Film-Tech

BELL & HOWELL

SoundStar XJ
Operating
Instructions
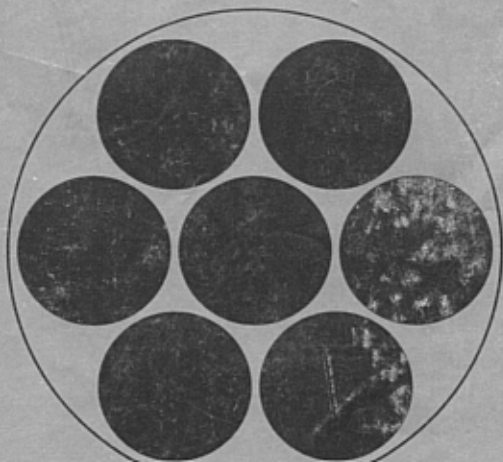
IMPORTANT: Read these instructions carefully
before operating your projector.

IMPORTANTE: Antes de hacer funcionar su proyector,
lea estas instrucciones cuidadosamente.

IMPORTANT: Lisez attentivement ces instructions
avant d'utiliser votre projecteur.

Welcome to SOUND Movies!

You've taken sound movies with your super 8 sound movie camera, and now you're ready to enjoy them to their fullest extent! All the action and all the sound you've captured on the film will be shown and played with pleasure and excitement for all to experience.

It's a whole new world of movie enjoyment—and you'll find your films have realism you never before dreamed possible.

To be sure of getting the fullest enjoyment from your sound films, read this complete instruction book over carefully before showing your movies for the first time. It's best to become completely familiar with your projector and its capabilities first—then you can put the show on with complete confidence.

¡ Bienvenido a la Pelicula SONORA!

Usted ha tomado películas sonoras con su cámara super 8 con sonido, y está listo para gozarlas! Toda la acción y el sonido que ha capturado en la película será visto y eschuchado por todos con placer y gusto.

Es un nuevo mundo de deleite en películas—y notará que sus películas tienen un realismo que no se imaginó que sería posible.

Para asegurarse de obtener el placer más completo de sus películas sonoras, lea cuidadosamente las instrucciones de este libro antes de proyectar sus películas por primera vez. Es mejor que primero llegue a conocer bien a su proyector y lo que puede hacer con él—entonces puede presentar sus películas con toda confianza.

Bienvenue au Film SONORE!

Vous avez tourné des films sonores avec votre caméra super 8, et maintenant vous vous préparez à les apprécier à leur plus grande valeur! Toute l'action et tout le son que vous avez capturé sur ce film se dérouleront devant vous et vous amix afin de pouvoir partager entre vous tout le plaisir et la sensation d'une telle expérience.

