

The COMMUNICATION RECEIVER

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THE NATIONAL AGS-58C AIRPORT COMMUNICATIONS RECEIVER ASSEMBLY

Noteworthy about the National Company products of the 1930s is the seeming stability of product lines ... the well-defined receivers with the familiar and distinctive configurations, such as the SW-3, the FB-7, the HRO, and of course, the AGS. However, each in its turn went through numerous design changes, leading to the variations which are being re-examined and re-documented by historians.

The strange receiver with the two plug-in coils which was often seen in advertisements of the day in company with the AGS is a case in point. This is the National Model 58C, which was a component of the airport communications receiving system designed and manufactured by National for the General Electric Company, under contract to the Civil Aeronautics Board. This column concludes the presentation of the AGS and describes the 58C and its evolution.

According to the first announcement in *QST* (October 1932), the AGS was "developed in conjunction with the Airways Division of the U.S. Department of Commerce to comply with the exceedingly strict requirements of aviation ground-station service." At the same time, the "58C", an updated version of the SW-58, was announced. This early advertisement was obviously directed at the amateur market, since coils were available to cover the entire spectrum from 150 kc to 33 mc. In the same ad, the new power units for either single or paired receivers were announced.

Most of the AGS receivers during their short life span went to the CAA through the General Electric Company, and relatively few with the amateur bandspread coils into the amateur market. In the *AWA REVIEW*, Volume I, Nagle states that the 58C was included to tune the 200-400 mc range not covered by the AGS. The 58C was also advertised as a

"stand-by" receiver, and since coils from 13½ to 115 meters were supplied, it would appear that this smaller receiver could be used for a number of receiving tasks.



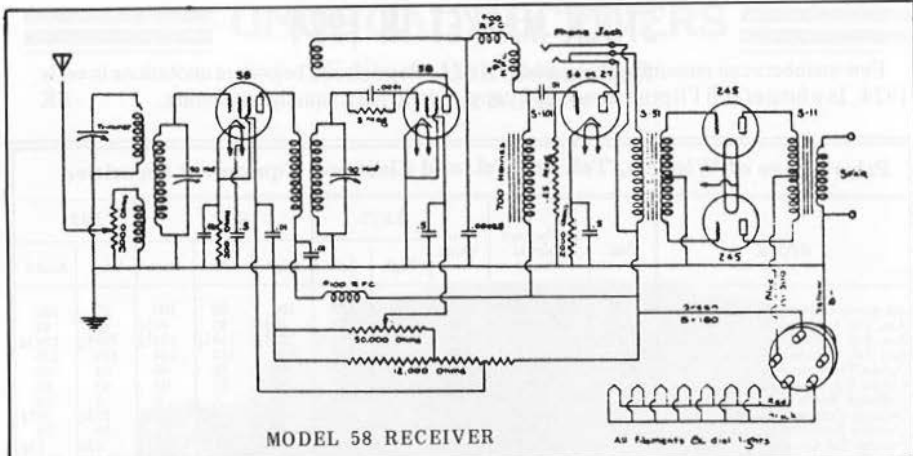
- ← Monitoring speaker
- ← Coil rack
- ← "AGS" receiver
- ← Type 58C receiver
- ← Power units

The familiar picture reproduced here is from the National Bulletin 240, and shows the recommended airport installation. Below the heavy duty PM speaker is the storage rack for the AGS coils not in use, then the AGS, with the Type 58C receiver and the dual power supply on the bottom. Note that there is no coil storage rack for the extra 58C coils.

The power supply was available in several variations; the GRSPU for a single receiver, the GRDPU-66 for use with two AGS receivers, and the GRDPU-26 for the AGS/58C combination. The dual units are identified by the two switches.

Collectors and restorers are cautioned to be careful with identifying the differences between the AGS and the 58C coils. The latter are longer and with a smaller diameter, and are not interchangeable (Nagle - *AWA REVIEW*).

The 58C receiver was a reworked SW-58, which in turn was the AC version of the DC re-



ceiver, the SW-34. An examination of the diagrams and tubes in each leads to the conclusion that the model numbers came from the RF and detector tube types. The circuits of the SW-58 and the 58C were identical, with the coils moved to the front of the panel, since the 58C was designed for rack mounting. (A mahogany box for table mounting was, however, available on special order.) The dial was changed to the Type N to match the AGS.

