



by Samuel Kaufman

WELL, it's just as we predicted! The Federal Communications Commission has authorized commercial television and—as we write these lines—holders of experimental licenses are squawking over some of the Government's "musts." Many of the video participants are particularly burned up over the requirement of a minimum telecasting program service of fifteen hours a week and there is such strenuous objection to this provision that some minor revision on the part of the FCC might be forthcoming.

July 1 was the designated starting date for commercial service by stations meeting FCC requirements. And, judging by the many years of experimentation and intensive program development of leading networks and laboratories, it would seem as if the contenders for television supremacy would leap down the track at the word "Go!" But they've been toeing the mark for such a long time that their muscles are stiff and creaky.

When the word "Go!" did come, they found that their reflexes didn't respond and that they required a bit of a rub down.

But instead of a rub down, certain prominent contenders for television leadership

are now worried about being rubbed off the video roster.

The networks are so alarmed over another FCC ruling—the one calling for a new order of the day for radio chains—that they're too scared to do anything about further television expansion.

The two FCC orders—the one regulating network operations and the one sanctioning commercial television—were not connected on the surface. But some observers, reading between the lines, seem to think that the networks won't dare to attempt to snatch too great a claim on video development.

Without taking sides in the battle between the FCC and the networks regarding the latter's status as "a monopoly," it seems apparent that the networks had long taken it for granted that television was "their baby." They had a cock-sure attitude about this and, to an extent, considering their financial investment in video progress, they may have rated a certain leadership. But they seem to have taken too much for granted and, now, standing in the public spot under the Government charge that they are a monopoly, it certainly doesn't seem wise to leap in television with all their resources at this time.

It seems that the FCC charges will have to simmer down before television, insofar as network participation goes, will really go to town!

COMMERCIAL television standards, as of July 1 (the Government's designated starting date) will be 525 lines at 30 frames per second.

The boosting in the number of lines does not worry the potential participants as much as the shift to frequency modulation for the sound portion of their eye-and-ear shows. This means an additional investment to transmitters that were thought to be all ready to go.

It may be significant that there has not been an early start in revamping the old 441-line receivers in use in the New York

area. While it is best to make the necessary adjustments when the new-type transmissions are actually on the air, there is more than a bit of skepticism that considerable delays may be experienced before actual commercial telecasting on the new standards is available.

THE Radio Corporation of America, perhaps feeling that it will be a long, long time before it will realize profits through receiver sales or through television sponsors on its network subsidiary stations, is looking for new means of video income and has launched a powerful campaign for the introduction of television equipment into theatres. That is, the campaign got off to a powerful start. But a few days after the opening gun, the shouting simmered down to a murmur—and an occasional moan.

A full dress show was staged for theatre owners at the New Yorker Theatre. The featured event (conveyed over wirelines and not available to home look-and-listeners) was the middleweight championship prizefight between Billy Soose and Ken Overlin which originated in Madison Square Garden a few blocks away. There were many embellishments, including newsreels, a playlet and other television features.

But, alas, the result—to this observer and many others he queried—seemed flatter than an anemic flounder caught under a steamroller.

From the program-building end, the effort was worth a bit of praise, but the pickup, particularly that of the prizefight, was a poor job. And it was the fight that was the featured event of the evening.

It is our guess that RCA is off on the wrong track if it is attempting to give priority to theatre television. While this represents a tremendous field for the future, the shortage of "special event" material—and this is the only thing that would pack television equipped theatres—is obvious. And we doubt whether a great number of theatre

(Continued on page 61)

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The same applies to T3; though it is not nearly as sensitive. Do not use the centertap of the 1.5 volt winding on the power transformer. Unless you are very lucky, it will not be in the exact electrical center; and any slight deviation means a loud hum from the 26. Use a potentiometer across the winding. Anything from 10 ohms up to a hundred will do, but one with many turns of wire is preferable as it gives you a finer adjustment.

In an earlier model, 5 mfd. condensers were used to bypass the cathodes; but it was found that a reduction to .1 mfd. produced a marked drop in hum level as well as eliminating a tendency towards boominess. A slight drop in the overall gain was also evidenced by this change, but it was more than compensated for by the increased intelligibility.

As shown in the diagram, a 2500 ohm electrodynamic speaker was used at the master station. The only reason for this was that such a speaker was already on hand, for a permanent magnet unit such as is used at the remote station would be preferable. If you do use a field coil speaker, do not attempt to follow the common practice of using the field as a filter choke in the power supply. Such a connection is all right when the speaker is performing its normal function; but when used as a microphone, it must have well-filtered d.c. in the field. It naturally does not get this when acting as a choke.

