



# Sylvania News

Vol. 5

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No. 5

HYGRADE SYLVANIA CORPORATION makers of HYGRADE LAMPS, SYLVANIA TUBES and ELECTRONIC DEVICES  
FACTORIES AT . . . SALEM, MASS. — EMPORIUM, PA. — ST. MARYS, PA. — CLIFTON, N.J.

Emporium, Pa., November, 1934

## Thoughts For Thanksgiving

### Why Angels are Bright

One of the many things that we all take for granted in 1934 is light. We quote part of an editorial which recently appeared in the New York Herald Tribune, not only because this company manufactures electric lamps, but because November is the month dedicated to giving thanks for what we have.

"It is hard for us who live in cities long ago made incandescent by Edison to understand how beautiful light must be to those who first imagined angels as creatures of unearthly splendor. In the comfortless doleful Northern winter, through unnumbered centuries, abundant light seemed a worshipful thing.

"For light then was rare and costly. The floating wick and the rushlight burned low, and were not for the poor. A feeble lamp became a 'flaming minister.' So, in the long darkness shining apparitions illumined men's chilly dreams, and brightness, not known on earth, came from heaven.

"Perhaps if electric lamps had been invented before angels were imagined the idea of their beauty would have been quite different. In nights that can be made brighter than noon by lifting a finger, medieval angeis would not be conspicuous. St Michaels famous shining blade would fail before an airport



Shown here in a thoughtful mood is lovely Rosemary Lane, who with her sister Priscilla supplies the feminine charm for Fred Waring and his Pennsylvanians. From now on, when you listen to the program sponsored by the Ford Dealers of America (breezing along with the V's) shut your eyes and get a mental picture of Rosemary at the mike. The broadcast comes over CBS network, 9:30-10:00 P. M. E. S. T., every Thursday.

## Program News To Help Sales

Plans are afoot for a weekly series of three-hour broadcasts of dance music, on Saturday nights, beginning December 1, sponsored by the National Biscuit Company. Three bands, three directors and one master director will blanket the country, playing in shifts and in ensemble from 10:30 to 1:30 Eastern Standard time, and from 9:30 to 12:30 Central, Mountain and Pacific time. The program will be uninterrupted except for a short commercial announcement every half hour. Nice for Saturday night parties.

Vic and Sade, that couple who broadcast the most authentic sketches of small-town life we have ever heard, are now on the Red network, NBC, at 2:30 P.M. Eastern Standard Time every day except Saturday and Sunday. Still too early to give us a chance to listen, but tell your customers.

"The American Hour from Rome" is a new short wave program for American listeners from the Italian Broadcasting Corporation. The programs, which include short talks by famous people, News bulletins and musical selections, are broadcast by Italian stations on 48.7, 42.98, 31.13 and 25.4 meters every Wednesday and Friday from 6:30 to 8 P.M., Eastern Standard Time.

Your more sophisticated customers,—the ones who read the "New Yorker" and "Vanity Fair" will be glad to know that Alexander Woolcott is back on the air, Sundays at 9:00 P. M., E. S. T., over CBS. Bob Armbruster plays, when Alex

## The Service Man is the Radio Doctor

Stanley N. Abbott, Sales Manager

I frankly wonder whether the average service man fully appreciates his exceptional practice and opportunity

many of his patients are unable to convince the rest of the family that they are sick. A radio set may groan



## ▶ THE SERVICE EXCHANGE ◀

**Atwater-Kent 55** A great improvement in this model especially in those that are broad tuning at 1500kc. and weak at 550kc. is to use type 35 tubes in place of the 24's. The wiring is changed thus: Disconnect the cathodes of the 24's from the original bias resistor but leaving the low end of the volume control connected so as to ground thru the bias resistor. Connect the cathodes of the 24's sockets together and connect a 100 ohm resistor from this lead to the chassis. Disconnect the lead from the old bias resistor and connect it to the cathode of the r-f tube. Install the 35's in the 24 sockets. The selectivity is much better with 35's.

—Leo Zimmer, Canisteo, New York.

\* \* \*

**Sparton Receivers.** Noise in the older Sparton Receivers using the Untuned Amplifier can usually be traced to one of these causes: (a) Bad 484 tubes. (b) Corroded joints where the fine wire of the untuned transformers is soldered to the lugs. (c) The fact that there is no connection grounding the three "cans" together except a metal plate under their mounting screws. Poor grounding of the pre-selector can will show up as a loud a-c hum or buzz with the high frequency end of the dial "dead". If the r-f amplifier can be poorly grounded there will be erratic voltage readings and frying and crackling in the speaker. Occasionally a "high background noise" may be traced to one of the plates bypass condensers of the detector tube being leaky. Dirt on the rotor contacts of the variable condenser will cause noise while tuning.

—Leo Zimmer, Canisteo, New York.

\* \* \*

**Silvertone 1711.** Trouble in the Silvertone Exposition Model 1711, six tube super is sometimes audio howl, which sounds like a microphonic tube. Looking from the rear of the self contained cabinet, the coil shield on the right front of the chassis will be found to be touching a nut holding the speaker to the front of the grill. Enlarging the chassis bolt holes on the back side and floating

the speaker to the front of the cabinet on a concentric circle of cardboard, has cured the most stubborn cases.

Floyd Haskins, Jr., Little Rock, Ark.

\* \* \*

**Thoughtful Suggestion.** When you service a set or test tubes in homes take along an old rag and wipe off the tubes and chassis. It only requires a few minutes but the lady of the house will appreciate it and be well impressed with your thoughtfulness.

—E. G. Kertz, Kenosha, Wis.

\* \* \*

**Midwest 16.** A very great noise as if cloth is being torn may be traced to a shorted trimmer condenser under the chassis. A new trimmer will make the set "perk" again.

—A. Sienkiewicz, Norwichtown, Conn.

