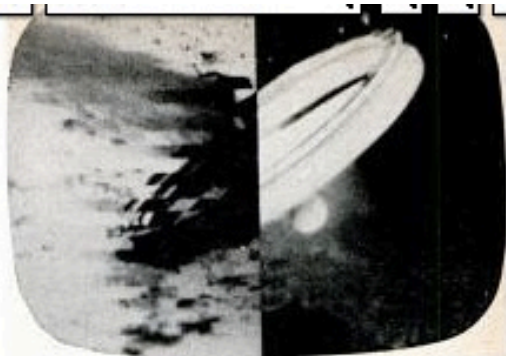


In Hartford, with 2,150 families signed up, pay TV has had a real test. Here's the one-year report

What Do They Think of Pay TV?



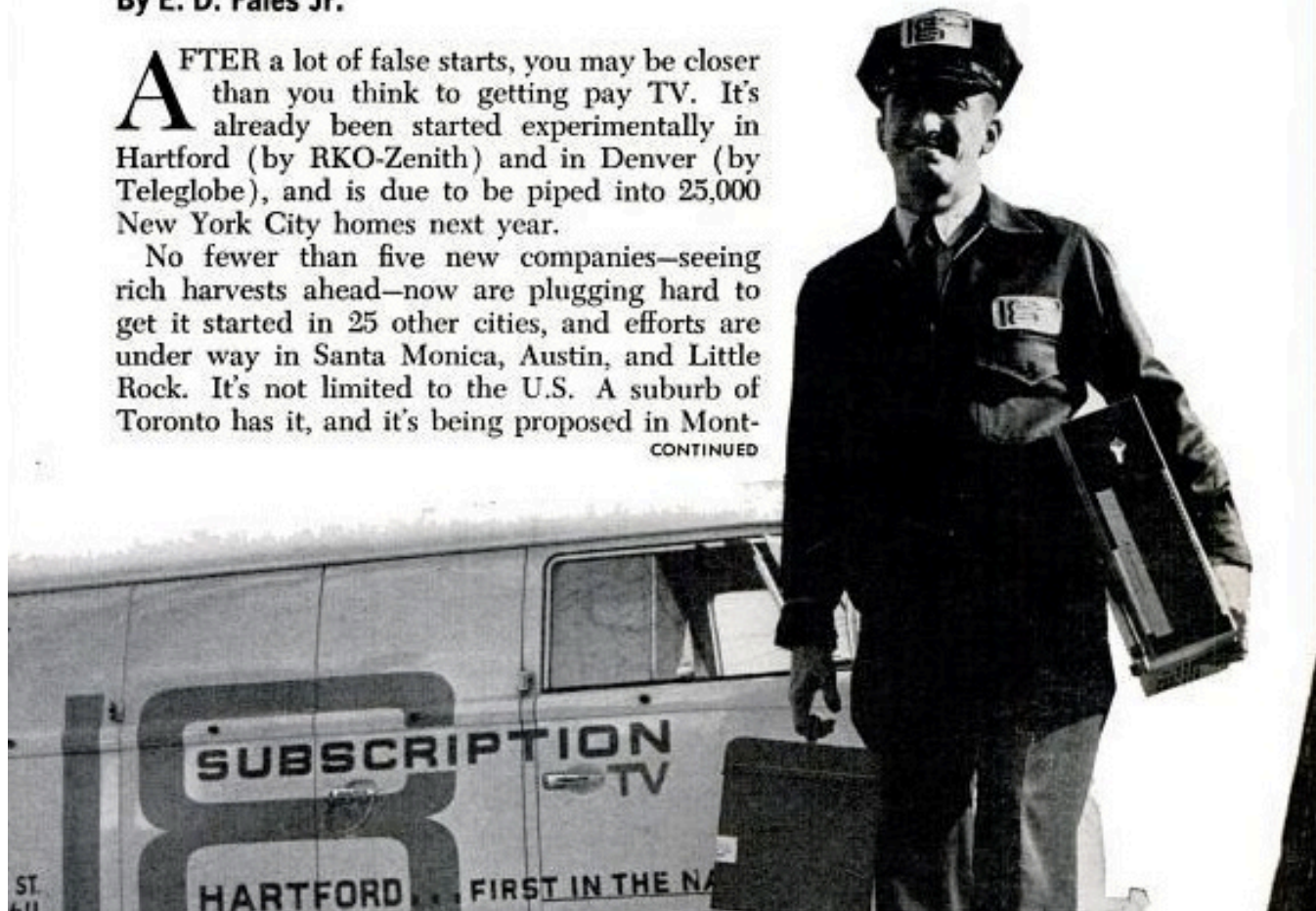
Before and after subscribing to the RKO-Zenith system being tried in Hartford: If you want the clear picture at right, you have to call the man below.

