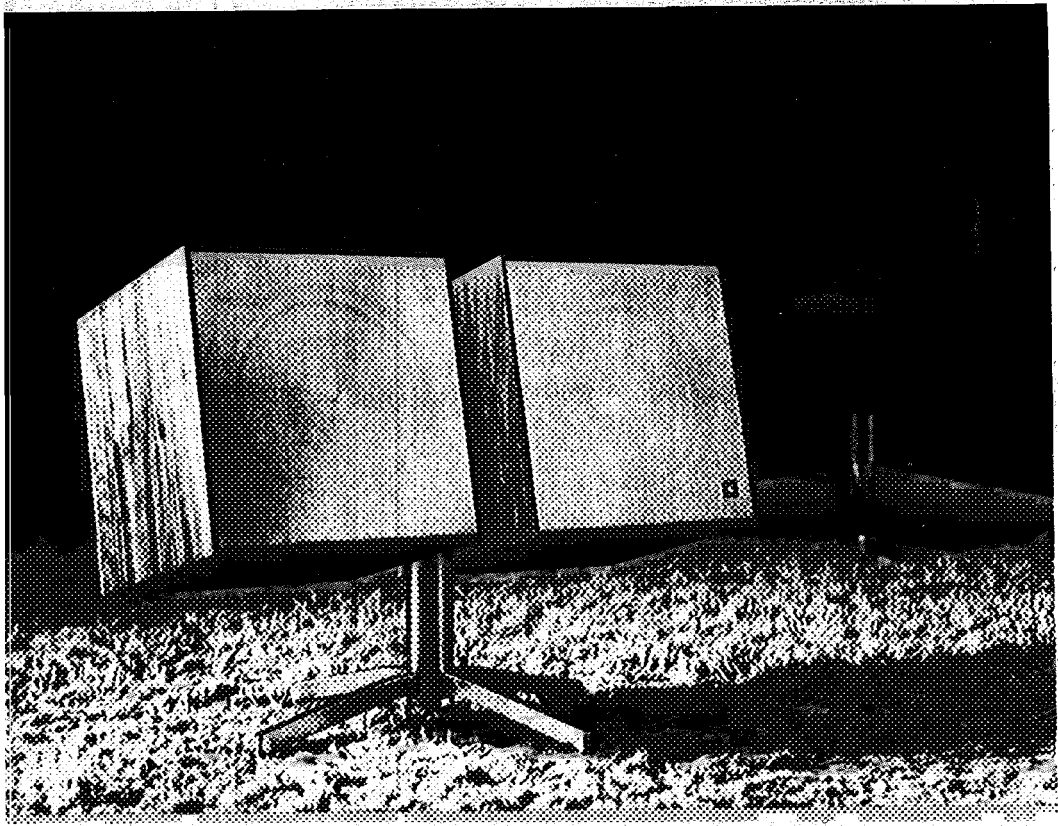




Publication OM80



JBL L80 CAPRICE

assembly, operation and performance

An unparalleled audio-visual experience

Crisp, solid bass. Smooth, clear highs. Distortion-free performance . . . *exciting* JBL sound. These JBL-refined concepts have been elevated to an even higher level in the JBL Caprice.

The Caprice boldly declares itself as a departure from conventional compact loudspeaker systems: rather than being a mere avant-garde ornament, the Caprice is a stately expression of delicate symmetry, with a beauty of form shaped to mirror the forward aspirations of Man. The emergence of this portable loudspeaker system gracefully projects a unique form of rich, functional elegance for those who are aware of their personal environment, and who wish to enhance it with a creation of exceptional beauty. *Unaffected by prevailing vogues, the Caprice is designed to retain its functional beauty, and is thus destined to become a cherished heirloom . . . providing a continuous source of pleasure in the years to come.*

The Caprice also provides an extraordinary audio-visual experience: The concept of musical enjoyment is given a new dimension—a visual dimension that *accentuates the musical experience*. The result is an exhilarating, aesthetic integration that is easily identifiable with the thoughtful, discriminating listener.

