

Review of the Sansui CX-990
Stereo AM/FM Car Receiver

by Steve Mittman

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The Sansui CX-990 is Sansui's top of the line (best) car receiver. It also was the first stereophonic AM automobile receiver on the market and is still (as of 6/84) the only car receiver on the market capable of decoding all four AM stereo systems being used in the United States (Harris, Kahn, Magnavox and Motorola), and does so automatically.

I had been needing a new stereo system for my car and had been waiting impatiently for this unit to be made available. Originally promised for last September, following numerous delays, it wasn't finally introduced into the marketplace until this past April.

The CX-990 is a fantastic piece of machinery. The receiver is loaded with features, and delivers true high fidelity stereo, with full frequency response. And since it decodes all four AM stereo systems automatically, the listener need not be concerned about which particular system is being used by which station; thus the practice of "keeping track" of station and system becomes about as obsolete as caring about the particular brand name of any other piece of equipment a station may be using. On a scale of 1 - 10, 10 being highest, I would rate the CX-990 a "9." The main reason it doesn't get a full "10" is due to the fact that it has two major disadvantages. The first "disadvantage" is its high price. The unit's Manufacturer's Suggested Retail Price is \$519. Additionally, it is unamplified, which means that it requires a separate amplifier, or if you have front and rear speakers -- as I do -- you will need two amplifiers or a dual-amp. And since this really is a great stereo receiver, one might as well go "all the way" and get a (passive) graphic equalizer (EQ) for the finest sound quality. It so happens that Sansui tends to be slightly high priced and are also shrewd in that no other manufacturer's components are truly compatible with their line of products. Per a lot of inquiring around, I learned that basically it would be all right to have the Sansui CX-990 preamp outputs modified for another (less expensive) brand amplifier, but since the Sansui EQ (SG-7) can plug directly into the back of the CX-990, to avoid or reduce distortion, I should really get the Sansui SG-7 EQ. Of course, no one in their right mind would walk into a stereo store and purchase something at the "asking" price, but with only three stores in the entire greater Los Angeles area carrying the unit (only authorized Sansui dealers), I really didn't have too much bargaining power, hi. Nevertheless, I managed to get \$55 knocked off the CX-990, picked up a factory reconditioned \$250 Kenwood dual-amp for \$95, and the Sansui EQ for \$100. With the preamps modification (\$20) and tax, that was 725 bucks right there. (And basically all I was really buying was "the radio"! (Thank goodness I'm happy with my speakers, hi.) Relatively speaking, the CX-990 (and required additions) may be worth the price -- but it's still expensive, hi, and unfortunately is probably out of the price range of most consumers. If stereo truly is the "savior" of AM radio, I think the price of such receivers will have to first drop significantly -- especially since most people don't even listen to AM radio anyway.

The second major problem, especially for we DX'ers, is that the unit comes with built-in mutes for both AM and FM. The mute is basically an "all or nothing" function such that unless the incoming signal strength of a station is sufficiently strong, the mute will cut in and blanket the channel with absolute silence. (The reasoning behind this feature is that supposedly the average listener doesn't listen to "weak" stations. To them, such stations are just "noise," so by the mute prohibiting reception of everything except strong locals, the average listener is fooled into thinking that it is a great radio as there is never any "noise" and everything sounds so "crisp and clean.") The mute on this unit was so bad that as I was driving down the freeway listening to FM locals and would pass under bridges, the mute would kick in! (Yes, this was happening with FM, so you can imagine how bad the AM was!) Luckily (for me, anyway), it so happens that Sansui headquarters is located in nearby Campton. I brought the unit in and when I asked them to remove the mute, they tried to explain to me that a lot of "thought" went into the feature and that it "improves" reception. When I pointed out that I couldn't even receive Anaheim, let alone Boise, Seattle and New Orleans, I think I blew them away! They agreed to take it out, and then "matter of factly" told me that it would be ready in four weeks! After "explaining" to them that I couldn't wait, they relented and told me that it would be ready in a couple of days. When I came back, I suspected that the mute had been turned down all the way (but not "off"), and when I asked the technician if I could test it, he admitted that there might still be some "extremely weak" stations I might still not be able to hear. I reiterated that I wanted absolutely no mute whatsoever. He sighed and said that that would require going into the circuit boards and removing some diodes. I said fine; that's what I wanted. It was ready the next day and now works beautifully! (And yes, I can now hear WWL, et al.) All in all, I must admit that Sansui was friendly and cooperative, but the reason for this great elaboration is to warn you that if you plan to purchase this unit, no doubt you will be unhappy with the mute feature, so when you send it to them, be prepared to wait four to six weeks, and also make certain that you clearly explain that you want the diodes in the circuitry for the AM and FM muting completely removed. (That mute feature is a worse threat to DX'ing than the breakdown of the clears, hi.)

