

Defense and the Hi-Fi Bachelors

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Deep in a world of calculus, navigation, thermal units, boilers and ballistics, a superb "home" hi-fi system helps maintain a balance between the science of the age and the culture of the ages.

In Two Parts—Part One

IT BEGAN in the early 1950's on board a destroyer—the USS *Evans* of the U.S. Seventh Fleet. Operating in waters of the Western Pacific during and after the Korean War, the *Evans* was a busy beaver: direct action in the war, patrolling of the Formosa Straits, a full schedule of training made necessary by manpower requirements and the rapidly increasing complexity of scientific equipment necessary to naval operations in modern national defense; then the long, lonely haul back to home base in Long Beach, California—and out again for more of the same.

Among those to whom this posed a cultural problem was Lt. E. L. St. Ville, then chief engineering officer of the *Evans*. The problem: The West and its way of life had to stand well defended against all who would challenge it, and to this end it was every man's duty to give it the best that was in him; but even the best of hopes and assurances gave no promise of an early return to an

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unthreatened life at home or abroad. The crux of the problem, then was how to carry along in the world of science and defense, afloat or ashore, a means of keeping in unbroken contact with what was one of the finest things in the Western way of life—music.

On board the *Evans*, the first answer was a hi-fi record player and a slowly growing stack of LP records, specimens from pop tunes of the day to symphonies and operas.

While the *Evans* ploughed the Pacific, its chief engineer discovered via hi-fi music what many technical men have discovered: that science, far from being the enemy of the arts, as many have insisted, is in fact the pollen-carrier that exposes to the finest music many who might otherwise never be subjected to its beauties; and he discovered that it works the other way round, too—music has become the pollenizer of limitless scientific advance. On the *Evans*, books and magazines on sound reproduction soon took their place beside volumes on

marine engineering and naval proceedings. The hi-fi system then was, however, far from the superb installation that now graces a room of the Bachelor Officers' Quarters at the U.S. Navy Postgraduate School on California's Monterey Peninsula.

Back on Dry Land

Fission for the next stage of development was provided by the San Francisco Hi-Fi Show of 1956. The fissioning agent was a JBL "Hartsfield" speaker incorporating a 15-inch woofer and a high-frequency driver with acoustical lens. The then-current price—\$750—was enough to cause any sailor to blink more than once, and to render him forever unhappy with anything less. Want ads soon located the same speaker for some 30 per cent less, a rare event. Within hours, the speaker stood in a corner of a BOQ room, with a ready audience of navy officers waiting to hear it, even with only the old record player to drive it.

Connected to the 8-watt output of this unit, the new speaker quickly proved itself. It actually took less energy to drive it than did the three speakers incorporated in the record player.

The audience stood back enthralled—and the big chain reaction had begun.

Among other officers assigned to the General Line School for postgraduate work, as was Lt. St. Ville, myriad hi-fi installations began to crop up. There was, however, no indication as yet that this positive chain reaction would eventually influence installations in the homes and naval facilities of foreign countries—nor of the fact that the very decor, furniture, and general appointments of Lt. St. Ville's room would soon undergo a modification dictated largely by sound-reproduction considerations. Why limit the beauties of opera, symphonies, choral renditions, with inade-



Old Glory amid oaks at the entrance to the BOQ—a setting that enhances the best of hi-fi music within. (Official Photograph, U.S. Navy.)



After the day's chores—relaxation. Navy nurses Gretchen Hill and Dorothy Tomac dropped in for a share of it, too; Lt. St. Ville hosting. (Official Photograph, U.S. Navy.)

quate acoustic receptivity? Down went a wall-to-wall rug. And that desk over there, against the other wall. Now, over here, a sofa, just the right distance from the speaker; drapes for those windows; a man spends his money for one kind of recreation or another; let's make this one as close to perfect as possible.

The quest for perfection led through amplifiers. Next over the counter came a Scott 121-B pre-amplifier and a McIntosh 60-watt power amplifier. Result: "Wonderful sound . . . Also, not-so-wonderful rumble," for the Scott and the McIntosh amplified not only the perfection of music but as well the imperfections of the old-style turntable. Despite its valiant past service, the weak link in the chain had to go. Its successor: a Scott 710-A stroboscopic three-speed professional turntable with an ESL professional arm and cartridge.

Eureka

Now the Hartsfield and the amplifiers

came truly into their own. So much so, in fact, that the new turntable soon acquired a mate—a Fairchild 411-H three-speed professional. The supply of discs, meanwhile was climbing rapidly. So was the popularity of the BOQ room that housed them, and things soon took on a communal aspect: Who had what composition recorded by which orchestra? Soon the corridors that had for years heard little more than talk of engineering, navigation, aviation and reactors, rang with cries such as: "Going into town? Good. Bring me back a Beethoven Number Nine. The RCA one by Furtwaengler and the Bayreuth Festival Orchestra and Chorus . . . And, say, there's a nurse below who wants the Von Karajan one of the Tchaikowsky Sixth. Columbia. Okay?"

