MOSLEY ELECTRONICS, INC.

SWR-itis CAN IT BE CURED?

The advent of low-cost SWR bridges and analyzers has enabled ever-increasing numbers of Hams to become acquainted with so-called reflected power. This has become such a popular conversation piece on the Ham bands that an entirely unwarranted degree of importance has attached itself to the subject of SWR.

Many Hams - who for years had experienced excellent results with their beam antennas - suddenly found that their feed-lines possessed something less than perfect unity match to their antennas. Such is human nature, that, irregardless of past performance, this newly discovered "revolting development" became entirely intolerable!

This unjustified mental attitude has for some years provided nice incomes for chiropractors and broken bone specialists who have reaped far more profit from the roof and tower excursions than have the Hams who restlessly seek perfection.

Competent professional antenna engineers generally agree that in most applications a standing wave ratio of up to 5 to 1, or somewhat higher, is satisfactory and acceptable.

For example; referring to the ARRL Antenna Handbook, we see that a SWR of 5 to 1 in RG-8/U coax will result in a signal loss at 28 mcs. of only 1 db. This decrease in signal strength cannot normally be detected on an S-Meter!

This is the "introduced loss", due to SWR, and has no bearing on the normal 1 db. line loss inherent in 100 feet of the line which is present in any case. Furthermore, these losses decrease as frequency decreases!

Sometimes - and particularly with Ham antennas which must operate over wide ranges of frequencies - it is not at all desirable to have a feed-line/antenna combination that offers perfect unity SWR. Such combinations usually are very critical and while providing unity at one frequency will often have a poorer response curve than other antennas designed to give optimum performance over a greater band-width.

In actual practice, most Hams will be far better off with beam showing 1.1/1 SWR at tuned point and increasing but little as frequency is changed; rather than with antennas that show unity at resonance but must be retuned for operation at other frequencies.

MOSLEY TRAP MASTER beams do not claim perfect unity match at any point in the bands but are so designed to provide optimum performance over the full width of each band without tiresome roof or tower climbing.

As can be seen in Fig. 5, the frequency response curves show a very low SWR at the minimum tuning points and very slight and inconsequential rise in SWR to the band limits.