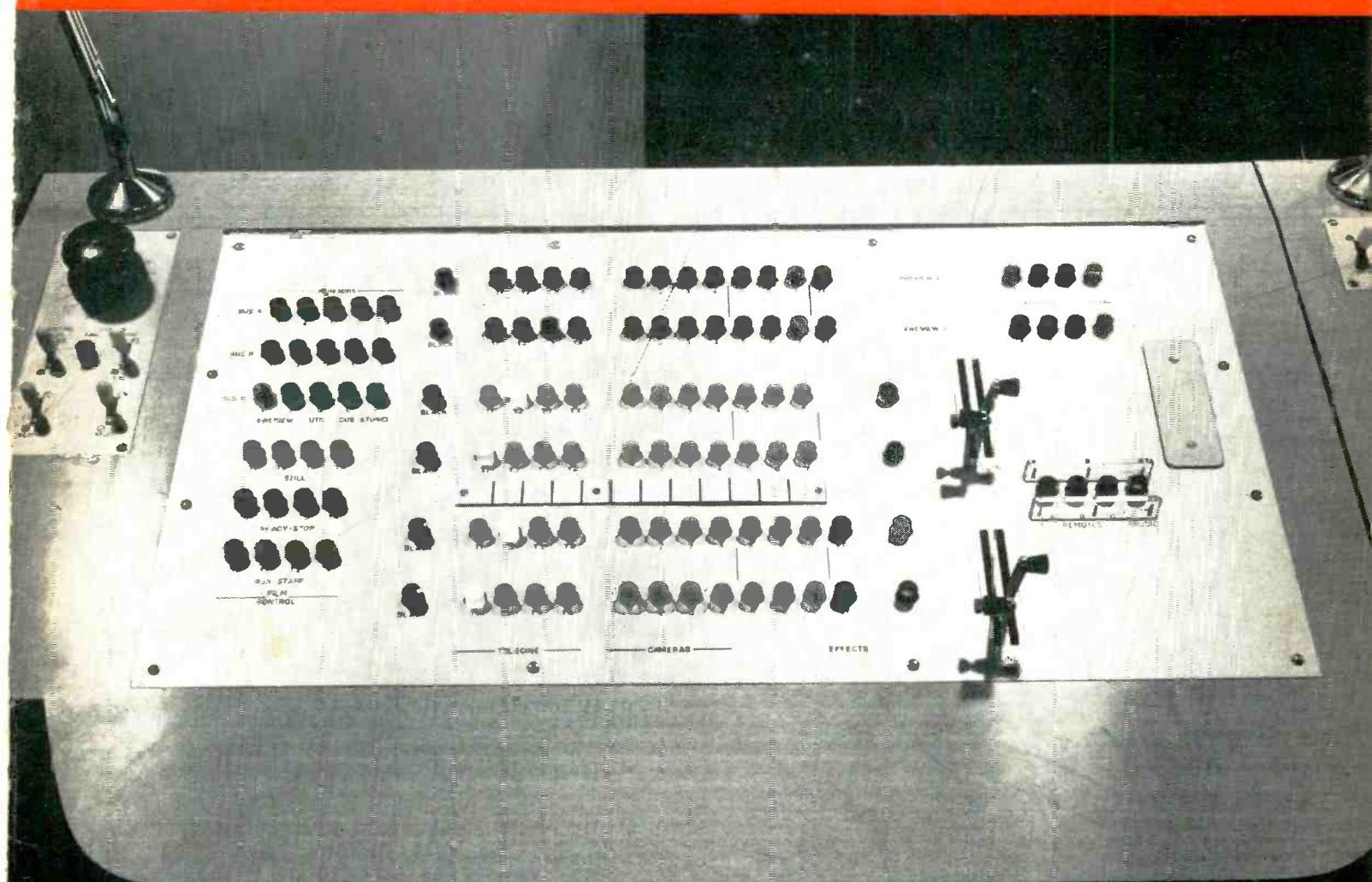
RADIO, TV and RECORDING

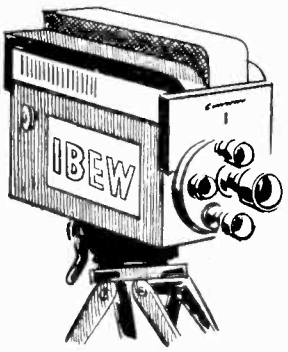
TECHNICIAN-ENGINEER

NOVEMBER, 1953



Television City, Hollywood, U.S.A.

International Brotherhood Of Electrical Workers (AFL)



Profits in the broadcasting industry, individual liberties of workers, falsely pictured

What Is the Truth?

"The truth shall make you free."—John VIII, 32

IN the face of constantly rising living costs—BLS Consumer Price Index figures still continue to rise—our members are generally asking for upward wage adjustments. These demands are not unreasonable but some employers have assumed an air of shocked innocence and have advanced all sorts of economic arguments as defense. The most-used argument is that television competition has ruined the AM market; conversely, that television has not yet secured a foothold and that AM is footing the bill. Actually, the original impact of television (at least, in most markets) appears to have been largely overcome and the general outlook for the whole of the industry is better. The gross income of the industry in 1952 was some $809,400,000—an increase of $223,300,000 over the previous year, according to the FCC. The report of the Commission goes on to say that three out of five AM stations in TV markets increased their total revenue and four out of five AM stations had higher gross revenues in markets which had no television.

A five-market survey by the NARTB last Spring indicated that radio can meet and offset the effects of TV competition. The main effect of television was found to have been largely confined to network stations' revenues. And realistic managements have concluded that the answer to TV competition is not in reduced AM rates. The report stated: "The most profitable station in each market outspends its competitors in the program department and has a smaller ratio of total expense in the general and administrative category."

We can have no more patience with specious arguments, vague in content and confusing by intent, than we have with the claptrap written by some newspaper editorialists on a subject nearer to our side of the fence. This is the subject of the liberty of workers being limited and (to hear them tell it) abolished by unions and union leaders. Perhaps part of their strategy is to make so much noise about their favorite subject as to divert public attention from the true picture of the relationship of members to the unions and the ensuing relationship of the unions to the employers.

ONE such recent editorial deplores the loss of individual liberty suffered in the last twenty years by the Wagner Act and under the Taft-Hartley Act since 1947. You are deprived of your civil liberty, in other words, by being forced to accede to the will of a majority of your fellow-workers. One wonders whether your civil liberties are likewise impaired, if you voted for a Democrat and the majority of your countrymen voted for a Republican? Or whether laws relating to taxes, traffic regulations, or any number of things should be resisted on the basis of what amounts to individual isolationism?

The American way of life is based on free enterprise—we support that tenet, wholeheartedly. As union members, we recognize the practical necessity of the free enterprise system. From the lowest-paid unskilled worker to the president of the corporation, the profit system is a necessity and a boon. But we will not be severed from our united purpose—to support free elections and abide by the decision of a majority—and to bend all our efforts to accomplish the greatest good for the greatest number. The trust MUST make us free—we have the right to demand the truth about profits, about our civil liberties and the law as well as the truth of the status of the industry.

