

REALISTIC®

Stereo Cassette Tape Deck

SCT-33 Cat. No. 14-625

Your Realistic SCT-33 combines studio-quality recording capabilities with the most deluxe cassette conveniences. Many of its features have previously been available only in the most expensive open reel decks. Read this manual carefully, so you'll be able to take full advantage of all the special controls and functions.

Features include:

Ultra-Smooth Logic-Controlled Cassette Operation

One microprocessor IC, one motor and 2 solenoids provide light feather-touch operation of the cassette mechanism. Now you can change tape motion from Fast-Forward or Rewind to Play or vice versa without worrying about tape jam or wrap ups.

2-color Fluorescent peak meters with auto peakhold

Separate Right and Left Fluorescent Level Meters are illuminated white and red, and incorporate switchable peak hold functions for easy setting of maximum record level. The rapid response of these Meters assures true peak indication.

1.4 mm close-gap metal Record and Play heads compatible with Metal Tape

New technology high density ferrite close-gap record and play heads generate the magnetic field required for Metal tape. The double-gap high-density erase head provides the high magnetic field necessary to completely erase Metal tape. This brings all the superb characteristics of Metal Tape to your system — frequency response, greater dynamic range at high frequencies, reduction of distortion at high input levels, plus sharp improvement of the S/N ratio at high frequencies.

Metal tape Capability

The latest technological break-through in magnetic recording, Metal tape, provides you with the very best record/playback results. Increased output levels of up to 8 dB over other premium tapes (without increased distortion) give you greatly increased dynamic range for studio-quality recordings. Front panel adjustable bias control permits precise bias settings for all high-technology tapes.

Two Dolby NR Systems: B-type and new C-type

The SCT-33 features the latest circuitry and the Dolby C-type NR system. The Dolby, two-stage, C-type NR system lowers background noise to 1/100th of its original level (20 dB), making it ideal for recording wide dynamic range program material or live music. With the Dolby C-type NR, the SCT-33 rivals the performance of many studio-type open reel recorders.

Auto Rewind

Automatically rewinds the tape to the beginning of the tape and stops or begins to play.

Memory Rewind

The microprocessor IC remembers where you pressed the Play button ... and when Rewind is pressed it automatically rewinds the tape to that position to restart playback (or auto-stop).

Automatic Record Mute

Press the Mute button, and the Microprocessor automatically shuts off the recording signal for 4 seconds, and then enters Pause mode.

Timer Recording and Playback

With an external timer connected, you can record your favorite radio program while you're out, or start playback at a pre-set time for stereo "wake-up alarm" (or other timed record or playback applications).

Professional Editing Capability

The SCT-33 lets you go directly from play to record without stopping. You hear the playback signal up to the exact moment you enter the record mode. There is zero time delay or playback fidelity loss (which can occur even in expensive, three head professional decks).



CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



Explanation of Graphical Symbols

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user of the presence of uninsulated "dangerous voltage" within the product's enclosure; that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING:
TO PREVENT FIRE OR ELECTRIC SHOCK,
DO NOT EXPOSE THIS TAPE DECK TO
RAIN OR MOISTURE.

* Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.
"Dolby" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

For your own protection, we urge you to record the Serial Number of this unit in the space provided. You'll find the Serial Number on the back panel of the unit.

Serial Number

CONTROL LOCATIONS AND FUNCTION

- 1 POWER Switch**
Push in to turn the power "on"; press again to turn the power "off".
- 2 EJECT Button**
Press to open the Cassette Compartment and eject the cassette.
- 3 Stereo PHONES Jack**
Plug a pair of stereo headphones into this jack for private listening or editing.
- 4 Digital TAPE COUNTER**
Use this to aid you in locating desired portions of the tape. Press the button at the right to reset to "000".
- 5 BIAS ADJust**
Adjust Bias to get best results from the kind of tape you use (see BIAS ADJUSTMENT, page 59).
- 6 REWIND Button**
Press to rewind tape rapidly. To release this function, press the STOP or PLAY button.
- 7 PLAY Function LED**
Lights when you are in the Play mode.
- 8 PLAY Button**
Press for Playback operation. For Record, press this button simultaneously with the RECORD button.
- 9 FAST Forward Button**
Press to move tape rapidly in a forward direction. To release this function, press the STOP or PLAY button.
- 10 STOP Button**
Press to stop the tape movement.



- 11 RECORD Function LED**
Lights when you are in the Record mode.
- 12 RECORD Button**
Press simultaneously with the PLAY button to Record. The RECORD LED will light, indicating you are in the Record mode.
- 13 PAUSE Function LED**
Lights when you are in the Pause mode.
- 14 PAUSE Button**
Press to temporarily stop tape travel during Record or Play. Press the PLAY button to release.

- 15 MUTE Button**
During Recording sessions, press this button to edit out unwanted signals.
- 16 AUTO/MEMORY REWIND Switch**
When a tape reaches the end in the record or playback mode, the AUTO REWIND function rewinds the tape automatically to the start. This switch also activates the microprocessor IC Memory Rewind; press REWIND, and the tape rewinds to the specified position and automatically stops or plays repeatedly.

- 17 TIMER Switch**
When using an external electrical Timer set this switch to RECORD for timer-controlled recording, and to PLAY for timer-controlled playback. Set to OFF when you are not using an external Timer.
- 18 METAL Function LED**
Lights up when you set the TAPE select switch to the METAL position.

