

TABLE 17. EFFECT OF ENCLOSURE ON HEAT EMISSION FROM RADIATOR

Enclosure Number	Height of Top of Enclosure Above Top of Radiator	Description of Enclosure	Free Area of Inlet sq. in.	Free Area of Outlet sq. in.	Net Pounds of Steam Condensed in Radiator per Hour	Relative Capacity Percent	Enclosure Number
1	00"	Radiator not enclosed—Painted (not dipped) with two coats of black Peacora paint			21.93	100.0	1
2	00"	4" x 50" Across Front	2000	462.5	19.53	89.1	2
3	00"	4" x 50" Across Front	2000	209.4	18.98	86.5	3
4	00"	4" x 50" Across Front	2000	625.0	18.31	83.5	4
5	00"	4" x 50" Across Front	2000	200.0	16.89	77.0	5
6	17 1/2"	4" x 50" Grilled Front	2000	92.1	15.17	69.2	6
7	34"	4" x 50" Grilled Front	2000	92.1	17.16	78.3	7
8	00"	4" x 50" Grilled Front	3300	209.4	18.77	85.6	8
9	00"	4" x 50" Grilled Front	1650	209.4	19.43	88.6	9
10	34"	4" x 50" Grilled Front	3300	462.5	18.09	82.5	10
11	00"	4" x 50" Grilled Front	3300	92.1	23.92	109.1	11
12	00"	Punched metal grille front and ends, solid top. Grille-work beginning 4" above floor. F.A. of grille = 44%	3300	92.1	15.17	69.2	12
13	00"	Woven metal grille front and ends, solid top. Grille-work beginning 4" above floor. F.A. of grille = 53%	3300	92.1	18.47	84.2	13
14	00"	Same as (13) with F.A. of Grille = 42%	3300	92.1	18.74	85.5	14
15	00"	Same as (13) with F.A. of Grille = 42%	3300	92.1	18.47	84.2	15

Note: Steam Temperature: constant at 216°F. Breathing Line Temperature = 80°F.

CHAPTER II—HEATING BY RADIATION

Results reported by Frost and others indicate that the increased heating efficiency noted with enclosed radiation is due to increased air circulation caused by flue action of the enclosure. While the use of an enclosure often retards heat emission from the radiator it is counter-

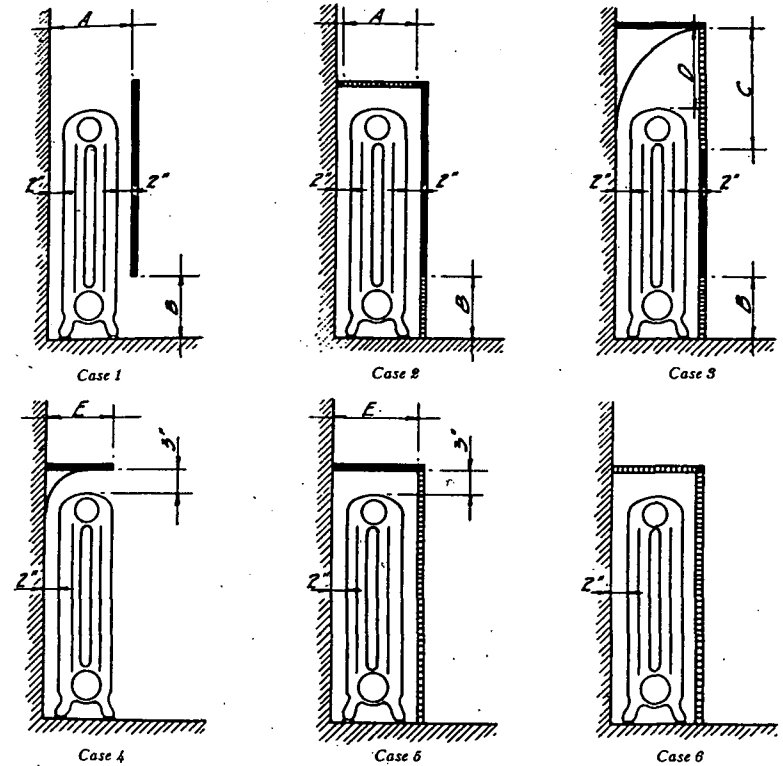


FIG. 3. DIFFERENT ARRANGEMENTS OF RADIATORS IN ENCLOSURES

balanced by the greater effectiveness of the heating. The heating effect for the enclosures shown in Fig. 3 follows:

- Case 1 is 10 per cent more effective than a direct radiator when properly constructed.
- Case 2 is 5 per cent more effective than a direct radiator when properly constructed.
- Case 3 is equally as effective as a direct radiator when properly constructed.
- Case 4, with E equal to one-half A,—percentage of reduction is 10 per cent.
- Case 4, with E equal to A,—percentage of reduction is 20 per cent.
- Case 4, with E equal to 1 1/2 A,—percentage of reduction is 35 per cent.
- Case 5, with E equal to A,—percentage of reduction is 30 per cent.
- Case 6, percentage of reduction is 5 per cent.

This data applies to the use of cast iron column radiation, with enclosures built-in as part of the architectural treatment of the room and does not apply to other types of enclosed radiators.