It was more than O.K. Students from foreign lands—Chile, Belgium, Formosa, Japan—became interested. There was more to be learned here than the science

of modern defense and warfare. In Lt. St. Ville's room alone, the collection of popular and classical records was already in the hundreds and the quality of sound reproduction "out of this world," obviously unsurpassable.

And then the inevitable happened.

It was the San Francisco Hi-Fi Show of 1958 that upset this monophonic apple cart. The new audio fans of the Postgraduate School had, of course, known about tape and the captivating advance of stereophonic sound; but this was the first time they had heard it on a grand scale—music so faithfully reproduced in "latitude and longitude" that it was as though a new dimension had been introduced to perception itself, even if that dimension was called an "illusion." One thing they knew for a certainty—the "unsurpassable" installation at the BOQ would never be the same again.

It wasn't. Stereo came in fast.

First: an AM-FM tuner (Scott 330-B) to bring in the AM-FM stereo broadcasts transmitted from time to time by the San Francisco stations; another pre-amplifier (Scott 121-C), and another McIntosh 60, to feed a second bass-reflex speaker—a home-made job resulting from a do-it-yourself program and consisting of a 15-inch woofer and two three-inch cone tweeters. The Fairchild turntable now acquired a Rek-O-Kut professional pickup arm and a Pickering 371-D magnetic stereo cartridge—which later gave way to a Fairchild 232 which, in turn, is now resting while a Shure Dynetic is being tried out.

The system was better than ever. But it was barely completed before it became inadequate. Too many shortcomings. For one thing, not many stereo discs were yet available. For another, much good stuff came over the AM-FM stereo broadcasts but was then lost. And already there was talk about the coming of multiplexed FM stereo broadcasting; more good stuff that would be lost—

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Left: Center and right channel speakers and friends: Lt. E. L. St. Ville, Lt. Richard Avrit, Miss Danye Tamminga, and Miss Jean Meyers. Right: Left channel and center speaker systems. The piano, too, has been recorded on many an occasion.



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unless you recorded it, for use here at the school, and especially for playback upon reassignment to sea duty after graduation. But record it how?

And Now—Tape

Considering everything, there was only one answer—tape. Among other things, there was the dynamic-range and frequency-response capability of tape. For men many of whom would soon return to sea, on craft designed for military utility and not for carrying excessive personal gear, there were other items in favor of tape, not least among them light weight. But most important of all: you could safely play tape on a vessel rolling, pitching, vibrating and even pounding in heavy seas—while under such conditions a jarred needle would quickly ruin records, especially the new and expensive stereo discs.

That was that. Tape entered quickly.

First on the scene was an Ampex A-122, acquired by one of the audio fans encouraged by Lt. St. Ville. Here, too, future sea duty considerations were a factor—the equipment had to be physically rugged as well as electronically and mechanically tops. St. Ville's installation soon followed with an Ampex 601-2 portable stereo recorder. A few stereo tapes were available on the market. More were recorded from the AM-FM broadcasts. Listeners in the BOQ room became more frequent and more numerous. Here was sound reproduction of a quality they had never even dreamt of before. But the quest for perfection had by no means yet come to an end: if two speaker systems sounded this good,

wouldn't *three* systems sound even better? Here was a chance to find out, perhaps the last chance for a while—for at sea the large, cumbersome speakers were one item that would have to meet compromise. But smaller, shelf-mounting types could take their place and be more than adequate for the limited spaces aboard ship—and then some, as they were to discover long before sea duty.

The answer was an Acoustic Research AR-1W woofer with a JansZen 130 electrostatic tweeter, provided by another student and placed atop Lt. St. Ville's piano. With the Hartsfield left in its original corner position, the home-made bass-reflex speaker was placed equidistant between the two side systems. With the side speakers carrying separate stereo channels, some of each channel was fed into the center speaker at a level a few db below that of the side systems. The three speaker systems were then phased as the earlier two had been, with the use of a 50-eps tape. To feed the center system, an additional preamplifier (a McIntosh C-8) and McIntosh-60 power amplifier were acquired. A home-made electronic mixer, constructed by a lieutenant majoring in electronics, was then installed to provide a balancing facility between the three pre-amplifiers and the speaker systems.

With the increase in popularity of this BOQ room came an increase in the demand for system flexibility. To satisfy this demand, a third tape recorder (another Ampex 601-2) was acquired. This introduced a new series of complications, which will be described next month.

(To be continued)



With five shelves of recorded tapes available, both the 601-2 and the A-122 Ampex machines are busy.



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