Whiplash

Like disc jockeys the country over, Alan Cummings of Washington's WWDC, was served under with requests for Male Train, his listeners could not seem to hear it often enough. Early one morning last week, Cummings stuck back: he began playing, one after the other, recordings of Male Train as sung by Frankie Laine, Bing Crosby, Gordon MacRae, the Syncophones, Buzz Miller, Arthur Smith, Vaughn Monroe and Tennessee Ernie. Before long, the unrelieved barrage of whisperacks and clippy-clap jangled WWDC's switchboard with phone calls from desperate night owls crying "Uncle."

Cummings, with his ninth straight record on the turntable, relented. "I never went for Male Train," he explained mildly. "The only way to get my fans around to my way of thinking was to play the tune to death..."\n
Twinkle, Flash & Crawl

"Let's have color television now," This seemingly innocent proposition, proffered to the Federal Communications Commission by the Columbia Broadcasting System, has thrown the whole television industry into a frenzy of activity, alarms and bitter accusations.

Since late September the hearings before FCC's Washington's chastely paneled Department of Commerce Auditorium have been crowded with TV experts, newsmen, publicists, lawyers, Congressmen and corporate presidents and vice presidents. Witness accounts of technical testimony. Some witnesses were branded as liars, and their motives were viewed with alarm.

So far, the harried commission has made no decision, It will probably make none for many months, and any decision it does make is sure to rouse cries of anguish. If it gives color-television permission to CBS, the only outfit with a color system that works well at present, it will offend the manufacturers of black & white sets and their dealers, who are prospering on the status quo, and who fear that any promise of color will make the public stop buying. It will offend many station owners, most of whom, now living on hope and money transfers, dread the greater cost of color televising. It will also offend Radio Corporation of America, No. 1 operator in the industry, which manufactures black & white sets, is leading a telecaster in black & white, and has a still-experimental color system of its own. A decision favoring CBS, says RCA, would be disastrous.

CBS, on the other hand, has gathered behind it a head of political steam. Its color sets have toured the U.S. The brilliantly colored pictures have been seen with enthusiasm by thousands of influential citizens who say: "We've seen color television with our own eyes. It's good. Why can't we have it in our own homes?"

This week, with the hearings recessed, the FCC Commissioners were holding their heads and trying to make up their minds.

Fooling the Eye. Stripped of technical embroidery, the basic theory of color television is fairly simple. Even a black & white television picture is an optical illusion. All there is on the screen at any instant is a fast-moving bright spot that "scans" back & forth, covering the whole screen with 525 lines of light which the slow-reacting human eye (if not brought too close) sees as a picture. The pictures follow one another so fast (30 a second) that they are blended by the eye to give the illusion of motion—just as the eye blends the frames on a strip of movie film. Pictures or elements of pictures in the primary colors will blend too, giving a scene in reasonably natural colors.

The last step, adding color, is easy on paper but exceedingly difficult in practice. The systems proposed by CBS and RCA approach the problem in fundamentally different ways.

Color with Fields. In the CBS color system (called "field sequential"), the transmitting camera, like the ordinary black & white camera, has a single Image Orthicon "seeing" tube. In front of it is a spinning disc with segments of blue, green and red transparent plastic. When a blue segment is in front of the tube, the camera sees only the blue light coming from the scene being televised. When the disc has turned a little, putting a red segment in front of the tube, the camera sees only the scene's red light. Next, it sees green through a green segment of the disc.

If the disc is properly synchronized with the scanning speed of the tube, one color "field" goes out over the airwaves and appear one after the other on the face of the receiving "picture" tube. All of them are white, since the "blue" (the luminescent substance) on the tube's face only in white light. But in front of the receiving set's picture tube is a second spinning "color disc" (see diagram). This disc is synchronized so that a blue segment is between the tube and the eye of the viewer whenever a "blue" field is flashing on the tube. So the eye sees the field in blue. When a "red" field is on the tube, a red segment of the disc makes that frame look red. In the same way, "green" fields are made to look green. The three one-color fields, following one another quickly, are blended by the eye to form a full color picture.

Color with Dots. RCA's system, called "dot interlacing," is entirely electronic. Under no circumstances does it spin any disc. In the transmitting camera are three tubes. In front of them is a system of "dichroic mirrors" (see below) which allow each tube to "see" in one color only. All three tubes scan the scene continuously, but an electronic switching device, turning their signals on and off 114 million times a second, allows each tube to transmit only the scene's red light. When the disc has turned a little, putting a red segment in front of the tube, the camera sees only the scene's red light. Next, it sees green through a green segment of the disc.

