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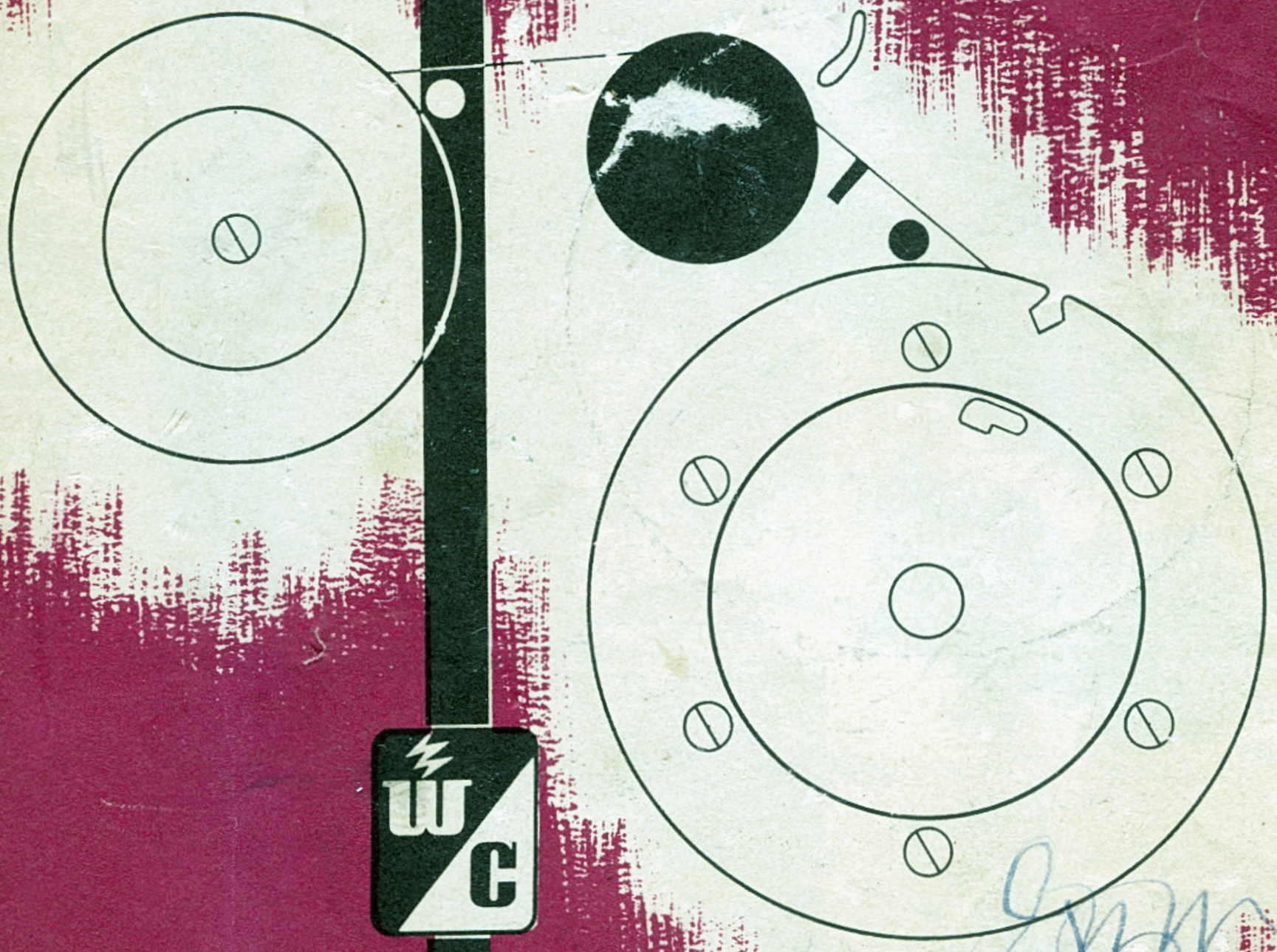
Chelsea, Michigan

Instructions for operating

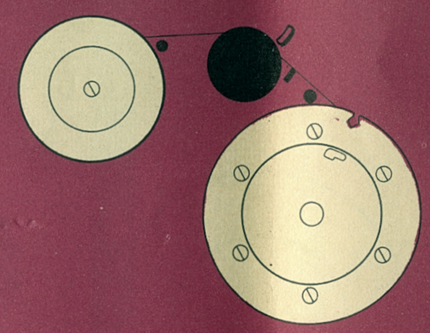
WEBSTER-CHICAGO MODEL 288

Electronic Memory Wire Recorder



WEBSTER·CHICAGO

Model 288 Electronic Memory



Model 288 *Electronic Memory* is a completely new portable wire recorder offering many exclusive Webster-Chicago features.

WEBSTER·CHICAGO

Model 288 Electronic Memory

#252186

INSTRUCTIONS

Your recorder is ready!

Everything you need to make or play back a recording is included in this one package. When completely unpacked, you should have:

1. A Model 288 Webster-Chicago wire recorder
2. A Microphone
3. An AC line cord
4. Two 15 minute and one 30 minute spools of wire. (Additional 15 minute, 30 minute or 1 hour spools are available from your dealer).

