

M35-1-1

Frequency Check List Update

About a month ago, I came across a frequency check service in Colorado. Since the majority of his late night checks were not on our 1983 list, I thought I'd better publish his list.

1st or 2nd TUESDAY

0715	KBFS	Belle Fourche	SD	1450
0725	KRLN	Canyon City	CO	1400
0750	KGLN	Glenwood Springs	CO	980

1st or 2nd THURSDAY

0200	KAFE	Santa Fe	NM	810
0210	KQJM	Havre	MT	610
0220	KBMN	Bozeman	MT	1230
0230	KDSJ	Deadwood	SD	980
0305	KNEB	Scottsbluff	NE	960

1st or 2nd SATURDAY

0110	KBRB	Ainsworth	NE	1400
0200	KRBN	Red Lodge	MT	1450
0210	KLMX	Clayton	NM	1450
0230	KEXO	Grand Junction	CO	1230

1st or 2nd SUNDAY

0200	KWIV	Douglas	WY	1470
0213*	KRSY	Roswell	NM	1230
0220	KLRK	Leadville	CO	1230

SECOND MONDAY

0110+	KONK	Norton	KS	1530
0200	KSN0	Aspen	CO	1260
0205	KVOW	Riverton	WY	1450
0210	KLYC	Laurel	MT	1490
0220	KTOQ	Rapid City	SD	1340
0230+	KCLV	Clovis	NM	1240
0240+	KBMV	Billings	MT	1240
0245	KSYX	Santa Rosa	NM	1340
0405	KYNN	Omaha	NE	1490
0500	KBOZ	Bozeman	MT	1090
0640	KLIB	Liberal	KS	1470
0650	KMKR	Meeke	CO	1450
0700	KPOW	Powell	WY	1260
0702	KOTA	Rapid City	SD	1380
0720	KDRG	Deer Lodge	MT	1400
0735	KWOR	Worland	WY	1340
0750	KPAG	Pagosa Springs	CO	1400

SECOND TUESDAY

0100	KFLA	Scott City	KS	1310
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2nd or 3rd THURSDAY

0110*	KAMI	Cozad	NE	1580
0120*	KBCQ	Roswell	NM	1020
0130	KRKE	Albuquerque	NM	610
0200	KICA	Clovis	NM	980

THIRD MONDAY

0110*	KEDD	Dodge City	KS	1550
0120*	KVSH	Valentine	NE	940
0200	KPOK	Bowman	ND	1340
0210	KPRK	Livingston	MT	1340
0220*	KYCN	Wheatland	WY	1340
0230	KSIL	Silver City	NM	1340
0240*	KYLT	Missoula	MT	1340

THIRD THURSDAY

0220*	KTHE	Thermopolis	WY	1240
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3rd THURSDAY or 2nd SATURDAY

0230*	KIMN	Rapid City	SD	1150
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ANNUAL FREQUENCY CHECK

0030	KROE	Sheridan	WY	930
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(next check on 1/10/84)

- * Check from 0213 to 0215
- + Same as 1983 f/c list
- ± On '83 list, time different
- # Quarterly 3, 6, 9, 12
- \$ Quarterly 1, 4, 7, 10
- € Semi-Annual 1, 7

All checks (except as noted) are scheduled for 10 minutes with 1 khz tone. Some may only be on for the first few minutes of the time slot. It is also possible, as I have found out, that the time will change/be rescheduled due to station personnel problems (sickness/I forgot/etc.), so beware. I know you folks won't count a station unless you hear an ID anyway. Tests do not start before the fifth of the month (usually) and finish by the 19th. These criteria will usually establish which Tuesday, etc the test will be aired. I've tried, quite successfully, for some of these tests since receiving the list and have noted that no two tests have been exactly the same (length/tone on/off times/etc.). 73's and best of DX in '83... phil bytheway (pb)

