

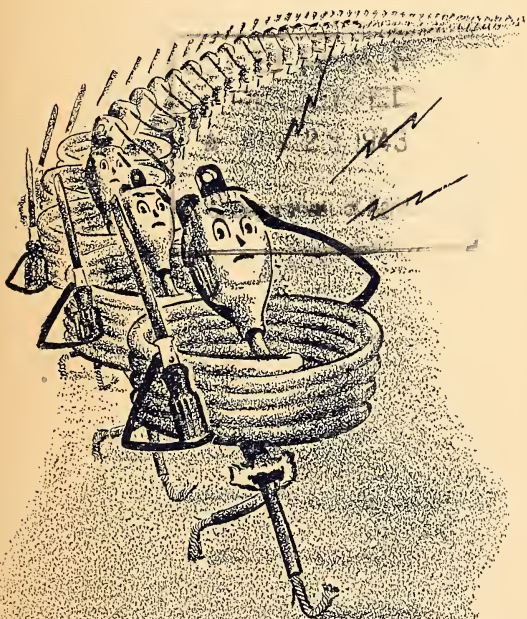
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# How to make your electric **CORDS** last longer



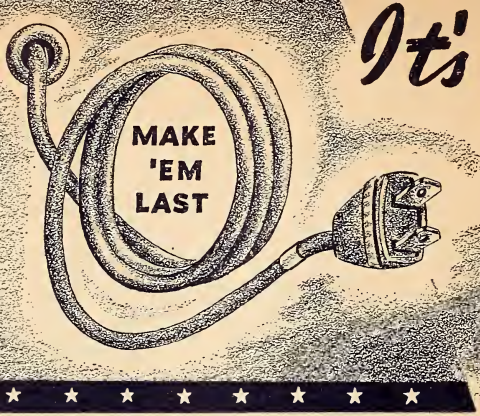
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U. S. GOVERNMENT

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# It's up to you, Mr. and Mrs.



Electric cords contain copper and rubber—two materials needed to win the war. Little of either can be spared for civilian use. So it's up to you to make what you have last.

Remember that by careful use of electric cords you are saving the electrical equipment. A small contribution to the all-out effort



## TAKE CARE OF ELECTRIC

### Cords...Plugs

These are the parts of the electric cord—

**Outlet plug**, which fits into the wall outlet or other source of electricity.

**Appliance plug**, which fits over the prongs of the electrical equipment.

**Cord**, connecting the two plugs, made up of two twisted bundles of fine copper wires. Each bundle is wound with cotton thread and enclosed in a rubber tube. The two rubber tubes are further insulated with cotton thread or asbestos, and usually are bound together by a fabric or rubber covering.

### Handle With Care

Don't hit plugs against hard objects...don't yank the cord, kink it, twist it sharply, or knot it...don't let the cord touch hot surfaces...don't let a cord get wet...don't handle a wet cord except with a thick pad of dry cloth.

Don't try to hide cords where they will be stepped on or pushed against...don't do anything that will expose the wires or that will let the two wire bundles touch...don't staple or nail cords to the wall or baseboard.

*Never handle any cord with wet hands. Many fatal accidents happen that way.*

### Save Cord Wear

If you have a switch at the outlet—turn the switch to "off" before you connect or disconnect the plugs. This prevents sparking between metal prongs and outlet. Sparking eats away metal and will in time cause poor connections.

If there is no switch, disconnect the plug from the wall outlet first. It is much less expensive to buy a new outlet plug than to replace the appliance plug and the appliance terminals.

To disconnect either plug, grasp the plug, not the cord. Pull straight. If the plug sticks, rock it gently from side to side as you pull, to loosen one connection at a time.

It's the safest policy to disconnect the cord from the outlet each time you finish using a heating or cooking appliance.

### Off Duty

Put cords away free from kinks, knots, or sharp bends. Hang cords over large, round wooden pegs...over two or more metal hooks...or coil them loosely. Hang or coil the cord so the same spot doesn't always get the rub or bend.

# Homemaker!

and repair of electric  
"life line" of your  
every saving con-  
omy.



## CORDS

Store in a clean, dry, cool place. Keep rubber-covered cords in a dark place. If you put cords in a drawer, be sure there's nothing in the drawer to cut the cord covering.

If the cord is attached "for keeps," wrap it loosely around the appliance, but let a heating appliance cool first.

### Extension Cords

*Use them with caution:* Extension cords usually are not recommended, because it is dangerous to fasten them closely to baseboards or wall. It may be necessary to use them, however, now that materials for installing new outlets are limited. If so, inspect an extension cord from time to time to be sure it has not frayed or worn thin.

Plug an extension cord in an outlet—never attach it permanently. If you run the cord for a way around the room, attach it to the baseboard with rubber or fiber-insulated fasteners. Run it around door casings—never across a doorway, over steam or hot-water pipes, or over hot-air registers.

