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
10. Guarding
11. Displays, controls, including labeling
12. Tires and Rims
14. Work Postures
15. Confined Space
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

SAFETY.CAT.COM™
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
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

SAFETY.CAT.COM™
CATERPILLAR®
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

SAFETY.CAT.COM™
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 injuries and deaths. Safety must be a part of your everyday routine. Avoid looking for trouble and always pay attention to equipment and machine conditions at all times. For more insights into mine safety, consult your operator's manual and maintenance manual and bookmark SAFETY.CAT.COM™.

SAFETY TIPS FOR UNDERGROUND MINING OPERATIONS

Description:
Launch PDF 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. AE383495. These are available in packs of 50.

View All Safety Tips
Product Safety
Before Operation, Machine Safety, Maintenance Interval Sections
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 multimedia 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 machines:
- Safety Basics Videos
- General Safety
- Operator Tips
- Walkaround Inspections

> View All Videos

MULTIMEDIA
You'll find a variety of interactive tools, including videos, walkaround inspections, in this multimedia collection:
- Safety Interactions
- Virtual Walk Arounds

> View All Multimedia

LITERATURE
This literature collection has everything you need for your safety dissertation on the job site:
- Operation & Maintenance Manual
- Electrical
- Toolbox Talks
- Safety Checklists
- Safety Tips
- Tri-Fold Brochures

> View Literature

ONLINE TRAINING
Take your online safety training here. Offered in English and Spanish.
> Learn More

SAFETY MERCHANDISE
Click here for safety merchandise.
> Learn More
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 Aroun ds

Interactives

Walk Around

FIRE SAFETY

Safety in Case of Fire

Proximity to Power Lines

If you do find yourself in such a situation, be particularly aware of the danger to those around you. Be prepared to escape quickly, if possible. However, if your experience is unusual for you, it may be wise to seek advice from a qualified professional.

SAFETY.CAT.COM™
**TOOLBOX TALKS**

**Hand-Held Tool Safety**

**SAFETY.CAT.COM™**

**TOPIC: Hand-Held Tool Safety**

- **Wrenches:** When using an adjustable wrench on a nut, make sure the adjustable jaw faces you before tightening. Use socket wrenches for hard-to-reach places to avoid strain. To avoid breaking the teeth of a wrench jaw and making it unsafe for future use, never use a pipe wrench on nuts. Do not add more leverage by using a wrench handle extension.

- **Hammers:** Always wear safety glasses to protect against flying objects. Use the right hammer for the job and carefully inspect it before use. When replacing hammer handles, ensure they fit the hammerhead. After wedging head securely into the handle, make sure handle is free of splinters and cracks. Use a soft metal hammer or one with a plastic, wood, or rubber head when striking steel surfaces; never strike hardened steel surfaces with a steel hammer.

- **Pliers:** Never substitute pliers for another tool such as a wrench. Use insulated grips if working with electricity and make sure protective covers are free from cracks or holes. If cutting wire with pliers, make sure wire is secure by using a vise (or your foot if it is not available). Always use safety glasses.

**Other Common Tools**

- Use crowbars only for jobs that require prying.
- Clean files with a file card after each use, do not allow file to strike against another piece of metal.
- Keep hand tools sharp to prevent slipping; store them with the point in cork to reduce the risk of accidents.
- Keep scrapers in sharp condition for best results.

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**SAFETY.CAT.COM™**

**Hand-Held Tool Safety**

**CATERPILLAR®**

**SAFETY.CAT.COM™**

**Literature: Free Toolbox Talks and Checklists**

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**Toolbox Talks are intended to facilitate health and safety discussions on the job site. For additional Toolbox Talks, please visit SAFETY.CAT.COM™.**

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**Safety & Maintenance Inspection: Wheel Loaders**

---

**Operator/Inspector Date Time**

<table>
<thead>
<tr>
<th>What are you inspecting?</th>
<th>What are you looking for?</th>
<th>Evaluation Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>FROM THE GROUND</td>
<td>FROM THE GROUND</td>
<td>FROM THE GROUND</td>
</tr>
<tr>
<td>Tires, wheels, lug nuts, stem caps</td>
<td>Inflation, leakage, damage, wear</td>
<td></td>
</tr>
<tr>
<td>Bucket cutting edge, closing board</td>
<td>Excessive wear, damage</td>
<td></td>
</tr>
<tr>
<td>Bucket lift and tilt, guide links, links, hames, pins,</td>
<td>Excessive wear, damage, wear</td>
<td></td>
</tr>
<tr>
<td>Loader frame, arm, dozer board</td>
<td>Excessive wear, damage</td>
<td></td>
</tr>
<tr>
<td>Undercarriage</td>
<td>Leaks, damage</td>
<td></td>
</tr>
<tr>
<td>Transmission, transfer case</td>
<td>Leaks</td>
<td></td>
</tr>
<tr>
<td>Doors, and hatches</td>
<td>Condition, completeness</td>
<td></td>
</tr>
<tr>
<td>Fuel tank</td>
<td>Fuel level, damage, leaks</td>
<td></td>
</tr>
<tr>
<td>Differential and final drive oil</td>
<td>Fluid level</td>
<td></td>
</tr>
<tr>
<td>Air intake (equipped with an air cleaner)</td>
<td>Cleanliness, oil mist</td>
<td></td>
</tr>
<tr>
<td>Brake lines, pipes, brake lines, brakes</td>
<td>Leaks, damage, wear</td>
<td></td>
</tr>
<tr>
<td>Hydraulic fluid</td>
<td>Fluid level, damage, leaks</td>
<td></td>
</tr>
<tr>
<td>Transmission oil</td>
<td>Fluid level</td>
<td></td>
</tr>
<tr>
<td>Lights, foot and rear</td>
<td>Function, damage to lens, missing, or wiring</td>
<td></td>
</tr>
<tr>
<td>Battery compartment</td>
<td>Cleanliness, loose nuts &amp; bolts</td>
<td></td>
</tr>
</tbody>
</table>