Operation of the system is very simple. If you are at the master station and wish to speak to someone at the other end, turn on SW2, throw SW1 to "talk," and say your say. Then flip, to "listen" for the reply. You will have to train the family not to answer until you have stopped speaking and had time to throw the switch, as evidenced by a slight click and silence. If they try to shout you down in the middle of a speech, they simply won't be heard.

On the other hand, if you wish to contact the master station from the remote, you must make use of the push button at that point. This sounds the buzzer at the other end and indicates to the party there that someone wishes to speak with him. He is then at liberty to start up the amplifier and ask, in effect, what all the fuss is about.

An idea of the sensitivity and volume output of this system is given by the fact that, with the writer's installation, a person speaking no less than two feet from the master mike in the attic can carry on a comfortable conversation with someone anywhere on the first floor, the remote speaker being located in the dining room.

In regard to running the connecting cable between stations, the writer found that the easiest and least obtrusive method was to follow the hot water heating pipes. Obviously, this would not be possible in all cases; but where it is, it is no trouble to poke the cable through the same hole in the

floor as the pipe occupies, enlarging it slightly if necessary, and to tie the cable out of sight behind the pipe as it runs down the wall. This should be a particularly handy method for the reader who lives in a family where "unsightly wires" or any slight damage to the house are frowned upon. The cable used, incidentally, is two-wire, shielded.

The model built by the writer was done in breadboard style, as shown in the photographs, and mounted in a homemade cabinet with a quarter inch Masonite front. As junkbox parts were used almost exclusively, the exact cost cannot be given. However, a replica built entirely of new parts should not cost more than around ten dollars.

One more point. Some difficulty may be encountered in securing a power transformer with both 2½ and 1½ volt windings. If so, either a separate filament transformer can be added, or else a higher voltage winding on the main transformer used with a suitable dropping resistor. Do not, however, attempt to use the same winding for both the 26 and 47 filaments; it runs you into complications.

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Video Reporter (Continued from page 39)

owners would invest in the costly equipment for just occasional "Standing Room Only" events. Championship prizefights and other headlining sport events don't take place daily.

Furthermore, there's an added wrinkle in how television interests can afford to pay for "television rights" to sporting events. If they think they'll get them free, there's another guess coming. Radio didn't hurt the box-office at sporting events in the past because it whetted the desire to see the contests. But telecasting the events, while promotionally effective, won't have as good results at sporting arena box offices.

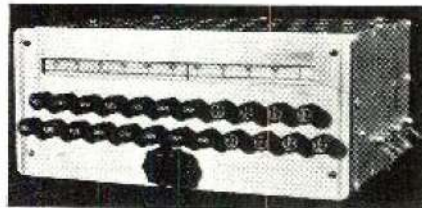
TELEVISION, despite its long period of promotion, is still something of a side-show. Of course, the public hasn't had the opportunity to regard it in any other light. But it is still being treated as a sort of "freak" novelty.

The New York headquarters of the radio network that has been selling "television tours" to the public has now combined the video sightseeing trip with its older-established radio studio rubberneck tour. And, at "two shows for the price of one," it is anticipated that summer visitors to New York will flock to the tour in great numbers.

Television may not have yet reached astronomical proportions, but it has gained some star-gazing recognition. An enterprising New York telescope barker stationed on Forty-second Street, between Fifth and Sixth Avenues, is selling glimpses of the television antenna atop the Empire State Building for five cents a look. While his nearby heaven-gazing competitors have the moon and the planets as their headlining features, this fellow is drawing business by aiming his lens at the turnstile-shaped video aerial.

WE couldn't help but feel that the sudden high-pressure ballyhoo for color television was a sort of technicolor red herring designed just to bide time until its various exploiters charted their courses for more active participation in the video art. Now, however, with word reaching us that some laboratories are working on electronic color

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systems we see a ray of hope for varicolored television offerings.

The network exponent of color television in New York has announced a tie-in with the Metropolitan Museum of Art in the matter of exhibiting the works of great masters via the iconoscope and its complementary color disk. This is clever promotion as well as good programming—provided that the received images are satisfactory. No one is more fussy about excellent reproduction than an art lover, and television can't afford to kid around with them in matters of distorting great paintings and still expect to keep them reserved for their potential permanent audience. But we do recall that art lovers were none too pleased with black-and-white reproductions of paintings made available over the competitive network's video station several seasons before.

