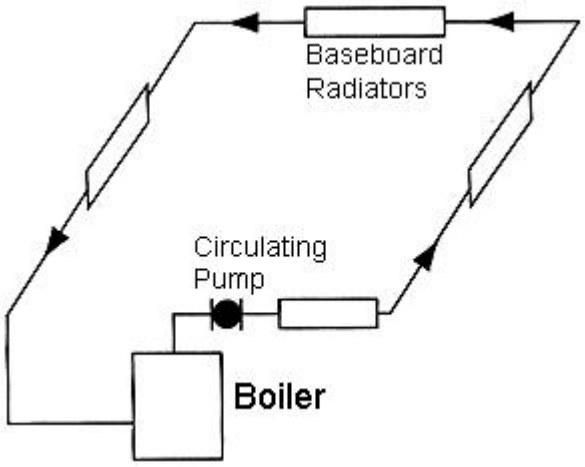
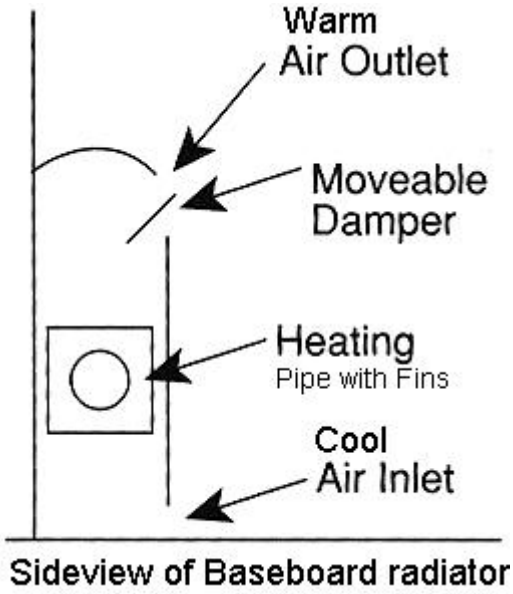
Hydronic Heating Systems

General Overview

Using natural gas, water is heated by a boiler (located somewhere in your basement). This heated water is then pumped (forced circulation) through pipes that carry the heat to various zones (consisting of pipes and radiators that form heating loops).



Heat is then distributed in individual rooms (both common and member bedrooms) through convective baseboard radiators.



Sideview of Baseboard radiator

Control of the system is achieved either through thermostats or a water temperature control located on the boiler.

Troubleshooting

If you have difficulty or suspect that heating problems may be related to malfunctions in a boiler room (noise from pumps, loss of heat over a wide area) or with anything other than what is being described here, please contact the ICC maintenance staff.

Problems with inadequate heat are generally related to control problems, lack or absence of water flow, or air build up.

Initial Assessment

- Gauge the temperature of the room and eliminate the obvious. Is the thermostat (maybe in the adjacent room) turned up? Is the window fully closed and is the upper sash all the way up?
- By touch, feel the heating pipe at multiple points along its course (note especially sections of pipe before or after valves)

1) Control Problems

Solution: check T-stat function, contact staff

- You should become familiar with the location of t-stats in your house and which regions they control. T-stats normally control more than one room if not the whole house. Members have to negotiate a temperature that is comfortable for everyone (those without thermostats should not use a gate or ball valve in their room to adjust temperature).

2) Flow problems

Water is not being circulated through the lines.
Solution: open valves that block flow

- If the pipe feels cold, check to make sure that any gate or ball valves located along the loop (could be in an adjacent room) are in the open position (see pictures on next page)
    1. An open gate valve will be turned all the way counter clockwise (lefty loosey). An open ball valve will have its handle in line (not perpendicular) with the pipe.
    2. Gate or ball valves along a certain loop may be located in rooms adjacent to the ones with heat problems (or up in the ceiling tiles in a basement common room)

3. Gate or ball valves should never be used to control heat (even if they are not fully closed using them will alter the fluid pressure in the line and adversely effect the heating system).

Gate valve

Ball valve in open position

3) Air problems

A natural product of heating water is air. At times, this air will accumulate in the heating lines and form a block that will stop water from being able to circulate.

Solution: bleed air from the lines

1. Locate a bleed valve along the heating pipe. These could be on the pipe in an adjacent room or even further away (see picture on next page).
2. With a small cup or pan ready, turn the release screw using a bleed key (lefty loosey). If air is present in the line, it will be released (hiss out) along with a sputtering of water. Allow the bleed valve to remain open until a solid stream of water is produced and you think most of the air is out. Note the temperature of the water as it is being released.
3. Close the bleed valve (righty tighty) to stop the stream of water. Do not over tighten. Wait several minutes and recheck the line to see if it's warming.
4. Depending on the amount of air and its location in the pipe, it may be necessary to bleed off as much as a gallon of water. If you don't get hissing or sputtering while bleeding (indicating air release) it's not an air problem. If you open up the bleed valve and nothing

comes out (or the water stream stops) either the bleed valve is blocked (corroded) or a gate/ball valve is closed somewhere stopping flow.

5. Bleeding air out of the lines will need to be done repeatedly throughout the heating season to keep the system performing optimally.

Bleed valve