

Case Study: Adding a Jib or Gantry to a bay Already Served by a Bridge Crane

The Problem

Dearborn Crane has a steel-warehouse customer. This particular has (4) twenty ton overhead cranes operating in each bay. These overhead cranes are used quite frequently to load and unload trucks. The customer decided to begin cutting I-beams to length before shipping some of them. The customer was using their fast-moving high-capacity overhead cranes, designed for loading twenty ton bundles of steel on trucks, for feeding individual pieces of I-beam into their saws. Truck loading was down by an average of fifteen percent per day. Profits were dwindling, and the customer brought up his throughput problem in casual conversation with a Dearborn Crane representative.

The Solution

It's not possible to add another smaller bridge crane to the main runway system, as the big cranes must have full run of the bay with no interference from a crane hovering over one saw. Instead, Dearborn Crane suggested a semi-gantry crane. A semi-gantry crane is a hybrid between a bridge crane and an overhead crane. One side runs on an elevated runway, like a bridge crane, while the other side runs on the floor, like a gantry crane (see fig. 101)

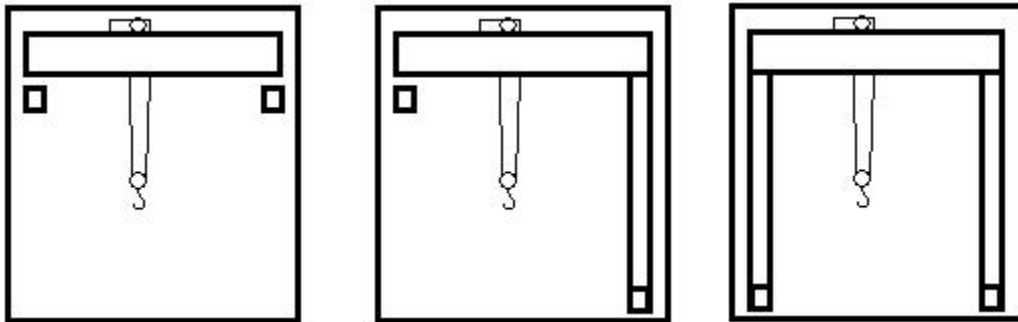


Figure 101, L to R: A bridge crane, a semi-gantry crane, and a gantry crane.

A five ton semi-gantry crane was installed over both saws, allowing the saw operator to pick from central areas and load the saw with individual pieces. Now, the overhead cranes only drop a large bundle of beams, straight from the inbound truck, in the feed area. The overhead cranes then pick up the finished bundle and load it on a truck or storage area. The inexpensive smaller gantry cranes allow the saw to work without

waiting for the overhead crane. The overhead cranes are used to their full potential, shifting bundles from truck to storage and back. They are not obstructed by the gantries, because the gantries operate from a runway mounted lower on the wall, and from the floor. (see figure 102)

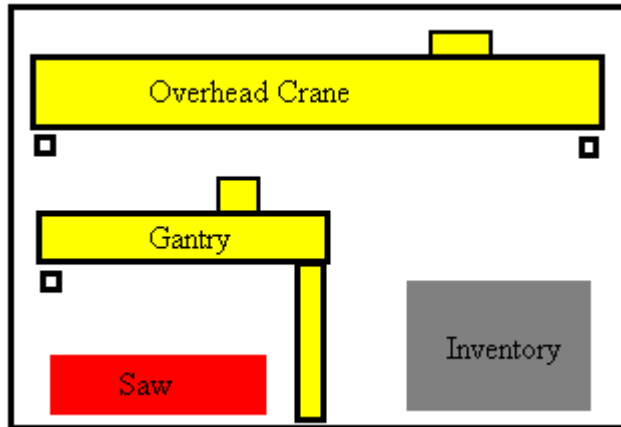


Figure 102

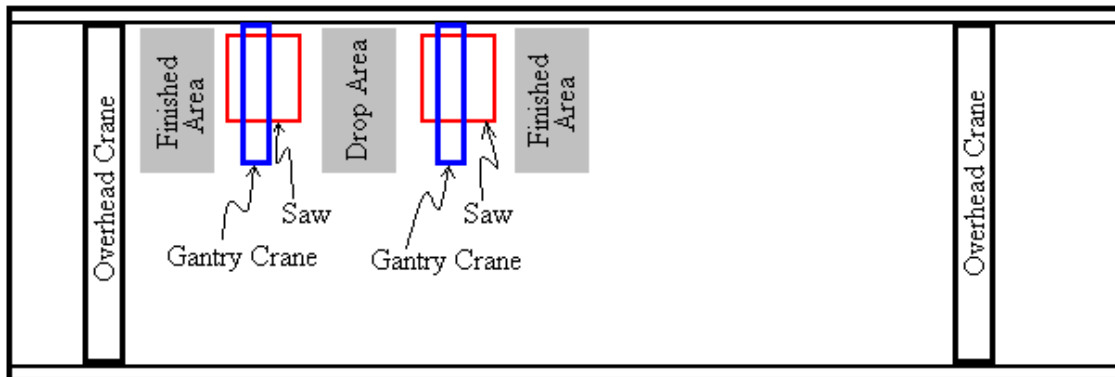


Fig 103

In figure 103:

1. Overhead Crane loads and unloads trucks.
2. Gantry crane picks up uncut beams from drop area, loads into saw.
3. Gantry crane picks cut beams from saw, puts in finish area.
4. When a full bundle is cut, overhead crane loads bundle on truck or storage area.
5. During this process, the overhead cranes continue to do their original job of shuffling bundles between storage and trucks. The overhead cranes are being used to their full potential and the gantries are used to their full potential.

The other lesson – whenever there is a throughput problem and material handling is involved, call Dearborn Crane – we have a solution to your problem.

Fig 104: a picture of the actual facility where Dearborn Crane installed both twenty ton overhead cranes and five ton semi-gantry cranes.



fig 104