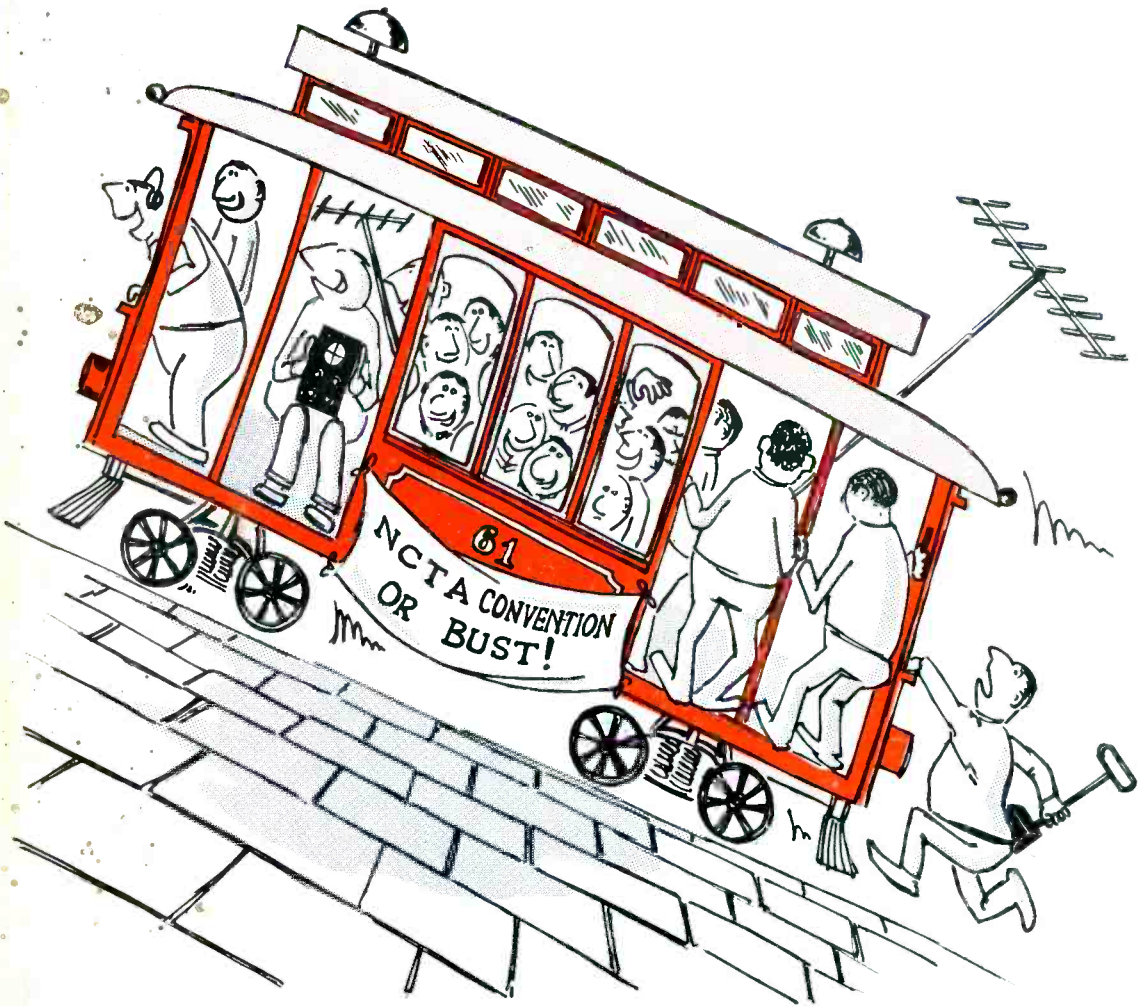


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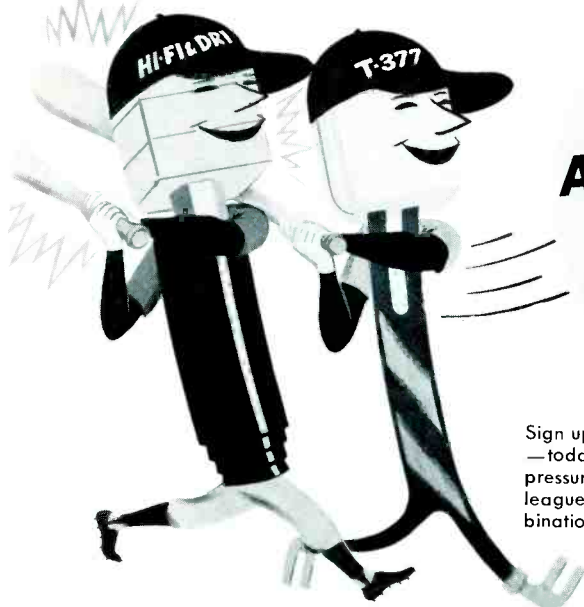
TELEVISION HORIZONS



DEVOTED ENTIRELY TO TELEVISION RECEPTION

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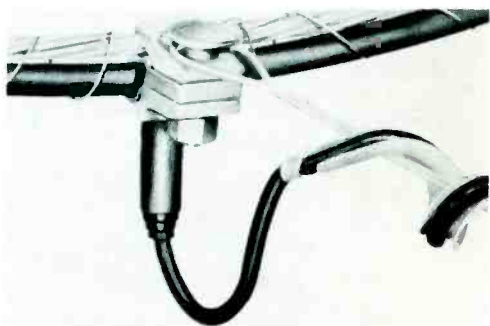
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Exclusive and Late News of the TELEVISION RECEPTION INDUSTRY

San Francisco—or Bust!

The dates are June 19-23. The scene is the Jack Tar Hotel in San Francisco. The event is the Tenth annual National Community Television Association convention. This semi-special issue of Television Horizons is dedicated in part to the Cable TV industry's gala-annual meeting which we have every reason to believe will be a fantastic success. At press-time check-in more than 800 guests are expected to converge on the City by the Golden Gate for the week long affair. While we don't pretend to believe all will arrive via cable car (see cover) we do feel few will leave the city without succumbing to a token ride on one of America's most famous modes of transportation.

Television Horizons will be on hand in San Francisco to cover this very newsworthy event with a full staff of news hounds and photographers. But more than that we want NCTA'ers (and guests) to feel that "here at last is long overdue press representation for the industry." Make a point to say hello to TVH—won't you?

And mark down a mental note to make arrangements to receive the July issue of TVH... a full eight page report in photo and word of the 1961 NCTA Convention.

(P.S. The July issue will probably arrive in your office before you do if you plan on traveling to the 50th state by Jet Tour following the convention!)

Once Again—Pay Cable TV

Conventioners in Miami (1960) will recall the impressive Pay-TV demonstration put on by the TelePromTer Corporation. *Hold on to your hats...* 1961 will feature another round of Pay-TV exhibits, most note-

worthy of which is an newly developed system by Home Entertainment Corporation, Beverly Hills, California. Interested readers will find a special pre-release story on the system on page 32 of this issue of TVH.

FCC Would Allow "Two Finals" For V Translators

The Commission invites comments towards a proposed amendment of section 4.735 (a) of its rules governing VHF Translator operation, which reads as follows:

"The FCC proposes to permit the use of more than one 1-watt final amplifier radio frequency amplifier by a single VHF Translator station in individual cases where each amplifier would be used to serve a separate and distinct community which otherwise would be served by a separate VHF Translator. The FCC does not propose to permit the use of more than one final radio frequency amplifier to serve all or a part of the same community, or to serve (a) a community and (b) the surrounding region. Nor will the Commission allow two or more RF amplifier stages to simulate higher power (more than one watt) VHF translator operation with a broad or omni-directional antenna radiation pattern."

Confused? The FCC means simply this. If you live in Big Piney, Wyoming and want to erect a translator to serve both Big Piney and Little Piney, under the proposed rules you may erect a single Translator, with two separate and distinct final stages; One for Big Piney, one for Little Piney. The receiving antenna amplifiers, mixers and oscillators (as well as buffers stages) can be common to one Translator. Only the finals will be separate, and you will be permitted full one watt power in two directions.

Now It's Final—UHF Boosters Are Legal!

On May 17 the Commission finalized an order which makes UHF "On Channel Boosters" legal devices. The power output is limited to one-watt and the use of the units is limited to "boosting existing UHF Translator signals" into "dead areas."

To date only one known manufacturer is working on such a unit. In a late report to TVH, he noted "we have finally gone to cavity type construction and are hopeful field tests will begin shortly after June 1st." The unit was announced in this section of the April issue. Letters to *Television Horizons* from Maryland, Oregon, Washington, New Mexico and California indicate that "if and when" someone perfects the UHF "On Channel Booster" there will be a receptive market.

Transistors in Amplifiers

Elsewhere in this publication reference is made to the prospects for a "Transistor Show" at the NCTA Convention. When the story was written every indication pointed in the direction of "substantial unvieling of transistorized equipment" in San Francisco. In light of further reports late in May it is perhaps wise to tone down the prediction abit and to state that "considerable transistor equipment will be shown for the first time" in San Francisco. In recent days engineering reports to this desk point up a "reversal" in the transistor trend, blamed for the most part on the transistor manufacturers.

Others cite "intermodulation effects in line amplifiers which run at greater than 40 db gain are uncontrollable." Most manufacturers had been shooting for broadband transistorized amplifiers with no less than 50 db gain.

Two Battles Developing in Southern California

A long term feud between UHF translator operators and Los Angeles area television stations will break into the open soon. Stations have openly refused translators permission to rebroadcast programs citing "union contracts" which forbid them from paying local talent and floor personnel "the local-rate" when the station sends the program to a "second, third, etc. station," thereby forming a *network*. The translator ops main-

tain their installations do not constitute "broadcasting stations" in the network sense, while Los Angeles broadcasters say they are unwilling to "find-out" in court should the unions decide "translators are part of a network." In May a projected translator station group contacted the FCC seeking official Commission clarification on what does and does not constitute a network.

Said the letter (in part) to the Commission "... A solution would be to amend the rules to permit translation without permission but with formal notice in advance to the broadcast station and within thirty days after operation of the translator a follow-up notice with the coverage area more closely defined."

A second "behind the scenes battle" in Southern California involves the rich coastal town of Santa Barbara. The town is served with a single local station (KEYT) and in some areas 'passable' Los Angeles area reception is possible off the air. At least two Cable Companies are actively courting both the City Council and the County Commissioners seeking a franchise for a Cable Installation. Both report "the idea is making some headway" although neither expects an early decision. The market is a large one—60,000 plus receivers.

Impati on the Air!

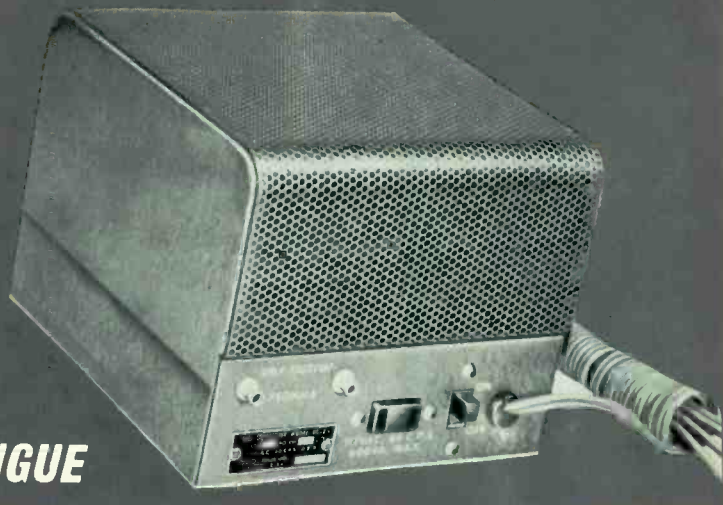
The airborne educational TV program was officially put in gear in Chicago on May 14 when the *Jerrold Company* threw the switch at a press conference held at the Conrad Hilton Hotel in downtown Chicago. Jerrold used the May Parts Show (May 22-24) to exhibit its reception of the 150 mile distant signals on channels four and thirteen of the Conrad Hilton's 3000 room master TV antenna system. A full report on Impati field tests and reception appears on page 34 of this publication.

VHF Translators in East—Three More

Great Lakes Television Company (licensee of WSEE-35 Erie, Pennsylvania) has filed a trio of VHF translators in mid-state PA. WSEE seeks a channel 7 unit in Franklin, channel 9 unit in Oil City and a channel 8 unit in Titusville. All three would translate WSEE.

*lowest cost UHF converter-
amplifier for master TV...
superb indoor performance*

**NEW
BLONDER-TONGUE**



UHF CONVERTER AMPLIFIER MODEL UC-2

The newest addition to the world's most complete line of master TV equipment not only converts a specific UHF channel to a specific VHF channel but it amplifies the signal as well.

Designed for master TV installation, Model UC-2 is particularly timely with the tremendous growth of the use of UHF in educational TV. The UC-2 is an economical approach to effective UHF conversion in master antenna systems. A crystal-controlled converter (such as the Blonder-Tongue MUC) provides stable drift-free operation in any temperature condition. Where temperature variations are small, however, (as in a heated room) the far less expensive UC-2 will perform extremely well. The UC-2 plugs into existing equipment in any master TV system. Many of the engineering advances responsible for Blonder-Tongue's leadership in the master TV system distribution field have been incorporated in the UC-2.

