

Today's Video Systems vs. those from 1936  
For Amusement Only

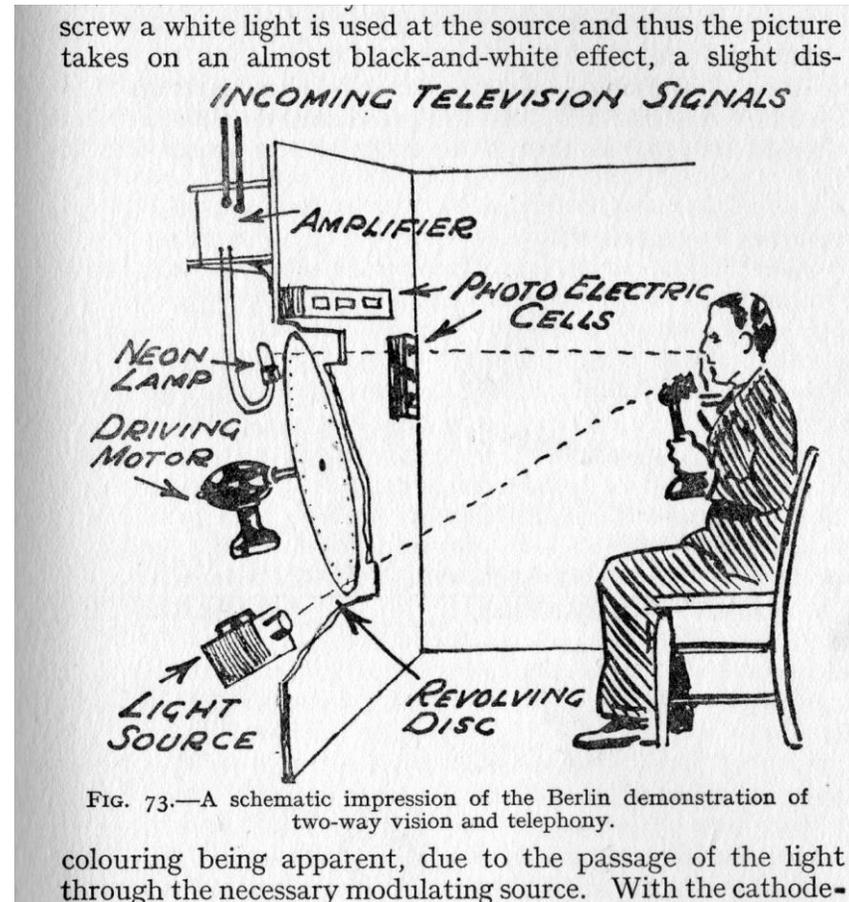
# Today - 12 fps from our eyeTrain Gen T

- This snippet from a 1936 Book on Television. The book details both the John Logie Baird and Farnsworth/Iconoscope system.

24 times a second, as explained in Chapter I.  
**Continuous Motion for Film Television.** — For television purposes, however, the motion of the film forward must be absolutely smooth and continuous, quite apart from any gearing arrangement required for the standard low-definition image-rate of  $12\frac{1}{2}$  per second. In the case of the projector first successfully used for purposes of television the film was fed through at a constant and uniform speed, while an arrangement of lenses and mirrors caused two appropriate adjacent pictures to merge together at any one

- Seems that 80 years ago 12.5 fps was 'low-definition'
- Baird was Scottish, just to save anyone the trouble of pointing it out...