C'est un monde tout nouveau de plaisir dans le cinéma- et vous vous apercevrez, que vos films contiennent d'avantage de réalisme que vous ne l'auriez jamais pensé possible.
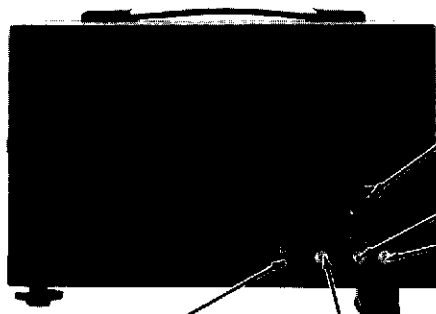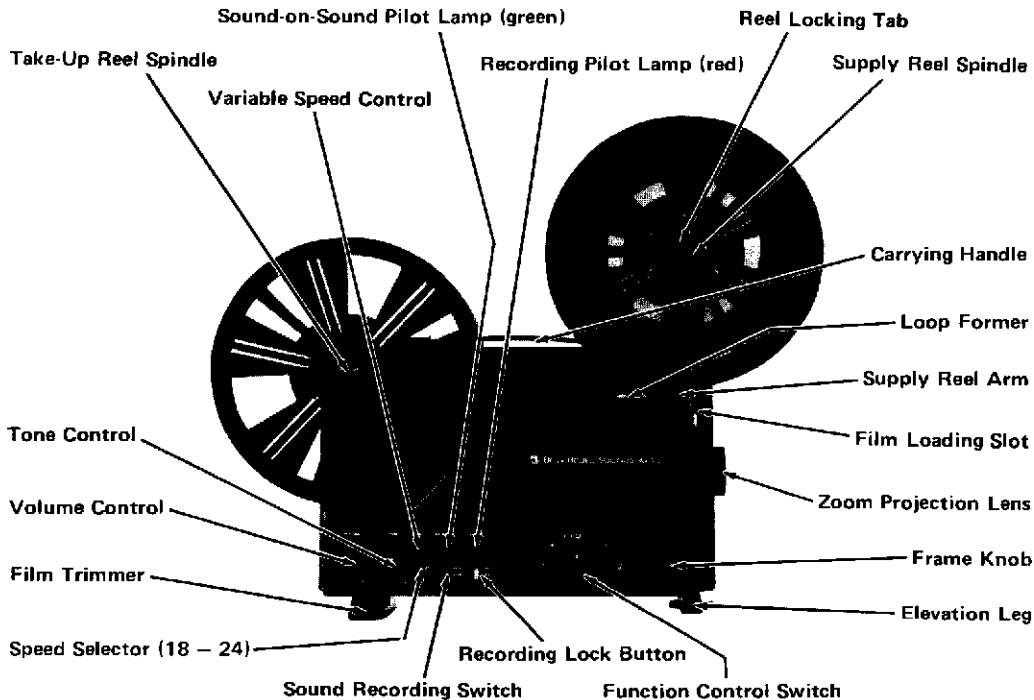
Pour être sûr de tirer le maximum de plaisir de vos films sonores, lisez attentivement ce livret d'instructions complètes avant projeter vos films pour la première fois. Il est conseillé de vous familiariser complètement avec votre projecteur et ses capacités, en premier—ensuite vous serez muni de la confiance nécessaire lorsque vos amis seront présents.

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.

Minor changes in the appearance of your projector may not be included in these illustrations.

Sound-on-Sound Pilot Lamp (green)
Recording Pilot Lamp (red)
Reel Locking Tab
Supply Reel Spindle
Take-Up Reel Spindle
Variable Speed Control
Carrying Handle
Loop Former
Supply Reel Arm
Film Loading Slot
Tone Control
Zoom Projection Lens
Volume Control
Frame Knob
Film Trimmer
Elevation Leg
Speed Selector (18 – 24)
Recording Lock Button
Sound Recording Switch
Function Control Switch

Power Supply Socket
Extention Speaker Jack
Earphone Jack/Monitor Jack (MON)
Auxiliary Input Jack (AUX)
Microphone Jack (MIC)
Microphone
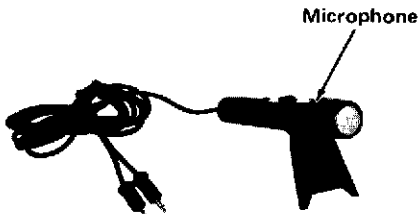
Function Control Switch

Lamp and Sound

Forward

Stop

Reverse

Lamp and Reverse

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. Your projector should normally be about 10' to 14' away from the screen.

Lift up the **Supply Reel Arm** to its operating position as shown. Attach the **Take-Up Reel** to the spindle of the **Take-Up Reel Arm** by aligning the key on the spindle with a slot in the reel hub, then push on firmly. Attach the **Power Cord** to the socket on the rear of the projector and then plug it into any standard 117-Volt AC wall outlet.
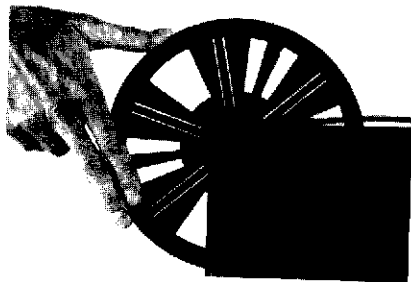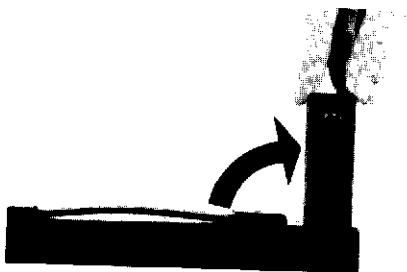