Never run a cord where it will trip someone, where it will be walked on, or where furniture may be moved over it. If the covering is worn off the wires, result may be a short circuit...a fire...or dangerous electrical shocks.

# It's up to you, Mr. and Mrs. Homemaker!



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'EM  
LAST

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Remember that by care and repair of electric cords you are saving the "life line" of your electrical equipment. And every saving contributes to the all-out for victory.



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Never run a cord where it will trip someone, where it will be walked on, or where furniture may be moved over it. If the covering is worn off the wires, result may be a short circuit...a fire...or dangerous electrical shocks.

## Gather Your Tools

For simplest cord repairs you need: Scissors, screw driver, sharp pocket or paring knife, heavy thread, friction tape, and rubber tape. For cutting off wire, you need cutting pliers.

For safe splicing of cord ends you need a soldering iron and either rosin-core solder or a noncorrosive soldering paste and solid wire solder. A 65- or 75-watt electric soldering iron is best. Never use soldering acid or acid-core solder for splicing electric wires.

## Making New Connections

A plug may break...an old cord may need to be cut off or replaced...connections at either plug may be loosened or broken. Following are directions for the three main steps in making safe new connections.

### Remove the Old Plug

● **Appliance plug.** Remove clips or screws that hold the two plug halves together. Notice how connections are made. Loosen screws that hold the two wire bundles. Pull wires free.

● **Outlet plug.** Take the plug apart and note how wires are connected to the base of the prongs. Loosen the two screws that hold the wires to the prongs. Pull the wires from under the screws and out of the plug.

### Prepare Wires for Reconnection

When you take the wires from the plug, note what color they are. If they are bright and both ends are equal in length with no broken wires, reconnect them just as they are.

● **If wires are black and wire bundles untwisted,** scrape wires gently with a knife until they are bright. Be careful not to break off any fine copper wires. Twist each bundle to make it one compact wire. It is then ready to reconnect.

● **If two wire bundles are uneven and the wires broken,** cut off damaged end of the cord (1).

Slit and cut off a few inches of the outside covering (2). If this is the appliance-plug end, slit about 3 inches; about 2 inches if it is the outlet-plug end.

Wrap the end of a fabric covering with heavy thread or tape just beyond the cut, to keep it from fraying (3). Cut off insulation around rubber-covered wires. If asbestos, cut about 1/2 inch from end of outer covering.

Slit the rubber covering on each bundle of wires (4) just far enough to lay bare sufficient wire to wrap once around the terminal screw on the plug. Be sure not to cut deep enough to damage any of the fine wires. Cut away rubber covering as far as you have slit it (5). Cut off threads next to wires. *Do not cut wires.*

If the wires have darkened, scrape them gently and twist each group into one bundle (6).

For a new cord, prepare the wires as above. It isn't necessary to cut off any cord first.

## Attach the Plug

**WARNING!** Look out for short wire ends.

In getting the cord ready to attach to the plugs it is hard to avoid cutting some of the wires. Watch for loose ends. They have caused many short circuits and burned cords. Be certain loose ends are tucked in before you wrap wires around the binding screws.

● **Appliance plug.** If there is a coiled cord protector, slip it over the cord. Grasp the end of one bundle of wires with the end of the screw driver and thumb (7). Draw it up so insulated part of wire comes just to edge of screw.

Loop the wire entirely around the screw in the direction the screw turns, but do not overlap it (7). If you do, pressure of the screw may cut off some of the wires where they cross. Be sure no loose ends of wire fray out from under the screw. Tighten the screw. Fasten the other wire the same way.

Fit metal clips and rubber-covered bundles into the grooves in one-half of the plug (8). Be sure the end of the coiled protector is in the groove provided for it. Pack asbestos insulation tightly between rubber-covered wires where they part. Put other half of the plug on and fasten (9).

● **Outlet plug.** Pull the two bundles of wire through the opening in the base of the plug until the bound end of the outside wrapping comes inside the plug.

Take each wire bundle in turn between thumb and end of screw driver. Draw it around one of the screws at the base of the prongs so the end of the insulated part of the wire comes just to the edge of the screw.

Loop the wire entirely around the screw in the direction the screw turns, but never overlap it.

Tighten screw. Be sure no loose ends of wire fray out from under the screw. Wires from the two bundles must never touch. Put the plug back together again.

## Frayed or Worn Coverings

### Only outer covering damaged...

Cut off the frayed edges of the covering. Wind new friction tape around the cord. Lap each end of the tape over the sound covering. Keep the tape taut and stretch it, overlapping each wind to make a smooth wrap.

### Both outer covering and rubber on wire bundles worn through...

Cut off all ragged edges. Wrap each wire bundle separately with new rubber tape (if not available, use friction tape).

Stretch the rubber tape enough to cut down its width to about one-half. Keep it taut as you wrap it. Start the wrap on the sound insulation at one end... extend it over the worn part... lap onto good insulation at other end.

