Weight Room Safety Strategic Planning—Part IV

Gary Polson, MS, CSCS
Strength Tech, Inc.
Stillwater, Oklahoma

LOSS CHART 1 OF THIS SERIES presented the two areas that fall under the weight room facility: room design and equipment. Here we will discuss potential losses in these areas and how to prevent or reduce them.

Room Design

Room design can be divided into four areas (see Loss Chart 6). All offer opportunities to reduce loss.

Size

The overall size of the room dictates how much equipment can be placed in it and how many athletes can safely work out at one time. Very large rooms may have supervision visibility problems. Ceilings must be high enough to allow overhead lifts by tall athletes. But very tall ceilings add a lot of air volume that decreases the air exchange rate. Losses can be reduced with proper room size.

Floor Plan

Floor plan decisions involve placement of structural items such as doors, windows, mirrors, or drinking fountains. The placement of these structural items, in combination with equipment placement decisions, determines the traffic flow and visibility in the room. Most weight rooms are square or rectangular in shape and have a supervisor’s station in the middle or along an edge to allow visibility of the entire facility. L-shaped rooms may obstruct the supervisor’s vision. If necessary, mirrors can be used to increase the range of vision from the supervisor’s station.

Some floor plan decisions are made in concert with equipment placement decisions, which will be discussed later. Coaches often have to contend with pillars, steps, low hanging heaters, and other obstructions. Floor plans that create efficient traffic flow, maximize visibility, and keep obstructions to a minimum will reduce losses in your weight room.

Room Surfaces

Proper surfaces are important. Loss Chart 6 lists the various items and also the properties of materials. Identify the properties needed by each item and select materials with those properties. For example, flooring in a power clean area needs friction and durability. It must be cleanable, fire resistant, shock absorbing, and sound absorbing. If you are in an existing facility, reevaluate its surfaces and make sure they are not putting your facility at risk. Properly selected surfaces can reduce losses.

Utilities

Utilities allow maximum safe use of the facility. Ventilation needs are critical for a weight training room. Humidity control is often a problem. If the room becomes too humid, the weight plates, floors, and other surfaces may become slick. This can lead to the formation of a light rust barrier that remains slick even after the area dries out. Proper humidity control and good ventilation can prevent these problems and improve the air quality of the facility.

Access to sunlight and open windows can be a safety asset. Natural lighting tends to increase motivation. Airing out the room gets rid of odors and dries out the facility if it gets humid. The ventilation rate can be significantly re-

© 1995 National Strength & Conditioning Association
duced in nonpeak and off hours to reduce power consumption. Many coaches with older facilities find it necessary to use floor fans to properly ventilate and cool the facility. If you use floor fans, make sure the electric cords are in good condition and properly routed to prevent tripping.

Emergency utilities such as a telephone with emergency phone numbers and the address of the weight room posted on it, emergency lighting, lighted exit signs, and fire alarms should be a vital part of your disaster preparations. Properly designed utility systems can reduce losses during normal operations and minimize them during disasters.

**Equipment**

Equipment can be divided into three areas (see Loss Chart 7). All offer opportunities to reduce loss.

**Supplier Support**

Choose equipment that is backed by the supplier. Many coaches purchase equipment built by local welders who are not experts in fitness equipment. Some have tried to copy existing pieces and had serious safety difficulties. Purchase equipment from stable, established companies that have a history of producing safe equipment. Some are covered by product liability insurance. Small new companies often have unique single-item products, but be sure the items are safe and follow sound principles.

**Design**

Three areas should be considered when evaluating equipment designs. From a human factors standpoint, equipment must exercise the muscles desired, be safely adjustable to fit the athletes, have no pinch points, and have no surprises in operation. The equipment must be stable and provide a solid platform for doing the exercises. Finally, consider its safe operation from the various perspectives listed in Loss Chart 7.

**Placement**

Many equipment placement decisions are made in concert with the floor plan decisions discussed earlier. Usually initial placement decisions are made from floor plan sketches. A sheet of grid marked paper can be used for sketching the basic floor plan to scale. Then the equipment can be sketched in
to scale, or scale paper cutouts can be made and moved around to determine the best locations. Don’t forget the need for weight trees for plate storage. Create a basic path through the facility. Some facilities actually lay out a plastic or colored walk path. It is much easier to do your planning on paper than to keep moving the actual equipment around later.

Typically the facility is divided into areas by activity: lifting, stretching, aerobic, rehab, and supervision. Stretching, aerobic, and rehab areas are often off to the side because they require less supervision or, in the case of rehab, are used only under direct supervision. The primary supervision area is usually in the middle of the lifting area or along one side. The lifting area is the largest area. Items in this area are placed according to muscle group and are also arranged into free weight and machine areas.

Very large pieces of equipment—cross-over pulley machines, Smith machines, huge power racks, multistation machines—should be placed first. Items requiring rubber flooring are usually grouped together. Dumbbell racks, dumbbells, dumbbell benches, EZ curl bars, and tricep bars are often placed together in a rubber floored area with mirrors. Body weight equipment such as incline sit-up boards, back extension benches, chin-up bars, and dip bars are also grouped together. Some facilities group items by sport. Taller equipment is usually placed along the wall so as not to obstruct visibility. Thoughtful placement of the equipment will reduce traffic.

Do not be afraid to move the equipment around from time to time. It will make your facility seem fresh and new again and you will gradually arrive at the optimal equipment placement. Several facilities move equipment seasonally, or for different athletic programs. Provide proper storage and recondition the equipment while it is out of service. A program of continuous improvement in equipment placement will improve the overall operation of your facility and reduce losses.

This concludes the development of Loss Chart 1. The next installment of this column will discuss how to apply it to your facility. ▲

Gary Polson is a registered professional engineer and a CSCS. He holds a master’s in mechanical engineering and physical education. He and his wife operate Strength Tech, Inc., which specializes in developing fitness products for use in prisons.