Dear Sir,

We have pleasure in enclosing a copy of our Booklet B.32. dealing with Cossor Television. This is sent to you as a matter of general interest and to acquaint you with the developments we have made in this direction.

Copies of this booklet are available to Cossor Television Stockists in the Service Area.

Yours faithfully,

A. C. COSSOR LTD.

[Signature]

General Manager.

P.S. The new reduced prices will be found on page 17.

Enc. Booklet B.32.
Radio—its thrills—its interests—increased an hundred fold

by

TELEVISION

Do you remember the sugary sentimentality of “Sonny Boy”? Do you remember the bathos, the raucous crudity of “The Singing Fool”—the first all-talking picture? As you watched—and heard—its banalities unfolded did you realise that you were the witness of a revolution—a revolution which has left its mark in every corner of the globe?

Today another—and similar—revolution is taking place. A revolution even greater—in implication and in possibilities—than the introduction of “talking pictures”

It is the coming of Television.

Since its inception, Radio has been blindfold. We have listened but we have been unable to see. Imagination, inspired by aural impressions, has had, perforce, to serve as sight.

Today, imagination gives way to reality. To sound is added the priceless gift of vision. Radio is blind no longer.

Television is here!
"Look! — Look! — That end wall's toppling — it's coming down — it's falling — look! . . ."

NEWS

That you can see — and hear too!

"... the third News..." says the announcer, then, without emotion, he reads out the events of the day. World-shaking happenings — news of trivial importance — everything, vital or otherwise, is treated with the same air of impartiality — of detachment. For fourteen years we have listened to this impersonal recital of facts — even of sensational facts. Yet, with all its faults, its lack of colour — of drama, how could it have been otherwise — this presentation of blind news?

But the news you receive today need not be blind. No longer need
THE MOST VIVID PHRASEOLOGY—
THE MOST DRAMATIC DELIVERY
OF THE SPOKEN WORD WILL
NOT BRING YOU A FRACTION
OF THE THRILL OF

seeing

you depend solely on the reading of carefully edited reports. No longer need you force your imagination to visualise that which you hear. With Cossor Television the News, lives—it is real—you can see with your own eyes—
the facts—as they happened.

You will see not only news but spectacular events, too—
events like the Trooping of the Colour—the Royal
Military Tournament—the R.A.F. Display at Hendon—
Naval occasions. There are no limits to the scope of
Television. In the near future, your Cossor Television
Receiver will enable you to see, in comfort, from your
own arm-chair the events of the day—living—real.

... HERE COME THE HORSE ARTILLERY—DON'T
THEY LOOK FINE?—WATCH THEM WHEEL INTO
LINE—THERE! WASN'T THAT A MARVELLOUS SIGHT...
SPORT—See as well as hear

Twickenham... that battleground of the giants! Epsom...
Lord's... that historic muddy stretch between Putney and Mortlake...
the Open... what memories—and hopes!—those words conjure up!
Already you have heard—you have listened to commentaries—
often exciting ones—but imagine being able to see too!
Old George (gad!—how that man runs!) going down the wing for
England... your "shirt going west" as the field bunches into
Tottenham Corner... Bradman nonchalantly hitting out...
THE MOST EXCITING
RUNNING COMMENTARY
IS MADE IMMEASURABLY
MORE thrilling
WHEN YOU CAN
See too!

interesting, dramatic, to 'hear', but a hundred times more thrilling
to see as well—as, indeed, you will be able to see—though sitting con-
fortably at home—on Cossor Television.

Remember that, in addition to direct presentation of events as they
occur, Cossor Television brings with it all the resources of the film
industry. Happenings which, for technical or other reasons, cannot
be directly televised, will be filmed and afterwards transmitted by
television.

Thus, there is opened up a new era in the presentation of sports news
—an era of even greater and more thrilling possibilities than the coming
of Radio—because it brings with it the priceless gift of sight.
"THE PLAY'S
THE THING"—

OPERA too!

