

Please read before using this equipment.

OWNERS MANUAL



REALISTIC®

HIGH FIDELITY

Catalog No. 31-2016

MODEL STA-65B
Solid State 72-Watt Stereo FM-AM Receiver



Sold, serviced and guaranteed from coast-to-coast

Engineered by RADIO SHACK®, Division of Tandy Corporation

REALISTIC[®]

THE BRAND WITH OVER 1,000,000 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.

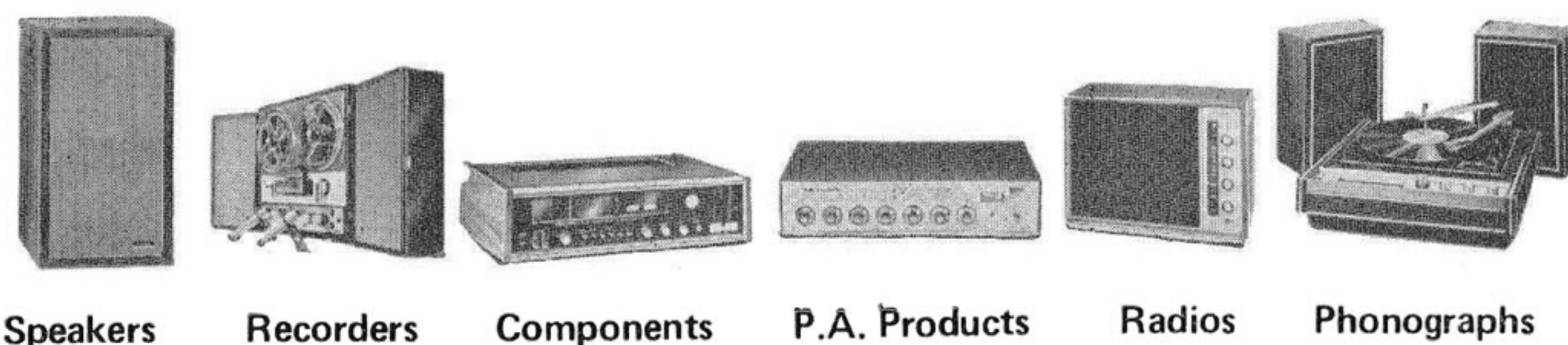
Early products were a \$39.95 FM tuner, a \$29.95 preamp/amplifier, a \$19.95 speaker. Soon we found ourselves a unique niche as manufacturing retailers.

Capacity and ability grew simultaneously. Our Realistic Electrostat-3[®] electrostatic tweeter — now used in the Electrostat-2A speaker — was called a "best buy" by the country's leading product-review magazine. Our 10TRF radio out-performed practically anything then available. And dealers from all over the world began requesting a Realistic franchise.

Recent "firsts" include: the first medium cost DC/AC communications receiver totally engineered in solid state — the Realistic DX-150; the first properly designed low-cost police band radio — the Realistic Patrolman; the Realistic Optimus-1 loudspeaker, bringing "over \$120 sound" down 33%; the first lifetime-guaranteed vacuum tube; and the Realistic STA-120 stereo receiver which combined massive power, modern styling, and a veritable host of new ideas — at a cost fully \$100-\$200 below its value under traditional marketing practices.

But of course! — Realistic marketing practices are NOT traditional. First: the line is restricted in distribution. Second: we do not have sales representatives and other normal "trade" costs, nor do we waste money and tools on frequent model changes to attract new dealers — a new model is a NEW model, a current model is one that gets a steady stream of improvements at no cost to you and without a lot of wild (and expensive) claims of novelty.

We do not "sell" watts of power or speakers by the number; or rely on the usual confusing array of "Manufacturer's Specifications", most of which are, sad to say, quite irresponsible. We sell three things only: sound with minimum distortion, value without hidden extras, and ingenuity. Realistic's market share has grown satisfactorily on this basis. We think it's the way YOU want us to be.



REALISTIC AUDIO PRODUCTS are the proud result of Radio Shack engineering, research, development, and over 45 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.

Model STA-65B General Description

Your STA-65B is a solid state stereophonic receiver with an output of 72 watts, full controls for radio and tape and records, a number of truly unique features, and comes to you mounted at the factory in a walnut cabinet for which you do NOT have to pay the usual \$ 29.95 or so extra.

The AM radio is wideband in design, meaning the STA-65B reproduces the maximum fidelity of which the medium is capable.

The FM radio section has a superb FET-transistor front end and performs exactly the way an audiophile would expect.