Move the **Function Control Switch** to the LAMP & SOUND position so that light is projected on the screen. If the projected light frame is too low, first tip the projector up to the proper angle with the **Carrying Handle**. Holding the projector at this angle, rotate the front **Elevation Leg** until the projected light frame is centered on the screen.
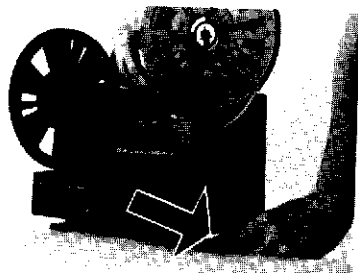

Rotate the **Lens Barrel** to focus the edges of the light frame. If necessary, pull or push the **Zoom Lens Barrel** to adjust the size of the light frame on the screen. Once aligned, turn the **Function Control Switch** to STOP.

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 of these speeds 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. Also, the **Variable Speed Control** should be set in the center (see page 5 for more information on this control).
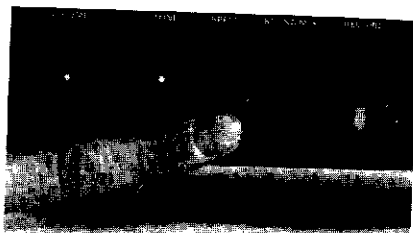
When your film is returned from the processor, a length of white film leader is attached to the beginning of the movie. This leader aids in efficient automatic threading and allows you to view your film from the very first scene. Always be sure there is at least 20" of this leader at the beginning of 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 pin engaging one of the perforations. 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.
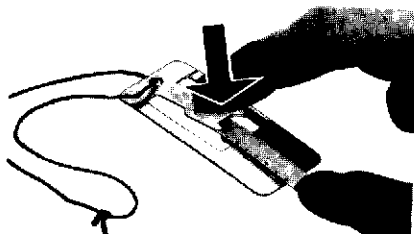
splicer. directions carefully. If tape splices are used, cut off that portion of the splice material (before applying it) that would cover the sound stripe (the stripe opposite the perforations) so that the sound track remains exposed. This helps assure uninterrupted sound when the splice passes over 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. Flip the **Supply Reel Locking Tab** down to secure the reel of film.


Loading the Film

With the full reel of film installed on the **Supply Reel Arm,** pull out about 4" of leader.
Move the **Function Control Switch** to FORWARD. Insert the end of the film leader into the **Film Loading Slot** and it will be picked up by the automatic loading mechanism. The film will continue through the projector and attach automatically to the **Take-Up Reel.**

curl or other reason, immediately stop the projector by moving the **Function Control Switch** 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.
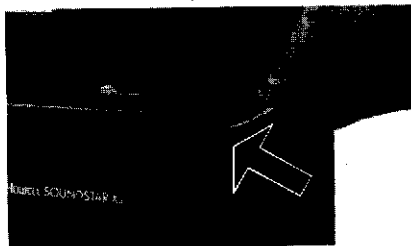
Once the film is securely attached to the **Take—Up Reel,** move the **Function Control Switch** back to the FORWARD position. Now, move it once further to LAMP & SOUND and your movie will be projected on the screen.
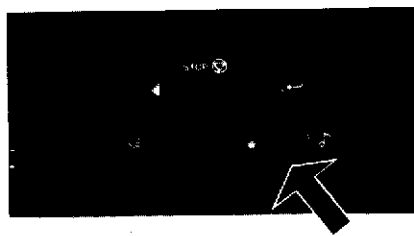

IMPORTANT: For efficient automatic film threading, be sure to examine the film leader for proper trim and condition before inserting the end into the **Film Loading Slot.**

IF THERE APPEARS TO BE A PROBLEM WITH THE FILM THREADING PROPERLY, immediately stop the projector to prevent any damage to the film.

## Showing Sound and Silent Super 8 Movies

When the first scene appears on the screen, adjust the image sharpness by rotating the **Lens Barrel** in either direction. To zoom the lens, slide it back and forth until the picture fills the screen to the desired size. If the picture on the screen is cut off at

the top or bottom and a frame separation line is showing, rotate the **Frame Knob** until the full picture appears.
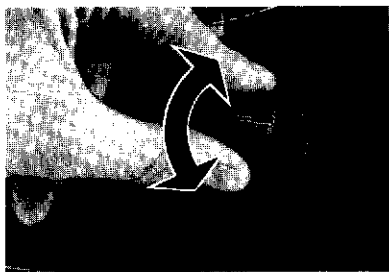

Showing a sound movie is the same as showing a silent one, but you do have sound to adjust. Just turn the **Volume Control** to set the sound to a comfortable listening level. The projector's sound amplifier is on whenever the projector is turned on, and because it is solid-state, there's no warm-up time. If you are using an external speaker instead of the one built into the projector (see page 9), its volume level is also controlled by the same **Volume Control**.

