



REGIONAL SAFETY ALERT

Accident Prevention Bulletin



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Subject: Dozer overheating
Area of Concern: Fire Suppression Operations
Distribution: Southern Region

Discussion: Specific models of John Deere dozers have been experiencing overheating issues for an extended time. The model and series affected seem to be limited to the “J” series 450/550/650 models.



A Working Group was formed of individuals from R8, our State Partners, and San Dimas Laboratories. The team collected information utilizing a risk assessment process and specific information provided by the operators experiencing the problem. This first-hand information was captured in the risk assessment and information was assembled in a risk register that matched the hazards with the mitigation measures to reduce the overall risk. The risk register also contains a collection of information designed and intended to alert operators to potential overheating scenarios and techniques recommended by operators to assist when overheating occurs.

The Risk Assessment and Risk Register is available from the Southern Region website at http://fsweb.r8.fs.fed.us/safety_health/index.php and the Southern Area Coordination Center (SACC) website at http://gacc.nifc.gov/sacc/administrative/safety_mgmt/safety.htm.

The team is in the process of field testing dozers that have been modified with kits and after market products aimed at reducing temperatures and to prevent loss of power while in operation.

The use of the affected equipment has not been interrupted by this issue, but it has caused significant disruption in providing the same serviceability as unaffected dozers. The primary risk is the loss of power that accompanies overheating that could strand the operator in an exposed situation while fire fighting.

OPERATORS:

- Identify dozers that are experiencing overheating
- Keep in mind the need for additional maintenance of equipment
- Always keep safety zones and escape routes identified
- Use briefings and reminders to maintain situation awareness
- Know if temperatures above 80F are predicted
- Remove dozer from service if necessary



These dozers can be operated safely, as has been demonstrated, but it will require continued foresight on behalf of all concerned until we have a solution that removes this issue from consideration.

Temporary measures for helping to communicate and maintain awareness of this issue is being created and will be forwarded to the field and posted on the websites listed above as soon as they are ready.

The following considerations should be a part of your preparation for operation of the dozers that are subject to overheating. These measures are just as relevant to normal dozer operations, but should be a part of all planning when conducting operations with the affected "J" series.

Observations:

- Overheating was occurring in "J" series 450/550/650 models
- Air temperature above 80 F is a factor
- Environment, terrain, vegetation, tree density/size influence likelihood and time interval for overheating
- Speed and throttle combinations are related to overheating, as well as, operator techniques (plowing and pushing)
- Geographic location is a factor (Coastal Plain-temp and RH)

Recommendations:

- Maintain high RPM's to maximize pump pressure
- Maintain thorough cleaning of the radiator, radiator probing and cleaning with 90 psi air
- Ensure instrument indications and settings are accurate (check by service technician if suspect)
- Avoid aggressive operator actions that would lead to overheating
- If the proper cleaning and servicing techniques have been implemented and the dozer starts to run hot as soon as it's unloaded from the transport it should be red tagged and put out of service until it's checked out by a qualified mechanic

Other considerations:

- Direct Attack may cause operations that contain an unacceptable level of risk in considering whether or not the dozer will overheat at a critical time.
- Indirect Attack techniques may be appropriate to maintain adequate margin of safety.
- Night operations may reduce the overheating occurrence, but special vigilance is required to see and avoid obstacles and hazards.
- Soil types should be considered as to effect on dozer performance and power demands.
- Fire Behavior should always be considered, monitored, and interpreted with the most conservative response
- Operator fatigue is of particular concern if it contributes to operator exposure on an affected dozer.

Other activities:

- Field testing, data collection on modified dozers is underway and results will be transmitted as they become available.
- Specifications for future purchase requirements are being revised.

Remember your Risk Management Principles:

- ◆ Accept NO unnecessary risk
- ◆ Make risk decisions at the appropriate level
- ◆ Accept risk only when benefit outweighs cost
- ◆ Integrate risk management into all levels of planning

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