A startling comparison shows the new Sprague Coaxial Enamel Condenser (right) compared in size to an old air-tuning model (center) and a coil tuner (left).

New Sprague Coaxial Condenser to Revolutionize Radio Designs

Sprague Specialties Company has just finished development of a revolutionary new condenser in which a totally new type of enamel, created from secret formulae, serves as the dielectric; and hopes to release this shortly to the radio industry.

The variable air-tuning condenser — next to the tubes the most familiar part inside a set to the eyes of the layman — can be replaced with the new Sprague coaxial unit which, because of its tremendous savings in space, promises to bring broad revisions in designs, particularly in small sets and automobile radios.

The new coaxial condenser was developed in the Sprague laboratories here in North Adams and represents two years of research work followed by a year of engineering development and service testing in the laboratory.

One-Fifth Size of Air Model

A typical example of space-saving is a comparison between a good, two-gang air tuning condenser found in about 95% of all commercial sets today and an equivalent model of the Sprague coaxial. The air condenser requires 16 cubic inches while the Sprague coaxial condenser needs about 3 cubic inches. Besides its smaller size the new condenser will probably represent some cost saving.

All condensers are composed of alternate layers of electrical conductors and non-conductors. In the new Sprague model, enamel replaces air as the non-conductor. In the first place the special enamel developed has a much higher dielectric constant rating than air. It is also possible to use a much thinner layer of enamel than the smallest practical air space. The result is to multiply many times the capacity per square inch of active surface.

The new coaxial model is not just a tuning condenser but will be valuable in replacing trimmer or padder condensers where high stability is required. The Company's expectation is that it will find a ready market for the tuning condenser especially in small, low priced receivers and that the replacement of high stability trimming condensers will come in the higher priced receivers where improved performance is wanted.

Valuable with Push Button

The coaxial condenser is also designed for condenser tuned push button receivers where excellent performance is required, with the added advantage of a wide capacity range, making it possible to set up any broadcast band station on any one push button. Its use in conjunction with loop receivers is self-evident.

In manufacturing push button radio sets the choice of stations to be set up on a given push button has been limited in the past by the capacity range of the condenser or the inductance range of the coil with which the button was connected. With loop receivers, it will now be possible with the coaxial condenser to tune any button to any station. This is a vital sales point.

Much trouble has been experienced in the past by radio manufacturers who set up push buttons to be adjusted to stations in one end of the wave length band and then had them sold in areas where the majority of stations were at the other end of the band. This caused intense dissatisfaction among customers. The new condenser will remove this difficulty by covering the entire broadcast band with its greater capacity range. (Continued on page 2)
Production of the new Sprague coaxial condenser requires costly machines running into many thousands of dollars and tolerances on the condenser itself which are amazingly fine, getting down to very high accuracy.

Full Patents for Sprague

Development of the new invention, on which a number of patents are already pending or applied for and which will be fully covered by the Sprague Specialties Company, arose from the desire to find a substitute for the old mica condenser. Mica, despite good electrical properties has the drawbacks of being hard to handle from a production standpoint. Extremely thin films of mica have been required — making it difficult to prevent breaking and spoiling. Nearly all mica must be imported from India and only a limited number of fabricators capable of processing it properly have been available. This problem led to experimentation with various types of enamels and glasses fired directly onto a metal condenser plate.

Almost immediately the need for a porcelain enamel with vastly improved electrical characteristics became evident. Our research director, Dr. Robinson, took up this problem and set his laboratory staff to work on it. Within two years we had developed an enamel frit (fused compound for a base) which produced a vitreous enamel surface not only with high electric properties but workable from a mechanical standpoint. A satisfactory point in

Exhaustive Experimentation Required

Looking back over three years of intensive work reveals a repetition of experiments almost reminiscent of Dr. Ehrlich and his quest for a "magic bullet." One of our chief researchers on the practical applications of the coaxial condenser, recalls that we tried hundreds and hundreds of different enamels before devising our own formula. An interesting discovery in this connection was that American porcelains had gone ahead of the vaunted porcelains of Europe, where progress had been stalemated by rule of thumb and tradition. A particular problem was to find an enamel that did not crack or blister on being applied to the metal base.