The Caprice consists of two, solidly connected wooden cubes (*in your choice of Oiled Walnut or Oiled Rosewood*) exquisitely finished on all sides, with delicately perforated, spun aluminum grille fronts. The speaker cubes tilt and rotate smoothly above a chrome plated base and leg assembly. The system can be tilted and rotated to face any desired location; sound dispersion can be adjusted to project directly into the listening area, providing for extremely flexible placement in the room. White, plastic glides are capped to the legs, preventing your floor from being marred during movement. The Caprice incorporates the JBL LE8T, the finest extended range loudspeaker of its size made anywhere—augmented by the exclusive JBL PR8 passive radiator for realistic, effortless performance over the entire range of human audibility. A stereo pair of Caprice's consists of two, separate systems . . . each system being a single Caprice containing an LE8T and a PR8 passive radiator.

Enjoy it anywhere and everywhere

Light enough to be carried anywhere, the Caprice offers maximum portability and use within the home. Use it in the playroom, den, kitchen, living room, porch, or office; take it outdoors for patio, pool and lawn parties. Plug it into your high fidelity system as an extension speaker, or into your tape recorder, television set, or movie sound projector. The JBL Caprice . . . a new, exciting, *luxurious* way to reward yourself.

JBL precision craftsmanship

All JBL acoustical enclosures and the loudspeaker components installed, have been carefully designed, hand-crafted, and tested as an integrated system. *Moreover, each component in the speaker system has been individually and carefully machined, checked, polished, assembled, checked and rechecked in each step of production by superbly trained JBL craftsmen.* Stamped parts and ready-made subassemblies are never used, and only the finest possible materials are utilized. Special tooling and unique manufacturing processes are employed to insure closest possible tolerances, to assist each craftsman in doing his job in the best possible manner, and to fulfill JBL's exacting specifications. No compromises are permitted that might in any way limit performance. JBL's corps of dedicated craftsmen maintain expert control over each step of the intricate manufacturing process. In short, JBL craftsmanship, performance and reliability is the result of perfection in human endeavor . . . a reflection of individuals who take pride in their values.

The crafting of your JBL loudspeaker system has been given the painstaking care afforded the finest musical instruments, and like such instruments, it will not deteriorate with age or use. In the proper acoustical environment, it will continue to deliver unexcelled performance without loss of quality, without adjustment, and without attention. The few simple recommendations in this booklet will assist you in obtaining optimum performance in a compatible acoustical environment; performance which will remain clean and fresh year after year.

Warranty

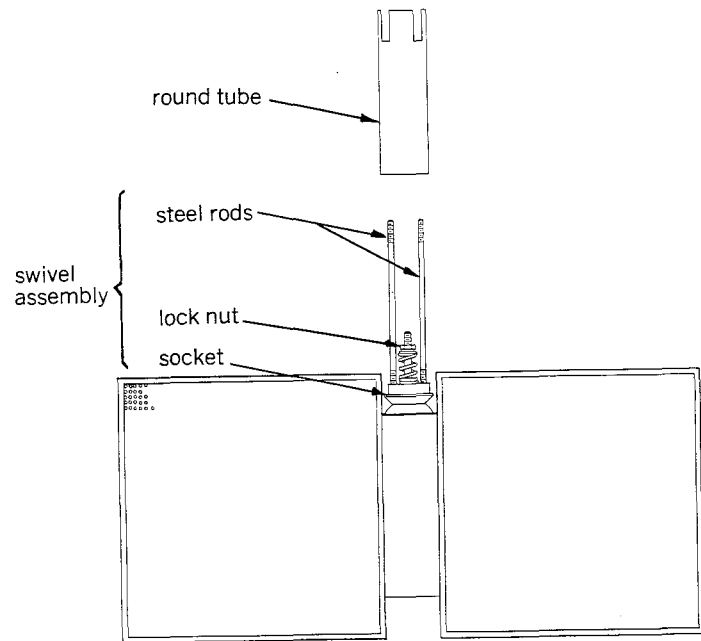
This JBL product is covered by a two-year warranty and is guaranteed against defects in material and workmanship. Should it become necessary, JBL will replace defective parts and make appropriate repairs under this warranty. Of course, the warranty does not cover damage caused by misuse, accident or neglect. JBL retains the exclusive right to make such determination on the basis of factory inspection.