See and hear

However good the play—however well acted—however appropriate the "noises off"—there is always an air of unreality about a Radio presenta-
tion—because the players are invisible—because you cannot see. Imagine
sitting through a theatre performance blindfold. Is there any difference?
And opera, too. How much more interesting if one could see!
You can see—on Cossor Television. Through its alliance with the
resources of the cinema, Television will bring you—not merely the
spoken lines—but vision too. You will see as well as hear the dramatic
situations—the thrills—the laughs of the Theatre.
"LADIES AND GENTLEMEN—

MUSIC HALL!

—"TURNS" THAT YOU CAN

See as well as hear

The famous comedian is announced. The orchestra strikes up his "signature tune". And the audience bursts into laughter—at what? You, who are listening, wonder. You missed the joke—it was a silent gesture—you could not see—you are conscious of having missed part of the fun—because your entertainment is blind.

But, with a Cossor Television Receiver you can enjoy all the fun—the silent fun as well as the humour you can hear—the wagging eyebrow—that naughty look—just as if you were sitting in the audience.
The Miracle

More than thirty years ago Cossor began—unwittingly, it is true—to prepare for the coming of Television. In those (electrically speaking!) medieval days, the House of Cossor was famous for medical and scientific apparatus of the highest laboratory quality.

With the coming of Radio, attention was turned to this new field. Here, the long-established tradition of scientific accuracy found new application and expression. The making of wireless valves and, later, Radio receivers developed logically from the earlier scientific experience. The measure of success enjoyed in this enterprise can be judged from the fact that in the homes of Britain there are more Cossor Receivers in use than any other make.

When the possibilities of practical Television began to be discussed, a Cossor Television laboratory was established and

of

TELEVISION

research energetically commenced. After a short time, it became obvious to Cossor engineers that the development of high-definition Television was closely identified with the Cathode Ray Tube. To Cossor, the Cathode Ray Tube was already long familiar. So long ago as 1902

PLAYED BY COSSOR

were made the first Cossor Cathode Ray Tubes. Their development, in fact, so far as this country is concerned, has largely been due to the pioneer work of Cossor Research. Here again, as in Radio, earlier Cossor experience proved invaluable.

It is important to remember that, from the start, the entire effort of the Cossor organisation has been directed to one single end—the making of a combined Television and Radio Receiver. Here, once again, previous enterprise has played no small part. As the largest self-contained Radio manufacturers in the British Empire, the Cossor organisation possessed a vast wealth of experience accumulated in the making of Wireless Receivers. Added to this experience is a wide foreknowledge of Cathode Ray Tube technique. And finally, permeating the whole enterprise is the tradition of laboratory accuracy handed down from those valuable early years.

Small wonder is it, therefore, that the Cossor Television Receiver of to-day is the most highly developed instrument yet produced. When its "background" is considered—how could it be otherwise? If genius is the "quality of taking infinite pains," then is the Cossor Television Receiver a product of genius—of over thirty years of "taking infinite pains." As you will read overleaf these Cossor Instruments possess many important and unique advantages. Independent critics have said that the Cossor instrument is not only the best made in this country but, indeed, in the world.
The Cossor Television Receiver is a handsome instrument fashioned in solid walnut, 44\(\frac{1}{4}\) in. high, 20\(\frac{1}{2}\) in. wide and 24 in. deep. The viewing screen and Radio and Television controls are protected by doors when not in use. Two distinct services are provided: (a) Television reception on both systems radiated by the BBC together with simultaneous reception of the accompanying Television sound programme; and (b) superb high-fidelity broadcast reception of all the leading European Radio programmes and also of sound (without vision) on the Television wavelength (41.5 megacycles). You will see, therefore, that this instrument provides complete home entertainment; combined Television and Sound programme; normal Radio programmes; and, in the case of Model 237T, electrical reproduction of gramophone records. Throughout the day it will afford, in one form or another, continuous entertainment or interest.