FEATURES:

- Low-noise, long life operation with frame-grid tube
- No balun needed—input is matched to 300 ohm antenna
- Built-in mixing network for mixing output with any other VHF signal
- Two equal outputs for separate branch lines
- Amplifies the TV signal 6-10 db minimum (depending on conversion)

A complete line of Blonder-Tongue distribution and conversion equipment is available to fit the needs of any master TV installation. Free system layout service is available by writing to Dept. TH-6.

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"Television Horizons' readers — always the first to know, the best informed, the first to act."

State of The Art

Exclusive Report . . .

What the FCC has been told about UHF

(Conclusion of a Three Part Series)

Television Horizons magazine has presented in the preceding two parts of this series an exclusive look into an FCC ordered technical study of current UHF-TV receiver designs. Parts one and two discussed technical information handed back to the commission by Airborne Instruments Laboratory of Deer Park, Long Island, New York, in which AIL presented its findings on various types of RF amplifiers which might be suitable for UHF-TV reception.

The first portion of this concluding report to the industry concerns further quotes from the AIL report to the Commission.

... "Industry Opinion"

Said AIL "Since the recommendation for the type of receiver to be used in the UHF-TV test (Editor's note: test referred to is the New York City high power channel 30 test, to begin in October of this year) must take cognizance of the receivers available now and in the near future, a number of companies manufacturing UHF-TV sets and tuners were contacted for information on the state of the art of UHF-TV receivers and the prospects for the application of new devices or techniques to these receivers. The question asked of these three companies were (1) "What type of UHF-TV receiver is most likely to be used in 1962?" and (2) "What device offers the most promise of being used in the RF front end around 1965?" The results of the replies are noted below. As can be seen, there is general agreement that the crystal mixer will be the device used in home receivers in 1962, but the opinions concerning 1965 are quite varied, partially because of the rather low level of effort presently being expended on UHF-TV receiver development. (If the public demand were to increase suddenly, as may occur from a possible FCC ruling, an intensive development effort would be initiated by the industry and these opinions might then be radically changed.)

COMPANY A

Crystal mixers will be used in almost all

UHF-TV sets in 1962. In 1965 the crystal mixer will still be used in some sets.

COMPANY B

In 1962 the crystal mixer will be the device used in most, if not all, UHF-TV sets. In 1965 they believe the crystal mixer will still be the major device, with possible competition from transistors.

COMPANY C

In 1962 the crystal mixer will be the device used in UHF-TV sets. In 1965 the crystal mixer will still be in common use with possible competition from tunnel diodes and transistors."

END OF QUOTE . . . for now

AIL does not identify the three "major set manufacturers" contacted for the prophecies listed (A, B, C) above. It seems fair to assume that RCA and Zenith are among those listed with Philco perhaps the third. Based upon sketchy marketing and engineering knowledge sifted down from each of these three respective companies, TVH feels RCA is responsible for Company A's comments and Zenith for Company C's notations.

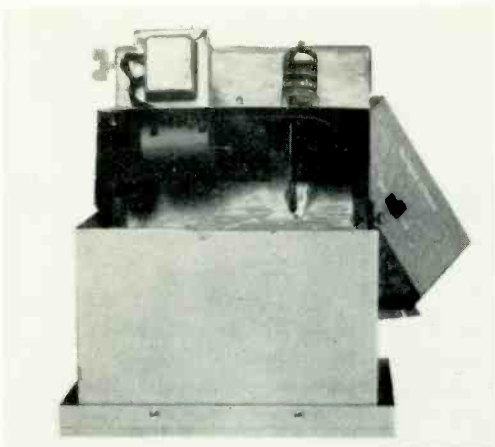
Also among the facts reported in the AIL report were comments from three firms identified as "UHF-TV tuner manufacturers." Listed merely as companies D, E, and F, they replied as follows:

	1962	1965
Company D	Crystal Mixer	All three stated
Company E	Electron Tube	"Depends
Company F	Crystal Mixer	strongly on
		what is avail-
		able at com-
		petitive prices"

RECOMMENDATIONS

In concluding its report, AIL furnished the FCC with its recommendation for suitable receiving apparatus to be used during the forthcoming New York City UHF test. The recommendation to the Commission reads as follows:

"If the lowest practical receiver noise figure is desired for use in the forthcoming UHF-TV tests, the sum-frequency parametric amplifier can be used. This device will provide stable



BLONDER TONGUE's new UHF signal booster for the UHF Translator range uses nine pin glass envelope triode developed in England. Unit mounts at the antenna, power supply is remote at the receiver.

performance and an overall receiver noise figure that is below four db across the entire UHF-TV band. However it is a complex device requiring high quality components and may therefore never find a place in commercial TV sets.

Alternately, an optimum crystal mixer which includes an improved IF noise figure is recommended. This device can provide an overall receiver noise figure of about eight db, and can probably be used in commercial TV sets. Furthermore, the use of such a device will probably not be challenged by its most likely competitor, the coaxial transistor, for several years."

INDUSTRY COMMENTS

Through the pages of *Television Horizons* the television reception industry has had the opportunity to "look-into the files of the FCC" and perhaps gain further insight into Commission thinking in regards to the UHF problem.

That the pending New York City UHF tests hold considerable importance to our industry is a foregone conclusion. What the results of the test will be are likewise not at all mystifying. The Commission (or at least the UHF fluniental members) has pre-decided what the results will be; based not so much on wishful thinking as much as upon engineering data amassed under the guise of a "theoretical evaluation" of the New York City area.

In other words, *UHF in New York City will work*. If it does not, there will be a host of red faced engineers and superiors.

Within the television receiver industry few, if any, labs are working "overtime" on UHF

receiver designs. The present day crystal mixer works . . . *maybe not so good* . . . but it does work. To date the major improvements in UHF fringe area reception have taken place in the associated industries . . . notably the antenna manufacturers, the transmission line manufacturers, and now the "external amplifier" builders.

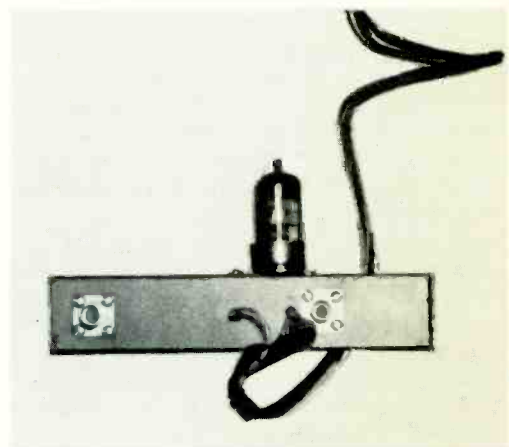
TVH has been singularly impressed with the hope the "coaxial transistor" holds for the plight of UHF fringe area viewers. It is a simple device, it shows promise of mass production techniques at reasonable cost levels, and the circuitry necessary is likewise simple in design. Based upon the cold shoulder reaction given to "parametric amplifiers," and other highly complicated forms of RF amplifiers, it is apparent "the answer to more sensitive UHF receivers must be a simple one, AND, an inexpensive one."

Today *only* the coaxial encapsulated transistor holds this promise.

ABOUT INDUSTRY PROJECTS

Not everyone is standing still. There are a few UHF receiver design projects going ahead, mostly in the east. Both *Benco* and *Jerrold* can supply you with single channel RF amplified crystal controlled converters for UHF . . . if you can pay the price. Again it is not so much a matter of design knowledge (or the lack of it) as much as it is a matter of money. We know how . . . we just don't know how — *cheaply!*

One enterprising chap told *Television Horizons* "*we are anxious about the coaxial transistor. We like it . . . we think it will work. In fact*



HORIZONS PUBLICATIONS developed this "trough-line amplifier" for UHF-TV more than one year ago. Amplifier uses German-made 6CM4 tube available through *Amperex*. A construction article on this amplifier appeared in the June 1960 issue of *DXing Horizons*.

we want to design a front-end for UHF including the complete gang-tuned mixer, coaxial transistor RF amplifier and IF amplifier in a single package which will mount as an integral part of the antenna. We would tune this device remotely from the receiver, and the only signal coming down the transmission line would be the IF signal."

Enthusiastic, we asked "When can we see a proto-type at the TVH lab?"

"When coaxial transistors come down from \$125.00 each" was our reply.

On the more current side, Blonder Tongue is about to release a brand new "signal booster" for UHF. The unit is primarily designed (at the present time) for UHF channels 70-83, or catering to the UHF translator market place. Called the *UB Ultrabooster* the BT unit works as a broadband UHF amplifier at the antenna as a "mast-mounting unit." The Ultrabooster employs a Genalax 2521 glass envelope tube (made in England) with a reported transconductance near 22,000 mhos. The 2521 is a nine pin triode.

Television Horizons has been testing "Lab Sample Number Six" of the *UB Ultrabooster* for some weeks as this is written and a preliminary field use report can be expected in the months ahead.

Another new unit in a similar vein will be announced shortly by a second major manufacturer. This one is a "semi-broadband" crystal controlled UHF converter which converts a five channel (30 megacycle bandwidth) UHF range down to the high VHF channels. In the particular lab sample we saw channels 72-76 were converted to channels 7-12. Again the conversion is done at the antenna as a further effort to save on transmission line losses which soar at UHF frequencies.

In June of 1960 *DXing Horizons* magazine (forerunner to *Television Horizons*) reported on a UHF trough-line amplifier which produced "noticeable gain through front end noise figure reduction." This particular unit employed an Amperex EC-86 tube designed for UHF service in Europe. The amplifier was developed in the *Horizons* laboratory and still appears to be the only semi-broadband device around today.

FORECAST

With *new blood* on the Commission (notably *Commissioner Newton E. Minow*) the next twelve months are expected to see vast new changes in the allocations scene. Already the more farsighted UHF broadcasters "have

heard the word" and are busily filing with the Commission to grab-up the most favorable UHF channels in their areas. The most recent move in this category is WNOK-57 at Columbia, South Carolina, which will in June move to channel 19. As Commissioner Robert E. Lee said in October of last fall, "Those now on UHF will have the first crack at the low UHF channels."

What all of this will do to the fringe area industry is a matter for further discussion. You as industry persons should recognize that where VHF stations now reach out 100 miles, their U counterparts will be hard pressed to reach 65. This means a lot of towns and cities now with grade B television will be faced with a decision; (A) *Put on a station of their own*, or (B) *Install either Cable or Translator systems* to bring television "back into town."

A special *Horizons'* report to the industry on this very topic will appear in the August issue of *Television Horizons*. R.B.C.

CALIFORNIAN WINS MARS CONTEST

During the month of April *Mid America Relay Company*, Rapid City, South Dakota staged at nation-wide contest for VHF translator enthusiasts, offering as first prize money a brand-new *Mac-10 VHF Translator*. The company has announced that first prize winner is *James Warta* of *Mammoth Lakes, California*. Warta, in taking first prize, completed an eight question survey of existing translator equipment and completed in twenty-five words a statement as to "features he would like to see in future manufactured units."

IN ERROR

Page 30 of the May TVH reported the *Benco Company*, Toronto, Canada will be using "the new Amperex 6939 dual tetrode" in their new VHF translator. Elmer Nelson, President of *Telson Electronic Products Inc.* of Rapid City, South Dakota reminds TVH that "the 6939 is NOT a new tube and has in fact been proven through several years of use." Notes Nelson "because of the tube's known reliability we have selected it for our TEPCO VHF Translator."

San Francisco Preview

NCTA Tenth Annual Convention

by Jackie Johnson

Television Horizons Staff Writer

One day early in May this reporter journeyed to the fabulous city by the Golden Gate for a guided pre-convention tour of the site for the NCTA 1961 convention.

On hand to greet me was Mrs. Claire Perkins, Sales Manager for the "hub-bub of convention activity" at the brand new (and slightly extra-special) JACK TAR Hotel. "Mrs. Perkins" we asked, "what makes the JACK TAR Hotel and San Francisco the ideal location for this year's meeting?"

We felt pretty smug asking such a question, for we have lived on the outskirts of the San Francisco Bay Area all of our life and to "us" *"the city is it!"*

Mrs. Perkins smiled like a chesser cat about to gobble up an oversized mouse and then replied simply *"Because the Jack Tar IS San Francisco, and San Francisco IS San Francisco."*

All of which, we feel, is another way of saying that if you haven't been to "the Paris of the western hemisphere before you have a unique and thrilling experience in store."

Because the convention is a family affair (and in fact, we have been informed that fifty family groups will take the jet-tour to Hawaii following the convention) we have approached this "preview" from the family vantage point.



INSIDE THE COURTYARD at the JACK TAR the swimming pool provides enjoyment sheltered from June breezes, while only yards away (in background) an all-year ice skating rink will delight the youngsters.



SHINING IN THE EARLY MORNING sunlight the bright orange and blue be-decked JACK TAR Hotel is NCTA convention headquarters for 1961.

San Francisco in June is unbeatable. The weather is exceedingly comfortable . . . with just enough touch of "the coast" to send you home full of vim and vigor. The natives will tell you that "winter arrives" sometime around June 15, and lasts through late August. But a word to the wise. "Winter" to a San Franciscan means a little bit of fog and temperatures in the high fifties and low sixties. Coming from the blistering plains of the mid-west or the sunbaked coastline in the east the weather will affect you one of two ways. You will come to town dressed in a summer suit and shiver for four days, or you will arrive with the proper type of clothing and truly enjoy your stay visiting the 1001 spots that makes San Francisco truly San Francisco.