In addition to the established two-year warranty, JBL will, at its option, repair the speakers free of charge during their entire normal life if factory inspection discloses a manufacturing defect.

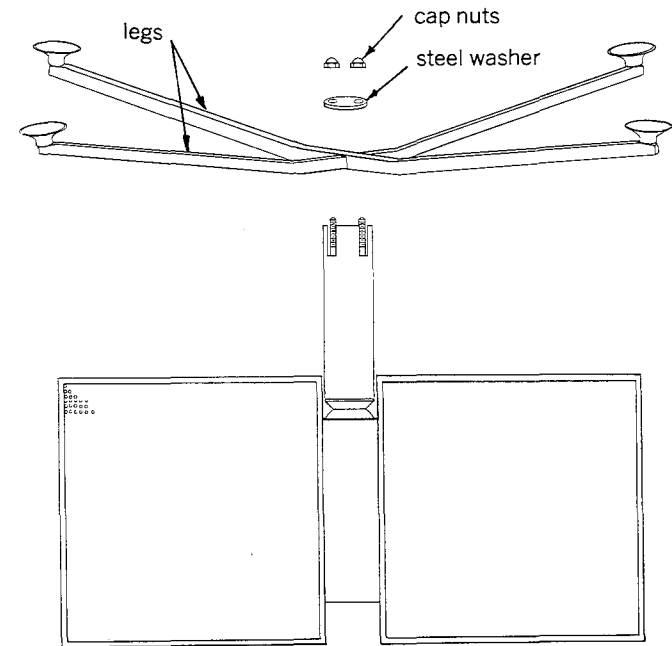
Should your system ever require service, return it to the JBL dealer from whom it was purchased. If it is impossible to contact your dealer, please write directly to JBL describing the difficulty as fully as possible. Products returned to the factory must be sent prepaid and will not be accepted unless written authorization has first been obtained. The warranty is recognized only when the unit is repaired by JBL or an authorized JBL Service Agency and providing that the serial number of the unit has not been defaced or removed.

To establish the warranty, be sure to fill out and mail the warranty card packed with the system within ten days of purchase.

Inverted view of L80



Inverted view of L80



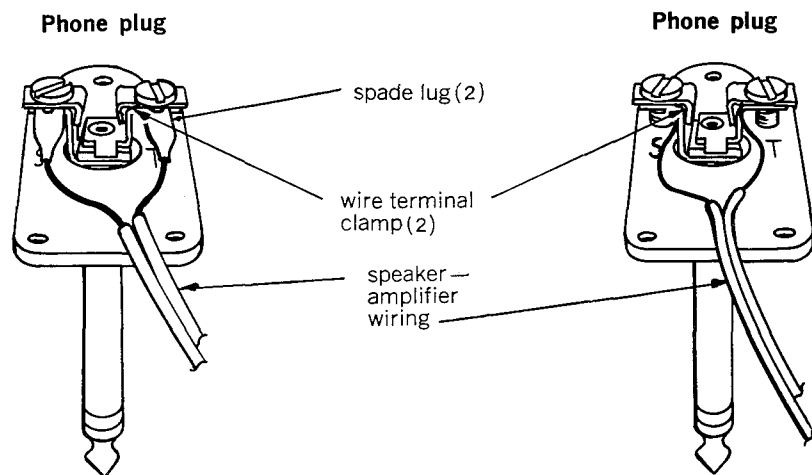
Assembling the Caprice for Insulating the

1. **Attach rods and tube** Lay the enclosure on a clean, padded surface, so that the serial number plate and swivel assembly are on top. Screw the *shorter* threaded ends of the two steel rods into the two holes on top of the socket portion of the swivel assembly. Tighten each rod by hand until it is fully threaded. Then lower the round, chrome plated tube over the rods (with the notched end on top) until it rests against the socket. **NOTE:** *Do not move or adjust the lock nut that retains the tension spring on the swivel assembly; the swivel assembly has been preset at the factory to provide the proper amount of spring tension for maximum ease in tilting the system.*

2. **Attach legs** The two notched legs should be interlocked to form an "X" and then fitted into the notches of the round tube—the white plastic glides facing upward. Lower the round steel washer over the ends of the two steel rods inside the tube and let it drop against the interlocked portion of the legs inside the tube. The complete assembly is then secured with the two chrome plated cap nuts which screw onto the remaining exposed portion of the steel rods. Turn the Caprice over so that it stands on its legs and it is now ready for the next step—connecting it to your amplifier.

