PROBLEM SOLVED™ PAPER

SOLUTION: Martin® Tracker

INDUSTRY: Bulk Transportation

LOCATION: Canada Steamship Lines CSL Assiniboine

The self-unloading vessel CSL Assiniboine carries bulk cargos including coal, grain and taconite pellets on the Great Lakes.

PROBLEM

Canada Steamship Lines Inc. owns and operates the largest fleet of self-unloading vessels in the world. One of these vessels is the CSL Assiniboine, which plies the Great Lakes carrying cargos of up to 33,860 tons (28,388 tonnes) of coal, grain or taconite pellets. The ship's self-unloading system consists of three conveyors belts below the vessel's holds. These feed a single stern-mounted loop elevator that raises the cargo to a 258-foot (78.6-m) discharge conveyor. This 850-FPM (4.3 m/sec) boom conveyor will unload the ship at rates up to 5,413 tons (5500 tonnes) per hour. But tracking problems on the discharge conveyor threatened unloading efficiency and the life of the belting. To avoid edge damage in the narrow confines of the boom, this 108-inch (2743-mm) wide, ¾-inch (19-mm) thick belt must run in the proper path.

SOLUTION

This automatic belt-training device provides immediate and continuous precision alignment of a mistracking belt. The Martin® Tracker uses a patented steering system to provide precision adjustments to keep a belt tracking perfectly. The Martin® Tracker will work where other belt training devices fail, preventing spillage and extending belt life. To suit application requirements, the Martin® Tracker is available in three models: Standard, Heavy-Duty and Extra Heavy-Duty. Selection is based on conveyor speed and belt thickness. On the CSL Assiniboine, an Extra Heavy-Duty Martin® Tracker Lower Unit was installed to keep the discharge belt centered as it enters the conveyor loading zone.

A Lower Unit of the Martin® Tracker Extra Heavy-Duty was installed to eliminate belt wander on CSL Assiniboine's discharge conveyor.

RESULTS

Despite initial skepticism—including crew members who said "it will never work"—the Martin® Tracker is a complete success. Crew members note the discharge belt has no side-to-side movement, and the Martin® Tracker is powerful enough to withstand any mistracking forces even though the conveyor's pulley distances are shorter than ideal. In fact, the ship's chief engineer reports the Martin® Tracker keeps the belt running true even when the ship is listing during unloading operations.

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