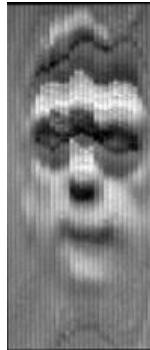


SELECTED BANDWIDTH COMPARISONS OF TELEVISION IMAGES



1928 Walie Fowlkes “Phonovision” test disc. 4 fps x 30 lines x 201 seconds = 24,120 passes (120 Hz, “buzzing bee”). Actual Baird broadcasts used 12 fps to minimize flicker, giving an effective bandwidth of 72,360 passes in 201 seconds at 360 Hz.



1933 RCA/Zworykin test transmissions, 24 fps, 240 lines x 201 seconds = 1.1 million passes over 201 seconds at 5.7 kHz.



1936 BBC Television Service using Emitron system. 30 (fps) x 180 (lines) x 201 seconds “high res” = 1,085,400 passes (450 times more data) (5.4 kHz). Leslie Mitchell (pictured above) was one of the first announcers in 1936; this image is probably not an off-screen capture but a studio shot from film,



1936 Nazi Television: The off-air capture above is from Television Station Paul Nipkow in Berlin, which used a higher definition 441-line system. The German *Reichspost* also offered “Television Phone Booths” (for Aryans only) from 1936 to 1940.



1946 US NTSC 30 (fps) x 525 lines x 2 (interleaved) x 201 seconds modern standard = 5.75 MHz (1,350 times more data). *(An NTSC television channel as transmitted occupies a total bandwidth of 6 MHz. A guard band, which does not carry any signals, occupies the lowest 250 kHz of the channel to avoid interference between the video signal of one channel and the audio signals of the next channel down)*



2006 US HDTV 30 (fps) x 1,050 lines x 600 pixels x 201 seconds HDTV standard = 6,783,750 passes (27,000 times the definition of phonovision) (18 MHz) *(Since current terrestrial channel allocations are limited to 6 MHz, a pure HDTV signal cannot be broadcast over the air without compression; even on digital cable systems some form of compression is usually required.)*