- 19 DOLBY NR Function LED**
Lights when you set the DOLBY NR switch to IN (B-TYPE or C-TYPE) position.
- 20 DOLBY C-TYPE Function LED**
Lights when you set the DOLBY NR switch to the C-TYPE position.
- 21 Digital Peak Level Meters**
Indicate peak level of recording. When playing a tape or monitoring recorded sound, they show playback signal level.
- 22 TAPE Select Switch**
Use this to set Bias and Equalization for best results with the particular tape formula you're using (METAL, CrO₂, Fe₂O₃, etc.).
- 23 DOLBY NR Switch**
Set to B-TYPE or C-TYPE as desired to activate the built-in Dolby Noise Reduction system. Set to OUT when not using Dolby NR.
- 24 MICROPHONES LEFT/MONO and RIGHT Jacks**
For live recording, plug high quality microphones into these jacks.
- 25 OUTPUT Level Control**
Use to adjust the level of the tape play output signal — to match the other input levels to your Amplifier/Receiver.

- 26 MPX FILTER Switch**
Press to the IN position when recording FM Stereo broadcast with Dolby NR.
- 27 INPUT Switch**
Use this switch to select the input source (MICROPHONE or LINE IN) for recording.
- 28 MONITOR Switch**
Selects the signal (SOURCE or TAPE) that goes from the Deck to your Amplifier/Receiver (or Headphones).
- 29 PEAK HOLD Switch**
Press in to hold highest peak level indication on the Meters. Press again to return to the "auto-reset" mode.
- 30 RECORD LEVEL Left and Right Control**
This dual clutch-type control adjusts the recording levels of both channels simultaneously — or individually if desired.
- 31 Memory Ring**
Use this to set reference point for the Record Level.

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Rear Panel



32 LINE IN Jacks

Connect external signal sources to these jacks from Tape Out or Record Out of your Amplifier/Receiver.

33 LINE OUT Jacks

Connect these output jacks to the Tape In or Aux In jacks of your Amplifier/Receiver.

34 Line Cord

Connect to an AC outlet (check labeling on the rear panel for the correct voltage and frequency — in Volts and Hz).

SPECIFICATIONS (TYPICAL)

Tape System:	Standard PHILIPS Cassette 4-track stereo
Tape Speed:	1-7/8 ips (4.75 cm/s)
Frequency Response (overall):	Metal, 30 to 21,000 Hz (± 3 dB) CrO ₂ , 30 to 20,000 Hz (± 3 dB) Normal, 30 to 19,000 Hz (± 3 dB)
Signal-to-Noise Ratio:	Dolby B "IN" 69 dB Dolby C "IN" 78 dB (Metal tape — A weighted, ref. 3% THD, 3rd HD, 400 Hz)
Distortion:	0.8% (ref. 160 nW/m)
Cross-talk:	Better than 60 dB
Wow and Flutter:	0.05% WRMS
Erase Ratio:	Better than 65 dB
Output Level:	Line Out = 0.75 volts maximum (adjustable)
Output Impedance:	Line Out = 10 k ohms Headphone = 8 ohms
Input Sensitivity:	Mic = -68 dB m (0.3 mV) Line In = -20 dB m (80 mV)
Input Impedance:	Suitable Microphone impedance = 300 to 5 k ohms Line In = 50 k ohms
Record Bias:	85 kHz
Erase System:	85 kHz AC erase
Power Requirements:	AC 120 V, 60 Hz, 23 W (U.S.A., CANADA) AC 220 to 240 V, 50/60 Hz, 24 W (EUROPE) AC 240 V, 50 Hz, 24 W (AUSTRALIA)
Dimensions:	4-5/16" x 17-1/8" x 10-1/2" (H.W.D.) (11.0 x 43.5 x 26.6 cm)
Weight:	10 lbs. 9 oz. (4.8 kg)

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INSTALLATION

Using one of the patch cords provided, connect the Left and Right **LINE OUT** jacks to the corresponding tape input jacks of your Amplifier/Receiver.

Use the other patch cord to connect the **LINE IN** jacks to the **TAPE OUT** (or **RECORD OUT**) jacks on your Amplifier/Receiver.

Plug the line cord into an AC outlet.

