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SAFETY.CAT.COM™

Mining Machine Safety
Safely home. Everyone. Every day.™

Mark Andrews and Valerie Cantrell

October 21, 2010

CATERPILLAR®

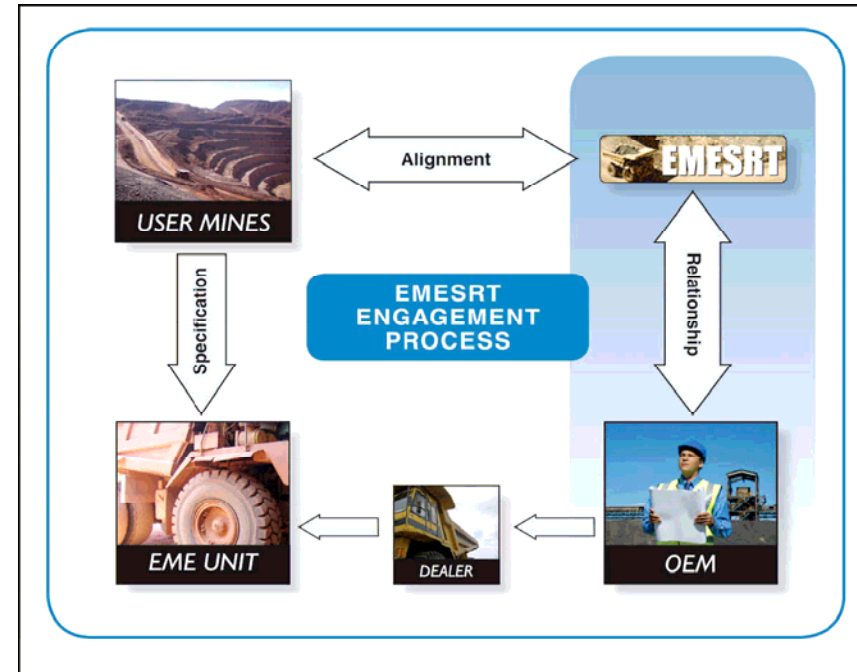
F-Series Design – Key Elements

EMESRT 15 Design Philosophies (DP's)

1. Access & Egress
2. Working at Heights
3. Noise
4. Vibration
5. Fire
6. Dust
7. Isolation
8. Visibility / Collision Detection
9. Machine Stability / Slope Indication
10. Guarding
11. Displays, controls, including labeling
12. Tires and Rims
13. Manual Materials Handling
14. Work Postures
15. Confined Space

Earth Moving Equipment Safety Round Table (EMESRT)

BHPB, Xstrata, Rio Tinto, Anglo American, CVRD, Barrick,
Newmont, Freeport



Caterpillar's Product EHS Process

Voice of
Customer,
Industry, &
Dealer

National &
International
Standards
&
Regulations

Hazard
Identification
and
Resolution

Engineering
Design
Guides

New Technology Introduction
New Product Introduction
Continuous Product Improvement

The 5-Step Approach

- Eliminate the hazard (*Where appropriate*)
- Guard against the hazard (*Design change*)
- Work practice controls (*Process change*)
- Visible or Audible Warnings
- Personal Protective Equipment (*Last*)

Many of the enhancements made to Cat machines are brought forth by our customers and evaluated prior to incorporating.

What's the most important thing in the Mining Industry?

- (A) Production / Output
- (B) Safety

Safe Production

About ...



Provide solutions enabling our world-wide customers to create a jobsite culture of safety and sustainability.

SAFETY.CAT.COM™ Information

Online Courses – 200+

- Equipment Training, Driver Safety Training
- Environmental Training, OSHA Training
- General Safety Training

Toolbox Talks

- ~ 2 yrs of TBT's Available

Safety Information

- OMMs + Safety & Maintenance Checklists
- Virtual Walk-arounds + Tips + Interactives

Safety Basics Videos

- 17 Safety Basics + Many Others



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Home English

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CONSULTING SERVICES

CATERPILLAR SAFETY CONSULTING SERVICES

Caterpillar is now offering Consulting Services to help support the customer in several aspects of Environmental, Health and Safety. You can find out more about our various services and how we can help by visiting the new Consulting Services section of SAFETY.CAT.COM™.