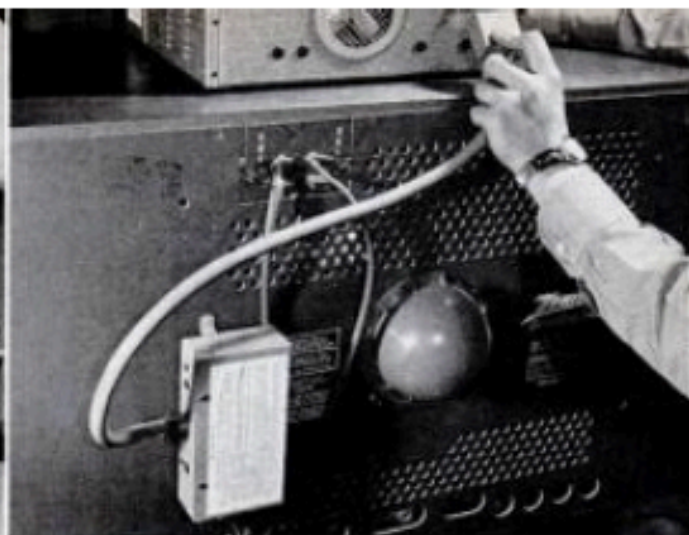
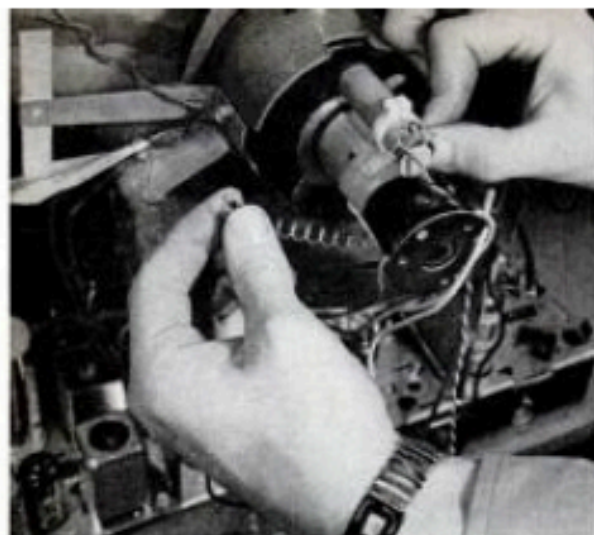
By E. D. Fales Jr.

AFTER a lot of false starts, you may be closer than you think to getting pay TV. It's already been started experimentally in Hartford (by RKO-Zenith) and in Denver (by Teleglobe), and is due to be piped into 25,000 New York City homes next year.

No fewer than five new companies—seeing rich harvests ahead—now are plugging hard to get it started in 25 other cities, and efforts are under way in Santa Monica, Austin, and Little Rock. It's not limited to the U.S. A suburb of Toronto has it, and it's being proposed in Mont-

CONTINUED





How the Zenith decoder is attached to your television set

1 Signal-pickup coil is attached by a small spring (shown) to the neck of video tube.

2 Signals pass through adapter box (lower left), go by coaxial cable to decoder unit.

real. (In England, engineers are even talking of transmitting pay TV via the gas pipes that serve many homes there.)

Meanwhile, the war waged against it by free TV and Hollywood seems on the wane. More good movies are being made available. Movie producer Otto Preminger admits: "It's as inevitable as automobiles were."

What does this mean to you? Suppose a chance to subscribe came next month? Should you take it? What will you get? Will it kill off your free TV? And what will it cost?

To get answers, POPULAR SCIENCE sent me to Hartford. There, since June 29 last year, hundreds of families have been guinea pigs in the first full-fledged, FCC-approved test of pay TV. They plunked down \$10 each to get it. And they've been spending from \$3.25 to upwards of \$8 a month to see it.

