



Manufacturing

September 2002



Operational Advantage

Manufacturing

- > Capital Efficiency (\$/sf)
- > Manning (sf/man)
- > Ability to deliver differentiated products
 - Aligned
 - Patterned
 - Thick
- > Scale to build purpose built machines
- > Culture focused on operational and engineering step change



Equipment Evolution

Hatschek Forming

- > 1917 - First machine purchased from Swiss Eternit
- > 1980's - JH standardises around 4'wide x 2 or 3 tub machines
- > Mid 1980's to Present - JH pushes equipment design envelope



Capacity Definitions

- > Standard Foot - 1 Foot x 1 Foot x 5/16" Thick
- > Standard Product – Product that dictates the design parameters of the machine. This is Cedarmill Plank in the US
- > Design Capacity – The amount of standard product that can be made factoring in best practice losses for waste and delay
- > Effective Capacity – The current realized capacity over the full product mix

Equipment Evolution

Hatschek Forming

- > Late 1980's - 4' wide x 4 tub machines built in Rosehill and Fontana
- > 1996 - Fifth tub added to Plant City #1
- > 1996 - PC #2 built with 24' stacker
- > 1997 - 5' wide x 6 tub machine built in Cleburne, uses 24' roller
- > 1998 - Steam strip placement integrated into Tacoma greensheet stacker



Equipment Evolution

Hatschek Forming (Cont.)

- > 1999 – Hatschek Step Up Implemented in Tacoma and Cleburne. Design Capacity of machines improved by 33%

- > 2002 – JH announces construction of purpose built panel line at Waxahachie. Line designed to:
 - Have no product inefficiency gap
 - Have superior alignment control of gauged features (+/- 1/32")



Equipment Evolution

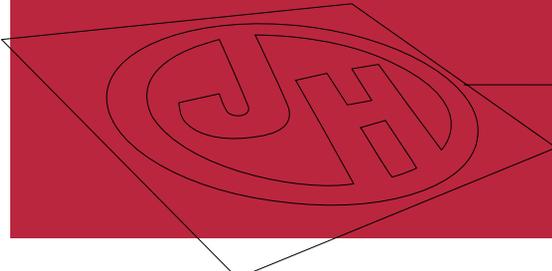
Finishing Improvements

- > 1994 - Auto Plank Line Installed in Fontana
- > 1996 – Auto Prime Line Installed in Plant City
- > 1998 – Tacoma Finishing Line designed to process entire sheet machine output
- > 2000 – Peru Finishing Line designed to process full product line at Step Up outputs
- > 2002 – JH announces Waxahachie II Panel Line. New Line capable of processing 80% more than existing single lines



Product Evolution

- > Patterns – Have evolved from Sampling Wood Impressions to Fully Developed Industrial Design Process
- > Alignment – 20% of current product mix. Control has evolved from +/- 1/8" to +/- 1/32". Next Generation Process being Implemented in Waxahachie Panel line
- > Thickness – 10% of current product mix. Harder to:
 - Form
 - Cut Off
 - Water Jet Cut

A large, semi-transparent watermark of the James Hardie logo is positioned in the top-left corner of the slide, overlapping the red header bar.

Engineering Reconfiguration

- > US Engineering traditionally done at the site level
- > Created a central engineering group in 1998.
Primary focus on capital construction and major projects.
- > Currently reconfiguring Engineering to support Global growth
 - Construction
 - Process Improvement
 - Next Generation



Plant Overview

- > We currently have a total commissioned or announced Hatchcheck design capacity of 2.15 bsf.

Plant Locations



Plant Design Capacity

Flat Sheet Plants	Capacity (mmsf)
Fontana, California	180
Plant City, Florida	300
Cleburne, Texas	400
Tacoma, Washington	200
Peru, Illinois	400
Waxahachie, Texas	360
Blandon, Pennsylvania	120
Summerville, South Carolina	190
James Hardie Total	2,150



Plant Overview

Fontana

- > Two machines - 180 mmsf
- > Constrained by greensheet stackers
- > Capable of priming full product mix
- > Manufactures all SKU's except HLD
- > Supports US product development work



Plant Overview

Florida

- > Three machines – 300 mmsf
- > Manufactures all SKU's except HLD, roofing
- > Capable of priming full product mix
- > Site of first US Pipes Plant

Plant Overview

Cleburne

- > Two machines – 400 mmsf
- > One of two pilot plants for Stepup
- > Manufactures planks, backer and HLD
- > 100% priming capability
- > Houses new technology fibre cement forming equipment (XLD TRIM)

Plant Overview

Tacoma

- > One machine – 200 mmsf
- > One of two pilot plants for Stepup
- > Capable of making full product mix
- > Prime line capable of matching sheet machine output
- > Commissioned auto backer line in December 2000



Plant Overview

Peru

- > Two machines – 400 mmsf
- > Built step up ready
- > Capable of full product line
- > 100% priming capability
- > Second line commissioning began September 1.
First saleable product made September 10.