Your projector also has a **Tone Control** for adjusting the sound quality. Turn the control clockwise for added treble and counter-clockwise for less treble.
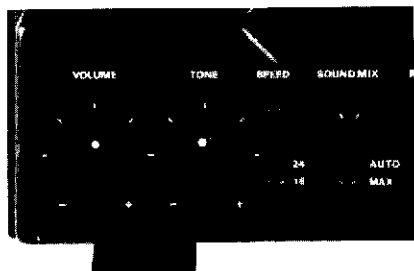
If the image jumps or chatters during projection due to a poor splice, perforation fault, or lost loop, lightly press the **Loop Former** once or twice. This should correct the problem.
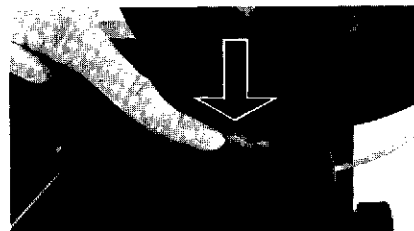

To reverse the action of your movies for special effects or to review an earlier scene, turn the **Function Control Switch** counterclockwise to REVERSE and further to LAMP. NOTE: When a sound movie is projected in reverse, the sound is automatically disconnected and no sound will be heard from the speaker.

To add interest and variety to your movies, your projector is equipped with a VARIABLE SPEED CONTROL. Your movies are running at normal speed when the **Variable Speed Control** is set in the center. If you want to make your movies run slower, turn this knob to the left (counterclockwise). If you want to speed up the action, turn the knob to the right (clockwise). To resume normal motion, set the knob back to the center. NOTE: Always have the **Variable Speed Control** set for normal motion (in the center) when loading film through the projector.

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
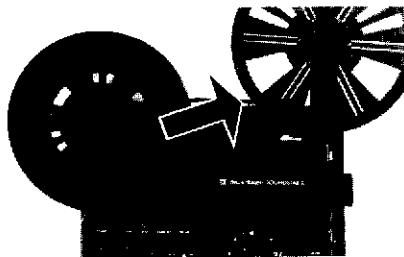
When all of the film on the reel has been projected, turn the **Function Control Switch** to STOP.
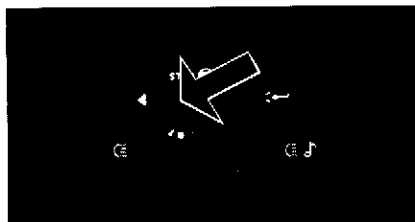
by passing over the lamp housing. Insert the film end into one of the slots on the empty **Supply Reel.** Move the **Function Control Switch** to REVERSE and set the **Projector Speed Selector** at 24 to rewind the film quickly.

Adding Sound to Your Movies

Sound movies taken with a Bell & Howell sound 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.

MAGNETIC SOUND STRIPE

BALANCE STRIPE
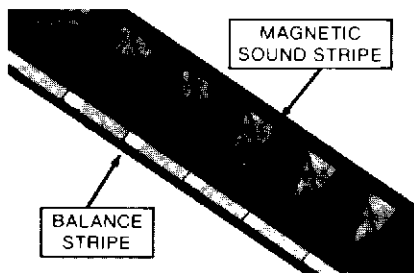
The recording system of your projector lets you:

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 processor 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 splicer directions

is the best source for information on striping silent film, on editing and splicing, and on the equipment available.