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D. W. TRACY, *President* • J. SCOTT MILNE, *Secretary*
ALBERT O. HARDY, *Editor*
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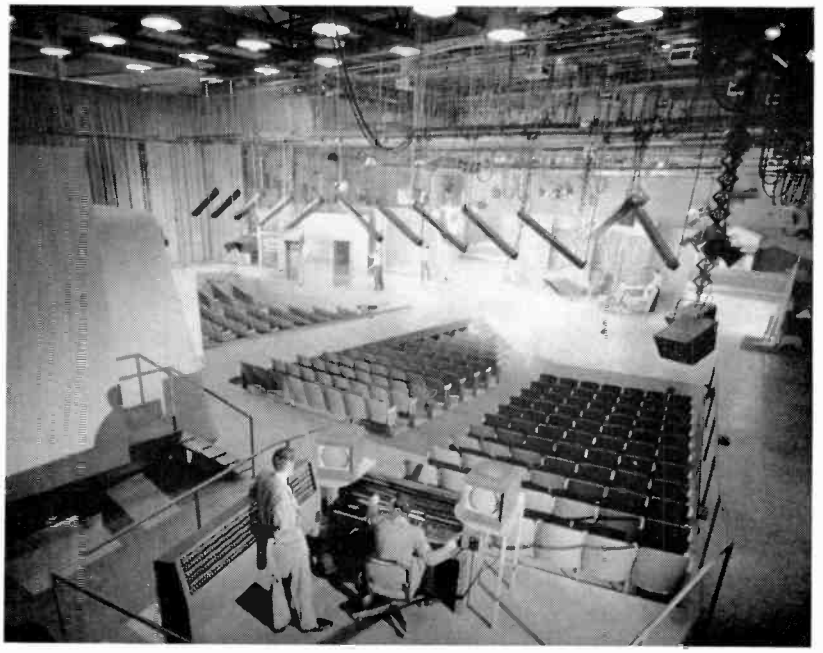
It's a happy coincidence that Television City, built around a new kind of camera, is itself extremely photogenic. You may have seen it in a number of magazine features. . We set out to create the greatest possible built-in efficiency for a new medium of entertainment and advertising. We wanted a "production line" to build an idea into a performance with the greatest savings in time, motion, and money. In actual operation, Television City—to talent, advertisers, and studio audiences alike—is a major triumph in fitting structure to function. And while it houses all kinds of mechanical marvels, it is also an ideal theatre for projecting certain intangibles—the spontaneity and immediacy of "live" programs.

J. L. Van Volkenburg, President
CBS Television

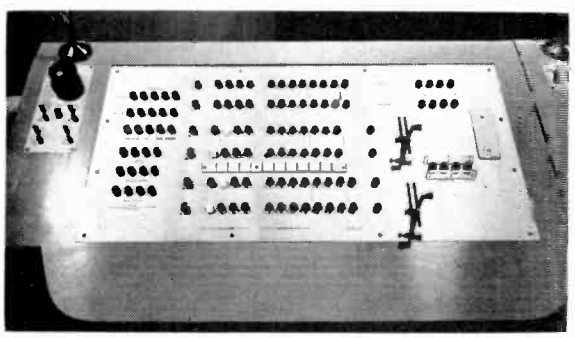


One of the spacious audience studios designed especially for TV.

This is Television City

Designed especially for the needs of television and staffed by members of IBEW Local 45, the CBS center in Hollywood continues to grow.

CBS Television City's 25-acre tract is part of colorful Gilmore Island, which has been a landmark in the Los Angeles area for decades. Originally the Gilmore tract was part of the vast Rancho La Brea on which the historic La Brea Pits were found. Still intact on the Gilmore property is the original ranch house built in 1828. This is the house in which Earl Gilmore, oil man, developer of Gilmore Island, was born, where he lives today, surrounded by his projects: the Farmers' Market, the Pan Pacific Auditorium, Gilmore Field.

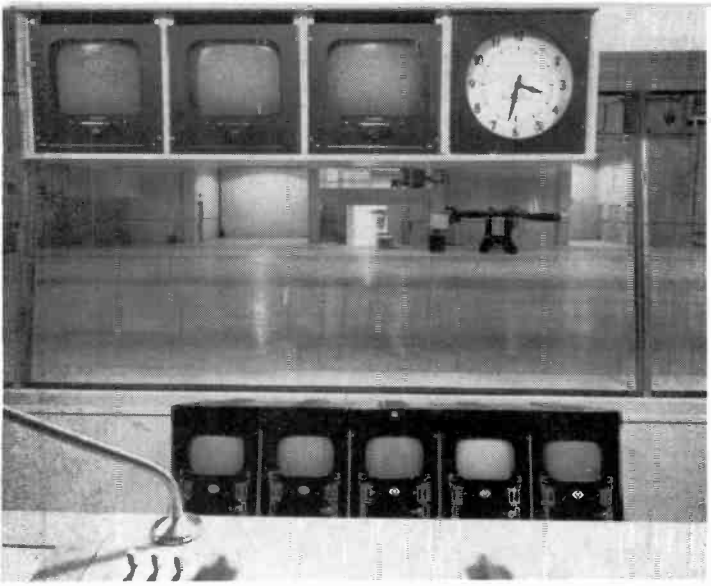


FRONT COVER—A video control board in one of the control rooms. It is CBS-designed and custom-built. All switching, fading and film operations are controlled here, with audio control being the only separate entity.

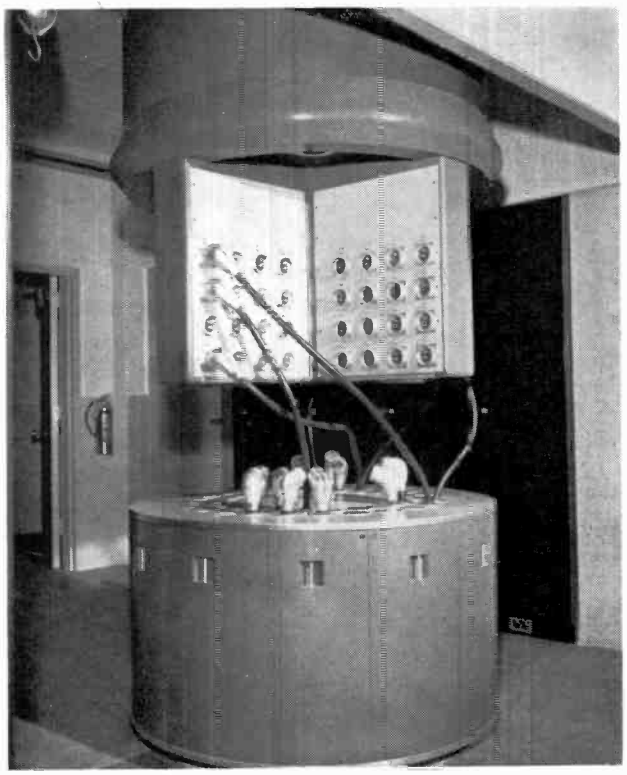
Woven into the history of Gilmore Island is much of the lore of Los Angeles—past and present . . . the early days of the Spanish dons . . . the oil boom, in which the Gilmore family pioneered . . . the filming of the "Four Horsemen of the Apocalypse," which used the ranch house for its setting . . . the growth of the fabulous Farmer's Market . . . and into this same tract of land is woven the lore of the city's future, through the Giant Television City which has been built there.

It has been almost exactly a year since Television City swung into network operations. On November 15, 1952, this great new facility was dedicated to coast-to-coast broadcasting. Even now the building is proving to be too small. Fortunately the original plans included expansion—expansion of the initial unit is possible with a minimum of time, materials and effort. In the reasonable future this expansion must be undertaken. The present "initial" unit staggers the imagination; there are 475 DOORS in the building! 103,000 square feet of linoleum, asphalt tile and carpets, three separate power systems, four oversized freight elevators and "My Friend Irma"! (All this and Heaven, too.)

* Television City is a formal title and Television City Inc. is an existing corporation owned by the Columbia Broadcasting System. CBS Television City is located in Hollywood at Beverly Boulevard and Fairfax Avenue.



Studio 43 in Television City as viewed from the director's position in the control room.



Television City Telecine—a cross patch unit.

TV City telecine control room, showing control console, video distribution racks, and cross patch unit.

SQUARE FEET AND ACREAGE

Television City contains a total of 374,620 square feet of floor space and is built around a core of four gigantic studios, each measuring 12,100 square feet and each complete with its own make-up and costume rooms. Designed to serve the needs of these mammoth studios on an assembly-line production basis are set design facilities, carpenter shops, paint shops, set storage rooms, and property rooms. In a 35,000-square-foot office area, comprising the Television City's administration building, are the necessary story conference rooms and other facilities for writers, directors, producers. Within steps of the giant studios there are dressing room for 208 performers. Three tremendous rehearsal halls, each 2,500 square feet, are themselves as spacious as the largest previously available Hollywood television studios. The entire CBS Television City concept is one of swiftly blending a combination of writing, directing, producing, and acting talents with production activities on a scale never before dreamed of.

