Did You Know?

For more information about the Globe Wireless e-mail connection to your ICOM SSB, contact Globe Wireless at (800) 876-7234.

For more information about PinOak Digital High Frequency Digital Communications, call (800) 746-625l.

For more information about SAILMAN visit their website at www.sailmail.com

CHAPTER 16

Review: SSB Channel Designators Explained

Your friends with marine SSB may tell you. . .

To talk local, you want to go on 4A. They sometimes call that 4-alpha. It's good in the mornings, and 4-alpha on your set is 4-2. Some sets have it as 4-1, but that's really 4-S. You can look up this channel as 451, which is really 4146. Got it?"

The mysteries of SSB channelization get worse. Did you know that international distress frequency 2182 kHz may NOT be the best place to cry Mayday when you are halfway across the sea?

Single Sideband

And if you call Mayday on Coast Guard working channel 816 or 1205, they could be "duplexing" a weather report and not listening to their input frequency. So WHO do you call in an emergency, anyway, on marine SSB?

And what about making phone calls? Are you really charged $25 just for getting an answering machine? I am happy to report, NO.

So let's demystify that new marine SSB installation, and compare the channels and frequencies listed in this chapter with what is stored in your SSB's memory.

ALL THOSE CHANNELS. Marine SSB frequencies are assigned specific channels within the following megahertz regions:

MEGAHERTZ REGIONS		
CHANNEL	**MHZ**	**APPROXIMATE RANGE**
2 XX	2 MHz	100 miles day; 1000 miles night
4 XX	4 MHz	100 miles day; 1500 miles night
6 XX	6 MHz	500 miles; 1500 miles night
8 XX	8 MHz	700 miles day; 2000 miles night
12 XX	12 & 13 MHz	100 miles evenings; 3000 miles days
16 XX	17 & 17 MHz	Unreliable evenings; 4000 miles days
22 XX	22 MHz	Daytime only band, worldwide

Each band of marine frequencies skips off the ionosphere and refracts signals back down to earth at different angles. 2 and 4 MHz come back down relatively close to your vessel. 8 and 12 MHz are excellent for medium-range, day and night, skywave "skip" contacts. On 16 and 22 MHz, skywaves fade out at night, but offer the longest range during daylight hours. **The best range usually follows the direction of the sun.**

Choose the megahertz range that will skip your signal to the approximate distance you want to reach. 8 and 12 MHz are the favorites during the day, and 4 and 6 MHz are the favorite bands during the night. 2 MHz is clobbered with noise, and you won't get zip. 22 MHz is too high for reliable daily contacts. Choose 8 and 12 MHz as your "bread and butter" bands.

Marine radio channels are assigned ITU designators. ITU stands for International Telecommunications Union, and assigns commonality to every country's marine SSB set.

But there are differences between each manufacturer of SSB equipment on how they read out the channels, so stay tuned. More to follow.

Most 2 MHz frequencies have little use even 2182 MHz, the international distress and calling frequency. The range is so limited, you would do better to squawk Mayday on VHF channel 16. Most 2 MHz frequencies go by their actual numerical frequency kilohertz, not by three-digit channel designators. Lucky for us, a kilohertz readout on the radio dial is common among all marine SSB radios in every country.

4 MHz to 22 MHz marine channels are all listed by a three-digit or four-digit channel designator. An example would be marine Channel 401, or marine Channel 809, or marine Channel 1206. These channel numbers, common worldwide, are assigned to pairs of radio frequencies that make up a radio channel. Both the marine telephone companies of the world and the United States Coast Guard and rescue agencies throughout the world operate on frequency PAIRS where they transmit on one frequency, and listen on another. This is called DUPLEX. But you don't need to worry about the individual frequencies for ship transmit and ship receive because your marine SSB has all of these channels pre stored in ITU memory. If you dial up marine Channel 808, your set automatically receives on 2740 kHz, and transmits automatically on 8216 kHz. It is prestored duplex, so all you need to know is the channel number and what service goes with which channel numbers.

Currently, AT&T runs the high seas maritime radiotelephone services from three stations that serve this half of the world. However in the future, access will be through station WLO out of Mobile Alabama. AT&T will be limiting the service provided by KMI, WOM, and WOO. From Australia to Africa and everything in between, the AT&T marine operator offers you radiotelephone service on the following channels:

AT&T MARINE OPERATOR		
AT&T SAN FRANCISCO KMI	**AT&T FLORIDA WOM**	**AT&T NEW JERSEY WOO**
401, 416, 417	403, 412, 417	410, 411, 416
804, 809, 822	423, 802, 810	808, 811, 815
1201, 1202, 1203	814, 825, 831	1203, 1210, 1211
1229, 1602, 1603	1206, 1208, 1209	1605, 1620, 1626
1624, 2214, 2223	1215, 1223, 1601	2201, 2205, 2210
2228, 2236	1609, 1610, 1611	2236
	1616, 2215, 2216	
	2222	

TIP!