IMPORTANT: The information on this page and on page 7 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 8.
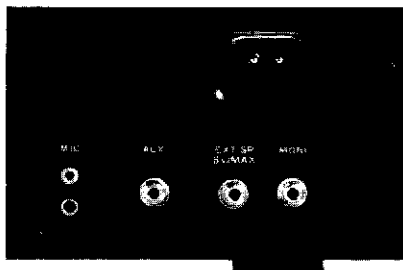
Recording with the Microphone

Insert the **Microphone Plugs** into the **Microphone Input Jacks** as shown on the rear of the projector. Make certain your microphone switch is OFF until ready to record sound. While recording, the **Sound Recording Switch** must ALWAYS be set at MAX.
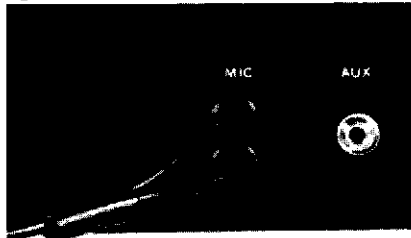
Load the projector with striped film as described previously and then turn the projector to STOP. Extend the **Microphone** as far from the projector as possible to pre-

6

vent picking up the operating noise. For best sound quality, hold it about 4—6" from your mouth and speak in a normal tone.

Push in the **Record Lock Button** without releasing it, and turn the **Function Control Switch** to the LAMP & SOUND position. The red **Recording Pilot Lamp** will light to let you know your film is ready for recording.
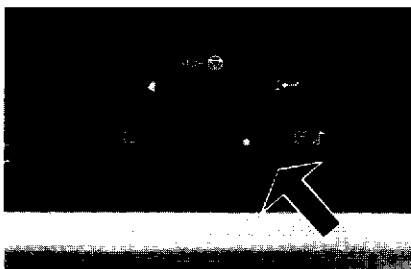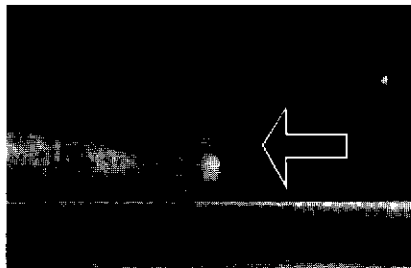
Turn the **Microphone Switch** to ON when you are ready to record. The recording level is automatically adjusted by the built-in recording circuit of the projector so that adjustment of the volume control is unnecessary. To stop the recording, turn the **Function Control Switch** to FOR-WARD and STOP. Notice the **Record Lock Button** is automatically released.

To monitor your voice as you record, plug the earphone supplied with your projector into the **Earphone Jack** on the rear of the projector. You will then hear your voice 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,

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 8.

Recording from Other Sources

You can record sound onto your striped film 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 3.5 mm mini-jacks. Your dealer or electronic supply outlet can provide you with the proper connecting cord and fittings.
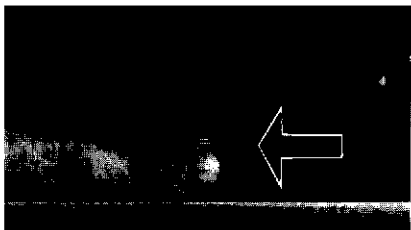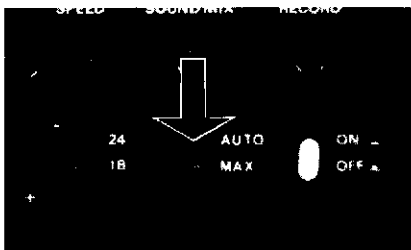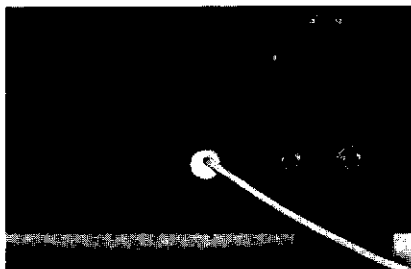
connecting cord. Plug this cord into the **Auxiliary Input Jack** of the projector. Turn the sound equipment on and set it to a normal listening level. With the projector loaded with the movie to be recorded, press the **Record Lock Button** in and turn the **Function Control Switch** to LAMP & SOUND position.

You may use either the projector's built-in speaker or earphone 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.
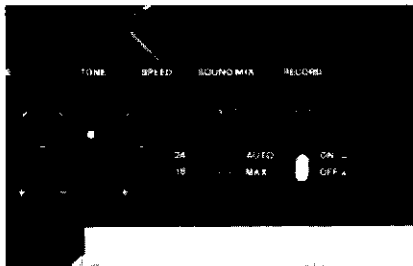
To stop the recording, just turn the **Function Control Switch** to FORWARD and STOP. The **Record Button** will pop out automatically. To resume recording on the film, push the **Record Button** back in and move the switch back to LAMP & SOUND.

