

THIRTY-ONE television stations now are beaming pictures to a million or more screens from New York to Hollywood. To millions of sports fans these figures are big news, for the television bill of fare is heavy with athletic programs.

About 850,000 receivers of every price and size will roll from the assembly lines of more than 45 companies by the end of the year, and a whopping share of these screens will end up in the living rooms of sports enthusiasts. The fan now can view almost any kind of sport from baseball, football, basketball, boxing and hockey to track events and even rodeos.

This doesn't mean that he's completely satisfied with the method of airing athletic contests. Frequently, baseball fans are given an excellent view of home plate while there's a crucial double steal under way at second and third. Nor is the football fan satisfied when the cameraman is tricked into following Smith around right end when



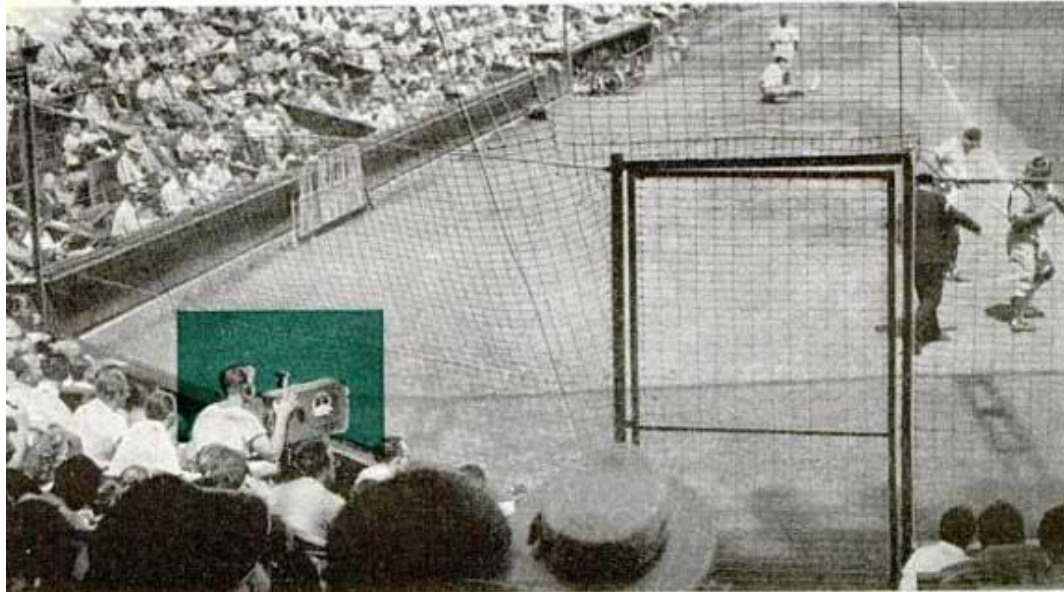
CHS photo

Monitoring screens Nos. 1, 3 and 4 show views of separate cameras. No. 2 shows picture on air. Top screen picks up picture after it is broadcast

Television covers the game

Behind-the-plate camera shoots through netting to show the pitched balls

KTLA photo





At Wrigley Field in Chicago, cameraman gives his Zoomar lens a pregame test. By manipulating lever he can change focus for a close-up of ball or wide-angle shot of field

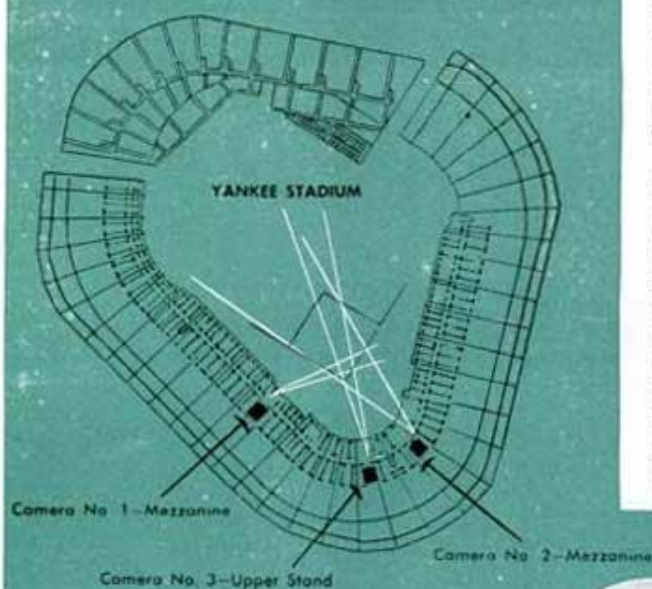


Diagram shows placement of Du Mont's cameras for airing baseball games. Camera No. 1 picks up infield close-ups and dugout shots. No. 2 covers pitcher and batter. No. 3 high in stands follows outfield hits