Choose the channel on a likely frequency that will skip your waves into the particular AT&T maritime services station closest to you. If you're in the South Seas, you might try Channel 1602 to AT&T coast station in California. If you're in the Caribbean, try AT&T coast station in Florida on Channel 403. And if you're sailing to Spain, you might to try AT&T coast station New Jersey on 1203. Otherwise use the WLO Frequencies listed below.

WLO ITU CHANNELS

Channel Number	RX Frequency	TX Frequency
405	4369.0	4077.0
414	4396.0	4104.0
419	4411.0	4119.0
607	6519.0	6218.0
824	8788.0	8264.0

WLO ITU Channels continued on page 62

WLO ITU CHANNELS

Channel Number	RX Frequency	TX Frequency
829	8803.0	8279.0
830	8806.0	8282.0
1212	13110.0	12263.0
1225	13149.0	12302.0
1226	13152.0	12305.0
1607	17260.0	16378.0
1641	17362.0	1648.0
1647	17380.0	16498.0
2237	22804.0	22108.0

Contact Rene Stiegler of WLO radio for information and frequency information packs. PH:(334)665-5110, FX:(334)666-8339, or wloemail@aol.com or rene@shipcom.com

Try tuning these channels in now and listen to the ship-to-shore traffic. You will hear only the shore side of the conversation because the ships are transmitting duplex. Phone calls cost under $5 a minute, with no land-line charges. There is a 3-minute minimum, so once you start gabbing, go for 3 minutes and make it a $15 bill. If you get an answering machine, tell the operator to cancel the call, and you pay nothing. Radio checks with AT&T are free. Calling the Coast Guard through AT&T is also free. What? **Calling the Coast Guard through the high seas marine telephone service? Why?**

COAST GUARD CHANNELS

2182 kHz - Distress	424	Working, Weather, AMVER
Channel	601	Working, Weather, AMVER
Channel	816	Working, Weather, AMVER
Channel	1205	Working, Weather, AMVER
Channel	625	Working, Weather, AMVER

These are United States Coast Guard weather, AMVER, and working channels and are not necessarily monitored 24 hours a day for a distress call. These are the channels where you will hear automated Coast Guard weather. It is digital speech synthesized, and will sound like someone sitting on a fish hook.

If you need the Coast Guard anywhere in the world, call on the high seas marine operator duplex channels. I guarantee they are listening because they're looking to make money on an incoming phone call. They won't make money on a Coast Guard call because they'll patch you through free. But once your situation is stabilized, the Coast Guard will ask you to switch over to one of their working channels. Suggest a channel near the MHz band you are presently going through the marine operator on. Just look at your radio dial—if it's reading 1201, then you are on the 12 MHz band. You would suggest to the Coast Guard you can work them on ITU Channel 1205. Switch over, and you will hear their friendly voice.

Did You Know?

The Coast Guard tracks commercial shipping all over the world on a computer in New York—and if you need help or evacuation anywhere out on the sea they can probably find someone within 300 miles of you and request them to divert and lend assistance. This is part of the Coast Guard's AMVER program.

Ship-to-Ship

Here is where SSB radio manufacturers have split from the normal channeling scheme. Here are the channel designators that SHOULD come up on your marine SSB for ship to-ship safety and routine calls:

CHANNEL DESIGNATORS		
CHANNEL	**FREQUENCY**	**USE AND DESIGNATOR**
4-0	4125 kHz	Safety, "4S"
4-1	4146 kHz	Ship-to-Ship, "4A"
4-2	4149 kHz	Ship-to-Ship, "4B"
4-3	4417 kHz	Ship-to-Ship, "4C"
6-0	6125 kHz	Safety, "6S"
6-1	6224 kHz	Ship-to-Ship, "6A"
6-2	6227 kHz	Ship-to-Ship, "6B"
6-3	6230 kHz	Ship-to-Ship, "6C"
6-4	6516 kHz	Ship-to-Ship, "6C"
8-0	8291 kHz	Safety, "8S"
8-1	8294 kHz	Ship-to-Ship, "8A"
8-2	8297 kHz	Ship-to-Ship, "8B"
12-0	12.290 kHz	Safety, "12S"
12-1	12.353 kHz	Ship-to-Ship, "12A"
12-2	12.356 kHz	Ship-to-Ship, "12B"
12-3	12.359 kHz	Ship-to-Ship, "12C"
12-4	12.362 kHz	Ship-to-Ship, "12C"
12-5	12.356 kHz	Ship-to-Ship, "12E"
16-0	16.420 kHz	Safety, "16S"
16-1	16.528 kHz	Ship-to-Ship, "16A"
16-2	16.528 kHz	Ship-to-Ship, "16B"
16-3	16.534 kHz	Ship-to-Ship, "16C"
22-8	22.159 kHz	Ship-to-Ship, "22A"
22-9	22.162 kHz	Ship-to-Ship, "22B"
22-0	22.165 kHz	Ship-to-Ship, "22C"
22-4	22.168 kHz	Ship-to-Ship, "22C"
22-5	22.171 kHz	Ship-to-Ship, "22E"

TIP!

Not all marine SSB transceivers list these ship-to-ship channels by the ITU duplex number. Most ICOM marine SSB transceivers list ship-to-ship simplex frequencies by the megahertz band, a hyphen, and numbers 1 through 9. Sometimes the number l and 2 correspond with ship-to-ship A and B channels, yet other times they number up from the safety channel so A now becomes "-2." But not to worry, just double check the frequency with the ship-to-ship channels and frequencies I have just listed, and go with the frequency.

The safety channels are restricted to navigation. Safety, and weather information, similar to what takes place on marine VHF channel 6. No gabbing on the marine SSB safety channels. The marine ship-to ship channels may also be used by private coast stations so you can talk from ship to shore and bypass the marine operator. Towing and salvage companies, plus marine stores regularly conduct business on ship-to-ship channels 4A, 8A, and 12A. Now go back to the list and double check the frequencies:

4A = 4146 kHz
8A = 8294 kHz
12A = 12,353 kHz

Find these channels on your own SSB radio, and verify the channel number agreeing with the actual ship-to-ship/ship-private coast shore frequency.

If you're cruising, the Federal Communications Commission offers additional 4 MHz and 8 MHz channels for ship-to-ship communications. This will relieve all of the congestion now found on popular channels 4A, 4B, 8A and 8B. At last—"secret" ship-to-ship SSB frequencies that are perfectly legal under FCC Rule 80.374 (b) (c).

"SECRET" SHIP-TO-SHIP FREQUENCIES	
4 MHz SHIP-TO-SHIP FREQUENCIES	**8 MHz SHIP-TO-SHIP FREQUENCIES**
4000	8101
4003	8104
4006	8107
4009	8110
4012	8116
4015	8119
4018	8122
4021	8125
4024	8131
4027	8134
4030	8137
4033	8140
4036	8143
4039	8146
4042	8149
4045	8152
4048	8155
4051	8158
4054	8161
4057	8164
	8157
	8170
	8173
	8176
	8179
	8182
	8185
	8188
	8191

The FCC Rules state, "These frequencies are shared with fixed services, and marine ship-to-ship operation must not cause harmful interference to those other services." In other words, if you and a cruising buddy land on a frequency and overhear shore traffic complaining about your ship-to-ship communications, switch off that channel in the table above.

Shore stations will continue to monitor their regular frequencies on 4 and 8 Alpha and Bravo frequencies, no charge. But mariners wishing to intercommunicate ship-to-ship on 4 MHz and 8 MHz may now switch to these new, very quiet SSB channels in full compliance with FCC rules. In fact, 4030 MHz is fast becoming the Baja "intercom" channel for mariners with SSB transceivers.

In the Caribbean to Panama canal, try 4054. Hams in the canal, listen 7083 to 7085 lower sideband.

WEATHER FACSIMILE CHANNELS	
ALL UPPER SIDEBAND:	
Pacific Coast	8680.1 kHz
Pacific Coast/Long-Range	12,728.1 kHz
Hawaii	11,088.1 kHz
Pacific/Hawaii	16,133.1 kHz
Hawaii	9980.6 kHz
New Gulf Frequencies	4316, 8502, 12,788 kHz
Boston	6340.5 kHz
Atlantic	10,863.2, 12,748.1, 8078.1, 15,957 kHz

TIP!

