

CASA Conference 2011

RISK ASSESSMENT IN AGRICULTURE

by Bruce Johnson



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Introduction

- **Barriers to Health and Safety in Agriculture**
- **Risk Management**
 - Hazard identification – touch on
 - Risk Assessment – focus on
 - Control measures – touch on



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BARRIERS TO HEALTH AND SAFETY IN AGRICULTURE

Barriers to a Safety Culture

- Farmers are aware of many risks and recognize the need for training but are not necessarily motivated to change their behaviour.
- “Only farmers understand farming” attitude means external intervention lacks credibility and is easily rejected.
- Farmers are a unique group, need special considerations.
- Fatalistic “It’ll happen when it happens.”

Barriers to a Safety Culture

(Cont'd.)

- Long term reward verses short term punishment.
- An issue rather than a problem.
- Underestimate the degree of risk.

Agriculture – A Risky Business !

What are the Risk Factors In Agriculture:

- The worksite is also the home and playground,
- Large heavy duty equipment,
- Large animals,
- Confined spaces,
- Chemicals,
- Isolated locations, stress, long hours, weather, geography.



A Common Response !

- People often answer – “they didn’t use common sense”
- What is common sense? Webster’s Dictionary defines it as “ordinary good sense and judgment”
- How can we possibly determine what its based on, who has it, and, how much they have?

Common Sense

Who has the most common sense on the farm ?



Research

Expressed views on safety and common sense from farmers found in a research study **“Beyond Common Sense A Report on the Barriers to Adoption of Safety in the Agricultural Industry”**:

- “It’s a pretty safe job, as long as you use your common sense”
- “Driving a tractor is nine tenths common sense”
- “Safety is the application of common sense”
- “You just need common sense - carelessness causes a lot of accidents”
- “The more often you do it the less dangerous it is to you”

Common Sense

Who gets hurts most often?

The individuals at highest risk are farm owner/operators

RELATION TO THE WORKPLACE	Accounted Fatal Injuries
Owner / Operators	924 = 46%
Child of the Owner	274 = 14%

Common Sense Discarded !

- Rushing
- Frustration
- Fatigue
- Complacency
- **Attitude**



Good judgment should be based on knowledge training, and instruction !

The Reality

Can we leave the well being of our workers, our family and our business to chance !

- The latest CAIR report indicates 734 tractor related fatalities or 40% of all deaths, followed by 176 augers fatalities
- Age group 60 plus contributed 711 deaths or 36%
- 189 children less than 10 years old died

Providing Workable Solutions

Deal with the Hazard



A RISK MANAGEMENT APPROACH TO AGRICULTURAL HEALTH AND SAFETY

Risk!

- How many here are risk takers ?
- How many are not ?

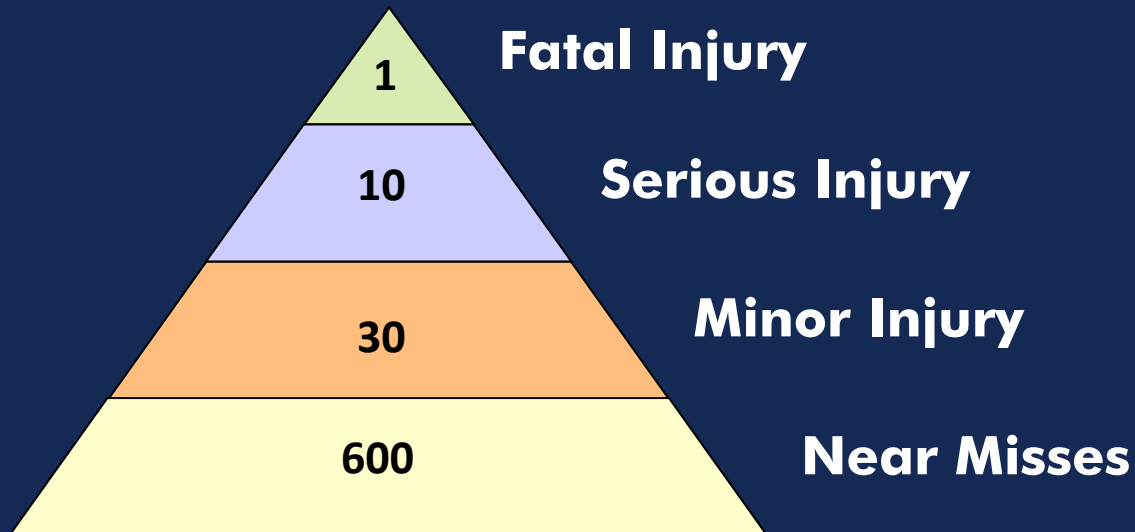
Practically, Zero Risk Does Not Exist

We all take risks – that's normal. The challenge is how can we effectively manage those risks in order to avoid unwanted loss ?