Mixing Sounds Together

Your projector has its own mixing control circuit to combine background music 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! Remember, when you mix a new recording onto a camera-recorded sound track, there is no way to recreate the camera-recorded sound if it becomes damaged accidentally.

To mix music with a camera-recorded track, connect the music source to the projector as described on page 7. Play your film through to get an idea of how the music should be added, volume changes, etc.. A script that relates the picture with narration coming up would be very helpful

sound mixing is highly recommended.

After the practice run-through, reload the projector, turn the music on, and set the **Sound Recording Switch** up to AUTO position. Push **Record Lock Button** in without releasing, and turn the **Function Control Switch** to LAMP & SOUND.
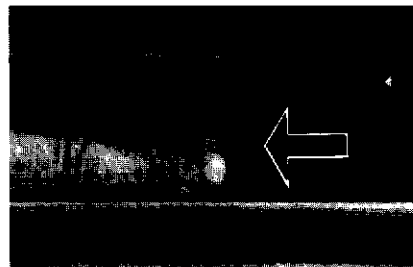
Both the red and green recording pilot lamps will light to let you know your film is ready for sound-on-sound recording. The recording level is automatically adjusted by a built-in auto recording level circuit so that adjustment of the volume control is unnecessary. When you have finished your sound-on-sound recording, turn the **Function Control Switch** to STOP and set the **Sound Recording Switch** down to MAX.
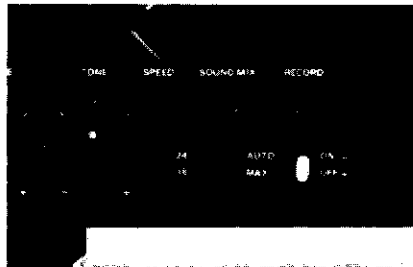
CAUTION: To stop "sound-on-sound" recording, turn the **Function Control Switch** to OFF position and then move the **Sound Recording Switch** down to MAX. Otherwise, any previously recorded part will be ERASED.

NOTE: When **monitoring** during mixing, you will hear what is being recorded and

8

NOT what is already on the stripe. To mix and monitor both inputs, record both simultaneously. To add mixed sound to a non-recorded track, first record the background music (see page 7), 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 Recording Switch** set down to MAX and disconnect the microphone or other sound source from the projector. Push in the **Record Lock Button** without releasing, and turn the **Function Control Switch** to LAMP & SOUND.

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 for large audiences or whenever you wish to have the sound coming from the screen. A speaker with 4 to 8-ohm impedance and suitable connecting cord may be obtained locally from your dealer or electronic supply outlet. The projector's **External Speaker Jack** accepts 3.5 mm mini-jacks. Inserting the plug automatically disconnects the projector's built-in speaker.

The Auxiliary Output Jack is used for several purposes. It provides an easy way to record from the film's sound track onto a regular magnetic tape so that the original track is preserved. This is a good idea if the film track has irreplaceable information which might be accidentally erased during mixing. You can also plug an external amplifier into this jack for amplified sound for extra-large audiences. The jack accepts cords with 3.5 mm mini-jacks.

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

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.

Play 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.

What To Do If —

IF THE FILM FAILS TO LOAD PROPERLY, move the **Function Control Switch** 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 to place the **Function Control Switch** to FORWARD first, then re-insert the film end into the loading slot and the film should thread through to 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, gently press the **Loop Former** once or twice to correct it. If the problem still exists, stop

and the measures described above do not correct it, stop the projector and turn it off. See the information on this page 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 **Function Control Switch** to STOP. If the **Record Lock Button** has 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 periodically. To get to these parts, open the front cover easily by pulling up the front and rear sides at the same time with both hands. Then slide the **Projection Lens** straight out the front of the projector. Gently brush the film channel and aperture with a soft camel's hair brush. Never use any hard instruments and do not brush through the aperture.
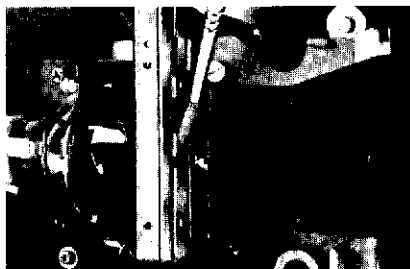