There are two meters (explained in manual) for FM tuning; one doubles for AM tuning. Most receivers at any price give you only one meter. Realistic thinks you need two.

The amplifier is rated at 72 watts. More than this is, in our view, superfluous. Even 72 is at the upper limit of practicality considering loudspeaker limitations and one's capacity to "take" more than just a few watts for periods longer than milli- or even micro-seconds.

Every provision for tape recorder use has been provided: monitor switch, tape in and tape out.

GUARANTEE: the Realistic guarantee is stated on the Fact Tag packed with the equipment. It is in effect from coast to coast. At any time, Realistic equipment may be restored to new condition with original parts with MINIMUM delay anywhere in the U.S.A., usually in your own neighborhood. It is NOT necessary to return Realistic equipment to our Laboratories in 98% of the cases.

Model STA-65B General Specifications*

* Note: These are given in general form only since Realistic does not believe in buying to or designing to numerical specifications. The latter are subject to variables unrelated to performance, just as frequency range, the number of transistors or IC's or watts, etc., is totally irrelevant to the end product in terms of sound quality. Our philosophy is that hi-fi equipment should be classified as musical instruments, their quality and relative value being judged the way a pianist selects between brands and styles of pianos. Thus Realistic designs toward *achieving a certain sound*... regardless of cost, regardless of lab measurements, regardless of competitive advertising claims. Price is determined by parts, tool and labor costs, features, and physical size. Sound is determined by our "electronic musicianship" tempered by your appreciation of the result.

Amplifier-Preamplifier Section

Audio Output: 72 watts (36 w/channel) IHF.

Harmonic Distortion: Under 1.0%.

Frequency Response: ± 1 db 20-25,000 cps or better.

Tone Controls: Bass ± 10 db @ 50 Hz, Treble ± 10 db @ 10,000 Hz

Hum (Phono): -65 db

Radio Tuner Section

FM Sensitivity: 2.5 uv for 20 db S/N.

FM Stereo Separation: 30 db @ 1000 cycles.

FM Image Rejection: 35 db.

FM Signal-to-Noise Ratio: 65 db.

AM Sensitivity: 100 uv.

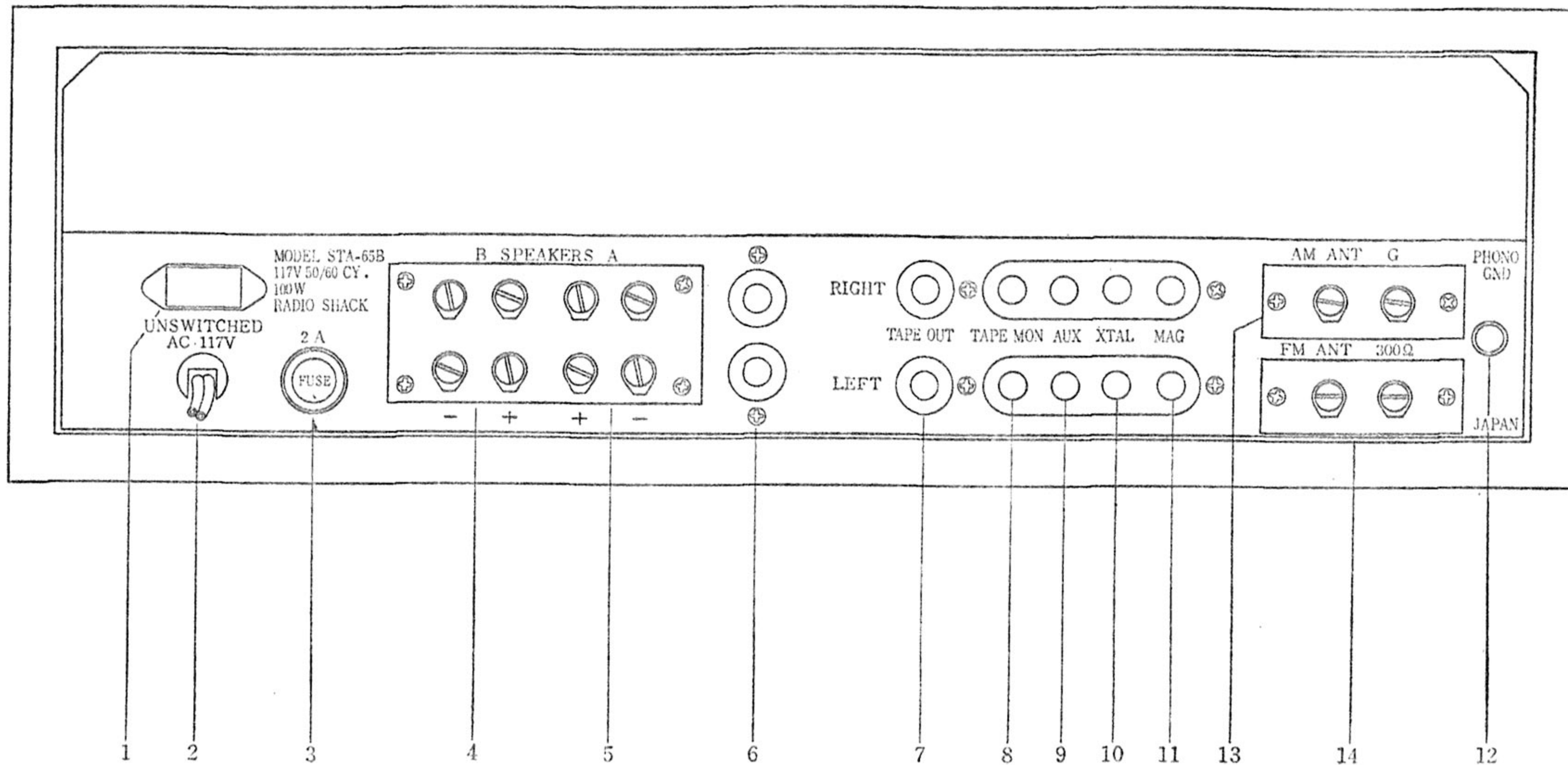
AM Image Rejection: 35 db.

