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.

RADIO SHACK LIMITED WARRANTY

This equipment is warranted against defects for 2 years from date of purchase. Within this period, we will repair it without charge for parts and labor. Simply bring your sales slip as proof of purchase date to any Radio Shack store. Warranty does not cover transportation costs. Nor does it cover equipment subjected to misuse or accidental damage.

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

We Service What We Sell

REALISTIC AUDIO PRODUCTS are the proud result of Radio Shack engineering, research, development, and over 50 years of experience in electronics. Laboratories are maintained in Boston, Ft. Worth, Los Angeles, and abroad. In every sense a national brand, the Realistic label is worn with equal distinction by our highly original Communications and Citizens Band (two-way radio) products, and numerous other items including: tape, headphones, antennas, intercoms and tubes.

THE BRAND WITH OVER 10,000,000 CUSTOMERS

In choosing this fine Realistic product you have demonstrated a rather acute awareness of the good old American custom called "getting the most for your money." With Realistic this is not an idle boast.

The "line" was born in Boston, long famous for Yankee ingenuity — and thrift. Its original intent was to bridge a gap between $100 equipment and $25 equipment where, at the time, there was a real void in hi-fi merchandise.

Early products were a $39.95 FM tuner, a $29.95 preamp/amplifier, a $19.95 speaker. Soon we found ourselves a unique niche as manufacturing retailers.

Capacity and ability grew simultaneously. Soon Realistic hi-fi products — loudspeakers, receivers, tape decks, even table radios — began receiving critical acclaim for faultless performance as well as value. Dealers and franchises from all over the world began requesting a Realistic franchise.

Today you can shop The Worldwide Supermarket of Sound® with the confidence that you're getting the widest selection of quality hi-fi equipment available anywhere — whether you're looking at budget-priced extension speakers or true audiophile receivers.
Specifications

PRE-AMPLIFIER & AMPLIFIER
Audio Output Power at no-n-more than 0.09% Total Harmonic Distortion into 8 ohms, over the audio spectrum, 20 to 20,000 Hz.
Frequency Response: 40 watts (Minimum RMS Power, Both Channels Driven).
Sensitivity (1 Watt) from 20 to 20,000 Hz
PHONO 1, 2: 2.2 mV
AUX/TAPE IN: 160 mV
Tape Output Level
PHONO 1, 2: 135 mV
AUX: 130 mV
DIN Input/Output Level
PHONO 1, 2: 220 mV/3.3 mV
AUX: 63 mV
Signal-to-Noise Ratio
AUX & TAPE: 75 dB
PHONO 1, 2: 63 dB
Tone Control Action
Bass: ±10 dB @ 100 Hz
Treble: ±10 dB @ 1000 Hz

FM TUNER
Sensitivity (HF): 1.9 uV (10.8 dBf)
Limiting Sensitivity: 1.8 uV
Signal-to-Noise Ratio (1 mV): 65 dB
Total Harmonic Distortion: Mono 0.1% Stereo 0.5%
Stereo Separation (1 kHz): 48 dB
Image Rejection: 58 dB
IF Rejection: 85 dB
Alternate Channel Selectivity: 60 dB
Capture Ratio: 1.5 dB

AM TUNER
Terminal Sensitivity: 10 uV for 20 dB S/N
Radiated Sensitivity: 200 uV/m
Image Rejection: 45 dB
Signal-to-Noise Ratio: 43 dB
Total Harmonic Distortion: 0.8% (5 mV/m)
A.G.C. Figure of Merit: 50 dB
Selectivity (10 kHz): 32 dB
RF Interference Rejection: Rated excellent

ANTENNAS
AM: Built-in ferrite. FM: Linecord, plus terminal for External Antennas

POWER REQUIREMENTS
120 V AC, 60 Hz (450 watts max.)
(220/240 V AC, 50 Hz for Australian and European models as indicated on rear of unit).