Exhaustive "tracking" tests on the ability of the coaxials to stay within specified capacities have proved the new model's worth. Life and wear tests show its ability to last for twice the life expectancy of the ordinary radio receiver. Humidity tests have also found the coaxial condenser satisfactory for all normal applications. Like Dr. Einstein's "X", the condenser has its "Q" — the electrical characteristics of its enamel. The Sprague coaxial enamel condenser's "Q" is far, far above anything exhibited by ordinary enamels. From a mechanical standpoint the condenser lends itself well to the simpler types of tuning mechanisms.

CONDENSERS ESSENTIAL PART OF NEW WELDING PROCESS

Sprague condensers again find an opportunity to take a leading role in industrial progress in other fields with their application of a new process known as flash percussive welding.

Several outstanding advances result from this new welding process, a significant characteristic of which is that it uses condensers as a storehouse for its electrical energy. Welding, as most Sprague employees know, is done by creating an electric arc between the two metal objects to be welded and then forcing them together. The great heat causes both to melt thus creating a weld. One of the big difficulties of the process is the high voltages required. Under the new process developed by the Danish inventor, Alfred Vang, and being promoted by Vanco Products Company, high grade condenser equipment is being used to store up enough current from ordinary voltage lines to produce a very high voltage spark that welds everything in its path. Taylor-Winfield are builders of the machines. The new method creates an instantaneous flash weld at high voltage cutting down the time of heating to about one-thirtieth of the time previously consumed.

From an economic point of view the demand for power can now be kept at a more nearly uniform rate and voltages required are much smaller. Ordinary power supplies can be used and the disturbances caused by the old weld process that could be felt through the whole power line, can be eliminated.

With the great reduction in heat, the new method prevents melting of the parts being brought together except at the actual weld. This is especially important when welding objects of different thickness or of different melting points like aluminum and Dow-metal or hard and soft steels. Under the old method, the thin or soft part naturally heated up or melted faster than the thick surface. Now, however, copper valve needles one-quarter inch in diameter are being welded to copper and phosphor bronze bellows only 5/1000 of an inch thick.

Another important advantage of this new process is in connection with special heat-treated metals, particularly aluminum alloys whose characteristics were often upset by the old welding torch. The new flash percussive method avoids this by its speed and shallow heat penetration.

While being used successfully at present in automobile construction, the process is expected to be of special value in airplane building and in new stainless steel trains where special heat-treated metals must be welded to other metals both different in nature and in thickness. The type of the new discharge can be somewhat controlled and kept in one direction. There is no doubt that applications of this method might also be made in our own condenser manufacture where we have the problem of welding on extremely thin sheets of aluminum foil.
“People” Get Larger Share of 1939 Sprague Dollar

People received a slightly larger share of the Sprague dollar and “Things” (materials, taxes, heat, light, power, telephone, shipping, etc.) slightly less, during 1939, than in the break-down of the Sprague sales dollar shown in the LOG back in 1938.

The share of a Company’s income that goes for materials, labor, taxes, salaries, commissions or profits, naturally depends largely on the nature of the business. The proportions spent for this or that are determined to a great extent by the type of business and conditions throughout the year.

Employees exert an important influence in cutting down waste of materials, power, supplies, etc., and shrewd and skillful operation by management can often reduce shipping costs, interest and insurance or expenditures for rent or interest. Conditions in the community have a definite effect on tax costs. These things are far more important than the small percentages they represent because they have a definite effect on tax costs. The difficulty

More Jobs Means Lower Taxes

While the percent of our dollar that went for Taxes dropped slightly from last year this does not mean that less money went for taxes as we took in more dollars last year than the year before. Welfare today is one of the biggest factors in tax burdens so that anything that helps business to hire more people lowers the number of relief and helps to lower taxes. Lowering taxes, in turn, gives business an important extra margin for hiring additional help. There are “profitable circles” as well as “vicious circles” in the economics of government and business.

What shares increased and what shares were smaller in 1939 than in 1938?

