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# *Lighthouse Larry*



## **SIDEBAND HANDBOOK**

First Edition

**AN EDUCATIONAL PUBLICATION  
OF  
RECEIVING TUBE DEPARTMENT**

**GENERAL  ELECTRIC**

**Owensboro, Kentucky**

## INTRODUCTION

Interest by radio amateurs in single sideband and other suppressed-carrier transmission and reception techniques for voice communication has grown by leaps and bounds since some pioneering experiments were conducted by radio amateurs back in the 1940's.

And a large part of this pioneering happened right at *General Electric*, where scientists (who also were radio amateurs) at *General Electric's* world-famous Research Laboratory developed wide-band audio frequency phase-shift networks.

These patented networks made possible the generation of a single sideband, suppressed-carrier signal at high radio frequencies. They simplified the design of single sideband transmitters by eliminating additional circuits required to convert the SSB signal usually generated in a low frequency filter up to the operating frequency.

From this key research, the design and construction of simple phasing type projects which have been described in *G-E HAM NEWS* followed. These articles include the famous "SSB, Jr." 5-watt SSB transmitter; the "Signal Slicer" receiving adapter; and similar circuits. Our records show that thousands of radio amateurs constructed their first SSB equipment from the original *G-E HAM NEWS* designs.

And, again in the 1950's, pioneering work by radio amateurs at *General Electric* resulted in still more simplification of suppressed-carrier transmitters by using the double sideband techniques evolved from synchronous communications studies made by *General Electric*.

All of this wealth of background material from *G-E HAM NEWS* has been reprinted in this first edition of *Lighthouse Larry's Sideband Handbook*. In addition, later information on many of the articles on sideband has been compiled and follows the reprints of the original articles.

We've also included some key articles on subjects related to sideband in this handbook, such as linear amplifiers, RF and audio accessories, and power supplies. Especially noteworthy is the original *G-E HAM NEWS* articles on Dynamic Power Supply Regulation which prompted more radio amateurs to use high-capacitance filter.

We dedicate this book to the radio amateurs who have pioneered and furthered suppressed-carrier communications techniques. And, at *G-E HAM NEWS*, we're proud of our small part in making sideband in amateur radio a success.

73,

—*Lighthouse Larry*

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This work is an educational publication for radio amateurs compiled and published by the Receiving Tube Department of the

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**presents HOW-TO-DO-IT IDEAS  
from the 999 radio amateurs at  
GENERAL ELECTRIC**

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