\* \* \*

**RCA Model R11.** This and other models of the same type may play from ten minutes to half an hour and then gradually die out. If when you pull out the automatic volume control tube the set plays normally you will find the trouble in one of the following:

1. Filament voltage too high or too low on the automatic volume control tube.

2. The condenser between the two 1 meg. resistors in the grid circuit of the automatic volume control tube becomes slightly leaky.

3. A defective 5 meg. resistor leading from the grid of the A-V-C tube, replace with a 2 or 3 meg. resistor.

4. Leaky blocking condenser from plate of 35 tube to grid of automatic volume control tube.

5. Leaky cathode to plate condenser on automatic volume control tube. A new tube in this circuit will correct the trouble temporarily but will only mean a call back.

—G. O. Zimmerman, Hagerstown, Md.

\* \* \*

**Kolster 21, 23, 24, 25.** If these sets oscillate after inserting new tubes, replace all grid suppressors. The first r-f grid suppressor should be replaced with a 3000 ohm resistor and the other suppressors should be replaced with 2500 ohm resistors.

## A CHAT WITH ROGER WISE

Chief Tube Engineer, Hygrade Sylvania Corporation



ROGER WISE, Chief Tube Engineer

We frequently receive inquiries from owners of older models of receivers who are interested in substituting new types of radio tubes for those originally used by the manufacturer. In so doing, they expect that they will be able to take advantage of the improved tube characteristics to "pep up" the performance of the set and to secure better tone quality or improved output. This possibility is also of great interest to service man and dealers, both as a means of increasing their business and answering the demands made upon them for improved operation of receivers owned by their customers.

Any recommendations made regarding substitutions are safe only after a study of the receiver in question has been completed and the exact effects of the changes in tubes determined accurately by laboratory measurement. If this information is not available, it is far better to retain the original tube type, although it may be very desirable to replace the old tubes with new tubes

of the same type. Tubes are a vital part of the receiver, so much so that a change in tube types often disturbs the "balance" of the receiver. If the receiver is out of alignment, substitution of an improved tube may give some improvement in sensitivity, but it is far better to re-align the set and retain the original tube complement.

The substitution of new types of rectifier tubes for the old types is particularly risky. For instance, the substitution of a mercury rectifier tube for a Type 80 will greatly increase the voltage supplied to the filter condensers and other parts of the set. If the voltage rating of these parts is exceeded, the set may operate temporarily and then suddenly fail.

Recently some interest has been aroused in substituting Type 83V for Type 80 rectifier. Here also the result is an increase in the output voltage although this increase is not as great as when mercury vapor rectifiers are used. However, the same comments apply and there is the same danger of overloading such parts as condensers and resistors. A substitution of this kind should only be made after ascertaining that the condensers will not be overloaded and that the resistors are capable of handling any additional current which may be imposed on them as a result of the increase in voltage. The possibility that the tubes may be overloaded should also be considered.

From time to time attempts have been made to sponsor campaigns to change over large numbers of standard receivers by substituting a new type of tube for the tubes



beam. If it we lived in dark, shadowy halls and groped our way to bed we should want those resplendent guardians back again, and no dark angels would do."

## Thanks to Radio

Quoted from an editorial in "Printers' Ink" is the following tribute to radio, which we consider both sincere and valuable, coming as it does from a magazine whose point of view on radio has not always been the same as ours:

"By such facilities as the radio we are enabled, not merely to enjoy entertainment, but also to link ourselves more closely in a fellowship of personal betterment and common progress. And by lending itself to such undertakings as this, radio identifies itself more and more clearly as an essential instrument of civilization."

## Radio Sales Improving

"The activities of the wholesale branch of the radio industry, if taken as a barometer of the trend of the trade, indicate that despite the drought, hell and high water, conditions are improving and business is picking up. Branch offices are being opened, new salesmen are being added and new and larger quarters are being occupied. All of which means that the retail trade is coming to life, and is again ordering complete lines instead of a few of the most popular models, and is selling instead of being content with order taking."—Lee Robinson, in "Radio Merchant".

Believing that some romance is necessary even in the serious business of radio sales and service, we are coming to the rescue of our readers with a series of portraits of charming radio stars, to be featured on the front page of Sylvania News. We feel that our first choice is a real reason for giving thanks. Blondes will also be given a chance, though we don't believe that gentlemen always prefer them.

The service man today is the radio doctor. He is called to the home of the sick radio set; his diagnosis is accepted without question; his remedy is taken for granted; his reasonable bill for services, parts and replacement tubes is paid without murmur.

There never was a service so intricate as that now being rendered by the properly trained radio service man. Automobile, electrical refrigerator, heating plant and general run of mechanical servicing are simple in comparison. The very intricacy of present-day radio sets with their maze of components and wiring and critically balanced functions, calls for a genuine technician equipped with precision tools. Radio sets have gotten far beyond the stage where the neighborhood Edison can diagnose and repair set failures. When the radio service man is summoned, therefore, it is because he alone is considered competent to diagnose and remedy the trouble. He is the doctor!

But—and this is a very important "but"—the radio doctor, because his profession is so new, has one handicap that he must learn to overcome. Too

## Type 6A6 Announced

In continuation of our established policy to manufacture promptly all standard types of receiving tubes, we announce Type 6A6, list price \$1.35.

The Sylvania 6A6 is a complete Class B output tube with two sets of triode elements in a single bulb. The general design and applications of the 6A6 are the same as that of type 53 of the 2.5 volt group. Except for the heater rating, which is 6.3 volts at 0.8 ampere, the operating characteristics are identical with those of type 53.

## Technical Information

On page 2 of this issue will be found technical information on type 6A6 and on type 83V, announced last month. It is so arranged that it may be clipped and pasted on one of the blank pages in the Sylvania Technical Manual. This method will be used as new types are announced, so that the manual may be kept up to date.

and scream, but until it actually seems to be dead or dying the family may let it struggle along, and blame "static" for the noise, because they have not yet learned to recognize the symptoms of radio illness.

