

### **MONARCHS KEEP ON WINNING**

Hutchinson batters Blue Jays before rain brings early conclusion, D1

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#### **SUNDAY, JULY 3, 2016**

# The prairie skyscraper

**1.** Driveway

- **2.** Grain pit
- 3. Elevator leg
- 4. Distributor
- 5. Spouts to bins
- 6. Spout to railroad car
- 7. Return spout to truck
- 8. Storage bins
- **9.** Mixer
- **10.** Back hopper
- **11.** Grain cleaner
- **12.** Spout to truck
- **13.** Spout to cleaner
- **14.** Driving motor
- **15.** Cleaner bin



Wheat trucks bring the grain to the elevator from the fields. The grain is dumped through an open grate into an underground pit.

14 **C** When the grain reaches the top of the elevator it can be diverted to the grain bins for storage or to railroad hopper cars and tractor-trailers for 4 shipment 5 3 8 8 8 15 8 6 7 3 (13) 9

10

Hundreds of white grain elevators stand as sentinels across the plain, serving as reminders of the importance of agriculture to Kansas.

#### **BY THE NUMBERS**

#### 394 million

bushels of wheat Kansas farmers are expected to harvest this year - 22 percent more than last year.

#### 10.000

capacity in bushels of the smallest wood elevators of the early 1900s. Some could hold up to 15,000.

#### 30.000

capacity in bushels held by today's smaller grain elevators.

#### 18.3 million

capacity in bushels at ADM in Hutchinson, at one-half mile the world's second longest elevator under one headhouse.

#### 22.4 million

capacity in bushels of the former DeBruce Grain elevator - now owned by Gavilon Grain - listed as the largest elevator in the world.

#### 2,657

length in feet of the Gavilon elevator, after an explosion in 1998 caused the company to remove 30 feet from each end.

#### 2,573

length in feet of Hutchinson's ADM elevator.

#### Sources: Kansas Agricultural Statistics Service, Guinness Book of World Records.

#### **DID YOU KNOW**

•Workers use three-wheeled bicycles to get around the large ADM elevator in Hutchinson.

 Most farmers no longer use the old tin and wood grain elevators, which some might still see across the state. Those early elevators used horse power or water power to drive the elevator belt.

•Gasoline engines came into use during the 1930s but eventually were replaced by electric motors.

•Plastic buckets used in elevators come as small as 3 inches by 2 inches - largely used in the peanut industry. The newest bucket technology will fit three basketballs in the bucket - or 28 inches by 10 inches - moving grain at 30,000 bushels an hour.

 If wheat were stored exclusively at the Gavilon elevator, it could supply the wheat for all bread consumed in the United States for nearly six weeks.

Sources: OSHA, "The American Grain Elevator: Form and Function" by Hutchinson author Linda Laird. Wade Spencer, Hutchinson area resident and sales engineer with Dallas-based Maxi-Lift, which makes grain elevator buckets.

#### ONLINE

Hutchinson-area resident Wade Spencer built a to-scale model to show how a grain elevator works kansasagland.com

#### **DEADLY DANGERS**

Despite advances in safety, working at grain elevators can be a dangerous job. The main threats? Blowing up: Grain dust can cause explosions. Such was the case when Wichita's DeBruce Grain

В. The grain is scooped from the pit by buckets mounted on a conveyor belt and carried to the top of the elevator.

1

6

(12)

11

mmmm

2

Grain can be released from the tapered bottom of the bin into the pit. It is again carried to the top of the elevator to be transferred to another bin or loaded into a railroad car or truck.

D.

Jim Heck/The Hutchinson News

exploded in 1998, killing seven and injuring 10. Elevators are not to have more than an eighth of an inch of dust at any time, according to OSHA regulations.

Falling into the grain: In just five seconds a worker can become engulfed in flowing grain and be unable to get out. In 60 seconds, a worker can be completely submerged in flowing grain. More than half of all grain engulfments result in death by suffocation. More than than 900 cases of grain engulfment have been reported during the past 50 years. The fatality rate of grain engulfment is 62 percent, according to researchers at Purdue University. In 2010, at least 26 U.S. workers were killed in grain engulfment - the highest number on record. Chemicals: One worker died from exposure to a herbicide at a grain handling facility at Cairo Co-op in June 2011.

#### SAFETY MEASURES



Sources: OSHA, Department of Labor, Purdue University Research

## Text By Amy Bickel The Hutchinson News Illustration By Jim Heck



Next week marks voter registration deadline, start of early voting ahead of primary. A3

HutchFest in full swing with rib-eating, roller derbies and more revelry. See a photo gallery on PAGE A4

Salthawk coach Cornelsen learning to help highly coveted recruits in signing process **SPORTS** 

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#### **INTERCEPTED LETTER**

Prairie skyscrapers

#### Dear friends,

These incredible structures take storage to new heights.

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