

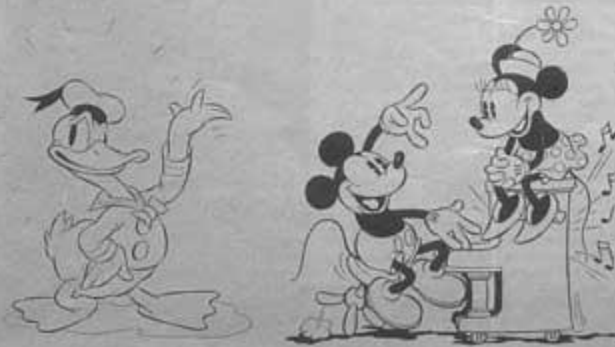
AUGUST

The  
First National Television  
**STUDENT  
ENGINEER**

VOL. 2  
No. 10



SINCERELY YOURS -  
WALT DISNEY



During the recent De Molay imitations and convales in Kansas City, Walt Disney, the creator of these well-known movie and talkie actors, appeared before the mike on a remote pick-up at the new Municipal Auditorium.

WXYZ listeners may now count themselves as being among the very few who have heard his voice over the radio, because Walt is one famous man who fights shy of personal publicity, preferring to let Mickey and Minnie, Donald and Pluto take the bows. Pluto goes one better than his fellows, personally preferring to take all the bow-wows. And when Walt sent these pictures to The Student Engineer he didn't expect such a poor pen to be run in connection with them.

# "NOTES" from the CHIEF ENGINEER

— G.L. "JERRY" TAYLOR —

If some of you fellows have failed to receive answers to some of your letters, particularly addressed to me, I hope you will be a little lenient with me because I have not been able to catch up with my work since returning from my trip through the East. The weather has been pretty hot here at Kansas City, and I assure you it has been quite a task to write letters. I hope to catch up within the next 2 weeks, and I promise that hereafter you will receive the same prompt attention that you have always had.

I said, in the last issue of the STUDENT ENGINEER, that I would give you the latest news of my trip in this issue of your paper. I have a new Pontiac coupe, equipped with a seven tube Philco auto radio. My wife and I were three days enroute from Kansas City to Washington, and one of the most enjoyable features of our trip was that we were able to receive WJXY every nite that we were gone.

The first nite we were just outside of St. Louis, Mo., and WJXY was coming in fine. The second nite we were in West Virginia, and got a great big thrill out of listening to the ballgame over our station. On this nite we had a little interference from WJXS in Waterbury, Conn., but still WJXY came in great. The third nite we were in Virginia, and while the reception was not as good as it had been we were still able to receive the station with some degree of satisfaction.

The Federal Communications Commission called a special hearing, the purpose of which was to invite all the interested parties so that they might present information which would guide the Commission in the commercial allocation of those frequencies lying between 30,000 and 120,000 kilocycles. In the past, as well as at the present time, all frequencies above 30,000 kc had been used on an experimental basis. It was felt that sufficient data had been collected on these high frequencies to commercially allo-

cate them to various services. Because this information does exist, all of those services interested in securing a permanent allocation of these high frequencies were invited to attend this hearing.

While it is not my intention to try and predict just what the FCC will do in the way of allocating these higher frequencies, from the information gained at this hearing, it is more or less apparent that these ultra high frequencies will be allotted to the services which are now using them. While nothing definite will probably be done before November or December of this year, the following will give our students some idea as to the use of these frequencies.

In the band from 30,000 to 42,000 kc., the following services will be accommodated: aviation, coastal harbor, telephone, apex broadcasting, facsimile broadcasting, fixed public press service, general experimental, government services, motion picture services, municipal police, point-to-point telegraph, point-to-point telephone, special emergency, special experimental, state police and forestry service.

Television is asking for the band from 42,000 to 90,000 kc. However it is not recommended for the time being to disturb the amateurs now using the band from 56,000 to 60,000 kc.

The services to be accommodated in the frequency band from 30,000 to 42,000 kc., will also occupy the band from 90,000 to 120,000 kc. Frequencies from 120,000 kc. are to remain on an experimental basis, but it is recommended that if Television is to have what are known as portable pickup transmitters, that they necessarily will have to be operated on frequencies higher than 120,000 kc.