As a result of Television City's careful design, the production capacity of the four tremendous studios is about 28 hours of live television programming weekly. The four Television City studios can turn out 22 times as much entertainment product yearly as any of the largest Hollywood movie lots, and 23 times as much annually as New York's entire legitimate theater.

DESIGNED TO MEET THE NEEDS

The unique plant evolved after more than 50 versions of ideal television facilities had been designed and studied by architects William L. Pereira and Charles Luckman over a period of 18 months. The final plan is one that achieves full flexibility in order to meet all future physical and technical requirements of television, providing for the sorely needed elements of efficiency and stability today as well as the invaluable advantage of complete flexibility tomorrow.

Walls separating both audience and non-audience studios can be easily moved so that the size, shape, and number of stages can be readily changed when required. Seating arrangements in audience studios, currently planned to accommodate 350 people, can be altered or completely eliminated to make way for additional stage space. Building walls themselves, some of them glass, can be moved outward as much as 300 feet so that more buildings can be added. Walls can then be anchored back in place.

SOME MATERIALS USED

More than 3,386,000 pounds of structural steel, along with 190 miles of heavy steel reinforcing, and enough concrete for an 8½ mile highway, are among the many ingredients which went into building the vast electronic wonderland. Despite its massiveness, and its ingeniously planned and equipped interiors, the tremendous expanses of glass, huge white walls relieved by black entranceways, and well-proportioned red rails which

enclose the trucking ramp running around the entire exterior second floor level, give Television City the outward appearance of striking simplicity characteristic of well executed functional modern design. Its immense public, employe and performer parking areas are capable of comfortably holding 710 cars.

SET DESIGN AND SCENERY

A revolutionary approach to set designing and scenery construction has been developed in CBS Television City —an approach which will make possible the development of sets more efficiently and resourcefully than has been possible in the legitimate theatre, the motion picture industry, in opera or in previous television production.

Everything—from raw materials to finished product —is under one roof. Everything moves from one place to another on a production-line basis, swiftly and economically.

There's a carpentry shop of approximately 14,000 square feet, equipped with every conceivable high-speed power tool for woodworking, and manned by 35 carpenters.

The 12,000-square-foot paint shop is equipped with power sprayers, driers and moving paint frames. It can handle scenery flats up to 22 feet high. More than 20 painters can work in the place at one time.

In the prop repair shop of more than 2,500 square feet, cabinet makers and other skilled craftsmen can repair props damaged over a period of time. It, too, is equipped with every type of tool.

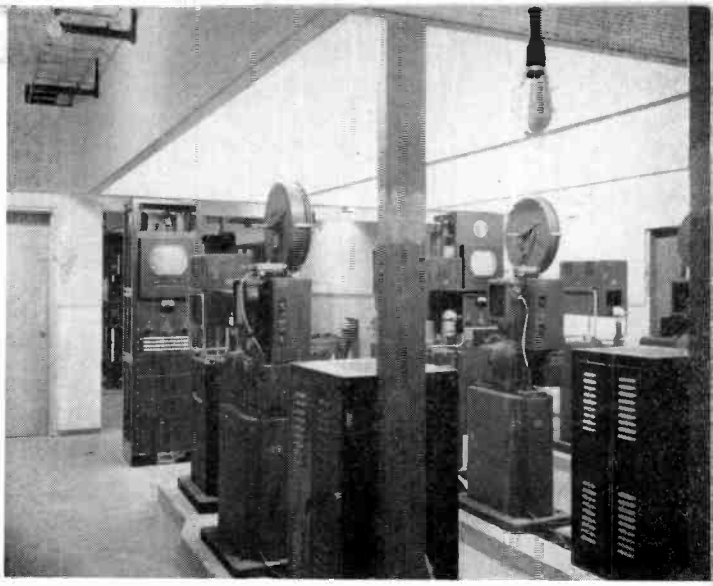
THE SPECIAL EFFECTS SHOP

There's a special effects shop where chaps with the ingenuity of Edison's work with chemicals, electronics and mechanical devices to produce on short notice whatever the show producer calls for—forest fires, explosions, fog, rain, snow.

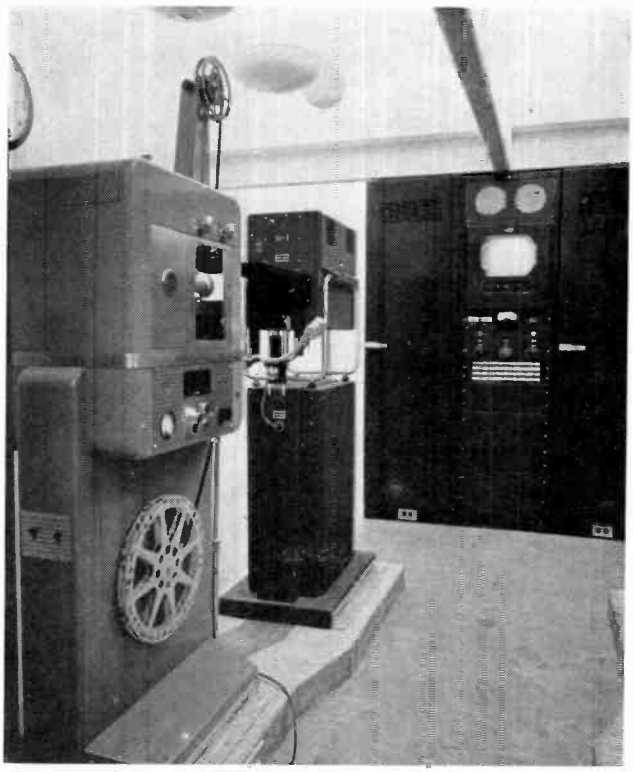
And there's a plaster shop where modelers and pattern makers turn out fake architectural forms—pedestals, balustrades, columns, cornices, etc.—and those breakways, the bottle that cracks up into fragments when a guy is hit over the head with it.

These shops are grouped in the service area of CBS Television City. From this service area there are three different traffic routes (complete with traffic indicators, speed limit signs, etc.) to all parts of the plant. Via each of these three routes, materials can be moved in and out of the shops, in and out of the studios, in and out of the entire plant. Trucks and automobiles drive in and out of the ground floor of the building, making deliveries and pickups.

CBS Television City, Hollywood, is equipped with a million and a half dollars' worth of the world's most modern technical equipment, designed and fabricated by 60 top engineers and technicians after more than three years of intensive research.

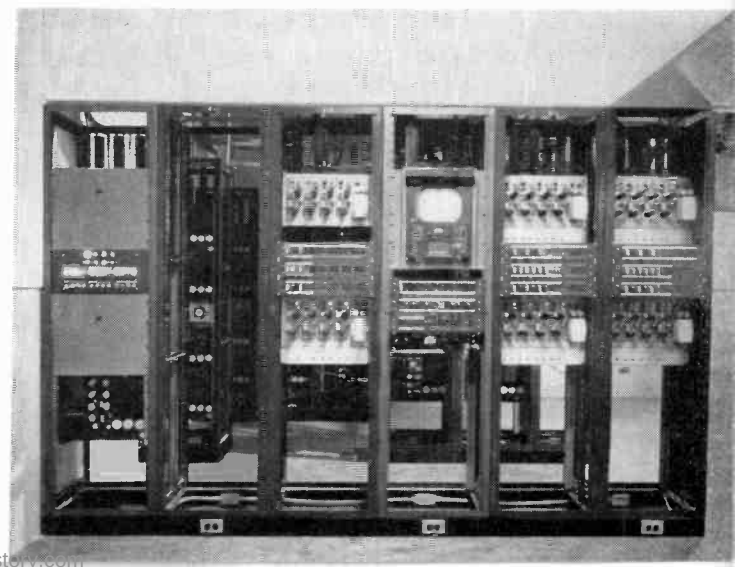


The telecine projection room, looking east.