For the man this will mean a light top-coat and a fall suit. On the feminine side suits are a must. Dark cottons are suggested with informal cocktail dresses and wraps high up on the list of *musts*.

But more about convention center. The JACK TAR Hotel is a brand new 403 room extravaganza located on the heart of "auto-mobile row" in downtown San Francisco. On the side of a hill the brilliant orange and blue JACK TAR stands out well above surrounding buildings. From the technical standpoint the JACK TAR utilizes a closed circuit television



ENTERING FROM THE OUTSIDE WORLD on the right you register to the left of the staircase and then wind your way upstairs to the "exhibit area."

system between the 400 car garage (under and below the hotel itself) and the registration desk. If you wish you may register (via-TV) while your car is being unloaded and then go directly to your quarters without as much as setting foot in the plush upstairs lobby.

Of special interest to CATV convention goers is the owner of the JACK TAR chain of hotels, Charles Sammons. Sammons himself is a CATV systems owner (in the southwest he participates in a number of systems) and the phrase "CATV" is not altogether unknown at the JACK TAR. Sales Manager, Claire Perkins was exceedingly interested in our May copy of *Television Horizons* and she quickly recognized many of the industry people pictured throughout its pages.

BOOTH CENTRAL

As is the case at most conventions the main booth-exhibit area will be "the" gathering spot for those in attendance. Somewhat more than twenty-five booths are expected to be in operation during the meet, representing nearly every major manufacturer and supplier of CATV equipment and services.

At the JACK TAR you enter the front door directly in front of a set of cross-hatched stairs (see photo three) which takes you up a flight to the "exhibit lobby." The exhibit lobby itself is visible in photo one as the first row of windows above the white-topped overhanging roof covering the central entrance way. The exhibit lobby is rectangular (see floor-plan map) but "like a doughnut in shape" as the large cross-hatch stairway in the center forms "the hole" in the center of the floor space area.

WHAT TO DO—WHERE TO GO

NCTA Special Assistant Frank Nowaczek notes "many special tours and showings have

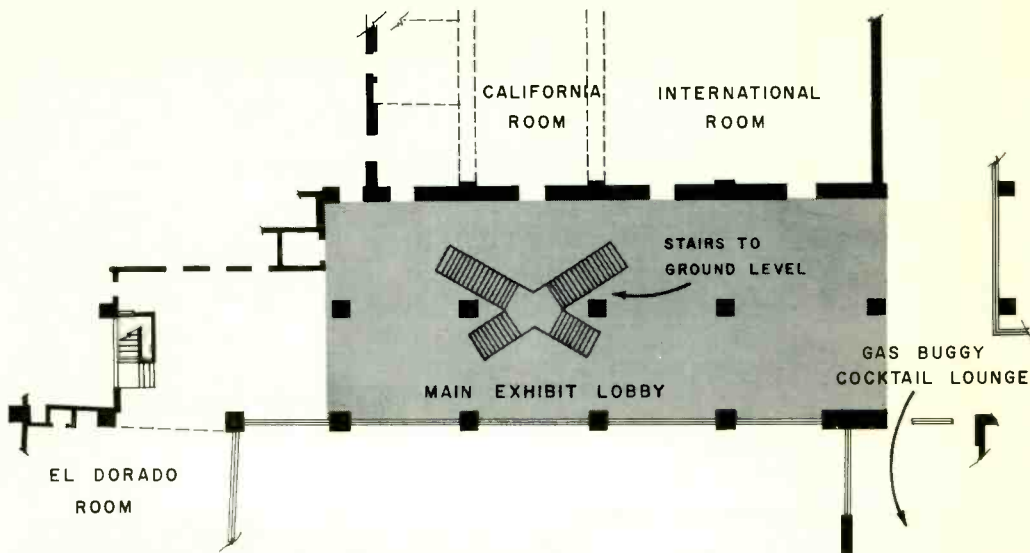
been planned for the ladies (as well as the gents.'" However San Francisco is a city which literally "must show you itself." In other words "you will have to find time to get away on your own, to wander and probe on your own, if you really want to take in the city."

For all first-timers "one-of-a-kind attractions" such as the cable cars, Chinatown, the Golden Gate at sunset and the beaches and parks are a must. The JACK TAR is convenient to most everything and within easy taxi-fare to all of the city's more attractive night (and day) spots. From the hotel's front steps, downhill to the right (down Van Ness Blvd.) is Market Street and downtown. Up-hill to the left is in the general direction of (a) Nob Hill, (b) Chinatown, and (c) the Golden Gate (if you go far enough). As the hotel is built on a hill, going out the "backway" (up-hill) will take you (eventually) to the coastline and the beaches. Going across Van Ness and down either Geary or Post streets will take you back downtown to Market street.

The hotel will provide you with a "packet-full" of information on the usual tourist sites and a long-list of world famous stores and shops which will be of interest. From our own "native experience" we heartily recommend a late evening trip to the *Top-Of-The-Mark* for a breath taking view of the Bay Area (and San Francisco) by night, a trip to *Fisherman's Wharf*, an afternoon stroll through *Chinatown* and a pre-midnight stop at the *Hungry-I* nightclub. The latter is the "birthplace" of many of America's modern-day entertainers, including Mort Sahl, The Kingston Trio, The Gateway Singers and numerous others. The show is always first-rate and we guarantee you will never find another night-spot quite like the "i" in the entire country!



YOU MAY EAT BREAKFAST HERE — or it may only be a meeting. But the chances are good you will find your way into the "Telegraph Hill Room," one of the many private meeting areas.



CROSS SECTIONAL BRIEF depicts main exhibit lobby on second floor (see photo 3) and the main meeting areas. Smaller meeting rooms (Telegraph Hill Room, Presidio Room, etc.) may be found to the left of the California Room.

Above all keep-in-mind that San Francisco is undoubtedly the "friendliest city" in the world. Taxi drivers, local residents and out-of-town buffs alike will bend over backwards

to help out when they find you are visiting in *their city*. San Franciscan's are a fiercely proud people and justifiably so, we believe. *Tell us if you don't agree when we meet in June!*

J.J.

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NCTA CONVENTION GUIDE

1961 — San Francisco

Dates: *June 19-23*

Place: *JACK TAR HOTEL, Van Ness at Geary, San Francisco*

Expected Attendance: *600 plus*

Expected Weather: *Daytime highs 55-65, Nighttime lows 45-50. Foggy in the mornings, crisp in the afternoons. Mostly clear at night.*

Clothing Advised: *Men — medium weight suits; women — suits, dark cottons, informal cocktail dresses and wraps.*

JACK TAR HOTEL GUIDE

Dining Facilities: *Sugar and Spice Dining Room (semi-informal) and Coffee Shop; Sugar 'n Spice Bar.*

Entertainment: *Swimming pool, all-year ice skating rink; "The Gas Buggy" deluxe food and beverage room.*

Transportation: *NCTA advises cars will be made available on a rental basis through a large agency. Taxi's are available 24 hours per day in front of the main lobby.*

CATV EXPERIENCE THAT COUNTS

Attention all CATV operators!

BEFORE

making your next equipment purchase . . .

BEFORE

planning that extension . . .

BEFORE

building a new system . . .

CONTACT AMECO

The Only CATV Manufacturer Who:

- Owns and operates CATV systems in 28 cities.
- Operates 55 channel hops of microwave.
- Maintains a FULL TIME construction crew.
- Offers products fully tested in Antennavision systems before being placed on the market.



Ameco, major manufacturer of operator designed CATV equipment in the West, offers a complete, uncluttered line of precision engineered products. Made with high quality components and the best materials available, the Ameco line offers the CATV operator long periods of stable, trouble-free operation with a minimum of maintenance.

Ameco engineering and operating experience coupled with system construction know-how and nationwide field representation, provides a comprehensive service . . . valuable to the most seasoned CATV operator, as well as to the newcomer to the industry.

FOR OPERATOR BUILT AND OPERATOR APPROVED CATV EQUIPMENT

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COMMUNITY AND
CLOSED CIRCUIT
TELEVISION
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PHOENIX, ARIZONA

MANUFACTURER OF QUALITY BUILT PRECISION ENGINEERED EQUIPMENT FOR CATV

NCTA ON THE MOVE

That events happen with rapidity in the CATV field is merely a matter of observation. In the past six months the NCTA has:

- (a) *Culminated a very successful membership drive;*
- (b) *Finalized and instigated a new top-echelon management program with PR expert Bill Dalton at the head;*
- (c) *Conducted a series of "first-time" (and very successful) seminars and meetings which drew together broadcasters, the FCC and CATV operators;*
- (d) *Represented the CATV industry at a workshop meeting of the "Radio and TV Executives Society of New York." and*

- (e) *Moved the executive offices of the association into brand new quarters (new to the Association that is!).*

With the NCTA Tenth Annual Convention "barely around the corner" *Television Horizons* traveled to Washington, D. C. for a look at the new offices and a "photographic tour of the plant" for our readers.

We found the office modern-well planned and (we were told) well within the budget established by the Board of Directors. Having spent some time visiting previously in the former offices on "E Street" we were in particular impressed with the roomy feeling the 2240 square feet generates. Prior to our April
(Continued on page 14)



MEETING FOR THE FIRST TIME in the new Washington offices, this executive session caught NCTAers (left to right) Glenn H. Flinn, Tyler, Texas; Fred J. Stevenson, Fayetteville, Arkansas; E. Stratford Smith, General Counsel; Larry Boggs, Oklahoma City, Oklahoma; Sanford E. Randolph, Clarksburg, West Virginia; William Dalton, NCTA President; Charles Clements, Waterville, Washington; Bill Daniels, Denver, Colorado and A. J. Malin, Rochester, New Hampshire.

NCTA San Francisco 1961 Convention

Program Highlights

(correct to press time)

PRE-CONVENTION

Friday, June 16

- 2:00-6:00 P.M.—Executive Committee Meeting Twin Peaks Room 1
- 2:00-3:00 P.M.—Pole Line Attachment Committee Meeting-Telegraph Hill Room 2
- 3:00-5:00 P.M.—Joint Meeting (above groups) Telegraph Hill Room 2

Saturday, June 17

- 9:30 A.M.-4:30 P.M.—Board Meeting (Executive Session) T. Hill Rooms 1-2
- 12:00 P.M.—Board Luncheon, Twin Peaks Room 1 and 2

Sunday, June 18

- 1:30-5:00 P.M.—Board Meeting (open Session) T. Hill rooms 1 and 2
- 6:00 P.M.—Board Reception, Smith and Pepper, hosts-California Room

Monday, June 19

- 8:00 A.M.—State and Regional Association Officers "Dutch Treat" Breakfast T. Hill Room 2
- 8:00 A.M.—Exhibit Hall Set-Up
- 9:00 A.M.-12 Noon—Committee Meetings Sea Cliff Room
- 11:00 A.M.-12 Noon—Membership and Dues Committee Meeting Embarcadero Room
- 1:15 P.M.—California Hosts Meeting T. Hill Room 1
- 2:00 P.M.-3:00 P.M.—NCTA-State and Regional CATV Association Convocation-California Room "Introducing National Chairman Sanford Randolph and President William Dalton"
- 3:00 P.M.-4:30 P.M.—State and Regional "Cracker Barrel Meetings" (meeting places to be individually scheduled)
- 6:00 P.M.—"Chairman's Welcome" Exhibit Hall-Reception for National Chairman and Mrs. Randolph, and Grand Opening of Convention Exhibit Hall

Tuesday, June 20

- 8:00 A.M.—"Old Timers" Dutch Treat Breakfast T. Hill Room 1
- 9:15 A.M.-12:15—Morning Session, International Room (Includes Business Meeting of NCTA)
- 12:45 P.M.-2:15 P.M.—Keynote Luncheon, California Room
- 2:15 P.M. ON—"Evening on the Town"

Wednesday, June 21

- 8:00 A.M.—First Timer's Breakfast, California Room
- 9:15 A.M.-12:15 P.M.—Morning Session (Includes business Session of NCTA)
- 12:15 P.M.—Special Feature Luncheon, California Room
- 2:00 P.M.-5:00 P.M.—General Business Session, International Room

Thursday, June 22

- 8:00 A.M.—Board of Directors, Progress Breakfast Telegraph Hill Rooms 1 and 2
- 9:15 A.M.-12:15 P.M.—General Morning Session, International Room
- 12:15 P.M.-2:00 P.M.—Buffet Luncheon, Exhibit Hall "Courtesy of Convention Exhibitors"
- 2:00 P.M.-5:00 P.M.—General Afternoon Session International Room
- 6:30 P.M.-7:30 P.M.—Hawaiian Rendezvous — "Cash Bar on Jack Tar's Patio Terrace"

Friday, June 23

- 8:00 A.M.—Exhibitor's Dutch Treat Breakfast, Telegraph Hill Room 2
- 9:00 A.M.-12:00 Noon—Morning Session, International Room (Includes closing NCTA Business Session)
- 12:45 P.M.—Board of Director's Luncheon, Telegraph Hill Rooms 1 and 2
- 1:30 P.M.-3:30 P.M.—Board of Directors Meeting, Twin Peaks Room 1 and 2

Saturday, June 24

- Post Convention jet-cruise to Hawaii.