General Description
Your STA-820 represents one of best values available today in a high-quality receiver. Its power, versatility and clean, modern styling make it a truly outstanding buy.
- 40 watts of clean “honest” power will drive almost any speaker system – even two sets of speakers!
- The FM front-end section utilizes Field Effect Transistor Circuitry. This means that your tuner has extra-high sensitivity combined with exceptionally low noise, plus unusual immunity to distortion caused by electrical interference at these high frequencies and minute signal levels. Maybe that’s a little too “technical” for you – but it’s all solid up-to-the-minute engineering technology.
- The FM/AM IF section is built around a Linear IC which assures minimum noise and low distortion, combined with high sensitivity.
- The FM multiplex section uses a newly developed Phase Lock Loop IC (P.L.L. IC) which assures stable stereo separation even if internal temperatures rise or drop.
- Muting eliminates interstation hiss on FM.
- Phono-preamplifier and Tone-preamplifier use newly developed operational amplifier ICs (OP-AMP IC) which assure high-gain, low distortion and wide dynamic range.
- High-power Main Amplifier are a true complementary OCL (Output Capacitor-less) circuit configuration which provides high-power with maximum reliability.
- Twin overload protection circuits automatically protect the amplifier from thermal and speaker problems (shorting or otherwise).
- Special noise-cancelling circuitry eliminates switching noise.
- Complete with factory-mounted wood-grained vinyl veneer covered wood case, and you don’t pay a penny extra.

NOTE: Before connecting the STA-820, please read the following instructions. They will insure your getting the most enjoyment from your new Receiver.
CONTROL FUNCTIONS

This brief description of each control will give you an idea of the versatility of your STA-820. Complete installation and operation instructions are contained in other sections of this manual.

SELECTION
Determines the desired program source.
AM — Activates the built-in AM tuner.
FM — Activates the built-in FM tuner.
PHONO 1 — Activates the PHONO 1 jacks on the rear panel. The turntable connected to these inputs must have a magnetic phono cartridge.

PHONO 2 — Activates the PHONO 2 jacks on the rear panel. For listening to a second magnetic-cartridge turntable.

AUX — Activates the AUX jacks on the rear panel. Connect any high-level source (tape deck, TV audio, ham radio, turntable equipped with a ceramic or crystal phono cartridge, etc.).

BASS
Controls low frequencies. At the center position, it does not affect the sound. Turn clockwise to boost bass response, counterclockwise to de-emphasize the low frequencies.

TREBLE
Controls high frequencies. At the center position, it does not affect the sound. Turn clockwise to boost treble response, counterclockwise to de-emphasize the high frequencies.

BALANCE
Adjusts balance of sound between left and right channels. At the center position (you'll feel a slight "catch" there) sound will be equal from both channels.

REALISTIC®
**VOLUME**
Adjusts volume of sound from both channels — from 0 to max.

**SPEAKERS A/B**
Determines which are connected: A (main) or B (remote).
Press in to connect the appropriate Speakers. For private listening with stereo headphones, leave both buttons out.

**POWER**
This separate push-button means you can leave VOLUME set as desired and just turn the Receiver on and off with a simple push. Press in to turn on (the dial will light up): press again to turn off.

**Tuning Knob**
Tunes AM and FM stations.

**PHONES**
Accepts any pair of low impedance stereo headphones. The jack is always “live”.

**FM25/4S (for USA and Canadian models)**
Converts Dolby* FM signals into standard Dolby NR system for decoding by a Dolby tape deck or decoder. When listening to a non-Dolby FM signal (or if you do not have a Dolby decoder), leave FM 25 µs button in out position.

*“Dolby” is a registered Trademark of Dolby Laboratories.

**HI FILTER** (for European and Australian models)
Press this button in to eliminate hiss and any high frequency noise.

**FM MUTE**
Press this button in to eliminate interstation noise when tuning for FM stations. Receiver will then be silent until you tune a strong (5.5 µV or better) station.
Leave FM MUTE in out position to receive weak FM stations.

**MONO**
When pressed in, switches the amplifier and tuner from stereo to monaural operation. In the “out” position, the amplifier operates in stereo and the FM tuner automatically switches to stereo when a stereo signal is present.

**TAPE MONitor**
Push in to play tapes or (with a three-head deck) to monitor a tape as it is being recorded.

**LOUDNESS**
With the button in, boosts low frequencies to compensate for the ear’s reduced sensitivity to bass at low volume. Push button again (to “out”) to remove the compensation.