[Learn More](#)

INDUSTRY SAFETY

Select an industry for additional safety information.

Select Industry:

PRODUCT SAFETY

Select a product for safety excerpts from the OMMs.

Select Product:

QUICK LINKS

- [Toolbox Talks](#)
- [Videos](#)
- [Safety Checklists](#)
- [Safety Tips](#)
- [Virtual Walk Arounds](#)
- [Take Your Class](#)
- [Purchase Safety Items](#)
- [News and Events](#)
- [Caterpillar Material Safety Data Sheets\(MSDS\)](#)

TWITTER UPDATES

Cat Safety Services
CatSafety

We have revised a few of our Toolbox Talks: Carbon Monoxide Poisoning, Hazard Assessment, Hearing Protection. Make... <https://fb.me/HXLATz92>
18 hours ago

[twitter](#) Join the conversation

Online Training



Caterpillar's online training provides value by...

- Offering affordable e-learning courses
- Increasing jobsite hazard awareness
- Utilizing tools for a positive safety culture – saves lives
- Developing a competent and engaged workforce

NEW COURSES AVAILABLE

**RIGHT TRAINING.
RIGHT VALUE.**

Obtain valuable online environmental, health and safety training from Caterpillar.

SAFETY.CAT.COM/RIGHTNOW

Consulting Services

- Job Safety Analysis
- Safety Management Systems (SMS)
 - Audits
 - Policies
 - Procedures
- Personal Protective Equipment
 - Audits
 - Noise & Air Testing
- HazCom, Hazardous Transportation
- Environmental Management Systems
- Lean Safety Training

CATERPILLAR Work Instruction: Change Oil (page example)

Applicable equipment: 988, 992 Loader
Revision date: 04/11/10, 01
Written by: Chiff (example only)
Approved by: Chiff (example only)
PPE:

STEP	DESCRIPTION	SAFETY SYMBOL	CONTROLS	VISUAL AID	SAFETY RISK
1	Clutter all necessary supplies and equipment including: <ul style="list-style-type: none">✓ oil pan✓ socket wrench set✓ oil filter✓ OIL (make sure OIL)✓ oil filter wrench✓ rags/soakup materials		1. Material storage racks are labeled with proper items and oil for each machine to reduce wrong use of parts. 2. Tools and supplies are signed out of the tool crib by the user to manage inventory levels, tracking and tool maintenance		
2	Clean the hood and remove the fuel cap to allow the oil to drain more easily into the pan. <ul style="list-style-type: none">✓ Be careful not to burn hands on hot engine if the engine or nearby parts are still hot		1. Oil cap is labeled on right hand side of the engine to help ensure wrong cap isn't removed. 2. Other examples TSD: _____, JCS		
3	Remove oil cap and allow pan underneath oil drain to catch oil used oil. Release the plug and let oil drain. <ul style="list-style-type: none">✓ Make sure oil pan is steady when it needs to be to prevent spills and splashes✓ Do not change oil near open flames		1. Place shop rags underneath oil pan to collect oil splash. 2. Other examples TSD: _____, JCS		

CATERPILLAR (MPT) Page 1 of 1



Industry Safety

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MEDIA & LITERATURE

SHOPPING

Industry Safety > Mining

English

MINING

One of the oldest industries in the world is one of the most important when it comes to supporting modern life. It's impossible to imagine today's world without mining.

Unfortunately, it's all too easy to imagine the risks of mining. These massive mining machines move thousands of tons of rock and ore around the clock. Harsh weather conditions, dark tunnels, blind spots, slips, trips or operator error can all contribute to jobsite hazards. Safety must be a part of your everyday routine, with toolbox safety talks between shifts and close attention to worksite and machine conditions at all times. For more insights into mine safety, consult your machine's Operation and Maintenance Manual and bookmark SAFETY.CAT.COM™.

SAFETY TIPS FOR UNDERGROUND MINING OPERATIONS



Description:
Launch this document and flip through 10 safety tips for underground mining operations.

- ↳ Launch Document
- ↳ Download PDF Version

To purchase your copy, please contact your local [Cat Dealer](#) and ask for media No. AEXQ4690. These are available in packs of 50.

↳ View All Safety Tips

TOOLBOX TALKS

The most recent mining related toolbox talks.