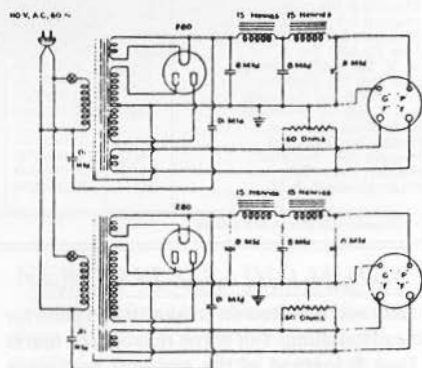
All three receivers, the DC-34, the SW-58, and the 58C were improved versions of the famous National "Thrill Boxes", the most familiar of which was the well known SW-5 short wave tuner. The circuit consisted of a tuner RF stage, a regenerative detector, and two audio stages. The receivers were advertised as sensitive and easily controlled. Shielding, filtering, and circuit isolation were considered important. The shielding feature, by the way, was emphasized in the design and construction of the AGS with its "triple shielding." If you get a chance, examine one carefully.

The 58C was probably the last of the TRF family of receivers produced and sold by National for serious communications work. The day of the manufactured superhet had dawned and National was in the forefront with the AGS, the FB-7, and the soon-to-arrive HRO.

Not all airport installations had the two racked receivers as pictured. One such unit, from the airport of Old Orchard, Maine, which serviced the transAtlantic flyers, included the AGS, a single power supply, the coils and the speaker in a table rack mounting, but no 58C. In fact, it would appear that the classic com-

bination is extremely rare, and this writer has yet to see a 58C receiver. Comments, anyone?

The 4" Type N dial on the AGS, by the way, is the VNE, with a 150-0 scale and a dial rotation of 270 degrees.



The GRDPU dual power supply designed for noise and hum reduction.

When the AGS was first announced, the frequency coverage was 2400 to 15,000 kc, with additional coils to extend the range to 20,000 kc. In February 1933 they announced that the range was now 1500 to 20,000 kc, and bandspread coils were available for the 160 through 20 meter amateur bands. And in March 1933 came the FB-7, which received increasingly heavy promotion in *QST*; by August, 1933 the AGS was relegated to the catalogs.

Two interesting variations of the AGS are pictured in *QST* for July, 1933. The AGU was similar to the AGS electrically, but with the physical modification of having all three coils

(Continued on next page)

STOCK MARKET IN 1924

Few members can remember the market in 1924. Reproduced below are quotations in early 1924. In a future OTBT I'll print some 1932 copy. You'll find it equally interesting. --BK