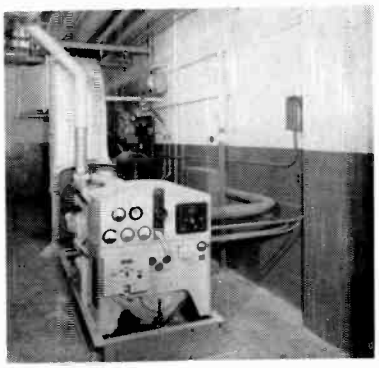


Telecine Projector Group 16-1, Television City.

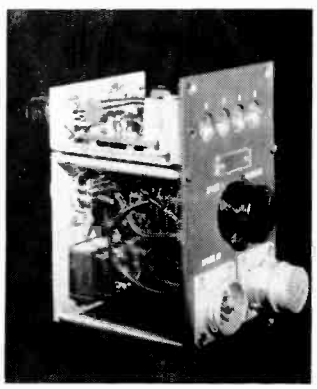
Video distribution racks in TV City.



Projector Group Telop-1 in Telecine.

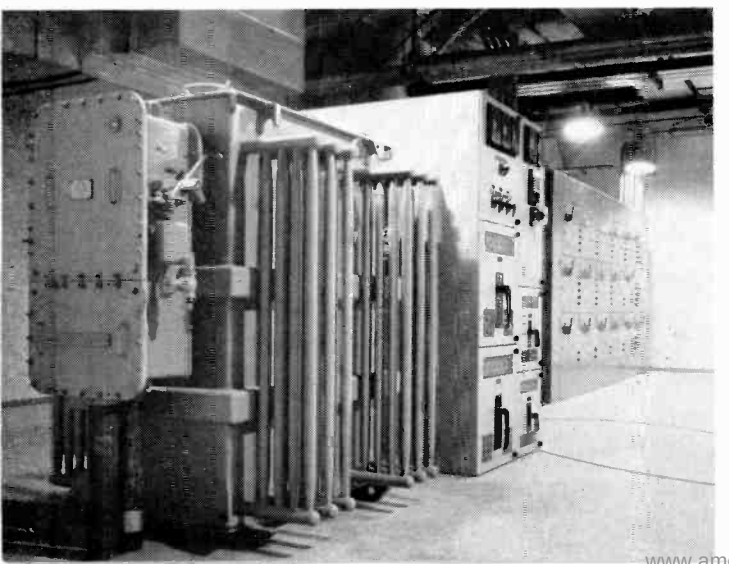


Standby emergency power unit.



Pulse Distribution and Isolation Unit

500 KVA primary power transformer automatic switch gear and distribution panel for audio/video facilities power.



Installation started with the arrival of an audio console, constructed at CBS-TV in New York, and shipped to the Coast by special truck.

Since, carloads of specially designed television equipment have moved into the unique 15-acre television development. There are $250,000 worth of the newest type television cameras, motor-driven cranes, camera pedestals by the score, more than 8,000 vacuum tubes, equipment racks, and video-switching consoles. There is also more than $1,500,000 worth of telecine equipment. In addition, there is complete high-fidelity equipment for television recording—both 16 and 35 mm.

All studio audio facilities at CBS Television City are CBS-designed and constructed. Each studio control room has an audio console that can handle 11 simultaneously-connected microphones. Quite a handful, to say the least.

The show director or producer who feels he must shout like a madman at the cast to impress them with his genius had better avoid a job at CBS Television City. CBS-TV engineers have installed a limiter on the talk-back system in every control room. Thus, a director can shout and bellow for the chorus girl second from the left to get in step but his voice will arrive on stage in even soft tones to sound like a mild request.

SIZE OF FREIGHT ELEVATORS

Four oversize freight elevators service the initial unit of CBS Television City. Each one is twice as high and three times as wide as the average passenger elevator. Each can lift 7,500 pounds. To test the lifting capacity, Smilin' Ed McConnell, who weighs 300, and Teola, 7-foot, 7,000-pound elephant of Smilin' Ed's gang, took a ride up. (They made it.)

Television City can serve as a giant fort and shelter to withstand gamma rays, heat radiation, and concussion from an atomic blast, according to Hal B. Hayes, expert on atomic housing and advisor to the French government on atomic construction. The triple concrete floor of CBS Television City's engineering wing would not even be penetrated by a direct hit. As many as 20,000 people could find comfortable shelter in the area under the building, some 400 feet wide and 430 feet long. Inside the four huge studios as many as 10,000 people would be safeguarded from an atomic bomb exploding a mere 1500 feet away. Concrete south and east walls would easily withstand the shock wind of 600 to 700 miles an hour caused by the explosion.

In keeping with fantastic, fabulous, stupendous Hollywood—This—is Television City.

One of many explosions that occurred during the ammunition truck fire west of Omaha, Nebr., October 9, 1953.

One Studio Supervisor 'Mid Shot and Shell

What happens when an ammunition truck catches fire on the highway and an IBEW engineer finds himself hemmed inside the mobile unit, as reported by "Har" Underkofler, Local 1221

"Al . . . Al . . . Please come back to us—"

That was the tense plea of two IBEW technicians and an assorted number of announcers and newsmen waiting in the control room of the Radio KFAB studios in Omaha on the evening of October 9.

It followed the earth-shaking roar of an exploding 105 millimeter shell going off in an ammunition truck which had caught fire after a collision with a passenger car. Technicians John Bruna and "Har" Underkofler were manning the Ampex machines, recording the on-the-spot pickup of the exploding shells and roaring flames.

The "Al" referred to is the Omaha Studio Supervisor, Al Bates, member of Local 1221, IBEW. He was crouched in the KFAB mobile unit 10 miles west of the studios, near the famous Boys Town, shortwaving to the control room each tremendous explosion as it was touched off by the searing flames.

The evening had begun quietly. Then about 6:35 p. m., a newsman monitoring the sheriff's radio heard the report of an ammunition truck on fire on U. S. Highway 30-A, a heavily traveled road leading west out of Omaha. Following newsroom procedure, he telephoned Bates, who was at home relaxing after his evening meal. Bates immediately headed for the scene with the completely equipped mobile unit. He arrived before most of the police and fire-fighting emergency units and set up the unit in a tourist court a scant several hundred feet from the burning ammo truck and the car in which three elderly women were trapped.

First Explosion Overloads the VI

His first thoughts were to assemble facts and shortwave them to the studios for bulletin material until newsmen could arrive on the scene. While he was talking and technicians Bruna and Underkofler were recording in the studios, the first of the terrific ex-

plosions all but wrapped the needle of the VI around the peg.

From then on, for an hour, Bates crouched in the station wagon talking as the mike on the end-gate recorded the explosions. Bates wasn't talking "for publication," but News Director Carl Uhlarik, listening in the control room, said it was the best sight-and-sound recording he'd ever heard and decided to build the 9:30 p. m. newcast around it.

Bates' first comment was: "Jeepers, I'd better get out of here." A restrained comment, to say the least.

But Bates stayed through the rain of shell fragments and metal which dropped as far as three-fourths of a mile from the burning ammo truck. He disclaimed any personal bravery. "I can't move," he said, "I'm hemmed in."

The resulting pickup was comparable to a tape cut on a battlefield, complete with exploding shells, ricochets, flying shrapnel; red-hot metal slamming into the station wagon with direct hits. Luckily, damage was slight. Bates, except for some shock, got out unscathed.

Ready to Cut the Carrier

But back to that control room moment and the anxiety. Just as Bates said he was going to cut the carrier of the Link transmitter for a few minutes, probably the heaviest explosion of all came through. Then, suspenseful silence followed by the plea: "Al . . . Al . . . come back to us."

The tension soon broke. He did come back, of course, with an entry for the understatement of the month.

