it be understood that this patent purchase was for synchronization of transmitter and receiver and not that of sight and sound.

Mr. Lubke has certainly traveled far since the days back in 1931, to be exact, December 3rd, W6XAO, went on the ultra high frequencies to begin a regular schedule of broadcasts of television under the sponsorship of the Don Lee system and his supervision. A regular daily schedule was inaugurated and with the exception of Sundays and holidays, it never went off the air during this period, nor missed a single schedule.

Very little was known about television at that time but with 150 watts of power pushing the signal out on the assigned frequencies of 45,000 kilocycles, for sight and 49,750 kilocycles for sound, they knew that someone would be able to receive the signals. But Mr. Lubke did better than just guess about the number of scanners, or listeners, that he could possibly have.

He let every one know that he was ready to null out, without any obligation to experimenters, free of charge, a complete diagram of a television receiver which would pick up his broadcasts. Over three thousand requests for these diagrams were received and it was ascertained that over 100 television receivers were built. These "scanners" cooperated with him by sending in reports on image clarity from their different locations in every direction and as far as 30 miles distance from the transmitter.

Occasionally, meetings were held where reception and transmission problems were thrashed out and reports made by the "lookers," which gave Mr. Lubke a fair idea of how his presentations were being received. Experimenting went on with different systems and a few new methods were evolved out of this experimentation and patented.

In 1936, Roger Howell, one of the "lookers," situated at Long Beach, California, 20 miles along from W6XAO, upon his own initiative demonstrated the television reception to the officials of his city and to the press who were very favorably impressed with this example of the art. After that, regular demonstrations of this high-definition television at distances of from 1/10 of a mile to 10 miles disappeared. (Television further on page 52)
heard as a constant medium-high tone. A change in the intensity of these sig-

nals triggers the oscillator which is so designed that the receiver is a measure of the effect of the change.

The television broadcast is a 300 line sequentially scanned picture with a framed repetition frequency of 24 per second which, of course, can be re-

ceived on television receivers operating on 56 or 60 cycle home electrical current. But a nine-inch cathode ray tube is required to reproduce the full
details of the images broadcast and for

rough experimental work, or where the expense of a large tube is prohibi-
tive, recognizable images can be ob-
tained on the DaMont 2" tube type 24X3 or the RCA 1" tube type 502.

A standard negative image is radiated from the transmitter and on the aver-
age scanning receiver, if the image shown on the cathode ray tube is a
photographic negative (white objects reproduced black and vice versa), one
may or may not achieve "audio" fre-

quency amplification (following the second detector) will give the proper

"pleasingly" synchronized pulses transmitted at the end of each line (1,200 per second) and at the end of each complete image (60 per second).

These pulses are of opposite polarity to the image signal variations according to the

standard practice.

Television broadcasting station

WXAX is located in the Don Lee

Building at Seventh and Bixel Streets

in Los Angeles. It comprises two

transmitters, operating on ultra-high

frequencies. The television signal is

broadcast on a frequency of 43 megacycles, and the sound signal on a fre-

quency of 49.5 megacycles. The

power is 1,000 watts.

Television as a great vehicle for cul-

tural and educational benefits is vis-

ualized by Mr. Thomas S. Lee, presi-
dent of the Don Lee Broadcasting Sys-

tem and owner of the west's only te-

levison station.

"Thus far, the television medium has been regarded in the same light as motion picture and radio," said Mr. Lee, under whose guidance the Don Lee

network undertook the operation of

WXAX some nine years ago.

"While it is true that the scope of entertainment will undoubtedly be en-
larged," he continued, "the infinite pos-
sibilities of television as a purely cultural standpoint have not yet been probed.

"The teaching of music by showing the fingering of stringed instruments;

the picturing of a great musical con-
ductor in action; the dancing of a mas-
ter of the ballet, will be brought into

the home to enrich the cultural out-

look of the average family.

"Works of art may be shown in the process of creation. The finishing

touches by the sculptor on a monu-

ment; the last brush strokes on a por-
trait; an etching in the interesting

process of completion, will be trans-
mited through the new medium." 

According to Harry E. Lubke, te-
novision director of the Don Lee net-

work, activities have been aggressively
carried forward during the past year.

During the daily programs, many
details of the new technique of

tlevision have been uncovered. "One of the most startling of these," says

Lubke, "is the ability to change the

apparent color of the hair of a sub-

ject from blonde to brunette, accord-

ing to the lighting treatment of the

act. Recently, a long shot of our

performer, Gertrude Arthur, was so il-

luminated that she appeared as a bru-
nette at distant television receivers.

Later in the same program, on a 9

inch shot, she was definitely blonde. It will be admitted that this change was

stumbled upon accidentally; how-

ever, it gives an indication of the

power of the television instrumenta-

tility in producing special effects. This

particular effect was achieved through

proper proportioning of light upon

performer and background.

The close and continued teamwork

necessary throughout a performance

on the part of the technical and pro-
ducing crew is a considerable exten-
sion of that required for radio work

involving members of the Don Lee staff.

There must be continuous correla-
tion between the sight and sound of

the performance and this, coupled

with the more involved nature of the

visual operations.

Nineteen years ago, the Don Lee Broad-

casting System pioneered the intro-

duction of television on the west coast, according to Lewis Allen Weiss,

general manager of the network which

operates a chain of 28 radio stations

on the Pacific Coast. Through con-

stant experimentation and develop-

ment, the only western television sta-

tion has undergone a steady process

of growth and improvement.

The WXAX television schedule now

covers seven hours a week, with one

or more broadcasts each day except

Sundays and holidays.

Of this time, 1 1/2 hours are given to

transmissions from film; 1 1/2 hours are live subject production. In order
to present the live programs, 1 1/2 hours of rehearsal are spent by the cast

and staff each week, with so-called "skeleton" rehearsals held prior to each
telecast. The latter are the equivalent of the well-known dress rehearsal in

radio and the show business.

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Television Lessons

(Continued from page 20)

C2-L2 circuit, on the other hand, is
tuned to 83 mc. and acts as input to
the 1633. To prevent pick-up of video
L.F., strays the output of the 1633 is
carried to the sound receiver in con-

The buffer stage of Figure 26B is

similar as to what it does, but L1 is

common to both the rejection (C1-L1)
circuit and the acceptor (C2-L3) in-

circuit. It feeds its own output load. L2 is the primary of the input transformer of the sound

receiver.

Getting now to the video detection

Radio News, May 1939