Right, photos of a television screen show what the sports fan sees from his easy chair. Left to right, a batter lays down a bunt, a runner slides safely into third, and usual player-umpire argument starts



Jones carries the ball the other way for the winning touchdown.

Fortunately, these incidents are rare, and most stations are feeling their way into systems that will put the right picture on the screen at the right time.

There are a good many bugs that face the producer of a sports program. Let's take a look at the infant art from cameraman to commentator to producer to find out how these problems are overcome. In baseball, probably the most popular sport that is telecast, the producer has the following typical setup:

Two or three video cameras are placed in the stands in the area running from behind first base to behind third base and are connected with the control room by coaxial cable. The commentator, who generally is near one of the cameras, has a line running from his mike through the control room to the transmitter. The producer in the control room has lines for communication with the cameramen and commentator.

The producer is the key man who decides what you'll see in the comfort of your living room. Before the game he locates his cameras, depending on local conditions as much as personal judgment, and briefs his cameramen on how he wants the game covered—the focal area of each camera in various situations that may arise during the game. This is vital since a lack of coordination among the boys behind the lenses might result in all cameras fo-

cusing on one point when the producer wishes to show his customers something happening at another point.

In most ball parks the producer is buried deep in the stands. In front of his seat are monitoring screens which show what each camera is viewing at any given moment. The producer orders the engineer to throw onto the air waves the most important picture. Some producers also have a regulation receiver which picks up the transmitted signals so they can see exactly what the home viewer is seeing. When such a receiver is not in use, the commentator's voice is piped in through a loudspeaker so the producer can instruct any cameraman to cover the incident being described.

In New York City, the National Broadcasting Company, Du Mont and the Columbia Broadcasting System are airing the games of the Giants, Yankees and Dodgers respectively. NBC at the Polo Grounds has three cameras hung in cages from the upper tier of the grandstand, one directly behind the plate and the other two halfway between home and first base. Producer Bill Garden uses a wide-angle lens behind the plate to show most of the playing area. On an outfield smash, the Zoomar lens, which can be converted from wide-angle to close-up with the movement of a rod, follows the ball through the air until it is returned to the infield. The third camera is used for close-ups.

Although some cameramen say the Zoomar lacks the clear image other lenses pick up, it provides a thrill to the viewer, who can fly through the air behind the ball or



Camera's turret mounts four different types of lenses. Cameraman can change from one lens to another by manipulating the controls

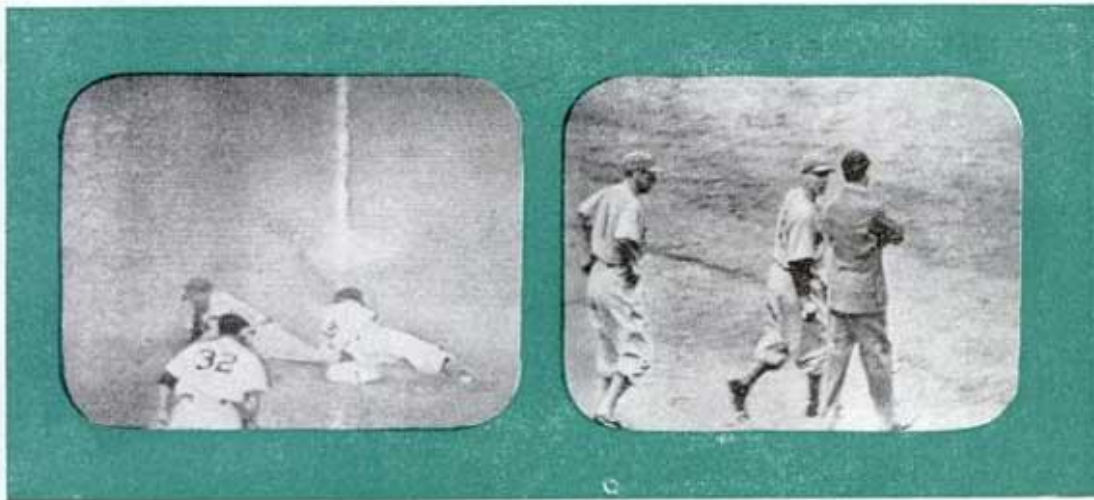
enjoy the sensation of catching a pegged ball practically in his own mitts.