For Special Information On:	Read Page
The Controls and what they do	4-5
How to record	6-7
How to play back a recording	8
To record a long program	9
To record from your radio	9
Microphone technique	10-11
Your warranty	19

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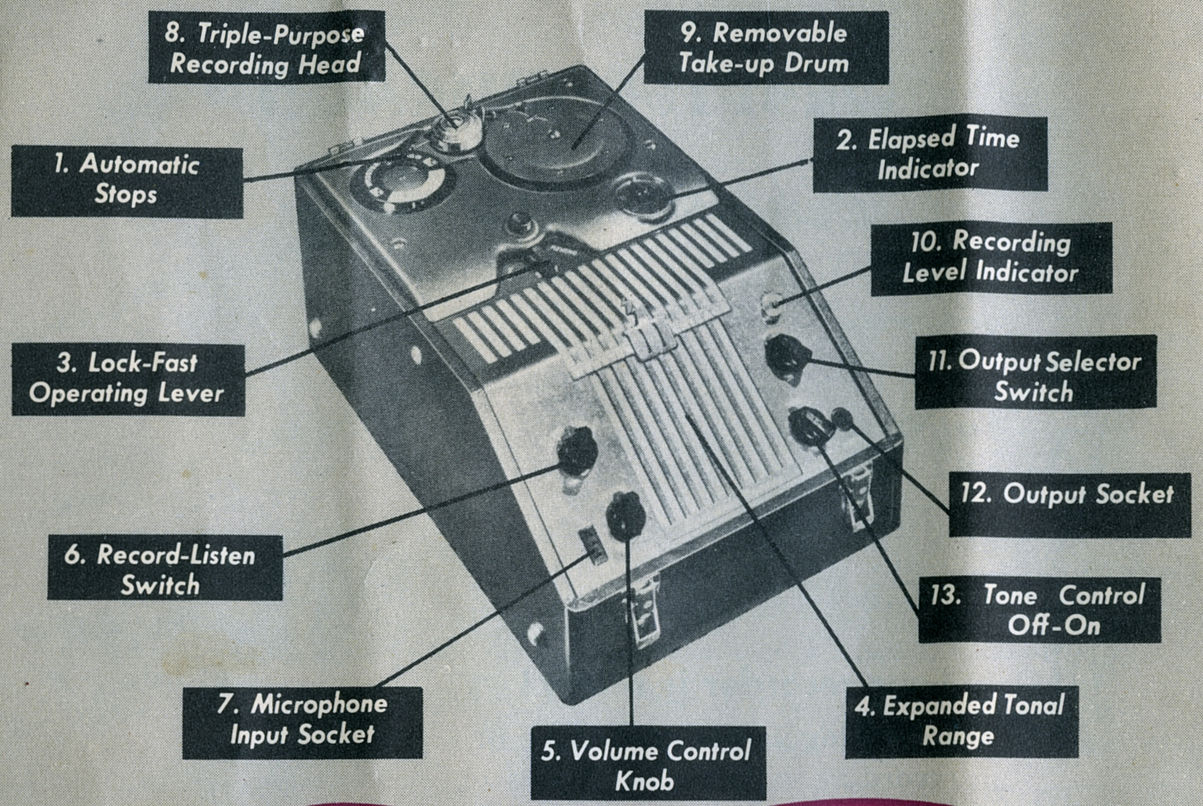


Record-O-Magic Controls

and what they do

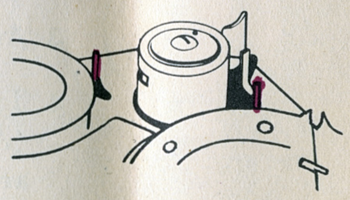
1. Automatic Stops—these stops shut off the entire recorder automatically at the end of the wire in either direction. They reset automatically when the control lever is moved to "stop."

2. Elapsed Time Indicator—Times every recording, or can be reset to zero manually for timing any section of a recording.

3. Lock-Fast Operating Lever—Controls the motion of either spool for recording, listening or rewinding. Resets the Automatic Stops when the lever is placed at "Stop" position. This lever also controls a set of "Memory" brakes that prevent the drums from running too fast, snarling the wire. Accordingly, a foot pedal switch should not be used on the Model 288 *Electronic Memory*.

The single Release button is interlocked with the Control Lever in such a way as to eliminate the possibility of spilling wire by moving the lever too quickly from "Rewind" to "Run." Push in the Release Button with the forefinger only when moving the control lever from "Stop" to "Run" or "Rewind."

4. Expanded Tonal Range—The result of expert engineering in the amplifier design. Makes it possible to record and play back voice or music with clear, life-like tonal quality.



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5. Volume Control—It's turned exactly like a radio volume control. It should never be turned too loud, or distortion will result. Always adjust the volume to a point where the Recording Level Indicator just flashes on the loudest "peaks" of voice or music. Do not increase the volume during the low-level parts of a recording, or the full dynamic range of the original program (the loud and soft passages) will be "compressed" and the play back will be all at one volume level.

6. Record-Listen Switch—For recording or erasing, this switch is turned to "Record." For listening it is turned to "Listen." This switch should always be turned to "Listen" before rewinding to avoid the possibility of an accidental erasure.

7. Input Socket—Fits the three-prong "Jones" plug on the microphone cord.

8. Triple-Purpose Recording Head—Records, plays back and erases. While operating, the recording head rises and falls to wind the wire evenly and smoothly on either spool.

The head cover is automatically turned when the "Run-Rewind" control is turned to "Rewind," bringing a special wire guide into position to lift the wire from the groove. This reduces wear of the groove, and permits better control of the wire during rewind.

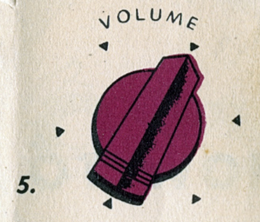
9. Removable Take-up Drum—Lifts right off the mandrel for quick, easy change of wire when continuous recording for over an hour is desired.

10. Recording Level Indicator—This tells whether your volume control is properly adjusted. When the light flashes only on the loudest tones of voice or music being recorded, the volume is adjusted correctly.