Risk Management



Incident Ratio



- Everyone in this pyramid had an encounter with a hazard
- The level of risk plays a role where they end up

What is a Hazard?

A hazard is:

“A thing or condition that may expose a person to a risk of injury or occupational disease.”



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How to Identify Hazards

- Workplace inspections
- Hazard alerts
- Incident investigations
- Job task analysis
- Material Safety Data Sheets
- Manufactures equipment manuals
- Look at the source (new or young workers, workplace, lack of training)
- Consultation with FARSHA
- FARSHA workplace audit



Dealing With Hazards

- We are dealing with the hazard, **not** conducting a job / task safety analysis



What is a Risk Assessment?

A process of determining the potential of a hazard to cause injury or illness and the potential severity of that injury



Risk Considerations

These are the questions we must answer to conduct a risk assessment

- Who is at risk ?
- Worker's knowledge / experience?
- What is the potential for injury ?
- Frequency - how often is the worker at risk?
- Severity – how severely can workers be injured?



Ability to Manage Risk

Factors Governing Ability:

- Age group: 15 - 25, 25 – 50, 50+
- Gender
- Physical Ability
- Cognitive Ability
- Knowledge / experience / training
- Supervision



Types of Risk Assessments

- **Comprehensive** →
 - Specific hazards outlined in OHSR
- **Standard** →
 - Non-specific hazards not specifically outlined in OHSR



Comprehensive Risk Assessment

- Ergonomics
- High noise levels
- Workplace violence
- **Confined spaces**
- Risk of leak or fire of chemicals
- Pesticide handling
- Need to rescue or evacuate workers
- Risk of heat or cold stress
- **Risk of falling from heights**
- **Working near high voltage**
- Unexpected movement of equipment or machinery during maintenance
- If emergency eyewash or showers may be needed

FARSHA's Comprehensive Hazard Checklists

Hazardous Materials		
Are any of the following present in the workplace? (Tick any that are used or stored in the workplace or as part of workplace operations.)		
<input type="checkbox"/> Fuels, lubricants	<input type="checkbox"/> Fertilizers (anhydrous ammonia, or others)	
<input type="checkbox"/> Compressed gases (acetylene, oxygen, propane, etc.)	<input type="checkbox"/> Veterinary medications	
<input type="checkbox"/> Pesticides (herbicides, fungicides, baits, insecticides, etc.)	<input type="checkbox"/> Sterilizers or cleaners	
<input type="checkbox"/> Paints, solvents, coatings, varnishes	<input type="checkbox"/> Materials with WHMIS labels	
If yes to any of these, complete the section entitled Hazardous Materials. Implement a Workplace Hazardous Materials Information System (WHMIS) program, and include appropriate controls for all hazardous materials.		
If no to all of these, write "not applicable" here: _____		
Musculo-skeletal Injury Prevention		
Do workers typically, in any job duties, encounter any of these conditions? (Tick any that are normally experienced.)		
<input type="checkbox"/> Carrying heavy weights or unbalanced loads	<input type="checkbox"/> Gripping objects using a "pinch grip"	
<input type="checkbox"/> Animal handling, or carrying live animals (calves, lambs, etc.)	<input type="checkbox"/> Lifting or moving objects by moving wrist or elbow	
<input type="checkbox"/> Awkward or extended postures	<input type="checkbox"/> Repetitive movements	
<input type="checkbox"/> Twisting while lifting or holding weights	<input type="checkbox"/> Cold, wet, or slippery conditions	
<input type="checkbox"/> Bending or stooping while working	<input type="checkbox"/> Working with vibrating tools or equipment	
	Yes	No
Has the workplace experienced any claims for musculo-skeletal injury?	<input type="checkbox"/>	<input type="checkbox"/>
Does the commodity group experience a significant number of musculo-skeletal injury claims?	<input type="checkbox"/>	<input type="checkbox"/>
If yes to any of these, complete the section entitled MSI Prevention Program. Carry out a risk assessment and implement appropriate controls.		
If no to all of these, write "not applicable" here: _____		
Noise Control and Hearing Conservation		
Is anyone exposed to noise levels that may be over 82 decibels over the course of an 8-hour day? (A rough way of identifying a damaging noise level is whether it's possible to hear normal human speech at arm's length early in the morning – if voices have to be raised to be heard clearly, the noise level is potentially damaging.)	<input type="checkbox"/>	<input type="checkbox"/>
Are there ever exceptionally loud noises such as hogs squealing, pesticide blast sprayers, engine backfires, etc.?	<input type="checkbox"/>	<input type="checkbox"/>
Has anyone in the workplace been diagnosed with noise-induced hearing loss?	<input type="checkbox"/>	<input type="checkbox"/>
Is there any indication that long-time workers or family members have a hearing loss?	<input type="checkbox"/>	<input type="checkbox"/>
If yes to any of these, the FARSHA consultant should carry out a basic noise level survey to determine whether a hearing conservation program is required. Complete the section entitled Noise Control and Hearing Conservation.		
If no to all of these, write "not applicable" here: _____		