MICROPHONE CONNECTION

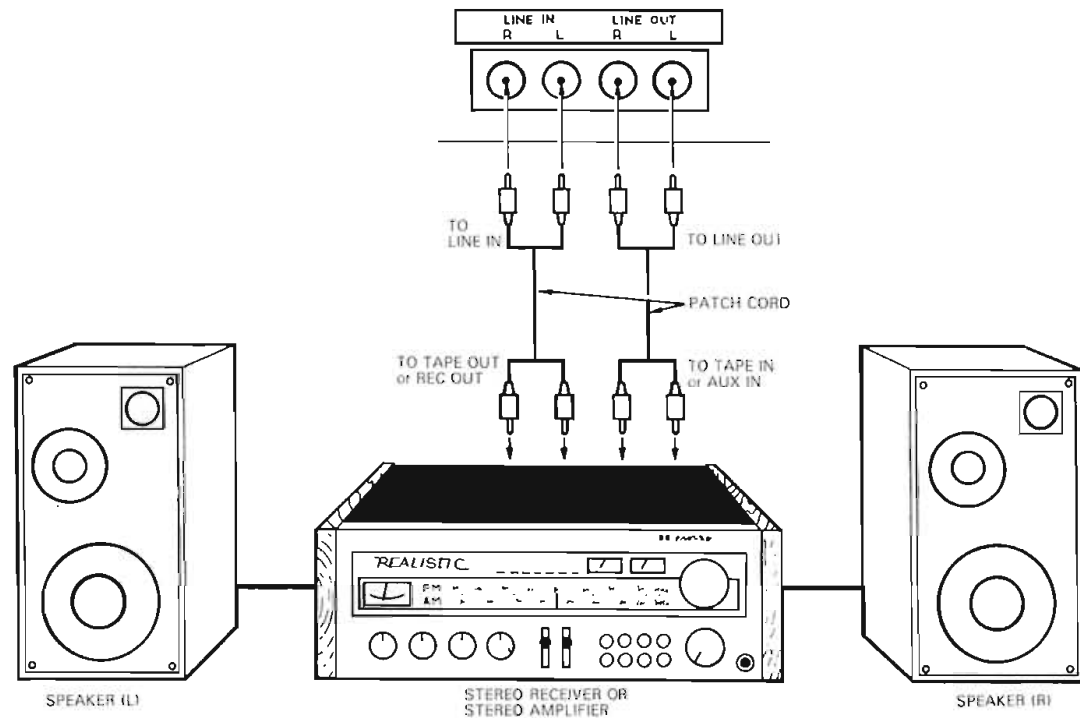
For "live" recordings, connect microphones to the **MICROPHONES** jacks on the front of the Tape Deck. Use two for stereo recordings; for monaural recordings, just use the LEFT/MONO jack.

To fully realize the dynamic range, low noise and wide frequency response of this Deck, you should use good microphones. Your local Radio Shack store has a wide selection of microphones (and other accessories). Ask your salesperson for advice on what to use.

STEREO HEADPHONES

You can use Stereo Headphones to monitor the recording process and signal, or to listen to a tape being played back. This gives you complete private monitor/listening capability. Your Radio Shack store has some very fine headphones to choose from. We strongly recommend that you try a pair.

To use them, just plug them into the **PHONES** jack at the front of the Tape Deck.



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OPERATION

WARNING: Before turning the Deck on, set the **TIMER** switch to OFF. (If set to REC or PLAY, it will automatically go into that mode when you turn the unit on and you might accidentally erase a portion of a tape.)

PLAYING BACK TAPES

To Turn the Deck On

The SCT-33 offers the convenience of a separate ON/OFF switch. To turn the Deck on, push **POWER** once; push again to turn it off.

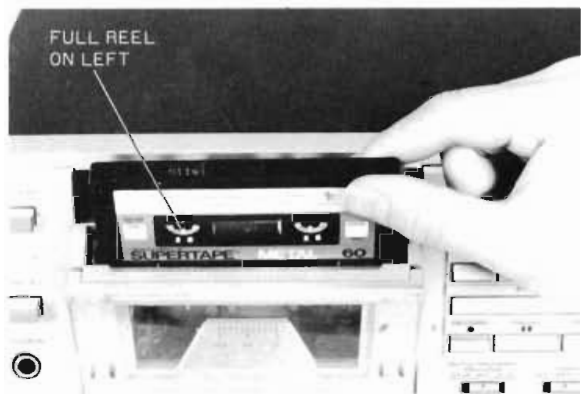
LOADING A CASSETTE

Press the **EJECT** button and the cassette compartment cover will come out toward you gradually. Insert the Cassette into the cassette compartment, open end down and full reel to the left.

Close the cassette compartment cover. When the Cassette is fully recorded or played back, turn it over to side 2 (or B) for recording or playback of the other side.

To remove the Cassette, press **EJECT** and remove the Cassette.

While the Cassette compartment is open, the buttons will not function.



PLAYING THE TAPE

1. Press **POWER** to turn the unit on. Press the Reset button to reset the counter to 000.
2. Load a pre-recorded Cassette as noted above. Press the **MONITOR** switch to the **TAPE** position.
3. Set the **AUTO/MEMORY REWIND** switch to the desired position. See **AUTO/MEMORY REWIND SWITCH**, page 9.
4. Set the **TAPE** select switch to the appropriate position: NORM position for standard tape; CrO₂ position for CrO₂ tape; METAL position for Metal tape.
5. If you are going to play a Dolbyized tape, set **DOLBY NR** to IN (B-TYPE or C-TYPE) position.
6. Press the **PLAY** button and tape will begin moving. Adjust the Volume, Tone and Balance controls on your Amplifier/Receiver for desired levels.
NOTE: You can adjust the **OUTPUT** Level control to match your Deck's output with that of other signal sources (disc records, FM, etc.) connected to your Amplifier/Receiver.
7. To temporarily stop tape playing, press **PAUSE**; to restart the tape, press **PLAY**.
8. To stop playing, press **STOP**.

To move tape rapidly in a forward direction, press **FAST-F**.

To move tape rapidly in a reverse direction, press **REWIND**.

In either case, press **STOP** or the desired tape motion key, to release the function.

Use the **TAPE COUNTER** to aid you in locating approximate positions on the tape.

You'll notice that while in the play or record mode a green LED is flashing above the **PLAY** button. This is an indication that the take-up hub is in motion.

(The flashing is in time with the signal applied to the built-in microprocessor, and the timing is part of the memory function.)

To obtain the best performance from this unit, it is recommended that you use the tapes: Supertape® Gold (NORM position), Supertape® Chrome (CrO₂ position) or HI-BIAS and Supertape® Metal (METAL position). A high recording level with a wide dynamic range can be obtained.

