

FILM-TECH

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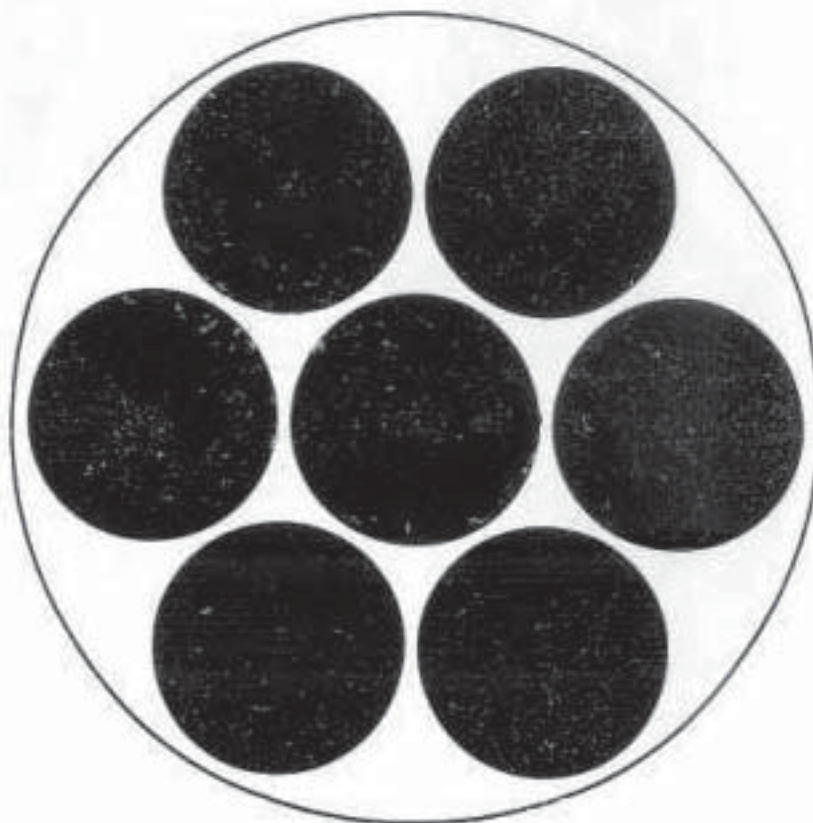
BELL & HOWELL

SoundStar Operating Instructions

NOTE: These projectors use SUPER 8 sound and silent film ONLY. Do not attempt to project regular 8mm film with this equipment.

IMPORTANT: Read these instructions carefully before operating your projector.

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IMPORTANT SAFEGUARDS

WHEN USING YOUR PHOTOGRAPHIC EQUIPMENT, BASIC SAFETY PRECAUTIONS SHOULD ALWAYS BE FOLLOWED, INCLUDING THE FOLLOWING:

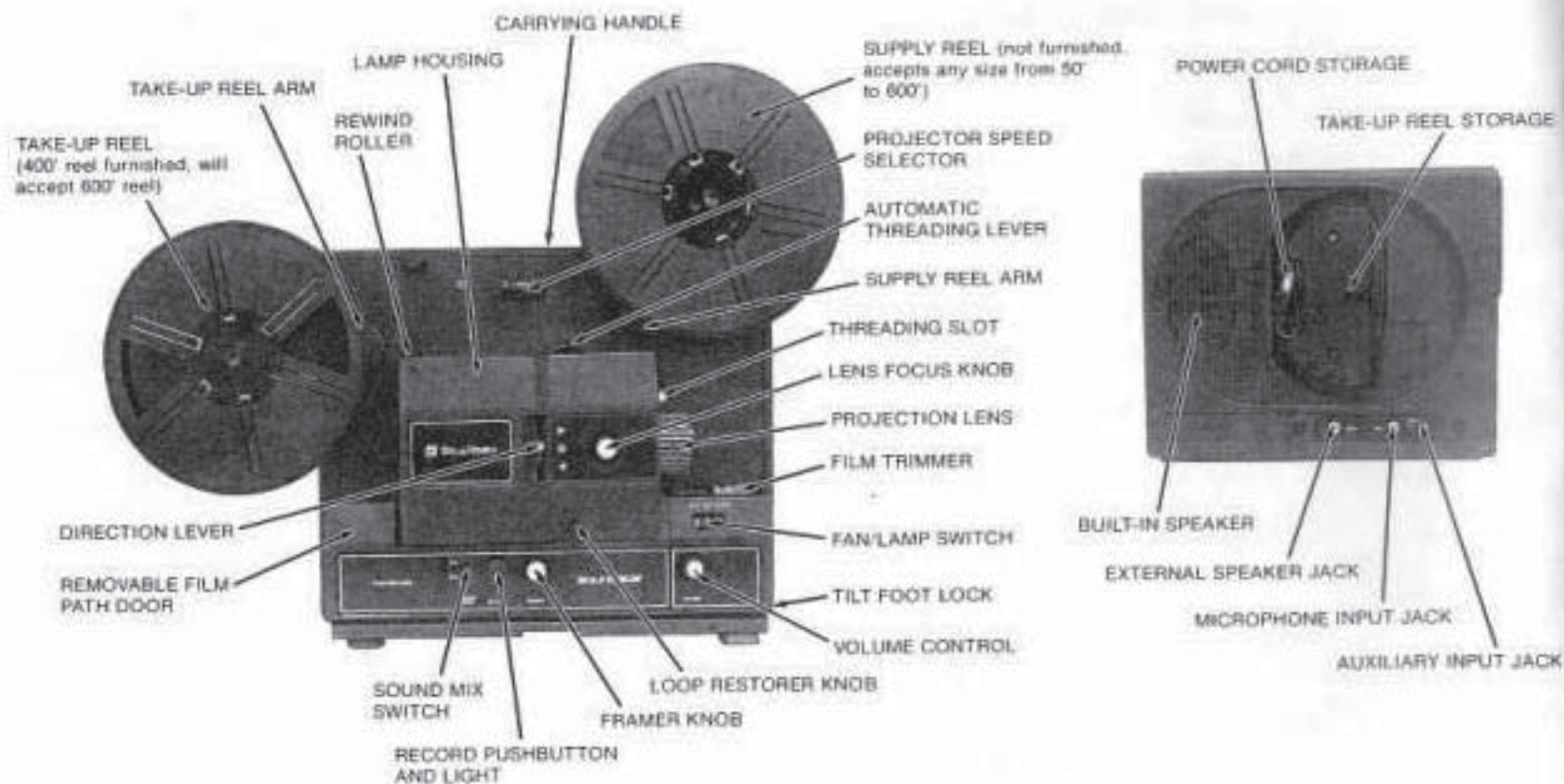
1. READ AND UNDERSTAND ALL INSTRUCTIONS.
2. CLOSE SUPERVISION IS NECESSARY WHEN ANY EQUIPMENT IS USED BY OR NEAR CHILDREN. DO NOT LEAVE EQUIPMENT UNATTENDED WHILE IN USE.
3. CARE MUST BE TAKEN AS BURNS CAN OCCUR FROM TOUCHING HOT PARTS.
4. DO NOT OPERATE EQUIPMENT WITH A DAMAGED CORD OR IF THE EQUIPMENT HAS BEEN DROPPED OR DAMAGED—UNTIL IT HAS BEEN EXAMINED BY A QUALIFIED SERVICEMAN.
5. POSITION THE EQUIPMENT IN SUCH A WAY SO AS NOT TO BLOCK ANY AIR INTAKE OR EXHAUST OPENINGS.
6. IF AN EXTENSION CORD IS NECESSARY, A CORD WITH A SUITABLE CURRENT RATING SHOULD BE USED. CORDS RATED FOR LESS AMPERAGE THAN THE EQUIPMENT MAY OVERHEAT. CARE SHOULD BE TAKEN TO ARRANGE THE CORD SO THAT IT WILL NOT BE TRIPPED OVER OR PULLED.
7. ALWAYS UNPLUG EQUIPMENT FROM ELECTRICAL OUTLET WHEN NOT IN USE. NEVER YANK CORD TO PULL PLUG FROM OUTLET. GRASP PLUG AND PULL TO DISCONNECT.
8. LET EQUIPMENT COOL COMPLETELY BEFORE PUTTING AWAY. STORE THE POWER CORD PROPERLY IN THE STORAGE AREA PROVIDED.
9. TO PROTECT AGAINST ELECTRICAL SHOCK HAZARDS, DO NOT EXPOSE THIS EQUIPMENT TO RAIN, MOISTURE, OR OTHER LIQUIDS.
10. TO AVOID ELECTRIC SHOCK HAZARD, DO NOT DISASSEMBLE THIS EQUIPMENT, BUT TAKE IT TO A QUALIFIED SERVICEMAN WHEN SOME SERVICE OR REPAIR WORK IS REQUIRED. INCORRECT REASSEMBLY CAN CAUSE ELECTRIC SHOCK HAZARD WHEN THE EQUIPMENT IS USED SUBSEQUENTLY.