For this reason the radio service man must learn to sell his services. He is a skilled technician. He must also learn to be a salesman, if his income is to keep step with his skill. It can be done. It has been done. The factory stands ready to help, by supplying the mailing cards and the imprinted folders, the tube stickers and the service signs, the personal council and advice, the information about what other service men are doing. Only the individual service man can take the last necessary step which will apply this assistance where it is needed to reach and educate his own group of possible "patients".

The radio service man is the "doctor" of his own future, as well as of the radio industry. Will he build up the prestige and the opportunity that he already has or will he let it slip and be content with the greasy overalls and the professional status of the plumber's helper?

## We View With No Alarm

Are the magazine editors right when they say that radio is losing ground as entertainment? High-brow and low-brow alike, they insist, through editorials, articles and poems, that within five years radio will be as dead as the dodo.

We do not believe that an editor who works in New York or Chicago is a good judge of the acceptance or non-acceptance of radio by the public. Radio is, by its very nature, bound to be less popular in the large cities than it is in the towns, villages and rural districts. We believe that more radio sets are in operation for more hours daily, with more pleasure and benefit to the listeners, than our friends the editors would concede to be possible. We believe that radio is so closely united to the lives of the majority that they would fight any suggestion that it be abandoned. We believe that radio's future is to be greater and more powerful for good than its past. What do you think?



The Sylvania display at the New York Electrical Show was as modern as tomorrow. Sylvania leadership, exemplified by the development of the 6.3 volt group of receiving tubes and the Graphite Anode which prolongs the life and increases the efficiency of Sylvania transmitting tubes, was featured.



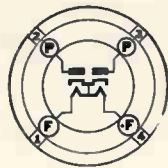
## For Your Technical Manual

Pasted on the blank sheets in the back of the Sylvania technical manual, the technical data given below will help to keep your manual up-to-date.



ST-BULB

TYPE  
83V



### Full-Wave High Vacuum Rectifier

#### CHARACTERISTICS

Heater Voltage AC	5.0	Volts
Heater Current	1.75	Amperes
Maximum Overall Length	5 1/4"	
Maximum Diameter	2 1/4"	
Bulb	ST-16	
Base	Medium 4-Pin	

#### Operating Conditions and Characteristics:

Heater Voltage	5.0	Volts
A-C Voltage per Plate (RMS)	350	Volt ma.
D-C output current	1/5	Ma. max.

#### CIRCUIT APPLICATION

Sylvania 83V is a heater cathode type high vacuum rectifier designed for full-wave circuit applications. The heater requires 1.75 amperes at 5 volts. This differs from the rating for Type 83, which takes 3 amperes at 5 volts. The d-c output current (175 milliamperes) is intermediate between the ratings for Type 80 and 5Z3.

In general, high vacuum rectifiers are to be preferred to mercury vapor types for radio circuit applications. The latter type may be the source of objectionable noise, and usually requires shielding, particularly in receivers with high sensitivity. Radio frequency chokes are generally required in such sets, and whenever employed, should be connected in series with each plate lead and located within the shield. These precautions are unnecessary when high vacuum rectifiers are employed. A further advantage of the heater cathode type high vacuum rectifier is that the heating time for the tube will be comparable with that required for the other tubes of the receiver. This delay will prevent excessive peak voltages and therefore adds to the protection of the filter condensers.

The 83V is not directly interchangeable in some cases with the mercury vapor Type 83, since the recommended maximum plate voltage is only 350 volts r-m-s per plate and the d-c output current is limited to 175 milliamperes. Choke-input filters will reduce the peak plate current and afford improved voltage regulation, although there will be a sacrifice in d-c output voltage. If voltages of the order of 400 to 500 volts are to be employed a Type 5Z3 should be used.

#### Type 6A6—Class B Amplifier

Except for the heater rating which is 6.3 volts at 0.8 ampere, Type 6A6 is the same as Type 53 of the 2.5 volt group. For characteristics and circuit applications refer to Type 53 on Page 64 of The Technical Manual.

—Wesley E. Dilly, Pittsburgh, Pa.

\* \* \*

**Audiola Jr.** Some of these sets oscillate after a time and re-balancing will not help much. By inserting a .0001 mfd. fixed condenser between detector plate and ground and re-balancing the oscillations are overcome. The volume can be increased by boosting the screen voltage. To do this disconnect the 50,000 ohm section that feeds the screens and insert a 35,000 ohm, 2 watt resistor in its place.

—Ray Douglass, Hastings, Mich.

\* \* \*

**Stromberg Carlson 29.** A simple cure for overcoming hum in this receiver without disturbing the chassis is to connect an 8 mfd. condenser between the high side of the speaker field and the chassis.

—F. L. Dearth, Kensington, Ohio.

\* \* \*

**Speaker Rattle.** Some of the midget radios now on the market have a rattle in the speaker. In some of them it is impossible to adjust either the voice coil or the pole piece. A few drops of heavy oil between the coil form and the pole will in most cases remedy the noise with no danger to the coil.—E. G. Kertz, Kenosha, Wis.

## Correspondence Club

H. J. Hawkins, Care of Marlack Radio Service, 1763 Marne Avenue, Toledo, Ohio

Mr. Hawkins is particularly interested in D. C. receivers and repairs. While we haven't had very much to report on correspondence activities, we hope that the good work is going on. If you are interested we'll be glad to repeat the entire list of correspondents in the next issue of Sylvania News.