11-12. Output Selector Switch and Socket—Turning this switch to No. 1 position permits listening to wire recordings through the internal speaker on the Model 288. No. 2 position connects the 500 Ohm winding of the output transformer to the output socket for an auxiliary loudspeaker with 500 Ohm input. No. 3 position is for playing the Model 288 through a public address system, high fidelity amplifier, or your radio receiver. Position No. 4 is a monitor position for use when recording from radio or phonograph. When used with microphone, feedback and squealing will occur.

13. Tone Control Knob—Also the "Off-On" switch. It controls both the amplifier and the motor. During recording this knob should be turned all the way to the right to record higher frequencies. In listening it can be adjusted to individual taste.

14. "Emergency Brake"—During rewind this brake will apply a "heavy brake" to the takeup drum immediately if the wire is broken or anything causes the wire to become loose. Prevents the "flywheel effect" of the takeup drum from spilling and tangling wire. Note: After this brake has operated, it may be necessary to move the control lever to "Run" in order to release the "emergency brake" before continuing the rewind. The slight pressure of the "emergency brake lever" against the wire eliminates any looseness or vibration of the wire between the recording head and the supply spool, insuring perfect level wind.



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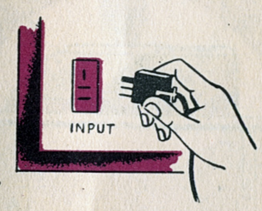

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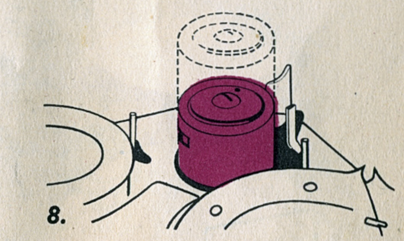

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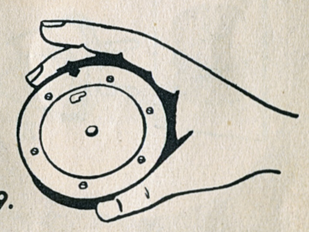

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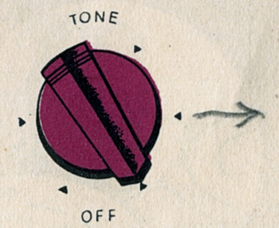
OUTPUT 12.



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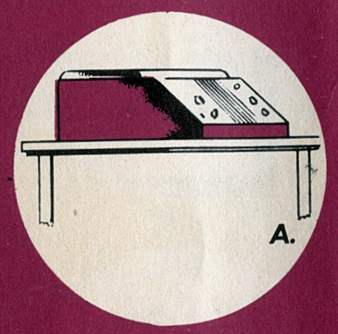
HOW TO OPERATE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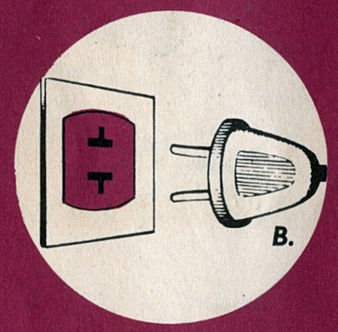
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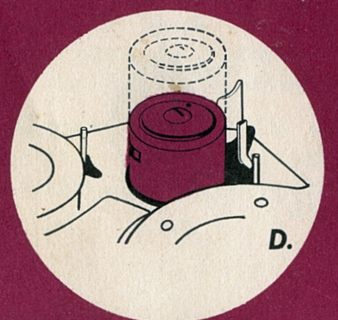

D.

The Model 288 *Electronic Memory* is as easy to operate as your radio. Follow these simple, classified instructions and you'll be amazed at how much pleasure you will get from so little effort.

Getting Ready to Record

A. Set on a level surface—Remove the lid and place the Model 288 on a level table to insure proper action of the mechanism.

B. Connect the Power Cord—This cord plugs into the male socket on the back of the Model 288 and into an A.C. socket. NEVER USE THE MODEL 288 ON DIRECT CURRENT. (Check with your local power company if you are in doubt as to what kind of current you have.) Most Models 288 are designed for 105-120 volt operation. Special models may be designed for 210-240 volt operation. ALWAYS check the name plate on the back of the cabinet to determine the correct voltage and current required by your particular recorder.

If it is desired to operate the recorder on 50 cycle current, a special motor shaft sleeve must be used in order to drive the mechanism at 60 cycle speed.

C. Turn the Model 288 on—The "On-Off" switch is incorporated in the "Tone" Control and turns "on" in the first few degrees of rotation to the right or clockwise.

D. Raise the Recording Head—This may be done by rotating the Take-up Drum by hand until the head is at its highest position. It is important that the head be raised before the wire is placed so that the wire will run on a straight line from spool to spool and not pull across the face of the spool when the Model 288 is in operation. This lets the wire run smoothly and freely and avoids "wow."

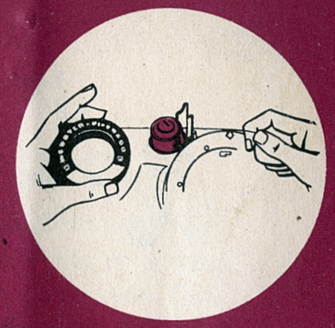
E. Place Spool of Wire—The spool should be placed label side up on the mandrel at top left of the *Electronic Memory*. The nylon leader should first be unwound about eight inches to allow threading.

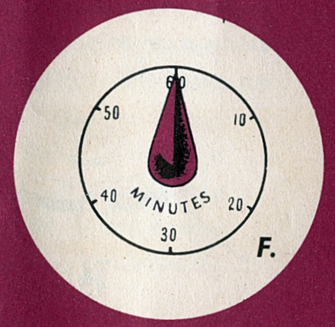
F. Adjust the Elapsed Time Indicator—The pointer may be turned to zero manually at any time

G. Route the Wire—The wire should be routed outside the Automatic Stops, through the Recording Head Slot, between the "emergency brake" guides and through the notch on the Take-up Drum. Push down the button in the center of the Take-up Drum to raise the Leader Retaining Clip, slide the leader beneath the clip and release the button.

