

'TECHNICAL SHORTS'

by Gerry O'Hara, G8GUH

'TECHNICAL SHORTS' is a series of (fairly) short articles written by Gerry O'Hara, a CVRS Director and vintage radio enthusiast, each focussing on a technical issue of relevance in repairing, restoring or using Eddystone valve radios. However, much of the content is also applicable to non-Eddystone valve receivers. The articles are the author's personal opinion, based on his experience and are meant to be of interest or help to the novice or hobbyist – they are not meant to be a definitive or exhaustive treatise on the topic under discussion.... References are provided for those wishing to explore the subjects discussed in more depth.

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Introduction

Although most radio receivers were still of the 'tuned radio frequency' (TRF) type in the late-1920's, advances in valve design, in particular the introduction of the screen-grid valve (tetrode), and improved inter-stage screening and decoupling, meant that they could attain high levels of gain while remaining stable. However, this high sensitivity, when coupled with more numerous and higher power broadcast stations coming on the air, began to cause several undesirable effects to manifest: cross-modulation, overloading (in many stages of the receiver), distortion, and large changes in output volume as the receiver was tuned through different stations – very disconcerting and annoying. Almost all receivers were fitted with a manual gain control of some description: in these early sets, this could be as simple as a rheostat in the heater supply to one or more valves, as in my King-Hinners Model 25 'Neutrodyne' TRF from 1924 – photo, below, (using 01A triodes), or a

potentiometer in the aerial circuit, as in the Atwater Kent Model 37 TRF from 1926 (#226A triodes in RF stages), and this method coupled with variable bias, as in my late-1920's Philco Model 77 'Highboy' con



illustrative circuits at the end of this article. However, this was not ideal, especially when listening to more distant station subject to fading, an issue that became more important when shortwave bands started to become popular and reception of very long distance stations became possible, along with more 'serious' fading due to atmospheric effects.



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