What We Know
That Just Ain’t So

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Motivations

- What fallacies are common on the plant floor?

- How far has web handling \textit{science} replaced common industrial \textit{mythologies}?

\textit{It ain’t so much the things we don’t know that get us into trouble. It’s the things we know that just ain’t so.}

- Artemus Ward
What is a Fallacy?

• An error in thinking
  – A belief inadequately supported by the facts
  – A belief that does not follow from the facts (*non sequitor*)
  – A belief that does not consider contrary facts (confirmation bias, *dicto simpliciter*)
  – A widely accepted belief that is not examined (*argumentum ad populum*)
“Spiral Grooving/Taping Spreads”

- Case 1 – elastic traction: false
- Case 2 – slipping into groove: false
- Case 3 – yielding into groove: false

“The Web Tracks to the Tight Side”

- Case 1 – misaligned roller in traction: false

“The Web Tracks to the Tight Side”

- Case 2 – diametrically varying roller: *sometimes*
“The Web Tracks to the Tight Side”

- Case 3 – baggy web: false

“To Reduce Wrinkling
Increase/Decrease Tension”

- Virtually all wrinkles are tension sensitive
- Case 1 - misalignment

Traction

• “Large Diameter Rollers have more traction”
  – Adhesion: true
  – Air entrainment: false

• “Rough Rollers have more traction”
  – Against rough products: true
  – Against smooth products at low speed: false

• “You need a Nip for traction”
  – An option to consider when slipping
  – But consider equipment costs and wrinkling risks
Confusing Terminology

- Traction – One of three states of web/roller interaction where at the inlet they both have the same speed [1].
- Traction Capacity – The tension difference that is sustainable across a roller before the onset of slipping [2].

“You Should Wind Tight/Loose”

- Loose > Damage Roll
  - Flat spots
  - Out-of-Round
  - Telescoping
- Tension Insensitive
  - Offset core
  - Wrong roll width

- Tight > Damage Web
  - Blocking
  - Core Crush*
  - Corrugations
  - Gage Bands > Bag
  - Tin Canning

Tension Control 1

• Dancers are better than load cells or vice versa.
• AC is better than DC
• Digital control is better than analog.
• We need an infeed nip to isolate tension
• Why would we want to drive both laminator rolls?
• Motors should share load rather than fight each other.
• Gearboxes reduce motor costs.
Tension Control 2

- The web needs support.
- The path is long so we should add a drive to help the web along.
- We run slow so that tension control should not be a big challenge.
- Our control is poor, so we should add a drive point.
- Our control is poor, so we should get a new drive.
Tension Challenge


The Solution - Training

- Publications (self taught)
- Tradeshows
  - CMM
- Conferences
  - AIMCAL AWEB and Fall Tech
  - TAPPI PLACE
  - WHRC IWEB
- Seminars
  - Bruce Feiertag (WHRC)
  - David Roisum (WEB101SM)
  - Time Walker (various venues)
  - Inhouse, in conjunction with conference, etc
- **Seminars are the success story!** Most of the 10,000 web literate people have learned web handling from a seminar.
The Training Challenge

- 100,000
  - Managers / Directors
  - Engineers / Scientists / Technicians
  - Foreman / Supervisors / Shift Leaders

- 1,000,000
  - Operators
Questions?

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