AM Signal-to-Noise Ratio: 40 db

Antennas: Built-in AM and FM, plus external facilities.

This equipment designed for 117 V AC 60 cycle operation. Before operating for first time: be sure speakers are properly attached (see manual).

Rear Panel Inputs And Outputs : Identity And Location



(1, 2, 3) Power And Protection

- 1—Spare AC receptacle (unswitched) for changer or deck.
- 2—AC line cord for 117 volt 60 cycle AC current 100 watts.
- 3—Main fuse (2A).

(4, 5, 6) Speaker Connections

- 4—Screw terminals for remote (B) stereo speaker pair.
- 5—Screw terminals for main (A) stereo speaker pair.
- 6—RCA-type jacks for main stereo speaker pair if equipped with RCA-type plugs.

(7, 8) For Tape Recording

- 7—Tape output jacks.
- 8—Tape input jacks.

(9, 10, 11, 12) Aux And Phono Connections

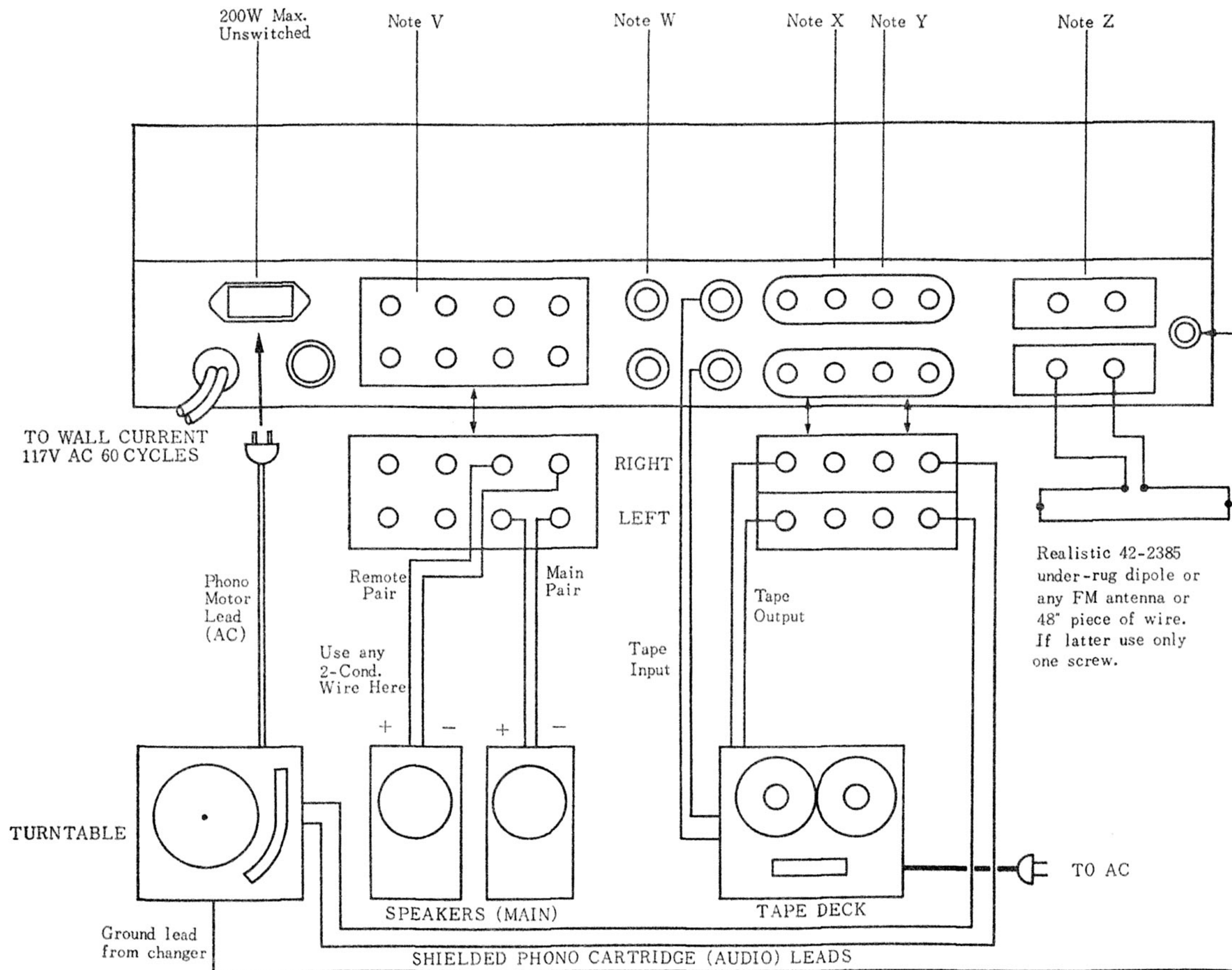
- 9—Auxiliary input jacks.
- 10—Crystal or ceramic phono input jacks.
- 11—Magnetic phono input jacks.
- 12—Grounding screw for record changer.

(13, 14) AM And FM External Antennas

- 13—AM antenna screw terminal.
- 14—FM antenna screw terminals, use one for single 48" wire, both for 300-ohm dipoles and outdoor types.

Note: The STA-65B has built-in AM ferrite antenna, plus built-in FM line antenna suitable for strong signal area only.

A Typical System : STA-65B, Changer, 2 Speakers, Tape Deck



Note V: for "remote" (B) speaker pair; connect same as "main" pair in diagram. Always observe (+) and (-) polarity to properly phase speakers.