## Analyzer Data Available

We have on hand detailed instructions for the modernizing of the Jewell 199 set analyzer, with diagrams, written by F. L. Sprayberry. Too long for publication in Sylvania News, it contains information which we'll be glad to pass along to service men who own one of these analyzers and wish to modernize it. Address requests to Editor of Sylvania News, Hygrade Sylvania Corporation, Emporium, Pa.

traced to difficulties such as those outlined above. As radio receiver design becomes more complex, the desirability of making changes becomes less and less. The policy which many dealers and service men have followed with success is that of keeping radio receivers up to their original standards by replacing defective parts and worn-out tubes whenever necessary. When a radical improvement is desired by the user, it is time for him to purchase a new receiver which will give him the benefit of all the technical progress made in radio design during the time which has elapsed since the original purchase of his receiver.

## YOUR QUESTIONS ANSWERED

**Question 1.**—What are the characteristics of Types 950 and 951 tubes, and how can I test them in my present tester? Are there any Sylvania tubes that will replace these types?

**Answer**—Types 950 and 951 are, respectively, a power output pentode and a screen grid detector-amplifier tube. The characteristics of a Type 950 are practically the same as those of a Sylvania Type 33 tube. Although the characteristics are similar to Type 33, it is impossible to make replacement with the 33 since the bulb of this tube is larger, thus prohibiting its use in the receivers designed for the Type 950. The testing of a 950 can be accomplished by the same procedure as that of testing a Type 33.

Type 951 is very similar in characteristics to a Sylvania Type 32 tube, but a Type 32 is not satisfactory as a replacement tube because of the same reason given above. The same procedure is used in testing Type 951 tubes as used in testing Type 32 tubes.

**Question 2.**—There seems to be considerable confusion over the terms Class "A", "B", and "C". Will you please explain each of these three different types of amplifiers.

**Answer**—A Class A amplifier is one which operates the tubes with sufficient negative grid bias so that current flows through the plate at all times. In a Class A amplifier the plate output wave form is essentially the same as that of the exciting grid voltage. Until recent years Class A audio systems were used in practically all receivers. The characteristics of Class A amplifiers are low efficiency and output with a large ratio of power amplification.

A Class B amplifier is one which operates the tubes with a negative grid bias of such an amount that the plate current is reduced to a relatively low value with no grid excitation voltage. In a Class B amplifier the power output is proportional to the square of the grid excitation voltage. A Class B amplifier has medium efficiency and output with a relatively low ratio of power amplification.

A Class C amplifier is one which operates the tubes with a negative grid bias which is higher than that required for cut-off so that the plate current is reduced to zero with no grid excitation voltage. When an alternating grid excitation voltage is applied, large amplitudes of plate currents are passed during a fraction of the positive half cycle of the grid excitation voltage variation. The grid voltage usually swings sufficiently positive to allow saturation plate current to flow through the tube. This results in harmonics being present in the output wave, making it necessary to provide means for removing the harmonics from the output. The

plate circuit efficiency and output are higher in a Class C amplifier, but the power amplification is relatively low.

**Question 3.**—Please answer the following questions for me relative to tubes.

1. What is a Type 2B6 tube, and is there a Sylvania tube which will replace this type, or can I make any circuit changes to incorporate Sylvania tubes?

2. Can Type 83V be tested in the same socket as a Type 83, and are these tubes interchangeable? Where is the cathode connection made in the 83V?

**Answer**—1. The Type 2B6 is a power output tube commonly known as the "Triple Twin". This tube is not included in the Sylvania line, and since there is no Sylvania tube similar in characteristics, considerable changes would be necessary in your circuit to change over to another type of output.

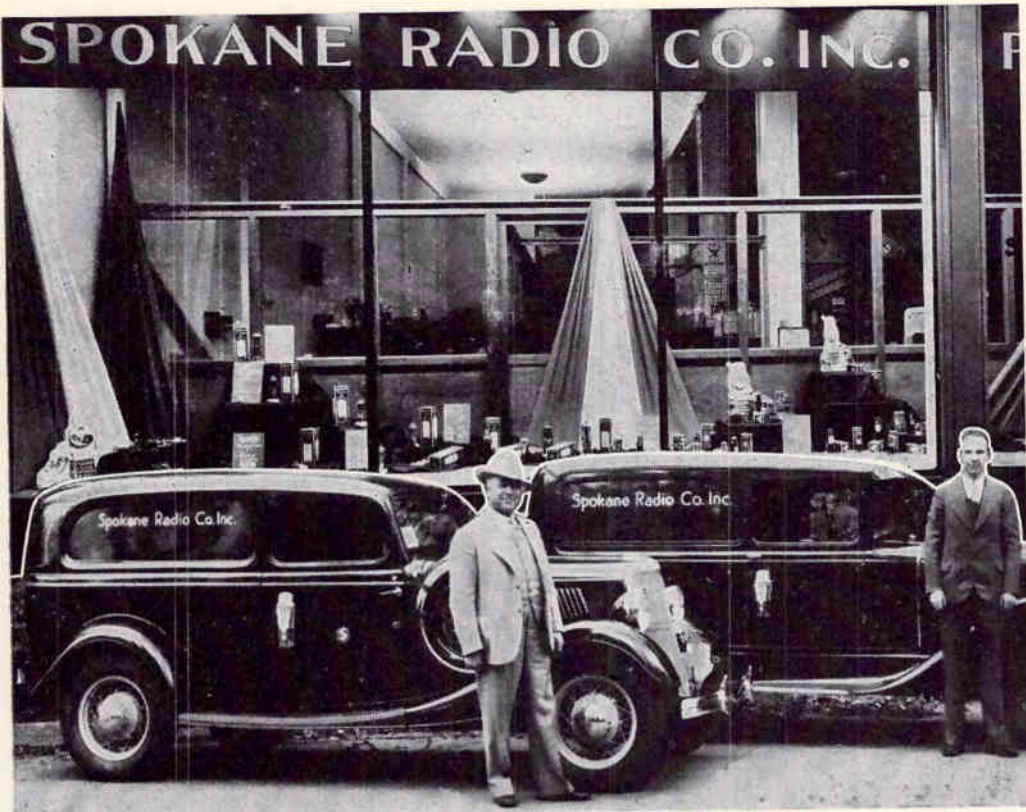
2. The 83V has the same basing arrangement as Type 83, and the testing of these two types is the same. The cathode of the 83V is connected to the center of the filament which eliminates the necessity of having an additional pin on the base. The 83V cannot be used to replace Type 83 in all cases, since the DC output current rating is not as high as that of Type 83. In making any changes of this nature it must be determined whether the 83V will supply the current required by the circuit used with Type 83.