CONVENTION SCHEDULE NOTES

Two factors keep *Television Horizons* from listing a detailed program schedule at this time.

Foremost is the flexible position a good portion of the schedule shows as we go to press. The second is space allowances. It may generally be assumed that the general morning and afternoon business sessions consist of a series of seminars and talks on related matters of considerable interest to all CATV operators. So complete and packed is this portion of the schedule alone that it would consume nearly four pages in print! Needless to say the detailed schedule for the Convention will be spelled out in the Program given out at registration time.

Television Horizons will be on hand to record comments and views presented at the Convention in word and on film. *We hope to see you there, and feel certain you will find San Francisco enchanting!*

RBC

PAY TV —

A JAB IN BROADCASTER'S RIBS

In a speech before the NAB convention in Washington during May NAB President Leroy Collins had this to say about "pay" or "subscription" television.

"I believe that pay television is a perversion of broadcast channels, and the NAB will oppose it at every turn, and with every possible pressure. I am completely convinced," he added, *"that if pay TV seriously takes hold in this country it can mean the elimination of free television as we know it."*

During the same NAB meeting FCC Chairman Newton Minow noted in contrast *"the infant pay TV is going to be given a chance to prove whether it can offer useful service. We (at the FCC) are going to protect it from those who could strangle it in its crib."*

Neither has made any specific comments about "wired pay or subscription television" and no mention was made of the current experiments in a Toronto, Canada suburb.

NCTA ON THE MOVE

(continued from page 12)



ENTERING THE FRONT DOOR AT 535 "The Transportation Building" takes you into the "waiting room." The office area behind the planter is "the general offices."

visit, our last stop to see the NCTA had been in October. We arrived on a Friday (then) and found the office entirely consumed with the production problems of putting out the "news bulletin." Thus we were pleasantly surprised to find the new office contains a substantial room devoted to printing and literature dissemination.

Housed in the new offices are nine staff members (including President Bill Dalton). The office area includes four private "office-rooms" and a large L shaped work area, in addition to the printing work-room.



THE GENERAL OFFICE AREA looking towards the door of President Bill Dalton (left-center) and Special Assistant Frank Nowaczek (right-center).

Our general impressions can best perhaps be summed up by a letter reprinted in the March 31 edition of the NCTA Bulletin. The letter came from Past President of the Association, Al Malin:

"I am amazed that you were able to achieve so much additional space in a thoroughly satisfactory building within the budget limits established by the Directors. May I also commend. . . the staff for the prudent and efficient purchases of attractive used office furnishings. . . I think the entire membership would be encouraged to know these things in these continuous times of great expense to a young and struggling association." R.B.C.

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- Move now to be on the ground floor of the expanding future in CABLE TELEVISION.
- Check with Daniels & Associates, Inc. for precise appraisals of existing systems.
- Let us outline an investment program in the field of CABLE TELEVISION.
- Management is no problem with the Daniels & Associates, Inc.'s proven system of personnel selection and recommendation.

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- Capital gains is frequently your best answer to depreciation problems. Let us show you why!
- To realize the most profitable return for your CABLE TELEVISION investment you must reach the broadest possible market with your sales intent message.
- Before selling or establishing a price, obtain an accurate appraisal of your system from our independent experts.
- OUR JOB... to locate buyers of competent ability and financial responsibility.

For discreet representation, sound advice and quick results—contact the ONLY CATV authority recognized throughout the United States and Canada. More than 90% of all CATV system sales to date have been handled by Daniels & Associates, Inc.

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**PROGRESSIVE BROADCASTERS alert to the natural expansion of their present interests are contacting Daniels & Associates, Inc. for information regarding CATV opportunities in their immediate coverage areas.*

Mast Mounted Preamplifiers

Why?

By Jack Beever
Jerrold Electronics Corporation

This writer has occasionally received a query from a mast mounted preamplifier user which goes like this — “I bought a mast mounted preamplifier and my pictures are a lot stronger, but they are just as snowy as they were before.” Subsequent investigation brings out the detail that the user hooked it up at the bottom of the mast in order to see how well it worked before tackling the chore of climbing the mast — and this shows a basic misunderstanding of the reason for putting a preamplifier up in the air.

Nobody likes to have vacuum tubes, transistors, coils, condensers, and resistors mounted on top of a vibrating structure, exposed to great variations of temperature and humidity. It is only done when its use is necessary to improve television pictures and the reason lies in the behavior of television transmission lines and the nature of “snow.”

Let's look at snow — suppose we connect a 300 ohm resistor across the antenna terminals of a TV receiver and crank the contrast control (which is a video gain control) all the way up. The picture tube face will look like a snow-storm scene if the set has a normal amount of gain in the tuner and IF sections. The only way to get rid of this snow — which is actually the thermionic and shot effect noise of the tuner's RF amplifier and the resistor—is to reduce the IF and tuner gain until you can't see it. If you do this and then introduce a television signal into the tuner which can be seen at this reduced gain, the pictures will be snow-free as far as you are concerned.

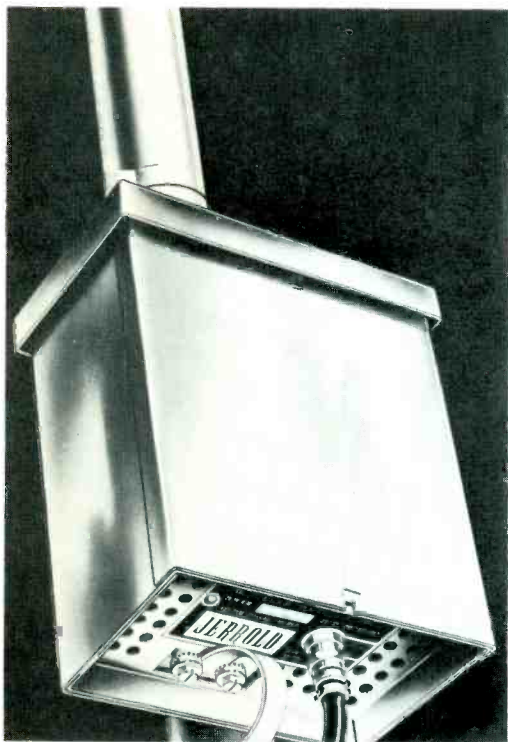
Observe that you didn't remove the snow—it is still there but at too low a level to be seen in *comparison to the picture*. This is a round-about way of saying that the signal-to-noise ratio is about 40 db, and *this* is a way of saying that there is a 100 to 1 difference between noise level and picture levels. If at this time you are wondering why when watching a fading signal, the picture becomes alternately snowy and clear, remember that all television

receivers have built-in automatic gain controls, and these change tuner and IF gain according to signal strength — on a strong signal the gain is 'way down, on a very weak signal the set goes “wide open” — maximum gain — and the snow that is always there becomes visible.

We must always keep in mind that the antenna looks (or should look) to the receiver as though it were a 300 ohm resistor at ambient temperature, and, therefore, will always make this electrical noise that causes snow. This is our limiting factor. Other components also make noise, and the ones that bother us are those located where the signal level is lowest, the tuner input. Here is an area where we can get help — good engineering can minimize the amount of noise generated here. Good television receivers are designed so that their noise figures are about as good as you can get with commercial vacuum tubes, and we can't look for much more help here.

The only way we can quiet down the receiver so that it doesn't produce snow on our pictures is to provide it with more signal. Sounds simple, doesn't it? You just put an amplifier ahead of the tuner. It would be nice if it worked this way — but all you really do is let your television set look at the snow produced by the input tube of the amplifier!

Here's where the behavior of the transmission line comes in, and here's where we can do some good — by improving the receiving system's overall signal-to-noise ratio. Let us look at the characteristics of twin-lead transmission line. We can examine some average losses, as quoted in various manuals, taking 200 megacycles — the middle of ch.11, as a good measuring point. The average twin-lead, flat ribbon, polyethylene insulated type will show a loss of 1.7 db per 100 feet at 200 megacycles. Tubular twin-lead shows about 2.0 db at the same frequency. Roughly, this means a loss of about twenty per cent of signal voltage for every 100 feet of lead. Sounds pretty good in comparison to RG59/U coax,



JERROLD DSA 202 antenna mounting amplifier combines low-noise front end and long-life tube functions into a single broad-band package.

which loses about forty-five per cent in the same 100 feet. However, as always, three is a fly in the ointment — the loss figures quoted are for measurements made in free space, dry air conditions, and a characteristic of parallel pair lines is that any substance, either dielectric or conductive, brought into contact or close proximity with the line will increase its losses.

This means that stand-off insulators, staples, roof edges, the walls of holes in houses, window frames, dirt or dust on the lead, salt deposits, rain, snow, ice, coatings of oxide on wires or insulation, bird dung or creeping plants all work together to make the line loss much more than the quoted figures. The worst offenders are staples, rain, stand-off insulators, and salt spray. For example, a staple across twin lead usually introduces a decibel of loss — thus six staples cause a 6 db loss — fifty per cent of signal voltage. Rain may cause the wire loss to go up as much as six times!

By the way, putting staples in twin lead so that the staple is lengthwise instead of across doesn't help much — so don't be fooled.

Experience indicates that a loss of 6 db is not unusual in the line between an antenna

forty feet up and a set at ground level. This means that the set is only getting half as much signal voltage as is found at the antenna terminals.

And if these figures sound out of line to you here is an experiment to try — connect a field strength meter to the end of a down lead from an antenna, and while reading signals, grasp the line first with one hand and then both — you'll be surprised.

If we have a fixed noise level at the set, as we have shown, then doubling the signal voltage at the antenna terminals will cause the AGC circuit to reduce the receiver's gain by half — and also the fixed noise by half, giving us half as much snow. But who wants to watch television pictures while perched on top of a mast?

The mast mounted preamplifier comes into its own here—it will have a noise figure (if properly designed) equal or superior to the television set. Being mounted at the antenna, it sees a signal-to-noise ratio twice as good as the receiver itself sees, and its output will contain the same quality of signal at a higher level. It can pass the signal to the receiver as long as its gain is enough or more than enough to overcome the down lead loss. This particular phase needs some talking about, so let's carry on.

Let us suppose that the preamplifier's gain is just equal to the line loss of the installation. In this case, the preamplifier takes the antenna signal, plus snow, adds its own unavoidable bit of noise, builds it up by a gain equal to the line loss, and sends it down to the receiver. The receiver sees a signal which is equal to that across the antenna terminals. Clear enough? Well, this particular strength of signal is such that the tube noise is a visible portion of it—otherwise we would have snow-free pictures off the antenna, and what happens here is that the tuner's noise becomes a visible part of the picture, too.

Addition of these noises can produce as much as 3 db more noise. This is still a useful improvement—we gained 6 db improvement at the preamplifier input and lost 3 db at the receiver input—but we can do without that loss by simply having more gain than necessary to overcome the down lead loss.

Let's say we have 10 db (3 times, approximately) more gain than necessary to cancel the line loss. This means 16 db gain in the preamplifier and a signal delivered to the receiver which is three times that across the antenna

(Continued on page 36)

Mast Mounted Amplifiers

Why They Are Used

By Lon Cantor
Blonder Tongue Labs
Newark, New Jersey

The trouble with TV reception in a difficult reception area is not just that the signal is weak; but that it is weak in proportion to the noise present. A weak signal can always be amplified. However, the noise will be amplified right along with it. Once the signal-to-noise ratio deteriorates, no amount of amplification will improve it. In fact, amplifications will always add noise, evidenced on the screen as snow.

The best solution to this problem is a mast mounted amplifier. Let's take a typical case to see why a mast mounted amplifier provides a better over-all signal-to-noise ratio than a conventionally mounted amplifier.

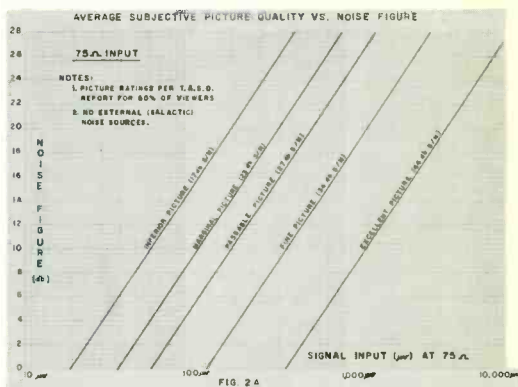
Suppose that the incoming signal has a strength of 350 microvolts. Let's further assume that the noise level delivered by the antenna is 10 microvolts. The signal-to-noise ratio at the antenna, then is 350 u volts/10 u volts or 31 db (35 times voltage).

Now suppose that we mount an amplifier right at the antenna to provide 20 db gain (ten times voltage). Every amplifier generates noise of its own. Let's assume that this particular amplifier generates 9 microvolts of noise. Since noise sources in series add by the root mean square, the total noise voltage would equal 10^2 (noise at antenna) + 9^2 (amplifier noise) = 14 microvolts. Therefore at the input of the amplifier the signal to noise ratio is no longer 31 db but 350 u volts/14 u volts or 28 db (twenty-five times).

According to TASO (Television Allocation Study organization), a 28 db signal-to-noise ratio provides a passable picture.

Now suppose we had the same signal available at the antenna and mounted the same amplifier 200 feet away from the antenna. We would then have to choose a cable to connect the amplifier to the antenna.