**SUPERLATIVE Radio TOO!**

For the faithful reproduction of television pictures, special receiving circuits are absolutely essential. These circuits must be capable of faithfully amplifying the minute television signals without the slightest trace of distortion. Since the Radio part of the Cossor Receiver uses the same highly developed circuits, the performance—especially quality of reproduction—is superlative, incomparably superior to anything previously available.

possess many IMPORTANT ADVANTAGES including—

**Direct Vision**

In the Cossor Television Receiver the picture is viewed direct without the aid of mirror, lens or other device. This important advantage ensures extreme clarity and brilliance with the widest possible angle—both vertical and horizontal—of vision.

**Rock-steady Picture**

Clearly defined, brilliant black and white pictures with great wealth of detail, large enough for a number of people to enjoy at one time and sufficiently bright to obviate extreme measures of room darkening are an outstanding feature of this magnificent Cossor instrument.

**Simple Operation**

The Cossor Television Receiver has only two controls in addition to those usual for radio reception. One is to regulate the “brightness” of the picture, the other determines the degree of “contrast.” These controls can be mastered in a few minutes and, once set, require no further adjustment during the period of the transmission.

**High-fidelity Radio Reception**

For the reasons outlined above, the Cossor Television Receiver will also bring you the normal BBC and Continental radio programmes with a fidelity of tone and detail never before equalled.

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**TWO MAGNIFICENT MODELS**

**Model 137T**
Cossor Television and High-fidelity Medium and Long Wave Radio Receiver as illustrated and described herein, price
70 Gns.

**Model 237T**
As Model 137T but with additional upper section incorporating electric gramophone of the latest type, with record changers and every up-to-date development, price
90 Gns.

**Hire Purchase Terms Available.**
How it is Done

IN SIMPLE LANGUAGE — THE PRINCIPLE
OF COSSOR TELEVISION

After your first thrill of television, you will want to
know how it is done. It is impossible, of course, within
the limited space of this booklet to give more than the
barest outline of television principles.

Firstly a little general information as a background. If
you examine under a magnifying glass a photograph
reproduced in your morning newspaper, you will see
that it consists of a large number of dots. Dark portions
of the illustration consist of large dots — light portions
of small pin-points. But when viewed at arm's length,
the illustration becomes quite pleasing because the dot
formation disappears. Even slight variations of light and
shade appear in their correct values.

The television picture is built up in a somewhat similar
manner. Instead of dots, however, it consists of
horizontal lines closely spaced. The light and dark
portions of the picture are obtained by varying the
brightness along each line — or portion of a line. Before
describing how a subject to be televised can be broken
down into a line formation, it is necessary to say
something about what is known as "persistence of
vision".

When we see a person walking across the screen at the
cinema, we actually see a sequence of "still" pho-

HOW
A PRINTER
"SEES"

THE PICTURE

On the left, greatly enlarged, is a printout illustration. Note that it
is composed of dots of varying sizes to produce the impression of light
and shade.

so to speak, between the still pictures, and in this way
the illusion of movement is created.

A lighted torch fastened at the end of a length of string
and twirled round the head will appear as an unbroken
ring of light. Again, an illusion due to persistence of
vision.

The picture in a television receiver is not really made
up of lines at all. Actually it is produced by a single
spot of light travelling at an incredibly high speed.

Just like our analogy of the lighted torch, the single spot
of light can be made to travel so quickly across the end
of a cathode ray tube that it is visible only as a line.

By suitable electrical control, this spot of light can be
causėd to move in a vertical direction. Therefore,
starting at the top left-hand corner of the picture, it will
sweep across in a series of closely-spaced parallel lines
repeated over and over again in sequence.

So much, therefore, for general principles. Now come
with us to the BBC studio at Alexandra Palace. The
announcer is being televised. He stands in the field of
a spotlight not unlike those used at the theatre. But if
you were to examine it closely you would see that
immediately in front of the lens there is a rotating disc
perforated spiral-fashion with a number of small holes.