Up went the share for hourly wage workers, clerks and straw bosses; for officers, executives and all senior supervisors; and for people as a whole. Down (in proportion, remember) went the share spent for materials, taxes, interest and insurance; heat, light and power; telephone, stationery, postage and miscellaneous expense.

Also down was the proportion of our dollar that went for improving the Company’s financial position and the share paid out to our hundred or so stockholders.

Why Business Spends Money

Just let’s stop a minute and consider what money has to be spent with no appreciable loss of time.

Simple — when you read about it — but nevertheless of value both to the Company and to Rose Giacco. Possibly you can think of or develop some other simple but constructive improvement in production methods or equipment. Try it out or tell us about it.

Here's one for Bob Kipley — the attractive home built for himself by George Thebarge, our elevator man, who did this fine piece of work under the handicap of having only one arm.

In 1929, Arnold married Miss Elizabeth Chalmers of Boston and they have three future aviators: William, Jr., 10, Robin, 8 and John, 3. For vacations, Arnold likes to slip off with Frank Gods in the Fall and shoot ducks down on Long Island. But his real hobby is flying for Uncle Sam. It's a real recreation and "you get good grub."

ACCIDENT REVEALS AMAZING TEST FOR KOOL-OHMS

Just as the method for vulcanizing rubber was accidently discovered when Goodyear spilt one of his mixtures on a hot stove, an amazing new proof of the safety factor in our Kool-Ohm resistors came to light recently through an error by which a set of Kool-Ohms was subjected to a tremendous overload.

Kool-Ohms are rated on an average as able to withstand 250 degrees Centigrade. During a routine test recently several, accidentally, were left under test at the wrong voltage. When the man in charge returned to the test room the Kool-Ohms were sizzling at the terrific heat of 658 degrees Centigrade. The aluminum had boiled off but the coated and treated resistor element itself remained intact.

This amazing proof of Kool-Ohm qualities was so striking that our sales force has made its first public demonstration of this "fiery furnace" suicide test for customers. Regular units are now deliberately subjected to the intense heat of 658 degrees as a demonstration for buyers requiring a resistor with an exceptional safety factor.

FRENCH, INDIANS CAPTURED FORT MASSACHUSETTS

The reconstruction of old "Fort Massachusetts" that we show in this issue of the LOG is worth a visit if only to recall the courage and hardships of the early settlers. Dramatized recently in the motion picture "Drums Along the Mohawk" the trials and dangers of the kind of life people led here in the early days make present problems tame in comparison.

During King George's war between England and France and their colonies, a tiny handful of 22 men inside the fort held off an army of 700 French and Indians for thirty hours before being captured and carried off to Canada where they were held captive for over a year.

"Fort Massachusetts" is the only location in this part of the United States ever actually in the hands of the French. It was burned by the Indians shortly after its capture.

Built on the state highway from North Adams to Williamstown, the replica contains many relics of the early settlers and Indian wars.
MINSTREL SHOW A GREAT SUCCESS

The second annual minstrel show, held April 4 and 5, was a decided success. The variety of music, instrumentalists, singers, and dancers kept the audience entertained for over three hours.

The first part of the show was a skit built around the fact that the Company was putting on a show celebrating its tenth anniversary. Needing talent, the employment office decided to hire only those applicants with entertaining ability. Lawrence Laliberte as manager, janitor John Quirk, office boy Ayoob Ashkar, and stenographer Gertrude Lefebvre interviewed those applying for work. William Landry, Ray Girard, Jean Brown and Elaine Clairmore got jobs through their ability to sing. Jimmie Crew’s electric guitar playing and Frances Gajda’s Hawaiian dance and her roller skating act put their names on the payroll. Other successful job-seekers were William Bellows who played the trumpet, Violet Maruco who played the accordion, and Virginia Spencer who demonstrated how she taught the Sprague Product’s salesmen how to sell condensers.

The second part of the evening’s entertainment was the Children’s Jamboree. Edmond Dupuis opened with two clever tap dances; June Adams followed, singing “In An Old Dutch Garden”; William Mahony in cowboy costume was next with hill billy airs. Five-year old Barbara Sherman who sang and danced and four-year old Conchita Angeli who also danced were next on the program. The Jamboree ended with acrobatic dancing by Carolyn McNeill. A roller skating-dancing act which was one of the hits of the evening by Billy Blair and a snappy drill by the Royal Blue Pioneers drum corps of Scout Troop 31 under the expert direction of Drum Major Geraldine Tatro ended the first half of the minstrel show.