Because the system is portable, connections are made through a phone jack located on one of the bottom panels of each Caprice. A matching phone plug is provided with each Caprice, which is inserted into each phone jack. The wiring from your amplifier is then connected to each phone plug (see diagrams below). If you need additional plugs for other locations, these can be obtained from your JBL dealer.

To connect each phone plug, remove the three screws which hold on the black, plastic cover. You will see two screw terminals labeled "S" and "T." If you are using two Caprice's for stereo, it is important that connections to both speakers be made the same way; the wire from the amplifier black ("common" or "ground") terminal should connect to "S," and the wire from the amplifier red (or 8-ohm) terminal should connect to "T." Note that two wiring alternatives to the phone plug are shown. If using a spade lug (left-hand illustration) is impossible or inconvenient, simply route the bare wires to the appropriate wire terminal clamps as shown in the right-hand illustration, making sure that the wiring is tightly wrapped around the terminal screws, and firmly held in place between the two metal portions of each terminal clamp. The operation is made easier if the stripped ends of the wires are tinned with a soldering tool and solder.



If your amplifier does not have an 8-ohm terminal, or if for any reason you want to try a different impedance, you can connect the loudspeaker system to a 4- or 16-ohm terminal, without danger to either the amplifier or the loudspeaker system. The specified 8-ohm rating of the system is a nominal figure which suggests the connection which should give the most efficient power transfer between the amplifier and the speaker system.

Eighteen gauge insulated wire is the minimum size recommended for speaker-amplifier connections up to 50 feet. Beyond this distance, a heavier gauge of insulated wire is recommended (16 gauge from 50 to 100 feet; 14 gauge from 100 to 150 feet). Ordinary commercial lampcord is perfectly satisfactory for almost any connection likely to be made in a home installation. If you use plastic covered lampcord, you can keep track of which wire is which by noting that one of the plastic jackets is smooth, while the other has a distinct ridge. By calling the ridged wire "red" and the smooth wire "black," you can make connections as if you were using color-coded wire.

For best possible stereo performance, the two systems should be placed symmetrically with respect to the main listening position. The general rule of placement for stereo speakers is that a person sitting in the usual listening area should see an angle of about 40° between the two sound sources. Therefore, the distance between the two speakers depends upon their relationship to the listening area. They may be located at any height above the floor, but somewhere near ear level allows for a more natural sound source.

Apart from the requirements for satisfactory stereo coverage, placement of the loudspeaker systems has a great deal to do with how the music installation sounds. If possible, you should experiment with the placement of the loudspeaker system before deciding on a final arrangement. Performance in the very low bass region is even more dependent upon the dimensions of the room and the placement of the loudspeakers than the inherent qualities of the speakers themselves. Very often, moving the system only a few feet will make the difference between a boomy, unnatural sounding system, and one which is realistic and clean. There should be no overstuffed furniture or other obstructions between the loudspeakers and the listening area, and you will get better bass if the loudspeakers are not placed by open doors or near thin panelling.

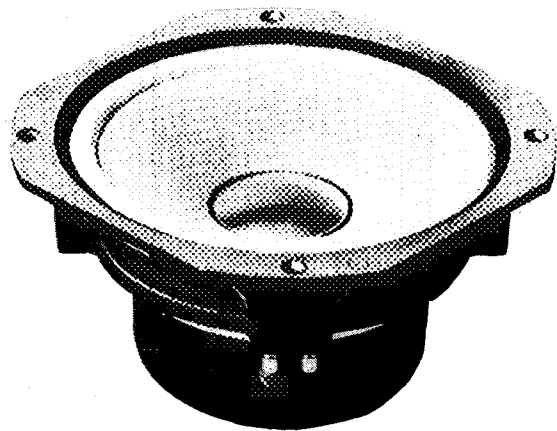
For best possible sound coverage, it may be desirable to tilt the enclosure