**SIGNAL Meter**
Indicates relative strength of AM or FM signal. For AM stations, tune for highest reading.

**TUNING Meter**
Use when tuning FM stations. Tune for a center reading.

**STEREO Indicator**
This bright red LED lights up if the MONO button is out and you are tuned to a stereo FM signal.
1. UNSWITCHED Convenience Outlet
Powers any audio accessory up to 100 watts. The front panel POWER switch does not affect this receptacle (it's always on).

2. POWER FUSE
Protects the Receiver from voltage surges, short circuits and other abnormal operating conditions. If the dial light does not go on when POWER is on, check the fuse. If it is blown, replace it with an identical size and value (5 A).

3. AC Cord
Supplies the Receiver's power. Plug into any 120 V AC, 60 Hz outlet (220/240 V AC, 50 Hz for European and 240 V AC, 50 Hz for Australian models as indicated on rear of unit).
4. A SPEAKERS Screw Terminals
Powers main speakers which do not have phono Jack connectors.
NOTE: Use either phono jack or screw terminals for A speakers, not both.

5. A SPEAKERS Phono Jacks
Powers main speakers which have phono jack connectors.
NOTE: Use either phono jack or screw terminals for A speakers, not both.

6. B SPEAKERS Screw Terminals
Powers remote Speakers.

7. TAPE IN/OUT DIN Jack
If your Tape Recorder has a DIN-type socket, use a cable with DIN-type connectors and plug into the DIN-type socket on the Receiver.

8. DUB OUT
If you have a 2nd Recorder, use these jacks to duplicate a recording or make two recordings at one time.

9. TAPE OUT
Permits tape recording any source chosen by the Selector. The output from these jacks is unaffected by the front panel controls.

10. TAPE IN
Accepts output from any tape deck or recorder for tape playback. These jacks are active only when front panel TAPE MON switch is pressed in.

11. AUX
Accepts output from any high-level source — a second tape deck or tuner, a ceramic or crystal phono cartridge, etc. These jacks are active when Selector is set to AUX.

12. PHONO 2 Jacks
Connect Record Changer/Turntable with magnetic cartridge to these jacks. These jacks are active when Selector is set to PHONO 2 position.

13. PHONO 1 Jacks
Same as PHONO 2 for connecting another Record Changer/Turntable with magnetic cartridge. These Jacks are active when Selector is set to PHONO 1 position.

14. Phono GND Screw
Connect the ground lead (typically green or black) from the Record Changer/Turntable to this screw (to reduce or eliminate hum).

15. FM Line Cord Antenna
Connect to the 300 Ω FM screw terminal illustrated to provide FM reception in most metropolitan areas. Disconnect the line cord antenna when using an external FM antenna.

16. FM ANTenna 300Ω Screw Terminals
Connect antennas using standard 300-ohm lead-in to these screws.

17. FM ANTenna 75Ω Screw Terminals
Connect antennas using 75-ohm coaxial lead-in. Coaxial cable provides extremely high resistance to static and other noise.

18. AM ANTenna Screw Terminal
Connect an external AM/short-wave antenna to this screw for long-distance AM reception. In most areas the built-in antenna will provide excellent reception.

19. Built-in Ferrite AM Antenna
Is adequate in most areas for AM reception. Move around on its swivel for best reception.
A Typical System: STA-820, Turntable, 4 Speakers, Tape Decks and Shortwave Radio

ANTENNA CONNECTIONS

REALISTIC®
CONNECTIONS

BEFORE MAKING CONNECTIONS:

1. Do not plug in the Receiver’s power cord.
2. Be sure POWER is off.

NOTE: To reduce hum; use shielded audio cables for all connections except speakers.

SPEAKERS

The STA-820 has two sets of A (main) speaker outputs — use only one set. If your speakers have phono plug inputs, use the Receiver’s phono plug outputs and a set of unshielded speaker cables. Otherwise use the Receiver’s screw terminal outputs.

For maximum bass response, be sure to observe proper phasing. Connect the + Receiver speaker output to the speaker terminal labeled A, 1 or +; and the − output to the speaker terminal labeled B, 2 or −. Most speaker wire is marked with a ridge along one conductor or has one color-coded conductor. If you use preassembled phono plugs, phasing will automatically be correct.

Connect B (remote) speakers following the instructions above. Be sure the speakers are phased properly.