- ↳ [Carbon Monoxide Poisoning](#) 30-Sep-2010
- ↳ [Entering & Exiting the Cab of Your Machine](#) 09-Aug-2010

VIDEOS

The most recent mining related videos.

- ↳ [Managing Pit Operations: Becoming a Pro: Video \(2000\)](#) 11-May-2010
- ↳ [Safety Policies: #10steps: Entry: Video \(2009\)](#) 12-Apr-2009

CHECKLISTS

The most recent mining related checklists.

- ↳ [Track-Type Loaders](#) 07-Sep-2010
- ↳ [Underground Trucks](#) 07-Jan-2009

ONLINE TRAINING

Take your online safety training here. Offered in English and Spanish.

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EQUIPMENT SAFETY

Equipment safety for the mining industry.

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SAFETY ARTICLES

Safety articles from Viewpoint Magazine and various mining safety brochures.

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RELATED LINKS

↳ [Seat Belt Adjustment for](#)

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Product Safety

Before Operation, Machine Safety, Maintenance Interval Sections



Media & Literature

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Media & Literature

[Videos](#)
[Multi media](#)
[Literature](#)

English 

MEDIA & LITERATURE

This media and literature collection demonstrates safe operating and maintenance procedures for anyone working in, around, or on machines. The collection includes a wide variety of videos and multi media as well as literature that includes excerpts from the Operation & Maintenance Manuals, handy checklists, and Toolbox Talks.

VIDEOS

These videos are available for viewing and downloading and cover a broad range of current and former Caterpillar machine models.

- [Safety Basics Videos](#)
- [General Safety](#)
- [Operator Tips](#)
- [Walk Around Inspections](#)

[» View All Videos](#)

MULTIMEDIA

You'll find a variety of interactive tools, including virtual walk around inspections, in this multimedia collection.

- [Safety Interactives](#)
- [Virtual Walk Arouns](#)

[» View All Multimedia](#)

LITERATURE

This literature collection has everything you need for your safety discussions on the job site.

- [Operation & Maintenance Manual Excerpts](#)
- [Toolbox Talks](#)
- [Safety Checklists](#)
- [Safety Tips](#)
- [Tri-Fold Brochures](#)

ONLINE TRAINING

Take your online safety training here. Offered in English and Spanish.

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SAFETY MERCHANDISE

Click here for safety merchandise.

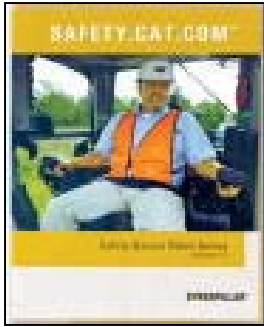
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SAFETY.CAT.COM™

CATERPILLAR®

Videos



- Only 3-7 Minutes in Length
- 17 Safety Basics Videos with Knowledge Checks
- Downloadable or Available for Purchase
- Available in Spanish, Portuguese, French and German



- Most Requested Video
- Over 80 Videos Available
 - Many are Machine Specific
- Many Downloadable or Available for Purchase
- English Only

Multimedia: Interactives and Walk Arouds

Interactives


FIRE SAFETY

Home | Components & Causes | Prevention | Safety in Case of Fire | Image Gallery | Learn More | Test Yourself

Safety in Case of Fire

Proximity to Fire

If you do find yourself in a fire, particularly aware of your proximity to the fire. Be particularly aware of your proximity to the fire. Be particularly aware of your proximity to the fire.



NEXT >>

Walk Around

WALK AROUND: MINI HYDRAULIC EXCAVATOR

HOME | INTRODUCTION | **GROUND-LEVEL INSPECTION** | MID-LEVEL INSPECTION | CAB INSPECTION

WALK AROUND: MINI HYDRAULIC EXCAVATOR

This interactive tutorial will show you what to look for in a walk around inspection of a Mini Hydraulic Excavator.