All told, as this is written, 2,150 Hartford set owners, from harbers to bankers, have signed up. They've been seeing movies (including some good new ones), fights, Yale-Dartmouth football, high-school basketball, ballet, orchestras.

On a recent night when other viewers fretted over failure of free TV to show a championship fight, Hartford pay-viewers saw it for \$2.

On another night when free TV was going through the agony of pain-reliever and bathroom commercials, pay-viewers saw an opera, *The Consul*. It ran two hours, spilled over 13 minutes into a third hour.

In those 133 minutes, viewers figured they had escaped nearly 40 commercials. And there was no salesman blasting in to ruin the closing lines.

How do viewers like all this? Here's a clue: Only 23 of those first 2,150 viewers have canceled. And viewers have found that pay TV does not replace their free TV. It's a supplement.

The first man I talked to was the cabby who drove me to Channel 18, RKO's part-time pay-TV station.

"Do you have pay TV?" I asked.

"No, but my neighbor had his decoder installed last night."

"How's it going here?"

"It's a funny thing. Nobody raves about it—it's not *that* good yet. But more keep signing up all the time."

To get pay TV via the RKO-Zenith system used in Hartford, you fill out an application, send \$10, and agree to pay \$3.25 monthly rental for a decoder (worth \$125). Besides that, you'll pay for all shows you watch. These cost from 25 cents to \$3; most are \$1.



3 Checking it out: After installing decoder, technician lowers the front door and dials the code number for whatever pay show is playing. (Code numbers show in small odometer

window just above large rectangular white button.) Then he closes door and turns small switch from "TV" to "PV." Once a month you draw your bill from small square door at right.

To be accepted, you must live within 20 miles of Channel 18's transmitter. You use your regular set (even a color set), but it must be in good shape.

There's a waiting list, and several weeks may pass. Then one day a white Volkswagen truck (one of seven) arrives. A blue-uniformed serviceman checks your set for ghosts, snow, or blooms—which would degrade the quality of the broadcast. Then, if everything's okay, he attaches a small adapter behind your set.

This is a gadget that intercepts all scrambled incoming signals and detours them through your decoder, which will unscramble them. The decoder, a trim brown box the size of a portable typewriter, rests on top of your set. It is linked to the adapter by a plug-in coaxial cable.

Channel 18 sends out free TV by day and pay TV by night. On the day I arrived at the studio, pay TV was to begin at 6:01 p.m. At 5:40 p.m., during a free-TV movie, I watched engineer Ray Sigda commit a bit of electronic deviltry. Tucking a code sheet under his arm, he opened a glass door in one of the huge studio control panels. Consulting the code for the day, he began twiddling six black plastic knobs, like a

man cautiously dialing to open a safe.

What he was doing was setting up secret amplifier and delaying circuits that would, first, change the broadcast film to a negative. Next, they would lasso some of the outgoing video signals and hold them back. They'd be delayed ever so slightly—just 1.7 thousandth of a second—but enough to create chaos on your screen.

Sigda scrambled the audio signals, too.

At 5:50 p.m., when his skulduggery was done, Sigda closed the glass door and waited for his cue. At 5:55 p.m., the regular free afternoon news show went on the air and ran five minutes.

Suddenly, at 6 p.m., Channel 18 broadcast a blast of trumpets. Channel 18 viewers everywhere recognized it. At the same time a deep voice rang out: "By authority of the Federal Communications Commission!" Then a slide flashed on thousands of screens. It read:

**Subscription TV
First in The Nation**

Pay-viewers hurried to weekly program books (mailed to them) and found:

TUESDAY 6 P.M.

PARAMOUNT'S

"Conquest of Space"

From a satellite 1,000 miles from



Messing up the works: At Channel 18's studio, engineer Ray Sigda takes a clear broadcast sig-

nal (right), codes it, and turns it into the frustrating scramble shown in the center screen.

Earth, scientists take off on the first trip to the planet Mars

(For adults & young people)

Code 247D 85 mins. \$1.00

(To be shown again 6 P.M. tomorrow.)

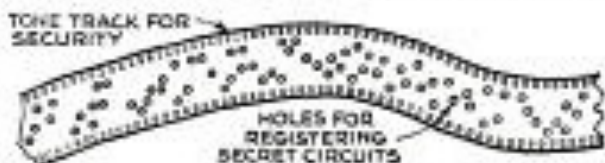
The trumpets still played, blaring out composer Aaron Copland's *Fanfare for the Common Man*. At 6:01 engineer Sigda got his cue, pushed three buttons. His code circuits went to work. On viewers' screens the printed announcement suddenly fell apart. The letters, no longer legible, looked like a game of dominoes after a player has gotten mad. The fanfare turned to sleigh bells.