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Operation — Continued

To listen to tapes privately (or if you don't have an Amplifier/receiver), plug a pair of stereo headphones into the **PHONES** jack. Use the **OUTPUT** Level Control to obtain the desired volume.

STEREO RECORDING

You can make recordings either from microphones (through **MICROPHONES** jacks) or through the **LINE IN** jacks. Make the appropriate connections before starting the Recording session.

We recommend that you use only the finest tape with your **SCT-33**. Only with the finest tape will you realize the fullest capabilities of this Tape Deck. Use Realistic Supertape® **Metal, Chrome** or **Gold** tapes.

1. Load a Cassette into the Cassette Compartment.
2. Set the **AUTO/MEMORY REWIND** switch to the desired position. See **AUTO/MEMORY REWIND** switch (page 9).
3. Set the **TAPE** select switch to the appropriate position. When using low noise/high output tape and ferric-oxide tape (Fe_2O_3), set to the **NORM** position; when using chrome-oxide tape (CrO_2), set to the CrO_2 position; when using Metal tape, set to the **METAL** position.



Mark the switch setting on the Cassette so you'll remember to play the tape back with the same setting.

4. Set the **INPUT** switch to the desired source-MIC or LINE.
5. Set the **DOLBY NR** switch to **IN** (B-TYPE or C-TYPE) position if you are going to make a Dolbyized recording (be sure to mark the

Cassette "DOLBY-B" or "DOLBY-C" if you record with DOLBY NR).

When recording FM stereo broadcasts, set the **MPX FILTER** switch to **IN**.

6. Reset the **TAPE COUNTER** to 000.
7. Press the **PAUSE** and **RECORD** buttons. Make sure the **MONITOR** button is in the **SOURCE** position (button out) and adjust the **RECORD LEVEL** controls to achieve proper channel balance and recording level. Adjust for meter readings that occasionally light the red segments. Normal recording levels will give meter readings between white — 10 and red 0.

This procedure allows you to preset the recording level prior to starting tape motion. See **NOTES AND APPLICATIONS** (page 11) for further Recording tips, especially for Metal tape.

NOTE: Left and Right channel recording levels can be adjusted individually. The larger diameter of the **RECORD LEVEL** knob is for Right and the smaller is for Left. Once you've set the relative balance of levels you can adjust the overall level of both channels at one time (the two sections are clutch-type, and rotate together unless you hold one section). Also, the outer Memory Ring can be used for setting to a reference point (it has no effect on Record Level — use it only for reference setting and then you can return to the exact setting later on).

8. Press **PLAY**. The tape will begin to move and you are recording.
9. To temporarily stop the tape while recording, press **PAUSE**. To restart the tape press **PLAY**.
10. Press **MUTE** to edit out the sound being recorded. After 4 seconds, the Deck will automatically enter the recording Pause mode. Press **PLAY** to continue recording.
11. To stop recording, press **STOP**.

To advance tape rapidly to any desired point, use the **FAST-F** button. Use **REWIND** to move tape rapidly in a reverse direction.

Use the **TAPE COUNTER** to aid in returning to the original tape position and to locate desired portions of the tape.

TO MONITOR A RECORDING

One of the outstanding features of your **SCT-33** is its ability to monitor a recording as it is made — without interrupting the recording process. Set the **MONITOR** button to **TAPE** and set your Amplifier/Receiver's Tape Monitor switch to the **IN** position (or use Headphone connected to **PHONES** jack).

When making Microphone recordings, if you try to monitor through your Amplifier/Receiver and speakers, you may experience acoustic feedback (squealing and howling); so it is best to use Headphones when monitoring Microphone recordings.

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AUTO/MEMORY REWIND SWITCH

Auto-Rewind function

Stop, rewind or play can be done automatically at the end of a tape, depending on the setting of the **AUTO/MEMORY REWIND** switch.

OPERATION MODE	AUTO/MEMORY REWIND SWITCH SETTING	MODE AT THE TAPE END
<i>Recording</i>	OFF	Stop (AUTO STOP)
	STOP	Rewind → stop (AUTO STOP)
	PLAY	* Rewind → play → Rewind → play ... (repeated)
<i>Playback</i>	OFF	Stop (AUTO STOP)
	STOP	Rewind → stop (AUTO STOP)
	PLAY	* Rewind → PLAY → rewind → play ... (repeated)
<i>Rewind</i>	OFF	Stop (AUTO STOP)
	STOP	
	PLAY	* Play → rewind → play → rewind → play ... (repeated)
<i>Fast Forward</i>	OFF	Stop (AUTO STOP)
	STOP	Rewind → stop (AUTO STOP)
	PLAY	* Rewind → play → rewind → play ... (repeated)

* Tape can be played back up to 16 times by the Auto-rewind function.

Memory Rewind function

When the REWIND button is pressed **during recording or playback**, the tape is rewound to the position where the PLAY button was **last pressed**.

SPECIAL NOTE: If **PAUSE**, **FAST-Forward**, **STOP** or **MUTE** (in record mode) is pressed, the memory is cancelled (will **not** rewind to the location where **PLAY** was last pressed it will rewind all the way to the start and then continue based on the setting of the **AUTO/MEMORY REWIND** switch).

After rewinding the Deck will then operate according to the setting of the **AUTO/MEMORY REWIND** switch.

PLAY — Playback starts after tape is rewound.
STOP — Stops after tape is rewound.

NOTE: At the end of a tape, the Auto Rewind function overrides Memory Rewind and the tape will be rewound to the start.

