

## AAR Channel Numbering System

The American Association of Railroads has assigned channel numbers to each of 96 radio frequencies in the 160-161 MegaHertz bands. These frequencies are used in the United States and Canada. Channels 7-96 are used in the U.S. for railroad operations. Channels 2-6 are used in Canada for rail operations only. In the U.S. channels 3-6 are used by railroads for truck operations.

The following table converts from AAR channel number to the appropriate radio frequency (MHz).

Ch	Frequency	Ch	Frequency	Ch	Frequency	Ch	Frequency
02	159.810	26	160.500	50	160.860	74	161.220
03	159.930	27	160.515	51	160.875	75	161.235
04	160.050	28	160.530	52	160.890	76	161.250
05	160.185	29	160.545	53	160.905	77	161.265
06	160.200	30	160.560	54	160.920	78	161.280
07	160.215	31	160.575	55	160.935	79	161.295
08	160.230	32	160.590	56	160.950	80	161.310
09	160.245	33	160.605	57	160.965	81	161.325
10	160.260	34	160.620	58	160.980	82	161.340
11	160.275	35	160.635	59	160.995	83	161.355
12	160.290	36	160.650	60	161.010	84	161.370
13	160.305	37	160.665	61	161.025	85	161.385
14	160.320	38	160.680	62	161.040	86	161.400
15	160.335	39	160.695	63	161.055	87	161.415
16	160.350	40	160.710	64	161.070	88	161.430
17	160.365	41	160.725	65	161.085	89	161.445
18	160.380	42	160.740	66	161.100	90	161.460
19	160.395	43	160.755	67	161.115	91	161.475
20	160.410	44	160.770	68	161.130	92	161.490
21	160.425	45	160.785	69	161.145	93	161.505
22	160.440	46	160.800	70	161.160	94	161.520
23	160.455	47	160.815	71	161.175	95	161.535
24	160.470	48	160.830	72	161.190	96	161.550
25	160.485	49	160.845	73	161.205	97	161.565

Note that these frequencies are **not** the only frequencies used by railroads. Some railroads also use frequencies in the **4xx.xxx MegaHertz** band, particularly around 45x.xxx, 46x.xxx, and 47x.xxx.

Most official railroad radios that synthesize the frequencies have a window that shows the AAR channel number for transmitting and the AAR channel number for receiving. For example, Amtrak's primary Road frequency in the Northeast Corridor is **160.920 MHz**, Channel 54. The window on the railroad radio would show **5454** (transmit on AAR channel 54 and receive on AAR channel 54).

Railroads also use some frequencies to transmit **end of train** telemetry. Some EOT devices, for example, transmit the train's brake pressure to the closest tenth of a pound and whether the EOT is moving or not every 40 seconds or whenever there is a change. AAR has allocated **457.9375 MHz and 452.9375** for EOT telemetry with the latter used at the head end to transmit control signals. Most railroads use these frequencies. However, Norfolk Southern uses **161.115 MHz** (AAR Channel 67) for EOT devices.

Since EOT devices transmit at two watts, the transmission will travel about 3 to 5 miles. Thus, by setting your scanner to scan these EOT frequencies, you get a warning whenever a train approaches. The problem with this strategy, of course, is that as soon as your scanner picks up anything on **457.9375** or **452.9375**, it will lock on that channel. Thus, this strategy works best if your scanner makes it easy to change the channels that are scanned so that you can stop scanning **457.9375/452.9375** when you know a train is close.

---

## Using a Scanner Radio

When you use a scanner radio to listen to railroad frequencies you will hear:

- Conversations among the train crew members.
- Conversations between dispatchers and train's "head end" (engineers).
- "Talking defect detectors" which will usually announce "no defects". Some of them will also tell you the train's speed, or the number of axles the train has, or even the outside air temperature.

Some methods for using a scanner radio:

- If your scanner has the ability to scan a range of frequencies, you could set your scanner to scan the range **159.810 to 161.565 MHz**.
- If you have a scanner that is capable of storing 100 channels of frequencies, you could enter all of the AAR frequencies in their corresponding channels (the frequency for AAR channel 36 in scanner channel 36, for example). Then you can use the channel lock-out facility of most scanners to only scan the desired frequencies. This saves you from the

need to reenter frequencies when you change railroads or locations -- simply change which channels are locked out.

- You can preset all the local frequencies into one or two "banks" (typically 10 or 20 scanner channels) of your scanner and scan through all of them. Sometimes "all the local frequencies" may be only a few. You may wish to set one of them as your "Priority" channel, to be checked every second or two even if the scanner is locked on another active transmission.
- If you don't know the local road frequency (for example), but can talk to someone with access to a railroad radio, simply ask them to tell you what numbers show in the window. If they tell you, for example, it shows **3666**, then you know that they are transmitting on **160.650** (Chan **36**) and receiving on frequency **161.100** (Chan **66**) and can set your scanner accordingly.

Once you've used your scanner for a while, you'll think of other methods.

**Hint:** Use an earphone or earphones. It's much easier to hear your scanner with an earphone, and if you are traveling on a passenger train an earphone is **required**.

**LAWS:** The use of scanner radios is governed by federal laws and regulations, and various state laws. A summary listing can be found [here](#). The details can be found at the [Scanner Reference Laws, Rules and Regulations](#) web site.