# Coming in 2017 – Two-way Videophones



- From the same book – Logie Baird

# Today - Infrared Cameras Day/Night Operation

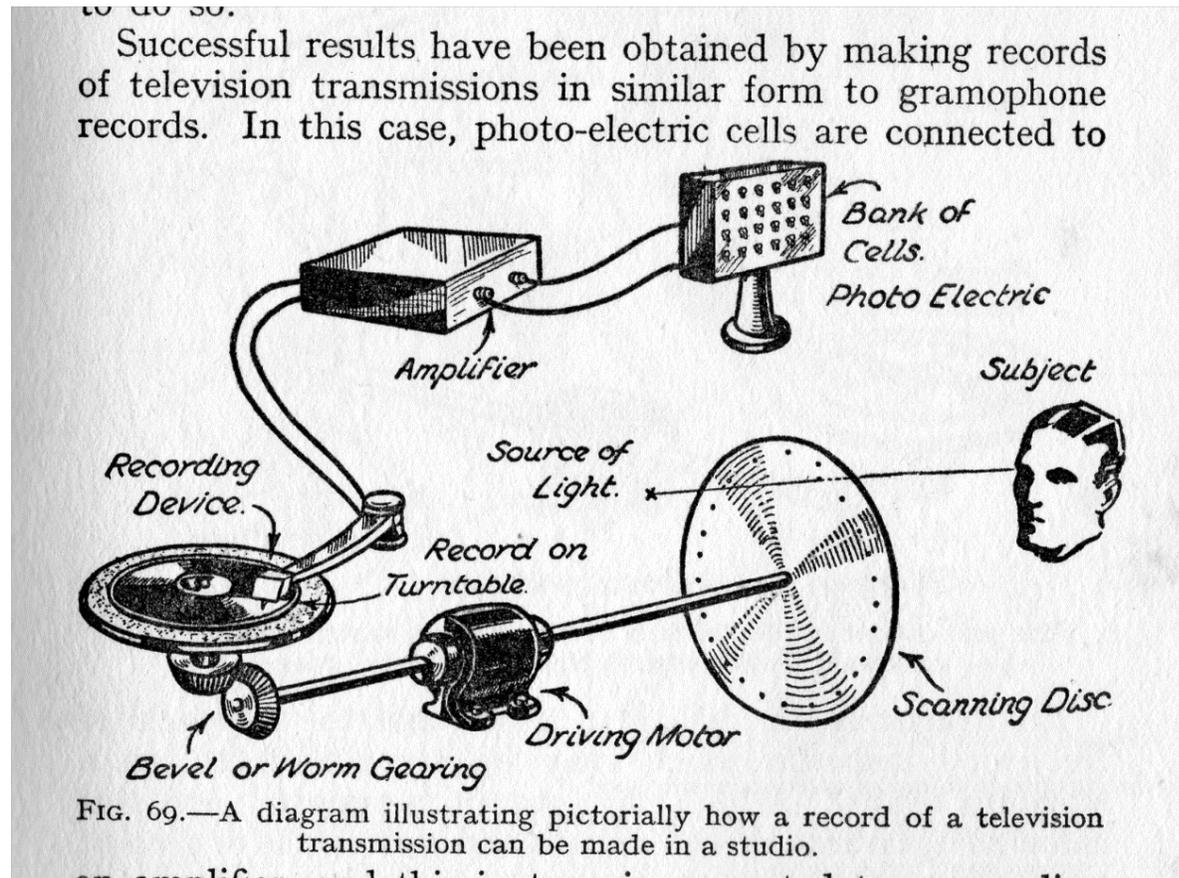
come when a monochrome image will be a thing of the past.

**Noctovision.**—Another development of television is to be found in the utilisation of the infra-red rays for the illumination of the subject being televised or transmitted. At present the object is illuminated by a bright light source placed behind the transmitting disc. At an experiment some years ago this light source was replaced by a special light and filter through which only infra-red rays passed. As is well known these rays are invisible, and they are already frequently employed in burglar alarms, etc. If, therefore, the object to be transmitted is placed in a darkened room, and is scanned by means of infra-red rays, the light variations would still be recorded by the photo-electric cells and the image could be transmitted, even although in complete darkness. Sir Oliver Lodge attended a demonstration of this system, and consented to being televised. He sat in a completely darkened room, and although so far as he was aware nothing at all had happened, he was clearly seen in Glasgow by some newspaper representatives and appeared as though he was in a fully illuminated room!

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Remote, Infra-Red television was old news in 1938...

# Video Recorders, actually older than you think



- 1938 again..... You might think that these drawings are just theories?

# Not just theory



FIG. 85.—An actual phonovision disc record. When “played” on the appropriate apparatus, instead of song or music being heard, the movements of an artist can be watched in the vision apparatus.