SAVE THESE INSTRUCTIONS

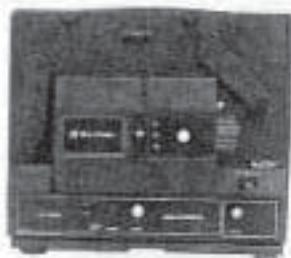
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KEEP THIS FLAP OPEN AS YOU READ THROUGH THE INSTRUCTION BOOK.



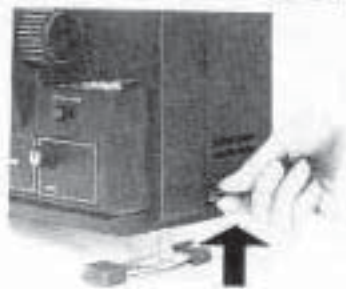
SETTING UP THE PROJECTOR



Place the projector on a table or other firm surface. Set the screen up in front of the projector and at right angles to it—do not have it tilted to one side. The screen should normally be about 10' away if it is 30" wide or about 14' away if it is 40" wide. At these distances, the image will fill the screen. The screen can be slightly closer or farther away than these distances and you can move the zoom lens in or out to change the image size to fill the screen.



Swing the **Take-Up Reel Arm** and **Supply Reel Arm** up to their operating positions. Remove the **Take-Up Reel** from its storage space on the back of the projector. Attach it to the spindle on the **Take-Up Reel Arm** by aligning the key on the spindle with a slot in the reel hub, then push it on firmly.

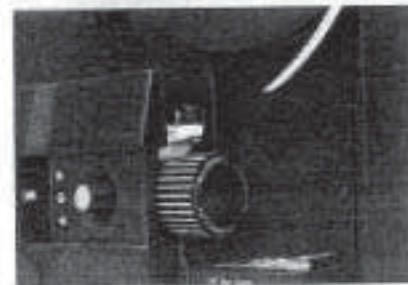
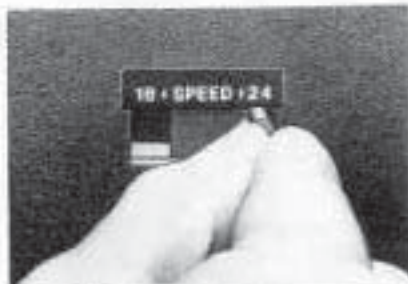


Unwind the **Power Cord** from its storage recess on the back of the projector and plug it into a standard 110-120 volt 60 Hz AC wall outlet. Move the **Fan/Lamp Switch** to the LAMP position and the **Direction Lever** to FORWARD ► to project light on the screen.

Turn the **Lens Focusing Knob** to focus the edges of the light frame. If the projected light area does not fill the screen, move the front of the lens (the part with the bright ridges) in or out. Pulling the front of the lens out makes the picture smaller, while pushing it in makes it larger. Refocus the lens whenever you change the zoom setting. To raise the front of the projector to center the light, first tip the projector at this angle, press up on the **Tilt Foot Lock** to release the foot, then release the lock to secure the projector in this position. If necessary, realign the projector and screen. Once aligned, move the **Direction Lever** to STOP ▼ and turn the **Fan/Lamp Switch** to OFF.

