Rapid Lesson Sharing

Event Type: Type 6 Engine Wheel Torque Malfunction

Date: Nov. 15, 2016

Location: Oklahoma, Traveling on Interstate 40 Just West of the Arkansas State Line

While driving their Engine down Interstate 40, the Operator suddenly feels a change in driving characteristics as one of their passenger-side rear duals suddenly passes them!

NARRATIVE

Kaibab National Forest Engine 631 was traveling to the Party Rock Fire in North Carolina when the Operator felt a change in driving characteristics in the engine handling—and a wheel from the passenger-side rear duals passed them.

Second Wheel Also Comes Off
Shortly after this event, the second wheel came off and ended up in traffic behind the Engine.

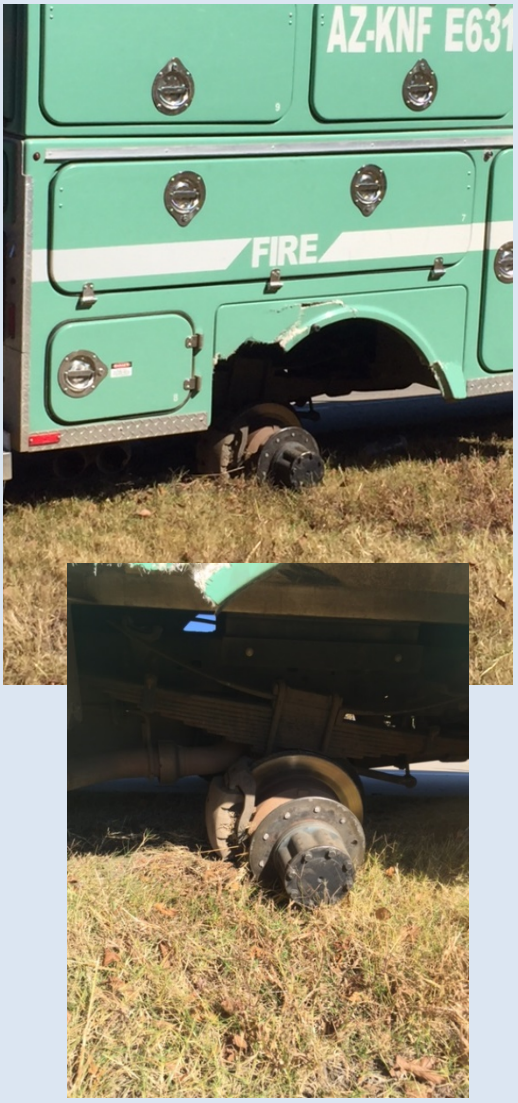
The Operator was able to safely maneuver the vehicle to the right side of the highway and out of traffic. No one was injured. The Engine was towed to a service center and repaired within two days.

Damages Included:

- One destroyed tire,
- Two unrepairable rims,
- A damaged rear rotor,
- A damaged rear hub, and
- A damaged fender skirt.

Engine Had Just Been Serviced With New Tires
This Engine had just come from a local vendor for service. New tires had been installed all the way around. The Engine was picked up and made ready for the two-and-half day trip to North Carolina.

This Unit will now be purchasing torque wrenches for all of these type of vehicles.



For more information on proper torque procedures, see next page.

LESSONS

Successes

- ✓ No one was injured or killed!
- ✓ Only 'minor' damage occurred to the Engine.
- ✓ The Operator was shaken up but was able to continue with the fire assignment.
- ✓ The accident caused a two-day delay in arriving at the fire incident.
- ✓ This Unit now knows the recommended torque procedures for Ford F-550 chassis.

Challenges

- ✓ This Unit did not fully understand the proper torque procedures for these Ford Chassis.

Recommended Torque Procedures by Ford:

WHEEL LUG NUT TORQUE SPECIFICATIONS

On vehicles equipped with single rear wheels, retighten the lug nuts to the specified torque at 500 miles (800 km) after any wheel disturbance (tire rotation, changing a flat tire, wheel removal, etc.).

On vehicles equipped with dual rear wheels, retighten the wheel lug nuts to the specified torque at 100 miles (160 km), and again at 500 miles (800 km) of new vehicle operation and after any wheel disturbance (tire rotation, changing a flat tire, wheel removal, etc.).

Bolt size	Wheel lug nut torque*	
	lb.ft.	N•m
M14 x 1.5	150	200
* Torque specifications are for nut and bolt threads free of dirt and rust. Use only Ford recommended replacement fasteners.		

On all two-piece flat wheel nuts, apply one drop of motor oil between the flat washer and the nut. Do not apply motor oil to the wheel nut threads or the wheel stud threads.

When a wheel is installed, always remove any corrosion, dirt or foreign materials present on the mounting surfaces of the wheel or the surface of the front disc brake hub and rotor that contacts the wheel. Installing wheels without correct metal-to-metal contact at the wheel mounting surfaces can cause the wheel nuts to loosen and the wheel to come off while the vehicle is in motion, resulting in loss of control.

- ✓ Units should purchase proper torque wrenches for vehicles that have special procedures.
- ✓ Learn and understand the requirements of your vehicles.

This RLS was submitted by:

North Zone FMO

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