

After a few weeks of playing around with your new single sideband radio telephone, you will begin to get a feel for the expected range on any one particular band of frequencies. In our next chapter, we'll give you some secrets!

## Single Sideband Range

Your transmitted ground waves are seldom influenced by atmospheric or ionospheric conditions. Here is what to expect in ground wave range, 24 hours a day:

<b>SSB Ground Wave Range</b>			
2 MHz	-	150 miles	
4 MHz	-	100 miles	
6 MHz	-	75 miles	Anytime,
8 MHz	-	70 miles	day or night
12 MHz	-	50 miles	
16 MHz	-	50 miles	
VHF Band (156 MHz)	-	8 miles vessel-to-vessel	
25 miles to Coast Guard			

Sky waves give you the very longest range, thanks to the ionosphere. Here's what to expect in solid communication range to distant ship and shore stations:

<b>SSB SKY WAVE RANGE</b>		
<b>FREQUENCY BAND</b>	<b>DAYTIME RANGE</b>	<b>NIGHT TIME RANGE</b>
2 MHz	Sky waves absorbed	1,000 miles
4 MHz	Sky waves absorbed	1,500 miles
6 MHz	500 miles	2,000 miles
8 MHz	700 miles	3,000 miles
12 MHz	1,500 miles	Worldwide in the direction of the sun.
16 MHz	3,000 miles	Worldwide in the direction of the sun until 8 p.m. local time.
22 MHz	Worldwide	Little sky wave reflection after sunset.
25 MHz	Worldwide	Little sky wave reflection after sunset.

As you can see, to talk further, go to a higher frequency. However, watch out—you can sometimes select a frequency that is too high. This may cause your sky wave signal to actually bounce over the station that you wish to communicate with, or go off into space.

If your signal is literally skipping over the desired station, switch to a lower frequency.

After a few weeks of tuning your receiver to different stations, you will be able to anticipate which band will be the best for a particular time of day to talk to a specific station hundreds or thousands of miles away. Try tuning your set during the day, and then at night, and listen to the

difference in range. Switch between bands and begin to get a feel for how the ionosphere causes signals to skip long distances, and sometimes short distances.

Marine telephone shore stations make it easy to predict the best band to establish rock-solid communications. Every four hours they read a traffic list (calls being held for vessels at sea) as well as ocean weather conditions. They simultaneously transmit this information on each one of the authorized bands. Simply switch bands while they are transmitting and determine which band offers the best reception. Where you hear them loudest is where they will hear you best. After they finish with their traffic list, give them a short call and you have now established communications, thanks to sky waves and Mother Nature's reflective ionospheric mirror.

## CHAPTER 6

# Band and Channel Selection

It's easy to program additional frequencies and channels with today's modern, high-frequency, marine single-sideband transceivers. You don't need to purchase expensive plug-in crystal elements. Everything is synthesized, and your modern ICOM marine SSB receives from .5 MHz through 29.999 MHz, and transmits from 1.6 MHz to 27.500 MHz.

The marine single-sideband service uses specific channels to identify specific frequencies between 4 MHz and 27.5 MHz. This book has a listing of channels and frequency assignments in the appendix. On the 2 MHz band, we use actual frequencies not International Telecommunications Union (ITU) channel designators. We use ITU channel designators on frequencies between 4 MHz and 27.5 MHz.

Most mariners will use about 10 frequencies in each marine band. New ICOM marine SSB transceivers offer over 300 channels that are synthesized, for voice, and an additional 600 channels for electronic