After a short intermission the minstrel proper got under way. The members wore formal evening clothes. The mixed chorus was elevated on bleachers covered with the Sprague colors of orange and blue. The ends were very ably handled by John Quirk, Paul Urbano, Walt Carpenter, Jerry Steinberg, Brendon Farley and Jimmie Crews. The soloists were William Landry, Felicia Fleury, Charles Dean, Helen Root, Evelyn Robichaud, William Bellows and Wallace Brown.

Others in the minstrel chorus were Charles Dunn, Busby Williams, George Coody, James Murphy, Julius Lapage, John Fortini, Doris Brosseau, Ayoob Ashkar, Ray Girard, Frances Gajda, Vera Urbano, Elaine Clairmore, Jean Brown, Margaret Steinberg, Charlotte Trottier, Teresa Landry, Margaret Daub, Doris Lonane, Gertrude Lefebvre, Jennie Battersby, Dorothy Dupuis, Elinor Carpenter, Mabel Williams, Marion Blanchard, Edna Laliberte, Rita Thomas, Mary Dunn, Marguerite Dunn, Violet Maruco, Blanche Pasternak, Elaine Bourdon, Verna Watts, Marion Roy, Frances Murphy, Raymond Shea and Rita Peat.

The show was coached by Joseph Macksey assisted by Doris Tietgens at the piano and Gus Roberts at the drums. A percentage of the proceeds will be given to the Polish and the Finnish relief fund. The remainder will be used for Christmas baskets for the needy.

SPORTS

With warm weather approaching in the Berkshires several topics are subjects of discussion in and out of the shop. Baseball seems to hold sway, with some talk of organizing a Dusty league composed of the various industries around North Adams. We would like to see this go thru with a well backed-up program consisting of certain restrictions and rules to maintain a fair chance for all teams to compete as amateurs.

Softball will again be a popular sport for both young and older players. Last year there were plenty of softball teams. They were successful from a sporting angle but not financially.

Fishing is of interest just now as the trout season opened on Monday, April 15th, anglers and fly-fishermen from Sprague’s were out strong on the opening day. As there are several big league fishermen in the plant we expect many full baskets and, of course, many good stories and alibis.
THE SPRAGUE RIFLE TEAM

Last December about ten employees formed a rifle team. At that time Company K was the only one in town. They intend to hold practice sessions and informal matches with other teams in the community. Until February of this year they used the State Armory range for practicing. Recently a few of the men got permission to use space in one of the buildings across the street. They cleared it out, put up a steel back stop, and now have a good range of their own. There are now thirty-two members.

Several of the girls decided they would like to try their hand at the new sport. They liked it so well that they are now talking of forming a girl's rifle team. If they do some of the men will have to bring up their scores or the girls will be posting higher ones.

The boys team is arranging several matches with other teams in the near future. There are now seven teams in the city.

The present officers of the Sprague Specialties Rifle Club are:

President: Wendell Smith
Vice-President: Fred Powers
Treasurer: Frank Gassett
Secretary: Alex Durant
Range Officer: Frank Chilson

DOWN THE ALLEYS

The men's league schedule wound up with a bang Thursday, April 11, 1940.

The first half saw the Local 249 team come thru in first place with the Foremen, Sprague Products, and Trimmers all tied for second place.

The second half finished in a tie for first place between the Local 249 and Sprague Products, followed by Dry Formation, Riveters, and Trimmers. Both halves were closely contested and a majority of the teams showed a marked improvement over previous years.

The Local 249 had a high team total of 1668 for three strings. Also a high team single string total of 600.

Clarence Pratt of the Foremen's team had the high individual string of 402. Clinton Sweeney, Local 249, had the high single string of 149.

All ties will be bowled off soon and the prizes for the high teams given out at a banquet later.