Plant Overview

Waxahachie

- > One JH machine and renovated Temple machine— 260 mmsf
- > 100 % priming capacity
- > Designed to make planks and panels
- > New 160mmsf panel line announced in August 2002
- > Capacity with panel line 360 mmsf

Plant Overview

Blandon

- > Two machines. One small specialty line and one purpose built plank line – 120 mmsf
- > Capability of priming 50% of product mix
- > Most machines semi automatic with high manual interface
- > Stack pressing operations abandoned in June 2002
- > Relatively high cost compared to JH lines

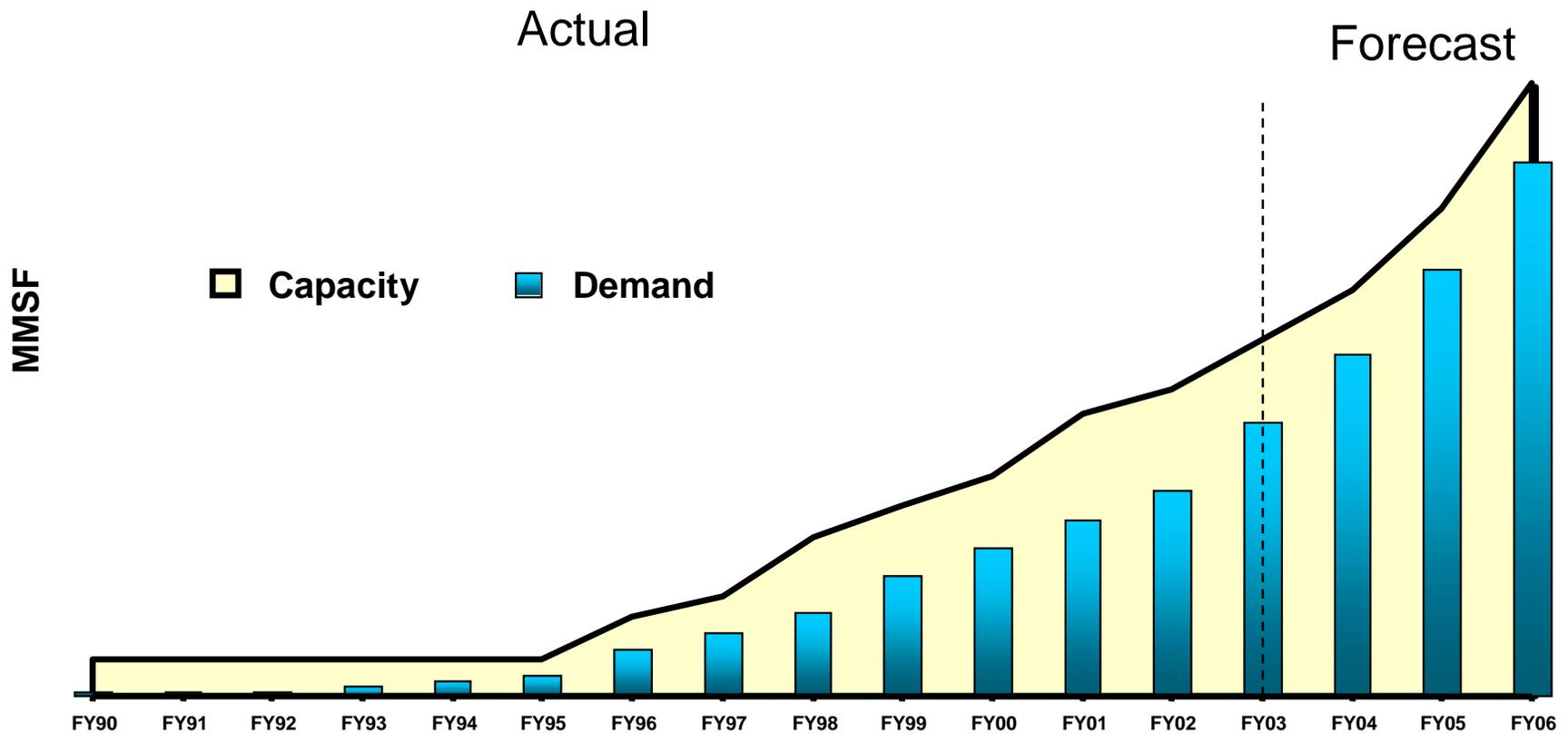


Plant Overview

Summerville

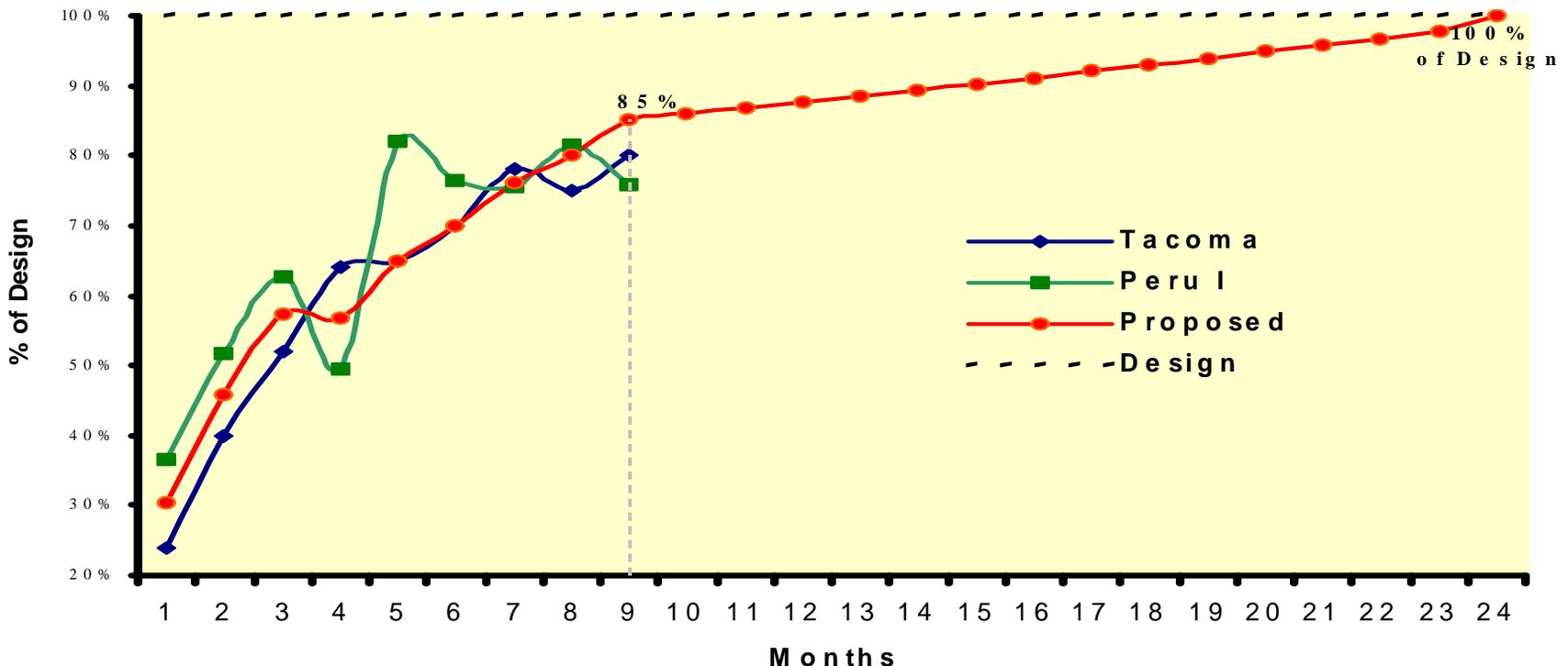
- > One machine – 190 mmsf
- > Machine purpose built for plank
- > Began making JH products on the line in June 2002
- > 50% priming capacity
- > Automated material handling system
- > Semi – automated finishing equipment

Design Capacity Vs Demand



Plant Ramp-up

- > Historically, we have ramped-up new capacity to 85% of design in 9 – 12 months
- > Going forward, new capacity ramp-ups to 85% of design will take 9 months and the remaining 15% gap will be closed in 24 months