	Yes	No
Working Alone or in Isolation		
Does anyone in the workplace work alone in conditions that present a risk of disabling injury?	<input type="checkbox"/>	<input type="checkbox"/>
Would the worker be unable to get help (on his or her own) in an emergency or if injured?	<input type="checkbox"/>	<input type="checkbox"/>
Is anyone out of contact for periods of time while there is a risk of disabling injury?	<input type="checkbox"/>	<input type="checkbox"/>
If yes to any of these, complete the section entitled Working Alone or in Isolation. Carry out a risk assessment, and implement appropriate controls.		
If no to all of these, write "not applicable" here: _____		
Workplace Violence Prevention		
Does anyone in the workplace have direct interaction with the public and dispense alcohol? (This may be the case if a vineyard provides a wine tasting room, for instance.)	<input type="checkbox"/>	<input type="checkbox"/>
Does anyone in the workplace have direct interaction with the public and handle money? (This may be the case if there are farm gate sales, or if an orchard also operates a fruit stand, for instance.)	<input type="checkbox"/>	<input type="checkbox"/>
Does anyone in the workplace have direct interaction with the public, and work alone or in isolation from others from the workplace? (This may be the case with agri-tourism, farm tours, farm gate sales or display rooms, for instance.)	<input type="checkbox"/>	<input type="checkbox"/>
If yes to any of these, complete the section entitled Workplace Violence Prevention. Carry out a risk assessment, and implement appropriate controls.		
If no to all of these, write "not applicable" here: _____		
Confined Spaces		
Using the WorkSafeBC definition, are there any confined spaces on the workplace property?	<input type="checkbox"/>	<input type="checkbox"/>
Is it possible to enter any of these spaces? ("Entry" meaning the face or head could be exposed to an atmospheric hazard. Entry is considered possible if the space has not been secured.)	<input type="checkbox"/>	<input type="checkbox"/>
Do any of these spaces ever require worker entry (now or foreseeably in the future)?	<input type="checkbox"/>	<input type="checkbox"/>
If yes to any of these, complete the section entitled Confined Spaces. Carry out a risk assessment, and implement appropriate controls.		
If no to all of these, write "not applicable" here: _____		
Documentation of Responsibilities Between Owner and Farm Labour Contractor		
Does this employer have workers who come through a farm labour contractor?	<input type="checkbox"/>	<input type="checkbox"/>
Does this employer have an agreement with the Seasonal Agricultural Worker Program or any other government-sponsored temporary worker program?	<input type="checkbox"/>	<input type="checkbox"/>
Is this employer a farm labour contractor?	<input type="checkbox"/>	<input type="checkbox"/>
If yes to any of these, complete the section entitled Documentation of Responsibilities Between Owner and Contractor.		
If no to all of these, write "not applicable" here: _____		

Standard Risk Assessment

- When a non specific hazard has been identified
- When at a new work location or using a new tool or piece of equipment
- When planning and designing work procedures
- Before selecting, purchasing, installing, and using equipment
- Before changes are made to the workplace systems
- Whenever there is new information about the work procedure



Evaluate

Determine the:

- Likelihood of an incident occurring →
 - Very likely
 - Likely
 - Unlikely
 - Very unlikely

- Consequences of an incident occurring →
 - Extreme
 - Major
 - Moderate
 - Minor

Evaluate

Factors to consider when determining:

Likelihood	Consequences
<ul style="list-style-type: none"> • Number of times a situation occurs 	<ul style="list-style-type: none"> • Potential for chain reaction
<ul style="list-style-type: none"> • Number of people exposed and duration 	<ul style="list-style-type: none"> • Substance concentration
<ul style="list-style-type: none"> • Skills/experience of persons exposed 	<ul style="list-style-type: none"> • Material volume
<ul style="list-style-type: none"> • Position of the hazard relative to people and other hazards 	<ul style="list-style-type: none"> • Speed of projectiles or moving parts
<ul style="list-style-type: none"> • Special characteristics of workers that may affect the likelihood of an incident 	<ul style="list-style-type: none"> • Height of worker or lanyard
<ul style="list-style-type: none"> • Quantities of materials or point of exposure 	<ul style="list-style-type: none"> • Worker position relative to the hazard
<ul style="list-style-type: none"> • Environmental conditions 	<ul style="list-style-type: none"> • Weight of worker or hazard
<ul style="list-style-type: none"> • Condition of the equipment 	<ul style="list-style-type: none"> • Forces and energy level
<ul style="list-style-type: none"> • Effectiveness of existing control measures 	

Risk Assessment Rating Matrix

Likelihood: How likely could it happen	Consequences: How severely could it hurt someone			
	Extreme Death, permanent disablement	Major Serious bodily injury	Moderate Casualty treatment	Minor First aid only, no lost time
Very Likely Could happen frequently	1	2	3	4
Likely Could happen occasionally	2	3	4	5
Unlikely Could happen but rare	3	4	5	6
Very Unlikely Could happen, but likely never will	4	5	6	7

Use the ratings for each risk to develop a prioritized list of workplace risks requiring action

The scores (1 – 7) indicate how important it is to do something about each risk

1,2,3	HIGH , do something about these immediately
4,5	MODERATE , do something about these risks as soon as possible
6,7	LOW , these risks may not need immediate attention

Factors to consider when determining:

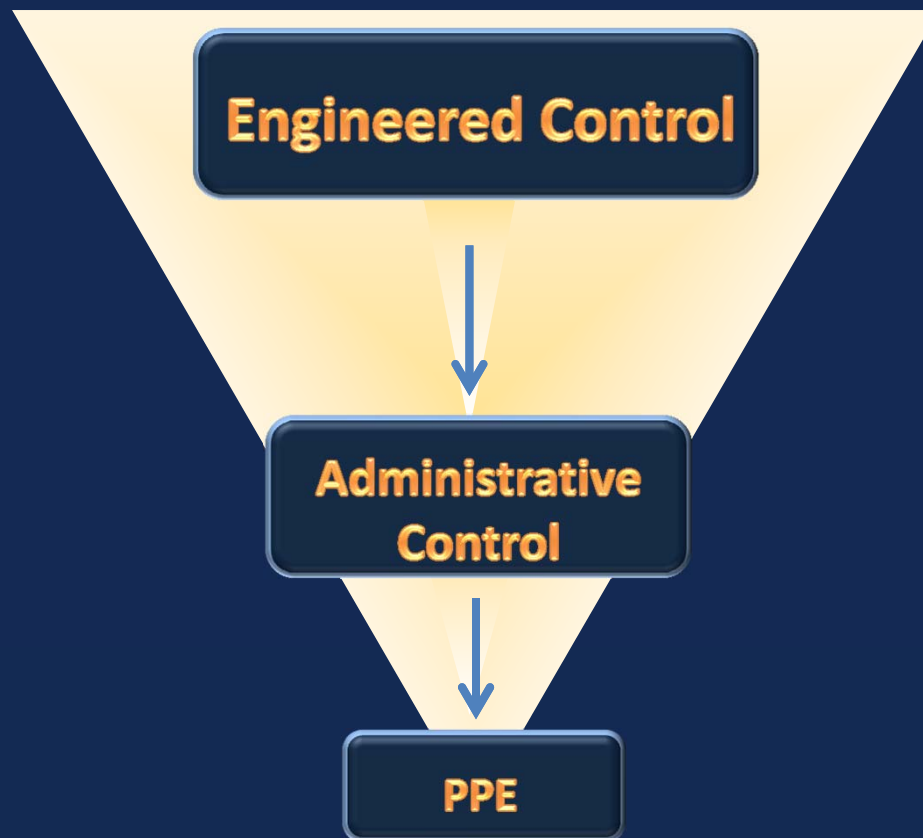
Likelihood	Consequences
• Number of times a situation occurs	• Potential for chain reaction
• Number of people exposed and duration	• Substance concentration
• Skills/experience of persons exposed	• Material volume
• Position of the hazard relative to people and other hazards	• Speed of projectiles or moving parts
• Special characteristics of workers that may affect the likelihood of an incident	• Height of worker or lanyard
• Quantities of materials or point of exposure	• Worker position relative to the hazard
• Environmental conditions	• Weight of worker or hazard
• Condition of the equipment	• Forces and energy level
• Effectiveness of existing control measures	

Control

Now that the level of risk has been determined, the hierarchy of control is used to assist in determining the most appropriate course of action to control the risk identified.