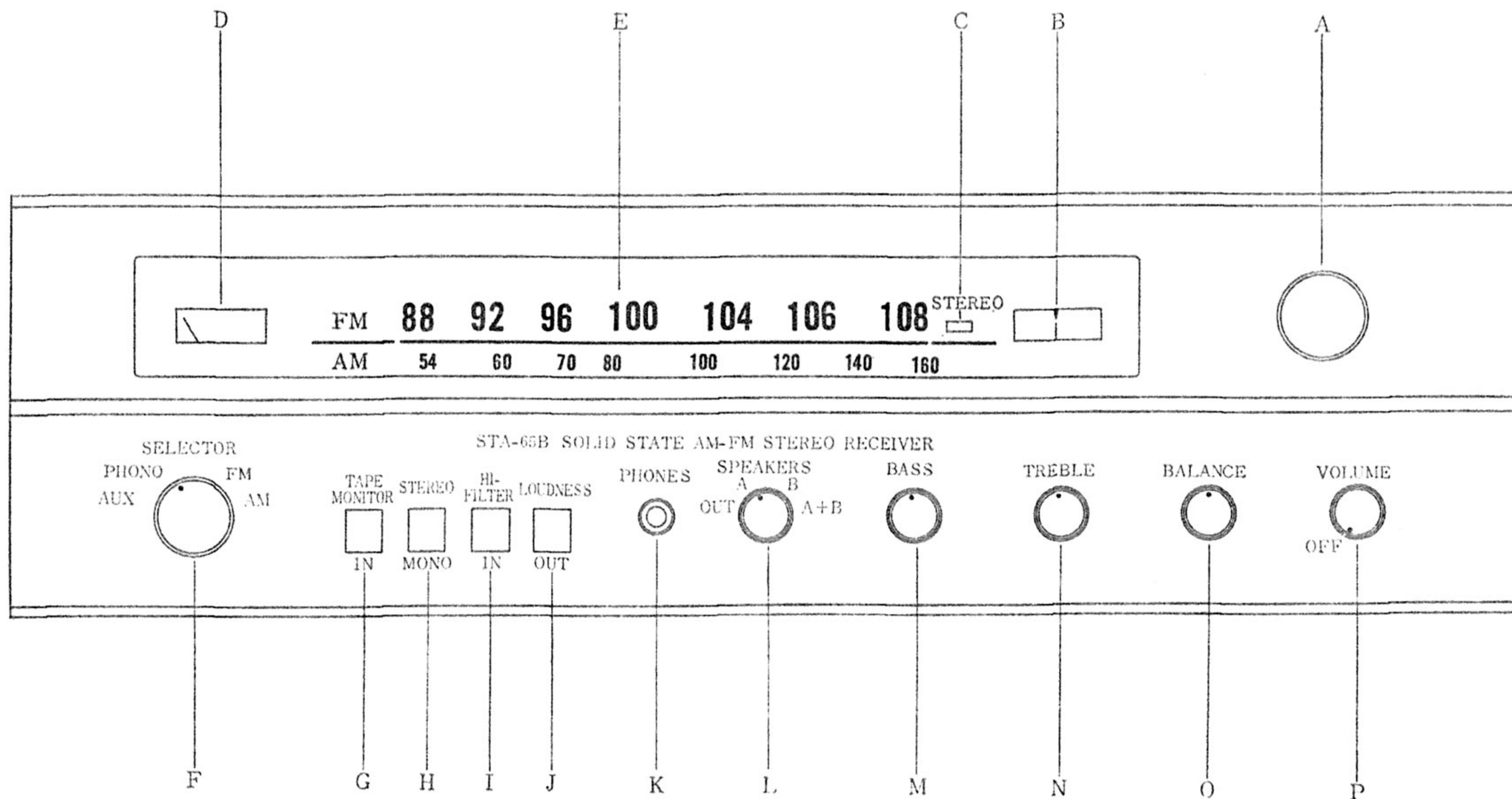
Note W: for "main" speaker pair IF leads have RCA-type phono plugs only.

Note X: Aux input for 2nd recorder, TV set, ham receiver, etc. High level.

Note Y: Input for second cartridge (non-magnetic).

Note Z: for external AM antenna if required (unlikely).

Model STA-65B Front Panel Controls: Identity And Location



(A, B, C, D, E)

- A—Tuning Knob
- B—Illuminated FM center tuning meter
- C—Stereo indicator light
- D—Illuminated FM-AM signal strength meter
- E—Illuminated slide rule dial

(F, G, H, I, J) Mode/Sound Controls

- F—Rotary program selector knob
- G—Tape monitor switch
- H—Stereo-mono switch
- I—Hi-filter switch
- J—Loudness switch

(K, L) Speaker/Phone Controls

- K—Stereo headphone jack
- L—Rotary speaker selector switch

(M, N) Tone Controls

- M—Bass tone control knob
- N—Treble tone control knob

(O, P) Volume Controls and Power Control

- O—Balance control knob
- P—Volume control knob and on/off switch

How To Operate The STA-65B Receiver Controls

Before turning on this equipment, a "main" pair of stereo speakers should be attached per example on Page 3, using any 4 to 16 ohm speakers (usually 8-ohm types). As the true capability of the STA-65B—in terms of sound quality—cannot be better than the speakers employed, we recommend our Minimus series (absolute minimum) or our Electrostat and Optimus series speakers (preferred). All "flip-lever" switches should be in Up position, speaker selector should be on A position and power should be off.

Radio Tuning Controls (Photo A, B, C, D, E)—2 Meters, Not 1

To tune FM and AM rotate the knob A; if tuning FM (see below) selector knob F will have to be in FM position. The stereo lamp will light—and set will receive stereo automatically—if station is broadcasting stereo and mode switch H is in stereo position; mono FM is also automatic if station is broadcasting mono even though H is in stereo position.

The *left meter* D is for FM and AM signal strength indication; tune to maximum deflection. The *right meter* acts and illuminates on FM only—this is an FM "center turning" meter and tuning is achieved as follows. (1) rotate tuning knob A until *right meter* is at null or center position; this optimizes antenna operation in its existing position. (2) *Left meter* (signal strength) now automatically registers relative strength of incoming signal. (3) To improve the latter, re-orient your FM antenna if possible and repeat steps (1) and (2) in that order. The value of the 2nd meter is obvious, and tuning is no more complicated.