so that the sound is projected slightly upwards, directly into the listening area. The system is designed to deliver a uniform distribution pattern between a high angle tilt of 22° and a downward tilt of 20.5°. Both hands should be used to adjust the system to the desired angle. The system can be tilted in a variety of ways, however, you will probably find it easier to do it from the front or the rear. If you adjust the angle from the front, you can get more leverage by grasping the top outside corners with your thumbs on top. When adjusting from the rear, grasp a cube in each hand in the same manner and "aim" the system toward the desired listening position. This method will give you a reference point to use in tilting the system to the desired angle. If you want to take "extra" care of the system, use a soft rag to prevent oily hands from coming into contact with the wooden cubes.

Internal components of the Caprice

The loudspeakers installed in the Caprice are precision devices, individually crafted and tested. After each unit has been checked by JBL's Quality Assurance technicians, it is installed in the acoustical enclosure and the complete system is inspected and tested again to ascertain that its performance is exactly the same as other Caprice's... all conforming to JBL's rigid production and performance specifications.

The two wooden cubes of the Caprice are joined internally by a specially designed horizontal sound tube, resulting in a single enclosure which houses the LE8T eight-inch extended range loudspeaker, and the PR8, eight-inch passive radiator. As you face each Caprice, the LE8T is to the left, and the PR8 is to the right.



LE8T Extended Range Loudspeaker The 8-inch LE8T is a unique loudspeaker, superior to any other 8-inch unit ever built; it is as different

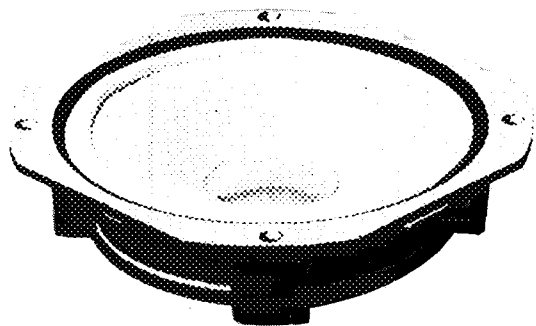
from an ordinary 8-inch loudspeaker as a precision chronometer is from an ordinary alarm clock. This medium efficiency loudspeaker possesses a smoothness of response that has no precedent in a unit of this size. By virtue of its specially mounted, small cone assembly (which allows for very long, linear cone travel), the LE8T can be used in the small enclosures for which it was specifically designed. A larger cone would require a larger enclosure and limited cone travel would result in bass distortion.

A 2-inch edgewound aluminum ribbon voice coil is precisely centered in a magnetic field having a total flux of 200,000 maxwells. (*Such a large, edgewound coil is much more difficult to fabricate than the small, round wire coils found on loudspeakers of other manufacturers, but it takes advantage of all the magnetomotive energy supplied by the magnet.*) All of the essential magnetomotive energy provided by the powerful 6-1/2 pound Alnico V magnet is concentrated in the one place where it contributes most to ideal performance... the voice coil gap, and stray fields (wasted energy) are non-existent. Efficiency is heightened, dynamic range increased, and the speaker is able to handle momentary overloads without damage. The voice coil gap is more than three times the length of the coil itself to allow peak cone travel in excess of one-half inch without appreciable distortion. An exclusive pure silver impedance-controlling ring counteracts the inductive characteristics of the voice coil so that uniform power is drawn from the amplifier through the full frequency range (efficiency is multiplied by a factor of four in the 15,000 cps region). The impedance-controlling ring helps extend the high frequency range of the LE8T well beyond the upper limits of human hearing.

The voice coil drives a specially designed, molded cone that is freely suspended and terminated with JBL's exclusive Lans-a-loy surround to prevent spurious resonance or "hangover," and results in smoother midrange performance. The Lans-a-loy suspension was formulated to computer-determined specifications to allow long cone travel without distortion, and to provide correct acoustic termination for vibrations traveling through the cone material. Lans-a-loy is inert, self-damping, and impervious to changes in temperature or humidity.