Recording on a New Spool of Wire

Before recording on a new spool of wire, run the spool through the *Electronic Memory* once and rewind. THIS IS IMPORTANT for it winds the wire on the spool in direct relation to the rise and fall of the recording head and also loosens the wire so that it will run more smoothly and prevent "wow." This may be done with the Record-Listen Switch in either position. It would be wise before using a new spool of wire to read the hints on wire on page 17.





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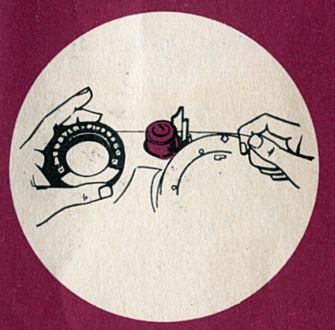
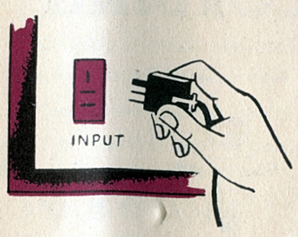


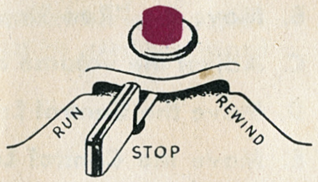
TO MAKE A RECORDING



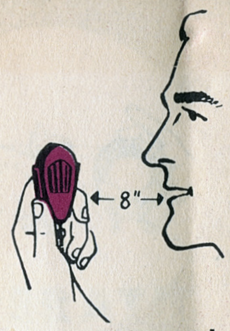
A. Plug in the microphone.

B. Set the Elapsed Time Indicator to "zero."

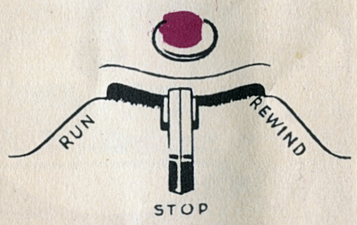
C. Turn the "Record-Listen" Switch to "Record."



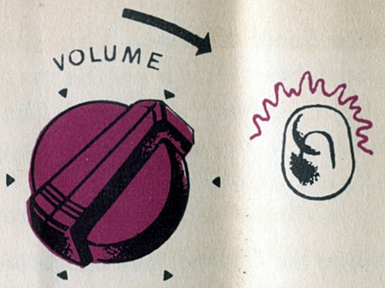
D. Move the "Run-Stop-Rewind" Control Lever to "Run."



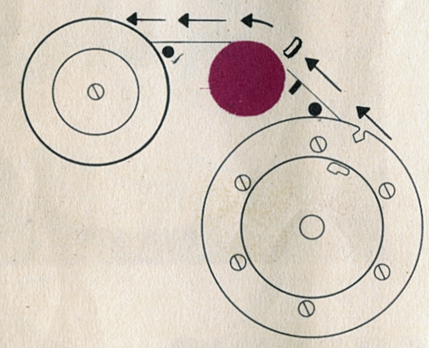
E. Hold the microphone 6 to 12 inches in front of the mouth. See the section on microphone technique, on page 10.



G. Move the Control Lever to "Stop" at the end of the recording.



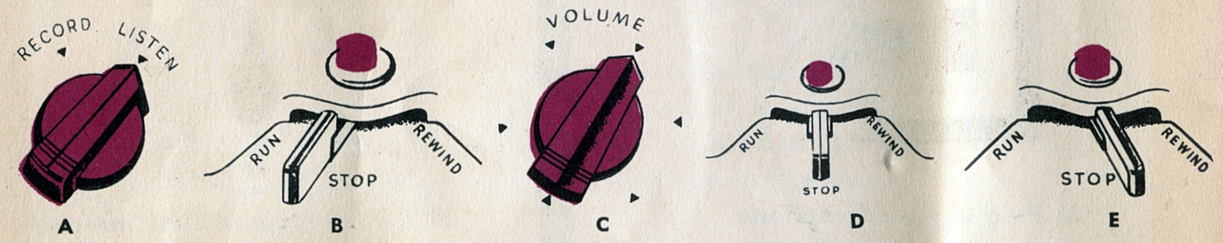
F. Turn the volume control to the right until the neon overload indicator flashes only on the loudest signals. If the neon bulb flashes too often you are overloading the wire and the playback of the recording will be distorted.



TO REWIND

A. Turn the "Record-Listen" Switch to "Listen."
B. Move the Control Lever to "Rewind," then to "Stop" at the end of the rewind cycle.

TO PLAY BACK A RECORDING



A. Be certain the "Record-Listen" Switch is in the "Listen" position.

B. Move the "Run-Stop-Rewind" Control Lever to "Run."

C. Adjust the volume control and the tone control for enjoyable listening.

D. Move the Control Lever to "Stop" at the end of the playback.

E. Move the Control Lever to "Rewind" and then to "Stop" at the end of the rewind cycle.

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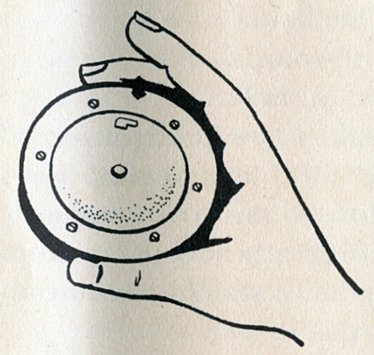
TO ERASE A RECORDING

When the "Record-Listen" switch is turned to "Record," an erase coil in the recording head is activated. Wire passing through the recording head is erased automatically before it reaches the Recording Coil. This makes it possible to make a new recording on wire that has been previously recorded, just as though the wire had never been used.

