

**THINK SAFETY
FIRST**

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Topics Today

- PTO'S and DRIVELINES SAFETY
- DRAG LINE SAFETY
- FATIGUE

**APPLICATION IS GETTING
FASTER with LONGER
HOURS**



"thablicol cord" injector for liquid manure

**ACCIDENT'S CAN
HAPPEN TO
ANYBODY**

MOST ARE PREVENTABLE

People Are People

- We make mistakes
- We forget things
- We do things in the wrong order
- We do things we should not do
- We get distracted
- We get overloaded

GOAL

- STOP
- THINK
- RE-ACT

DON'T BECOME A STATISTIC

PTO'S AND DRIVELINES

Learning Objective

- Identify Hazards and safe operation of PTO Shafts and Drivelines



A good result?



The top photograph shows a person in white shorts using a power tool, possibly a chainsaw, on a wooden structure. The bottom photograph shows a dog, possibly a pit bull, with a red and white checkered blanket draped over its back, sitting on a wooden platform.

Machinery Entanglement Injuries




Photo courtesy of North Memorial Medical Center-First Care Program

Result is Often

- Fractures
- Lacerations
- Spinal cord injury
- Amputation



PTO and Drivelines

- Master Shield provides a cover for connection between PTO and Implement Input Driveline



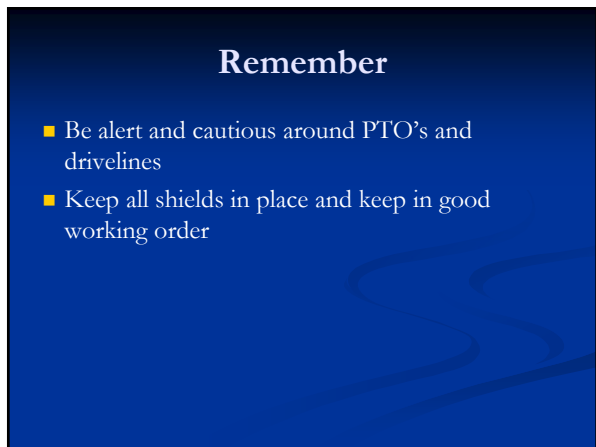
No Shield! Why?



PTO and DRIVELINE SAFETY THINK!

- WHAT ARE YOU THINKING ABOUT
- WHAT ARE YOU WEARING
- WHERE ARE YOU STANDING
- WHO OR WHAT IS AROUND
- IS UNIT RUNNING UNATTENDED
 - Is it protected







Learning Objectives

- Identify potential Hazards using high pressure hoses
- Identify safe operating procedures for field application

PTO HIGH PREASURE PUMP



STATINARY ENGINE PUMP SYSTEM



Field Application



Hose Application

- Working pressures – up to or over 200 psig
- Hazards
 - Hose burst
 - Connection failure
- Risks
 - Sudden impacts- hose contact
 - Flooding and Drowning

Compressed Air

- Pressurizing Liquid does not increase volume
- Pressurizing Air increases Volume
- $\text{Pressure} / 14.7 = \text{Pressurized Volume Increase}$
- $10 \text{ PSI} / 14.7 = .68$
- $50 \text{ PSI} / 14.7 = 3.4$
- $100 \text{ PSI} / 14.7 = 6.8$

Volumes

- 660'- 6" Hose Approx. 1000 Gallons (133 cu ft)
- 10 PSI
- 1- 6" hose volume x 1.68 = 1680 Gal (224 cu ft)
- 50 PSI
- 1- 6" hose volume x 4.4 = 4400 Gal (585 cu ft)
- 100 PSI
- 1- 6" hose volume x 7.8 = 7800 Gal (1037 cu ft)

Long hours and Fatigue

Fatigue is Dangerous

- It kills and maims
- It damages equipment and property

**BE
KNOWLEGIBLE**

Proper training on equipment makes
safe, efficient application.

Remember

- Locate equipment safely and securely at pumping location
- Locate operating controls away from potential hazards
- Safe attentive operation in the field

SAFETY IS AN ON GOING PROGRAM

- DON'T TAKE THINGS FOR GRANTED
- RECIEVE REGULAR TRAINING
- REVIEW AND UPDATE EQUIPMENT REGULARLY
- IF YOU BUILD IT, KEEP IT SAFE
- MONITOR FATIGUE
- KEEP AN EYE ON STRESS

**DON'T FORGET THE
DAY TO DAY SAFETY
EQUIPMENT**

ALERTNESS!
SAFETY GLASSES
PROTECTIVE CLOTHING
GLOVES
HEARING PROTECTION

**THINK SAFETY
FIRST**

■ THANK YOU FOR YOUR ATTENTION
HAVE A SAFE AND HEALTHY YEAR

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