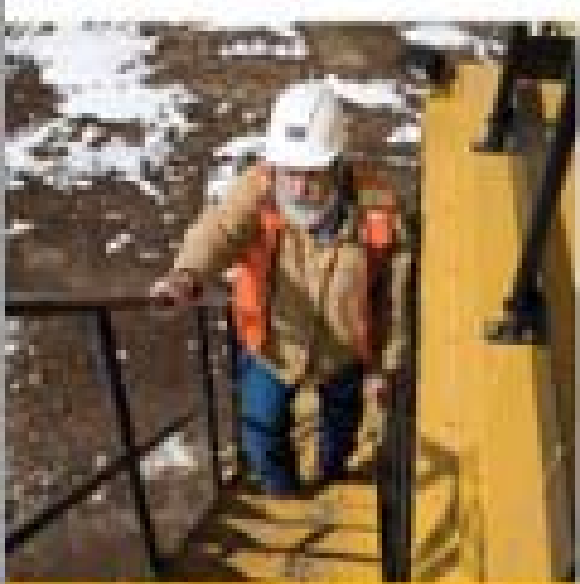
INTRODUCTION
This introductory video will teach you the basics of a walk around inspection.

GROUND-LEVEL INSPECTION
These easy to do checks can be performed as you walk around the tractor.

MID-LEVEL INSPECTION
Don't overlook these safety checks above ground and in compartments.

Transferring data from producttour.cat.com...

Literature: Industry Safety Tip Brochures



A SAFE OPERATION
SAFETY TIPS FOR
SURFACE MINING OPERATIONS

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8. Stay alert.

Poor footing may cause slips and falls from equipment. Use extreme caution when maneuvering on or near loose material. Organizing the work area is the best way to avoid slips and falls and make it clear that others are expected to do the same. For secure footing, slip resistant shoes or boots should be worn. Consider conditions that often lead to slips such as rain, mud, steep terrain, debris and use three points of contact when mounting and dismounting. Make sure the platform is free of debris, tools, gloves and loose objects. Position your equipment when parking to safely dismount via manufacturer designed mounting and dismounting points.



- ✓ Never follow a machine so close it puts outside their visibility zone
- ✓ If you cannot see them in their mirror, they cannot see you
- ✓ Post traffic and right of way signs at all intersections
- ✓ During employee safety meetings and employee/visitor orientation, train individuals on traffic flow and right of way

9. Maintain a safe travel distance between machines and identify equipment right of way.

Do not risk safety for production! Operators running equipment on the jobsite should remain a safe traveling distance from other machines. Weather conditions may cause slick roads as well as poor visibility. Having additional space between machines is recommended to avoid accidents. Any number of variables can cause a person to brake, turn, stop or lose control of a vehicle. Uphill and downhill slopes are areas of special concern. Ensure a safe travel distance is maintained at all times on haul roads.

Traffic flow creates a potential danger area for daily operators and jobsite visitors. All traffic and directional signs should be in good working condition. Ensure all employees and visitors are trained on the proper traffic flow and abide by the rules set forth by the site. Right of way determines which vehicle moves first when two or more pieces of equipment are in the same area at the same time. Right of way should be pre-determined by the site management and communicated to all individuals using the haul roads.

10. Make training a must.

Practice makes perfect. New operators should be properly trained before starting work on a jobsite. An operator who is not properly trained is a hazard to everyone on the mine site. Operators must understand the manufacturer's operation & maintenance manual before putting machines to work.

To create a safe work zone, it is important all employees understand the common communication practices used on the jobsite. Train employees on jobsite communication, including:

- Keeping track of others in the work zone and let them know where you are at all times
- Establishing eye contact before entering a work zone
- Creating two-way communication before entering a work zone
- Informing coworkers when leaving a work zone

Shopping

- Apparel
- DVD
- Safety Kits
- Reflective Safety Stickers



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Safety DVD

There are 5 videos on each DVD. Volume 1 includes: Safety Home, Seat Belts, Walk Arouds, Warning Labels, and Personal Protective Equipment. Volume 2 includes: Tire Safety, Slips and Falls, Mounting and Dismounting, Load and Transport, and Blocking and Cribbing. Volume 3 includes: the last 6 videos: Lockout Tagout, Rental Safety, Night Operations, Fatigue Avoidance, Operating on a Slope, Alternate Exits, and Work Tools. These Videos are perfect for newly hired employees or for showing at the start of a safety talk.

Choose from English, Spanish, French, Portuguese, German.