"Jeepers, that was one," he said. "It picked up the truck and shook it."

One newsmen counted 70 separate explosions. But to Bates, the technicians and newsmen in the control room, it seemed a very conservative estimate.

By then, the teamwork which has become a trademark of the KFAB news operation swung into action. Newsmen had reached the scene. Others were stationed at hospitals to report casualties. Re-write men in the studio newsroom and control room had their ears glued to the short-wave monitor.

With Underkofler editing tape and Bruna recording on-the-spot interviews (after his "shell-hole" ordeal, Bates manned the Link transmitter relaying those interviews) the 9:30 p. m. edition of the news was put together. The lead was eight minutes of actual explosions and comments by Bates. The newscast told of the accident, the three women burned to death in the passenger car, the heart-attack death of the owner of tourist court, the escape with minor burns of one of the women passengers, and the similar escape of the ammo truck driver. It told, in the tape-recorded words of various officials their reactions to the spectacular tragedy.

Newscast Arouses Much Comment

That newscast and a later documentary aroused more comment in the Omaha area than any other since KFAB's handling of the Big Missouri River Flood of 1952. Taped copies of the newscast were requested by railroads and trucking companies and by Gen. W. E. Laidlaw, commander of the U. S. Army Ordnance Ammunition Program. The Omaha City Council, in a special session discussing highway transportation of explosives, suspended the rules and listened to a play-back of the newscast.

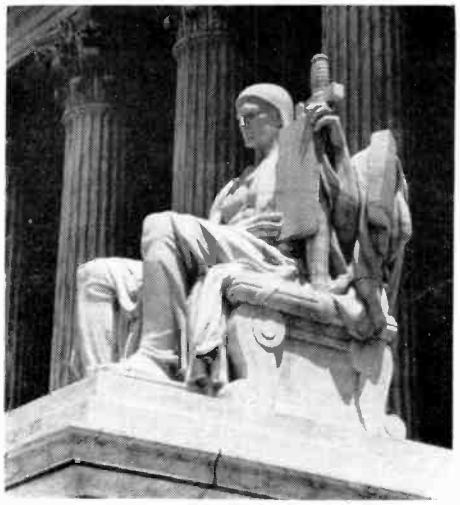
Rival news media were unstinting in their praise, as were dozens upon dozens of KFAB listeners. There was, however, one unfavorable comment. It came by letter to Bates from a woman who took exception to his using "the name of the Lord" while describing his hour-long night-mare amid the roaring flames and the bursting shells.

Bates was as restrained in his reply as he had been in describing his ordeal.

"I'm not a profane man," he said. "I was afraid out there. When I used the name of the Lord, I did so with all the awe and reverence I could command."

Al Bates, Local 1221, tries to fit a piece of shrapnel into hole in fender where it struck during ammunition truck explosion.

Question to be determined: Was the concerted activity of the employes of WBT-WBTV protected by Section 7 of the National Labor Relations Act? Appeals court says yes.



U. S. Supreme Court Considers

The Jefferson Standard Broadcasting Case

ON October 12, the Supreme Court of the United States heard the oral argument of the "Second Class City" handbill case—National Labor Relations Board v. Local Union No. 1229, IBEW. The Board was represented by Dominick L. Manoli and the IBEW by its General Counsel, Louis Sherman.

The case was the first to be argued before the high tribunal during its new term. Briefly, it involves the firing of 10 TV and radio station employes for attacking the quality of the station's programs and equipment in handbills distributed in Charlotte, N. C. The discharged employes are members of the IBEW.

Chief Justice Warren presided but asked no questions of either Counsels Manoli or Sherman.

Following the unanimous decision of the U. S. Court of Appeals for the District of Columbia reversing the National Labor Relations Board, the Board took the case to the Supreme Court, for decision of the question as to whether the concerted activity of the employes of WBT-WBTV was protected by Section 7 of the National Labor Relations Act. Obviously, if the distribution of the handbill which was critical of the employer's product was unlawful, it was not protected activity in terms of the language of Section 7.

The original NLRB decision stated that the handbill was "beyond the pale" and "indefensible." The IBEW contends that the handbill was factual, accurate and in the public interest. The chief motivation of the employes was to enlist the aid of public opinion and by such public-spirited action to gain the favor of the public in the union's endeavor to obtain a satisfactory and reasonable agreement with the employer. The lower court ruled that the Board committed a legal error when it failed to make a finding essential to its conclusion that the distribution of the handbill was unprotected by the Act. The Board's finding indicated that the action of the employes was not wise and was unfair—this projection of opinion into the realms of morality and personal judgment is neither authorized nor contemplated by the National Labor Relations Act.

The entire basis of the dispute between the employer and Local 1229 was the terms of the arbitration clause; the Local Union desired discharges to be arbitrated on the same basis as had been provided for in previous agreements. The employer took the position that discharges should be subject to question by the union only on the grounds that the reason given for discharge was true or untrue. Testimony in the Board hearing developed the status of the employer's position beyond doubt; if a man was discharged for "parting his hair on the wrong side" the discharge would be invulnerable. The hearing resulted from unfair labor practice charges being filed by Local 1229, after 10 technicians and engineers were discharged for distributing the handbill. The charges were upheld by the Trial Examiner but not by the Board. At this point, the International Office took up the case by filing an appeal with the U. S. Court of Appeals on behalf of the Local Union.

The results of the final step in the legal process are now awaited; a decision by the Supreme Court can reasonably be expected within the next four to eight weeks.

Father Rodriguez, who assists Father Salcedo with the educational work, delivering a lesson over the Sutatenza station mike. Father Rodriguez recently returned to Colombia after serving a UNESCO fellowship in Canada.

Long and Short Wave Learning

Radio continues to serve an essential purpose and a vital public service. Here, a young Catholic priest brings education to the illiterate of Colombia via AM. By Carlos Davila

HE walked into my apartment at the Hotel Continental in Bogota with a vigorous stride, this tall thin young priest. There was a glowing light in his eyes and he had a mysterious object under his robe.

It was Father Joaquin Salcedo, who has evolved an educational system without schools, which will teach multitudes from afar.

The "object" was a small radio receiver which he set on the table and tuned in to one of his "classes." He informed me that at that very moment about 12,000 peasants were gathered around 300 receivers, set up in rural buildings, corridors and patios in village houses and rooms all over the country-side, listening avidly and learning, not only how to read and write, but how to live.

"Literacy," says Father Salcedo, "is *not* our main purpose. Above all we want to develop in these peasants a basic intellectual and economic awareness and instill in them the desire for improvement."

He first set about this by making a study of their lives, their habits and main interests, in the belief that the ability to read for the sake of reading is not appealing enough to these simple people who are confronted with so many practical everyday troubles. They have to be shown how this ability can lead to the solution of their problems. He found that all of their basic interests revolved around agriculture and their daily chores in the fields and in the homes. So around these he wove his educational program, with the radio as his medium, the town of Sutatenza as his laboratory.

I visited this "laboratory" of 9,000 inhabitants whose name in the Quechua language means "The Town on the Crest." Although the Indians probably meant it geographically, it can now be applied to its moral, intellectual and health standards.

Father Salcedo has done in four years in this little community what takes decades and is seldom accomplished in other rural towns in the world. Thousands have learned the fundamentals of living. How to read and write and to keep clean and healthy; how to best cultivate and market their crops; how to use fertilizers and to manage their new machines; and how to care for their livestock.

New programs have made the outside world a reality, creating a new and endless source of conversation, a very important matter in these rural communities where other entertainment is scarce. Bars and taverns have been supplanted by sport and cultural centers. Crime has practically been wiped out so that a police force is no longer needed. Commercials? Never.

In response to my enquiries, the young priest delved into his past. He was born in Boyaca, one of eight children . . . . He first became interested in education of adults when he was thrown into contact with soldiers and prisoners. He could not reconcile himself to their ignorance. When he came to Sutatenza as a parish priest in 1948 he was even more shocked by the tremendous reality of the social problems and the ignorance of those good people.