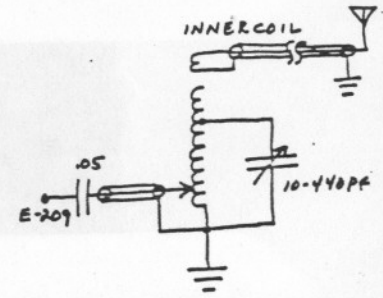
The R-390A on Longwave - Cheaply

The R-390A is a fine radio and most of us are quite familiar with it. A major drawback is that it doesn't tune down below 500 kHz. Or does it? A look at the schematic shows that the local oscillator in the 530-1000 kHz range does indeed track all the way down to zero kHz. Working backwards from the first mixer we find the first, and only bottleneck. The antenna coils and HF amplifier tuned circuits are the culprits. They stop at 500 kHz and go no lower.

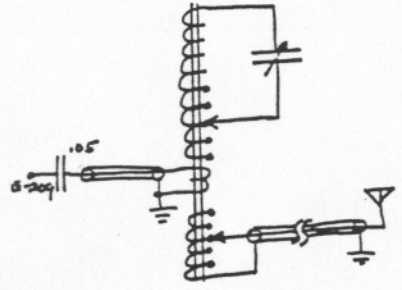
As an experiment, I removed the top covers from my rig and coupled a longwire antenna through a .05 mf capacitor to "test point E-209". This is easily

accessible from the top and is found right in front of V202 (6CL), the first mixer. Viola! Most of my strong local LW stations came in, along with an assortment of BCB spurs, LW products, and other electronic garbage. This comes from injecting a broad spectrum of signals to the grid of this tube.

Next came some preselection in the form of a ferrite loop antenna. The loop amplifier output was connected to E-209 with a piece of small coax cable and the .05 mf capacitor. This gave me greatly improved results. Very few BCB spur troubles and an improvement in sensitivity. The loop amp offset the loss of the R-390A RF amp. The next experiment gave the best results of all, practically equalling the performance of a Drake R7A used for comparison. An old coil from a 1939 vintage RCA BCB transmitter was recovered from the junkbox. This is a large piece, with 70 turns of #16 solid wire around a 6 1/2 inch ceramic and phenolic form. A smaller coil of 10 turns of the same type of wire is mounted inside it. This small coil is rotatable to vary the coupling between the two coils. The older members of our fraternity will recognize this as a variocoupler. Common in earlier years, but seldom seen today. This particular unit has taps on every other turn on the main outer coil. It resonated nicely with a 10-440 pf cap, also from the RCA transmitter. The LW coax feed was hooked to the smaller, rotatable coil. One end of the main coil was grounded, along with the frame of the variable cap. The station of the cap was connected to a tap about three-quarters up the main coil from ground. A tap point 2 turns up from ground was selected as the feed point for the radio. Optimum coupling between the small, inner coil and the outer coil varied from maximum at 200 kHz and below to a very small value at 400 kHz. This is probably more a function of the antenna I use than anything else.



ORIGINAL TEST CIRCUIT



FERRITE CORE CIRCUIT

These parts are difficult, if not impossible to get. I have no doubt that equal or better results could be had with ferrite toroids. An equivalent scheme would have a large toroid core with three windings. The first is the main tank circuit. Taps can be provided to increase the range of frequencies it will tune. The second is a link feed to the radio. The best number of turns can be experimentally determined and should remain the same over a wide range. The third is the antenna input, tapped for varying the impedance the antenna coax sees. The shield of the coax feed can be left ungrounded, only connected to the coil. I have found some noise reduction in connecting the coil across the coax in this fashion. The far end of the coax must be grounded however. I have used an antenna tuner identical to this on the BCB with good results.

I suspect that any of the commercially available would work just fine, also.

Thanks go to the number of people who have written expressing an interest in the R-390A/ longwave use. The next article in the works is a fairly simple and inexpensive series of modifications to the Drake R7A to improve operation below 150 kHz.

Craig Healy