NOTES: 1. The SAT-820’s outputs are designed for 4-16 ohm speakers. However, when more than one set of speakers is being connected, use only 8-16 ohm systems. This will prevent the amplifier from being overloaded.
2. When using the screw terminals, be sure no stray strands of wire touch a second terminal or the chassis — a harmful short could result.

3. Connect no more than two sets of speakers to the Receiver.
4. Use only as much wire as necessary to connect the speakers.

If you are using 4-ohm speakers, connect only one set of speakers, or use only one set of speakers at a time. That is, don’t press in both A and B SPEAKERS buttons if one set is 4 ohms. Low-impedance speaker systems will tend to trip the automatic circuit protection/amplifier shut-down circuitry when operating at high volume levels (to prevent damage from amplifier overdrive). Also, see Overload Protection, Page 12.

TURNTABLE

Connect the turntable leads to the PHONO inputs (PHONO 1 or 2). Be sure to observe correct Right (R) and Left (L) channel cable connections (usually the cables are marked). If the turntable has a ground wire (usually green or black), connect it to the PHONO GND screw. Plug the turntable’s power cord into an AC outlet or Receiver’s UN-SWITCHED convenience outlet.

(NOTE: If the turntable has a ceramic or crystal cartridge, connect it to the AUX jacks.)

TAPE DECK

Using shielded cable, connect the STA-820’s TAPE OUT jacks to the tape recorder’s input, usually labeled AUX/LINE IN. Connect the tape deck output to the Receiver’s TAPE IN jacks. Plug the deck’s line cord into the AC OUTLET (UN-SWITCHED) or into a wall socket.

If you want to duplicate (or dub) a recording, or make two recordings at a one time, use shielded cable to connect the STA-820’s DUB OUT jacks to a second tape recorder’s input.

If your tape recorder has a DIN-type socket, use a cable with DIN-type connectors and plug into the DIN-type socket on the Receiver.

A second tape player (8-track, cassette or reel-to-reel) can be connected to the AUX INPUT jacks. Thus, you can play tapes when using the AUX position of the Selector switch.

ANTENNAS

Be sure the line cord FM antenna is connected to the FM ANT 300 Ω terminal. The built-in AM antenna requires no attention.

If you need an external antenna, see HINTS FOR BETTER SOUND.

AUXILIARY

Plug the output from any high level source into the AUX jacks. This input is ideal for a second tuner, TV audio, ceramic or crystal phono cartridges, a tape player, shortwave radio, etc.

REALISTIC®
CHOOSING THE REST OF YOUR SYSTEM

SPEAKERS
No stereo system sounds better than its speakers, so choose the best you can afford for your front or main speakers. With a high quality receiver like the STA-820, you should carefully consider Radio Shack's Optimus and Nova-series speakers. To be able to hear your new receiver's superior performance, we recommend one of the Minimus speakers as a minimum investment.

Of course there are a wide variety of speakers intended primarily for remote use. Some are weather-proofed for outdoor installations and others offer the convenience of a built-in volume control. Naturally, if you plan to use your remote speakers for critical listening, you should consider using similar high quality speakers for both your main and remote installations.

Your nearby Radio Shack has a complete selection of speakers for every application and budget.

TURNTABLE
For convenience, most people prefer a record changer (often called an automatic turntable) to a manual turntable. A changer will play an entire stack of records and return the tonearm to its rest at the end of the last record.

For the best sound, your turntable should be equipped with a magnetic cartridge. Cartridges equipped with conical stylus (needles) are usually inexpensive and have good sound. But a cartridge with an elliptical stylus follows the record groove more accurately, and so, produces better sound. Your Radio Shack store has a selection of changer systems which come with factory-mounted bases and cartridges.

TAPE DECKS
Until very recently, reel-to-reel tape decks were the only possible choice for those interested in true high-fidelity. But recent technological advances have made 8-track and cassette recorders approach the sound quality for reel-to-reel machines.

Reel-to-reel decks are a must for those who want to edit their own tapes, and they still have marginally the best performance.

The best cassette decks, equipped with special tape bias settings and noise reduction circuitry, will out-perform many reel-to-reel decks. They have the additional advantage of compactness and convenient pop-in loading. In addition, cassettes can be used in the car as well as at home.