Du Mont uses one camera directly behind third base for close-ups, another at an angle slightly to the right of the plate to cover pitcher and batter, and a third in the upper stands to follow hit balls.

CBS, covering the Dodgers at Ebbets Field, uses only two cameras less than six feet apart to the left of home plate in the grandstand. Two wide-angle lenses on one camera and two close-up lenses on the other do the job.

Producers often disagree on the placement of the cameras. Three lenses can cover more ground than two, but the shift from one side of the diamond to the other may confuse the sports fan at the other end of the air waves.

One problem in televising a baseball





KTLA photo

High in the stands at the Los Angeles Coliseum a cameraman points long lens at football action on field below

game hasn't been overcome with complete satisfaction. The producer is the boss, but can't see the game from the control room except through the eyes of his camera lenses. The commentator can see the whole game, but must follow what appears on his monitor so that video and audio don't go riding off in opposite directions. The cameraman can be guided only by his pre-game instructions and his own judgment in what to pick up. The problem of correlating all the members of this televising team is difficult to solve.

Football is another fine television spectacle and one that can be aired with less difficulty than baseball. It's played on a somewhat smaller field, the ball is much larger and doesn't travel as far or as fast.

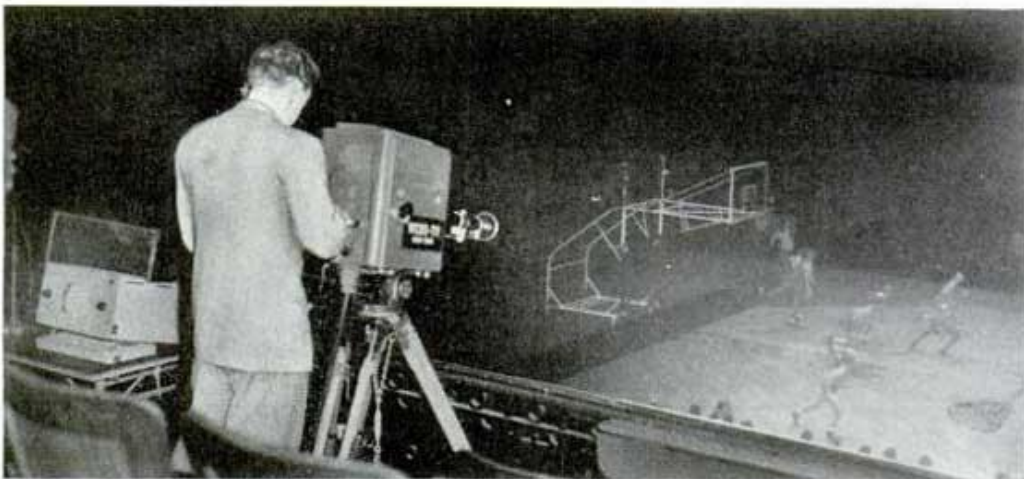
Station KTLA in Hollywood, which is running a heavy sports program, telecasts

all home games of one of the professional football teams and probably will telecast some of the collegiate gridiron games this fall. Its facilities were used last year to put the Rose Bowl on the air waves.

In televising football, two cameras high above the 50-yard line and as close to the playing field as possible make an ideal setup. NBC in New York uses its Zoomar lens to follow the ball on kickoff and punts. On plays from formation, both teams are shown in a wide-angle shot—or at least the offensive team and the defensive line. This is cut back to a close-up of the offensive backfield as the play develops.

