DISCLAIMER:

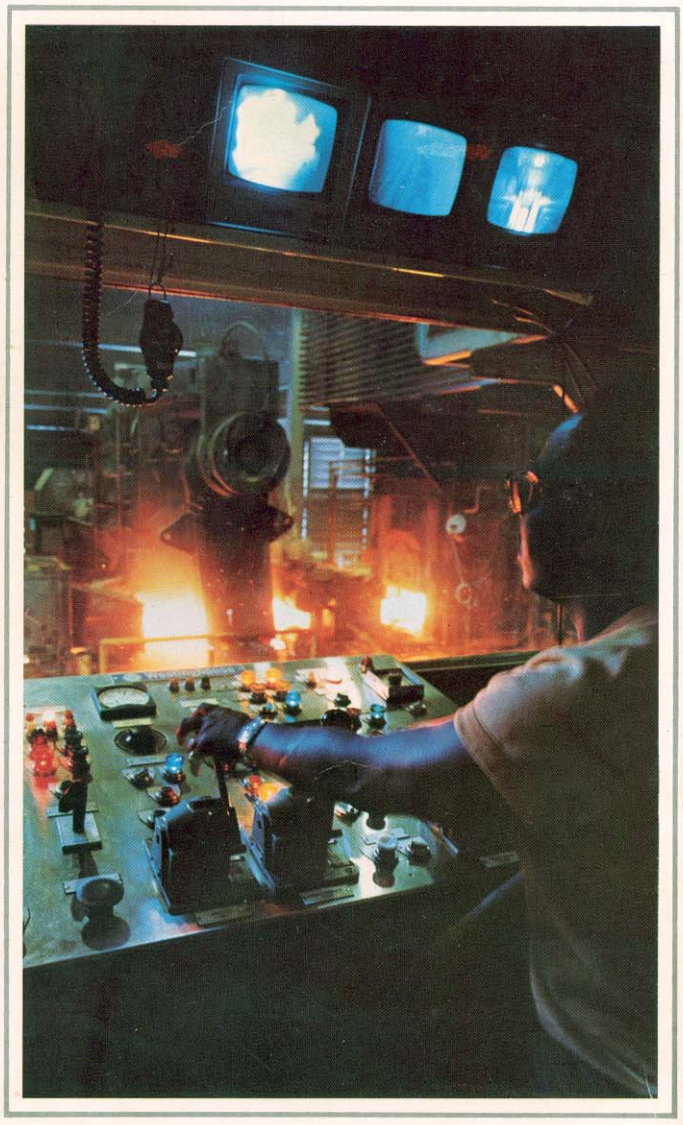
These photos depict the 13" Bar Mill after renovation in the 1970's which included filling of the Sub-Basement with concrete, a new floor poured (the Grinding area floor was originally a dirt floor) and the building was completely repainted. The Milling process was modernized and machinery relocated during the renovation. These photos are not indicative of the dusty/dirty conditions of the 1940's & 1950's. The photos have been staged and are not representative of the steelworkers daily attire.
NOTHING SHOULD BE ASSUMED, EVERYTHING MUST BE CLARIFIED BY A SITE EXPERT.