8-track cartridges provide slightly less fidelity than cassettes or reels but have several advantages. An 8-track recorder plays pre-recorded car tapes at home and can save money by recording new auto tapes. In addition, an 8-track cartridge uses a continuous tape loop which can provide hours of uninterrupted music. Many 8-track playback decks are less expensive than record changers and let you use car tapes at home.

HEADPHONES
Any system can benefit from a good pair of stereo headphones. They provide convenient private listening and many people find the heightened stereo very exciting.

Your STA-820's front-panel headphone jack will accept any low impedance stereo headphones. When shopping, wear each pair of headphones long enough to be sure they will be comfortable.

ANTENNAS
Under normal conditions your Receiver's built-in antennas should provide adequate AM and FM reception. If you have difficulty, see HINTS FOR BETTER SOUND.
OPERATING THE STA-820

BEFORE PLUGGING IN THE STA-820

1. Double-check all connections — especially the speaker connection — to assure that all are firm and that there are no shorts.
2. Set VOLUME to 0.
3. All pushbuttons should be out.

Now, plug in Receiver and push POWER button in to turn it on.

SPEAKERS/HEADPHONES

If you have Main speakers connected, press in SPEAKERS A; to activate Remote speakers, press SPEAKERS B. To activate both speaker pairs, press both buttons.

The PHONES jack permits headphone listening with any or all of the speakers. For private listening, press the SPEAKERS buttons to “out”.

VOLUME

Increase or decrease the VOLUME control setting for a pleasant listening level.

BALANCE

If necessary, adjust BALANCE for best stereo effect and channel balance, or to compensate for slightly off-center listening positions.

SELECTOR

Choose the input you want by turning the Selector switch.

AM — Use the Tuning knob to find the desired station. Fine-tune for the highest reading on the SIGNAL meter.

FM — Use the Tuning knob to select the desired station. If you’re tuned to a stereo FM station, the STEREO light will come on. Adjust Tuning for center reading on TUNING Meter.

PHONO 1/2 — Adjust the VOLUME, BALANCE and Tone controls. For the best sound and longest record life, do not track your cartridge below the recommended force. Light tracking may actually cause more distortion than heavy tracking.

AUX — Adjust VOLUME, BALANCE and Tone controls. The auxiliary input can be used for any high-level source such as a tape player, a second tuner, TV, ceramic or crystal phono cartridge, ham radio, etc.

NOTE: If the TAPE MONitor button is pressed in, the Selector switch will have no effect on the sound.

FM25 µS

For normal listening, leave FM 25 µS button out. If you want to record a signal being broadcast by an FM station using Dolby NR system, press this button in. Then, when you play back the tape, you must use a Dolby Decoder (that is, record with a Dolby-type tape recorder, but with Dolby circuit “off”, then play back with the Tape Deck’s Dolby circuitry “on”). If you press the FM 25 µS button in when listening to a Dolby FM signal, the sound will be excessively “bright” (too much high-frequency emphasis). If you have a Dolby NR Decoder, you can connect it to the TAPE IN/TAPE OUT jacks, press the FM 25 µS and TAPE MON buttons in. When an FM station is broadcasting a Dolbyized FM signal, you will be able to enjoy the following advantages:

○ Improved signal-to-noise ratio
○ Full program dynamic range, even at high frequencies
○ Improved reception in weak-signal areas

NOTE: HI FILTER is provided for European and Australian models instead of FM 25 µS. Press the HI FILTER button in to eliminate the pop and clicks on an old record, hiss from tape or FM — or any high frequency noise.

FM MUTE

Pressing FM MUTE button in removes interstation hiss and noise for FM stations.

When tuning weak stations you may need to turn the Muting off to receive a signal.

MONO

Press the MONO button to defeat normal stereo operation. The result is a composite signal (left + right). When you listen to weak FM stereo stations, pressing the MONO button will reduce the hiss, but the signal will no longer be stereo.
TAPE MONitor
Press the TAPE MONitor button in to play tapes or (with a three-head deck) to listen to tapes immediately after they have been recorded. IF NO TAPE IS BEING PLAYED, PRESSING THIS BUTTON WILL SILENCE THE RECEIVER.

LOUDNESS
When listening at low volume, press the LOUDNESS button. This overcomes the ear’s reduced sensitivity to bass at low volume by boosting the low frequencies.