Price Range of Wireless, Tel. and Tel. and Electrical Equipment Securities

STOCK	Div.	Authorized Capital Stock	Par Value	1922		1923			1924	
				High	Low	High	Low	Last	Bid	Asked
All Amer. Cables.....	1 3/4Q	\$40,000,000	100	125	107	106	95	100	99	100
Am. Tel. & Cable.....	1 3/4Q	14,000,000	100	70	54	58 1/2	40	40 1/4	40	43
Am. Tel. & Tel.....	2 3/4Q	750,000,000	100	128 1/4	114 1/2	128 3/4	119 1/2	125 1/2	128 1/2	128 3/4
Bell Tel. Canada.....	12Q	75,000,000	100	120 1/4	103	128	112	124	120	125
Cuban Tel. Common.....	2Q	14,000,000	100	95	80	94	82	90	94	96
Cuban Tel. Preferred.....	1 3/4Q	2,000,000	100	98	90	99	88	95	85	90
DeForest Radio.....	50c.SA	2,500,000	10	11	5	12	5	9	5	10
Dubilier Common.....		160,000		9 1/2	2 1/2	13 1/2	4 1/4	10 1/4	19 1/2	19 1/4
Dubilier Preferred.....	1 3/4Q	500,000	100			75	45	55	50	75
Federal Tel. Co.....		3,500,000	10	7 1/2	5 1/4	7 1/4	4 1/4	5 1/2	6 1/4	7 1/4
Gen. Elec. Common.....	1Q	185,000,000	100	196	136	202 1/4	167 1/2	196 1/2	214 1/4	215
Gen. Elec. Special.....	15c.Q	35,000,000	10	10 1/4	84	12	10 1/4	10 1/4	11 1/2	11 1/4
Horne Elec. & Mfg.....		*100,000							3	4
Mackay Co. Common.....	1 3/4Q	50,000,000	100	117	72	121	105	102	113	116
Mackay Preferred.....	1Q	50,000,000	100	70	57	70 1/2	64 1/4	64 1/4	67	69
Magnavox Mfg. Co.....	5c.Q	750,000	1			2 1/2	90c	2 1/2	2 1/2	3
Marconi of America.....		10,000,000	5	8	4	8 1/4	5	6 1/2	6	8
Marconi Stamped Stock.....				25c	5c	25c	5c	15c	5c	15c
Marconi of Canada.....		7,500,000	2 1/2	2 1/4	1	3 1/2	1	1 1/2	1	1 1/4
Marconi of England Common.....	15%	18,000,000	5	16	10	16	9	10 1/2	8	12
Marconi of England Preferred.....	10%	1,250,000	5	15 1/2	10 1/2	16	8 1/2	10	7 1/2	11 1/4
Marconi of Spain.....		1,750,000	5	3	1	2	1	1 1/2	1	3
Marconi Int. Marine.....	5Q	7,500,000	5	8 1/2	5	10	6	9	6 1/2	9
Mountain States T. & T.....	1 3/4Q	50,000,000	100	110	100	115	105	108	102	105
New England Tel. & Tel.....	2Q	100,000,000	100	125	108 1/2	122	110	110	111	114
N. Y. Tel. 6 1/4% Preferred.....	1 1/2Q	25,000,000	100	112 1/4	106	112	107 1/4	108	110	111
Ohio Bell Tel. Preferred.....	1 3/4Q	50,000,000	100	105 1/2	95 1/2	105 1/2	101	103 1/4	103	105
Pac. Tel. & Tel. Common.....		18,000,000	100	68	55	65	67	90	95	100
Pac. Tel. & Tel. Preferred.....	1 3/4Q	82,000,000	100	92	86 1/2	94 1/2	91 1/2	93	93	96
Radio Corp. Common.....		*7,500,000		8 1/4	2 1/2	5 1/2	2 1/4	4	4 1/2	4 1/2
Radio Corp. Preferred.....		25,000,000		9 1/2	2	4 1/2	2 1/4	4 1/2	4	4 1/2
Western Elec. Preferred.....	1 3/4Q	150,000,000	50	113 1/4	107	117	111 1/2	113	113	115
Western Union Tel.....	1 3/4Q	100,000,000	100	116	85	119 1/2	101	107	111	112
Westinghouse E. & M.....	1Q	121,000,000	50	65 1/2	49 1/2	67 1/2	52 1/2	60 1/2	64	65

* Shares—All others are dollars

The NATIONAL AGS-58C Receiver

in each set mounted on an aluminum plate for ease of handling. For some reason, the dial is a Type B instead of the superior and more expensive Type N. The AGL receiver was a low-frequency modification with a Type B dial and a frequency selector switch instead of plug-in coils.

For those readers who would like to read more about the AGS, the following list may help:

The National AGS "Communications Type" Short Wave Superheterodyne, by James Millen, M.E., The National Company, 1933.

"Designing and Testing a Commercial Short-Wave Super", by Millen and Kruse, Radio News, January and March, 1933.

"The National AGS Receiver", by Bill Orr, CQ, November, 1975.

As this column is being written in July, 1987, word has been received of the passing

of James Millen, M.E. early in June. Jim, in the few short years he was with the National Company, provided the leadership which was in large part responsible for the large and varied family of receivers so familiar to all collectors and students of the National story. The creativity of his engineering teams is documented in his prolific writings in the trade journals, and they make fascinating reading. A salute to one of the important pioneers in the development of radio communications; his contributions will be remembered.

FEEDBACK: Some errors in the August column have been brought to the editor's attention. In the introduction, the AGS was displaced by newer designs, not "displayed", as printed. Of much more importance, in the 3rd paragraph, column 1, page 16, the modern crystal blank was NOT WWII surplus, and the frequency was 520kc, not 250kc as shown.

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