When it is desired, a wire that has been recorded may be completely erased by running it through the *Electronic Memory* with the Microphone disengaged or the Volume Control turned off. By the same token, any part of a recording can be erased and filled in with a correction or change. Wires that have been recorded for temporary purposes may be erased and used over and over again, or as many changes and corrections as desired may be made on previously recorded wire.



TO RECORD A LONG PROGRAM

Model 288has a removable Take-up Drum to facilitate recording programs longer than one hour.

Choose a spot on the program for the change of spool when there are a few moments of applause or during the interval between speakers or musical numbers.

1. Move the control lever to "Stop."
2. Grasp the small Supply Spool in the left hand and the large Take-up Drum in the right hand.
3. Quickly lift them both straight up, keeping the recording wire taut.
4. Lay the two spools aside.
5. Pick up the new spools, which have been previously prepared for use, and place them in position on their respective mandrels. Be careful to route the wire outside the Automatic Stop trip levers.
6. Move the Control Lever to "Run" and continue the recording.
7. Rewind the Number 1 spool at your convenience later.

To Record from a Radio Phonograph

To record direct from a radio receiver it is necessary to pick up the signal from across the volume control of the receiver. It is then possible to record independent of the volume control of the receiver.

Webster-Chicago accessory cord No. 2901 is available from your dealer and includes the 22,000 Ohms ½ Watt resistor necessary between terminals 1 and 2 of the input plug. This same cord can be used to record direct from a phonograph record player.

MICROPHONE TECHNIQUE

The ability to get the best results with a microphone improves with practice. The microphone should be held far enough from the mouth to permit the volume control to be at least at "1 o'clock" without over-recording when recording a normal speaking voice as in public address work.

Some people pronounce "B's" and "P's" with an explosive puff which overloads the microphone; others speak with sharp sibilants which are over-accentuated when the recording is played back. In such cases, or in recording whistling or wind instruments, the microphone should be held sideways at right angles to the mouth or sound source.

There are, however, many variations in individual speech, and it is advisable to make a few practice recordings to discover the best microphone distance and volume setting. The usual tendency is to talk too loudly and too close to the microphone.

For recording musical instruments or singing, where the microphone may be several feet from the source of sound, it should be remembered that room echoes will seriously affect the quality of the recording. This is important. It is why Radio Broadcast Studios are specially treated to keep such echoes from reaching the microphone.

For recording singing or music it is helpful to connect crystal headphones to the output socket and turn the output selector switch to No. 2 position. This allows monitoring for regulation of microphone distance and voice or music volume.

Such sound absorbing articles as drapes, tapestries, overstuffed furniture, rugs or an audience, all aid in absorbing and eliminating echoes and hollow sounding recordings.

Auditoriums and rooms with relatively bare walls present especially difficult recording conditions. Drapes or a wool blanket hung behind an individual performer will help break up echoes.

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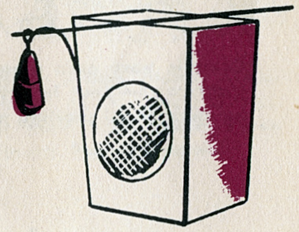
Nestling the microphone on the top of a folded coat or pile of cloth will also absorb echoes and improve the recording.

When recording speeches or programs in auditoriums equipped with a good public address system, better results may often be obtained by placing the microphone in front of one of the loudspeakers instead of trying to record directly at the speaker's stand.

Most problems associated with microphone placement and microphone technique are those encountered by the average public address technician. Each installation is different. Only experience will enable you to analyze quickly a new set of conditions and place the microphone correctly. You can learn, however, in your own home, the most frequently encountered recording conditions. Special problems can best be solved on the spot by consulting a local technician.

The microphone supplied with your recorder has excellent frequency characteristics out to 7000 cps, and high sensitivity. When held in the hand or mounted in the MS-111 microphone stand, it has semi-directional characteristics. Its output is rated at —50 db.

Non-directional characteristics for recording groups will result from placing the microphone on its back on a soft pad (to absorb unwanted jars and vibration). Rather large groups can be recorded successfully.



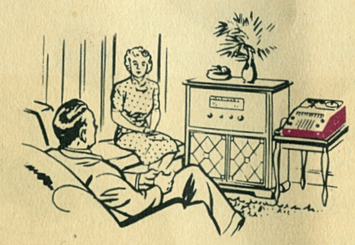
Special microphones may be desired by professional and advanced amateur recorders for special pickups. Any microphone with an output of —55 db or better can be used. Connect the microphone cord shield to terminal 1 of a Jones P-303CCT plug and the "hot" lead to terminal 2.

Radio programs should be recorded directly from the receiver circuit instead of by means of the loudspeaker and microphone. Accessory cord assemblies No. 2901 and No. 2902 or Model 183 Radio Connector and Volume Level Indicator make direct connections easy. These accessories can be installed in a few minutes by anyone familiar with radio circuits or by any competent radio service technician.

IN THE HOME

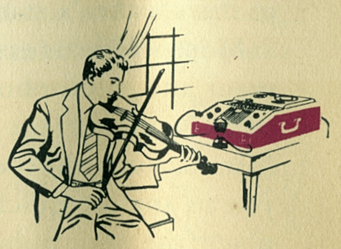
Wire Recording is a constant source of pleasure and entertainment at home. *Electronic Memory* owners have found the following ideas exciting—educational—fun!