Speaker/Phone Controls (Photo K, L)

For private listening plug any good stereo headset such as Realistic 33-1002 or 33-195 into jack K and turn speakers ("main") off turning knob L to off. If you have never experienced headphone stereo you will be extremely surprised at the sound quality and sensation of wide separation.

Connect 4-to-16 ohm (preferably 8-ohm) speakers per sketch on page 3, knob L controls the "main" pair of speakers in position A, "main" meaning "same room". In position B a pair of "remote" speakers, a second pair in any room, will be turned on and the main will be off. Position A+B turns both pairs on.

Use any 2-conductor wire to connect each speaker taking

care to: (1) let no bared wire touch any other bared wire, and (2) to phase speakers properly by running (+) to (+) and (-) to (-) as indicated on terminals of equipment and your speakers. If Page 3 sketch is followed you cannot make a mistake. Your dealer will supply you with the proper wire for speaker connection. A (+) to (-) wiring error will not damage the equipment but may result in speakers being "out of phase"—meaning that while one is moving forward, the other is moving rearward, resulting in some loss of bass and stereo effect.

It is generally considered that stereo speaker pairs should be similar speaker systems and that the proper spacing between them is 6 feet or more. However there are other relationships to consider, including: normal listening distance from you to speakers, "hard" or "soft" room, dimensions of room, and personal variables.

Caution: when attaching bared end of speaker wire to a terminal, end of wire should be wrapped clockwise around screw. Do not attach any speaker wire to any terminal or ground other than those assigned. If one channel is "out" and one is playing, the probability of a wiring short at terminal of equipment or speaker itself is 90%. If both channels are "out" the first check is the main fuse (Page 2, item 3) and a check to see if wall socket is actually "live" or if plug mates to socket.

How To Operate The STA-65B Receiver Controls (Continued)

Mode/Sound Controls (Photo F, G, H, I, J)—New “Flip-Lever” Design

Note: Controls G thru J, are Realistic's special Flip-Lever design—Much more “positive” and secure than push-buttons, better mechanically, and better because their position is apparent to touch as well as sight. Normal position of ALL these switches is UP—be sure to observe this when first operating the equipment.

“F” selector knob selects (left to right): Aux., Phono, FM and AM. All these controls are affected by flip-lever switch H which selects stereo (normal, up) from mono. The functions of F are quite obvious except for the FM positions. “FM” automatically plays stereo or mono—whatever the station is broadcasting, with switch H left in its normal (stereo, up) position.

“H” switch has been explained above. Up-stereo, Down-monaural.

“G” switch is for TAPE MONITOR which is normally left in the up-off position; its use is limited to tape recorders and decks. If nothing is connected to rear panel inputs (8) shown on Page 2, depressing switch “G” will SILENCE the equipment until restored to UP position, since “G” bypasses rotary selector “F”. It is depressed for ALL tape play purposes and—in the case of 3-HEAD decks, to allow monitoring (hearing of tape being recorded JUST AFTER TAPE PASSES THE RECORD-MONITOR HEAD, as opposed to merely listening to the program (radio, LP, etc.) coming through the receiver and/or checking taped result by rewinding and playing back. Realistic Model 999 3-head stereo tape deck is recommended for use with the tape monitor facility. Similar equipment is made by Ampex and Sony.

“J” switch in normal (up) position keeps “loudness” in the amplifier circuit, the actual control of which is a function of the volume controls. In the out (down) position, there is no “loudness” in the circuit at any volume level. Since loudness control replaces tones which the ear naturally loses at low listening levels, most listeners prefer to leave it in the circuit.

“I” switch in normal (up) position removes the high filter from the amplifier circuit. In down position, the filter is in the circuit to remove unwanted “highs”—usually record scratch, etc.

TO REPEAT: all the flip-lever switches along the front panel are normally in UP POSITION. If you run into trouble, first check position of these switches!

Tone Controls (Photo M, N)

“M” is a bass tone control and “N” a treble tone control. Both affect both channels equally when adjusted. In the “12 o'clock” position both are “flat”—meaning out of the circuit. Turning the knob to the right will increase the bass or treble, turning to the left will decrease the bass or treble. Always start with the controls set flat and adjust them gradually if you feel the tonal quality of the program needs to be altered.

Volume, AC Power Controls (Photo O, P)

“P” is both the volume control and the AC on/off switch. In the full counter-clockwise position of the knob the STA-65B is turned off and the volume is at the low point. Turning the knob clockwise, (to the right) will turn on the receiver. Further rotation will increase the volume.