The cone itself is further damped with another exclusive JBL material (Lans-a-plas) for even richer, fuller, smoother performance through the vital midrange. It is this damping compound which gives the cone its white color. High frequencies are reproduced by a dural aluminum center dome (0.002 inches thick) hydropneumatically drawn to shape so that no part of it is thinner, heavier, or more compliant than any other part. As a result, the dome adds no coloration to reproduced sound... high frequency performance is clear and natural. The dome is attached directly to the voice coil for most efficient propagation of high frequency sound. The entire moving assembly is rigid, yet exceptionally light, responding with verbatim accuracy to powerful bass fundamentals, and the most complicated and delicate treble waveforms.

The unique design, massive construction, meticulous hand craftsmanship, and precision assembly of the LE8T guarantees rich, natural, effortless performance. You hear accurate bass, bright midrange, and highs that are vivid, pure, and transparent.



PR8 Passive Radiator The passive radiator used in the Caprice is another JBL contribution to the art of realistic sound reproduction. It is an acoustic coupling device which utilizes energy inside the enclosure which otherwise would be wasted and converts it into useful sound. Although similar in appearance to a loudspeaker cone assembly, the PR8 consists of a freely suspended cone, carefully designed so that its mass and suspension compliance is controlled and adjusted to complement the characteristics of the LE8T in the L80 enclosure. Operating in phase with the LE8T (except at subsonic frequencies—which cannot be heard), it effectively doubles the radiating area of the LE8T through the low frequency range, giving solid, well-defined bass with extremely low distortion, greater dynamic range, and smoother, warmer, more spacious sound well up into the midrange.

The passive radiator helps solve several problems inherent in the design of a high quality loudspeaker system. First, the passive radiator takes the place of ports or tunnels. The enclosure is completely closed so that its interior is protected from moisture. Secondly, the passive radiator greatly increases bass efficiency. If the loudspeaker is ever to be used outdoors, it is much more difficult to achieve solid, balanced bass performance than in a listening room. The passive radiator assists in achieving the required bass efficiency in an enclosure small enough and light enough to be easily portable. Thirdly, the passive radiator maintains useful phase reversal of sound energy inside the enclosure over a somewhat wider frequency range than a simple port opening. Also, when a loudspeaker with very smooth response is used, the presence of a port opening nearby audibly affects sound quality at frequencies considerably above those at which the port is operative. The passive radiator presents an actual physical continuation of the baffle and completely eliminates this effect.

Power Requirements for the Caprice

Although the LE8T-PR8 combination will reproduce clean sound with as little as 3 watts input per channel, a 30 watt amplifier (15 watts per channel) is the minimum recommendation. For outdoor use, or to enjoy the full dynamic range of modern recordings indoors at fairly high volume levels, you should use a high quality amplifier having at least 40 to 60 watts (20 to 30 watts per channel) of undistorted output. In these two applications, a greater reserve of amplifier power is desirable for effortless reproduction of intense transients that sometimes occur in music. The Caprice can reproduce momentary transients whose peak power is equivalent to 100 watts or more. For this reason, the most powerful high quality component high fidelity amplifiers can be used if desired, with little danger of overload. The most important thing is not the power rating of the amplifier, but rather the quality of the signal it produces.

You should remember, however, that powerful wide-range amplifiers can accidentally damage any loudspeaker under the right conditions. For example, rewinding your tape recorder with the playback volume turned up can generate "squeals" powerful enough to burn out the high frequency voice coil. Similarly, powerful low frequency pulses extending down into the subsonic range can eventually damage the low frequency loudspeaker. Tubes or connectors should not be plugged or unplugged while the system is on. If the phonograph pickup is accidentally dropped with the volume control up, or if you play the system very loudly with excessive bass boost, almost the full rated power of the amplifier can be channeled into dangerous subsonic energy, which can damage the loudspeaker.