MUSICAL ACTIVITIES



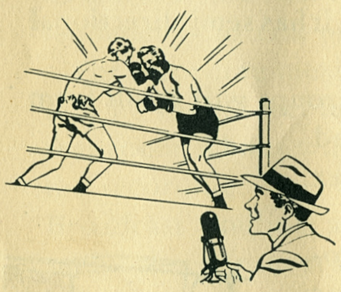
Enjoy concerts of your favorite symphonies or popular music, wire-recorded from the radio.

Dance to an hour's uninterrupted program of pre-selected tunes at home parties.



Improve timing and fingering in instrument playing by analyzing wire recordings of practice.

SPORTS



Compile your own albums of sportscasts—Your favorite announcers in all sporting events.

Criticize athletic events on the field, and play back later for analysis and coaching.

Wire record broadcasts of games for later playback and "Sunday morning quarter-backing."

FAMILY ACTIVITIES

Preserve the fun of family reunions and parties.

Make your own running commentary, with musical background, for home movies.

Wire record home theatricals for later enjoyment.

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CHILDREN'S ACTIVITIES

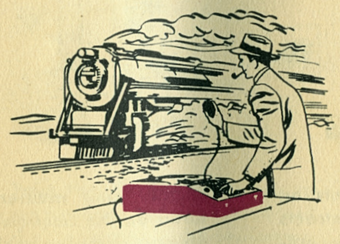
Wire record favorite stories for the children to listen to whenever they wish.

Record music and songs to play for party games.

Preserve baby's first words and keep a growing record.

AS A HOBBY

Many *Electronic Memory* owners have made wire recording a fascinating hobby. They use the *Electronic Memory* just as amateur photographers use their cameras for recording such incidents as these:



Make a fascinating and useful collection of on-the-spot sound effects of passing trains, 5-alarm fires, animals at the zoo.

Wire record candid conversations of friends for later playback and fun.

Secretly record friends' opinions on sports, politics, etc., and play back when those opinions have changed.

Present wire recordings of parties to the hostesses or the guests of honor.

Record weddings, parties, etc., as a favor for friends.

Burlesque serious speeches, opinions, etc. by interspersing humorous comments or changes of your own.

IN BUSINESS AND THE PROFESSIONS

Wire Recording has proved an invaluable asset in business and professional work to owners of the *Electronic Memory*. Here are some ways it has been used to save time and money outside the home.

IN CHURCH

Take the Sunday Service to shut-ins.

Preserve interesting lectures and talks for playing back to Sunday School Classes.

Use the *Electronic Memory* to teach intricate harmonies to the choir.

Hear the Sunday sermon on Saturday, for analysis and polishing before final delivery.

IN BUSINESS

Record what's said in important meetings for later transcription.

Rehearse speeches for polishing before delivery and for later transcription and release to newspapers.

Record comments on reports and contracts and save the recording for analysis and later transcription.

Dictate long memoranda on the *Electronic Memory* and play back for quick, easy check before transcription.

IN COMMERCE

Wire record inventories along with pertinent comments for later transcription.

Accurately record complicated orders given over the telephone for later transcription.

Provide novel and effective methods of training salesmen.

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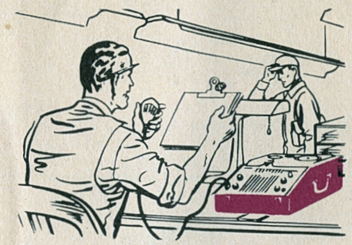
Chelsea, Michigan

Make up interesting sales talks for use with window and counter displays.



Record orders for night shifts and other departments.

Make accurate verbal records of important conferences.

IN LEGAL AND MEDICAL WORK

Preserve conversations with clients or patients, with the pauses and inflections that are often vitally important.

Dictate briefs for easy alteration on the *Electronic Memory* before transcription.

Record a running record in the operating room or during treatment in the office.

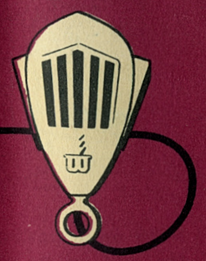
Take the *Electronic Memory* to the patient's bedside and record the opinions of consulting doctors for permanent record.

Rehearse arguments for polishing before they are presented in court.

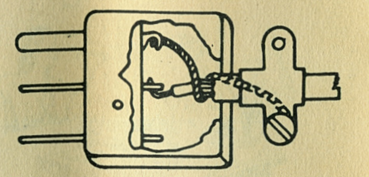
Record court arguments and verdicts for later analysis and permanent record.

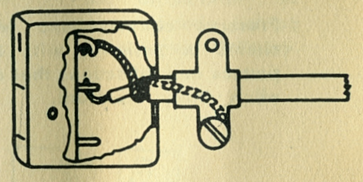
Use Webster-Chicago *Pre-tested* recording wire for best results on the *Electronic Memory*. Recordings may be kept for a lifetime or erased easily at anytime and the same wire can be used over and over again if desired.

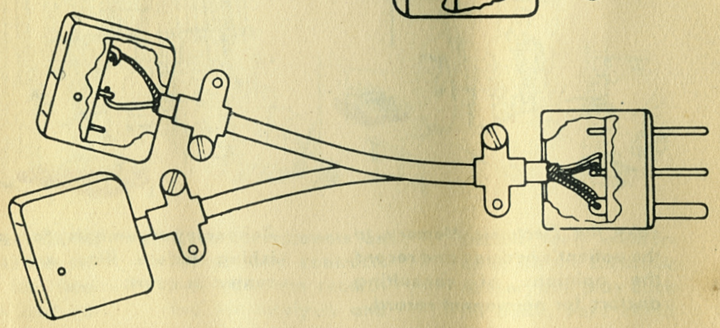
Microphone Extensions



Special installations sometimes require a microphone cable longer than is supplied with the MM-38 microphone. Up to 30 feet of additional cable may be added without undue loss of sensitivity or fidelity. You may use Webster-Chicago microphone extension cable CA-235 for this purpose. For greater distance, low impedance transmission lines and matching transformers should be used.