A clean **Projection Lens** means a sharp, bright movie. To check it, just look at the front glass surface during a show. To remove the lens for cleaning, slide the lens out the front. Wipe off the glass surfaces (both front and rear) with a soft cloth or lens tissue. Lens cleaning fluid may be used sparingly if needed. To replace the

needed to be sure the lens groove engages the rear of the knob. Check the lens often.
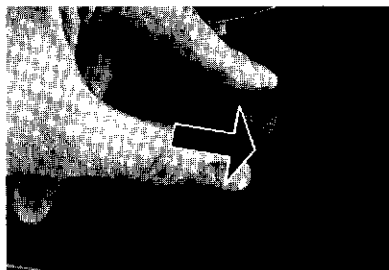
To remove partially shown film from the mechanism manually, first turn the **Function Control Switch** to STOP and unplug the projector. Allow the projector to cool, then remove front cover as described above. Open the pressure plate toward the right as shown and gently release the film from the front and rear sprockets. Work the film out carefully around the lower film path and remove film from projector. Carefully inspect the film for any damage and repair it with splicing tape before showing it again. Replace front cover and rewind film in the normal manner.
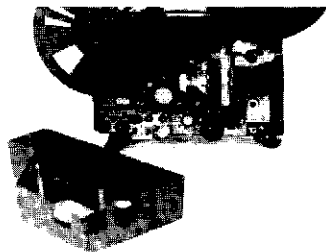
To replace projection lamp, first be sure projector is cool and the power cord is disconnected. Remove the front cover of the projector to expose projection lamp. Remove screw from lamp retaining bracket and set screw aside. Lift up retaining bracket so lamp is easily accessible. When you are sure lamp is cool, grasp it at the top and pull it straight out. DO NOT
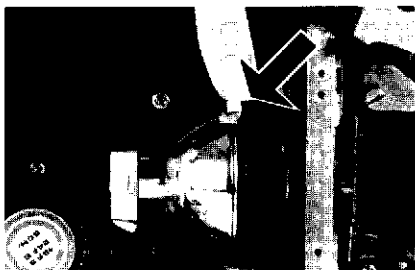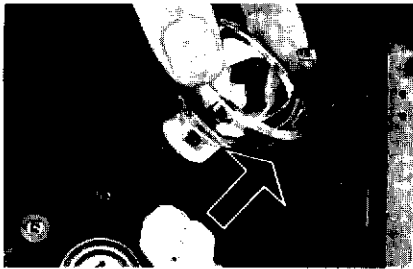
TWIST. The correct replacement lamp is 8-volt **EFM** 50-watt lamp. To insert new lamp, align the pins on base of the lamp with the socket and press firmly into place. Move lamp retaining bracket back in place and secure with screw.

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

The sound playback and recording head, however, should be cleaned periodically for optimum sound fidelity. Have the **Function Control Switch** 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.
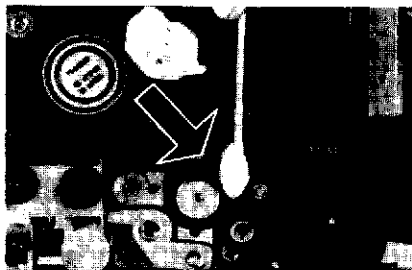
Sound System	:	Magnetic reproduction and recording
Film Type	:	Super 8 and Single 8
Film Capacity	:	Up to 600 ft. (180 m.) with special reel
Picture/Sound distance	:	18 frames
Film loading	:	Fully automatic reel to reel
Projection Speed	:	18 and 24 fps
Projection Lens	:	f/1.5 18-30 mm Zoom lens
Motor	:	DC commutator motor, with electric self-controlling governer
Frequency	:	50/60 Hz
Amplifier	:	2W solid-state IC amplifier
		Continuous power output: 2W 8 ohms
		3.5W 4 ohms max.
Speaker	:	Built-in 10 cm 2W 8 ohms dynamic speaker
Automatic recording level control	:	Built-in
Sound on Sound System	:	Built-in
Control	:	Tone, volume and speed control knobs
Input Jacks	:	AC main supply
		Microphone
		Monitor for earphone
		Auxiliary extension speaker
		Auxiliary input
Dimension	:	205 mm H x 290 mm W x 160 mm D
Weight (Net)	:	6.5 kgs.