Reproduction of Details

Your loudspeaker system cannot produce sound by itself. It only *reproduces* the electrical signal supplied by the other components in the system. It has no way of differentiating the desired program signal from unwanted electrical noise. The same qualities that enable it to reproduce music so accurately make it respond equally well to any background noise or distortion which may be present in any area of the electronics portion of your system. In short, your loudspeaker system responds with verbatim accuracy to the electrical signal supplied by the audio power source, and it will reproduce extraneous noises such as hum, hiss, crackle, or rumble just as accurately as it reproduces the desired program material. Such noises do not originate in the loudspeaker system and indicate that one of the other components in the speaker system or the program material itself is at fault. In the rare instance that something does go wrong with the loudspeaker system, one of the loudspeakers will either stop working altogether (no sound output), or it will impart a distinct rattling or scraping sound (rubbing voice coil) whenever the system is used.

If there is no sound output from one of the systems, identify it with a particular speaker and then disconnect the turntable and/or tape recorder from the amplifier—leaving only the amplifier connected to the speaker system. If the problem no longer occurs, then it can be traced to one of the disconnected components. If the problem still exists with only the speaker system connected to the amplifier, then physically reverse the loudspeaker wiring from the amplifier to the speaker system. This is done by connecting the Channel B speaker system (on your right as you face the system) to the Channel A amplifier terminals, and the Channel A speaker system (on your left) to the Channel B amplifier terminals. If the problem persists regardless of which set of amplifier terminals the inoperative speaker system is connected to, then the loudspeaker is probably defective. If the problem only occurs when the speaker is connected to a particular set of amplifier terminals (and does not occur when it is connected to the other amplifier terminal), then there is probably something wrong with the amplifier and your dealer or the amplifier manufacturer should be contacted.

On the other hand, if hum, hiss, excessive distortion, or radio broadcast interference is noticed, disconnect all input sources (turntable and/or tape recorder) and see if the problem still exists. If the noise is no longer audible with just the loudspeaker system connected to the amplifier, then the problem can be traced to one of the disconnected components. The exact source can then be identified by individually connecting each input source until the problem reoccurs. If the difficulty is still present with none of the input sources connected to the amplifier, then the amplifier is probably defective.

To help eliminate stray hum, pickup, etc., shorting plugs should be inserted in all of the unused inputs. To help prevent the phonograph cartridge or tape heads from picking up hum in the audio power source, the turntable or tape machine should not be positioned directly over or underneath the amplifier or receiver. The more isolated the audio power source is from the turntable or tape machine, the less chance there will be of stray pickup. Make sure that AC leads and input and output cables are as widely separated as possible; AC lines should never cross over cables and speaker wiring. This will help in preventing interference from coming in through the power line. Power line interference can also be attenuated by using a heavy duty interference filter between the amplifier and the AC line.

Fuzzy or blurred high pitched sounds can usually be traced to the recording itself or to a defective cartridge or worn pickup stylus. Problems with low frequency reproduction, however, are usually the result of room acoustics and the placement of the speaker system in the room. In addition, excessive bass boost or incorrect loudness compensation tend to give a muddy or “boomy” quality to reproduced music. One easy way to check your system for turntable rumble or other extraneous low frequency signals is to remove the loudspeaker grille and observe

the motion of the low frequency cone while the system is playing at high volume. If the cone continually moves in and out more than 1/2-inch or so, excessive low frequency power is being fed to the loudspeaker system.

Any of the problems listed above should be discussed in detail with your JBL Audio Specialist, who can provide the kind of personal service required to resolve the problem.

Removing loudspeaker components

It is recommended that you do not remove the spun aluminum grille panels, but if the loudspeaker components have to be removed for testing or repair, proceed as follows:

(1) Remove the aluminum panel, which is held in place by four, plastic friction clips located at each corner of the cube. (The Caprice can be placed on its back or inverted for more stability if you wish, but make sure that it rests against a clean, padded surface.) Gently pull the aluminum panel away from the cube, a little at a time, working first at one side or corner, and then the other. Twisting or bending motions should be avoided and it is recommended that you handle the panel by its edges. A very small, thin-headed screwdriver, or a thin, pliable butter knife can be inserted between the panel and the front edge of the cube to aid in lifting out the panel from the cube if necessary. In such a case, extreme caution should be observed so that the front edges of the cube are not damaged. (A small piece of pliable cardboard backing behind the screwdriver head or knifeblade can be used to prevent marring the cabinet.)