IMPORTANT: DO NOT press up on the **Tilt Foot Lock** when the projector is elevated unless you have a firm grip on the **Carrying Handle** and have taken the weight off the foot.

SETTING UP THE PROJECTOR (continued)



While most super 8 sound movies are taken at the standard filming speed of 18 frames per second, some commercially produced movies may have been taken at 24 frames per second. Also, some super 8 cameras for home use have both speeds for movie-making. Your projector will show movies at either speed to match the filming rate of the camera.

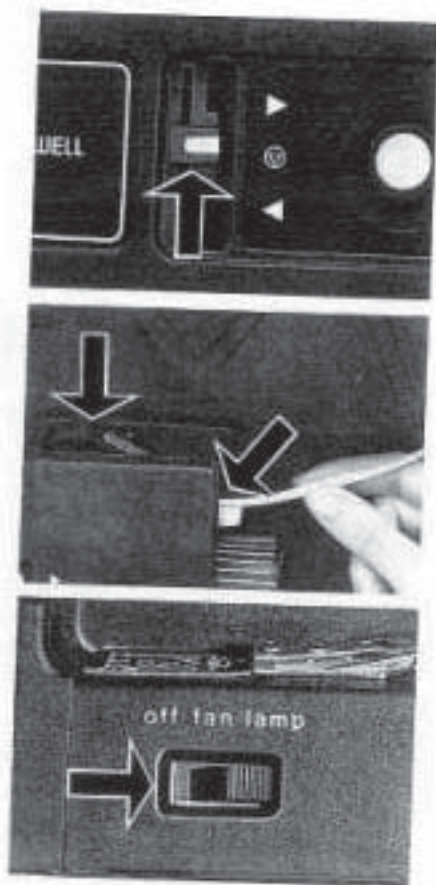
The **Projector Speed Selector** should be set to match the filming speed of the movies you are going to show. To change the setting, first turn the **Fan/Lamp Switch** to FAN, then move the selector to the desired speed AND LET IT RETURN TO THE CENTER REST POSITION. **DO NOT** change this selector unless the motor is running. **CAUTION:** Always have the speed set to 18 fps when storing the projector. To check, move the selector to 18 (with motor running) and let it return to center.

When your film is returned from the processor, a length of white film leader is attached to the beginning of the movie. This leader aids in efficient automatic threading and allows you to view your film from the very first scene. Always be sure there is at least 20" of this leader at the beginning of each reel. **The end of the leader must be trimmed with the Film Trimmer before it is used for the first time.** Place the end of the leader in the trimmer as shown with the perforations engaging the pins. Press the cutter bar down for a clean trim. When showing movies, always check the leader for proper trim and general condition. It should always be free from bends and creases. The film leader should also have a slight curl toward the center of the reel. If it does not, curl it between your fingers before threading.

When you splice smaller reels together onto a large reel for longer showings, follow splicer directions carefully. If tape splices are used, cut off that portion of the splice material (before applying it) that would cover the sound stripe (the stripe opposite the perforations) so that the sound track remains exposed. This helps assure uninterrupted sound when the splice passes over the sound head. If cement splices are made, be sure to remove the small portion of stripe on that part of the film base that overlaps the other film. This helps assure a good bond as cement will not stick to the striping material. The cement itself acts as a solvent for the striping material and can be used to remove it.

Place the full reel of film to be shown on the spindle of the **Supply Reel Arm**. It should be installed so the leader hangs down from the right side of the reel. As with the **Take-Up Reel**, fit the key on the spindle into a slot in the reel hub, then push the reel on firmly.

LOADING THE FILM



With the full reel of film installed on the **Supply Reel Arm**, pull out about 10" of leader.

Move the **Fan/Lamp Switch** to the FAN position and move the **Direction Lever** up to FORWARD ►. Depress the **Automatic Threading Lever** and hold it down. Insert the end of the film leader into the **Threading Slot** and keep feeding it in until it is picked up by the **Upper Sprocket**. Continue to hold the **Automatic Threading Lever** down until the film moves all the way through the projection mechanism and emerges from the slot by the **Take-Up Reel**, then release it.

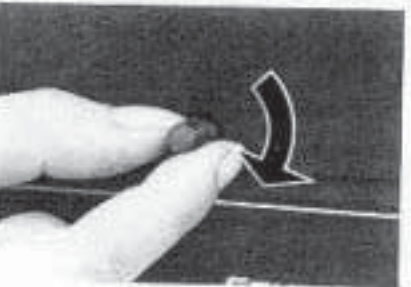
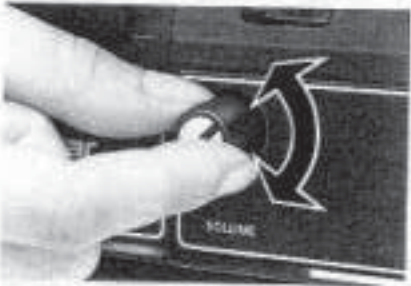
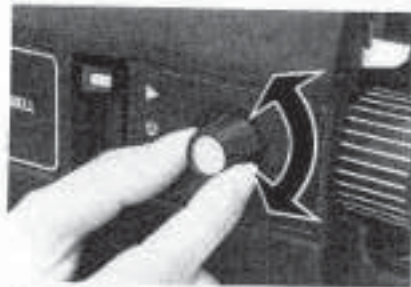
The end of the film will automatically attach itself to the hub of the **Take-Up Reel**. NOTE: If the leader does not attach automatically to the reel hub due to a reverse curl or other reason (see page 13), immediately stop the projector by moving the **Direction Lever** to STOP ▼. Take the end of the leader, being careful not to twist it, and insert it between the flanges of the **Take-Up Reel** and to the hub. The "fingers" that are designed into the flanges will pick up the leader—then rotate the **Take-Up Reel** clockwise to take up the film slack.

Once the film is securely attached to the **Take-Up Reel**, move the **Direction Lever** back to the FORWARD position. Move the **Fan/Lamp Switch** to LAMP and your movies will be projected on the screen.