Pay TV was on the air. You had one minute to get your decoder in action, or else shift to free TV.

Starting a decoder begins like this: You open the front door, revealing a dial and an odometer like the one in your car. You hear a faint sound of gears advancing a concealed paper strip on

which your bill is printed. You spin the dial (forward or back) until the code given in your program (247D) comes up in the odometer window. That *undelays* the video signals and also returns them from negative to positive.

As you turn the dial you are also ad-



vancing a "security tape"—a strip of 35mm Mylar film punched with a crazy assortment of holes. By dialing 247, certain holes move into position to complete certain circuits. When you dial D, you set a small printer in position to stamp "\$1.00" on your bill.

As you close the decoder door, the secret circuits are completed by gold-



plated fingers. Thirty of these push up against the perforated tape. But only six can get through the holes. These set



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Now turn the decoder switch from TV to PV. A buzzer sounds. You're hearing the decoder's "conscience" at work. It's so honest that it won't bill you until it knows everything is working: It is checking out its own circuits.

If anything is wrong—if, for example, you've dialed the wrong code—the buzzing turns to a chattering that means "try again." But if everything is in order, the buzzer goes for 15 seconds. When it stops, another sound comes on—a *clack!* A solenoid has yanked a lever—and your bill has been printed.

Suddenly the video and audio signals come clear, and you are watching and hearing "Conquest of Space."

The pay part. Once a month the postman brings you a partial bill. It looks like this:

Decoder rental	\$3.25
Program charges	—
Total	—

You have to fill in the cost of the shows you saw and the total. The program charges are printed on the bill that is still concealed in your set. Here's how you get that bill:

The partial bill brings you a special code number that will unlock the billing compartment in your decoder. Let's say the code is 244J. You dial 244J on the decoder and push the billing button. A small drawer door falls open—but only part way. The engineers want you to pull it the rest of the way. As you do this, you hear



a snipping sound: A small slicer bar has cut the bill. You pull it out. Let's say it looks like this:

271B	\$0.25
269A	FREE
270E	\$1.00
273F	\$1.25
275K	\$3.00

These charges total \$5.50. You write this into the bill you receive by mail. Your total charge is \$8.75. (Since your bill is over \$8, you're entitled to a \$2 rebate on next month's bill. Over \$10, the rebate

is \$3—an inducement to see more pay TV.)

Suppose you and the station disagree on how many shows you've seen. The security tape is edged with a sound track on which a tone has been prerecorded. Every time you see a show, a small erase head wipes a blank in this tone. Once a year the tape is removed. In case of dispute, it can be run through a read-out machine.

I asked chief engineer Hal Schumacher whether some wag couldn't figure out the circuitry and see shows free.

"Only an Einstein—and he'd have a hard time," he said. "You see, our printed programs, giving the codes, are only mailed out once a week, and there's a different circuit for every show."

Other systems. The Zenith system is only one of several now in use or soon to be in use. It comes entirely through the air, like any ordinary TV. The Toronto suburban system, which serves 5,800 homes, is Paramount's Telemeter, which operates entirely by closed circuit. There's no decoder; you simply stuff coins of any denomination into a box. (This is the system that Telelobe plans to give New York City.)

Denver's Telelobe system starts full-scale next month. Video is sent unscrambled through the air. Anyone can see it. But audio goes by a separate wire to a special loudspeaker in your home. You're billed once a month.

I found that some people in Hartford think pay TV is "great," most are at least satisfied, and some grumble impatiently for better shows. To RKO vice-president Jim O'Connor, even the grumbling is good.

"They're not grumbling about pay TV," he says. "They're just grumbling because we can't yet feed them all the top-notch shows they want to pay for."

These shows will come. Pay TV may or may not be for the masses. (Some experts think it will be.) But it will at least be for several million who are selective and want special features on travel, auto racing, science, exploration, music, boats—features free TV can't afford.

"We figure that some day soon at least 3,500,000 viewers may pay to see a single good show," says an official of another pay-TV company. "That's a one-night box-office take of \$3,500,000. Can't you see the kind of shows all that money is going to make possible?" ■ ■