* * *

The girls have finished their league schedule and the winner was the Paper Rolling team. Each girl on the winning team will be given a pin. This team and the other five — Solders, Dry Assembly, Dry Rolling, Office and Block Annex — held a banquet on Tuesday, April 16 at Florini's Italian Gardens.

That this league will run as smoothly and bowl as well next year is the hope of both your correspondent and the teams.

SPORT TIDBITS

Harvey "Specs" DeGrenier is going to Boston soon, with the Lafayette bowling team, to participate in the "Boston Advertiser" bowling tournament. The Lafayette are this year's city champions in North Adams.

* * *

Johnny Zabek, veteran guard of the Saint Stanislaus basketball team, did stellar work during the annual Polish basketball tournament at Steubenville, Ohio, the first week in April. The "Saints" played two games — they won one from Staten Island 65-14, and lost the other to St. Louis 35-34.

In the cribbage tournament between the Stock Room and Sample Laboratory the stock room boys were easy victors (says the stock room boys). The losers had to pay for a spaghetti supper at Florini's. The players were:

**Stockroom**
Bob Boyer
Don Meiklejohn
"Fritz" Windover
Don MacGillivray
George Roy
Dom Esposito
Larry Underwood
Walt Carpenter

**Sample Laboratory**
Jim McDonough
Rod McAlpine
Ray Bishop
Clayton Collins
Norman Chenail
Dave MacLelland
Ed Fitzpatrick
John Smith

An individual cribbage match has just finished and first prize went to "Fritz" Windover — second to Jim McDonough. Ed Fitzpatrick copped the booby prize.

Glenn Says . . . .

"Most of us pay no attention to such a small thing as a paper clip. To us it is just a piece of bent wire — yet think of the time it saves millions of people. It is the same on the job. Some opportunities for improvement appear so simple that we overlook them."
WEDDING BELLS

Marion Scarbeau of the Sample Department was married to Roy Caron (not employed here) at Bennington, Vermont, April 4th by Rev. Charles Sturgess in the Methodist Church. They visited in Connecticut and New York City before returning to Stamford, Vermont, where they plan to make their home.

Clara LeSage, of the office, and Frederick Miller (not employed here) were married at Notre Dame Church March 30. They spent a honeymoon in Washington, D.C.

On March 11, Lillian Barbuto of the Paper Assembly Department was married to John Dingas (not employed here) at the Congregational Church. Helen Scarfone and Albert Burzimati were the attendants.

Mae Roy, of the Boxing Department, and Jerome Szetela of Adams, were married in St. Francis Church in North Adams on March 30. They spent some time in New York, after which they moved into their new home in Adams. Several showers were given the bride before her wedding.

Genevieve Stachelek of the D. C. Rolling Department and Kenneth Banerof, not employed here, were married in St. Francis Church on April 15.

ORCHIDS AND DIAMONDS

Jeanette Fillion (Boxing Dept.) and Edward Trela, not employed here, have announced their engagement and expect to be married in the near future.

Loretta Champagne and John Smith, both of the Paper Rolling, have announced their engagement and we expect that the wedding will be in the near future.

Laura Davison (Paper Assembly) and Charles West, not employed here, report their engagement and expect to be married at some later date.

Florence McKane (Paper Rolling) and Albert Chalifoux have announced their engagement and are to be married on June 8.

Helen Dzierga (Paper Assembly) and Frank Kurpaska, not employed here, report their engagement and expect to be married May 30.

Dorothy Coté of the Paper Test Department and Alexander Skorupski, not employed here, have announced their engagement and are planning to be married on June 8.

Ada Arrighini of the Paper Test Department and Anthony Canale, not employed here, have announced their engagement and are to be married on July 8 in St. Anthony’s Church.

BLESSED EVENTS

On March 25 a daughter, Virginia Anne, was born to Mr. and Mrs. George Beverly.

A son, Gregory Allen, was born to Mr. and Mrs. Arthur Reynolds on March 27. The mother is Helen of Paper Rolling. Gregory is a grandson of Maurice Chonard.

On March 9 a daughter, Constance Anne, was born to Mr. and Mrs. Clarence Dean.

A daughter, Patricia Rose, was born to Mr. and Mrs. Earl Strange on March 9.

On March 23 a daughter, Mary Lou, was born to Mr. and Mrs. Jack Shields.

