

Attenuations

Providing noise control solutions for industrial applications.

McGill AirSilence LLC

An enterprise of United McGill Corporation —
Founded in 1951

3



Hayes Industrial Brake met OSHA noise standards by enclosing its punch presses with an L-shaped system of acoustical curtains hung from overhead tracks.

Noise is a fact of life in plants where industrial machinery is operated. In most cases, there is no way to quiet the machinery itself. The best solution is usually to isolate the machinery so that its noise does not disturb workers in other areas of the plant.

Hayes Industrial Brake is a manufacturer of mechanical and hydraulic brakes for agricultural, recreational, industrial, and construction equipment. Metal parts for these brakes are punched and assembled at the Hayes plant in Mequon, Wisconsin. In a reorganization to improve efficiency, the assembly operation was set up near the punch press area. Five punch presses, ranging in size from 75 tons to 250 tons, operate in this area, punching out metal parts for motorcycle caliper brakes. The company wanted to find a way to shield its assembly workers from the noise generated by the punch presses.

Hayes formed a task force to study the noise problem and develop a solution. They measured the noise near the press area and found that it averaged 108 dB and reached as high as 112 dB with the noisiest combination of equipment running. At first

they tried enclosing the individual presses. The barriers that they chose reduced the noise by about 5 dB but created problems for the press operators. Within the enclosures, there was very little room to move around and not enough access to get stock in and out. They concluded that

individual enclosures were not practical because of the size of the press area.

At this point, Hayes discussed enclosing the entire press area with Jim Riddle of Hering & Associates, the McGill AirSilence manufacturers' representative in Mequon. Because of the close quarters



The acoustical curtains block and absorb noise from the presses, reducing noise levels in the plant from 108 dB to about 90 dB.



Several of the curtain panels have built-in windows to allow visual contact between workers inside and outside the enclosures.

and the need for easy access, they decided against installing a permanent barrier wall. Riddle convinced Hayes to consult with McGill AirSilence.

McGill AirSilence supplies an extensive line of products for controlling noise in industrial and HVAC applications. This selection allows its acoustical experts to engineer the best solution for an individual noise problem. For Hayes, McGill AirSilence recommended an acoustical curtain system that would reduce noise while maintaining easy access to the presses.



Individual curtains slide along the overhead tracks, making it easy for workers to move stock in and out of the press area.

By making use of two existing building walls, McGill AirSilence was able to enclose the 83-foot by 43-foot press area with an L-shaped curtain system. Seventeen curtains that measure 16 feet, 4 inches high are hung from each of two parallel tracks suspended from the ceiling. The tracks are close enough together that the curtains can be attached to one another with Velcro® to form a solid noise barrier. The Velcro runs along the edges of the curtains in solid strips on the lower half and intermittent strips on the upper half. This arrangement makes it easy to pull the curtains apart so that they can be moved out of the way.

Once installed, the curtain system provided the required access. According to Audrey Tucker, assembly supervisor at Hayes, "Getting in and out and moving the curtains has not been a problem. The Velcro design makes them easy to move and close. They're not in the operator's way at all when he has to bring stock in and out."

The curtains are a heavy-duty construction designed for industrial environments. They contain a 2-inch-thick layer of fiberglass sewn to a reinforced vinyl barrier. The fiberglass absorbs noise, reducing the noise levels both inside and outside the enclosed area. The vinyl barrier blocks noise to contain it within the press area.

When closed, the curtains do not form a completely solid barrier. There is a small

open area at the top where the tracks are suspended from the ceiling and at the bottom to make it easier to sweep the floor.

Even with the gaps, the curtain system has improved the noise situation considerably. "It has reduced noise levels, and everybody seems pretty happy with it," says Audrey Tucker. "We checked the noise levels after the curtains went up. We ran the same machinery that had been operating when we took the original noise levels, and the noise had been reduced from 108 dB to 89 or 90 dB."

With the acoustical curtain system in place, Hayes is able to provide a work environment outside the press area that meets OSHA standards for noise levels.

United McGill® is a registered trademark of United McGill Corporation.

Velcro® is a registered trademark of Velcro Industries B.V.

McGill AirSilence LLC

An enterprise of United McGill Corporation —
Founded in 1951

2400 Fairwood Avenue
Columbus, Ohio 43207-2700
614/443-5520, Fax: 614/542-2620
E-mail: acoustics@mcgillairsilence.com
Web site: mcgillairsilence.com