On the worn part, increase the lap of the tape to build up a nearly uniform thickness the whole length of the wrap. Wrap the two bundles together with friction tape.

## Splicing

If a cord breaks in two, or if you want to make a cord longer, it is possible to splice wire ends together. Splice only if the cord is in good shape otherwise. You can make a temporary splice without using solder. But if making a splice for permanent use, solder the joining.

If you are splicing two lengths of different cords, be sure cords are same size and type.

### To Join Wires

Take off the outer covering of each cord end for about 5 inches. Cut off about 1 1/2 inches from the end of one of the wire bundles in each cord so the two new joinings will not come exactly opposite each other.

Cut and take off about 2 inches of the rubber covering and the cotton winding from the end of each wire. Be careful not to cut or nick the tiny wires.

Brighten the wires by scraping gently. Twist the bare ends of each wire bundle tightly so there will be no loose ends.

Cross the bare ends of the short wire of one pair of wires and the long wire of the other pair, forming an X about 1 inch from the ends. Hold the wires together at the crossing with the left hand. With thumb and fingers of right hand, twist the wires on the right side of the X tightly together. Then twist wires on left side of X in the same manner.

Twist the bare ends of the other two wires together the same way. Trim off ends of wires with cutting pliers and pinch cut ends down flat and smooth.

### Solder

For a safe, permanent splice cover the twisted wires with soldering paste. Heat the iron just enough to melt solder quickly. Wipe the iron clean. Heat the splice by touching it with the iron until the melted paste flows all over the splice. If you use rosin-core solder, the paste is unnecessary.

Wipe iron clean and hold it firmly against the bare twist. Touch solder to wire and allow it to flow down through the splice (a). Draw iron along to completely coat the splice with solder. If excess solder hangs from the splice, touch it lightly on the underside with the tip of the iron and it will flow onto the iron. Let splice cool.

For successful soldering—keep the wires clean and bright...keep the soldering iron clean and well covered over with solder as you work.

### Wrap

For either a temporary or permanent splice, wrap each wire in rubber tape (b) and bind the two wrapped wires together with friction tape (c). If rubber tape is not available, use friction tape throughout.

## MAKING A NEW CONNECTION WITH APPLIANCE PLUG

## SPlicing



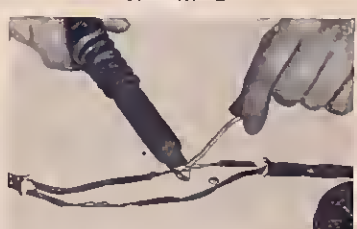
1. Cut off damaged end.



4. Slit the rubber covering.



7. Attach wires to plug clips.



a. Solder spliced wires.



2. Slit the outside covering.



5. Cut off rubber and fine threads.



8. Fit metal clips into plug.



b. Tape each wire.



3. Wrap just beyond cut.



6. Scrape the wires gently.



9. Fasten plug together.



c. Wrap the wires together.

## PLAY SAFE

### The Right Cord

Use a cord with asbestos insulation for heating appliances. For hard wear in damp places, it is best that an electric cord be covered with tough rubber. For ordinary household use—on lamps, clocks, radios—cords covered with cotton or silk braid are suitable.

Best way to check on how well a new cord will wear is to look for the colored bracelet of the Underwriters' Laboratories, Inc. This nonprofit organization makes tests for safety and strength of electric cords on request from a manufacturing company. It does not compare one manufacturer's product with another.

The gold band of the Underwriters' Laboratories on a cord shows the cord is built for an extra long life and can stand a great deal of bending. Next most durable are cords with a red band. Then come blue-banded cords, for use with appliances where the cord gets little bending. The yellow-banded cords are for use where there is even less bending—such as on a lamp.

### Six Safety Rules

- Watch cords for wear. Repair at once.
- Keep a cord away from heat and from water.
- Don't run cords under rugs...any place where they'll get unnecessary wear...or can trip people.
- Avoid use of extension cords. If you must use them, be extra careful to check often for frayed places.
- Never handle a cord with wet hands. Handle a wet cord only with a thick pad of dry cloth.
- If you repair cords yourself, take time to do a thorough job.

Other publications available from the Department of Agriculture on the care and repair of household equipment are...

How To Make Your Refrigerator Last Longer.

How To Make Your Washing Machine Last Longer.

Take Care of Household Rubber.

How To Make Your Gas or Electric Range Last Longer.

How To Make Your Ironing Equipment Last Longer.

Take Care of Vacuum Cleaners and Carpet Sweepers.



*Issued by*

BUREAU OF HUMAN NUTRITION  
AND HOME ECONOMICS

Agricultural Research Administration

U. S. Department of Agriculture

Washington, D. C.

March 1943

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For sale by Superintendent of Documents, Washington, D. C.  
5 cents per copy; \$1 per 100 copies

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