“O” is a balance control, when set at the “12 o'clock” position both speakers will operate with the same power. Should the speakers be different or the room require it the volume at each speaker may be adjusted by this control. Turning the knob to the right will decrease the left speaker volume and keep the right at the same volume. Turning the knob to the left will decrease the right speaker volume and keep the left at the same volume.

Attaching A Record Player To The STA-65B

Practical considerations call for a record changer—sometimes known as an “automatic turntable” to be used instead of a manual player. Use the best you can afford—Realistic, Garrard, Miracord, or Dual, are the preferred brands. Always use a MAGNETIC type cartridge with a diamond stylus. Preferred brands are Realistic (by Shure),

Shure, Pickering. See Manual pages 2 and 3 for location and sketch of components.

Every record player includes two audio shielded leads for stereo—these take the current set up within the cartridge by the mechanical effect of the record grooves coupling to the needle, and send this minute electrical current to the preamplifier stage of the equipment's amplifier section. They connect from the record player to phono input jacks (Page 2, item 11).

Every player also has an AC (motor) lead which you plug into the wall or spare AC receptacle (Page 2, item 1) which is unswitched—meaning it's still "live" even when equipment is turned off. This is to prevent accidental turnoff while record player is still in operating mode. This AC lead has a 3rd wire running from it—usually green—with a bare, tinned end. Its purpose is to prevent "hum" and it is meant to be attached to ground screw (Page 2, item 12) on receiver. Its use is not mandatory and it is not dangerous to touch.

Tape Recording With The STA-65B

Despite the improving performance of slow-speed reel and cassette tape mechanisms, there is no substitute for stereophonic 7" reel-to-reel recording at 7½ ips speed. A tape deck is the most desirable "add-on" to equipment like the STA-65B, with a portable tape recorder being equally acceptable if the recorder is wanted for external use. Both perform similar functions: record and playback. A deck costs somewhat less since it does not require playback amplifiers and speakers and elaborate cabinetry; decks include preamp electronics only.

Much of the following has been stated earlier in the manual but a re-statement may clear up some of the questions you have.

TO CONNECT A TAPE DECK—plug AC cord into wall or spare STA-65B unswitched outlet ("unswitched" meaning "always on" bypassing STA-65B power switch). Connect a pair of shielded audio cables to deck OUTPUT jacks and into STA-65B jacks marked TAPE IN (Page 2, item 8); depress TAPE MON front panel switch (Page 4, item G);

and play the recorded tape through the STA-65B amplifier and speaker system. If you have a full recorder instead of a deck, connect from the recorder's PREAMP OUT jacks to the STA-65B as described above.

TO RECORD WITH A DECK—when it is desired to record radio or LP discs from the STA-65B onto tape, you naturally insert such a program INTO the deck instead of using microphones. In the case of a deck or full recorder, using shielded audio cables, connect the recorder's AUX. INPUTS to the receiver's TAPE OUT jacks (Page 2, item 7).

Typical connections are illustrated on Page 3 of this manual, showing the 4 audio cables required to make and play tape recordings and which may be left connected as long as you like.

PLAYBACK THROUGH THE STA-65B is achieved by depressing front panel TAPE MON switch which bypasses the selector control (F). Unless TAPE MON is restored to normal (up) position you will not be able to hear radio or phono.

MONITORING THE RECORDING is done directly from the tape itself during recording session—in the case of 3 HEAD MACHINES ONLY; depressing TAPE MON switch at this time lets you hear the tape itself just after it has passed the record head; the input program is not affected. For regular 2-head machines, monitoring is done by listening to the program being recorded and by occasional rewind/replay sampling; naturally, observation of the tape recorder's VU meters gives visual indication that material is being fed to the record head.

With a little experimentation you will find that the really difficult part of tape recording is the proper selection and placement of microphones! The Realistic stereo Pro-200 mike system—see Dealer—will improve the performance of ANY tape system and permit very long cables to be used without loss or degradation of signal. This is the finest advance in "live" recording equipment we know of, and a bargain at its price.

31-2016 STA-65B ADDENDUM TO INSTRUCTION

Speaker Selector Switch (L)

Unless 2 pairs of speaker systems are used, switch must be in either A or B position and speakers connected to appropriate terminals. If only 1 pair of speakers is connected no sound will be heard in the A+B position.