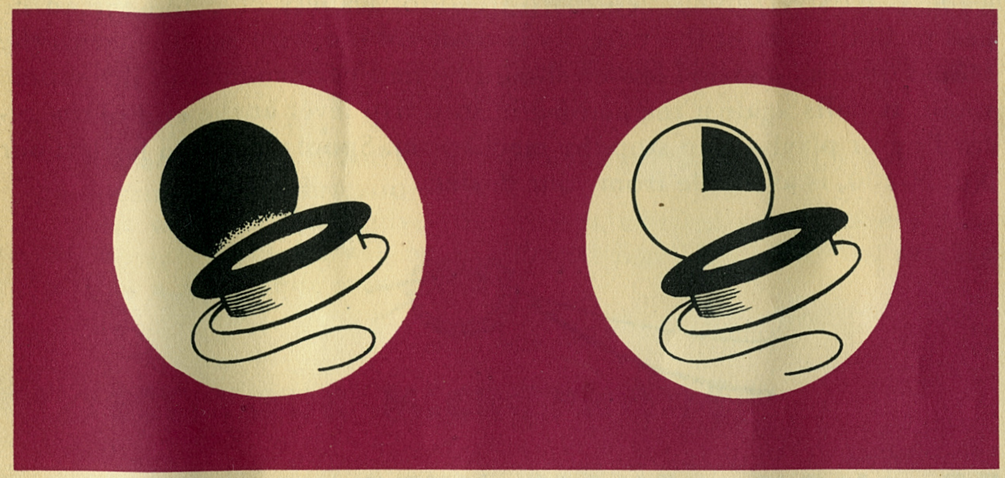


Multiple Inputs

Conference recordings or interviews sometimes make it advisable to use two or three microphones simultaneously.

A simple multiple input can be improvised using parts easily secured from a radio parts distributor. Secure two or three No. S-303-CCT Jones sockets, a No. P-303-CCT Jones plug, and two or three lengths of microphone cable. Connect them as indicated.

In general, it is not advisable to connect microphones in parallel since the sensitivity of a microphone is reduced by each one added. The proper method of mixing is to provide each microphone with an individual volume control and mix all inputs in a simple pre-amplifier. However, the Model 288 has sufficient gain to permit a direct parallel hookup as an emergency measure, especially when the sound source is within a few feet of the microphones, and control of the input level of each microphone is not essential.



RECORDING WIRE

Webster-Chicago Pre-tested Recording Wire is made from non-rusting stainless steel. It is tested and retested for magnetic, physical and chemical characteristics to assure you of quality program reproduction, long life and maximum operating facility. It is available from your dealer in quarter, half and full hour spools. Always insist on Webster-Chicago Pre-tested Recording Wire and secure the best possible recordings and reproduction.

ABOUT RECORDING WIRE

Do not attempt to use a one-hour spool of wire until you are experienced in the use of the fifteen-minute and thirty-minute spools and are thoroughly familiar with the controls of your wire recorder.

Before using a one-hour spool of wire be sure that:

1. **The groove of the recording head is clean.**
2. **The brakes are properly adjusted. The wire should not run or wind loosely, especially during rewind.**
3. **Wire winds evenly on the supply spool.**

See your dealer for adjustments if any are necessary.

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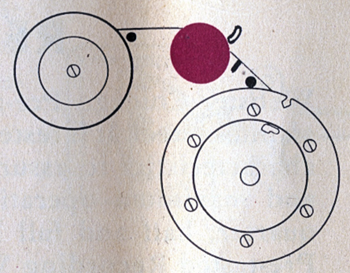
LEADERS

When you purchase additional wire you might secure spools without leaders. It is recommended that three-foot leaders of nylon thread be tied to both ends of the wire, as is done on the wire received with the Model 288. The inside leader should be tied permanently to the supply spool. It pulls against the automatic stop trip lever at the end of the recording or playback to stop the mechanism. Spools of nylon leader, our No. N-200, is available from your dealer.

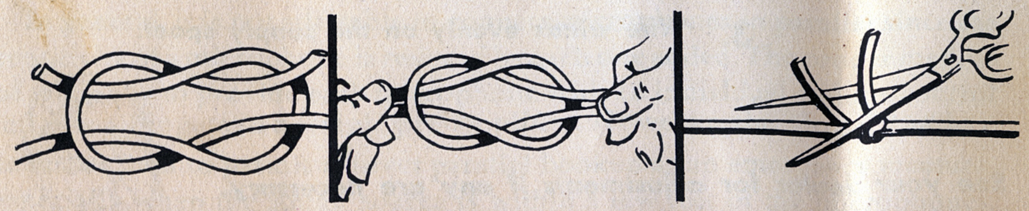
TO AVOID SPILLED WIRE

Loose brakes, especially on the take-up drum during the rewind cycle, will permit the wire to run loosely and possibly spill or snarl. The brake should be tight enough to keep the wire taut, but not tight enough to slow up the speed of the rewind. See your dealer for any necessary brake adjustment, especially if a one-hour spool is to be used. Also read the paragraph regarding the one-hour spool on page 17.



SPLICING WIRE

If it is desired to remove or insert a section for editing reasons, or if the wire is accidentally broken, the ends may be spliced by tying them together with a simple square knot as shown. Pull the knot tight and cut off the loose ends close to the splice. The knot will pull across the recording head without catching.