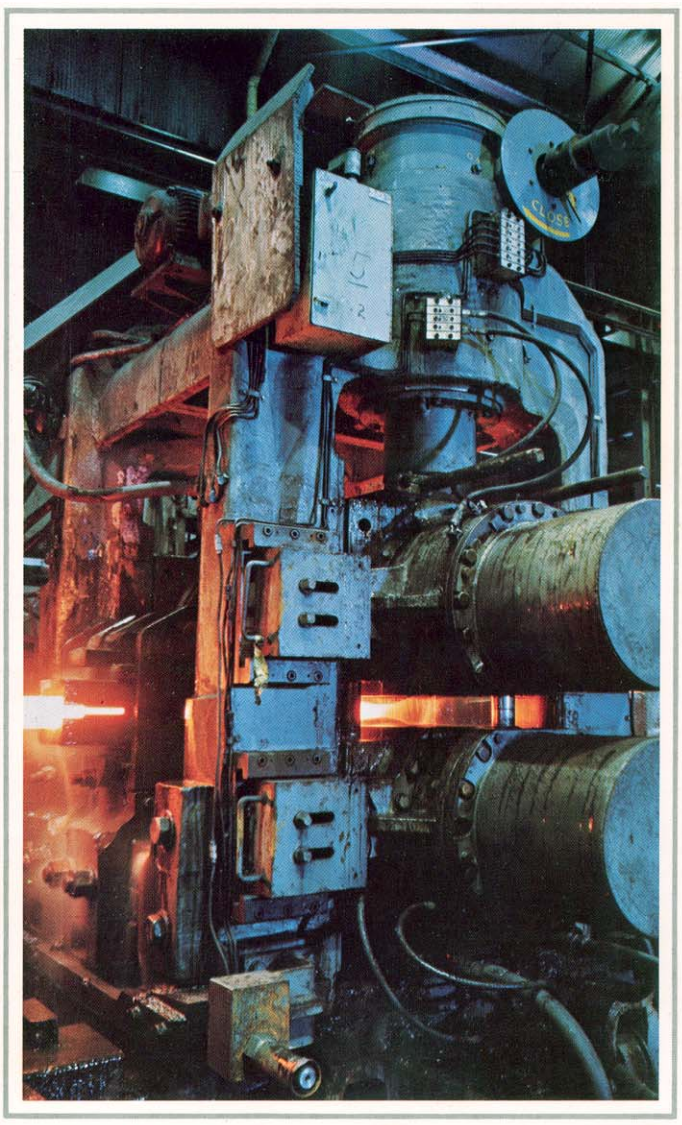
13" BAR MILL

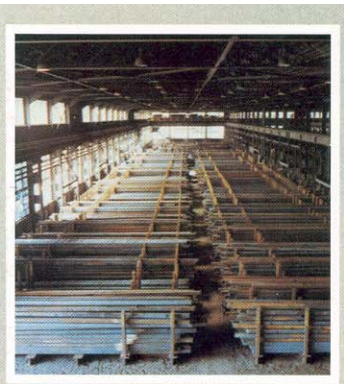
Lackawanna Plant

The world's newest and most sophisticated steel bar mill is now on stream. After years of planning, engineering, and construction, the Lackawanna 13" Bar Mill is now producing bars as advanced in quality as the mill itself is advanced in technology.

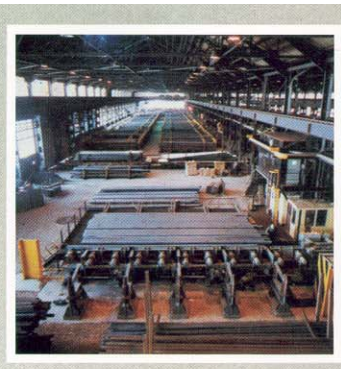
The bars from this mill—initially, carbon and alloy rounds from 5/8" to 1-15/16" in diameter—are "quality" in every respect. They consistently meet the standard commercial rolling tolerances for size and section. In fact, our standard product normally is well within these tolerances. The surface quality, internal structure, and uniformity of size make these bars second to none. We ship them straight, in neat, square-end bundles; or in compact coils weighing as much as 5400 pounds, heaviest in the world.



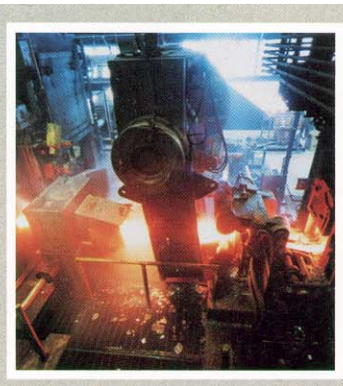




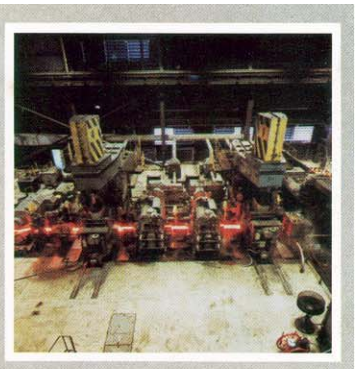
Billets, 6½ in. square, 40 ft long, approx. 5700 pounds. The significant billet-to-bar reduction improves bar surface finish.



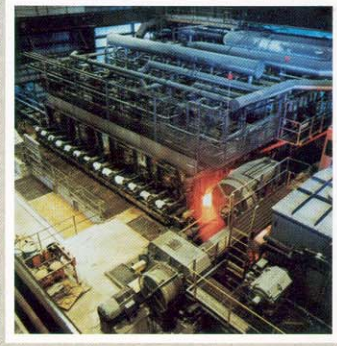
Two *charging tables* feed billets into furnace after computer verifies billet identity and weight.



Pinch rolls (right) and water jets (left) remove surface scale. Shear (center) crops or divides billet as required.