**Question 4**—Why is the numbering system of the base pins on the Sylvania base views different from the numbering system that has been in use a number of years?

**Answer**—The numbering system used on all Sylvania base diagrams is in keeping with the R.M.A. Standards System adopted within the past year. The old numbering system was such that the filament or heater pins were always numbered 3 and 4, the plate pin taking the number 2, and the remaining pins on the base being numbered in rotation. With the introduction of multi-element tubes, this system was confusing so that a new system was adopted and standardized by R.M.A.

The new system, as used in the Sylvania base diagrams and which was standardized in June 1934, is as follows: looking at the pins of the base, one filament or heater pin (large pins in the case of the four, six and seven-pin bases) is numbered "one", and the numbering is then carried clockwise around the pin circle to the other filament or heater pin. Thus the filament pins in a 7 pin tube are always numbered one and seven, the remaining five pins being numbered in clockwise rotation from the number 1 pin, regardless of the tube elements connected to those pins.





Posed against the background of a window display featuring Sylvania radio tubes, are A. F. Horton, (left) salesman and Morris Willis, general manager of Spokane Radio Company, Spokane, Washington, with the cars that carry samples or displays of every item of stock carried by the company. Prominently displayed on the door panels is the Sylvania tube insignia, as proof of the important part that Sylvania tubes play in SRC's merchandising program. Mr. Horton covers Eastern Oregon, Washington, Idaho, Montana and parts of Utah and Wyoming, using the displays carried in his car to help dealers and service men in selecting their stock. Mr. Willis believes in playing fair with the service men who are his customers. In his advertising to the public he stresses the necessity for keeping tubes and receivers in good condition, and plays up the technical ability and professional honesty of local servicemen.

### Servicemen How Would You Say It?

G. C. Kelling, of La Porte, Indiana, is one service man who is doing something about the problem mentioned in the "Radio Doctor" editorial on page 1. He asks for the imprinted folders, the tube stickers, and all the rest of the Sylvania sales helps for service men. We are glad to supply them, because we believe him when he says that he uses them.

Along with the folders, he sends out the sales letter which we are using to try out a new idea. Instead of making editorial comment we are asking you to think it carefully and tell us what you think of it. Could you improve it? Does he say too much, or too little. Does he take the right attitude on prices? Is he helping his prestige as a service man, or not, and why? Let's have your honest opinion. If you can help Mr. Kelling to write a better letter, he'll be glad to have your suggestions. If his letter helps you to be a better service salesman, that will be OK with him. The letter goes out on his business letterhead, as follows:

"We are not in business to see how much we can make or charge our customers, and we do not maintain a store where operating expenses would force us to charge high prices.

"There are others as good as we are, but we guarantee our work and save you money on repairs.

"Is your radio set giving satisfactory reception? Do the tubes need replacing? We replace worn and defective tubes with Sylvania tubes because we are safe in giving you a written guarantee with every one we install.

"How about your electric fan, iron, sweeper, toaster, washing machine motor, stove, curler, hair drier, lamps, or other electrical appliances? What about electric wiring, switches, wall or floor plugs?

"Remember us the next time you need work done and be assured not only of a guaranteed job, but of a saving in repair costs."

Thank you

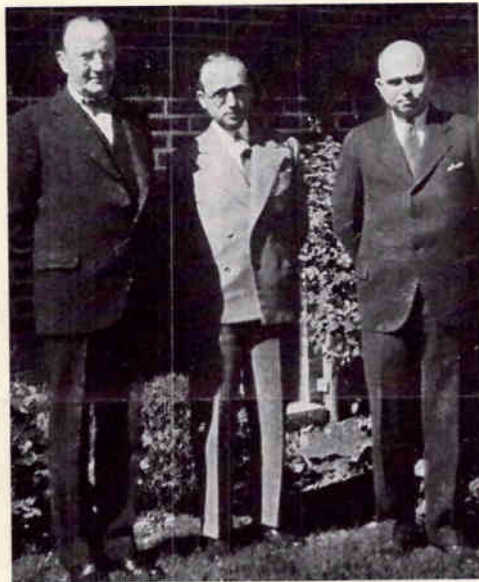
G. K. Radio & Electric Service.

### Try This Where You Buy Your Coffin Nails

A Sylvania dealer has worked out a plan which enables him to put Sylvania book matches with his business imprint into the hands of a wide variety of prospects at a relatively low cost.

He found that the proprietor of his favorite cigar store pays about \$2.50 per thousand for book matches to be given to customers. The Sylvania dealer had no trouble selling him the idea of buying the imprinted Sylvania matches from him at \$1.50 per thousand, the dealer absorbing the difference in cost. Both the cigar store man and the dealer reap the benefit—the former through lower costs, the latter through wide distribution of his advertising, as well

### "Best in the World"



Angel Vivo, progressive Spanish distributor of Sylvania tubes (center) with President B. G. Erskine (left) and W. A. Coogan, Foreign Sales Manager, during Mr. Vivo's visit to the Sylvania tube factory at Emporium, Pa.

Mr. Angel Vivo, wiry and energetic senior member of the firm of Vivo, Vidal y Balasch, recently visited the United States for the second time since 1931, on a search for new ideas. After inspecting the Sylvania factory he said "Almost always, when we imagine a thing that we have never seen, we picture it as better and superior to the real thing and are consequently disappointed. Today, after seeing the marvelous Sylvania tube factory I am surprised to find that my mental picture was far less imposing than the reality. I can now sincerely say that I understand why Sylvania radio tubes are the best in the world."