A son was born to Mr. and Mrs. Stanley Sumner on March 12. The mother is Ruth of Paper Assembly.

On April 4 a son was born to Mr. and Mrs. Robert Strange. The baby weighed 7 lbs. and 1 oz., and is the son of Lysle of Wet Assembly Dept.

Mr. and Mrs. Vincent Bartlett are the proud parents of a son born April 11.

Mr. and Mrs. John Rohare (Christine of the Paper Rolling Dept.) have adopted a baby daughter. They have named her Katherine Beverly.

A daughter was born to Wilfred and Rose Champagne on April 15.

A son, Armond George, was born to George and Laura Benoit on April 16.
BEAVER STREET BREVITIES

George Saulnier recently attended the concert and dance given by Kay Kyser and his orchestra in the State Armory in Troy, N. Y.

* * *

Bob and Lillian Boyer celebrated their 14th wedding anniversary April 6. They were entertained by their friends at a party. The Boyers have three children.

* * *

Road conditions in the Berlin Road section of Williamstown are so bad that Harry Haskins has had to walk three miles twice each day to the main highway to get to work.

* * *

Harold Dufraine's hound recently presented him with seven cute little puppies. Harold hopes that they will be as good hunters as their mother.

* * *

Tony Januska of the Ovens Dept. has bought a cow. He says there is more money in milk than in the eggs that Charles Sutliff and Bob Manns are planning on getting from the hens they are going to buy.

* * *

Virginia Perrault and Louise Blanchard are convalescing from recent operations.

* * *

June, daughter of “Gus” and Almaud Dupont, is recovering from an emergency operation for appendicitis.

* * *

We wish to extend our sympathy to Mr. and Mrs. Dominick Tassone, whose baby girl born March 19th, died a few days after birth.

* * *

“Pat’ Siciliano has been visiting friends in Albany, New York.

* * *

Helen Boucher of the Paper Rolling Dept. recently entertained the girls from her department with a spaghetti supper.

* * *

Rita DeMarco, Rena Fachini and Rita Gigiatti were among those who attended the Italian Ball.

* * *

Peg McCann of the Main Office visited in Stamford, Conn., and Washington, D. C., the week of April 15th.

* * *

Many from the plant went over to Williamstown this winter to watch the deer that came down from the mountains for food. There was so much snow on the hills they came right down into the back yards. There were about a hundred in a herd in the Sandsping section of Williamstown. A picture is shown on page 2 of this issue.

* * *

Angelina DeGrenier has returned from a short vacation in Boston.

* * *

Mr. and Mrs. Roland Bartlett, Sr., celebrated their fortieth wedding anniversary March 16, 1940.

* * *

The banquet which the Machine Shop and the Local 249 had recently was a huge success. Ray Faucett was head of the committee in charge. Music was furnished by Bud Combs, Fred Mazur, and Pete Wilcus.

* * *

After the bowling championship match that saw the Local 249 defeat the Sprague Products a little celebration was held at the home of George Scarbo.

* * *

Kay Bellows, Helen Albini and Etta Owen spent the weekend of April 13th in New York City.

* * *

Ellen Lowe and Frances Romeo spent the weekend of April 13 in New York City.

* * *

John Mahoney is feeling pretty proud these days. Two of his sons, representing the North Adams Skating Club, competed in the All New England Skating Tournament which was held at the Boston Garden, Boston, April 14. Dan, 17 years old, won first place in the 440 yard race and second place in the 880 yard. John, Jr., 20 years old, came in fourth in the mile race.

* * *

Molly Avery spent a recent pleasurably weekend back where Sprague Specialties came from — Quincy.

BRIDAL SHOWER

On March 14th all the girls of the office floor including the sample department, thirty-five in all, attended a supper in the lunchroom and presented Clara LeSage of the Engineering Office with a crystal and assorted kitchen utensils. The T-shaped table was effectively decorated with yellow flowers and yellow and green favors. The bride-to-be was also given a gay colored corsage of assorted spring flowers. Earlier in the afternoon, the complete office, sample and engineering laboratory presented Clara with a hospitality tray as a wedding gift.