

Infrared Heaters

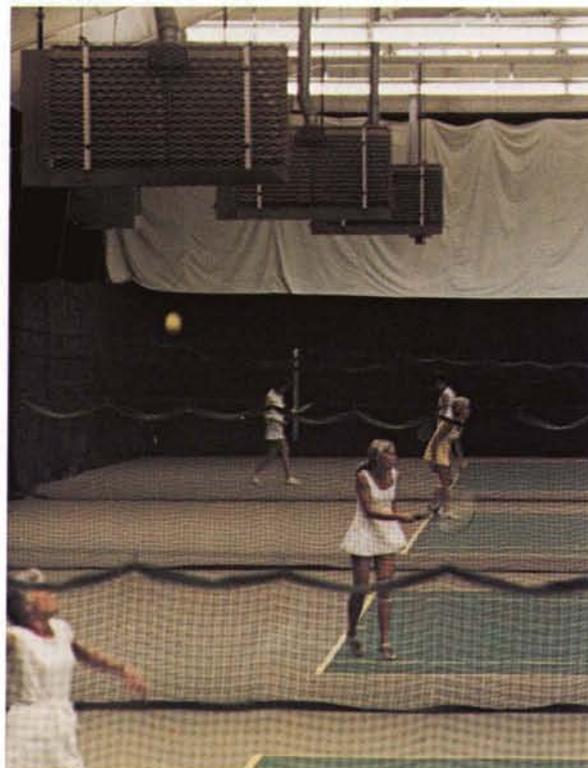
The heating units shown in the accompanying photos are Panelbloc infrared heaters, energy savers which burn little fuel in relation to their effective heat output. Produced by Bettcher Manufacturing Corporation, Cleveland, Ohio, Panelblocs are applicable to industrial or other facilities which have ceilings more than 12 feet



high, such as those pictured: at left the Bare Hills Tennis Club, Baltimore, Maryland and at right, CVA Lincoln-Mercury, Gaithersburg, Maryland. The heaters are mounted high above the floor and they radiate infrared energy downward.

Panelblocs do not waste energy by warming the surrounding air. Instead, they beam invisible heat rays directly to objects which absorb the radiation—people, floors, machinery and other plant equipment. All these objects in turn re-radiate the energy to the air.

A key element in the Panelbloc design is a coating applied to the aluminized steel outer surface of the heater. This coating must be corrosion resistant at high temperatures and it must have high "emissivity"—the ability of a surface to emit radiant energy. The Bettcher company formerly used a porcelain coating, but it caused a production problem. Bettcher did not have the capability to apply the material in its own plant, so the heaters had to be shipped out of state for porcelainizing, which entailed extra cost. Bettcher sought a coating which could meet the specifications yet be applied in its own facilities. The company asked The Knowledge Availability Systems Center, Pittsburgh, Pennsylvania, a NASA Industrial Applications Center (IAC), for a search of NASA's files.



The NASA center located several pertinent reports on radiator coatings used on spacecraft. One in particular described the coating known as Pyromark, produced by the Tempil Division of Big Three Industries, Inc., South Plainfield, New Jersey. Pyromark, a spray-on paint with exceptionally high emissivity, had been employed as a protective coating for the Apollo Lunar Module and it is now being used on the Space Shuttle. It is also used in many industrial applications and in consumer products. Through contact with the Tempil Division, Bettcher was able to set up its own coating facility. Thus, the NASA IAC contributed not only to Bettcher's realization of substantial savings but also to an increase in the radiant efficiency of the company's infrared heaters.