When replacing the grille, be sure that the four, plastic friction clips are centered in the sockets behind the aluminum panel before applying pressure. Pressure should be applied at the four corners and the edges of the panel—never against the center of the panel.

(2) Remove the four phillips-head machine screws which hold the LE8T to the baffle panel, then carefully lift out the speaker just far enough for you to remove the wiring from the two pushbutton binding posts. Because the length of this wiring is short, be careful that the Caprice is not tipped over while removing the LE8T. When replacing the loudspeaker, connect the black wire from inside the cube to the black terminal of the LE8T, and the red wire to the red terminal. When removing or replacing the LE8T (or the PR8), be careful that you do not touch the round aluminum center dome. The PR8 is removed and replaced in essentially the same manner as the LE8T, except that there will be no wiring.

The Caprice enclosure

JBL cabinetry represents the finest quality presently available in the

high fidelity industry. Impeccably crafted, all JBL enclosures feature lifetime monolithic construction with lock-mitred, wood-welded joints; structurally designed to prevent unwanted panel resonance or warpage. Each JBL enclosure is made of the finest pressed woods, furniture hardwoods and hardwood veneers, carefully selected and hand-finished.

As with other high quality handmade furniture, no two JBL enclosures are absolutely identical in appearance, due to small variations of color and grain structure which may vary between individual samples. No stains or other coloring agents are used in the final finishing; no film-type, plastic, or imitation "wood looking" veneers are used. Our chief concern is to leave the *natural* color in the wood, so that it looks like wood. The finish is intended to bring out the natural beauty of grain structure and color.

Detail work on JBL cabinetry is obvious. You won't find sloppy, loose joints. Instead, you will find closed, hand-fitted, tight mitres. Edge veneering is done by hand. Scratches, dents, glue lines and other similar defects are non-existent. Typical assembly line procedures are not followed; each cabinet is treated as an individual entity, receiving all of the personal attention it deserves . . . so that it reflects the consummate quality for which JBL is known. In short, *extra* care in fine finish work is always observed.

Finally, all JBL loudspeaker enclosure designs have been specially created to acoustically complement certain JBL loudspeaker systems, and then tested with the appropriate system installed, to make sure that the integrated system is performing up to our rigid standards.

By taking the simple precautions outlined below, there is no reason why the finish cannot be maintained in its original condition.

Oiled walnut—oiled rosewood

Your JBL enclosures are sanded and rubbed until the surface is mirror-smooth, then hand-finished with oil. It is a natural condition of this finish to appear as though it were drying out after a period of time. This results because the oil is penetrating deeper and deeper into the grain. Consequently, it becomes necessary to re-oil the enclosure once or twice a year for the first year or two. With each application, the beauty of the finish increases, and a warm, rich patina will eventually be obtained.

The cabinet should be rubbed with a mixture of three parts boiled linseed oil and one part pure gum turpentine. Apply a liberal amount of the mixture over the entire finished surface of the enclosure except the fretwork grille. In ten to fifteen minutes, wipe off the remaining oil with a clean, soft, dry cloth. (Make sure that the cloth has no buttons, pins, etc.) If small scratches are incurred, they can usually be removed by gently rubbing them with 4/0 steel wool. (*Be sure to rub with the grain.*) Very deep scratches, dents and more serious damage should

only be repaired by skilled craftsmen, and a competent cabinetmaker should be engaged to do this kind of work.

Grille panels

The perforated, spun aluminum grilles on the Caprice can be cleaned by going over them lightly with a vacuum cleaner brush, a soft, dry paint brush, feather duster or soft cloth. Oil, turpentine, or other mixtures should not be applied.

For additional information

If you have any difficulty in achieving the fine performance which your JBL loudspeaker system is capable of, please consult the JBL Audio Specialist from whom you purchased your components. He is equipped with the knowledge and instruments necessary to provide you with expert advice and assistance. You may also write directly to JBL. Such inquiries should be addressed to the Technical Service Department, and should explain the difficulty in detail.

Height (including legs) 17-9/16"
Width 22-1/16"
Height, width and depth of cube 10"
Shipping weight (stereo pair) 68 lbs.
Available finishes Oiled Walnut and Oiled Rosewood