BIAS ADJUSTMENT

There are various kinds of tapes on the market. The trouble is, each kind has different magnetic characteristics and it is almost impossible to determine only one bias setting for all kinds of tapes available.

So before performing critical recording, we recommend that you adjust the bias to suit the kind of tape you are going to use. Do this as follows:

Connect the Receiver (or Tuner and Amplifier) as noted previously. Set your Receiver/Tuner to FM and record inter-station hiss noise with the recording level set for a white Fluorescent meter reading at -20 (**MONITOR** button in the SOURCE position). Now, set the **MONITOR** button on TAPE and adjust **BIAS ADJ** so that the overall "Hiss" sound quality of the recorded signal matches the source signal as closely as possible.

This completes the **BIAS** Adjustment. (You won't need to change this **BIAS ADJ** setting unless you change tape formulas.)

NOTE: If your Tuner/Receiver has an "FM MUTE" switch, turn it to "OFF" or "OUT" during **BIAS** Adjustment.

Normally, the **BIAS** Control is kept set to the center position. Your SCT-33 is factory set to perform best with Realistic tapes, when set to that position.

NOTE: **BIAS ADJ** effects only the recording process.

AUTOMATIC RECORDING MUTE FUNCTION

When the MUTE button is pressed during recording, the Deck enters a non-signal mode for approximately 4 seconds and then automatically enters the recording pause mode; press the PLAY button to re-start recording. If the MUTE button is pressed continuously, the non-signal mode will continue for more than approximately 4 seconds; when MUTE is released, the Deck automatically enters the recording Pause mode. This is convenient for editing out commercials or leaving gaps between selections.

NOTE: If you want less than a 4-seconds mute, press **PAUSE** after the desired mute time.

PUNCHING IN

When recording live, you will often find songs start out fine but then someone makes a mistake. With the SCT-33 you can start over from the point of the mistake, instead of recording the entire song again. Simply playback or line outputs will let you hear the previous recording up to the exact instant you press the RECORD button.

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Recording or Playing back Using an External Timer

Because of the logic control circuitry built into the **SCT-33** you can use an external timer to turn it on and off and have a Recording made while you are away. You can perform play-back, also. Connect the **SCT-33**'s and your Amplifier/Receiver's power cord to an automatic Timer (such as Radio Shack's 63-886).

Timer recording

1. Set up the receiver for normal reception and adjust the recording level as noted on page 8. Be sure **POWER** is "ON" (both **SCT-33**'s and your Amplifier/Receiver's).
2. Now, connect the **SCT-33**'s power cord to the Timer's outlet. Set the timer for the desired "ON" time.
(Refer to the Timer's instruction manual for setting the timer).
3. Set the **AUTO/MEMORY REWIND** switch to OFF or STOP as you wish.
NOTE: When making a timer-controlled recording, do not set the **AUTO/MEMORY REWIND** switch to PLAY.
4. Set the **SCT-33 TIMER** switch to REC.
Now the **SCT-33** is ready for timer — controlled Recording.
5. At the pre-set time, the Timer will come on, power will be applied to the **SCT-33** and recording will start automatically.

Caution: If the cassette has the erase protect tabs removed, when the Timer operates, the **SCT-33** can not go into a Record mode — it will go into the Play mode instead. Before you set up for timer-controlled recording, be sure that the Cassette has the erase protection tabs in place. Also, be sure you set the **TIMER** switch to the REC position.

Timer Play

1. Load the tape you want to play, adjust the Amplifier/Receiver's Volume control for the desired level, and press the **STOP** button.
2. Connect the **SCT-33** to the Timer as described under "Timer recording" and set the Timer for the desired "ON" time.
3. Set the **SCT-33 TIMER** switch to PLAY. The tape will automatically be played back at the pre-set time.

WARNING: Be sure to set the **SCT-33 TIMER** switch to OFF except for timer-controlled recording or timer-controlled playback.
If you leave the **TIMER** switch set to REC and the power should fail for some length of time, when power comes back on the deck will automatically go into the record mode (unless erase protect tabs are removed), and erase whatever is on the tape.

When the **SCT-33 TIMER** switch is set to REC or PLAY, do not open or close the cassette door for several seconds after the power is applied; this will protect the mechanism from damage.
When the **TIMER** switch is set to REC or PLAY, several seconds after the power is applied, the tape transport mechanism automatically enters the recording (or playback) mode.

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NOTES AND APPLICATIONS

TO ERASE A TAPE

It is not necessary to erase a tape before using it again.

As you record, any previous recordings are automatically erased. However, if you want to erase a previous recording, without making a new one, disconnect microphones and set the

RECORD LEVEL controls to minimum. Now, load the cassette and run it through with both **RECORD** and **PLAY** buttons pressed (just as though you were making a recording). This will erase the tape clean.

You may erase an entire tape (both sides) in just a few second with a "bulk tape eraser" such as Radio Shack's 44-232.

CAUTION: If you wish to erase only a portion of a tape or only one side, you must operate the procedure above.

CHOOSING THE RIGHT TAPE

Choice of tape is vital to good recordings. To take full advantage of the **SCT-33** performance capabilities, you should only use the finer-quality tapes designed specifically for music recordings. For low-noise, wide range recordings, we recommend the new Supertape Metal, Chrome, HI-BIAS or Gold (in conjunction with the proper settings for these tapes).