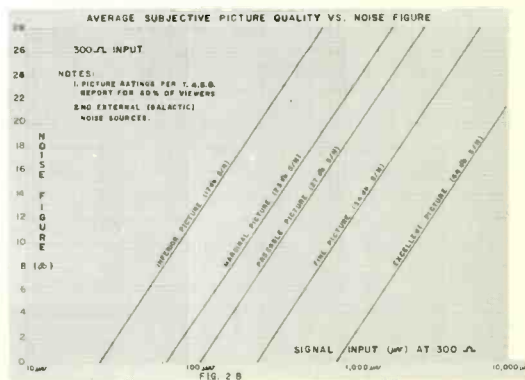
Table one would help us to select a cable for this purpose. Picking a cable means making compromises. Open parallel wire has the least loss *but it picks up the most interference*. Twinlead ribbon is less expensive and rejects interference better, *but its signal loss depends*



on the weather, increasing by as much as six times when it is wet. Where outside noise interference is a problem, coaxial cable must be used. RG-59/U is less expensive and easier to handle than RG-11/U *but it attenuates the signal more*.

Since the introduction of foam filled cable, ordinary coaxial cables are seldom used. Foam filled cable attenuates the signal far less than ordinary coaxial cable and costs about the same.

Getting back to our example, suppose we choose 200 feet of RG-59/U foam. The attenuation at 200 mc. would be about 4.5 db per hundred feet. Total attenuation would be 9 db. Of course, both signal and noise would be attenuated. Since the portion of the noise caused by thermal agitation (the other portion of the noise is galactic noise) would not be decreased at the end of the 200 feet, the signal



Type of Transmission Line	Cost 100 ft.	Interference Rejection	Signal Loss/100 ft.		Durability	Effect of Heat and Rain
			100 mc.	200 mc.		
RG-59/U Std.	\$ 7.00	Excellent	3.75 db	5.6 db	Good	Hardly Effected
RG-59/U Foam	7.00	Excellent	2.9 db	4.3 db	Good	Hardly Effected
RG-11/U Std.	12.00	Excellent	2.0 db	3.1 db	Good	Hardly Effected
RG-11/U Foam	12.00	Excellent	1.5 db	2.2 db	Good	Hardly Effected
300 Twinlead	1.50	Fair	1.1 db	1.7 db	Poor	Signal loss increases 3x when wet.
Open Parallel Wires — 450	5.00	Poor	0.4 db	0.5 db	Fair	Signal loss increases 6x when wet.
Open Parallel Wires — 600	5.00	Poor	0.2 db	0.25 db	Fair	Signal loss increases 3x when wet.

FIGURE 1

is actually attenuated more than the noise. But let's ignore this small factor (which only makes the case for mast mounted amplifiers even better) and assume that signal and noise are attenuated equally. Since 9 db is about 2.7 times, the signal would be attenuated to about 130 microvolts. The noise would be attenuated to about 3.7 microvolts. We combine (RMS) this 3.7 microvolt noise of the amplifier and find that the total noise is 9.7 microvolts. The signal-to-noise ratio, then, is 130 u volts/9.7 u volts or about 22 db (13 times). The TASO study shows that a 22 db signal-to-noise ratio produces a poor picture (between inferior and marginal).

Thus it can be seen that mounting the amplifier close to the antenna would mean the

difference between a good picture and a poor picture.

Of course it is important to design an amplifier so that it adds little noise to the signal. The amount of noise added by an amplifier is indicated by its noise figure. The lower the noise figure, the less noise the amplifier adds. One popular amplifier has a noise figure of 4 db on channels 2 thru 6. Figure two shows the relationship of the noise figure of an amplifier to the picture quality for given signal inputs (according to TASO standards).

Mast Mounted Amplifiers, however, are not an unmixed blessing. For one thing, they must be supplied with power. In a weak signal area, the antenna is often mounted some distance
(Continued on page 36)

Resistance of transmission line

Transmission Line	Loop Resistance (in Ω Per Hundred Feet)
Coaxial Cable (75 Ω)	
RG-59/U St'd., #22 Copperweld	4.1
RG-59/U Foam, Copperweld (.032 Center Conductor)	2.5
RG-11/U St'd., (7s, #26)	0.6
RG-11/U Foam, #14 Solid	0.5
Twin Lead (Ribbon 300 Ω)	
300 Ω , Flat, Copper (Belden 8225)	1.90
300 Ω , Flat, Copperweld (Belden 8230)	4.72
300 Ω , Tubular, Copper	1.90
Parallel Open Wire Line (600 and 450 Ω)	
#12 Copperweld *	0.8
#16 Copperweld *	2.05
#18 Copperweld *	3.26
#20 Copperweld *	5.18
#12 Copper	0.32
#16 Copper	0.8
#18 Copper	1.30
#20 Copper	2.02

* Computed for 40% Copper Conductor

FIGURE 3

Ameco On The Move

The sudden emergence onto the national scene of a relatively unknown, but aggressively competitive manufacturer of CATV equipment, has created considerable stir in the industry over the past several months. Boldly moving into an established market, one considered dominated by the eastern giants of the CATV industry, Ameco, manufacturing division of CATV pioneer, Antennavision, Inc., of Phoenix, Arizona, is already making its presence felt.

From a humble start in 150 square feet of space behind the system office building in Safford, Arizona, the company has grown to where it has been necessary to devote 6,000 square feet of its Phoenix plant area exclusively to the manufacture of its CATV and closed circuit TV products. Ameco plans to quadruple this production space.

In 1952, when CATV was already showing a healthy growth in the East, a group of businessmen in Safford, Arizona, decided they wanted TV reception. Seeking television techniques, they journeyed east to visit cable systems. Impressed by what they saw they pooled their modest resources and began construction of the first CATV system in Arizona at Safford. Almost immediately the people of nearby



Antennavision's \$18,000 aerial line construction truck shown in operation during construction of its Paradise Valley system in Phoenix, Arizona.

Globe and Miami requested expansion of CATV into that area, and Antennavision, Inc.,



Microwave relay point on Preston Mesa which receives four Phoenix TV channels from microwave transmitter on Hutch Mountain and transmits to microwave relay point at Jacks Peak for delivery to Antennavision's system at Glen Canyon Dam site at Page, Arizona . . . 250 air miles from Phoenix.



Installation of Ameco perfected G-line system in Antennavision's Glove-Miami system.

was born.

Finding that much of then available equipment would not function properly under the extreme temperature variations in the Arizona desert and mountains, Antennavision undertook development of its own equipment. Working on the systems by day, and installing hardware on amplifier chassis at night, the officers of fledgling Antennavision developed a line of CATV equipment which would operate under these difficult conditions. Neighboring CATV pioneers in Arizona and New Mexico heard of the equipment and wanted to buy, so the company formed its manufacturing division, Ameco. (Antennavision Manufacturing and Engineering Company)

Ameco showed steady, though not spectacular, growth in the Southwest; gradually expanding its sales activities into other western areas. Ameco is fortunate to be able to draw upon the electronic knowledge of the staff of Arizona State College School of Electronics, also used as consultants by General Electric, Motorola, Kaiser Electronics, Sperry-Rand and other Phoenix based electronic firms.

During this period of growth, the parent company, Antennavision, constructed systems in eleven Arizona communities, serving over 10,000 subscribers, and formed Antennavision Service Company, the first private common carrier to deliver microwave to a CATV system. Today, Antennavision Service Company

operates 55 channel-hops of microwave serving CATV systems in four states.

Use of microwave gave rise to problems in CATV distribution that heretofore had not existed. Ameco engineers tackled the problem and developed the demodulator-modulator technique for CATV head-end installation. Naming the equipment the Ameco-Tran, Ameco offered it on the national market. At present an estimated 600 Ameco-Trans are in service in systems throughout the U.S.

Recent acquisition of TV station KIVA in Yuma, Arizona, by Antennavision, sparked an ambitious system building program headed by the company's President, Bruce Merrill. Antennavision has six construction crews busily installing equipment in several turn-key jobs, and in its own Yuma, El Centro, Brawley, Calexico, Holtville and Imperial systems. When the Imperial Valley project is completed, Antennavision will be offering service to 40,000 Arizona and California homes in twenty-eight communities, and will be one of the largest CATV complexes in the country.

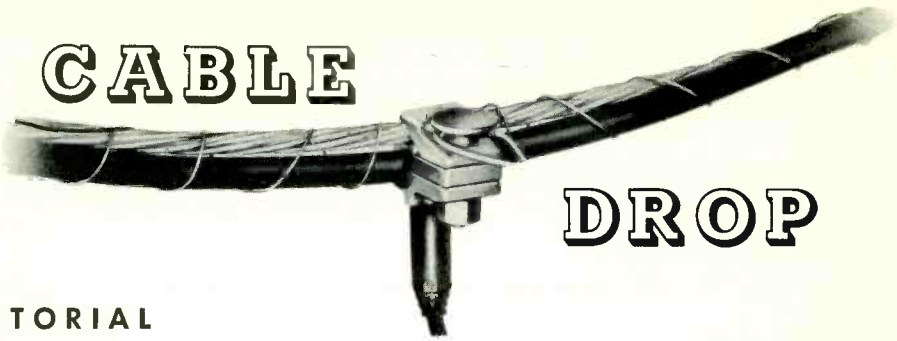
At the same time he acquired KIVA, Merrill decided to expand Antennavision's manufacturing division, Ameco, into the national CATV marketplace. He appointed Edward P. Whitney, former Executive Director of the National Community Television Association to head up the National sales program last February.

(Continued on page 36)



Ameco-Tran components on the production line.

CABLE



DROP

EDITORIAL

When *Horizons* Publisher Bob Copper appeared before the Seattle Pacific Northwest CATV meeting in April he presented a luncheon talk on the subject of "Can CATV Operators Meet Competition." The talk was general on content and did not attempt to point up any "particular form of competition" although a intrepid listener might have suspected he was referring to Translators and/or local television.

The meat of Cooper's talk jelled down to "CATV systems have existed for a number of years in almost virgin marketplaces. They have operated without competition in almost all instances, and have been able to get by with second rate promotion efforts. Today however the threat of federal legislation and local translator activity in every cable-fed town in the nation is changing the situation." Today said Cooper "the CATV operator must first awaken to the fact that he may at any time have competition, and secondly to the fact that competition in itself is not bad! In fact it may just be the thing the CATV operator needs to jar himself loose from a feeling of complacency."

Following the talk, several CATV operators in attendance admitted to Publisher Cooper he had hit home. Others had less to say. *No one disagreed.*

During the past 14 months a number of "Extras" have been dangled before the eyes of the nation's CATV operators. One of these is pay-TV via cable, a subject which will see yet further discussion in San Francisco. During the 1960 *Ninth Annual Convention* in Miami *TelePromTer* displayed a system of "key-TV." The approach to the *TelePromTer* system was through a direct pitch made to the CATV conclave by Krving Kahn, President of *TelePromTer*. The results of the public display were questionable. That the CATV operator was interested was not the question: That "he could afford to be interested" at a time when all phases of Cable

TV were coming under the scrutiny of pending federal legislation was the question.

This year's San Francisco CATV convention will see a similar "unveiling" of an "all-new" method of Pay-TV." As reported on page one of this issue, the displayer will be "National Telefilms Associates' new division *Home Entertainment Company*" formed on May 18, for the expressed purpose of displaying this system to CATV operators.

Whether or not the nation's CATV operators show enthusiasm for the NTA system operators are very much searching for "that extra-plus service" which will distinguish their product (cabled-video) from whatever other entertainment the set-owner is able to tune-in on his twelve channel receiver.

The potential is not only great, it is unbelievable large. And properly handled it can become everybit as profitable as any cable system in any virgin town ever turned out to be.

The CATV industry is ripe for a gimmick-system depreciation, taxes and competition all considered.

P.T. (Pay-TV?) Barnum . . . where are you?

LOCAL LIVE "ENTERTAINMENT TV" ON CABLE

. . . a first?

One of the early pioneers in the CATV industry is Bill Calsam, owner of *Craftsman Electronics*, Oneonta, New York and the owner-general manager of four CATV systems located in the central New York communities of Oneonta (3600 subs), Delhi and Unadilla (1200 subs). Calsam also operated and owned *Norwich Video* (1700 subscribers) until December 1960 when he sold it to a local (to Norwich) group of businessmen.

For some months the engineering staff at *Oneonta Video* has been busily preparing for

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REGULAR AND LOW LOSS FORM CABLES



59U



11U

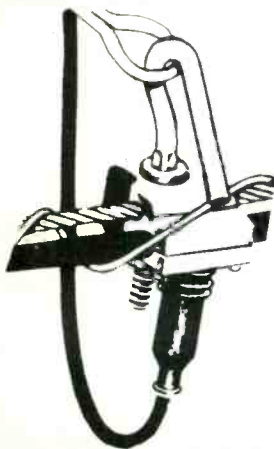


59U
MESSENGER

To meet the need for an ever growing industry, VIKING has developed a new non-contaminating material that extends the life of the cable 2 to 3 times.