VERY IMPORTANT: For efficient automatic film threading, be sure to examine the film leader for proper trim and condition before inserting the end into the **Threading Slot**. Also, continue to hold the **Automatic Threading Lever** down until the end of the leader emerges from the film path slot at the rear of the projector by the **Take-Up Reel**. Failure to hold the lever down for the proper period of time may result in mis-threading, improper loop sizes, and possible damage to the film or film perforations.

IF THERE APPEARS TO BE A PROBLEM WITH THE FILM THREADING PROPERLY, immediately stop the projector to prevent any damage to the film. Refer to page 13 for information on how to correct the problem.

SHOWING SOUND AND SILENT MOVIES



When the first scene appears on the screen, adjust the image sharpness by moving the **Lens Focus Knob** in either direction. If the picture on the screen is cut off at the top or bottom and a frame separation line is showing, rotate the **Framer Knob** in either direction until the full picture appears and the frame separation line disappears.

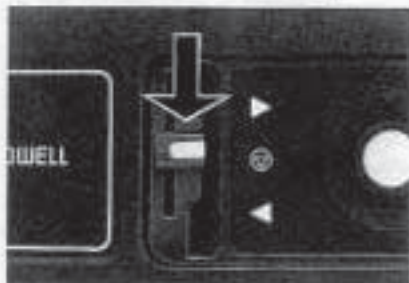
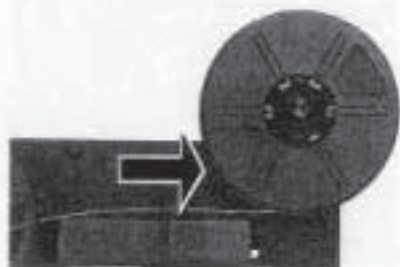
Showing a sound movie is the same as showing a silent one, but you do have sound to adjust. Just turn the **Volume Control** to set the sound to a comfortable listening level. The projector's sound amplifier is on whenever the projector is turned on, and because it is solid-state, there's no warm-up time. If you are using an external speaker instead of the one built into the projector (see page 17), its volume level is also controlled by the same **Volume Control**.

If the image jumps during projection due to a poor splice, perforation faults, or other causes, keep the projector running in forward and rotate the **Loop Restorer Knob** clockwise—then **immediately release it**. If this does not correct the problem, **DO NOT REPEAT THE PROCEDURE** but immediately move the **Direction Lever** to **STOP**. See page 13 for further corrective measures.

To reverse the action of your movies for special effects or to review an earlier scene, move the **Direction Lever** from **FORWARD** to **STOP**, hesitate a moment, then move it down to **REVERSE** ◀ Always pause briefly in the **STOP** position when moving the lever between **FORWARD** and **REVERSE**. **NOTE:** When a sound movie is projected in reverse, the sound will be garbled. Just turn the **Volume Control** counterclockwise to eliminate the sound.

When the movie is over and all the film is on the **Take-Up Reel**, move the **Direction Lever** to **STOP** and rewind the film by following the instructions on the next page.

SHOWING SOUND AND SILENT MOVIES (continued)



SILENT MOVIES are shown in just the same way as sound movies, but of course there won't be any sound. Follow the film loading directions and operating instructions carefully. To eliminate any static noises from the projector's speaker when showing silent films, turn the **Volume Control** all the way counterclockwise.

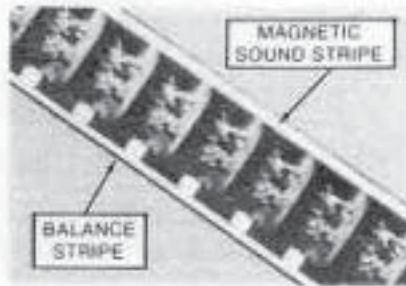
REWINDING THE FILM

When the entire movie has been shown and all the film is on the **Take-Up Reel**, you should move the **Direction Lever** to STOP to stop the reel from turning. Move the **Fan/Lamp Switch** to FAN.

Take the end of the film and thread it directly from the **Take-Up Reel**, over the **Rewind Roller**, and to the **Supply Reel**. Slip the film end into a slot in the reel hub and turn the reel counterclockwise a few turns to be sure the film end is securely fastened. Move the **Direction Lever** to the REVERSE position and the film will rewind back to the original reel. When completed, return the **Direction Lever** to STOP and move the **Fan/Lamp Switch** to OFF.

NOTE: Before storing the projector, check to see that the **Direction Lever** is in STOP and that the **Projector Speed Selector** has been moved in the 18 frames per second direction (change only with the motor running). Rewind the **Power Cord** COUNTERCLOCKWISE into its storage recess and make sure the plug is positioned in the opening at the left of the flange. Fold both reel arms down completely. Store the **Take-Up Reel** on its spindle in the cord storage recess.

ADDING SOUND TO YOUR MOVIES



Sound movies taken with the Bell & Howell Filmosonic™ XL movie camera or other sound camera may be shown as soon as the film is returned from the processor. The sounds you recorded are right on the sound track. You can, however, change the recording by mixing in other sounds or you can replace the recording completely if desired. It's all done with your projector.

NOTE: You can use your sound camera's microphone (if the cord has a single 3.5mm plug) to record sound with your projector. An accessory microphone is also available through your dealer (see page 17).

The recording system of your projector lets you—

1. Add background music to a camera-recorded voice track
2. Add voice recording to parts of a camera-recorded sound track
3. Record on an unsatisfactory track with completely new voice and music replacing the old sounds
4. Make a new sound recording on a non-recorded stripe with voice, music, or a mixture of both.

Your older silent super 8 movies can be made into sound films, too. Your dealer can arrange to have a magnetic sound stripe added, then you can add the sound recording yourself. Before striping silent film, however, the movie should be fully edited. You may wish to splice smaller reels together onto a large reel for longer shows. Good splices are important to sound movies and the splicing directions should be followed carefully. See the splicing information on page 4. Your dealer is the best source of information on striping silent film, on editing and splicing, and on the equipment available.