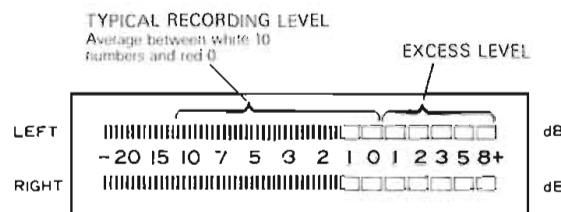
MONAURAL RECORDING AND PLAYBACK

You can use your **SCT-33** for monaural Record or Playback; follow the same procedures as outlined previously for both functions. For mic recordings, just plug the mic into the **LEFT/MONO** jack.

When you make monaural recordings through the **AUX IN** jacks, it is best if you use both right and left channels for the monaural signal — this assures best sound reproduction, maximum output and lowest noise. You will need a "Y" adaptor (Cat. No. 42-2435) to do this.

SETTING THE RECORD LEVEL

Record levels should not be too high or too low. Proper recording levels will be achieved when meter readings only occasionally light up the red segments of the meter. Normal peak levels will produce meter readings up to between 10 of the white section and 0 of the red section. High peaks of recording levels may occasionally flash the red +2 dB.



Recording levels which consistently peak into the 3 to 8 red section may result in distortion and/or poor high frequency response. Recording levels which peak only occasionally to 10 white (or lower) will have excessive noise — especially noticeable in the soft passages. Therefore, you must learn to adjust recording levels for a happy medium, to assure lowest noise and widest possible dynamic range.

PEAK HOLD FUNCTION

To hold the peak readings, press in **PEAK HOLD** — the Meters then will indicate the highest readings and hold them (unless another, higher peak signal occurs, which then will result in a higher reading). Peak Hold is designed to help you monitor those critical peaks for setting proper record level! (from -1 to +8 dB).

To release Peak Hold, press the button again (to OFF). Peak Hold will help you to never make a recording at too high a level — just maintain a Peak Hold meter reading that is appropriate for the type of tape you are using.

SPECIAL NOTE ON METAL TAPE

The new Metal tapes offer the very finest sound reproduction. The technology involved permits greatly extended dynamic range, especially at the high-frequency end of the audio spectrum. This means much less possibility of distortion on peaks of sound (e. g. clash of cymbals, etc.). To take full advantage of this extended high-frequency dynamic range, you can record on Metal tapes at higher levels than with other types.

Instead of limiting Meter peaks to between 10 of the white section and 0 red, when using Metal tape set Record levels for Meter readings peaking up to 0 and +8 red. (Recording at these higher levels will not produce distortion in the recorded signal, but will result in greater output and greater signal-to-noise ratio.)

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Notes and Applications — Continued

MICROPHONE RECORDING

Enjoy the excitement and fascination of making your own "live" recordings with a pair of Realistic microphones. Realistic has a mic for every purpose, from at-home recordings to live on-stage performances. Knowing the broad distinctions between microphone types will help you make the right choice. There are two basic pickup patterns: cardioid and omnidirectional.

Cardioids pick up sound mostly from the front. That's why they're good for stage work, music recordings and public address applications where feedback (acoustic "howling") is a problem.

Omnidirectionals have a circular pickup pattern that lets you place a mic almost anywhere in an average-size room and get good sound pickup. Used in pairs, they're good for making live stereo recordings of orchestras and other large groups.

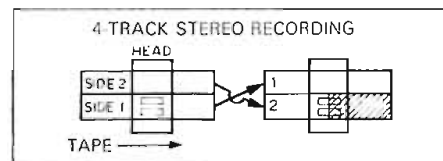
Another distinction is between dynamic and electret condenser microphones. Dynamics are rugged and versatile; great for at-home recording and on-stage work where dependability is a must. Electret condenser mics provide super-sensitive sound pickup along with a very wide and flat response. The finer electrets are used for critical studio work. Electrets require a small, easily replaced battery for their built-in transistor. Battery life averages six to nine months.

Your Realistic **SCT-33** is designed for use with any low-impedance (300–5000 ohms) microphones, either electret or dynamic.



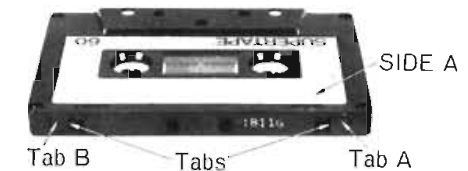
4-TRACK RECORDING AND PLAYBACK

A cassette has two sides. This Casette Deck uses the standard four track, two channel (stereo) system for making recordings and playing them back. After you have recorded both right and left channels on one side, remove the cassette, turn it over and reload to record both channels on the other side.



Cassettes have a built-in erase protection device. On the back are two small tabs. To prevent accidental erasure, carefully break off the appropriate tab as shown below. With side A/1 up, breaking "tab A" will prevent accidental erasure of the material on side A/1. Tab B is for side B/2.

If you decide to erase or re-record a cassette which has the tabs broken off, just cover the appropriate opening with tape.







To re-record a cassette it is not necessary to erase previous recordings. Previous recordings are automatically erased when a new recording is made.

To erase a tape, follow the same procedure as for Recording, but disconnect inputs and reduce **RECORD LEVEL** controls to minimum. Then run the tape through (press **RECORD** and **PLAY** buttons); this automatically erases previous recordings from the tape. Note that the Erase Protect Tabs must be in place for this erase function to work.

REALISTIC

To achieve optimum Record results, be sure to use the correct TAPE and DOLBY NR switch positions. When playing back a Dolbyized tape, always set DOLBY NR switch to the IN (B-TYPE or C-TYPE) position. When playing back a non-Dolbyized recording, set the DOLBY NR switch to the OUT position.