In the frequency spectrum from 42,000 to 90,000 kc., (except 56,000 to 60,000 kc.,) it will be possible to accommodate seven Television Stations in one particular area without interference. This allows 6000

kc. channels for each station. Both sight and sound transmitters must be accommodated in this channel. The channel also provides guard bands which will prevent interference from stations operating on adjacent channels. Because of the peculiar transmission characteristics of the ultra high frequencies, it will then be possible to repeat these seven channels every 200 miles, and so providing facilities for an extremely large number of stations throughout the United States.

The Radio Manufacturers Association and the National Association of Broadcasters were strong supporters of the recommendations just mentioned. The seven continuous channels will enable the manufacturers to build a combination sight and sound receiver which will permit all seven channels to be tuned on one continuous dial or in one continuous band. Additional information on the Television status will be found elsewhere in this issue.

## WQXAL

In the last issue of the SE, some changes governing WQXAL were mentioned. The FCC changed their regulations, and instead of becoming effective July 1st, the regulations do not take effect until August the first. By the time this issue reaches you, WQXAL will be operating on a power of 250 watts, on a frequency of 44,800 kc. for picture transmission, and a voice transmitter using a power of 150 watts on a frequency of 47,000 kc. The voice transmitter is now under construction in our laboratories under the direction of former graduate students E.C. Crane and M.W. Woodward. The general appearance of WQXAL's transmitter will be the same as the photograph published in the July issue. However, alongside of this transmitter will be placed the 150 watt voice transmitter.

## PORTABLE XMTRS

While in Washington I completed arrangements for the licenses of two

(continued on page 9)



## PHOTO ELECTRIC CELLS

Just as radio tubes made history—so photo cells, the Modern Aladdin, give promise of another great development. The uses to which they may be put are practically unlimited—television, beam broadcasting, counting, grading, sorting, alarms, safety control and many others.

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# WOXAL WOXBY



Walt Lockman seems to be pretty proud of his mail response. When 3000 copies of "On Parade" were printed and then announced as available to WEXBY listeners at 10¢ each, the orders came so fast that 10,000 were printed and every last copy sold. This furnished remarkable proof to the Wheaties people, the sponsors, that WEXBY is being tuned in, and that the station is in capable hands!

NOTES from the CHIEF ENGINEER  
(continued from page 4)  
ultra high frequency transmitters, one to be used in our truck, and the other a pack transmitter.



A picture of the transmitter which is to be used in our new Dodge truck is shown here. This is a crystal-controlled transmitter having a power output of 100 watts. It will operate on a frequency of 37,600 kc. We hope to be able to show you a picture of the equipment completely mounted in the truck in the next issue of the SE.

Experimentation is now being carried on for the development of a suitable pack transmitter. This xmtr will have a power output of approximately four watts. It is to operate on a frequency above 36,000 kc., and will be used only over very short distances. More details about this xmtr will follow in the next issue.

## APEX BROADCASTING

For the past two years, a few broadcasting stations have been experi-

menting with the operation of ultra high frequency broadcasting stations. That is, these stations have been operating on a frequency higher than 30,000 kc. This type of station is known as strictly a local station, because of the peculiarities of transmission involving DX. On these high frequencies it is possible to carry only as far as the theoretical horizon. Therefore, the higher the location of the transmitter aerial is located, the greater is its transmitting range. From the top of the Power and Light Bldg., we estimate that our transmitter will have a range of about 35 miles. Since it is possible to cover all of a metropolitan area from some high building, it is considered that in the future local broadcasting will be confined to the ultra high frequencies.

This information was brought out more and more strongly in the hearing I just attended at Washington. Radio manufacturers are now building present all-wave receivers to include the ultra high frequency band up to and including 70,000 kc. Therefore, it is evident that the future trend in radio broadcasting, particularly for local coverage, will be to the ultra high frequencies. Now, with this end in view, First National has applied to the FCC for a license to construct and operate one of these h.f. stations in conjunction with WEXBY. We propose to use this frequency of 41,800 kc. with a power of 150 watts. This xmtr will probably be in operation in September and will carry the same program schedule as broadcast over WEXBY. With the installation of this h.f. broadcasting station, WFT will be operating five high frequency transmitters in addition to the 1000 watt transmitter we now use on 1530 kc. operated as WEXBY.



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