For sound recording and mixing practice, a continuous film loop is very helpful. It allows you to try all types of recording techniques without erasing any sounds from your good movies. Take about 4' of discarded striped film and trim the end with the **Film Trimmer**. Thread it into the projector, and when about one-half of the film is through, move the **Direction Lever** to STOP. Splice the two ends of the film together and position the loop around the **Take-Up Reel** and the spindle of the **Supply Reel Arm** as illustrated. You can now operate the projector in the normal manner and the loop will provide you with about 15 seconds of recording time before it repeats.

RECORDING WITH THE MICROPHONE



IMPORTANT: The information on this page and on page 10 deals with recording on an unrecorded stripe or on a stripe where you wish to erase the previous recording. For information on mixing or adding sounds to a previously recorded stripe, see page 11.

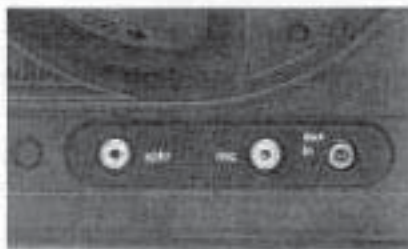
Insert the **Microphone Plug** into the **Microphone Input Jack**. Have the **Sound Mix Switch** in the **MAX** position. The recording circuit of the projector has an automatic level control and the input level is adjusted automatically. Turn the **Volume Control** fully counterclockwise to prevent any feedback in the recording.

Load the projector with striped film (or a continuous film loop) as described previously. Move the **Fan/Lamp Switch** to the **FAN** or **LAMP** position. Push and hold in the **Record Pushbutton** (it will light) and move the **Direction Lever** to **FORWARD**. The pushbutton will lock in and the film will be moving through the projector. Extend the **Microphone** as far from the projector as possible to prevent picking up the operating noise. Hold it about 6-8" from your mouth (not more than 12") and speak in a normal tone. Your voice will be recorded on the stripe and the automatic record level feature will adjust the level for optimum results.

To monitor your voice as you record, plug a set of monaural 8-ohm headphones into the **External Speaker Jack** (this jack is the miniature 3.5mm size). You will then hear your voice through the headphones as it will sound when the film is played back. You can control the monitor volume with the **Volume Control** and this control setting will not have any effect on the recording level.

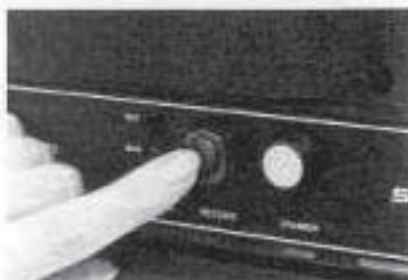
To record and mix your voice with music when using the **Microphone**, have the music source close by, speaker facing you, with the volume set to a comfortable listening level. To record the music, move the **Microphone** from your mouth to about a foot from the speaker, then move it back to your mouth to record your voice. This will give a fade-in, fade-out effect. The automatic record level feature will smooth out the volume for a pleasing mixture. For the best fidelity in mixing, however, use the mixing procedures described on page 11.

RECORDING FROM OTHER SOURCES



You can record sound onto your striped film for your personal use from practically any source. For example, tape player-recorders, record players, AM/FM radios, etc., can be used for recording.

Each of these sources may have different sockets, or connectors from which the signal must be drawn off. You will have to have a cord which will connect your equipment to the **Auxiliary Input Jack** of the projector. This jack accepts RCA-type phono plugs. Your dealer or electronic supply outlet can provide you with the proper connecting cord and fittings.



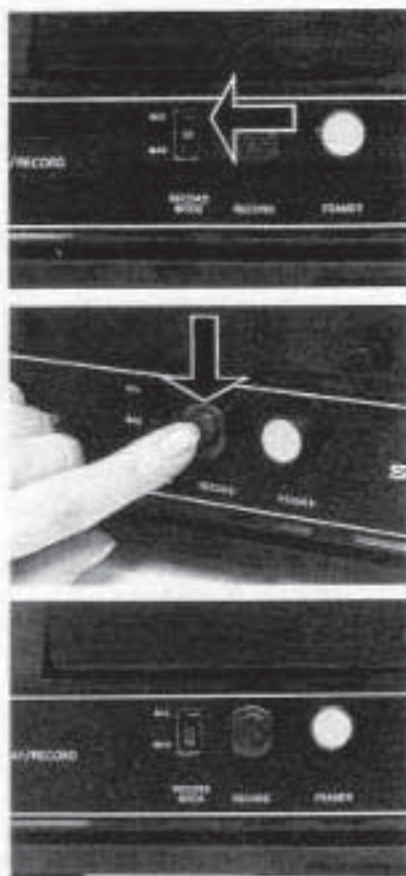
To set up for the recording, connect your sound equipment to the projector with the connecting cord. Plug this cord into the **Auxiliary Input Jack** of the projector. Turn the sound equipment on and set to a normal listening level. With the projector loaded with the movie to be recorded on, or with the continuous film loop loaded, move the **Fan/Lamp Switch** to FAN or LAMP, press and hold the **Record Pushbutton** in, and move the **Direction Lever** to FORWARD.



You may use either the projector's built-in speaker or headphones to monitor the sound being recorded onto the film's sound track. The monitor sound may be adjusted with the projector's **Volume Control**. This control, however, does not affect the recording level as this is controlled automatically by the projector's circuitry. When monitoring, note the quality of the sound. If it appears distorted, turn down the source's volume control until the sound quality is good. This puts the input signal within the range of the automatic record level circuit.

To stop the recording, just return the **Direction Lever** to STOP. The **Record Pushbutton** will pop out automatically. To resume recording on the film, push the **Record Pushbutton** back in and move the lever to FORWARD.

MIXING SOUNDS TOGETHER



Your projector has its own mixing control circuit to combine background music or narration with your camera-recorded sounds. You can also add both voice narration and background music to your non-recorded sound films.

CAUTION: Always make practice recordings until you become completely familiar with the mixing technique! The continuous loop suggestion on page 8 is ideal for this. Remember, when you mix a new recording onto a camera-recorded track, there is no way to recreate the camera-recorded sound if it becomes damaged or erased automatically.