Those two problems aside, the Sansui CX-990 is a great receiver, and I have nothing but praise for it. As mentioned earlier, this unit delivers high fidelity AM stereo, and lest you think that AM stereo is limited to the three-kilohertz bandwidth, but with two channels (stereo; but hardly "high fidelity"), don't be fooled. With a good receiver, and

if the stations are using good equipment (which is probably the case in large, competitive markets), the stereo separation is excellent and the frequency response rivals FM. (In "blind" tests conducted with my friends, they were unable to tell if I was tuned to FM or AM.) I've also extensively compared the various AM stereo systems in an attempt to evaluate which is the best, and I would have to conclude that if there is any real difference, it is insignificant. If there is any true damineering factor, it would have to be simply the relative signal strengths of the stations. For example, locals KFI (Motorola) and KHJ (Kahn) seem to have great stereo signals, full of high fidelity sound, but they also happen to be the strongest stereo AM stations on the dial at my location. (Though that is not to say that distant stations don't also sound good in stereo. I've monitored KBOI - Boise and KSL - Salt Lake City in stereo, and even over those great of distances, the stereo is still quite good.)

The CX-990 has a stereo indicator light which works for both FM and AM. Unlike the portable AM stereo Sony SFF-A100 unit (who's light is really only a carrier indicator), with the Sansui unit, if the station (either FM or AM) is being received in stereo, the stereo indicator light will illuminate; otherwise, if the station is being received in mono, it will remain off. Actually, to be precise, the light indicates the presence of a pilot signal transmitted by the station. Theoretically, if a local station is broadcasting in stereo, but isn't transmitting the pilot signal (though that would be unlikely), the station would be received in stereo though the stereo indicator light would stay off.

Since this receiver decodes four different AM stereo systems, one interesting facet about the unit is that whenever an AM stereo station is tuned in, for a brief moment the station is received in mono before the stereo occurs, as it takes a moment for the circuitry to decode which stereo system is being utilized and for the appropriate components to be activated. Interestingly, whenever a frequency is tuned in in which two or more non-locals are mixing together (even if they are mono), the stereo light always comes on and an artificial stereo effect is produced! (This won't occur if only one mono station is being received, or if one of the stations is a local (i.e., strong carrier) and another station can be heard under it.) Apparently the two or more stations mixing together confuses the circuitry into believing that a stereo signal is being received, and the signals are fed through a stereo mode, creating a synthesized "stereo" effect! Since my front speakers reproduce treble better and my rear speakers reproduce bass better, a "quad" effect is created, and the two or three stations seem to "echo" and swirl around the car, producing quite a sensation! (Sarehow, DX'ing on my TRF was never quite the same, hi!) (And now I see why the radio normally comes with a mute!) Occasionally during this "stereo" effect, due to fading or other factors, the radio will momentarily "cut off," then quickly come back on, followed (as usual) with the "stereo" signal. Apparently the receiver suddenly decided that now a different stereo system was being received, and rerouted the signals through the "new" mode! Since two non-locals mixing will always cause the "stereo" effect and light to come on, it is only possible to be certain of receiving true stereo reception from locals or from clear stations. (To illustrate, one evening I believed I was receiving stereo reception of WBAP - Ft. Worth. However, upon closer inspection, I also noted faint Spanish in there, which would have activated the "stereo." The following evening WBAP was alone, and the light remained off and there was no "stereo" effect.)

As mentioned earlier, this is Sansui's top of the line car receiver, and as such, besides automatically decoding all four AM stereo systems, is loaded with additional features which contribute to making this receiver "top notch." As these other features will also figure in one's decision about purchasing this particular unit, they are herein briefly listed: * Digital readout; * Quartz-locked PLL Synthesizer; * Computer Logic Tape Transport (computer circuitry prevents tapes from becoming snagged or jammed); * Dual-amp balancer/fader; * LED level meters (stereo); * 24 presets (6 x 3 FM; 6 x 1 AM); * Auto Reverse; * Tuner Monitor (can switch from tape to radio without ejecting tape); * Amorphous tape head; * Dolby B and C noise reduction; * Normal/Metal tape capability (actually, normal bias or CrO₂ or better); * Loudness Control; * Separate bass and treble controls; * Direct EQ capability; * Mono Switch (improves weak signals); * Manual Tuning (used in conjunction with Mono Switch); * Auto Seek (seeks next or previous station); * Preset Scan (scans 6 preset stations); * FM Local/DX Switch (50 db FM signal reduction; becomes obsolete with mute removed); * Auto Music Program Search (automatically locates beginning of current or next song); * Intro Scan (scans tape, playing first 10 sec. of each song); * Clock (5 sec. display, then freq. is displayed again; cont. display during tape operation); * Complete green and red illumination of all controls; * Illumination reduced by half when lights are on; * On/off control automatically raises/lowers power antenna; * High or low output voltage (to arps); * 9 or 10 W-tz. spacing; * Tuning range: AM (530 - 1620 W-tz., 10 W-tz. spacing); FM (87.9 - 107.9 MHz., .1 MHz. spacing).

Conclusion: There are, of course, advantages and disadvantages with AM stereo reception. AM doesn't suffer from multipath interference, can be received behind hills, and has a much greater range than does FM. However, all the problems of regular AM reception still exist. The stations still suffer from noise, fading, and nighttime skip GFM. But if one wishes to listen to a local AM station in stereo, this receiver has demonstrated that AM can provide the same high fidelity, full frequency sound that is normally associated with FM. So if you are excited about AM stereo, want an excellent receiver, and are prepared to wait a few weeks for Sansui to remove the AM/FM muting (a must!), then the Sansui CX-990, loaded with great features, will be a car receiver with which you will no doubt be quite pleased.