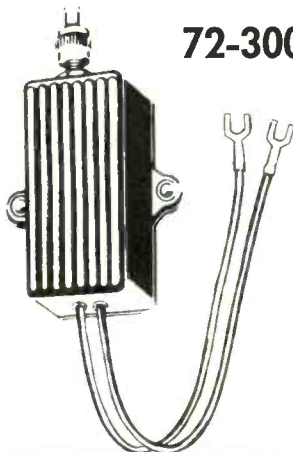
ALL CABLE IS SWEPT

"ALL-WEATHER" PRESSURE TAP



MATCHING TRANSFORMERS

72-300 ohm



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PRICES ON ALL OUR ITEMS—AND
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a late May date when "local-live entertainment television would be added to the 3600 viewer sets." Calsam, through his Craftsman Electronics, has been in a position to equip a local studio for sometime. Audio and Video modulators along with associated mixing and line-leveling apparatus are standard production line items.

But the way to "local-live television" on the Cable was more complicated than that. The foremost problem was the telephone company's restrictions on pole line attachments. The contract held with the land-line firm specified that his video coaxial cables could carry only commercially available "airborne" video programs. To add local-live television would be a violation of the contract. So Calsam set about setting his own poles . . . more than 3,000 in all.

While the pole conversion engineering program was progressing Calsam cemented arrangements with local educational institutions. A pair of colleges, a high school and various elementary schools are involved. All of the schools reacted the same way . . . in complete favor of using the Cable for locally produced instructional television.

Next Calsam set about obtaining local civic support behind the program. On May 24, of this past month Oneonta Video's first regular broadcasting began with the local Junior Chamber of Commerce sponsoring the Miss Oneonta Pageant introduction ceremonies with ten local beauties participating before the cameras. Following the selection of the "Queen" she came to the Oneonta Video Studios with Miss New York of 1960 for a thirty minute chat.

Calsam notes "we anticipate going on the air with regular programming immediately after my return from the San Francisco Convention."

Expansion at Oneonta Video will not stop with local-live television. At the present time Oneonta Video carries five channels, operating adjacent on the low band. Up to ten FM stations are also carried on the system. Background music is provided to stores in the area through the cooperation with Syracuse FM station WDDS.

Recently Oneonta Video's Washington attorney filed an application for a microwave system operating in the 6Kmc band. The microwave will bring New York stations to the system's head-end where "select independent stations and programs" will be made available to the Oneonta viewers.



DAGE CAMERA and Craftsman constructed mixing equipment equip a portion of the "Oneonta Video Company" studio.

The planned microwave system was yet another reason for the switch to his own poles, Calsam notes, as the telephone company pole-lease agreement prohibits microwave signals on cable.

EQUIPMENT

When the Oneonta Video system is completed and working Television Horizons will report on the actual installation engineering behind the project.

At the present time a pair of DAGE cameras feed a console with twin Miratel Monitors (see photo). A Bell and Howell 16 MM sound projector, one Selectroslide, a microphone mixer amp and three studio microphones complete the studio.

The lighting is a combination of fluorescent and incadescent.

The console video output and audio mixer output is fed into a Craftsman audio-video
(Continued on page 33)



CONTROL CENTRAL at Oneonta Video, Miratel monitors and audio-video mixing board.

IN CATV EQUIPMENT

THERE IS NO SUBSTITUTE FOR CRAFTSMANSHIP

CRAFTSMAN ELECTRONIC PRODUCTS, Inc.

ONEONTA, NEW YORK

Manufacturers of Integrity CATV Equipment

For the CATV System Engineer who demands
the Very Best "Monitor Quality" Line Signals

- Audio input—600 ohms unbalanced.
- Crystal controlled video carrier.
- Automatic frequency controlled 4.5 mc. aural carrier.
- FM Deviation 50 kc., linear to plus or minus one kc.
- Minimum audio input—minus 35 db.
- Maximum audio input—minus 10 db.
- VU meter permits accurate setting of FM deviation (0 db for 50 kc. deviation).
- Video carrier output range plus 30 db to plus 50 db.
- Audio carrier output range plus 20 db to plus 42 db.
- TV Channel 2-6 standard units, TV Channels 7-13 require additional converter.
- AFC controlled audio.
- 11 tubes.

PRICE \$260.00



CRAFTSMAN MODEL M-400
AUDIO MODULATOR



CRAFTSMAN MODEL M-500
AUDIO-VIDEO MODULATOR

- Independent audio and video inputs and independent aural and video RF controls.
- Built-in band-pass filter.
- Readily adaptable to composite video and 4.5 mc. aural carrier (i.e., to handle output of standard tuners).
- Video input one volt peak to peak.
- Twin VU meters give visual indication of FM deviation (audio) and video modulation.
- 13 tubes, employed as follows: 2 VR, 1 rectifier, 1 crystal oscillator, 1 buffer, 1 video amp., 1 modulator, 1 audio amp., 1 reactance modulator, 1 4.5 mc. oscillator, 2 IF amps. and 1 mixer.

PRICE \$375.00

Other quality engineered Craftsman products include matching transformers (indoor and outdoor), 2-3 and 4 way splitters, slope pads and other line accessories.

Complete Descriptive Literature and Prices available on Request from

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5 ELM STREET • ONEONTA, NEW YORK

TRANSLATOR

TOPICS

Prepared monthly by
James Beamer
P. O. Box 833
Livingston, Montana

TRANSLATOR CP's BEGIN TO MOVE!

On May 18 the FCC released the largest single batch of approved form 346's thus paving the way for what is sure to be a greatly increased flow of construction permits in the weeks ahead.

Washington reports to TVH indicate the Commission, in apparent self defense, placed twenty-five engineers on a crash program to evaluate form 346's early in May. Soon after the stepped up program was initiated the construction permits began to move. Prior to mid-May the applications were being processed at the rate of five per week. However on May 18 the Commission released forty-four approved 346's stretching from Midland, Maryland on the east to Long Creek, Oregon in the west.

This sudden spurt in Commission activity is welcomed by all VHF Translator groups who have been waiting patiently (?) for the "thaw" so as to be able to get a move on with summertime translator construction.

Needless to say the Translator manufacturers are also exceedingly pleased to see the thaw in grants as many have tied up valuable production lines and investments in this project while the Commission "bottled-up" the entire program.

1/10TH WATT TRANSLATORS—NO LICENSE?

During the May meeting of the *National Association of Broadcasters* considerable interest was expressed in a proto-type sample model of the MARS transistorized .1 watt VHF Translator. According to reliable sources, a prominent western legislator's aide carried the unit around in his coat pocket (it's that small!) and raised many eyebrows with the statement "This unit will run unattended for periods of six months to a year with simple dry cell batteries."

Your editor contacted *Mid America Relay Systems* (MARS) who confided that the new unit has been under serious considera-



THIS SCENE WILL BE REPEATED OFTEN in the weeks ahead as the FCC continues to crank out approved 346s. Here Fred Becker (r) takes delivery on an EMCEE VHF Translator from Video Utility Company representative Kenny Youngquist (center) as a member of the Board of Directors for the Circle (Montana) TV Club looks on (left).

tion by the FCC where it is thought "quite possible" it may be licensed for use by single family and small region coverage. Best of all, the all-transistorized unit (if operated at 1/10th watt or less) would probably not need to be licensed. Gene Bartlett at MARS told TVH "if we can run a production run of 100 units, we will be able to sell the unit for around \$200.00." Several people (mostly broadcasters) who saw the unit in Washington noted that at this price the super-miniature unit could be sold across the counter at parts houses much like conventional antennas. A photo of the unit appeared in the April DXH Salt Lake City Convention Report.

TAX DISTRICTS—REPORT '61

Montana and Utah were the only states to make changes in existing laws or to institute new regulations during the 1961 legislature session, in support of Translators in their states.

The Montana law is new while the Utah law involves an amendment of the existing law, which is several years old.

(Continued on page 28)

ONLY GEM OFFERS A COMPLETE RANGE of VHF TRANSLATORS

because

ONLY GEM OFFERS MODULAR TRANSLATOR CONSTRUCTION

Buy Only the Signal You Need . . .

GEM "SQUIRTER"—to 3 miles

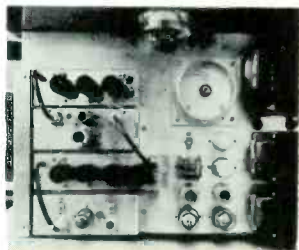
GEM JUNIOR—coverage to 5 miles

GEM-1 SERIES—coverage to and beyond 15 miles

. . . And Add On POWER as Your Community Needs Grow!



NEW GEM Indoor Translator Package (available in Squirrel, Junior and GEM-1 series)—Perfect for inside shack mounting, assuring ready access and convenient installation.



All GEM VHF Translators are engineered for long-life trouble-free operation.
All parts substantially overrated.

GEM-1 Series — ONLY \$995.00

GEM Junior — ONLY \$775.00

GEM Squirrel — ONLY \$650.00

Every GEM VHF Translator is available with fail-safe Radio Remote Control at a cost of only \$100.00 extra.

Before your Translator Group goes any further . . .

WRITE GEM TODAY!

Tell US about your coverage area and GEM will tell you how much power you need,
and **SHOW YOU HOW YOU CAN SAVE MONEY!**

"At GEM—Our Engineers Are Your Engineers"

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GEM, Inc.—From the Land Where People Know Translators Best . . . The Pacific Northwest

TRANSLATOR TOPICS

(Continued from page 26)

Wyoming, Idaho and Oregon had bills in the hopper but all were either lost in Committee or on the floor.

Examining the laws already existing, it is obvious that two separate approaches are possible for future law making attempts. The chief difference between the two methods is "where the tax assessments are placed." Colorado (for example) places the cost on property while Montana taxes the television set user (of the translator signal).

As you might suspect there are advantages to each of the systems. The broader use of the property tax derives a better source of revenue and makes more money available to the district. HOWEVER, there is also a corresponding increase in the number of complaints from people who pay their taxes but receive no acceptable translator service.

With the "user tax rate" the translator may be forced to operate on a lower amount of income, but by the same token, only those directly affected by the translator signal pay for the coverage and the complaints from non-satisfied users are reduced.

Yet another comparison can be found in the ease with which translator Tax Districts can be established. In Colorado this is determined by the County Commissioners or other governmental officials who are vested with the power to establish a television tax district.

In Montana it is necessary to petition the county commissioners to establish the district. This means extra work for those who wish to establish the tax district but in the long haul it does mean a better informed region.

Colorado specifies that any governmental subdivisions such as counties, school districts, incorporated (and un-incorporated) towns and cities may establish a district.

Montana establishes a separate agency to handle the district and may embrace all of one or more counties depending on the area covered by the television signal.

Both have a common method of tax revenues through an established agency such as the county treasurer.

Utah was the first state to instigate a tax district. During this last session of the legislature the existing law was modified to place the tax from the property of the viewer to the television receiver of the viewer.

Nevada, which has tax districts exactly

like those in Colorado, has one unique feature which might be examined by all states. It provides for the assessment to be made at closer intervals than once per year, and by so doing allows the district to pro-rate for six months the tax assessments. In this way are more fairly charged for the reception they received during their residence in the district.

NETWORK PERMISSION

... THE OLD BUG-A-BOO

KXLF-TV, Butte, Montana and KMSO-TV, Missoula, Montana are both CBS affiliates. Recently CBS refused to grant the *City of Butte Translator* broadcast permission for CBS programming carried on the KMSO signal the Butte Translator uses. The Butte City Dads, infuriated over the loss of their "second channel" went to bat for the city at CBS. Montana *Senators Mansfield and Metcalf* assisted *Montana Representative Olsen* in fighting for Butte with CBS. After a series of conferences with the network, CBS reversed its stand and granted Butte's Translator permission (on a two-year contract) to rebroadcast the KMSO signals into Butte.

But still network policy (at CBS and NBC) is to only grant rebroadcast permission to a translator using the signal of the nearest affiliated station!

Obviously Butte is nearer to Butte than Missoula is to Butte. And what will happen when the Missoula Translator requests permission to rebroadcast Butte into Missoula?

Other town's which may be affected include Riverton and Laramie, Wyoming, Scottsbluff, Nebraska and Lewiston, Idaho.

All of which proves once again that Television still remains the most controversial and touchy subject one can imagine in the west!

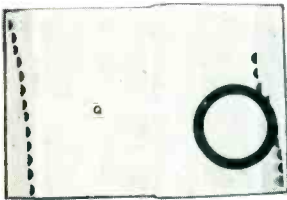
J.B.

WEAK SIGNAL BOX SCORE

"Status of Operating Systems, Units"
To May 25, 1961

VHF TRANSLATORS	
Licensed (on the air)	3
CPs Pending (346 filed)	692
CPs Granted	57
STA (on the air—347 filed)	1,064
Illegal—Operating	202
UHF TRANSLATORS	
Licensed (on the air)	297
CPs Outstanding	40
CPs Pending	30
CABLE TV	
U.S. Systems Operating	1,149
U.S. Systems Under Construction	47
Canada—Systems Operating	274
Canada—Systems Under Construction	11
FM BOOSTERS	
Illegal—Operating	17

Noah Webster Says . . .



QUAL-I-TY 1. That which distinguishes one object from others of the same species. 2. Degree of excellence. 3. Characteristic property.

When you install a VHF translator, your town demands two things — **QUALITY** and **RELIABILITY**. **TEPCO** offers both ingredients in a VHF translator designed for long term unattended operation with true **BROADCAST QUALITY** components and tubes used throughout.

