

In small or medium size theaters, it is sometimes practicable to use side wall or front wall distribution. For the satisfactory operation of such a system during the winter heating period, the returns should preferably be located at the floor level and near the front of the theater to prevent cold spots which may result from exposed wall convection or infiltration from exits.

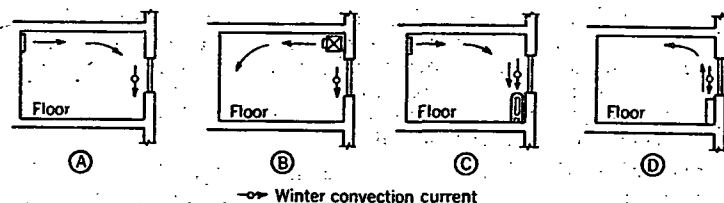


FIG. 9. DISTRIBUTION METHODS FOR SMALL ROOMS

- A. Satisfactory for cooling. Unsatisfactory for heating in severe climates where the outside temperature is consistently below 40 F, and single glass and uninsulated walls are prevalent.
- B. Performance approximately that of A when small diffusers are used in bottom of the duct.
- C. Satisfactory for cooling. Satisfactory for heating if direct radiation is properly controlled.
- D. Satisfactory for both cooling and heating. The air should be discharged slightly away from the wall, and for low velocities should be fanned out parallel to the wall.

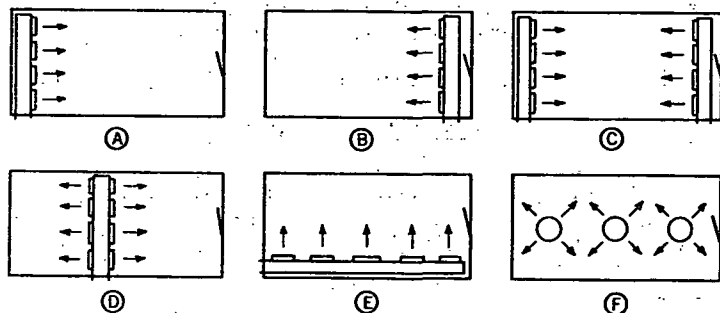


FIG. 10. SMALL STORE COOLING DISTRIBUTION

- A. *Rear Wall.* High outlet velocity, satisfactory if properly designed; possibility of excessive air motion and drafts if used for wrong application.
- B. *Front Wall.* High outlet velocity, results same as A.
- C. *Front and Rear Walls.* Moderate room air motion, outlet blows should not impinge giving rise to down drafts in center.
- D. *Center.* Moderate air motion, no impingement of air streams. Good results.
- E. *One Side.* Moderate room air motion; should blow toward exposed wall. Good results.
- F. *Ceiling.* Low room air motion. Good results. Outlets should be selected of sufficient size to allow for blocking when not located in perfect squares.

For *multi-room buildings* diagrams shown in Fig. 9 illustrate distribution methods for small rooms with exposed wall, such as offices, hotel (guest) rooms, hospital (patients) rooms, apartments, etc.

For a *small store* the cooling performance of various distribution methods is illustrated in Fig. 10. *Marine applications* of air distribution systems are given in Chapter 49.

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