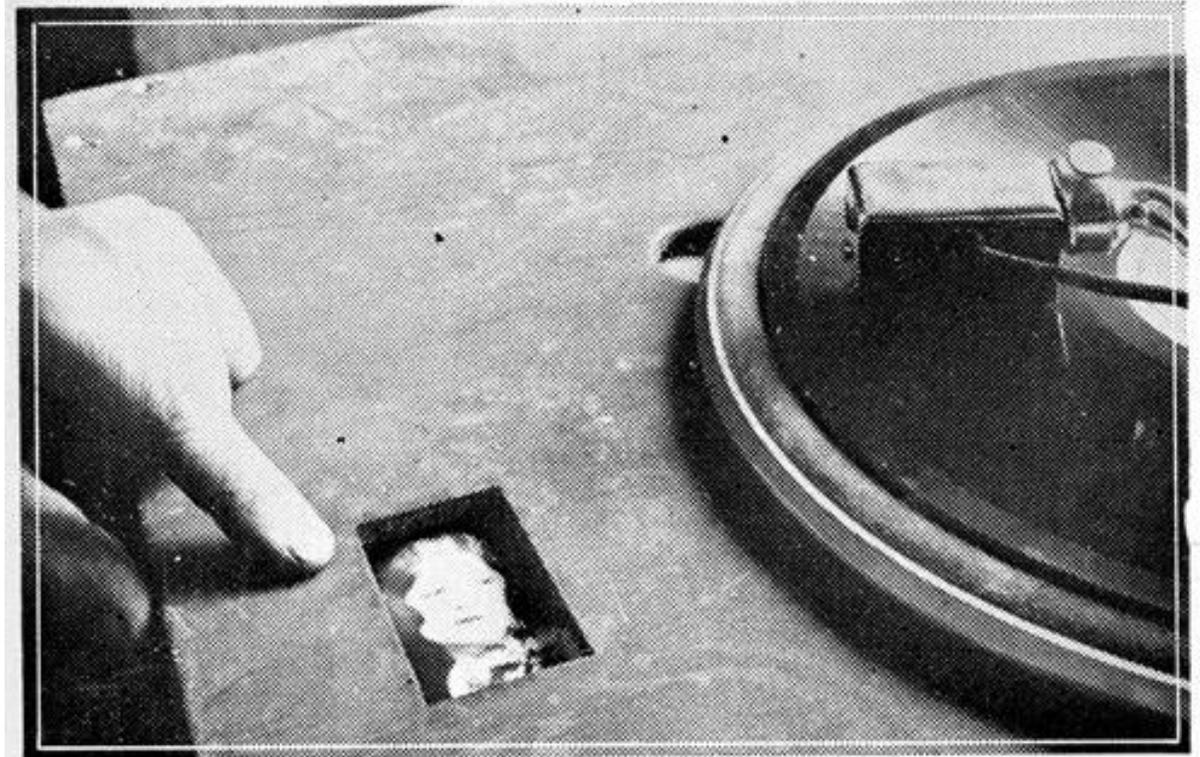


FIG. 84.—Showing how the “bottled image” appears in the television receiver when “played back from the record.”

# Camera Sensors

- Baird may have had a mechanical cameras and a single photo-cell but his camera still produced an electrical analogue video signal
- Baird scanned the subject with a light and measured the reflected light level with a single cell
- We illuminate the subject fully and scan millions of cells that each measure the reflected light level from their part of the image.
- The principle is the same..... break the image into parts and measure the level of that part – transmit the data serially

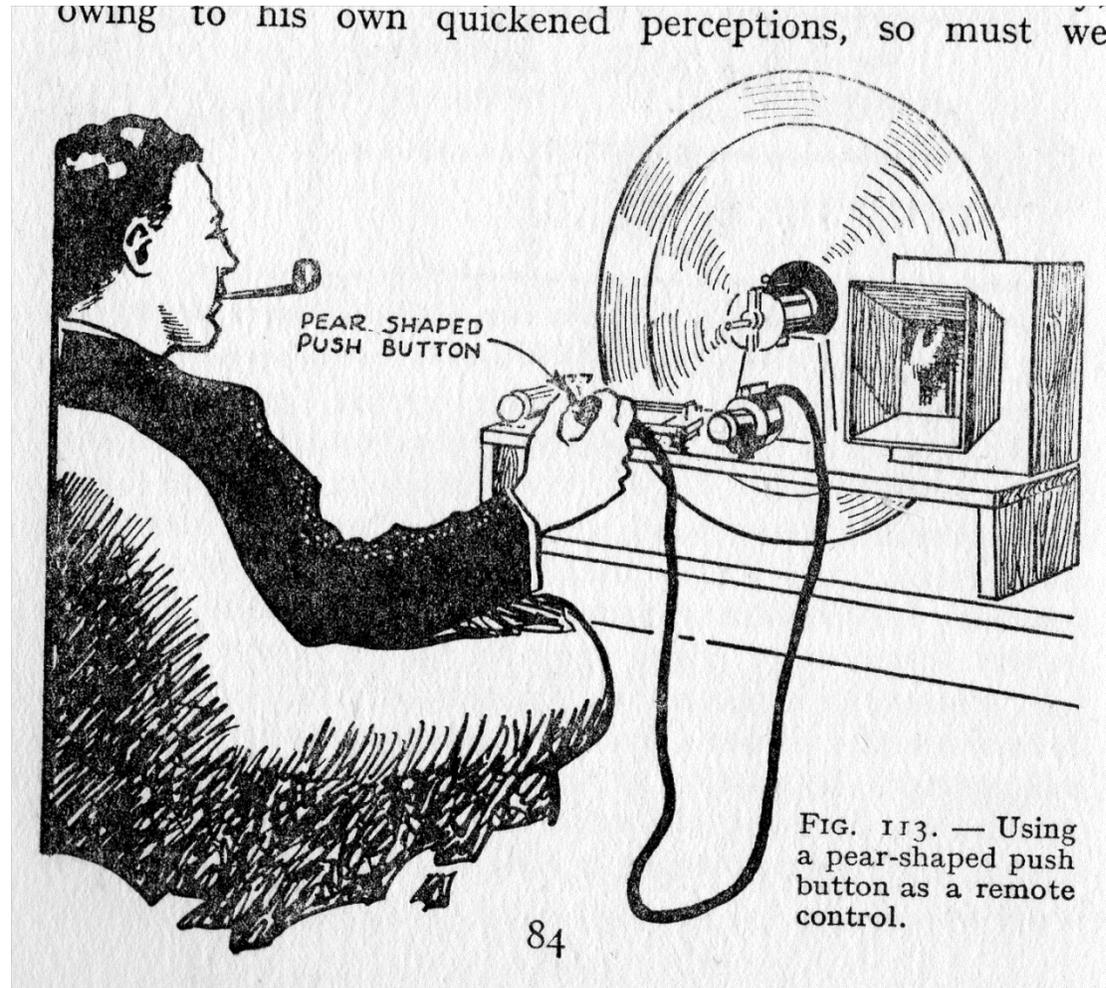
# Colour TV is how old?

