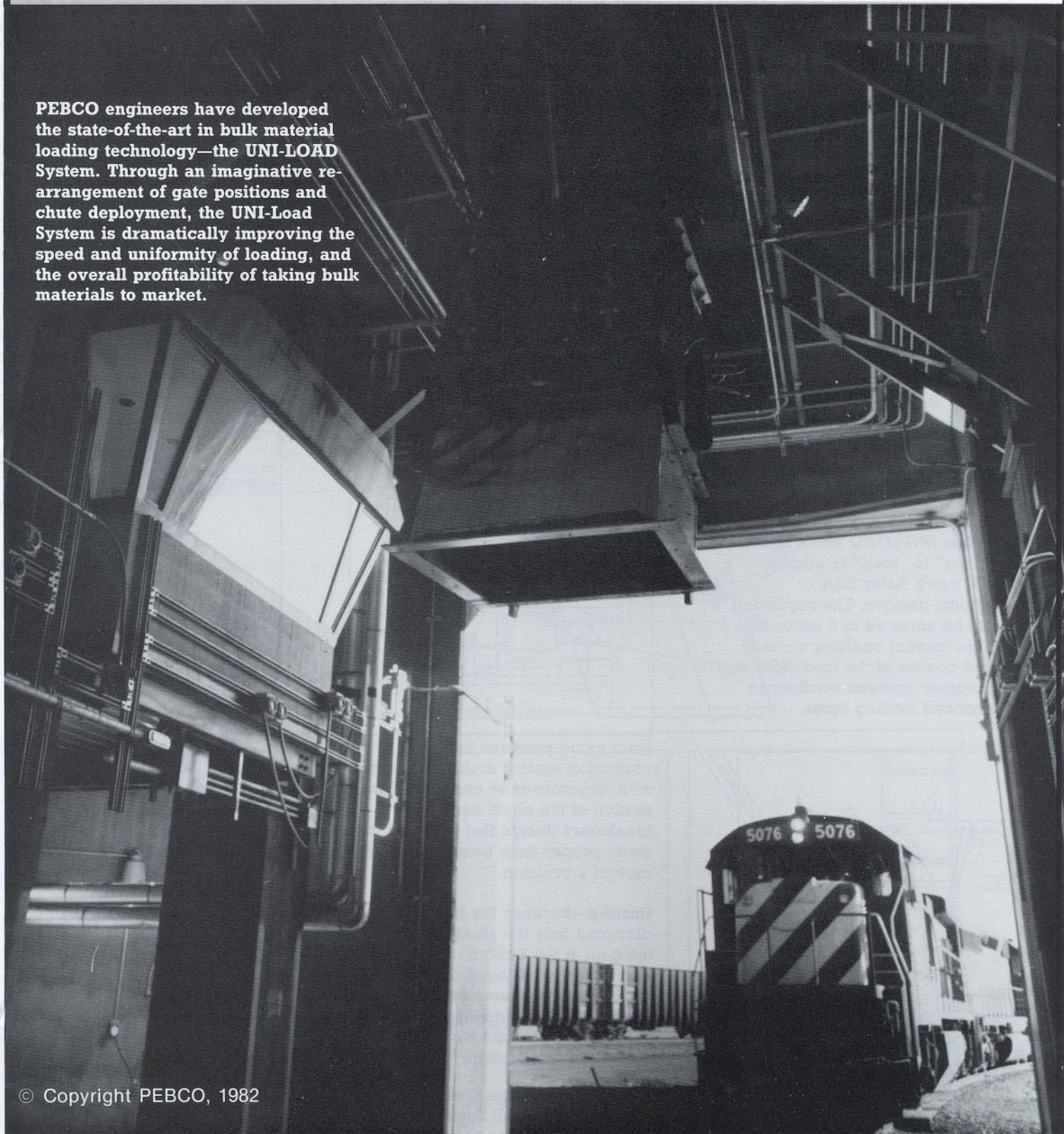


# THE UNI-LOAD<sup>®</sup> SYSTEM

Patent Pending

PEBCO engineers have developed the state-of-the-art in bulk material loading technology—the UNI-LOAD System. Through an imaginative rearrangement of gate positions and chute deployment, the UNI-Load System is dramatically improving the speed and uniformity of loading, and the overall profitability of taking bulk materials to market.



The general need in bulk material loading has always been the same: a simple and efficient method of loading rail cars or trucks with no compromise in loading speed. While that need has remained constant, most other aspects of the process and mining industries have changed. The UNI-LOAD System has been developed to provide solutions to the new demands of customers and railroads, while still providing the simplicity and efficiency that ensures long-term viability.