## PRICE VERSUS QUALITY

By WALTER R. JONES

A question sometimes asked by our jobbers, dealers, and service men is: "What effect has the drop in list prices on tube quality?"

This question comes as a surprise to those familiar with the strides being made in tube manufacture. A little study will convince anyone that there is a direct correlation between the expenditure of a great deal of time and effort in the improvement of tube quality and the cost of the finished product. Poor quality results in losses all through the manufacturing processes as well as unnecessary claims for replacement, all of which have their effect on the cost of the finished article.

The attention of the Hygrade Sylvania organization has been concentrated on quality, both directly and indirectly. We particularly appreciate the value of satisfied customers in view of the difficulties inherent in tube manufacture from the technical standpoint, and a continuous striving for improvement in tube quality has been recognized as essential to our progress.

### Old and New

A comparison made between the sturdy long-lived tubes being supplied to the trade today and the earlier forms of battery tubes or early A.C. tubes emphasizes the progress made. Every phase of tube manufacture is involved including raw materials entering the plant, the processing of these materials, the fabricating and mounting of parts, the equipment used in finishing the tubes, and the testing methods and limits.

Incoming materials are thoroughly inspected and must conform in every respect to detailed specifications before acceptance. The parts required such as plates, top discs, collars, etc. are now manufactured in our new Parts Department where the latest type of equipment has been installed.

### Production Changes

In the mounting operations, mounting jigs and fixtures insure perfect align-

### Progress Captures Old Mexico



Posed against the famous Chapultepec Acueducto Fountain in Mexico City are Gmo. Zambrano (at your right) head of La Casa Electrica, S. A., and R. Arestegui, Mexico City, manager for the same firm. The picture was taken by Walter A. Coogan, Foreign Sales Manager of Hygrade Sylvania Corporation, who has just returned from Mexico. Mr. Coogan reports that demand for receiving sets has far outstripped the supply. La Casa Electrica, S. A., in addition to Sylvania Tubes, handles Atwater-Kent radio and Norge refrigerators.

ment of parts. Many of the parts previously aligned by eye are now automatically centered with improvement in accuracy. Spot welding accuracy has been increased by use of the automatic control devices.

In testing Sylvania tubes, additional requirements have been imposed in accordance with changes in receiver design. Testing equipment has been improved in accuracy and the limits narrowed sharply to secure the necessary uniformity.

In a detailed examination of the product being shipped from our factories today, the list of improvements would be a very long one and only the more important of these improvements can be mentioned here.

In studying the appearance, it will be noted that the mechanical details of basing and soldering both as regards finish and alignment have reached a stage approaching perfection. The parts visible through the bulb have been made stronger and are exact in uniformity. Appearance has been improved by elimination of some of the spot welding formerly used where mechanically made seams can be used to advantage.

### Better Performance

In testing the performance of present day tubes, the uniformity of all the important characteristics is pleasing. Tubes are now free from microphonism, hum and noise to an extent which would have seemed impossible a few years ago.

It is particularly important to note that the requirements imposed upon radio tubes in present day radio receivers are much more severe than was the case when simpler circuits were being used. Introduction of the Superheterodyne receiver followed by the all-wave requirements has been responsible for this change. Sylvania tubes have not only kept pace with receiver requirements but they have forged ahead to an extent which makes trouble-free reception a foregone conclusion. The policies which have made this progress possible are being adhered to in every detail and no reduction in tube prices will be allowed to affect the quality standards which have been instrumental in building up the present public acceptance and good will of Sylvania tubes over a long period of time.

### Sylvanias Stood the Gaff in The Far North

In the spring of 1934 Captain R. A. Bartlett, in command of the SS Morrissey, started north to explore the little known reaches of Greenland, Ellesmere Lane, Grantland, and other points in the far north. With him went "Bob" Moe, radio engineer in charge of the Morrissey's radio transmitting equipment. Both Captain Bartlett and Mr. Moe realized the importance of providing absolutely trustworthy transmitting tubes, since radio would be their only means of communication with the world for many months, and a tube breakdown meant disaster. Sylvania transmitting tubes were selected, after careful tests, and the Morrissey sailed away with a full complement of Sylvania tubes installed in the transmitter. Late in August a vindication of their judgment came through in the form of a radiogram from the vicinity of Ellesmere Land, about 700 miles from the North Pole. The message, reproduced here, was transmitted direct (no relay) from the ship's 100 watt short wave station, W10XDA, and was reached through Ray Newby's short wave station, W2GOQ, at Wayne, N. J. A large part of the radio traffic to and from the Morrissey is handled by this station, which is located with the transmitting equipment of station WABC, of which Mr. Newby is Chief Engineer. The short wave messages are handled by operators O. W. Reed, Ed Schreiner, Jack Tiffany,

FROM STATION		LOCATED AT	DATE	TIME	OPERATOR
Rec'd	W10XDA	ARCTIC OCEAN	AUG 23	2:15PM	US-20
Start	TO STATION	ABOVE	AUG 23	4:00PM	RE