From the same 1936 book

various compositions.

**Colour Television.**—Systems of television in which the picture or image is obtained in an approximation to its natural colours. In the Baird experimental system of colour television, a triple scanning disc is used. This disc contains three spiral series of holes, the series of holes being provided with red, blue and green colour filters respectively. By means of this arrangement the picture is triply scanned.

# Remote Control 1930s style



- And pear shaped too

## LCD Monitors are New...?

- Only from a manufacturing point of view – the concept of using crystals to rotate polarised light in order to modulate its intensity was used in the 1930s
- LCD screens are pretty much the same thing except much smaller with more pixels
- This article is referring to something that never really caught on in the 30's

As no gas-filled lamps have been found suitable to carry the signal fluctuations without time lag, a scheme has been

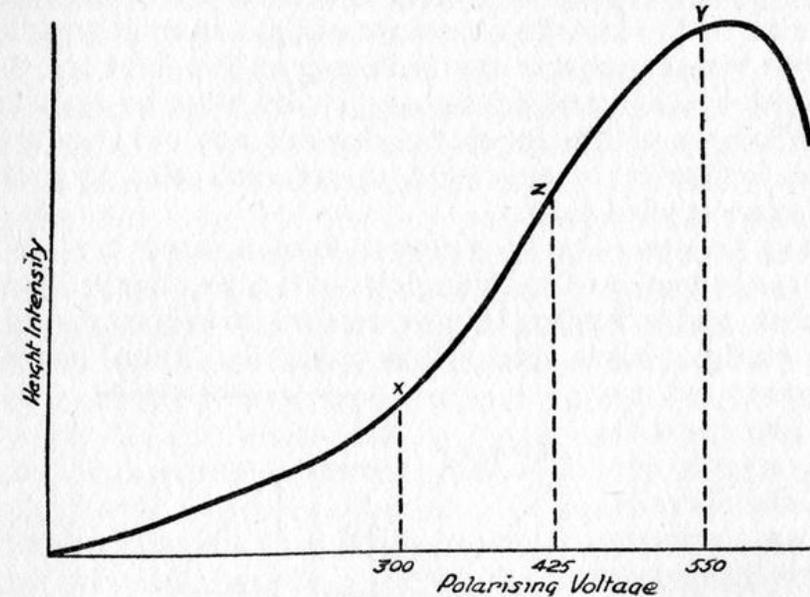


FIG. 48.—The light intensity polarising volts curve for a grid cell combination.

devised in which a normal electric lamp provides the illumination, and this light is passed through a special light-trap, the latter being provided with the signal variations, and thus controlling the light. The working is very ingenious and depends for its effect upon what is known as the Kerr-cell effect. It consists, essentially, of two plates arranged alternately and interposed with separators at the edges, immersed in a liquid known as nitro-benzene. This will pass current, and is employed in conjunction with Nicol prisms. This consists of a piece of Iceland Spar (*see Fig. 57*)

# Projection Televisions

Old hat.....