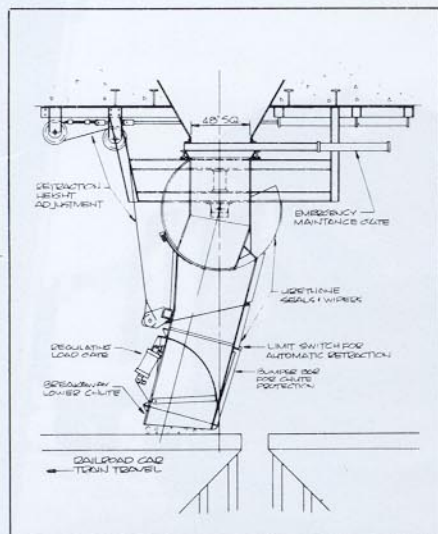
The new UNI-LOAD System introduces changes in two major areas: chute positioning and movement and gate arrangements.

**The chute**—Rather than traverse horizontally from a side ("clear") position to a "load" position over the rail car, the UNI-LOAD System chute is fixed in position directly over the cars. When loading is required, loadout operators actuate the chute which quickly swings downward from a hinged pivot point.

**The gate**—The non-jamming gate that regulates coal flow has been moved from a position at the top of the chute to the bottom of the chute.

These two changes alone radically alter traditional loadout methods and improve the system in every important category:

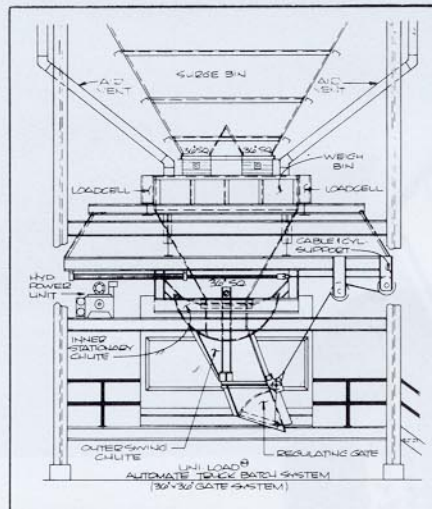
**Speed**—The UNI-LOAD chute swings from "clear" to "load" in about 5 seconds, much faster than conventional designs. The regulating gate can be actuated in 2 seconds, giving the loadout operator virtually unlimited control of the load. With this control comes operator confidence and enhanced loading times.



**Uniformity of load**—The positioning of the gate at the bottom of the chute eliminates the problem of "in-transit" coal, i.e. coal traveling down the chute after the load is shut off at the top. (Conventional designs require the operator to guess at the proper shut-off point for the coal flow, since the volume of coal inside the chute is not visible. A split-second's mistake cannot only mis-shape the coal load in the car, but over-fill the car, risking weight penalties from the railroad.) With the UNI-LOAD System, operators can shut off the coal flow at the exact point they sight the car as "full". As the gate closes at the bottom, there is no "post-closing" coal fall, and coal loads come out neat, symmetrical and accurately weighed to load maximums.

Even inexperienced operators can load cars evenly, with full control, in minutes.

**Maintenance**—The simple design of the UNI-LOAD arrangement requires fewer moving parts than traditional designs and substantially less structural steel. The design of the



pivot chute provides built-in protection against accidental contact with locomotives or cars. The lower portion of the chute itself has a breakaway design that prevents the chute proper from being damaged in case of a collision.

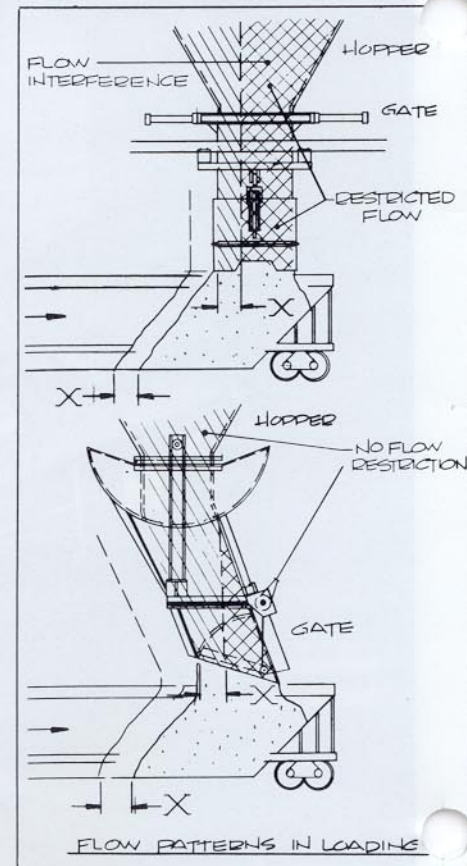
**Dusting**—Because the material is dropping only the short distance from the gate at the bottom of the chute into the car, dusting is dramatically reduced and in some cases eliminated. Additionally, urethane seals and wipers are placed throughout the system.