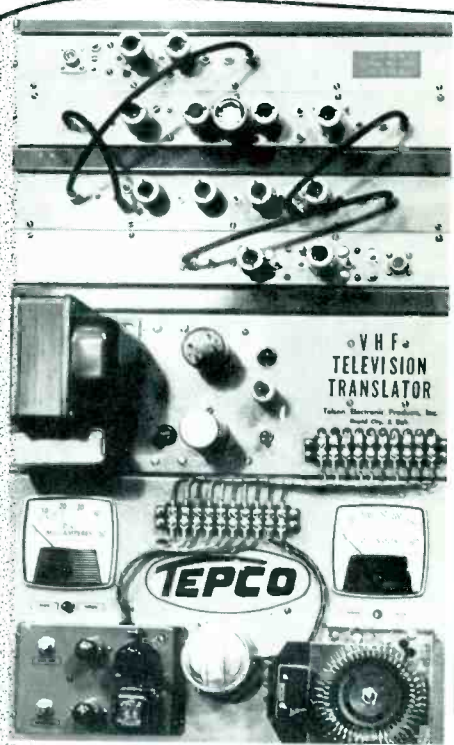
QUALITY — Only **TEPCO** builds these broadcast quality features into a VHF translator.

TUBE LINE-UP

1st R-F	6922	Final Amp.	6939
2nd R-F	6Q4	1st Oscillator and Multipliers (2)	6922
1st Mixer	6688	2nd Oscillator and Multipliers (2)	6922
1st Common Amp.	6688	Rectifier	5R4
2nd Common Amp.	6688	Coder	7728
2nd Mixer	6688	Cut-off	7728
Driver	6688		

and

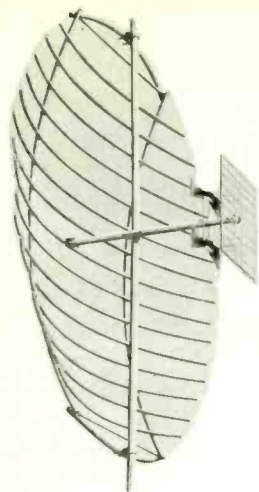
Ceramic Coils and Tube Sockets
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UHF HORIZONS

Conducted Monthly by
Harlow Speckhart
Route 1, Box 317
La Grande, Oregon

"News of the UHF Translator World"

RAISING FUNDS FOR NON-PROFIT TRANSLATORS

Many existing translator groups have established non-profit corporations for the expressed purpose of building and operating translator repeater stations. In many instances the capital funds have been raised on a voluntary contribution basis by soliciting the area of expected coverage. This is often done with no particular set or established fee in mind, each donor giving just what he felt he could towards the establishment of the operation.

Another method commonly employed by various groups is the "member-fee system." Here the group forms a non-profit corporation and sells "participating memberships" at a set fee to raise the necessary funds. Experience with this type of operation indicates a small number of people will subscribe to the system before the signal is placed on the air. Once the signal is on the air, the funds begin to arrive in greater and increasing numbers. Illustration one is a *Membership Application* recently employed in Oregon to sign up pledged members and donations.

In addition to the actual monies needed to put a translator station on the air, the initial planning stages should include a program of "organized volunteer labor." In practically all installations the actual monies accumulated through fund drives and whatever are barely adequate to purchase the actual equipment needed, and to oversee the installation of same by qualified personnel. Thus it is very important from a financial standpoint that translator groups plan to "do

the road building, shack construction or installation (assuming you are using one of the mountain top commercially constructed transmitter buildings, such as the *TV PIX Equipment Shelter*), and power line stringing."

It is extremely important that a large number of the homes who will actually use the translator signal participate in both the financial backing AND the labor of construction for the station. With a great many hands helping in the entire project you insure your future operation. People who feel they have had a personal hand in both the initial installation and construction identify themselves very closely with the operation. In later years this will be your best assurance of receiving the financial backing necessary to meet maintenance costs.

RAISING FUNDS

Successful translator operations (U or V) believe it is of utmost importance that a financial canvass be made of the entire coverage region at least once per year. This is done to ascertain who actually is using the signal. In some areas an arrangement is made with the local electricity company which directs its meter readers to make a note of the families in the area using the translator signal (as evidenced by UHF or VHF antennas, etc.). In other areas the gas company will do the job. As a last resort a special committee set up by the translator organization undertakes the project.

A card file should be set up which shows the name and address of every resident using the signal. The reverse side of the card can be used to record payments made, and serve as a check of delinquent or non supporting viewers.

From the amount of money collected during the early operating days of the translator(s) an annual operating budget should be established by the translator corporation (or organization). From the first few months of operation it will soon become apparent what percentage of the entire population served can be expected to be financially responsible. A ratio of the total accounts versus the paying accounts will then quickly tell you what the annual fee should be. It soon becomes obvious that every family using the signal will not, or cannot, participate in the financing of the installation. Ways and means of getting negligent (although financially capable) family's participation will be discussed next month.

— Membership Acknowledgment —
BLUE MT. TELEVISION ASSN.

Name:
Address:
Pledge: \$
\$ RECEIVED BLUE MT. TELEVISION ASSN.
Date: 19..... By:

— Membership Application —

I hereby apply for membership in the Blue Mountain TV Assn., and pledge to pay \$50.00

It is hereby agreed that this money shall be held by the Treasurer of Blue Mountain TV Assn., in the First National Bank of Oregon, Baker Branch, until sufficient funds are accumulated to build a Translator-Television Station on Mt. Fanny to provide Television to Baker Valley, Grande Ronde Valley, and Elgin or to such time as the membership deems the project is financially impossible in which case the funds of the account shall be pro-rated to the membership by a majority vote of the membership. It is hereby agreed that expenses incidental to the operation of the Association may be paid out of the fund.

Signature

Address

Date

ANNUAL MEMBERSHIP FEE

Years of experience has shown that it is good practice to hold the "Annual Membership Meeting" early in the fall, to set the fee for the following year. In most cases the fee payment is due on January 1st. In one successful operation two payment plans are offered. An annual fee of \$15.00 payable by the 1st of January as the first alternate, while a second choice collects \$1.50 per month. It is surprising how many of the families choose the monthly payment although it totals \$3.00 more per year (in this case).

Many non-profit organizations set a flat fee which is payable on a given date. No alternatives are available, and the negligent viewers go into a "non-cooperating" file.

Others choose to write a letter once per year asking for a donation. In most cases of this type the donation fee is not established as a flat-fee.

The important thing in obtaining any public support behind a translator operation is habit. In the early days of the unit's operation it must be crystal clear that regular contributions or donations will be needed to keep the translator operating. The habits formed at an early date by the translator group will to a large measure determine the success or failure of the translator operation.

H.S.

(Publisher's note: TVH feels this series by Mr. Speckhart to be one of the most timely ever prepared for translator readers. At such time as this series concludes (in the August

issue) reprints will be made available to interested parties).

EITEL ELECTRONICS

PRESCOTT, ARIZONA



UHF-TR-10
20 WATT
TRANSLATOR



VHF-TR-10/1
TRANSLATOR

Specializing in UHF and VHF, Manufacturing Translators and All Associated Equipment, Antennas, Preamplifiers, Converters—UHF and VHF

- EITEL UHF-TR-10 TRANSLATOR \$2,500
- EITEL UHF-TR-100 TRANSLATOR \$5,500
- EITEL UHF-PA-100 FINAL AMPLIFIER \$3,800
- UHF-CL-4A UNIVERSAL ANTENNA—Each . . . \$ 200

The smallest and most efficient—complete VHF Translator!

- EITEL VHF-TR-10/1, w/APC \$1,000

EITEL ELECTRONICS

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P. O. BOX 830

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LAB HORIZONS

Exclusive TVH Pre-Convention Preview

Home Entertainment Company's SYSTEM OF PAY TV

NCTA convention goers will be afforded an opportunity to view and ask questions about a brand new type of pay television which is described by the owners as being *"seventy percent less to install; fifty percent less to manufacture and seventy percent less to maintain than the equipment of any of the existing systems."*

"Yet" says Home Entertainer *"It accomplishes everything other systems do and offers several advantages over existing systems."*

The complete package consists of three major segments; a studio control center, a coaxial cable network and a tamper-proof home installation.

The system also provides a means for charging the subscribers for programs without running wires "back to the control studio," collecting coins or in any way entering the customer's home.

The studio center contains standard television studio equipment for projecting live, filmed or taped programs in either black and white or color. The actual signal leaving the studio contains three groups of video information plus a control channel. The equipment in the studio places the video channels on RF carriers which operate at "sub-channel frequencies." Thus the three sets of carriers plus the control channel are carried by a single channel.

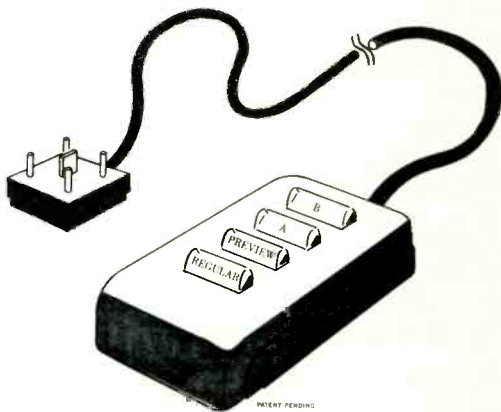
At the subscribers receiver the desired video program is separated from others by a tuner which has three "closed circuit" and one regular position. The subscriber selects the channel he wishes by pushing the proper button on the "tuner." The output of the tuner is fed to a "locally vacant channel" (using that as the "IF" frequency) which the customer tunes on his set.

One of the three program channels is a free "preview channel" used to provide general programming information, news, previews, etc.

Another channel is designated "A." This is used for mass-appeal programs, including first run movies. Channel "B" (the second pay-TV channel) is used for special events, sporting telecasts, operas, and other one-shot programs.

A fourth position allows the customer to return to "off-air" reception through a common antenna switching network.

The system works like this. The customer switches to the preview channel (no charge) and decides what he wishes to watch, if anything. Deciding on either channel "A" (continuously operating movies) or "B" he pushes the proper button on his "tuner." This operates the tuner switch AND automatically activates a ratchet relay on a box outside the customer's house. The ratchet relay punches a hole in a thirty day card showing the customer has selected channel "A" (for example).



SKETCH OF H-E-S
CONTROL UNIT

The same process is repeated for thirty days (or thirty-one) and then a regular meter man collects the month's cards and inserts new cards for the following month. All of this is done outside the home. The punched card is processed by a central billing agency which bills the customer as he is billed for his telephone.

No matter how often the customer tunes to Channel "A" during a one day period, he is charged only once "each day" for the viewing fare. Thus he may leave the movie and return to it later without incurring additional charge.

Because the signal does not enter the customer's set until he has made his viewing choice, the signal needs no scrambling equipment.

If more than one movie is shown on channel "A" per day, or more than one special attraction is displayed on channel "B" per day, an audio tone activates the relay which returns the customer's tuning to the preview channel automatically. Should he return to channel "A" or "B" for a second time to watch a second program he is charged once again.

According to advance information, the HEC system utilizes standard Cable TV line equipment (amplifiers, etc.) and is fully compatible with many existing CATV installations through minor equipment changes.

RBC

CABLE DROP

(Continued from page 24)

modulator. The built in band-pass filter handles the spill over and independent audio and video controls permit the adjustment of sound levels to eliminate upper adjacent channel interference. The output frequency is 24.5

to 30.5 mc, inverted. The control room signal is driven into 10,000 feet of JT-200 Times Cable to the first intown amplifier.

CALIFORNIA CATVers MEET IN SACRAMENTO

Occurring too late for release in the May *Television Horizons*, the California Community Television Association held their semi-annual meeting April 23 and 24 at the Senator Hotel in Sacramento.

Prior to the meeting it had been announced one of the prime topics for discussion would be the formation of a "Southwestern Regional Community TV Association." The proposed association would en-

(Continued on page 35)

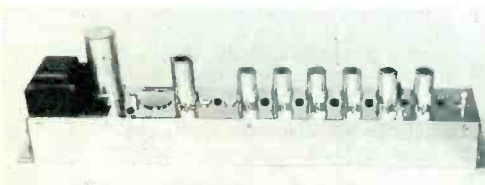


CALIFORNIA CATVers met in Sacramento April 23-24 in a semi-annual affair which brought together (left to right) William Dalton, President NCTA; Fred Rutledge, new President of the California Association; David McKay (Santa Cruz) Past President; Lewis Lemieux (Laguna Beach) Past President and Howard Bruggeman (Carmel) Past President.

Benco of Canada

announces true **LOW NOISE PRE-AMPLIFIER**

expressly designed for TV head end operation!



A Product of Canada*

*Available in the United States through Blonder Tongue distributors

P.A./L.N. (Low Noise)

SINGLE CHANNEL PRE-AMP

Utilizing Ceramic 7077 Tube

50 uV input realizes 100,000 uV output • Lowest noise—cascode input • 66 db gain—minimum
• Full AGC circuit • Input-output impedances, 75 ohms • Available channels 2-13 • Self contained power supply • C.S.A. approved.