# Image Quality

- While the quality issues being discussed on the clipping to the right may not be familiar today, we are only just getting to the point of perfect images ourselves.



FIG. 149.—If the receiver gives undue high-frequency response, the image will be accompanied by white patches surrounding the dark sections, somewhat after the manner shown in this illustration.



FIG. 150.—A poor low-frequency response will result in dark patches beneath the chin and loss of detail in the face as shown here.



FIG. 151.—Interference such as may be caused by local oscillation will produce a chequered pattern as shown.



FIG. 152.—L.F. instability produces dark lines passing across the picture as represented in this illustration.

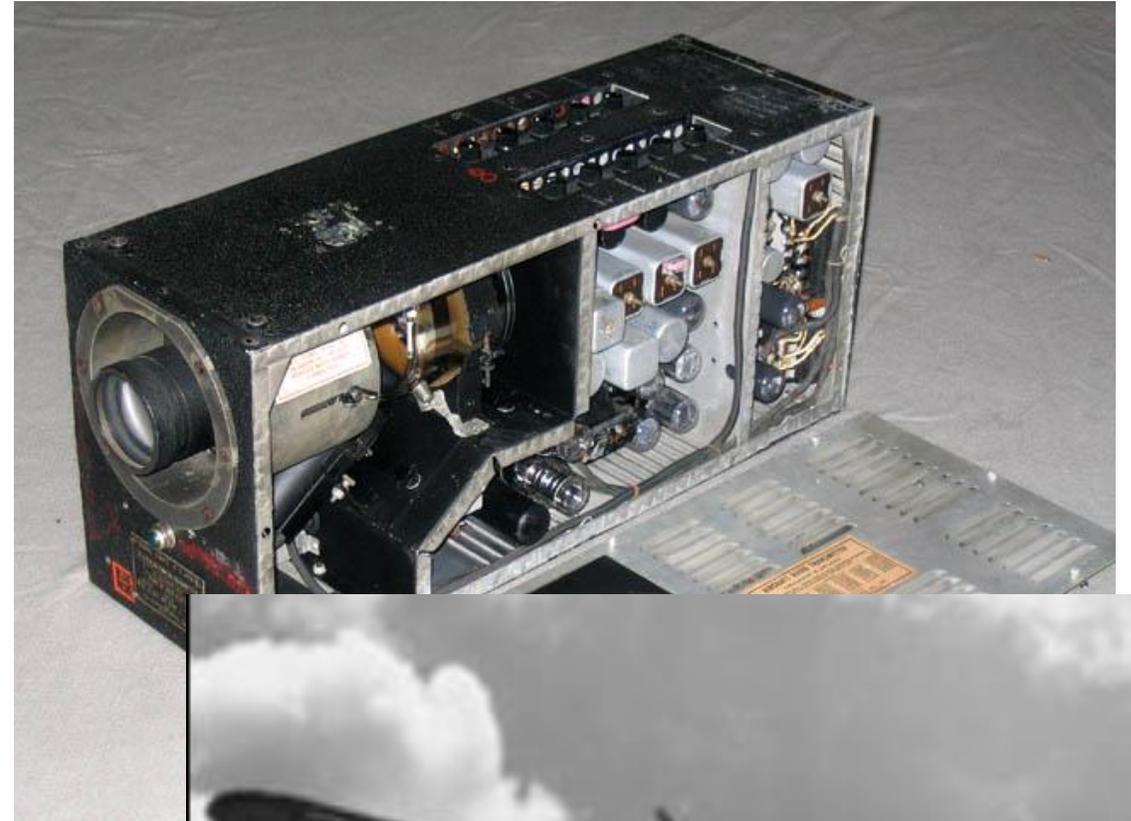
# Live Video from Radio Controlled Drones

- So, was this amazing technology around in 1930?
- Could they drop small munitions on an enemy in 1930?
- Well no, not 1930.....



# But how about 1940?

- The 'drone' was a B17 Bomber
- This was the video camera used, one looked ahead and another at the flight controls
- The drone was radio controlled from a following aircraft fitted with TV monitors via a live video link
- Auto-Pilots were around in the 1930s so drone stabilisation isn't new
- The payload was 30,000lb of Torpex explosive



I say chaps, we've been there and done that already don't cha' know