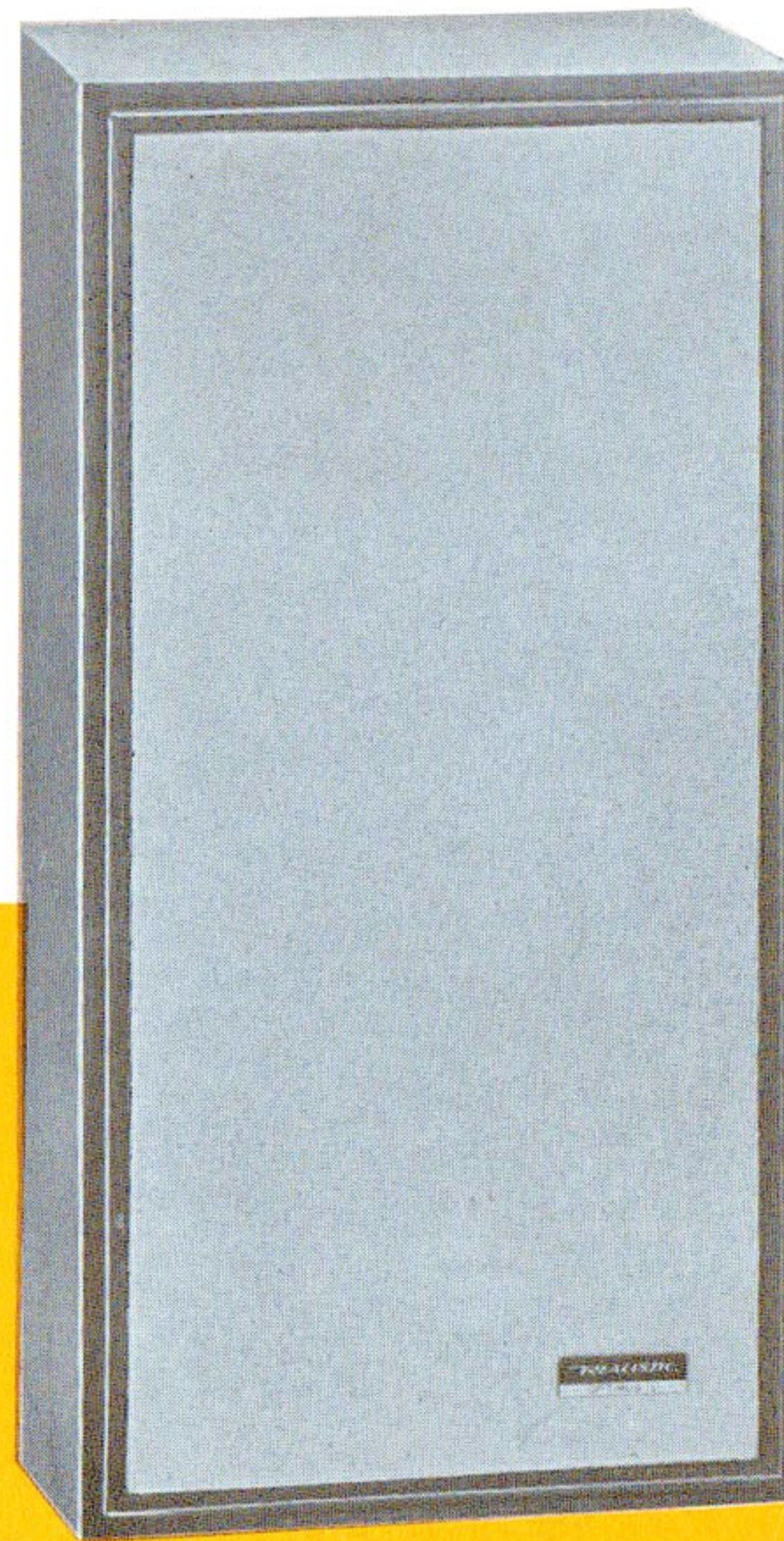
Guaranteed Quality from the builders of the famous ELECTROSTAT-3® TWEETER

NATURAL SOUND *REALISTIC*® SPEAKER SYSTEMS

Solo® Series



Optimus™ Series



About 500,000 Realistic loudspeakers have been sold in recent years by some of the nation's most estimable stores including those in the Radio Shack chain. Since the development of its widely acclaimed electrostatic tweeter — now used in our Electrostat-2A system, Realistic has had an enviable reputation for building good speakers at lower than usual prices. Our Solo series has a 5-year guarantee. Our Optimus, Electrostat and Minimus series have lifetime guarantees. Every speaker is engineered by us, not "just a box with a label." And even though speakers are meant to be heard and not seen, every Realistic speaker is born as beautiful as it sounds. Choose from 10 different models!

Minimus™ Series