BENCO TELEVISION ASSOCIATES

27 TABER ROAD • REXDALE, ONTARIO, CANADA

For DXers Only

AIRBORNE ALERT—Channels 72 and 76

Television Technician Rod Luoma of Detroit, Michigan was the first to report "off-the-air" reception of the *Midwest Airborne Educational Television* experiment to this desk. Luoma writes "I find the channel 76 signal quality slightly stronger than the channel 72 signal. The channel 76 signal produces a virtually snowfree picture. Picture quality in the first four days of observation (Luoma first noted the signals on May 11) appears to be quite consistent." Luoma also notes the first few days of tests were strictly test patterns and slides with voice identification. The hours of operation seem to run from 11 A.M. to 1 P.M. EST. The call KS2XGA is used on channel 76. Luoma uses a 12 Bay TACO Bowtie and 60 foot KTV tower to snag the 150 mile distant signals. Open wire line brings the signal down to the house where foam-filled line enters the viewing shack.

REPORT FROM CUBA

Amateur Radio operator CO2DL, A. Coro Jr., of Marianao, Cuba, writes "I wish to correct information you have printed regarding operating Cuban TV stations. Since the changes some of the stations previously listed have left the air. I work for CMQ as a technician so I know the following list is correct. Cuba is covered by a 6 Kmc microwave system now which ties most of the stations together. The stations outside Havana are merely repeaters however and therefore you often see the Havana identification on unlisted channels."

NOW OPERATING IN CUBA:

CMBF-4 Habana—100 kw., 665 foot tower

CMQ-6 Habana—100 kw., 665 foot tower

(Note: CMAB-2, CMBA-7 and CMBJ-12 are no longer operating.)

CMGQ-9 Mantanzas—28.5 kw., 300 foot tower, relays CMQ

CMGH-11 Matanzas—33 kw., 600 foot tower, relays CMBF

CMGF-13 Matanzas—14.5 kw., 300 foot tower, relays CMBF

CMHF-3 Santa Clara—33 kw., 600 foot tower, relays CMBF

CMHQ-5 Santa Clara—33 kw., 600 foot tower, relays CMQ

CMHA-8 Santa Clara—55 kw., 600 foot tower, relays CMBF

CMJ-12 Jatibonico—33 kw., 500 foot tower, relays CMBF

CMJ-2 Ciego-de Avila—5 kw., 250 foot tower, relays CMBF

CMJ-7 Ciego-de Avila—5 kw., 250 foot tower, relays CMQ

CMJL-6 Camaguey—100 kw., 765 foot tower, relays CMQ

CMJF-4 Camaguey—100 kw., 765 foot tower, relays CMBF

CMJA-9 Camaguey—55 kw., 450 foot tower, relays CMBF

CMJK-11 Camaguey—500 watts, local station

CMLF-13 Victoria de las Tunas—30 kw., 500 feet, relays CMBF

CML-5 Holguin—28.5 kw., relays CMBF

CMQ-3 Holguin—33 kw., relays CMQ

CML-8 Holguin—33 kw., relays CMBF

MORE — IN ERROR

Call it "printer's devil" (our's won't!) or what you will. Readers are referred to pages twenty and twenty-one of the May TVH in which the *Blonder Tongue AB-3 Amplifier* was detailed in our "Lab Horizons." Starting with paragraph four in the left hand column on page 20, the material should have read "To our surprise the AB-3 still perked along on its single cylinder following the "sky-to-earth-plummet."

"For testing purposes the AB-3 was alternately fed with long-john yagis for channel 2-6 and 7-13. A remotely controlled relay selects the input yagis as we switch channels in the lab."

Again (more printer's devils) in paragraph five in the right hand column on page twenty the material should read "Our unit was in the air seven weeks before the fateful March 25 tumble to the ground. Total clocked operating time was 490 hours. There has been a constant rumor about of late that 6DJ8 series tubes perk along very well for the first 500 hours and then take a sudden dip which may last as long as 250 hours. This (the rumor has it) is followed by a gradual recovery period during which time the tube comes back to almost original quality. (Then) it may last 4,000-10,000 hours with good quality high-gain results after the recovery period is completed."

Now... it makes sense!

FM/Q

ANTENNAE SYSTEMS

GET MORE FM STATIONS WITH THE WORLD'S MOST POWERFUL FM BROADBAND ANTENNAE

To be fully informed, send 30¢ for NEW Edition of "All About FM Antennae and Their Installations" by L.F.B. Carini. Contains Directory of FM Stations and Log.



FM/Q WETHERSFIELD 9, CONN.

CABLE DROP

(Continued from page 33)

compass CATV systems in California, Arizona, New Mexico, Nevada and Utah. The proposal was tabled, however, until the June National convention when a good representation of all of the states involved can be caucused.

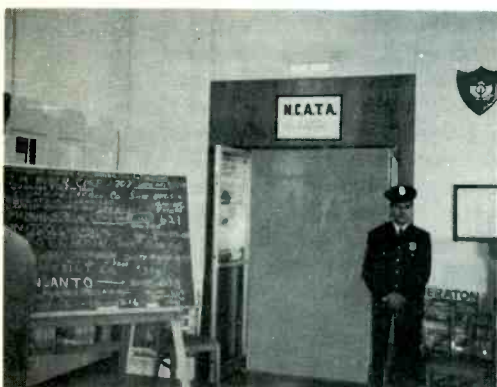
Officers elected at the meeting included Fred Rutledge of Ukiah (President), Dean DeFoe of Barstow (Vice President) and Harry Ford of Barstow (Secretary-Treasurer).

NCATA ANNUAL CONVENTION

NIAGARA FALLS

...best yet!

Special reports to *Television Horizons* from the *Fifth Annual Convention and Trade Show of the National Community Antenna Television Association of Canada* indicate this year's meeting was "the best ever" for all concerned. More than 140 registered participants represented 116 Canadian companies owning and operating 262 CATV systems in Canada were on hand. Manufacturers present to aid with the "Trade Show" portion of the event included *Benco, Jerrold, Dage, SKL, Entron, Raytheon, Delta, Master TV* and *Beatty* (towers).



NCTA ENTRANCE WAY at the Niagara Falls 1961 convention had a guard at the door!

The temperatures climbed into the low 80's with blue skies and perfect spring weather. But a few of the convention goers found time during the three day affair to venture out doors.

The NCATA Board of Directors met Thursday afternoon, May 11th, and one of the prime topics on the slate was the recently defeated Broadcaster sponsored effort to bring Canadian CATV under government

regulation. Apparently some of the CATV'ers on hand felt pretty good about the defeat of the regulatory move, as evidenced by a talk given by *T. A. Cross, President of Rediffusion, Inc.* Montreal. Said Cross "I feel that many of the Department of Transportation regulations governing CATV systems are unreasonable and unjustified. I also believe the DOT uses its licensing power to exert favoritism for the government operated CBC and for stations operated by the Canadian Association of Broadcasters."



INTEREST IN CLOSED CIRCUIT CATV continues to increase and DAGE was on hand with video originating equipment. On the right is Sam Salvin, Chief Engineer of Cable TV, Montreal.

Cross surprised many in attendance when he stated "I feel that the DOT regulation prohibiting the interruption of a program by the CATV operator unfair." Cross explained he got into "hot-water" with the DOT when he cut off regular programs from two US stations on his 18,000 drop Montreal system to bring viewers the *Johannsen-Patterson* bout. He noted "I thought they (the DOT) were going to pull the plug on me even though I had the station's permission to cut their shows."



BENCO TRANSISTORIZED CATV equipment was put to the test in this NCTA exhibit which showed a transistorized amplifier running "under water" in the aquarium at right.

AMECO ON THE MOVE

(Continued from page 21)

Richard F. Yearick, formerly sales manager for CATV equipment distributor Telco, was appointed Northeastern Regional Manager with headquarters in Lewistown, Pennsylvania. W. Edward Dart, Jr., was appointed to represent Ameco in the southwestern region with headquarters in Lubbock, Texas.

Further expansion came with the appointment of prominent CATV executive Courtney Kirgeeng, former president of the Pacific Northwest CATV Association and General Manager of Columbia TV Service Co., in Pasco and Kennewick, Washington, as Public Relations and Promotion Manager for Ameco.

Future plans call for Ameco representation in at least seven regional offices in the U.S., and for warehouse facilities in four major geographical centers for better service to Ameco customers.

MAST MOUNTED AMPLIFIERS

(Continued from page 19)

from the nearest AC power source.

One solution to this problem is remote power supplies. The amplifier actually consists of a mast mounted amplifier unit and a remote power supply unit. The remote power supply sends AC power up to the amplifier on the same down lead used to carry the signal.

Yet another problem is the resistance of the wire which varies the voltage available to the amplifier. Figure three shows the loop resistances of various types of transmission lines.

Since mast mounted equipment is not easy to reach, servicing can be difficult. For this reason, reliability is extremely important.

The output tube, for example, should be operated at less than 50 per cent of its rated plate dissipation.

WORDS OF CAUTION

When choosing your mast-mounted pre-amplifiers always be sure it is more signal you are after, not more noise. It is often easy to confuse the two!

And be especially careful to disconnect completely (pull the plug from the wall) the remote power supply for the mast mounted pre-amp *before* beginning work on the unit. Although you may only be working with 19-24 volts in some cases (or 117 volts in others) even the small amount of voltage can be substantial enough to "tingle you" into losing a grip on the tower. L.C.

ANTENNA PRE-AMPS — WHY?

(Continued from page 17)

terminals. Then, the signal-to-noise ratio at the tuner input will be better by a factor of three, and we are likely to be able to see only a one db—about twelve per cent, worsening of the noise level. Compared to the 3 db (forty per cent) this is quite good, and produces an overall gain of 5 db in signal-to-noise ratio, since we gained 6 db by mounting on the antenna and lost one db because we have more noise producing circuits. Bear in mind that this presupposes a 6 db down lead loss—if you have more loss, you get more improvement. More gain also reduces the effect of tuner noise, and gains up to 25 db are commonly found.

Well, that's the theory and concept — and like all good things, they are rarely as simple in practice as in theory. We have such things as input and output V.S.W.R., and what they do to you, not to mention such things as noise figure calculation, and how to predict how much good a given preamplifier will do from a given antenna. Let's talk about them next month, shall we?

TV PIX INC.

**EQUIPMENT
SHELTER
Model 55**

\$495.00

F.O.B. Salt Lake City

TV PIX Inc.

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SALT LAKE CITY, UTAH



FEATURES

Double strength molded fiber glass construction • Built-in guying and hoisting rings • Rust-proof, stainless steel and chrome-plated hardware • Super strength, weather-tight and self-insulating • Long life, low cost, lightweight • No upkeep expenses • Designed to withstand 115 MPH winds.

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Descriptive Brochure
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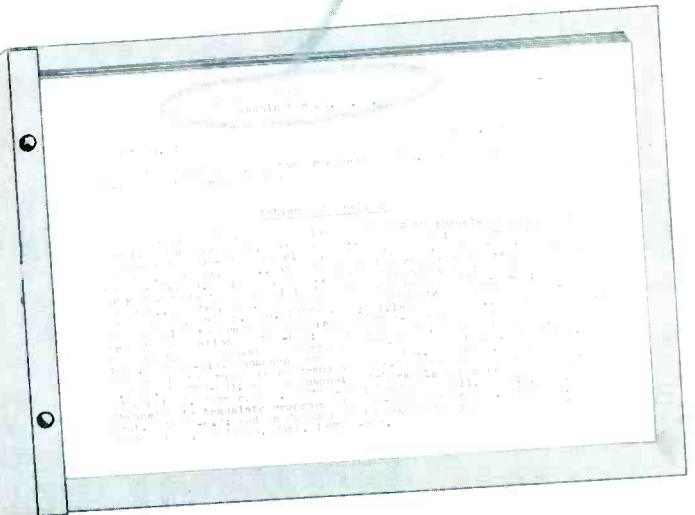
... of the **FIRST 28 VHF Translators** granted construction permits
(FCC approved Form 346)

21 SPECIFIED MARS EQUIPMENT!

The reasons for this vote of confidence are many . . .

PRICE • COMPACTNESS • EASE OF INSTALLATION • RUGGEDIZED CONSTRUCTION • MARS GUARANTEED QUALITY are among the reasons these twenty-one "early CP'ers" picked MARS.

Date Granted	Location
March 23	Troy, Montana
23	Terry, Montana
23	Center, Nebraska
27	Lovell, Wyoming
27	Baker, Montana
27	Baker, Montana (No. 2)
April 4	Ismay, Montana
10	Fort Benton, Montana
24	Delta Junction, Alaska
25	Broadus, Montana
25	Broadus, Montana (No. 2)
25	Monticello, Kentucky
25	Sundance, Wyoming
25	Powell, Wyoming
25	Powell, Wyoming (No. 2)
May 4	Lovell, Wyoming (No. 2)
4	Wyodak, Wyoming
4	Gillette, Wyoming
4	Gillette, Wyoming (No. 2)
4	Potter, Nebraska
4	Potter, Nebraska (No. 2)



MARS has no salesmen . . . MARS has no jobbers . . . MARS has no factory representatives. ALL MARS EQUIPMENT SOLD COMES FROM DIRECT INQUIRY FROM PURCHASERS (Alaska to Kentucky!) or from DIRECT REFERRALS FROM USERS OF MARS EQUIPMENT.

To insure your community of the very best Translator television reception . . . with **LOWEST** initial cost and **LOWEST** maintenance costs in the industry, write today for a free copy of the MARS "Translator Planning Packet."

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MARS M.A.C.-17 (1 watt) — \$933.00

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