BASS
Turn the BASS control toward + to boost the low frequencies or toward — to de-emphasize them. In the center position, the control has no effect on the sound.

TREBLE
Turn the TREBLE control toward + to boost high frequencies or toward — to de-emphasize them. In the center position, the control has no effect on the sound.

OVERLOAD PROTECTION
Your Receiver has built-in, automatic overload protection. If an abnormal load is presented to the speaker terminals, this protective circuit will automatically silence the Receiver. If this happens, turn POWER “off” and check all speaker connections; be sure no pieces of wire are touching between speaker terminals and be sure you don’t have 4 ohm speakers connected for both A (MAIN) and B (REMOTE). When you are sure everything is OK, apply power once more.

THERMAL PROTECTION
Your Receiver also has built-in thermal overload protection. This means it can not become abnormally hot and damage some portion of the circuitry. If internal temperatures do rise abnormally, the Receiver will automatically silence itself. If this happens, check to be sure you have not placed something over the ventilation holes — if you have, remove it. If you are using speakers with excessively low impedance, the amplifier circuit may be over-driven and thus producing excessive heat. This can be caused by using 4 ohm speakers on both Main (A) and Remote (B) speakers — if you use both pairs of speakers, be sure to use either 8 or 16 ohm types.

HINTS FOR BETTER SOUND

POSITIONING YOUR SPEAKERS
Where you put your speakers is a highly personal matter, depending largely on the arrangement of your listening room and the way you listen to music. Where you put your speakers does make a difference in how your system will sound, so before settling on a final arrangement, try several positions.

Bass response is highly dependent on speaker location. For maximum bass, place the speakers in the corners of your room. Putting the speakers directly on the floor will make the bass even stronger. If the bass sounds boomy and exaggerated, move the speakers away from the corner slightly, pull them out from the wall a little or raise them 6 to 18 inches (15–45 cm) off the floor.

Stereo
In an average room, stereo speakers should be 6 to 8 feet (1.8–2.4 m) apart. Putting them too close together reduces the stereo effect, while placing them too far apart reduces bass response and creates a “hole in the middle”. Also, most speakers have a tweeter dispersion angle of about 60°. Ideally your listening position should be in the overlap, so you may want to angle the speakers toward you for better stereo.
ANTENNAS
Under most conditions your STA-820's built-in antennas should be adequate for AM and FM reception. If you experience difficulty with reception in your area, try one of the arrangements listed below.

For FM, build the low-cost folded dipole (illustrated); or buy one ready-made from Radio Shack (42-2385). Just splice regular 300-ohm lead-in wire as shown. Apply a small amount of solder and heat the twisted ends until solder flows evenly over each strand of wire. Attach the lead-in to the 300 Ω terminals on the back of the receiver. The antenna itself can be tacked to the back of a record cabinet or onto a wall — the higher the better. (If possible, turn the antenna; this will affect signal pickup.)

A set of VHF-TV rabbit ears or ones made specially for FM reception work well in suburban areas. Some deluxe models feature electronic "tuning" for better directionality. Connect such antennas to the 300 Ω terminals.

An outside VHF-TV antenna provides excellent FM reception. An inexpensive "splitter" permits you to connect a TV set and your Receiver to the same antenna. In fringe areas, a special outdoor FM antenna may be the only solution. Such antennas can pick up stations up to 175 miles (280 km) away over flat terrain. If you use 300-ohm lead-in, connect it to the 300 Ω terminals and if you use 75-ohm lead-in connect it to the 75 Ω terminals. (Attach the braided ground wire of 75 ohm lead-in to the terminal common to the 75 Ω and 300 Ω antenna terminals or connect the braid under the clamp as illustrated.) For AM, a long piece of wire hung outdoors between two insulators can greatly improve long-distance AM reception.

Connecting an L-Pad
In some cases you may want to vary the volume of the remote speakers separately. This can be done very simple and inexpensively with a stereo L-pad, such as Radio Shack Catalog Number 40-979.