To mix music with a camera-recorded track, connect the music source to the projector as described on page 10. Play your film through (by itself) to get an idea of how the music should be added. A script that relates the picture with narration coming up would be very helpful and a practice run-through or two prior to actual sound mixing is highly recommended.

After the practice run-through, reload the projector, turn the music on, and move the **Sound Mix Switch** to MIX. At this setting, you will be mixing in the new sound (in this case, music) with the sound already on the sound stripe on a 50/50 basis. To start recording, push and hold the **Record Pushbutton IN** and move the **Direction Lever** to FORWARD. You can then release the button and it will stay in. To stop the recording, move the **Direction Lever** to STOP and the **Record Pushbutton** will pop out.

NOTE: If you are mixing in sound with the **Sound Mix Switch** on MIX, and if you move this switch to MAX, you will automatically erase **ALL** of the sound previously on the stripe and you will be adding 100% new sound. Be sure the switch is left on MIX if you wish to keep 50% of the pre-recorded sound.

You may wish to mix in new sound on a previously recorded track for just part of your movie. To do this, follow the above procedure to mix in the new sound. When you wish to stop, move the **Direction Lever** to STOP to disconnect the recording circuit. Project through the film you do not wish to alter, then resume recording or mixing in new sound by moving the **Direction Lever** back to STOP, press in and hold the **Record Pushbutton**, and move the **Direction Lever** to FORWARD. Remember, you will have to coordinate all of this with the scene on the film, the sound previously on the film, and the music (or other sounds) you wish to mix in.

To add mixed sound to a non-recorded track, first record the background music (see page 10), then the voice using the mixing procedure on this page. To erase **ALL** the sound from the track without re-recording, play the film with the **Sound Mix Switch** on MAX, **Record Pushbutton IN**, and nothing plugged into any of the input jacks.

HINTS FOR BETTER SHOWS

Position the projector and audience so that no one is sitting close to the projector's built-in speaker. This assures you that everyone is hearing the sound comfortably without undue loudness for parts of the audience.

Use an external speaker (such as Bell & Howell Cat. No. 19760) for large audiences or whenever you wish to have the sound coming from the screen. A speaker with an 8-ohm impedance and suitable connecting cord may be obtained from your dealer or electronic supply outlet. The projector's **External Speaker Jack** accepts 3.5mm miniature plugs. Inserting the plug automatically disconnects the projector's built-in speaker. For sound recording monitoring, use standard 8-ohm monaural headphones that have a cord with a 3.5mm miniature plug (or the appropriate adapter).

Editing sound films is almost the same as editing silent ones, but with one important consideration. The sound on your movie is exactly 18 frames **ahead** of the image. Therefore, if you edit exactly according to the image, you will be 18 frames separated from the accompanying sound. Most sound movie-makers prefer to have hesitations in the sound track when they stop and start different scenes. This is a great aid in assuring that important parts of the sound track are not eliminated when the movie is edited. Because 18 frames of movies is only one second, it is relatively easy to have an 18 frame (or one second) pause in sound just before a scene is ended. Filming should always be done with editing in mind if it is at all possible. Your photo dealer may have interesting booklets on how to edit.

Sound movies should be stored in much the same manner as valuable magnetic tape recordings. They should be kept from any magnetic fields or influences that might alter or destroy the magnetic sound track recording. As with all movie film, keep your movies in a storage area that is at a relatively normal humidity.

Plan your sound movie shows ahead of time to keep them as enjoyable as possible for your audience. Have the projector all set up, loaded with film, and show a few feet of film to be sure the projector is aligned and focused. Also set the volume for the most pleasant listening. When all is in readiness, reverse the film to the starting point and you're ready for the show to begin.

Need a public address system? Set the projector controls for recording as explained on page 9 (without film loaded) and speak into the **Microphone**. Adjust the volume with the **Volume Control**. You may also use this amplifying system for narrating silent unstriped films.

WHAT TO DO IF—

IF THE FILM FAILS TO LOAD PROPERLY, move the **Direction Lever** to REVERSE to remove the film from the projector. Check the end of the film for proper trim. The leader should also be free from wrinkles, bends, and splices. When reloading, be sure you hold down the **Automatic Threading Lever** until the film end has gone completely through the projection mechanism. Then release the lever and the film will thread itself onto the **Take-Up Reel**.

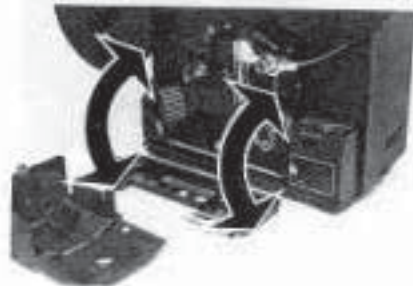
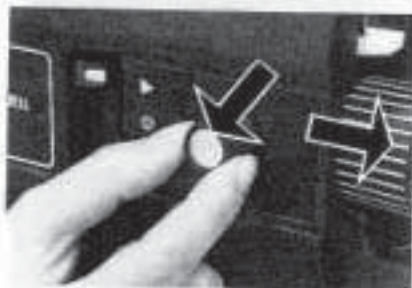
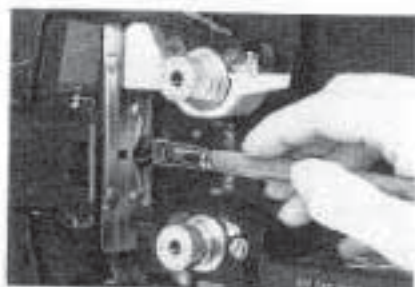
IF THE FILM END FAILS TO ATTACH TO THE TAKE-UP REEL, check to see that the leader curls in the direction of the reel. If the leader is in such a condition that you cannot curl it properly between your fingers, splice on new leader material.

IF THE PROJECTOR STARTS TO CHATTER DURING A MOVIE, or if the sound is garbled and not clear, a film loop may have been lost due to a poor section of film or bad splice. To restore a loop, turn the **Loop Restorer Knob** clockwise momentarily (the projector should be running in FORWARD), then release it. If this does not correct the problem, immediately move the **Direction Lever** to STOP. Move the **Fan/Lamp Switch** to FAN, remove the **Lamp Housing**, and turn the **Upper Sprocket Knob** seven or eight clicks counterclockwise to add to the upper loop. If the lower loop has also been lost, turn the **Lower Sprocket Knob** counterclockwise a few clicks to restore this loop. Move the **Direction Lever** back to FORWARD to check the film movement. If the problem still exists, stop the projector and remove and inspect the film (see page 14).