Next > Showing 1 - 10 of 15

Qty	Our Item #	Item Description	U/M	Unit Price
<input type="text" value="1"/>	990026	DVD - Safety Basics Volume 1 ENGLISH	EA	\$ 50.00
<input type="text" value="0"/>	990047	DVD - Safety Basics Volume 2 ENGLISH	EA	\$ 50.00
<input type="text" value="0"/>	990050	DVD - Safety Basics Volume 3 ENGLISH	EA	\$ 50.00
<input type="text" value="2"/>	990048	DVD - Safety Basics Volume 1 SPANISH	EA	\$ 50.00
<input type="text" value="1"/>	990049	DVD - Safety Basics Volume 2 SPANISH	EA	\$ 50.00
<input type="text" value="0"/>	990052	DVD - Safety Basics Volume 3 SPANISH	EA	\$ 50.00
<input type="text" value="0"/>	990059	DVD - Safety Basics Volume 1 FRENCH	EA	\$ 50.00
<input type="text" value="0"/>	990056	DVD - Safety Basics Volume 2 FRENCH	EA	\$ 50.00
<input type="text" value="0"/>	990053	DVD - Safety Basics Volume 3 FRENCH	EA	\$ 50.00
<input type="text" value="0"/>	990060	DVD - Safety Basics Volume 1 GERMAN	EA	\$ 50.00

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Safety Vest

Our Price:

\$28.00

[Details >](#)

Business Poster and Magnet Set

Our Price:

\$28.00

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eBlasts & Newsletters

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CATERPILLAR SAFETY NEWS


ELECTRONIC NEWS UPDATES FROM CATERPILLAR CUSTOMER SAFETY SERVICES

4Q 2010

UPCOMING EVENT

NATIONAL SAFETY COUNCIL & EXPO


October 3 - 8

 [Click here](#) for more information



GIE+EXPO 2010

October 28 - 30

 [Click here](#)

**AIST Safety
and Health
Conference**


November 7 - 10

 [Click here](#)



**2010 TRAM/National
Mine Instructors Seminar**

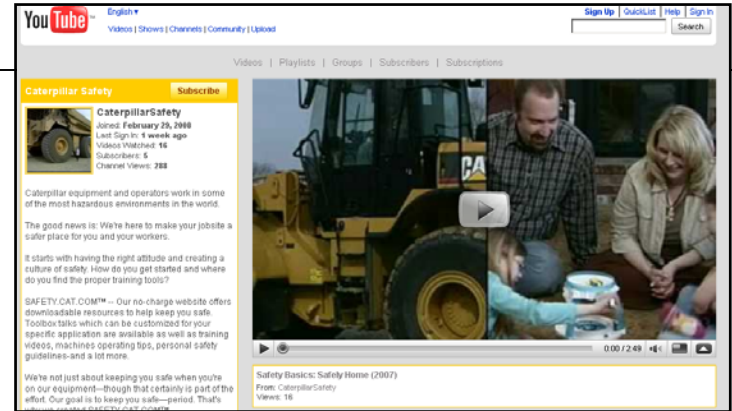
October 12 - 14

 [Click here](#)



Social Networking Update

youtube.com/caterpillarsafety



facebook.com/catsafety (578)

facebook

Sign Up

Caterpillar Safety Services is on Facebook

Sign up for Facebook to connect with Caterpillar Safety Services.

Caterpillar Safety Services

Wall Info Photos Video Customer Safety Services Notes



Caterpillar Safety Services Welcome IAAP to the Caterpillar Heavy Equipment Safety Seminar at Edwards Demonstration and Learning Center. 47 minutes ago



Caterpillar Safety Services Hazmat spill in transportation? Know the 49 reporting requirements in <http://bit.ly/1V29dm> Yesterday at 7:14am

For safety resources visit:
<http://SAFETY.CAT.COM>

twitter.com/catsafety (525)



CatSafety

Our team has created two new Safety & Maintenance Checklists on Fork Lifts & Track-Type Loaders. Check them out today! <http://fb.me/uvdtBqVN>

about 18 hours ago via Facebook

From September 9 to 10, 2010, Val will be supporting Customer Safety Services at the 2010 Texas Statewide Holmes... <http://fb.me/H6OIduHu>

1:33 PM Sep 7th via Facebook

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1-866-963-3551

or

catsafety@cat.com



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Val Cantrell
309.675.5916

Easy Login:

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Questions