Radio had always been his hobby so he decided to put it to use. The initial experiments were made with a home-made transmitter and three receivers which were

The author is a former President of Chile and a consultant for the United Nations, studying technical assistance programs in South America.

sent by mulepack to the most distant corners of the district . . . . "Soon I was speaking to them directly . . . from my own desk . . . calling them by their own names, urging them to listen everyday. . . ."

His success was overwhelming. They not only listened but so truly believed in his project that they themselves helped in the construction and setting up of apparatus, electric plants, etc., contributing in work, materials and donations, as much as $150,000.

Now in his headquarters—three large rooms which open on a flowered patio in a picturesque colonial house, Father Salcedo has an array of modern transmitting and recording equipment to rival any local station in the United States.

Here with the assistance of Father Rodriguez, a UNESCO fellowship holder, he supervises the recording and broadcasting of his classes. With an additional 5,000 receivers which will be installed by the Colombian Government this year, and improvements that will make his station the most powerful in Colombia, he expects to influence and enrich the lives of 200,000 rural inhabitants.

Two years ago UNESCO invited Father Salcedo to Rome to report and explain his methods and his aims which go far beyond literacy, in order to study the possibilities of employing it in UNESCO's educational campaigns elsewhere. As a result, UNESCO aid will be increased and three experts will join Father Salcedo's team in this year 1953. They will work in Sutatenza as a first step in carrying out the program approved at UNESCO's general conference of 1951 which calls for the survey and planning of an international center of fundamental education by radio in Colombia.

The day before my departure from Bogota I received a telephone call from Father Salcedo. He was in his car, he said, touring the countryside, visiting his parishioners. How was that possible? . . . He had a radio transmitter and receiver in his car. Twice a day he communicates with his parents' home in Bogota. This time he had communicated with his father, who in turn called me and connected the radio to the telephone in my hotel. So this unusual, radio-minded priest and I spoke to each other, first one, then the other, most satisfactorily.

Raymond Etchats, UN representative in Colombia, discusses with Father Salcedo the UNESCO agreement under which experts will aid the project.

A group of Colombian women listen attentively to a lesson beside a receiver supplied by the young Catholic priest.

Aided by the radio, left, an old lady follows the lessons by writing on the blackboard. Young and old listen.

His system is without a doubt one of the best solutions to the illiteracy which still plagues the world. It costs incredibly little, ten cents a year per student (the Colombian Government spends 150 pesos per school student) and can be put into operation instantly without the long and expensive training of teachers.

Father Salcedo makes use of what he calls "the local auxiliary," the more advanced student who knows how to read and write and acts as a leader, helping the others by writing and illustrating on the blackboard as the lesson comes over the radio.

The few professors employed in this campaign act as planners and observers rather than teachers. It is they who record the specialized lessons combining practical education with entertainment. Soon they are off in their cars to one of the receiving centers so as to be present when their "class" comes over the radio. There they will observe and take notes on the reactions of the listeners, the timing, circumstances, etc.

The last words I heard were "Sutatenza over . . . come in Bogota, come in Bogota." And I knew, when I said goodbye that he was resuming his tour, bouncing over rough dirt roads from farm to farm, bearing a message of hope, words of wisdom.

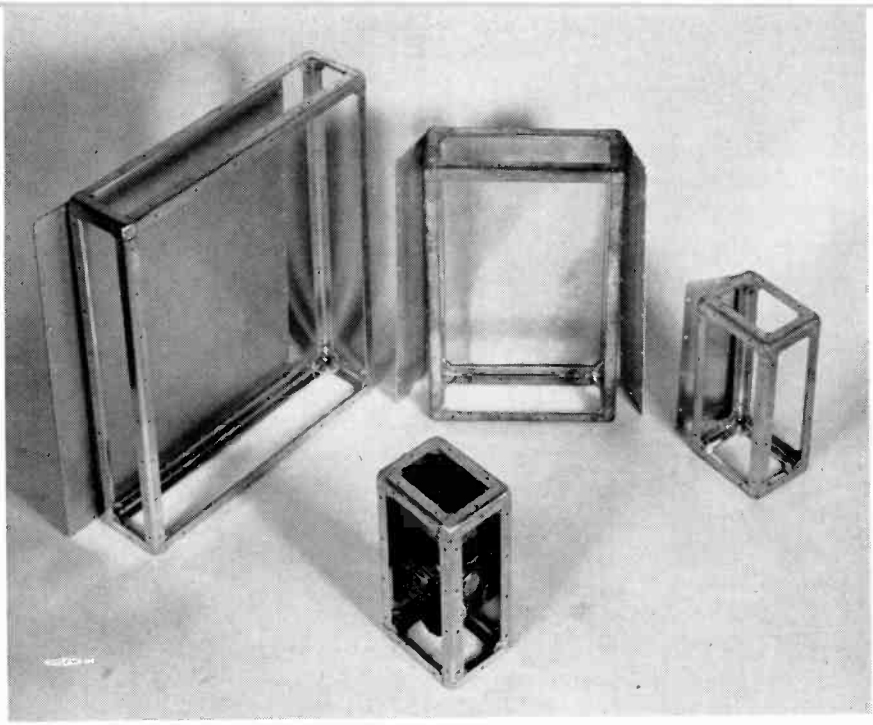
I saw Father Salcedo again in Brazil two months later, invited by the United Nations to attend in Rio de Janeiro a Seminar on Rural Welfare.

He told of his plans for expansion this year when he will have "one of the most powerful broadcasting stations of the American continent." After two years of experimentation a new type of inexpensive receiver has been developed for his "radio schools" and 5,000 of them will be distributed in the next few months.

"May the 200,000 Colombians that we are going to educate by these means," he told the Seminar, "be the forerunners of millions of other Latin Americans who will also see better days helped by the lights of knowledge and moral and technical forces."

Government researchers develop a components chassis that lends itself to varied electronic designs. There is easy accessibility, even in the small models.

Adaptable Electronic Chassis



Several adaptable electronic chassis designed by the National Bureau of Standards. The 3" x 4" x 4" chassis (foreground) illustrates the freedom of accessibility to components in even the smallest model. Other circuits may easily be added by mounting the components on a plate of the proper size and screwing the plate to the frame. For special requirements, plates of a non-conducting material may be used. The adaptable chassis (rear) are: from the left, 13" x 16" x 4", 8" x 13" x 4" and 3" x 4" x 4" models.

IN response to the need for a components chassis that would lend itself to varied and changing electronic designs, I. Rotkin and J. Guarracini of the National Bureau of Standards have developed a widely adaptable chassis that is both economical and convenient.

The design of the new chassis includes a rectangular frame made of $\frac{3}{8}$" x $\frac{1}{16}$" steel angle and sets of flat plates that are fitted to the frame with screws. The frames vary in size so that chassis may be made up as small 3" x 4" boxes, or 3" x 13" x 16" models, or even whole networks of different-sized chassis.

Conventional electronic chassis, normally built with five sides, often impose restrictions on the movement of tools used to drill and punch the required holes and recesses. After the components have been installed in the chassis and the experimental circuit tested, either a relatively expensive piece of equipment must be thrown away or valuable storage space must be used for an item that is only potentially useful. Even during the development stages of the circuit, the design of conventional chassis does not lend itself to exposure of the circuit wiring and tube sockets to facilitate probing and rewiring. Sometimes a great simplification is possible in the construction of equipment if several "breadboard" models can be pieced together, but this is a difficult task requiring complex mechanical structures if the components are mounted in standard chassis.

The chassis developed by NBS are produced in four standard sizes, all 3" high: 16" x 13", 13" x 8", 8" x 4", and 4" x 4". Flat cover plates are drilled with holes that match screw-holes in the frames. The dimensions of the chassis and plates were chosen so that the long side of each chassis matches the short side of the next larger size. When desired, any of the six side plates may be left blank or discarded entirely; thus, ventilation may be obtained for circuits requiring air circulation. No restrictions are placed on the kind of material from which the flat plates are made. Consequently, it is possible to eliminate much of the component insulation required when using all-metal chassis.