NOTE: To protect your Receiver, use a lightning arrester on any outdoor antenna.
Notes on Tape Recorder Care
A clean, demagnetized recorder will give its best performance for many years, while a dirty recorder can mangle or ruin pre-recorded tapes in a very short time. An inexpensive demagnetizer (degasser) removes residual magnetism from the tape heads. This will insure the lowest possible hiss and distortion and the best possible high frequency response. Always clean and demagnetize your recorder before making critical recordings. Under normal conditions you should demagnetize your recorder after every 10-15 hours of play. With normal use you should clean the heads and metal tape guides once or twice a month with a special solvent such as Realistic Recorder Cleaner (catalog number 44-1010). Moisten a clean cotton swab with fluid and rub the heads with short circular movements. Then clean oxide deposits from all metal guides. There are also a number of cloth cleaning tapes which can be played like a tape for fast, easy cleaning.
You can even use your demagnetizer to help remove oxide particles trapped deep in the head gaps. Place a cleaning moistened cotton swab over the gap and bring the demagnetizer into contact with it. Move the swab and demagnetizer in short, circular sweeps. Gradually withdraw the demagnetizer and remove the dirty swab.
Yearly preventive maintenance by an authorized technician reduces the possibility of expensive major breakdown and will keep your recorder in peak operating condition.

CARING FOR YOUR STA-820

The STA-820's wood-grained vinyl veneer covered wood case requires little attention other than to dust it. Using a wax will tend to produce a build-up which results in dull and white or grayish finish. So we suggest dusting only with a soft cloth. Wipe up spills (or stains) with a slightly detergent and water moistened cloth. Treat the front panel with care so you don't scratch it. A window cleaning liquid works well (a small amount on a soft cloth).

Ventilation — can be important. We merely recommend that you don't place the STA-820 on a surface which would block air circulation — air must be able to circulate freely around the back, under and over the top of the case. Avoid placing on a shag rug, etc. which would block such circulation.

If You Have Problems
We hope you don't; but if you do, here are some suggestions:

1. Check all your cable connections. Make sure all the leads and plugs are secure at both ends.
2. Try a different AC outlet if you don't get any indication of power (and be sure you've got the line cord plugged in). (Is a wall switch "off"?)
3. Try interchanging cables and connections on the rear panel — sometimes this will give you a hint of where the problem lies — and may solve the problem for you.
4. If the dial scale lights are on and Meter works — but you have no sound — make sure you don't have TAPE MON pressed in! If that is not the case — maybe the automatic current limiting protection circuit has been activated. In such a case, turn off POWER and check your speaker connections.
5. The dial lights don't come on, the fuse may be blown. Check it; replace only with a 5 Amp type.

A. Make sure there isn't a short across the speaker screw terminals (stray strand of wire touching between terminals or to the metal chassis).
B. If you are using more than one pair of speakers, they must be 8 or 16 ohm type (two pairs of 4 ohm speakers can overload the amplifier circuit and cause this circuit to activate).
C. Is the unit hot? Let the Receiver cool down for a few minutes and then turn POWER back on.

In any case, if none of the above does the job and you still have a problem — help is as close as your local Radio Shack store. Bring your unit in and be ready to describe the symptoms — we will get you back into good stereo sound ASAP!
NOTE: (1) Ss-1~Ss-8: FUNCTION SELECTOR SWITCH.
POSITION: 1 - AM, 2 - FM, 3 - PHONO-1, 4 - PHONO-2, 5 - AUX, C - COMMON.
(2) PS-1~PS-2: POWER SWITCH.
(3) ALL RESISTANCE VALUES ARE INDICATED IN "OHM" (K = 10^3 OHM, M = 10^6 OHM).
(4) ALL CAPACITANCE VALUES ARE INDICATED IN "µF" (P = 10^{-12}µF).
(5) VALUES IN MAIN AMP STAGE ARE USED FOR C.S.A. MODELS ONLY.
(6) * MARKED TRANSISTOR ARE USED FOR C.S.A. MODELS ONLY.
SPEAKERS – FOR THE MUSIC MINDED

For years Radio Shack has been known for its line of speakers. Back in the days when speakers often were priced higher than a good receiver—Radio Shack brought out the Optimus line which proved a speaker didn’t have to be expensive to sound expensive.

And today, we are THE place to go for speakers. Whether you are looking for a real-wood piece of furniture that sounds good or just a small bookshelf-type. Everything from our big sound Mach One to our sophisticated Optimus Tower to our handsome Minimus 5.