**Safety**—The precise flow available with the UNI-LOAD System allows a safer operation. The provision of the

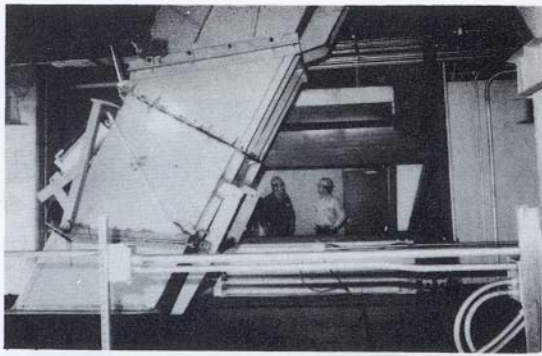
curved skirt arrangement forming the shut-off valve at the top, is a safety feature that will allow the chute to be raised and the coal flow cut off even in the event of a catastrophic accident.

Due to the fast loading times and responses, PEBCO asked Mr. H. Colijn, of H. Colijn and Associates, a Consulting Specialist in Transportation and Material Handling Systems, to examine the flow rates. Mr. Colijn recorded that "the pivot chute will allow an expansion of the flow channel toward the hopper outlet. This will make more effective use of the hopper outlet opening and will not interfere with the mass flow characteristics of the hopper. The vertical spout does not have this expanding capability and therefore only a portion of the hopper outlet is being effectively utilized."