In developing a circuit, the components may be assembled in "breadboard" style on one or more flat plates before final mounting on a suitable frame. This procedure facilitates and simplifies the often laborious details of drilling, punching, deburring, or nibbling. Once the units have been mounted in the plates, they may be screwed onto the frames with all the wiring and tube sockets on the open (outer) side of the plate exposed to the probing of the test equipment. If the design and craftsmanship permit, these same plates may later be reversed; the wiring will then be protected, the tubes will be accessible for replacement, and the completed unit is ready for actual operation.

If a component is a prototype or has become obsolete, only the plate containing the circuit in question need be removed from the frame and replaced with the improved circuit. The discarded plate can then be stripped and stored until a similarly patterned plate is needed again. If desired, whole clusters of these versatile chassis may be assembled around or on top of a larger chassis—the frames are sufficiently standardized to permit this. In addition, the spacing between the holes permits the mounting of commercially available bakelite terminal strips.

Privileged Questions for Privileged Characters

A question of privilege may concern a whole meeting, or it may concern a single member. Charges against a member's character may be involved.

By RAY WOOD, *President, Local 1212*

SOME of the Brothers got into a discussion the other day in the course of which confusion arose as to the difference between questions of privilege and privileged questions.

No, that's *not* doubletalk. It is a very real distinction which, properly understood and used, helps to make sense in many situations during the course of meetings.

F'rinstance; a committee report is being read, but cannot be heard in the far end of the room. Our Brother Black rises and, without waiting for recognition by the chairman, speaks out in clear, loud voice: "Mr. Chairman, I rise to a question of privilege which affects the meeting." The chairman should then ask him to state the question. He will, of course, say that the report cannot be heard. The Chair will then take steps to correct the situation. In this example there is no doubt that the question *is* one of privilege, i.e., the privilege of the assembly to hear what is going on.

A question of privilege may not be of such urgency as to warrant the interruption of a speaker who has the floor. If the chairman should decide that there is a question of privilege, but it is not of immediate urgency, he will allow the speaker to continue, but, when he has finished, will assign the floor to the Brother who has raised the question of privilege. He may then make a motion if one is needed to assure the privilege. This motion then is open to debate, amendment, or any of the various forms of modification applicable to it. As soon as this motion is disposed of, life goes on as before, taking up right where it left off when interrupted. The member who had the floor at the time of interruption is again given the floor.

A question of privilege may concern the privileges of the whole meeting, or it may concern a question of personal privilege, in which case it must relate to one as a member, or to charges against his character which, if true, would disqualify him for participation in the meeting.

Roberts Rules lists the following as relating to privileges of the whole meeting—those relating to organization of the assembly; those relating to the comfort or safety of the members assembled, as the heating, lighting, ventilation, etc., of the meeting room, or the freedom of noise or other disturbance; or to the conduct of officers or members; or to punishing a member for disorderly conduct or other offense.

Privileged questions, on the other hand, include those motions relating to adjournment and recess as well as the above mentioned questions of privilege. Also included are calls for the Orders of the Day . . . in other words, a demand that the meeting conform to its order of business; the sequence established in the By-Laws or the sequence as altered by a previous motion to introduce a particular subject at a particular time.

No question of privilege can interrupt a vote or the verification of a vote. If the chairman rules that a question as stated is not properly a question of privilege, this decision may be appealed by any two members.

Local 1217 Completes First Television Conversion Course

THE broadcast engineers of Local Union 1217 have completed their first Television Conversion Course conducted by the Local's Educational Committee of Technical Training and under the able tutelage of Professor Charles M. Schwarz.

The school was held in the Local Union 1 classroom and included conventional theory, practical operation contained in operating text's with lectures and actual operation of camera chain equipment. The tuition fee paid by the members taking the course covered the teaching fee and incidentals required to present the material used. The high degree of interest maintained during the 13 weeks course was due primarily to the skillful handling of the subject material by the lecturer.

Professor Schwartz's experience in the electronic field testifies to his ability as a teacher and lecturer. He has served on the faculty of the Washington University Engineering School for the past 20 years. In addition to the degrees of Bachelor of Science, Master of Science and Professional Electrical Engineering, he also holds all amateur and commercial licenses issued by the FCC. His texts are used in all Missouri Technical Schools, and his services are widely sought as consulting engineer in all branches of the electronic field. (*Turn the page.*)

It is felt that the success story of the TV Conversion Course would not be complete without acknowledging with deep appreciation the splendid cooperation received from other sources. Local Union 1 provided its schoolroom for all the sessions and in addition, space to house the laboratory equipment used by the professor in illustrating and demonstrating his lectures. The management of Station WTVI-TV, Belleville, Ill., unselfishly provided their studios and camera chain equipment for the practical portion of the course study. Supervisory engineering employes, of WTVI-TV, members of this local, made available their time and talents instructing and supervising the actual handling of the TV equipment by the future TV engineers. With that kind of cooperation the course could not fail to achieve the results for which it was planned.

Encouraged by the success of the initial attempt in TV schooling, Local Union 1217 is in the process of setting up another course to begin sometime in October. In the planning, provisions are to be incorporated to expand the scope of study. The actual operation of equipment is to be stressed as it was proven to the satisfaction of everyone that sound operational procedure is obtained only with actual experience in operating TV equipment.

KSTM-TV is rapidly taking shape and with several other stations having construction permits it is very apparent the Local must be ready to supply trained engineering personnel. It is the feeling of the Local's Educational Committee that the TV Conversion Training will be continued as long as the need for it is present.—

W. E. MANSFIELD, R. S. L. U. No. 1217, Acting Press Secretary.

One Moment Please

LISTENERS at Lumber City, Ga., sometimes have trouble hearing their favorite radio program, as we reported in last month's issue.

Now we have an item about reception troubles in Buffalo, Iowa.

Bill Mason, news director of Radio Station WQUA, Moline, Ill., was recently asked by a listener to talk a little louder on his 7:30 a. m. broadcast.

The listener, a woman at nearby Buffalo, told Mason "the train from Davenport, Iowa, goes through Buffalo at 7:30, and the noise is so loud that I can't hear the first two minutes of the newscast."

Reading Time

TV Manufacturers' Receiver Trouble Cures. Vol. 1, *Edited by Milton S. Snitzer. John F. Rider, Publisher Inc., 480 Canal St., New York. 115 pp. $1.80.*

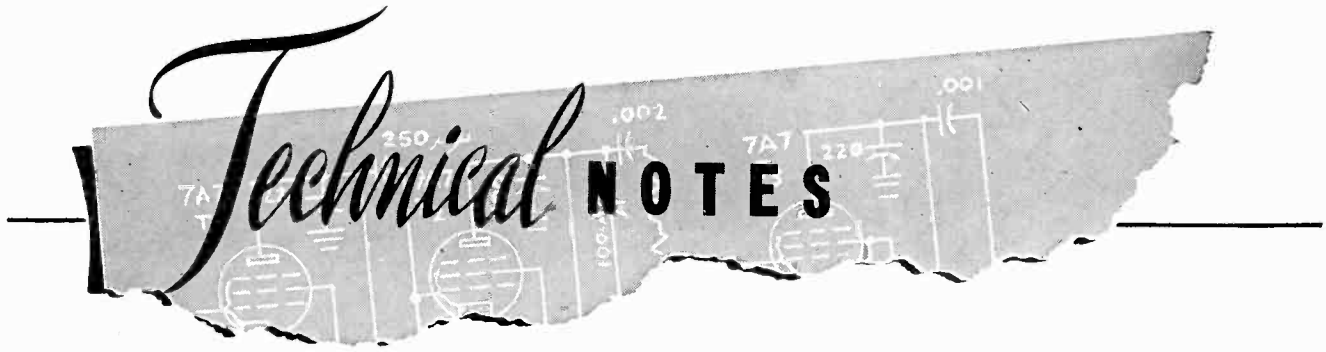
Troubles which may occur to models of the following brands of TV receivers and cures of such troubles are listed in this paper-bound book, which carries 51 illustrations: Admiral, Air King, Andrea, Arvin, Belmont-Raytheon, Bendix, Calbest, Capehart-Farnsworth, CBS-Columbia, Certified, Crosley and DuMont. Information is furnished by manufacturers themselves.