The receiving set at the other end has three picture tubes. They are like black & white tubes except that each has on its face a phosphor that glows in a different basic color. Each little impulse (the colored freight cars) arriving over the beam is electronically switched to the properly colored tube. They arrive so fast that each tube-face is covered 15 times a second with a pattern of tiny dots corresponding to the blues, reds and greens in the scene being televised. The more red there is in a
The world's most fabulous vacation...

You have to be content with only the finer things in life, bold enough to demand the ultimate in beautiful surroundings to fully savor the exquisite pleasure of a stay at Boca Raton!

Leave the ordinary world behind when you come to Boca. You can golf with Tommy Armour on Boca's incomparable private course, or play tennis with Fred Perry, never leaving this enchanted retreat!

Bathe in the blue, blue Gulf Stream! Bathe in the Rod's two crystal pools! Bathe in the brilliant sun!

The most exciting fishing in the world is yours within a few minutes of our own Club dock on one of the boats of our own fishing fleet.

Boca Raton
Club and Hotel, Boca Raton, Florida
Opening December 10th

For best reservations write now direct to The Boca Raton Club and Hotel, or call New York office, 730 Fifth Ave., New York, N. Y. 7-7600.

part of the scene (e.g., a red dress), the brighter the red dots on the corresponding part of the red tube.

Next step is to combine the three colored images in the eye of the viewer. The combining is done with two "dichroic mirrors" - plates of glass with one surface covered with a thin layer of a colorless, transparent substance. Because of the special way in which this combination affects light of different wave lengths, each mirror reflects only one color. The other two colors pass right through it.

The mirrors are arranged so that red light from the red tube is reflected to the eye of the viewer from the red-reflecting mirror (see diagram). Blue light from the blue tube is reflected by the blue-reflecting mirror, but passes through the red-reflecting mirror to the eye. Green light from the green tube is not reflected at all. It reaches the eye direct. The viewer sees the three pictures superimposed so that they blend to form a full-color picture.

Color Now. To the FCC Commissioners and other non-scientific listeners, the workings of the systems seemed far less complicated than the arguments about their comparative virtues. The simplest single fact is that the CBS system, developed to high perfection by Dr. Peter C. Goldmark, turns out pictures which are bright, crisp, and at least as faithful as most colored movies. Their own special ill is a so-called "color flash." If the viewer looks away suddenly, he sees the picture momentarily in a single color, because of the persistence in the eye of the last color picture seen. A color flash is seldom noticed unless it is looked for.

Proud of its color pictures, CBS has made every effort to show them to the public. A shrewd move was to make special cameras for televising surgical operations for Smith, Kline & French Laboratories, drug manufacturers. As a dignified publicity stunt, the drug house has shown surgical operations in color for the benefit of some 30,000 doctors in medical gatherings all over the country. Since black & white television gives little idea of a surgical operation, the CBS system has given many doctors their first glimpse of ultra-modern techniques. Many of the grateful doctors are loud rooters for CBS color TV.

Another fact is that RCA's system still does not work well. It has rarely been shown to the public, and does not impress laymen. Different sets show the same scene in different colors. The colors are not at all faithful; they often change suddenly and erratically. Dr. Elmer W. Engstrom, research chief of RCA, admits that the system is still in the laboratory stage. But RCA-men add that the CBS color system has reached its limit: it has no "room for growth."

RCA wants immediate public field trials to test the various systems. CBS declares that it is "perfectly willing to compete with any color TV system any place, any time." But it insists that "a system [its own] can be picked now on the basis of its known performance." Extensive trials, argues CBS, are unnecessary and would be costly and confusing.

CBS's Goldmark

Degradation. Both RCA and CBS are highly skilled at pointing out faults in the other company's system. First, says RCA, the CBS pictures are "degraded." This means that CBS, to increase the number of pictures per second and thereby avoid flicker, has had to reduce the number of scanned lines in each picture from 525 to 405. Thus, the "definition" is reduced and the grain of the picture is made coarser, like a newspaper cut compared to an illustration in a slick-paper magazine.

CBS retorts that definition isn't everything. More important, it claims, is the amount of "information" the picture conveys to the eye. The faithful colors in its system, CBS insists, give so much extra
information that the viewer is glad to sacrifice a little definition.

Another weak point in the CBS system is the color disc: It is mechanical and driven by a small electric motor. Such moving parts, says RCA, have no place in television receivers. Worse, the size of the picture is limited because the diameter of the disc must be more than twice that of the picture tube. Its own all-electronic system, RCA points out, has no mechanical parts; it can use any size tube.