AS late as a full month before the date when commercial television was to have its official birth with the full blessings of the FCC, there was a general lackadaisical air in New York television circles. An acrid note was sounded and it was due to the belief that the FCC was a year too late in sounding the starting bell for commercial television. We came across several participants who claim that *Chairman Fly* and his commission confreres applied the brakes to television a year before when it really could have gotten a foothold. But, now, they say, the unlimited national emergency that has been proclaimed makes it an inopportune time to invest heavily in a new industry that is hampered by material shortages as well as by an overcautious public which knows that London's television screens were darkened as a result of the war. They don't want to buy receivers in volume, it is believed, until they are assured that a television program service is permanent. And the best way they can tell is by observing it in radio shops and department stores for an extensive period before plunking down their own money for home receivers.

TELEVISION studios are working intensively on developing formulas for future programs. What some of the participants may have up their sleeves is still secret, but all disclosed efforts to date failed to reveal any originality. There has been nothing spectacularly creative—nothing to reflect that a great entertainment technique will be developed within the field of television itself. Rather, the program lads have been content to borrow methods of procedure from the movies, the stage and radio.

The easiest way to solve the program problem is to give television fans a little bit of everything, the video directors seem to believe. And they borrow a bit of talent and technique from here and a little bit from there and then they stir it all up with the result of obtaining a none too palatable hash.

The potentialities of television programming are so enormous that the directors of experimental shows seem scared of their shadows. Television can be an original entertainment medium right from the start. It is our view that television will be a bigger entertainment medium than the stage and screen put together. To rely wholly on that dated pair of illusion-creators is a mistake. Instead, the video art can develop its own technique—and it can be a polished, acceptable medium at the very start. The only requirement is that the holders of commercial television licenses will have to open their purse-strings for creative writers, imaginative directors and top-notch talent.

In matters relative to writing, directing and casting programs, broadcasting has been playing up to the stage and screen for many years. And radio has developed a program inferiority complex as a result. So, at the start, television should realize that it is potentially a more powerful and far-reaching medium than plays and movies and should, right from the start, relegate Broadway and Hollywood to a contributory rather than dominating spot. True, stage and screen personalities will be in television demand—but their iconoscope ability is more important than marquee prominence.

AS these lines are being written, the war in Europe shows no signs of abating and television program activities in all foreign nations is at a virtual standstill. When once again the world is at peace, it is apparent that Europe—or what's left of it—will look to the U.S.A. for a pattern for television procedure.

Even with the American industry's slow pace, some television progress is being made from day to day. Television leadership is a thing to be proud of, but the distinction would carry much more significance if there were several contenders for the honors. The stimulus provided by international television competition is a thing that would be warmly welcomed by the entire video industry.

THE possibilities of television's usefulness in wartime are great, and recent seasons demonstrations revealed several possible ways in which the video eye can become a vital military tool.

Television transmitting airplanes can fly over enemy territory and relay scenes of objectives to home bases for long distance shelling activities. And, possibly, the planes can be radio-controlled, thus effecting similar results through a robot pilot with no risking of human lives (except, obviously, on the enemy side).

It is disconcerting to realize that what was once conceived as an out-and-out entertainment medium can be used for such lethal purposes as warfare. But it should be realized that its military application can be especially important to defense measures.

EVERY now and then some American city other than New York does something in the way of television that makes the industry sit up and take notice. However, there is growing evidence that New York will be the video capital of the U.S.A. This has been implied time and time again by the many pioneering technical efforts in the field which used the largest American city as its testing grounds. But more important than that is the rating of the Big Town as a talent center.

We are bound to hear from Hollywood to the effect that the cinema city is the logical contender for talent leadership of the nation when, as, and if nation-wide video networks are placed in operation. But we cannot agree.

True, Hollywood has a load of movie names which may register as well over the kinescope as they do over the theatre screen. But movie names won't be enough to support a bid for leadership. New York has "on call" the cream of the crop in the way of radio, stage, concert and, yes, even movie names. It may seem odd to suggest that New York can compete with Hollywood in the television availability of movie personalities. But it's true! Mind you, we said *availability* and not *quantity*. And what good is quantity if just a very small percentage can be signed when needed for a television show?

Broadcasting experience of many years has shown that there are great difficulties in obtaining talkie stars for Hollywood broadcasts when they were seasonally engaged before the cameras; it's often hard for a star to find time away from the klieg lights for the countless rehearsals as well as the actual broadcast. But, when they're in New York, there's barely a hitch in taking on the mike assignment that won't clash with other activities.

We've even known of movie stars who preferred a special flight to New York (all expenses paid by the sponsor, of course!) to appear on a radio program. And the same will hold true of television.