Additional Capacity

Waxahachie Panel Line

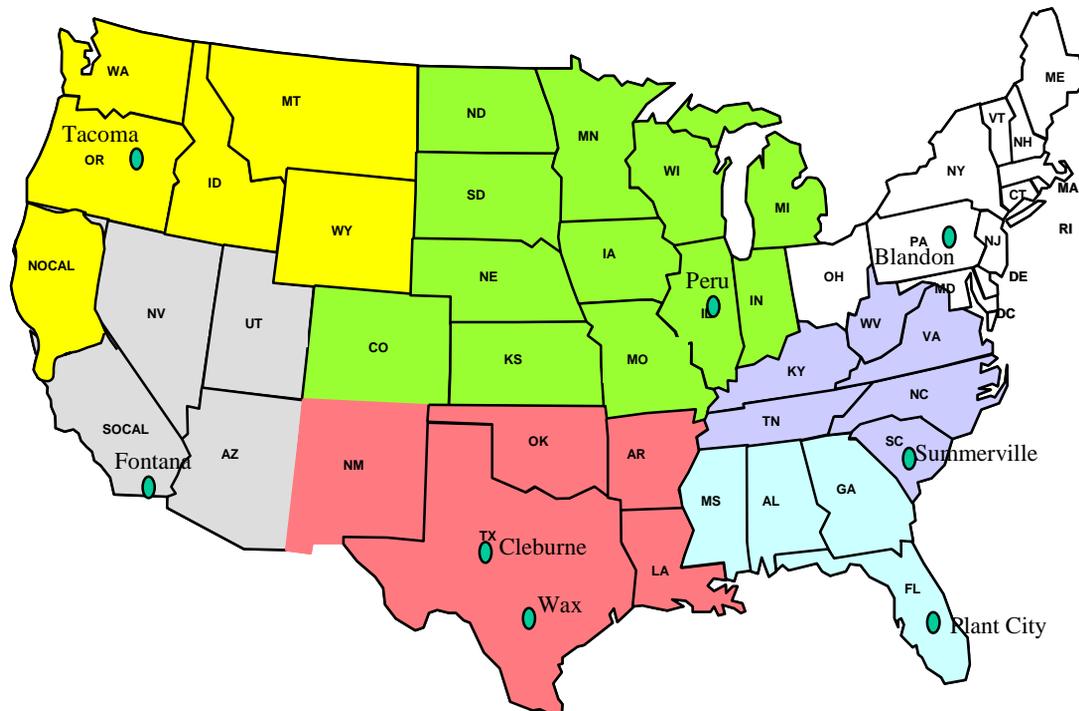
- > Purpose built panel line – 160 mmsf
- > Designed to make all panels at plank speeds
- > Utilizes next generation technology for aligned features (+/- 1/32")
- > Finishing line output increased by 80% to match sheet machine output
- > Commission June 2003

Cemplank/Temple Learning

- > Process Control
- > Former Design
 - Film thickness
 - Felt speed
 - Open vs closed system

Operational Advantage

- > Our manufacturing operations are configured to optimize freight and throughput
- > Our regional manufacturing operations gives us a low cost freight advantage across the country



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Questions?



Disclaimer

This presentation contains forward-looking statements. Words such as “will”, “believe,” “anticipate,” “plan,” “expect,” “intend,” “target,” “estimate,” “project”, “predict”, “forecast,” “guideline,” “should,” “aim” and similar expressions are intended to identify forward-looking statements but are not the exclusive means of identifying such statements. Forward-looking statements involve inherent risks and uncertainties. We caution you that a number of important factors could cause actual results to differ materially from the plans, objectives, expectations, estimates and intentions expressed in such forward-looking statements. These factors, which are further discussed in our periodic reports filed with the Securities and Exchange Commission on Forms 20-F and 6-K and in our other filings, include but are not limited to: competition and product pricing in the markets in which we operate; general economic and market conditions; compliance with, and possible changes in, environmental and health and safety laws; dependence on cyclical construction markets; the supply and cost of raw materials; our reliance on a small number of product distributors; the consequences of product failures or defects; exposure to environmental or other legal proceedings; and risks of conducting business internationally. We caution you that the foregoing list of factors is not exclusive and that other risks and uncertainties may cause actual results to differ materially from those contained in forward-looking statements. Forward-looking statements speak only as of the date they are made.



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