# 15 MORE VOTE FOR SYLVANIA



No, this is not our "rogues gallery". On the contrary, the frank and handsome faces shown above belong to some of the best Sylvania tube merchandising talent in the south. We are indebted to our southern sales representatives, J. T. Fulwiler and "Art" Chapman for the personal touches in the following identifications: 1. Not George and Gracie, but A. A. (Lonnie) Rogers, radio manager for Consolidated Automotive Co., Jacksonville, Fla., and Miss Elaine Carroll, who handles Sylvania tube orders; 2. A. H. Seager and Oscar Blasingame, owners of Acme Radio Service, Inc., Jacksonville, Fla., who boost Sylvania tubes and use them exclusively in service work; 3. Not yet selling Sylvania tubes but a great help to his Dad is young Bill Fulwiler; 4. Smiling Harry L. Simmons, service manager for Capital Electric Co., Jacksonville, "Still single, but wedded to Sylvania, the greatest tube ever built"; 5. J. T. Cecil, president of Interstate Hardware Co., Bristol, Tenn., a 100 percent Sylvania wholesaler, and a "below 90" golfer; 6. J. D. Carroll, service manager for Southern Bearing and Parts Co., Charlotte, N. C. keeps a scrap book of Sylvania News Service Exchange tips; 7. R. L. Brickley, Salesman for Auto Spring and Bearing Co., Roanoke, Va., knows how to tell the Sylvania tube story to dealers and get results; 8. J. H. Northey, President of Southern Bearing and Parts Co., Charlotte, N. C. friend of many radio dealers and service men, and a Sylvania enthusiast; 9. Geo. B. Thompson, owner of the Radio Hospital, Norfolk, Va., largest service station in the Tidewater section, displays Sylvania tubes in his shop windows, and always recommends them to his customers; 10. H. R. Perkinson, Sales manager of Tower Binford Electrical and Mfg. Co., Richmond, Va., first radio distributors in the south, and now one of the largest. Picked Sylvania for quality, and feature them. Not shown, but present in spirit, is J. S. Steere, manager of the service department; 11. J. L. Rudishill, R. T. Scroggs, and J. R. Ledbetter, the three musketeers of Shaw Distributing Co., Charlotte, N. C. Unbeatable as a sales and service combination. 12. T. H. Graves, manager of the recently organized Graves Electrical Supply Co., Greenville, S. C., growing fast, and sold on Sylvania tubes.

## Sing High, Sing Low

Selling methods, remarks Radio Retailing, seem to swing from one extreme to the other, and at present the radio dealer seems to have gone completely conservative. However, continues the editor, "The radio dealer is entering an era in which he must expand his circle of influence", if he is not to "stagnate in his narrow puddle of old accounts".

Which means, if we get the right idea, that a few years ago many dealers went into the house-to-house selling idea with more enthusiasm than good judgment, and are now so thoroughly fed up on the whole business that they have pulled down the blinds, retired into the back room, and admit customers only by password.

We wonder how many of those dealers, before they gave up the search for customers outside the store, gave any thought to the reasons for failures. Did they have a definite plan? Did they send their salesmen out "cold turkey", or did they make some effort to give him a list of selected prospects? Did they give him some inside information as to the reason for his canvass, or did he simply go out to make as much as he could on commission from sales? Did they follow up any information he might have gathered, or did they lose sight of the possibilities for sales of sets and appliances which he discovered were obsolete or missing from the homes he visited? Perhaps most important of all did they send out trained men, who could inspire confidence in their knowledge and their reliability, or did they simply pick the first half-dozen who were respectable-looking, regardless of their knowledge of the radio business? If a dealer can answer these questions honestly, he will understand better why door-bell campaigns sometimes fail.

When a dealer, in the last ten days of October, 1934, sends out a crew of salesmen who sell 457 tubes, 5 service jobs, and bring in information that leads to 2 set sales and 1 electric washer sale, it is plain that outside selling is not a complete wash-out for the radio and electric appliance dealer.

Perhaps not all dealers will find this method the right one, but the majority must begin to give some constructive thought to "expanding the circle of influence." That does not mean that he must grow panicky and start a frantic search for new customers. It does mean that he should take stock of his present business, plan the best method, for him,

his list of old customers will yield some good prospect material. Perhaps he should pay more attention to the birth marriage and engagement columns in his local newspaper. New babies sometimes mean new refrigerators and many small electrical items, such as heaters, fans, electric pads, etc. Engagements and marriages mean new families who are starting "from scratch". Radios, refrigerators, irons, washers, etc. are often given as wedding gifts. It will do no harm to make suggestions. As for tubes, the need is always present. Why should any dealer or serviceman feel that he is overstepping business ethics if he goes outside of his store to look for those that should be replaced?

## Sylvania News is a Father

The first radio publication to acknowledge Sylvania News as its parent has just been born to Spokane Radio Company, Spokane Washington. It doesn't look exactly like its father, but it has quite a few of his features. Until they can find a name for it, they are calling it SRC News. Morris Willis, manager of SRC, will be Godfather at the christening. Meanwhile prizes, including a Sylvania Service Kit, are being offered to dealers and service men in the Spokane territory for suggestions.

## Shine Up The Sign

Here is an idea gleaned from the December issue of Popular Mechanics. Luminous paint can be applied to signs and other display pieces to make them visible in the dark. This should prove an effective method of attracting attention to your Sylvania service sign, a display card in your window, or a service sign on your car or truck.

Perhaps this paint has possibilities for use in building a tricky window display. For example, use a huge radio tube, cut out of wall board, and a large replica of the "Sylvania Set-Tested Tubes" logotype, painted with luminous paint and set against a dark background. Scatter a number of tubes—old ones will do—through the display in the window. If a flasher system could be arranged so that all the lights in the window would flash off for very short periods at regular intervals, the effect of the luminous spots shining in the dark should get attention. A little

## Display Suggestions For Tinkerers

Last month we pictured two window displays with moving figures, said to have been very successful in drawing crowds. This month we have picked up another idea, via "Furniture Record" which seems to hold possibilities for an unusual Christmas window. We can't show you a picture, but here is the description:

"The use of a robot connected with telautographic equipment has been employed by Pomeroy's, Reading, Pa. to excite the curiosity of crowds that gathered in front of the show window to witness the operation of the mechanical marvel.

"The robot was continuously writing the store's advertising messages on a large sheet of paper, which unwound automatically from a roll. As the robot wrote, the sheet moved down and was wound on another roll.