This causes the beam to sweep across the announcer in
a series of close parallel lines. Standing immediately
behind the spotlight you would notice a bank of photo-electric cells. These cells are extremely responsive to light fluctuations. They are able to record, therefore, all the changes in reflected light created when the beam of light, for example, sweeps across the announcer's face. The light and shade of his features—his eyes, nose, mouth, etc.—all these vary in tone values and cause minute voltage fluctuations in the photo-electric cells. These in turn are very greatly amplified and are passed ultimately to the transmitting aerial.

For the purpose of our explanation we have merely outlined one method of transmitting. There are, however, many others—including the Iconoscope Camera which uses entirely different principles and which is capable of recording scenes out of doors.

And now for a brief explanation of a Cossor television receiver. The picture is seen on a screen at the end of a cathode ray tube. The accompanying sound is heard simultaneously in a moving-coil loudspeaker.

The Cossor cathode ray tube—the basis of modern television reception—is a large onion-shaped affair almost flat at one end and internally coated with a fluorescent material on which the picture appears. The bulb is of glass but the internal elements—although on a much larger scale—are not unlike those in a wireless valve.

The fundamental principles of the cathode ray tube are not difficult to understand. When a filament is heated, a stream of electrons is given off in every direction. In the cathode ray tube this electron stream—by means of two pairs of deflector plates—can be directed and controlled in much the same way as a nozzle on the end of a hose-pipe will direct a stream of water. By applying suitable voltages to the pairs of deflector plates, the beam of electrons can be made to move in vertical and horizontal directions. They become visible on striking the fluorescent screen. By exercising suitable electrical control, therefore, the beam—in other words a single spot of light—can be made to travel at an incredibly high speed and caused to assume a formation of closely spaced horizontal lines.

When the signals received from the transmitter at Alexandra Palace are amplified and passed to the modulating grid of the cathode ray tube, the formation of lines instantly becomes a living picture. The scene being “scanned” by the spotlight at the transmitter is re-created line by line on the fluorescent screen in your television set.

Obviously this explanation has been stripped of its technicalities. There are many other problems such as synchronisation. In the early days of television, it was necessary for each television receiver to be synchronised with the transmitter by the user. Today, synchronisation is automatically controlled by the transmitter. It is impossible, therefore, for the picture in the receiver to be out of step with the transmitter. This is done by means of special synchronising signals transmitted at the end of each line and at the end of each “frame.”

The operation of a Cossor television receiver is extremely simple—no technical knowledge of any kind is required once the instrument has been correctly installed. Apart from the normal controls of a wireless receiver, there are two others. One can be conveniently described as
a "brightness control." By its use the mean brightness level of the picture is adjusted. If the picture is too bright it can be dimmed—and vice versa. The other control adjusts the degree of contrast in the picture; if, for example, it is too contrasty and thereby suffers from lack of middle tones, a slight adjustment of the contrast control knob will correct it.

The instrument itself is divided into three "decks"—the upper deck carrying the cathode ray tube and the associated vision circuits; the middle deck is the radio receiver covering not only Alexandra Palace transmissions but also giving a superlative reproduction from all the worth-while European radio broadcasting stations. The lower deck embodies the large moving-coil loudspeaker and the power equipment necessary for supplying the high voltages required for vision and sound.

THE STUDIO "END" OF TELEVISION

In one of the BBC Television Studios at Alexandra Palace. Note the microphone suspended on the long arm, just over the violinist. (Photo—courtesy BBC)

Cossor TELEVISION

—IN THE MAKING

Above: The operator is moulding the internal assembly of a Cossor Cathode Ray Tube.

Copy right: A batch of Cathode Ray Tubes ready for the output test.

Right: Assembling television chassis and, in the background, viewing the completed chassis in their cabinets.
THE EMPIRE'S LARGEST SELF-CONTAINED RADIO ORGANISATION

An impressive view of an assembly bay—one of many—in the six huge Cossor factories at Highbury, London, which comprise the largest self-contained radio organisation in the British Empire.

Prices herein do not apply in U.S. and are subject to alteration without notice

We reserve the right to vary specifications if necessary

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