---

**ENGINE COMPARTMENT**

<table>
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<th>What are you inspecting?</th>
<th>What are you looking for?</th>
<th>Evaluation Comments</th>
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</thead>
<tbody>
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<td>Engine oil</td>
<td>Fluid level</td>
<td></td>
</tr>
<tr>
<td>Engine coolant</td>
<td>Fluid level</td>
<td></td>
</tr>
<tr>
<td>Radiator</td>
<td>Clean, not leaking</td>
<td></td>
</tr>
<tr>
<td>Bonnet</td>
<td>Paint chipping, leaks</td>
<td></td>
</tr>
<tr>
<td>Fuel filter / Water separator</td>
<td>Clean, in good working order</td>
<td></td>
</tr>
<tr>
<td>Air bag</td>
<td>Tension, wear, chafing</td>
<td></td>
</tr>
<tr>
<td>Air filter</td>
<td>Restriction indicator</td>
<td></td>
</tr>
<tr>
<td>Engine compartment</td>
<td>Dirt or dirt buildup, leaks</td>
<td></td>
</tr>
</tbody>
</table>

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**ON THE MACHINE, OUTSIDE THE CAB**

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<tr>
<th>What are you inspecting?</th>
<th>What are you looking for?</th>
<th>Evaluation Comments</th>
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</thead>
<tbody>
<tr>
<td>Body</td>
<td>Condition and cleanliness</td>
<td></td>
</tr>
<tr>
<td>HOOD</td>
<td>Damage, loose mounting bolts</td>
<td></td>
</tr>
<tr>
<td>Fire extinguisher (system)</td>
<td>Charge, damage</td>
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</tr>
<tr>
<td>Windshield, windows</td>
<td>Broken glass, cleanliness</td>
<td></td>
</tr>
<tr>
<td>Windshield wipers / washers</td>
<td>Wear, damage / fluid level</td>
<td></td>
</tr>
<tr>
<td>Doors</td>
<td>Open properly, broken glass</td>
<td></td>
</tr>
</tbody>
</table>

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**INSIDE THE CAB**

<table>
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<th>What are you inspecting?</th>
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<th>Evaluation Comments</th>
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</thead>
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<tr>
<td>Seat</td>
<td>Adjustment height, weight, able to reach pedals</td>
<td></td>
</tr>
<tr>
<td>Seat belt / mounting</td>
<td>Damage, wear, adjustment, age</td>
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</tr>
<tr>
<td>Horn, backup alarm, lights</td>
<td>Proper function</td>
<td></td>
</tr>
<tr>
<td>Mirrors</td>
<td>Damage, Adjust for best visibility</td>
<td></td>
</tr>
<tr>
<td>Cab air filter</td>
<td>Dirt, Dust</td>
<td></td>
</tr>
<tr>
<td>Gauges, indicators, switches, controls</td>
<td>Damage, Function</td>
<td></td>
</tr>
<tr>
<td>Overhead cab interior</td>
<td>Cleanliness</td>
<td></td>
</tr>
</tbody>
</table>
Literature: Industry Safety Tip Brochures

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

Do not risk safety for productivity! Operators running equipment on the job site should maintain 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 job site 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 determinations 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.

Practise makes perfect. New operators should be properly trained before starting work on a job site. An operator who is not properly trained is a hazard to everyone on the job 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 communication practices used on the job site. Train employees on job site 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

8. Stay alert.

Poor footing may cause slips and falls from equipment. Use extra caution when maneuvering on or near loose material. Ongoing 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, blacktop, 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.
# Shopping

## Safety DVD


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.

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Social Networking Update

youtube.com/caterpillarsafety

Facebook

Caterpillar Safety Services is on Facebook
Sign up for Facebook to connect with Caterpillar Safety Services.

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 CFR reporting requirements.
[URL]
Yesterday at 7:14 am

twitter.com/catsafety (525)

CatSafety

Our team has created two new Safety & Maintenance Checklists on Fork Lifts & Track-Type Loaders. Check them out today! [URL]
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... [URL]
1:03 PM Sep 7 via Facebook

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1-866-963-3551
or
catsafety@cat.com

Contact Us:
Learning Manager
Val Cantrell
309.675.5916

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