Radio & Television Workshop Manual, *by Sidney A. Dimond and Donald M. Andersson. Prentice-Hall, Inc., 70 5th Ave., New York 11. 301 pp. $4.50.*

For the beginning student in radio and television, this workshop manual's detachable pages include lessons and sample scripts on: Radio—voice and microphonic techniques, music and sound effects, auditions, production of scripts, technical tips, narration, commercial copy, news and music continuity; television—writing for visual presentation, properties, camera angles, characterization and sample scripts.

Television Scripts for Staging and Study *by Rudy Bretz and Edward Stashoff, A. A. Wyn, Inc., 23 West 47th Street, New York 36. 332 pp. $4.95.*

Here is a comprehensive guide to creative camera work. Original directors' scripts, marked to show floor plans and camera positions, are included. Accompanying one script are televised pictures of certain scenes to show what the TV audience actually saw. Techniques of good photography and staging are explained with an interesting text and many pictures and drawings.



New Microwave Antenna

A two-foot parabolic reflector—designed to meet broadcasting demands for a portable microwave dish that is readily portable through narrow passages or through small apertures to reach the desired field transmitting point—has been announced by RCA.

The new RCA MI-26182-51 reflector is a lightweight antenna, easy to manipulate, and especially designed for very short hops within the city such as street to building top, building to building, or remote truck to building top. The antenna provides good performance in transmission paths of up to five miles.

The microwave antenna has a focal length that permits use of RCA's four-foot waveguide, MI-26186, to be used with the new antenna as well as with the standard four-foot diameter reflector. Two sets of bosses on the rear allow fastening of the dish to an antenna ring mount, or to the head end casting of the microwave transmitter or receiver.

The equipment is now available through all RCA broadcast field sales representatives or the Broadcast Equipment Section of RCA Victor, Camden, N. J.

Record Keeping for Tubes

A solution to inventory problems of users of industrial and transmitting electronic tubes has been offered by the General Electric Tube Department.

The department is making available, through authorized G-E tube distributors, a new simplified record-keeping system for all required data on industrial and transmitting tubes.

The inventory control record comes in a 10-by-12 leatherette binder which includes sections for a one-year inventory, service report forms, data and prices on all G-E industrial and transmitting tubes, a sheet describing G-E tube manuals, and an interchangeability data section.

Besides the inventory control record, the program also includes a tube life record-keeping system for large industrial tube users, broadcasters, and telecasters. This system provides a supply of tube life record cards, with spaces for all necessary data, and a metal file cabinet for the cards.

'Slice-Away' Assemblies

Two novel types of RCA alkaline battery assemblies which can be sliced, like a package of candy mints, into numerous combinations of cells to provide different voltage requirements has been announced by the Tube Department of the RCA Victor Division.

The unusual battery assemblies are intended specifically for equipment designers and experimenters exploring application possibilities of transistors, according to L. S. Thees, general sales manager of the RCA Tube Department.

These battery assemblies are expected to facilitate transistor-circuit experiments because they permit rapid assembly of power supplies not readily available in standard commercial batteries.

Both RCA "slice-away" battery assemblies (VSO87 and VSO88) are 21-volt special-purpose types. Each contains 15 individual 1.4-volt crown-type alkaline dry cells firmly encased in a plastic sleeve. Each cell is indicated by a pair of ridges which are formed in the plastic sleeve by the scalloped edges of the metal caps of the cell. Various power requirements, from 1.4 volts to 21 volts, can be obtained quickly by slicing a section of the battery containing the necessary number of cells. Slicing can be accomplished easily with a knife or a razor blade.

The importance of "slice-away" battery assemblies is that they provide designers and experimenters with a flexible power supply that can be modified to meet the design problem of the moment, Mr. Thees said. Transistors are basically low-power electron devices, and the circuits which employ them have different drains and require different voltage supplies. A requirement, say, for seven volts can be quickly met by slicing five cells from the battery stack.

The RCA "slice-away" battery assemblies are in two cell sizes, obtainable from RCA battery distributors.

The RCA VSO87 is designed for current drains up to two milliamperes. Maximum dimensions are: diameter, $^{17}/_{32}$" height, $3^{3}/_{8}$". Suggested retail price: $2.20.

The RCA VSO88, which has larger cells and greater capacity, is designed for current drains up to 10 milliamperes. Maximum dimensions are: diameter, $^{15}/_{16}$"; height, $3^{3}/_{16}$". Suggested retail price: $2.95.

Station Breaks

WXYZ-TV Has One-Cent-Off Sale

An IBEW-contract station in Detroit, WXYZ-TV recently sold a new package show to a local distributing company for the unorthodox "bargain basement" price of $1,299.99.

The figure resulted from negotiations between William Hendricks, sales representative of the station, and Jack Surnow, president of the distributing firm, when the book-rate showed that the total deal added up to an even $1,300.00.

Surnow, being a fellow superstituous about the number 13, asked for a price change. Hendricks obliged, and a price cut of one cent was okayed by Station Manager John Pival to clinch the deal.

For TV Film Programs

Progress toward the development of television studio equipment designed to make possible the airing of filmed programs with quality equal to "live" pickups has been announced by the Radio Corporation of America.

The ultimate goal is nearer as a result of extensive studio research in television film broadcasting which led to the development of a new type camera, Dr. Henry N. Kozanowski, research engineer for the RCA Victor Division, recently told a meeting of the National Electronics Conference at the Hotel Sherman.

The new TV film camera, which uses a newly-developed vidicon type tube, and has a sensitivity for film operation approximately three times greater than present iconoscope film cameras, was described in a paper read by Dr. Kozanowski.

The new RCA camera—expected to go into production early next year—will provide picture quality comparable with live pickup performance, he said. In addition, the camera can be operated non-synchronously, making it possible to provide local film inserts in network programming. The camera's simplicity also makes it very attractive for remote control operation with a minimum of adjustment and attention.

"There has been a definite trend in the direction of recording certain programs directly on film for reasons of smoother performance, possibilities of editing, less strain on actors, and the increased versatility provided by the application of well-developed motion picture technique. Such a program is, therefore, no longer considered as a substitute for live-studio programs. In this case, the ultimate goal is picture quality which will make it impossible for the home television viewer to know whether the program material is live or is recorded on film. The same goal is called for in kinescope photography for delayed broadcast, program storage, and distribution by network affiliated stations," Dr. Kozanowski declared.

"The formation of these new trends in television broadcasting spurred on an intensive program of evaluating many hitherto unexplored methods of film reproduction. The vidicon pickup tube, which was being developed for industrial television applications, was investigated for possible application to broadcast pickup service. Our resultant work on the vidicon film camera during the past two years has convinced us that it comes closest to meeting the requirements for an ideal film camera."

Dr. Kozanowski elaborated the criteria used in determining performance of various type film cameras and analyzed the performances of the new instrument. He declared the vidicon introduced a minimum amount of deterioration in the translation of the optical information into a television picture signal.

The RCA engineer said that the new camera is being designed with these goals in mind: a small unit that can be mounted directly on either a 16mm or 35mm projector or integrated into an optical multiplexing system, and having rack-mounted auxiliary circuits for ease of maintenance and performance check. The control panel will be remote from the rack so that it can be installed below a master monitor for convenient operation.

Errata

We regret that the designation of the "line winding" in the Grounded Emitter circuit, Figure 8, Page 10 of our October issue somehow came out "line wiring." But this is consistent with our policy—we like to put something in our magazine for everyone, and some of our readers delight in finding mistakes.

Technician-Engineer