You might also memorize aeronautical East Coast and West Coast tower channels 13,282 and 13,270 kHz. I would also fill up one of those user-programmable memory channels with 13,300 and 5547 kHz, both upper sideband, aeronautical in-route frequencies. **If you can't raise the Coast Guard in an emergency, squawk Mayday to an airliner! It's been done before.**

FCC rules prohibit a marine radio being shared with another radio service. But if you are a voluntary equipped boat, you are not required by law to have a marine radio onboard—so one day you consider it a marine radio, and the next day you consider that marine radio a ham radio. Trust me. It works, but only if the marine radio has capabilities already unleashed as an amateur radio.

You could store the ham FREQUENCIES into any one of the 100 or more user-programmable marine channels on a modem ICOM marine SSB radio. A sample:

3968 kHz, lower sideband, West Coast marine nets
7268 kHz, lower sideband, East Coast waterway net
7238 & 7294 kHz, lower sideband, morning West Coast nets
14.300 kHz, upper sideband, 24-hour ham maritime mobile nets
14.340 kHz, upper sideband, West Coast 11 :00 a.m. mañana net
14,313 kHz, upper sideband, Pacific evening maritime net
21,402 kHz, upper sideband, Pacific and South Pacific

You need an amateur license to talk on these frequencies, but you don't need a license to listen and glean great weather information. In an emergency, you can holler for help on these frequencies without any questions asked. But it better be a real life-and-death emergency. You know how hams are. I'm one of them, too!

Finally, your SSB transceiver can be put into the AM double sideband mode, and the time signals and shortwave broadcast frequencies memorized to get up-to-date weather information the correct time, and the latest news from BBC and Voice of America.

5, 10, 15 and 20 MHz time signals
5975 kHz AM shortwave
7435 kHz AM shortwave
9575 kHz AM shortwave
11, 835 kHz AM shortwave
13,760 kHz AM shortwave
15,120 kHz AM shortwave

Tune anywhere around these AM shortwave frequencies for plenty of foreign and USA broadcasts.

Your best radio check is with the high seas marine operator. You must call them for a minimum of 45 seconds in order for them to beam you in with their massive antenna systems. A quick call will lead to no contact. Make it a long call, giving your vessel name, official FCC call sign or ship registration number, your position, the ITU channel you are communicating over, and repeat the process over and over and over and over again for 45 total seconds. Close talk the mic—push the plastic right up against your lips. If you talk 6 inches away from the mic, your power output will be zilch. SSB mic are all noise canceling, and you must absolutely touch the mic to your lips to get a signal out on the airwaves.

As you talk, you may notice your panel lights blinking, your anemometer exceeding 100 knots, your electric head going into the masticate mode, and various other pieces of marine electronics including autopilots going nuts on transmit. This is perfectly normal. It means you're putting out one walloping signal. You must live with it. There is no simple cure.

TIP!

Your radio check to the marine operator should finally achieve success on one of their working channels. If one megahertz band doesn't work, dial in another marine operator in another part of the country, and give THEM a try. Or tail in at the end of another ship contact when the marine operator is ready to sign off. If you can hear the marine operator well, they should pick you up as well.

One of the best radio checks is from the technician that installed the marine SSB. Don't let them off the ship until they reach a marine operator at least 1,000 miles away and get a good radio check on the air. Accept no excuses. I have seen marine SSB installations that LOOK good on a wattmeter, but over the air SOUND bad. An improperly installed automatic antenna tuner cable rectifies the RF wave and brings it back into the radio, scrambling your audio to sound like you are talking underwater. You can't see it on a meter, but you'll sure know you have this problem if absolutely nobody comes back to your request for radio checks.

With more and more radiotelephone calls going satellite aboard ships, be assured that the high seas marine SSB radiotelephone service is looking for more activity out there on the airwaves, and the technicians are eager to get you into their computers and will regularly run radio checks with you to give you the confidence of knowing they can reach out almost anywhere to take your incoming or outgoing phone call. Radio checks are free.

Did You Know?

The marine SSB radio manufacturers are delivering equipment designed more for the radio guru than the active sailor with things on the mind other than is 451 really 4-1 or is it really 4-alpha? ICOM's M710 marine SSB has the capability of programming the screen to read out the channel function in addition to just the channel number and frequency. Great idea.

A marine SSB is a powerful communications device for worldwide cruising and sailing. Know its capabilities, and know what the channels can do for you. There is absolutely nowhere in the world that you could cruise that you couldn't get back to a shore-side station on marine SSB on one of the megahertz bands. EVERYWHERE there are domestic and foreign shore-side stations ready to take your duplex channel activity. The modern marine SSB has all of these channels in memory. Now you know where to go to make that ship-to-ship, ship-to-shore, or emergency distress call.