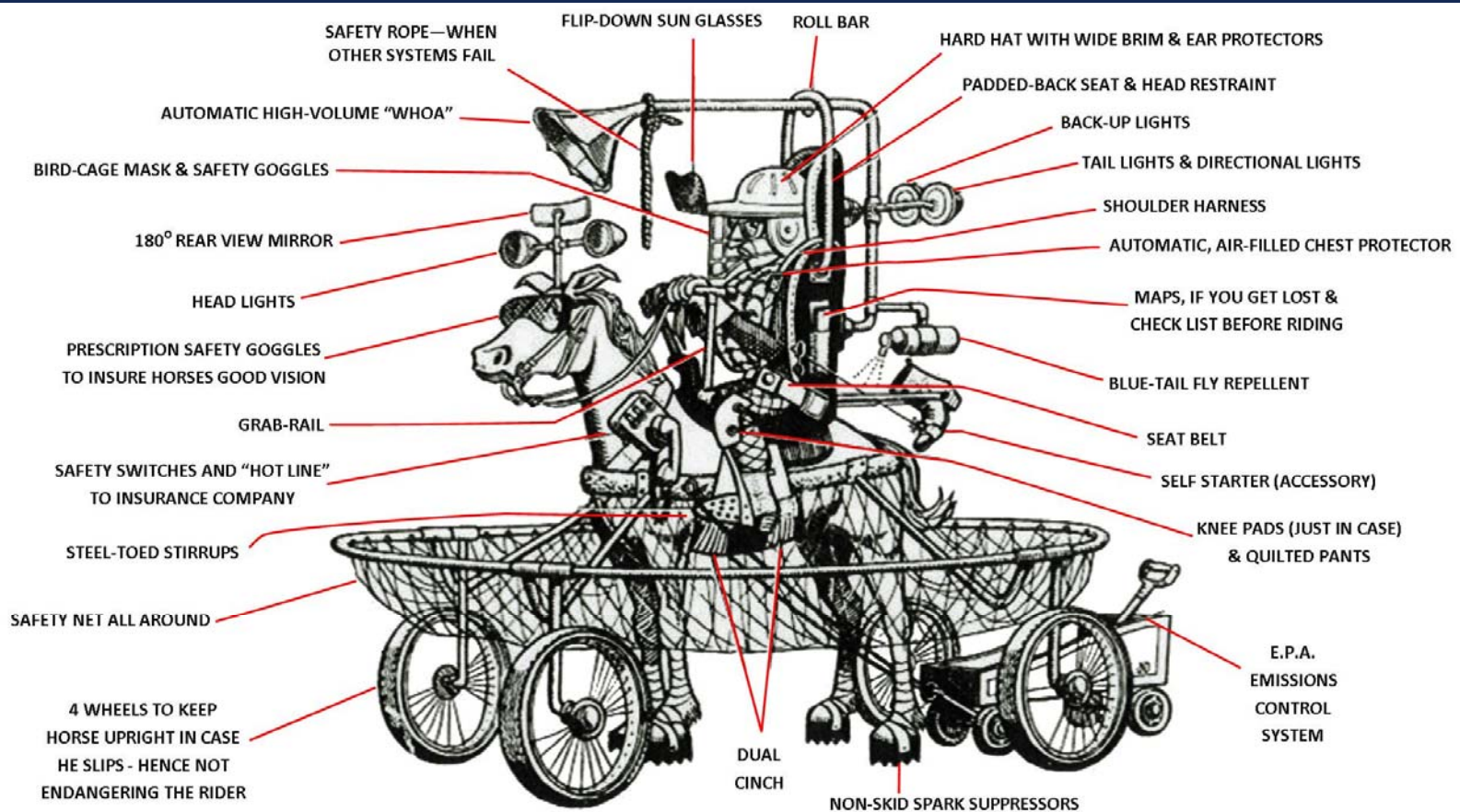
Control or Manage

Hierarchy of Control



Standard Risk Assessment Worksheet

STANDARD RISK ASSESSMENT WORKSHEET			
Company: _____		Work Place Location: _____	Date: _____
Prepared by: _____			
TASK	HAZARD	RISK	CONTROL
Other Recommendations: _____ _____			



Cowboy after Risk Assessment

Welcome to British Columbia



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Questions?

**Farm and Ranch Safety and Health Association
(FARSHA) office:**

Local calls: (604) 881-6078

Toll-free: 1-877-533-1789

FARSHA's web site: www.farsha.bc.ca