"To those familiar with this type of equipment, the operation was simple enough, for an operator inside the store wrote the words and drew the pictures that were reproduced simultaneously by the robot on the sheet of paper in the show window.

"As a means of advertising it has been most effective, for crowds gathered continuously, many of the observers reading every message that the robot wrote.

"In proportion to the interest developed, it is doubtful whether the store has ever employed a less expensive means of increasing sales."

If you like to tinker with electricity and mechanics, this ought to suggest something. Dress the robot as Santa Claus, put him in a Christmas setting, and write your own advertising messages. Don't forget to do some writing about holiday radio programs, in suggesting radios as Christmas gifts.

## Another "Big Shot" From the South

Mr. L. C. Leighton, who is exclusive distributor for SYLVANIA Tubes in the Canal Zone and Panama Republic, recently visited this country and spent some time with our Foreign Sales Department in New York.

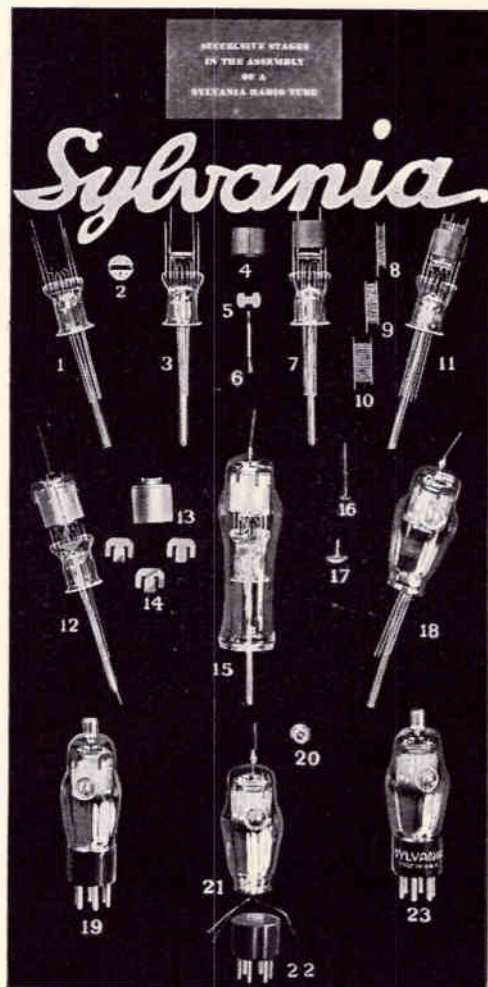
While Mr. Leighton was visiting in Syracuse, he participated in a champion event at the local gun club. He was high gun with score of 95 in the 100 target 16 yard event. In this event, Mr. Leighton vanquished Mr. L. G. Dana, the 1934 winner of the Grand American Handicap Championship, and we don't mind telling you that Mr. Leighton is just as successful at selling tubes as he is at annihilating clay pigeons.

## Shares Display With Appliance Dealers

Morris Distributing Company, Albany New York recently participated in the Better Homes Exposition. As they are wholesalers, they were not displaying merchandise in order to make sales to the public, but, being progressive and far-seeing wholesalers, they were helping their dealer customers to make sales. Visible at each side, of the rear of the booth, is a list of those dealers. What better method of sales suggestion then showing of merchandise, coupled with the names of the stores where it can be purchased?



Morris Distributing Company display



We have had many requests for information about the parts that are used to make a Sylvania tube, and the order in which they are combined. The picture and description given here will not take the place of a trip through the factory, but we hope that it will give you some idea of the careful and delicate work necessary to make a perfect Sylvania tube.

Progressive stages in the manufacture of a Sylvania type 78:

- Stem..... 1
- Bottom Collar..... 2
- Bottom Collar Mounted..... 3
- Plate..... 4
- Plate Mounted..... 7
- Mica Spacers..... 5
- Cathode Assembly..... 6
- Number 1 Grid..... 8
- Number 2 Grid..... 9
- Number 3 Grid..... 10
- Partially Completed Mount..... 11
- Outer Cage..... 13
- Mica Dome Pads..... 14
- Control Grid Lead..... 16
- Getter Tab..... 17
- Completed Mount..... 12
- Completed Mount with Bulb..... 15
- Sealed Mount, ready for exhaust..... 18
- Tube exhausted, ready for baking..... 21
- Top Cap..... 20
- Base..... 22
- Tube ready for final testing..... 19
- Tube etched, ready for packing..... 23

\*Tests and inspections are made throughout the process of manufacture, as well as many special tests on completed tubes.

## Sales Hints From Broadcasting Booklet

"Sixteen Hours a Day"—a handsome brochure issued by Columbia Broadcasting Company, reviews broadcasting activities for the past year. When it is spread out before you in black and white it is easier to realize the tremendous work the broadcasting companies are doing for entertainment, education and for a broader understanding of policies and economics.

This review of past programs also raises a sigh of regret for the many perfectly swell ones so many of us have to miss because they come at an hour when we are busy at desk, counter or machine.

However, this very situation offers a chance to get out on a hunt for more radio customers. How many doctors, dentists, lawyers, sales managers, and hospitals in your town have radio sets installed in their waiting rooms? As we look at it, any place of business where people have to sit on the "Anxious Seat" for minutes or hours during the day is a good place to put a radio. You've all heard this argument before, of course, but these program schedules drive it home from another angle, too. Does Dr. Brown know that fifty-three specialists, under the auspices of the New York Academy of Medicine, spoke during the morning hours in 1933? Does Attorney Jones know that from February 12 to May 28, seventeen eminent lawyers addressed the radio public, and that in October and November six criminologists and police executives spoke on the causes and cure of crime? Does Sales Manager Green know that between January and November fifty-eight world leaders in economics and sociology spoke on national and international economic problems and trends—subjects that are vital to Mr. Green if he hopes to be a wise and successful business man?

Does this give you a new slant on the value of selling radio programs as well