Two unfortunate things can happen in a football telecast. On a sparkling, open-field run, such a long lens may be used that the sports fan sees only the runner and none of the blocking. The other—and big-

CBS telecasts basketball game from New York. Commentator's monitoring screen, left, shows him what's on air



gest bugaboo to the cameraman—is that he will be fooled by the offensive team and follow a decoy instead of the ball.

Track and field meets may gray the hair of a producer since the field looks like a three-ring circus with a good many events in the process at the same time. No one wants to miss part of the mile race or the pole vault, but they frequently overlap. CBS licked this problem by covering the runners until the vaulter appeared and then cutting to him.

Station WBKB of Chicago has an aggressive sports program that includes ice hockey, boxing, harness racing and wrestling in addition to football and baseball. Hockey is particularly difficult to televise because the black puck won't show up well on grayish ice. This problem is partially met by leading a rush, either three-man or solo, down the ice so that a fast pass won't zip out of range.

Fights are easy to air since they are held in a restricted area and a cameraman can follow every move of the participants. Don Lee's Station KHJ in Los Angeles telecasts boxing matches every Friday night and wrestling on Monday. The scene is viewed by two image-orthicon cameras and microwaved to the main transmitter atop a mountain overlooking the city. Sound is piped over a balanced phone line to the transmitter.

KHJ also has televised tennis matches from a small court set up by the studio, and outdoor swimming events from its own pool. It has discovered that rodeo action is particularly suitable for television, but auto races often appear dull



The Mount photo

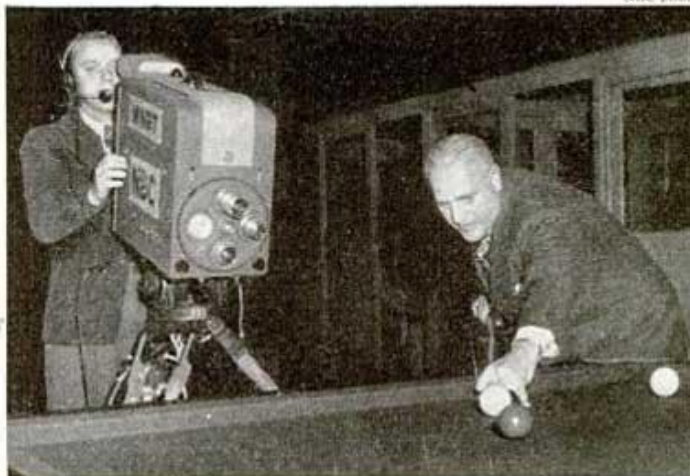
Camera behind the plate in the upper stand of Yankee Stadium chases a hit ball to the outfield and shows a close-up of the player fielding it



CBS photo

Strikes and spares are nothing new to television sports fans. The telecast of a bowling tournament requires an additional battery of lights. Below, Willie Hoppe, billiard champ, performs for video audience on special events show. Fans now can see almost any kind of sports event on screen

NBC photo





Television eye high in the grandstand follows the horses around Santa Anita race track in southern California

because there are no breaks in the action.

Basketball is a television natural that can be handled with a single camera and lens under the proper lights. Running and harness races pose no difficulties except how to fill in the half-hour waits between events when an entire card is telecast. Golf can't be covered well until helicopter-borne cameras can be brought to bear on tee, fairway, rough and green.

To view these programs, the sports fan has his choice of a good many new receivers, many of them featuring larger screens. One company has announced a projection-type set with a retractable screen 20 inches wide by 15 inches high. Late this year another manufacturer expects to bring out a 16-inch picture receiver in both tube and projection models. RCA Victor recently unveiled the first commercial equipment for showing life-size television programs to large audiences in hotels, clubs, churches and schools. The picture may be adjusted from three

by four feet to seven by nine feet. Other manufacturers are bringing out models that combine AM and FM with a record player and television screen. General Electric's receiver has a 10-inch tube with an aluminum-backed fluorescent screen.

Thus the sports fan, once he has bought and installed his receiver, can enjoy a holiday doubleheader, a billiard lesson or a thrill-packed rodeo for practically no additional expense. His living room may become the grandstand of the neighborhood.



Line-of-sight "dish" antenna at baseball park beams pictures to main transmitter on mountain