WHENEVER THERE IS A FILM TRANSPORTING OR THREADING PROBLEM, and the measures described above do not correct it, stop the projector and turn it off. See the information on page 14 on how to manually remove the film from the projection mechanism. Check the entire film path for obstructions such as film pieces, parts of the leader, overlooked tape, etc.

IF THERE IS NO SOUND from the speaker when you are playing a sound movie, immediately stop the projector by moving the **Direction Lever** to STOP. If the **Record Pushbutton** had been pushed in accidentally, moving the lever to STOP should have released it. Check that the **Volume Control** is turned up, that nothing is plugged into the **External Speaker Jack**, and that the film is threaded properly.

CARING FOR YOUR PROJECTOR



Your projector has been lubricated at the factory and further lubrication is not needed. However, there are cleaning steps you should perform.

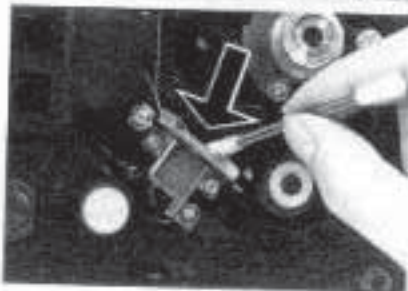
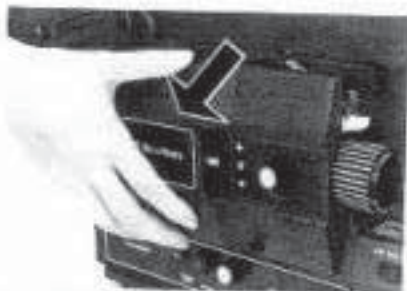
Brush the film channel and aperture clean after every few shows. To get to these parts, first pull off the **Lamp Housing** (see page 15). Grasp the **Projection Lens** and pull it toward you (away from the projector). The **Lens Housing** will swing out. Gently brush the film channel and aperture with a soft camel's hair brush. Never use any hard instruments and do not push the brush through the aperture. When completed, close the **Lens Housing**.

A clean **Projection Lens** means a sharp, bright movie. To check it, just look at the front glass surface during a show. To remove the lens for cleaning, pull out the **Lens Focus Knob** and slide the lens out the front. Wipe off the glass surfaces (both front and rear) with a soft cloth or lens tissue. Lens cleaning fluid may be used sparingly if needed. To replace the lens back into its housing, pull and hold the **Lens Focus Knob** out, then slide the lens in. Move the lens back and forth if needed to be sure the lens groove engages the rear of the knob. Check the lens often.

To remove partially shown film from the mechanism manually, first move the **Direction Lever** to STOP and turn the **Fan/Lamp Switch** OFF. Pull out about a foot of film. Pull off the **Lamp Housing** and the **Removable Film Path Cover** from the two top corners (see illustration). Work the film out from the bottom film channel, being careful not to bend or crease it.

Pull the **Lens Housing** out and remove the film from around the **Lower Sprocket**, **Rubber Roller**, and **Sound Head**. Lifting up the rear of the **Automatic Threading Lever** until it clicks up, remove the film from around the **Upper Sprocket**. The film should always be removed gently to prevent any damage. The film should now clear the entire mechanism. Check it very carefully and repair any damage before reshowing. Replace the **Removable Film Cover** by applying pressure at the upper left corner and just beside the **Loop Restorer Knob**. **CAUTION:** If the cover is not installed securely, possible film damage may result!

CARING FOR YOUR PROJECTOR (continued)



If the projection lamp burns out during a show, move the **Fan/Lamp Switch** to **FAN** and **cool the lamp thoroughly**. Unplug the projector's power cord and remove the **Lamp Housing** by pulling it away from the projector body. When you are sure the lamp is cool, grasp it at the top and pull it straight out. **DO NOT TWIST**. The correct replacement is indicated by a label near the lamp. To insert it, align the base with the socket and rotate the lamp until the guide key fits into the socket's guide slot, then press firmly into place. Replace the **Lamp Housing**. Always have a spare lamp on hand.

The projector's solid-state amplifier does not require any periodic maintenance. If you feel it needs to be checked, see your dealer.

The **sound playback and recording head, however, should be cleaned periodically for optimum sound fidelity**. Have the **Direction Lever** in **STOP** and clean the head (see the illustration) with a small cotton-tipped swab moistened with isopropyl alcohol.

Clean the rubber roller (just to the right of the head) by spinning it with your finger, then swabbing it with the same cleaning agent.

SOUND SYSTEM SPECIFICATIONS

POWER OUTPUT—3 Watts RMS

SIGNAL/NOISE RATIO—25 db MIN.

RESERVE GAIN—5 db MIN.

WOW AND FLUTTER—0.5% RMS
(weighted)

INPUT SENSITIVITY (per EIA Bulletin
6-A Rev. 12/74)

Microphone—0.2 mV

Auxiliary Input—100 mV

ERASURE—30 db MIN.

SPEAKER IMPEDANCE—8 Ohms

MICROPHONE IMPEDANCE—500 Ohms

USE
PROJECTION LAMP
ASA CODE DJL
ONLY

EASY STEPS FOR SHOWING MOVIES

These steps are **REMINDERS ONLY** and are for reference once you are familiar with the operation of the projector.



1. Swing both reel arms up to their operating positions and attach the **Take-Up Reel**. Plug the **Power Cord** into a wall outlet (120 volts 60 Hz).



2. Check the end of the film leader for proper trim and trim if needed. Place the full reel of film to be shown on the **Supply Reel Arm**.