Incompatibility. But the worst thing about the CBS system, says RCA, is that it is not "compatible." This term, borrowed from the divorce lawyers, means that the 8,665,000 black & white sets now in use could not receive CBS color broadcasts, even in black & white, because of the different number of lines and the different number of pictures per second. Nor could an unmodified CBS color set receive conventional black & white broadcasts. RCA's own color sets are "fully compatible": when a station is telecasting black & white, they will show black & white. When the station switches to RCA color, they will show color. Existing sets will show black & white all the time.

The issue of compatibility is probably the main reason why FCC has not yet authorized the CBS color system. Existing sets can be adapted to receive CBS color telecasts as black & white, but the adapter would cost some $35 and would have to be switched on when the station changes from black & white telecasts to color. Otherwise nothing would come through but a blur. Even adapted sets, says RCA, will get a "degraded" 45-line picture.

To get CBS color telecasts at their best—in color—an existing set would need besides an adapter, a color converter: a color disc and auxiliary apparatus to be slid in front of the tube during color programs. The converter would cost upwards of $50, depending on size.

Panic & Fury. The incompatibility of the CBS color set has sent a wave of panic and fury through most of the television industry. Some manufacturers claim that talk of impending color television has already hurt the market for black & white sets. Telecasters fear that the confusion following an authorization of CBS color would scare off sponsors, who are timid enough already. Nearly everyone outside the CBS fold argues that color programs which cannot be received on existing sets, at least in black & white, without trouble and added expense would be a breach of faith with millions of set owners.

To all this, CBS has both general and specific replies. Color is coming, it insists. Why not make the change now, when the U.S. has comparatively few sets in use—instead of several years from now when there may be ten million? If FCC waits until then, warns CBS, black & white television will have become a vested interest with enough power to block color permanently.

Besides, claim the CBS men, the RCA system will never bring color to the millions. Its complicated three-tube receiv-

New ceiling—new quiet

You can't keep people and clerical machines quiet in a busy office. Yet, distracting office noise can be remedied. Many businesses have done it—efficiently and economically—with Armstrong's Cushiontone.

Cushiontone is a fiberboard acoustical tile with a perforated surface. Up to 75% of all noise that strikes this surface is absorbed—kept from bouncing about the room and bothering people at work. The low cost of Cushiontone is more than paid for in increased comfort and efficiency of workers.

Cushiontone ceilings are attractive as well as efficient. Both the surface and beveled edges of each tile are factory-painted a smooth white. This finish provides excellent light reflection and is easy to care for. Repainting won't affect its high sound-absorbing efficiency.

You can have Cushiontone ceilings in your place of business almost overnight. Why not get complete details? Just contact the Armstrong acoustical contractor in your vicinity.


ARMSTRONG'S CUSHIONTONE
Made by the Makers of Armstrong's Linoleum and Asphalt Tile
NOW...  
a desk model postage meter!

Even the smallest office can have the convenience, economy and prestige of metered mail—without the desk model meter! Little larger than a phone, yet it prints postage of any value for any kind or class of mail... including parcel post! Also prints dated postmark and optional advertisement! Just dial postage and press the lever! To seal envelope, slide flap through moistener!

Your posture is protected against loss, theft or damage—and automatically accounted for in visible registers!

Good looking and easy to use... the DM solves anybody's mail problems. Larger meter models for larger offices.

Phone any FB office, or write for illustrated free booklet.

PITNEY-BOWES Postage Meter

1218 Pacific St., Stanford, Conn.
World's largest maker of mailing machines... offices in 92 cities in the U.S. and Canada.

Gold Medal Winner

Triple Cream California Sherry
MADE AND BOTTLED BY CRESTA BLANCA WINE CO.
SHORELINE, CALIFORNIA

CRESTA BLANCA

It's not cheap!

But it's authentically FRENCH... onion rings sauteed in real CREAMY BUTTER... swimming in rich BEEF STOCK... sharpened by rare old PARMESAN CHEESE... simmered in small BATCHES. Naturally it costs more... Ask your grocer or... write direct to Geo. A. Hormel & Co., Austin, Minn.

Program Preview

For the week starting Friday, Nov. 25, Times are E.S.T., subject to change.

Army-Navy Game (Sat. 11:15 p.m., Mutual).

NBC Symphony (Sat. 6:30 p.m., NBC). Toscanini conducts an all-Italian program (Giordano, Busoni, Respighi).


Telephone Hour (Mon. 9 p.m., NBC). Guest: Fritz Kreisler.

Carnegie Hall (Tues. 8 p.m., ABC). Guest: Helen Traubel.

Field Marshal Montgomery (Tues. 9:30 p.m., Mutual). Subject: “Western Union.”

TIME, NOVEMBER 29, 1949

Courtesy of Phil Dudley