The video industry has already demonstrated its operating independence of the movie industry. While the movies may not exactly take a back seat in television rating, they apparently will have to be content with one off the center aisle. And it is very likely that a batch of broadcasters who have their eye on television allocations will be a bit disappointed, too, in discovering that telecasting won't be dominated by the present broadcasting fraternity.

It all comes down to this: Television programming calls for such a broad scope of material and expertness of presentation that the video art is on the alert for a few dozen

Master Minds. Despite the many ambitious programming efforts made to date—particularly in New York and Hollywood—the surface has hardly been scratched. Program directors have been dabbling in whatever studio and remote control pickups came to mind. Some of the programs have been good, a great many have been mediocre and few flopped so hard that they're still bouncing.

TELEVISION'S scope is encyclopedic. Like radio it can draw on virtually everything known to man for program topics. And, better than radio, it can bring them home visually as well as audibly. And that's where a big problem lies. The field is so gigantic that program directors don't know where to start. And a few apparently don't know where to stop. The important thing is to realize right at the outset that television is a new and independent medium and while it can borrow talent and technique from the stage, screen, radio, concert hall, lecture platform, school room, sports arena and other spots, it *must* develop its very own formulae. It's our guess that the cultural end of programming will rank side by side with the anticipated comedy, drama and variety offerings.

New Developments in the Trade

Amplifier Sets Motor Speed

IT IS common practice among radio and sound men to use the 60 cycle power line as a substitute standard frequency source for modulation, measurement and timing purposes. But in the equipment illustrated here this process is exactly reversed. A precision 60 cycle tone generator is utilized to drive a half-kilowatt electric motor through the medium of a high-power audio amplifier system.

The purpose is to provide mechanical driving power of absolutely constant speed. For most purposes a synchronous motor operated directly from commercial power lines provides adequate stability of speed. But such lines are subject to instantaneous and short-period frequency variations and are therefore not capable of precise speed regulation. Mechanical means for speed regulation were also found unsuited to the requirements in this case.

In this apparatus a 60 cycle audio-frequency standard generator capable of maintaining its frequency accurate to one part in 100,000 constitutes the source of excitation. Its output is fed into an amplifier capable of 500 watts of undistorted output and this in turn supplies the driving power for the synchronous motor.

The design of this system is a development of the Research Section at the Propeller Division of the Curtiss-Wright Corporation to meet the requirements of certain critical test applications in the Curtiss-Wright plant. The actual equipment as shown in the accompanying photographs was built by the Transformer Corporation of America, New York City, its engineers also collaborating with Curtiss-Wright engineers in design details.

As a result of this sort of collabora-

tion, making the specialized knowledge of experienced electronic engineers available to industry in the solution of its individual problems, electronic equipment is coming to play an increasingly important role in today's stepped-up industrial program.

Unique Sound System

THE proceedings in the twenty courtrooms of the Allegheny County Courthouse, at Pittsburgh, Penna., are clearly audible these days, since the installation of individual sound systems in each of the courtrooms by Hamburg Brothers, RCA wholesale distributors in the city.

Each of the twenty units of the system is independent of all the others, and consists of microphones, a 25-watt amplifier, and two high quality loudspeakers. Lapel microphones are provided for the judge and for each of the lawyers. There is a stand microphone for the witness chair. Thus, the words of every participant in the courtroom proceedings are heard easily in every corner of the room.

Also included in each unit is an inter-communicating system on the bench, so that the jurist may communicate with the court stenographer, his chambers, or adjoining offices without leaving the bench. Frequent causes for delays are thus avoided.

Big Jump in New Sound Business

SALES of RCA sound amplification and re-enforcing equipment and related units showed an increase approaching 50 per cent in the first quarter of 1941 as compared with the same three-month period of 1940, according to George R. Ewald, RCA Commercial Sound Division Manager. The increase brings sound equipment sales volume for the first quarter to the highest point in RCA history.

Mr. Ewald attributed the sales increase, which follows several years of steady gains, to the fact that business men, industrialists, churches, schools, and even the home, have been "sold" on the value of sound as a service.

"The steadily rising tide of our Commercial Sound business is cresting at new heights as the rewards of years of patient salesmanship, advertising, and sales promotion are reaped," Mr. Ewald said. "Businessmen and industrialists are discovering that they can save time and money, and increase efficiency, with a sound system adapted to their individual needs. Greater safety, and a reliable emergency service, are other factors. At a time when the National Defense program is getting into high gear, it all adds up to wider use of the RCA line of coordinated sound equipment."

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