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MAINTENANCE AND ADJUSTMENT

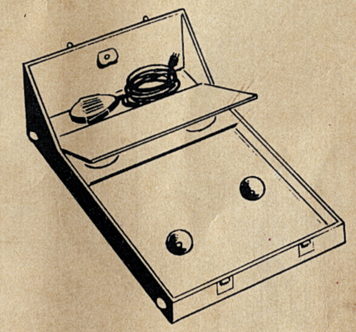
Your Model 288 Wire Recorder is completely adjusted, tested and lubricated. However, the following maintenance adjustments should be made periodically to insure trouble-free operation:

(a) Adjustment of brakes and head stroke to prevent wire spilling (includes replacement of brake pads and springs, if necessary).
(b) Checking of tubes.
(c) Inspection of drive and idler wheels and replacement, if necessary.
(d) Cleaning and lubrication.

Your dealer will arrange to give you prompt, efficient service. For a period of ninety days, this service will be on a "no charge" basis. Beyond that time, there will be a reasonable service charge.

PROTECT YOUR MICROPHONE

Keep it in a cool, dry place to preserve its efficiency. High humidity and temperatures above 110°F. will damage the crystal cartridge of your microphone. Any dynamic type microphone with an output of -55db or better should be used in such unusual operating conditions.



CLEAN THE RECORDING HEAD

IMPORTANT. Dirt and grime gradually accumulate in the groove of the recording head. Clean the groove occasionally by running the smooth edge of a piece of bond paper back and forth in it.

WARRANTY

Your dealer will provide warranty service at no charge to cover adjustments needed through normal use of this machine for a period of 90 days from date of original sale to you. This applies only if this unit is brought in to the dealer or his designated service shop for attention. Often contracts can be arranged with the dealer providing service in your home or place of business but such calls are not within the terms of this warranty. Your dealer also has a list of recommended charges published by the factory periodically for such adjustments as may be ordinarily required during and beyond the warranty period.

Form 79P147

WEBSTER-CHICAGO

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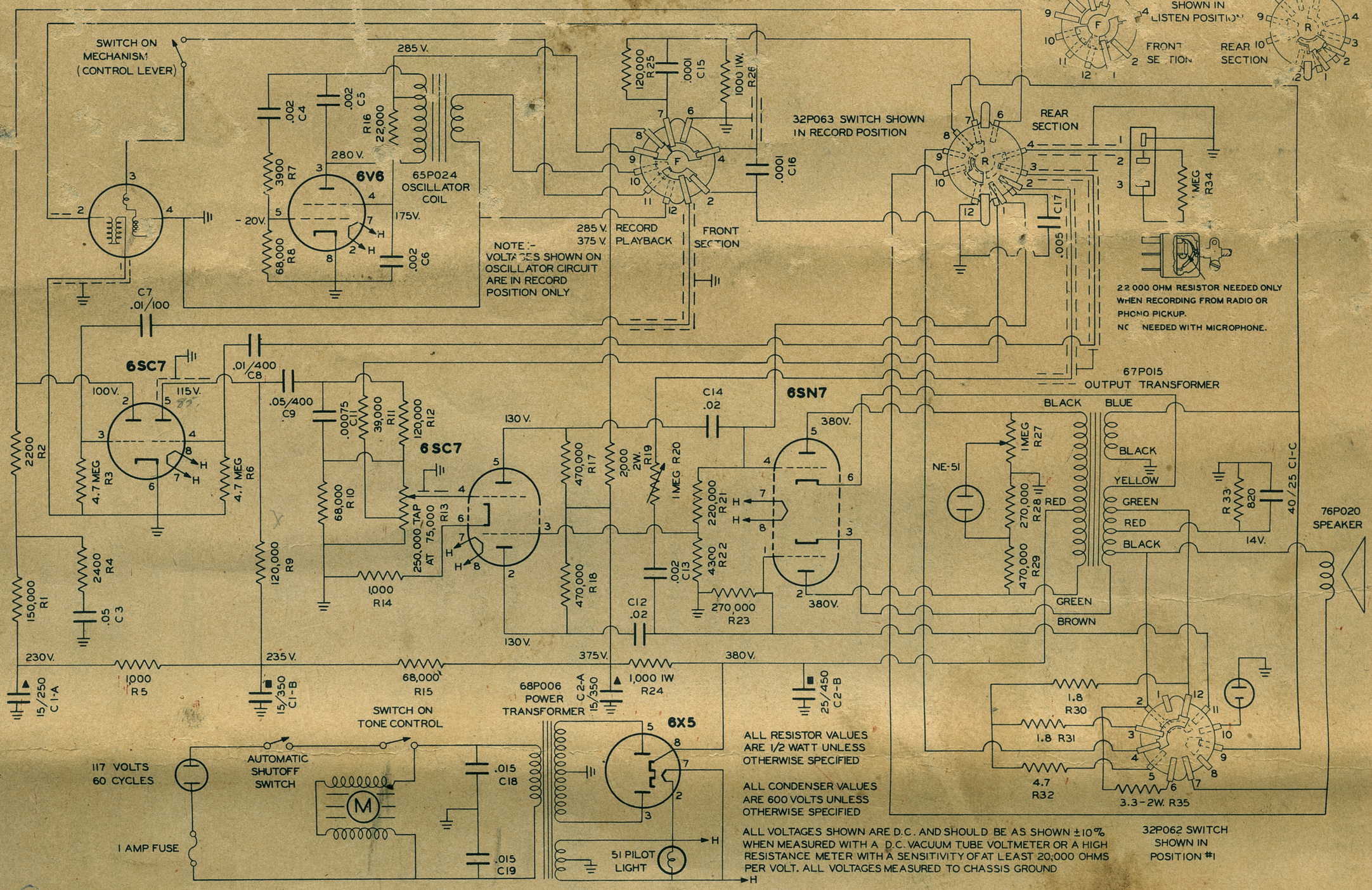

Circuit Diagram for Model 288 Wire Recorder.