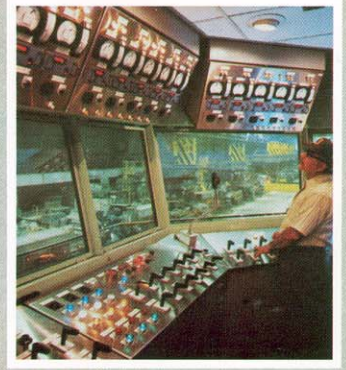


6½" billet is reduced to about a 4" square in the powerful *roughing stands.*



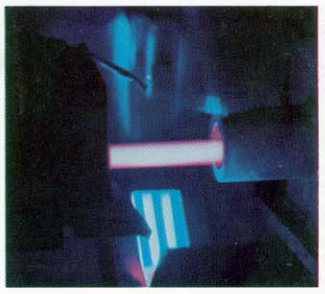
Reheat furnace heats billets to optimum rolling temperature, about 2200° F.

Alternate horizontal and vertical rolls severely work the hot steel as they reduce it in section. This improves the steel's soundness, mechanical properties, and surface.



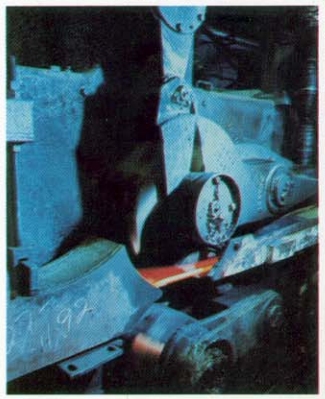
Entire rolling operation is supervised from *mill pulpit*, the main monitor and control center of the mill.

A changeover to roll a different size bar can be accomplished quickly and efficiently. Entire stands are moved in and out of the mill line.

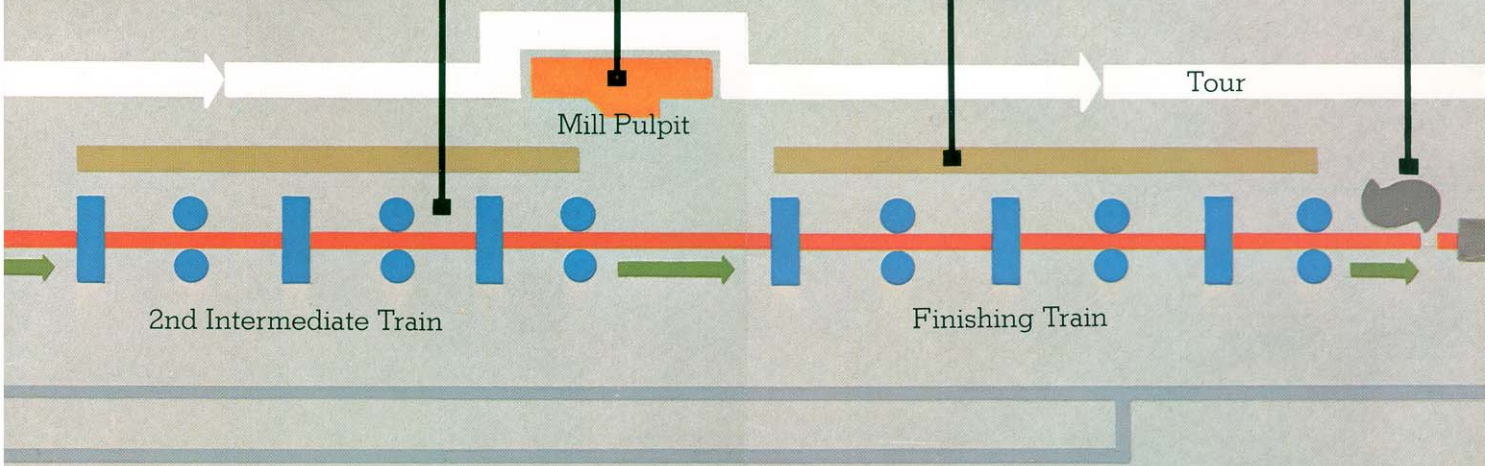


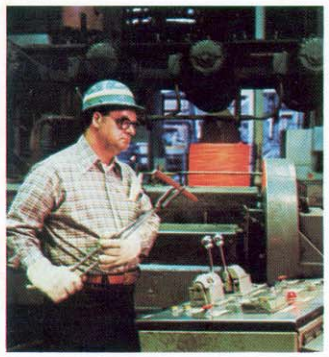
As bar speeds along at up to 50 mph, its diameter is checked continuously. Bar dimensions are maintained by computer-directed micro-adjustments of finishing rolls.

Nine interstand *loopers* assure tension-free rolling. Computer-controlled *water boxes* maintain proper bar temperatures.