Dolby encoded pre-recorded cassette releases are widely available, and should be played with appropriate Dolby noise reduction selected. Cassettes recorded with Dolby B-type noise reduction are identified on the box's spine and the cassette label with the  symbol, and on the liner's front cover with the  DOLBY SYSTEM symbol. Cassettes recorded with Dolby C-type noise reduction are identified with the  and  DOLBY C NR symbols.

Only when recording non-Dolby FM stereo signals with Dolby NR System, should you set the MPX FILTER switch to the IN position.

You can duplicate tapes by recording from another tape deck/player or put 8-track tape programs on cassettes. You can put your favorite records onto cassettes, also. Make appropriate connections from another tape player or phonograph to the LINE IN jacks as noted previously.

Storage of tape is no major problem, provided you do not expose it to extreme temperatures or high humidity. Also, do not expose your tapes to magnetic fields (magnets, large transformers, etc.). Avoid dust and dirt. You may find storage containers to be extremely useful accessories; see your local Radio Shack store.

Demagnetize the tape heads and clean the tape handling parts periodically ... this will insure maximum frequency response and lowest noise. After a few hours of recording or playing, dust, lint and tape oxide will begin to build up on the tape heads and guides; this affects record and play quality. To achieve the professional quality this system is capable of, such dust, lint and oxide must be cleaned off. Also, the heads tend to retain residual magnetism after some hours of use...this introduces noise on both record and playback. To clean, we recommend using Radio Shack Catalog Number 44-1162 Cassette Head Cleaner or use cleaning sticks (44-1093) and Recorder Cleaner (44-1010). To remove residual magnetism, use a Tape Head Demagnetizer such as our 44-1165 Demagnetizer.

Our 44-1165 Demagnetizer removes residual magnetism in a matter of second.



REALISTIC

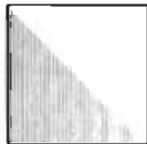
DOLBY* NR (Noise Reduction) SYSTEM

Your SCT-33 incorporates a Dolby C-type and B-type noise reduction system. The new Dolby C-type NR system starts enhancing program (and noise) from 100 Hz and rises 20 dB at 1 kHz and above when recording, and reduces the same amount when played back. The standard Dolby B-type NR system does the same from 500 Hz and 10 dB at 4 kHz and above.

With Dolby C NR and a good formula tape such as our Supertape Metal, tape noise will be below any program material you record — even when you play back at very high levels. Note that Dolby system reduces only the noise during the recording process: any noise from the original program source cannot be reduced.

What DOLBY* NR SYSTEM does

Making an ordinary recording:



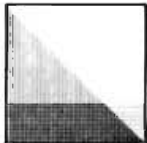
1. Music

Music is made of sounds of different loudness separated by intervals of silence. Loud and soft sounds are shown here as long and short lines. The music represented by this diagram starts loud and gradually becomes very quiet.



2. Noise

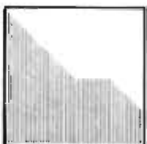
Any recording tape, even the best kind, makes a constant hissing noise when played. At the very slow speeds and narrow track-widths used in tape cassettes, tape noise is much more noticeable than it is in professional tape recordings, although even there it is a problem.



3. Music and Noise

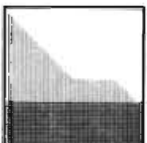
When a tape recording is played, the noise of the tape conceals the quietest musical sounds and fills the silence when no sound should be heard at all. Only when the music is loud will the noise be masked and usually not heard. However, tape noise is so different from musical sounds that it sometimes can be heard even then.

Making a Dolby* system recording:



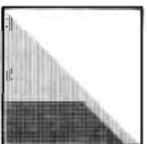
1. What the Dolby NR System does first

Before the recording is made, the Dolby NR system "listens" to the music to find the places where a listener might later be able to hear the noise of the tape. This happens mainly during the quietest parts of the music. When it finds such a place, the Dolby system automatically increases the volume so that the music is recorded louder than it would be normally.



2. The Recording

In a Dolby NR system recording the parts of the music which have been made louder stand out clearly from the noise. As a result, Dolby NR system recordings sound brilliant and unusually clear even when played back without the special Dolby NR system circuit.



3. What the Dolby NR System does during playback

When the tapes are played on a high-fidelity tape recorder equipped with the Dolby NR system circuit, the loudness is automatically reduced in all of the places at which it was increased before recording. This restores the music to its original loudness again.

At the same time, the noise which has been mixed with the music is reduced in loudness by the same amount — usually enough to make it inaudible.

	DOLBY NR SWITCH	DOLBY NR LED
IN C-TYPE		
IN B-TYPE		
OUT		

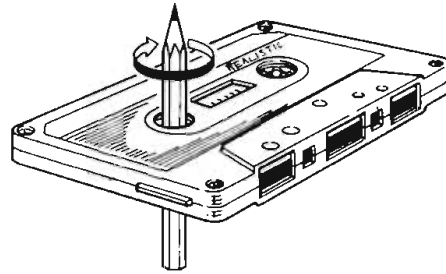
REALISTIC

TO AVOID MACHINE PROBLEMS

Your Tape Deck is a precision electromechanical instrument. It is ruggedly constructed and is designed for superior quality tape recordings and playback signals. To assure maximum enjoyment and optimum performance, there are a few things you need to keep in mind.

Always be sure you install a cassette properly before pressing any tape motion controls.