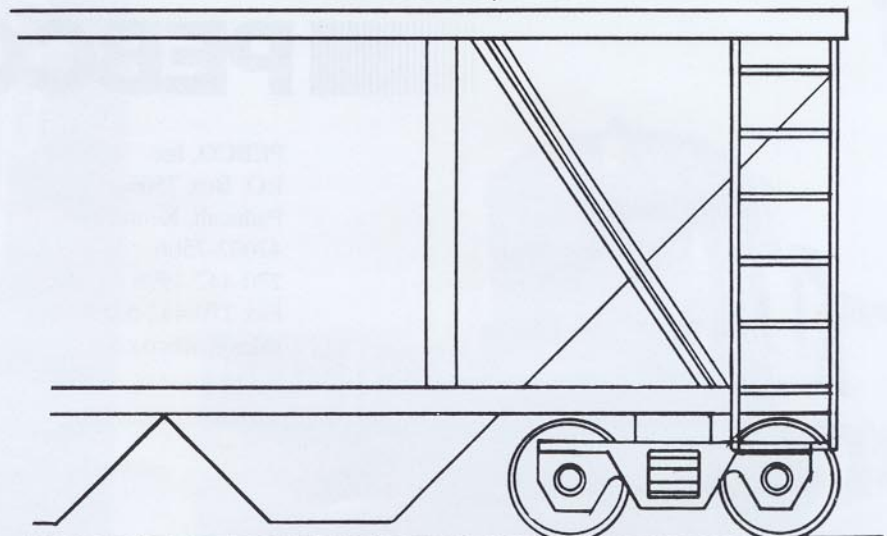
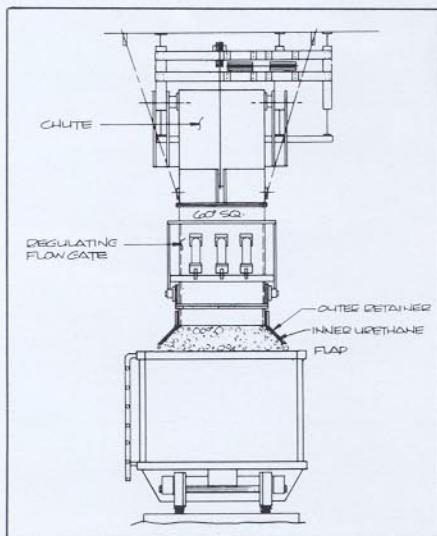
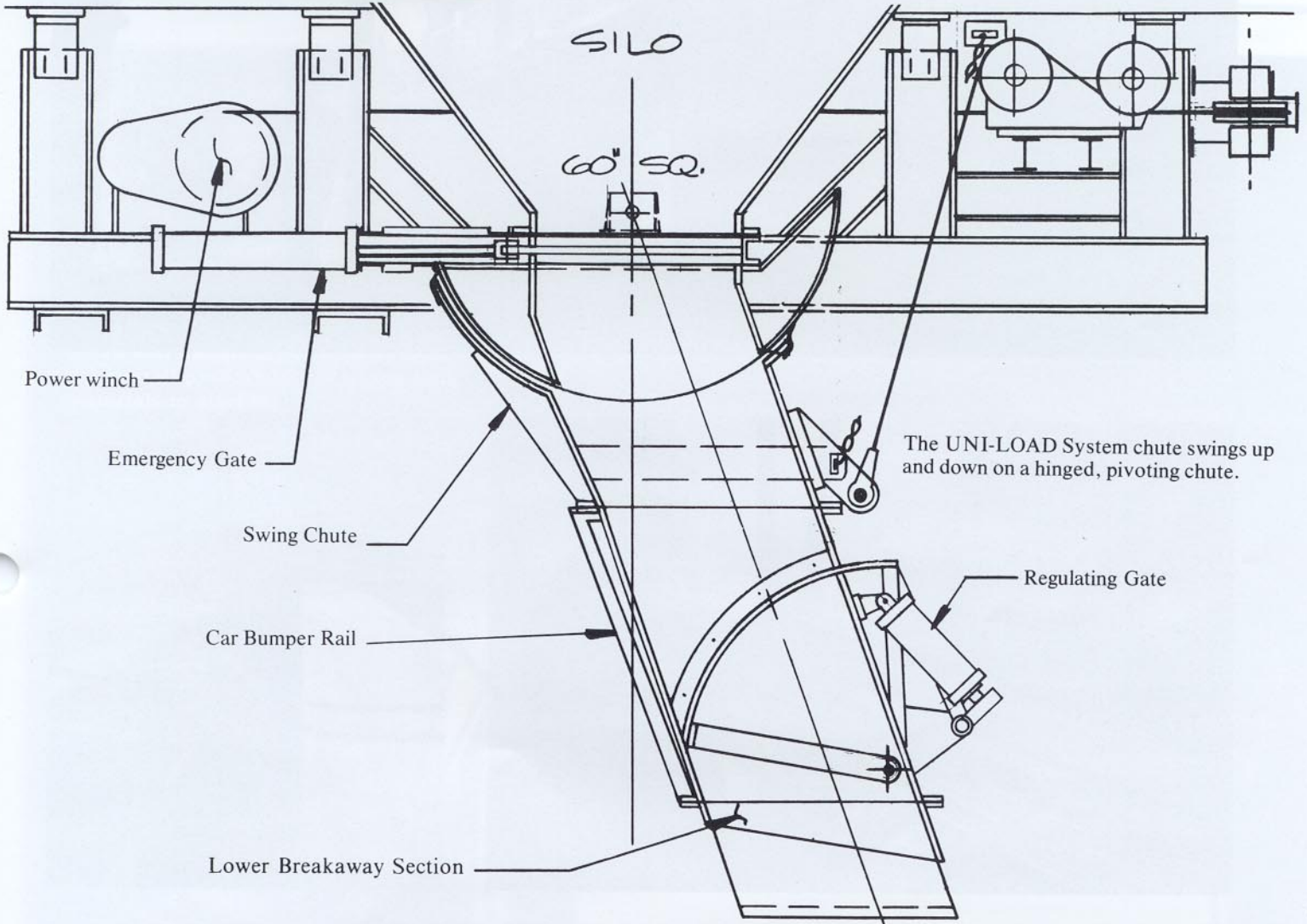
To date, the UNI-LOAD System has compiled some impressive statistics. In a single 24-hour period a UNI-LOAD System-equipped mine in Wyoming loaded 11 coal unit trains, a record amount of coal loaded in that period in the U.S. Individual cars have been loaded in as little as 20 to 22 seconds each, with 104-car unit trains being loaded in 32 minutes.



UNI-LOAD Systems are available in standard sizes 36" x 36", 48" x 48", and 60" x 60".



This UNI-LOAD System, at a coal mine near Gillette, Wyoming, is loading 104-car unit trains in 32 minutes.





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