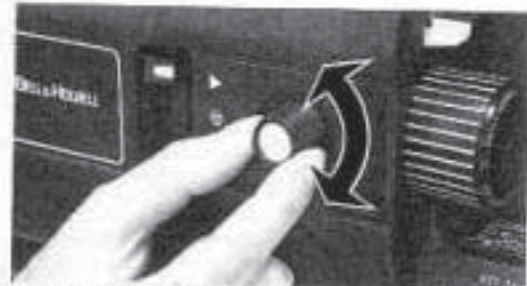
3. Move the **Fan/Lamp Switch** to **FAN** and set the **Projector Speed Selector** for the speed of your film.



4. Move the **Direction Lever** up to the **FORWARD** position. Press and hold down the **Automatic Threading Lever**, then insert the film end into the **Threading Slot** until it is picked up and pulled into the projector.



5. Hold the lever down until the film is completely through the mechanism. Move the **Fan/Lamp Switch** to **LAMP**.



6. Focus the image on the screen with the **Lens Focus Knob**. If necessary, adjust the **Framer Knob**. Adjust the **Volume Control**.

ACCESSORIES

Unidirectional Microphone No. 49545—for recording sound through the SoundStar projector. Has highly directional pickup; comes with stand for table-top use; has long connecting cord.



Protective Side Cover No. 046938—protects the projector when carrying or storing. All-metal construction; matches projector color and styling; snaps on and off easily.



Extension Speaker No. 19760—for putting the sound at the screen. Walnut-grain styling, 8-ohm impedance. Has 25' cord. Plugging speaker into projector disconnects built-in speaker.



DJL Projection Lamp No. 40591—a spare lamp on hand prevents interrupted movies due to lamp burn-out. Rated at 120 volts, 150 watts. Provides brilliant light, long life.



IMPORTANT

Some commercially produced home movies and foreign films may be poorly lubricated or not lubricated at all. These movies may not run through the projector smoothly and could show jumpy or unsteady pictures on the screen. The film could, therefore, be damaged in the projector.

If you notice these symptoms with any movie, do not continue projecting it. These films can usually be corrected with a film cleaner that has a built-in lubricant. See your photo dealer for further information.

FOR GENERAL ELECTRIC PROJECTION LAMPS ONLY

LIMITED WARRANTY

BELL & HOWELL will replace the General Electric projection lamp in your new projector free of charge if it fails during the first hour of operation due to any defect in workmanship or material. Failed lamps, **together with the information requested on the reverse side of this warranty certificate**, should be returned by Bell & Howell's special arrangement to General Electric Company, 420-450 Monroe Street, Bellevue, Ohio 44811.

Bell & Howell hereby limits the duration of its obligation under any implied warranty granted by state law, including any warranty of merchantability or fitness for a particular purpose, to the first hour of lamp operation. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

Bell & Howell expressly disclaims responsibility for all incidental or consequential damages. Replacement pursuant to the provisions of this warranty is Bell & Howell's sole obligation in the event its projection lamp is defective. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

FOR SYLVANIA PROJECTION LAMPS ONLY

LIMITED WARRANTY

GTE Sylvania Incorporated (Sylvania) will replace the Sylvania projection lamp in your new projector free of charge if it fails during the first hour of operation due to any defect in workmanship or material. Failed lamps, **together with the information requested on the reverse side of this warranty certificate**, should be returned to GTE Sylvania Incorporated, Winchester, Kentucky 40391.

Sylvania hereby limits the duration of its obligation under any implied warranty granted by state law, including any warranty of merchantability or fitness for a particular purpose, to the first hour of lamp operation. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

Sylvania expressly disclaims responsibility for all incidental or consequential damages. Replacement pursuant to the provisions of this warranty is Sylvania's sole obligation in the event its projection lamp is defective. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Projector Owner's Name _____

Address _____

Street

City

State

Zip

Projector Model No. _____ Serial No. _____

Date of Purchase _____ Lamp Type _____

Reason for Return _____

NOTE: Please complete all information requested above.

Projector Owner's Name _____

Address _____

Street

City

State

Zip

Projector Model No. _____ Serial No. _____

Date of Purchase _____ Lamp Type _____

Reason for Return _____

NOTE: Please complete all information requested above.

FULL ONE-YEAR WARRANTY

COVERAGE: Bell & Howell-Mamiya Company warrants that this product will function properly for one year from the date of original consumer purchase, or BHMCM will, at its option, either repair or replace it without charge. Warranty coverage does not include lamps, batteries, film, and accessories (which may be warranted by the original manufacturer); external finishes and appearance defects; damage caused by non-warranted parts, components, or service, defects due to lack of care (see instruction manual accompanying the product for guidance); or any other warranties made by any other person, including authorized distributors of our products. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

ALL INCIDENTAL AND CONSEQUENTIAL DAMAGES (SUCH AS DAMAGED FILM, FILM PROCESSING COSTS, AND COSTS OF PICTURE-TAKING TRIPS) ARE EXCLUDED FROM WARRANTY COVERAGE. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE EXCLUSION MAY NOT APPLY TO YOU.

WARRANTY SERVICE PROCEDURE: When warranty service is needed, bring the product with a description of the apparent problem, and the means to ascertain the date of original consumer purchase (such as copy of the bill of sale or cancelled check), to the nearest factory service center listed below or your local Bell & Howell approved service station (for names and addresses, consult your Yellow Pages or request a list from us at one of the addresses below). If at any time you are not satisfied with our warranty service, contact: Vice President, Distribution & Service, Bell & Howell Company, 7100 McCormick Road, Chicago, Illinois 60645.

Bell & Howell Company
General Service Department
2200 W. Brummel Place
Evanston, Illinois 60202

Bell & Howell Company
General Service Department
200 Smith Street
Farmingdale, L.I.,
New York 11735

Bell & Howell Company
General Service Department
623 Rodier Drive
Glendale, California 91201

Bell & Howell Company
General Service Department
4801 Fulton Industrial Blvd., S.W.
Atlanta, Georgia 30336

IMPORTANT

We recommend that you save your equipment's shipping carton (or box) and internal packing. Since this material is designed to be reusable, it will provide the best possible shipping protection should it ever be necessary to return your equipment for servicing. Be sure to repack the equipment in a manner as close to the original as possible. Use additional packing material as needed to help assure maximum protection.

BELL & HOWELL

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