Keep your Tape Deck clean. Don't install it in an area where it will be exposed to concentrations of dust and dirt. Don't expose it to extreme temperatures. **It is absolutely vital that you periodically clean the tape handling parts.**



Tape slack in a cassette can cause trouble by getting caught in the Capstan or Pinch Roller. To avoid this, tightly wind up the tape using the pointed end of a pencil as shown.

If you intend to use long play cassettes (C-90 or more), **you must keep your Tape Deck clean and properly maintained.** These longer cassettes use very thin tape which can very easily get caught in the tape handling parts — **the only way to avoid this is by proper care and cleaning of the machine.**

If you are going to use your Stereo Cassette Tape Deck extensively, we urge you to obtain suitable tape accessories from your local Radio Shack store to insure maximum benefit from your unit.

CAUTIONS

The erase protection tabs on a cassette are a precaution against accidental erasure or rerecording. **Be sure the cassette has erase protection tab before you start recording.**

Before Recording or Playing back, be sure the cassette is properly seated in the cassette compartment.

Do not touch the face of the Tape Heads with any magnetic or metallic object.

Disconnect the AC cord plug from the AC outlet when the unit is not to be used for a long period of time or you are away from home.

When you are connecting the Tape Deck to other units which produce a high volume of leakage flux (large power transformers), hum may be induced into this unit, so stack the units with sufficient spacing between them.

Your Tape Recorder has a circuit which generates an electronic signal used in the recording process; sometimes this signal creates noise or a weak steady tone during AM reception/recordings.

If this should happen, keep the Tape Deck as far from the tuner as possible.

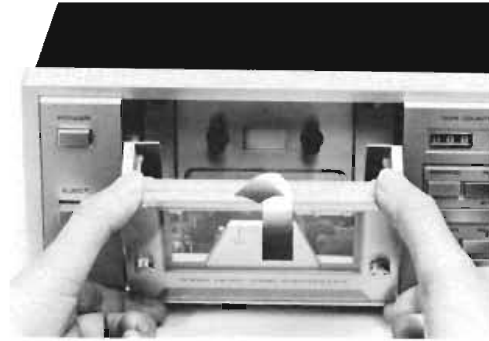
REALISTIC

SERVICE AND MAINTENANCE

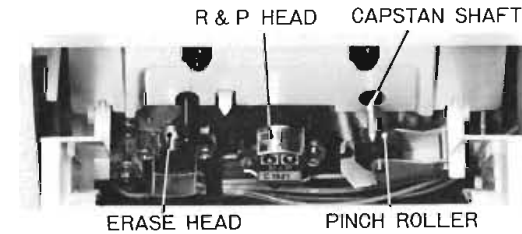
Only the highest quality parts are used in your unit and it should require little or no service as long as you observe a few general rules.

Although the SCT-33 is a ruggedly built unit, reasonable care should be taken to avoid rough handling. Avoid exposure to dirt and dust and areas of high heat and humidity.

Always keep your unit clean — especially the tape heads and tape handling parts — this will insure long life and maximum fidelity. Over a period of time it is normal for a certain amount of dust, lint and powder from the tape to accumulate on these parts. This prevents proper contact of the tape and results in improper tape handling (producing noise, partial "drop-outs" and poor frequency response). Periodically clean the tape heads and tape handling parts with tape head cleaner, head cleaning swabs or a cassette cleaner tape. Your local Radio Shack store carries a complete line of tape care accessories.



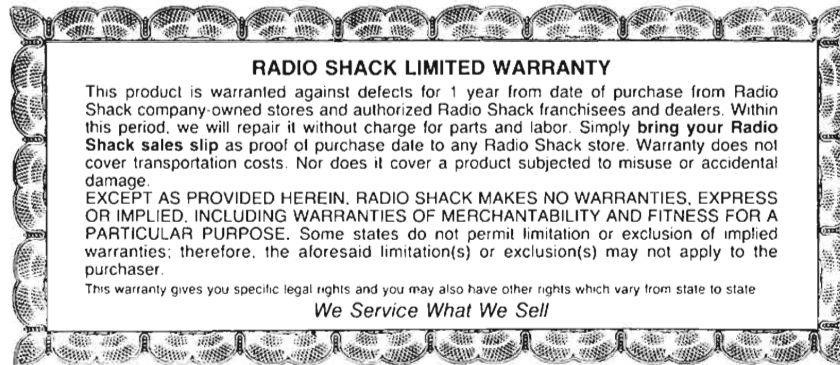
When the **EJECT** button is pressed, the cassette compartment comes out toward you. The cassette lid can be removed for easier cleaning by lifting it while holding both of its ends. You should then close the cassette lid frame to expose the tape handling parts that need cleaning.



Over long periods of constant use, the tape heads will tend to retain some magnetism. A magnetized head will produce noise. Thus, it is important that the heads be demagnetized periodically.

Periodic lubrication will insure proper operation of all moving parts. At least once a year you should bring your unit into your local Radio Shack store for standard lubrication and simple preventative maintenance by our service technicians.

REALISTIC



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**U.S.A.: FORT WORTH, TEXAS 76102
CANADA: BARRIE, ONTARIO L4M 4W5**

TANDY CORPORATION

AUSTRALIA

280 316 VICTORIA ROAD
RYDALMERE. N S W 2116

BELGIUM

PARC INDUSTRIEL DE NANINNE
5140 NANINNE

UK

BILSTON ROAD WEDNESBURY
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