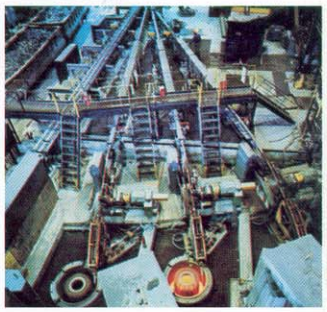


Dividing shear makes head and tail cuts for metallurgical testing, and cuts bar into cooling-bed lengths or desired coil weights.

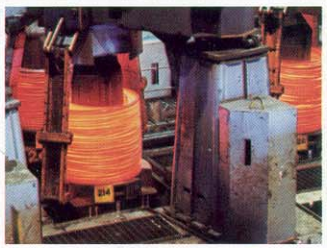




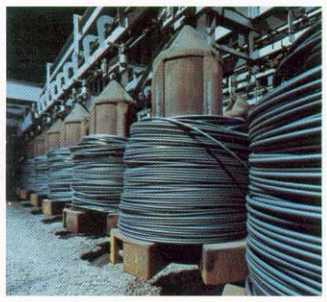
At *Inspection Station No. 1,* bar samples are checked for size, section, analysis, surface condition, etc., before bar is approved for further processing.



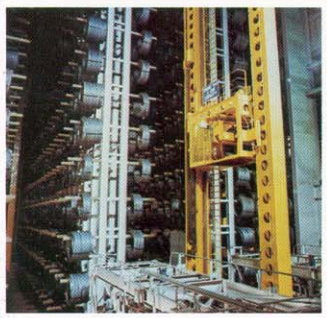
Hot bar is sent either to cooling bed for straight-length finishing, or to proper *water-box line* leading to one of three coiling reels.



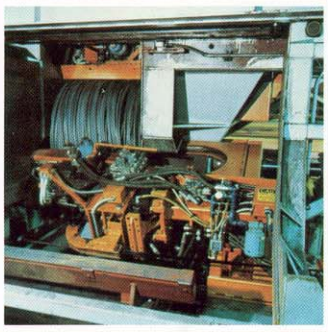
Coils emerge from coilers at about 1500°F. Each full, half- or third-weight coil is placed on a mandrel.



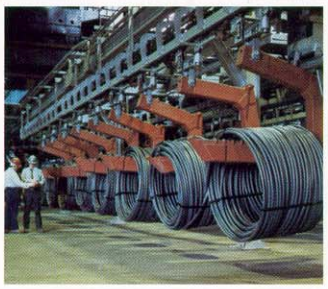
Each coil's identity is continually verified by computer as it moves through the mill on its mandrel.



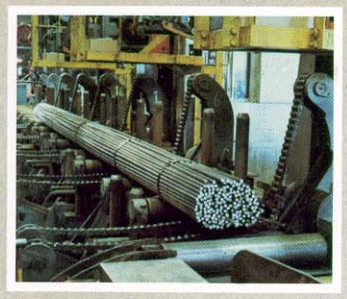
Captive cranes in *coil handling building* deposit and retrieve coils on computer command.



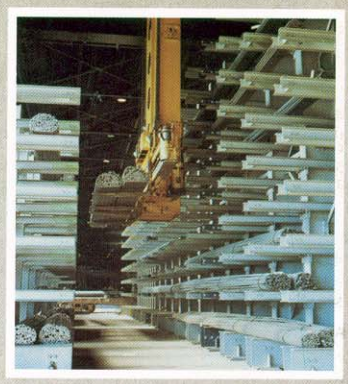
Compactor-bander first squeezes coil to a suitable height, then secures it with three steel bands.



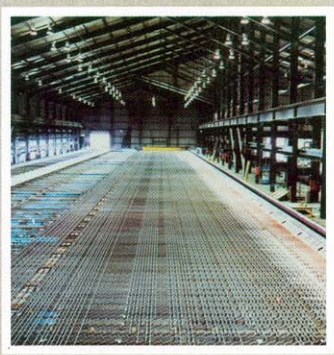
After banding, coils are moved on C-Hooks to shipping, to the coil handling building, or to other processing stations.



Automatically under computer control, bars are sheared to length, gathered, weighed, and banded into compact, even-end bundles.



Stacker racks in finishing and shipping area accumulate straight-length bars and bundles for further processing or shipping.



Bars cool slowly as they are "walked" the 77 ft across 420-ft-long *cooling bed.*

Coil annealing furnace and support equipment can handle a continuous flow of heavyweight 5400-lb coils.

Coils as large as 5400 lb can be pickled and coated at the mill.

Stacker Racks

End Tour

Straight Bar Bundling

Pulpit

Cooling Bed

Coil Compactor-Bander

Coil Annealing Furnace

Tour

Coil Pickling & Coating

ower & Free System

Coil Loading Area