

Rapid Lesson Sharing

Event Type: ATV Loading Accident

Date: Aug. 9, 2016

Location: Coconino National Forest,
Arizona

Background

The Need to Incorporate Loading and Unloading into ATV Training

ATV and UTV use is ubiquitous throughout wildland fire agencies as a tool for transporting personnel and equipment during all phases of operations. Their use is so frequent that any given module will load and unload these vehicles potentially hundreds of times in one year. While agencies require training specific to ATV operations and trailering, there is not training specific to loading and unloading these vehicles.

If you talk to “almost anyone” who uses ATVs regularly regarding loading and unloading these vehicles, to a person, everyone has a story regarding a mishap, a near miss, or an accident during these operations. Both ATV trainers involved in this accident review indicated that they needed to incorporate this skill into future ATV training.

NARRATIVE

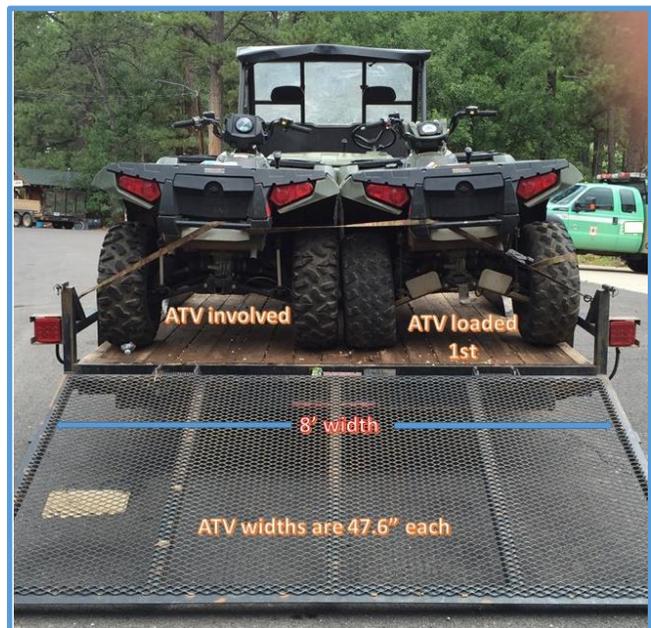
On the morning of August 9, an engine crew assigned to the Cracker Box Fire on the Mogollon Rim Ranger District was preparing for that day’s activities.

The duties for the day entailed patrolling the fire as it was being managed for multiple objectives.

The day began at 0800 at the Blue Ridge Ranger District Office where the crew loaded two ATVs onto a trailer and went in service to the adjacent work center to pick up a UTV for the day’s assignments.

The engine crew was joined by one other person from the local interagency hotshot crew.

Once they arrived at the work center, the crew unloaded the two ATVs, loaded the UTV, then began to reload the ATVs. The ATVs were intended to be loaded side-by-side which is typical when transporting three machines of this configuration.



The operator noted that as he was preparing to load the ATV “a little voice” in his head was saying: “Wow! This is tight. Do I feel comfortable doing this?”

The second ATV was loaded by the hotshot crewmember (the operator). This ATV was larger than the first ATV with a displacement of 850cc and a dry curb weight of 767 pounds—or more than 800 pounds as equipped.

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As the second ATV was loaded, its right front tire contacted the left rear tire of the other ATV.

As the ATV “climbed up” the tire of the other ATV, the operator attempted to correct the vehicle’s path to the left and applied additional throttle, intending to have the ATV settle back down onto the trailer.

But the operator quickly realized that ATV was rolling out to the left. He attempted to jump off and push himself away. He landed behind the trailer in a “seated” position. As the ATV fell backward, it caught the operator on the back of the helmet and, from the seated position, folded him forward at the waist, with the ATV coming to rest on top of him.



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The Operator’s First Thoughts: ‘Can I Feel My Toes?’

The other members of the crew immediately went to the operator’s aid, pushing the ATV off of him. As they did so, the operator sensed that something “was wrong.” He rolled to his left onto his stomach and did not attempt to move further as he felt better in the prone position. His first thoughts were: “Can I feel my toes?”

As the other crewmembers came to his aid, the operator said that it felt like he had pulled muscles in his back. A qualified EMT crewmember quickly performed a head-to-toe patient assessment, including a palpation of the spine, while another crewmember applied a manual C-spine. In doing so, the EMT noted bilateral swelling across the operator’s back. However, there was no deformity in the vertebra along the spine.

In response to the operator’s chief complaint of muscle pain, his crew members applied ice to his back and gave him ibuprofen.

Transported to the Hospital

Within minutes of this incident’s occurrence, the crew leader notified Dispatch, indicating that they may need to take the injured crewmember to the hospital in Flagstaff.

After some discussion, it was determined that the crewmember needed to be transported to the hospital for evaluation as the operator’s discomfort was not lessened by the application of ice. Because the operator didn’t feel that the injury

The accompanying crewmembers noted the physician's surprise that the crewmember was ambulatory given the degree of the injury and his emphasis that they needed to rule out any injury to the spine.



This generic photo—not from the patient in this incident—shows a lateral view of a Chance Fracture. A Chance Fracture is a flexion injury of the spine caused by violent forward flexion. It consists of a compression injury to the anterior portion of the vertebra and transverse fracture through posterior elements.

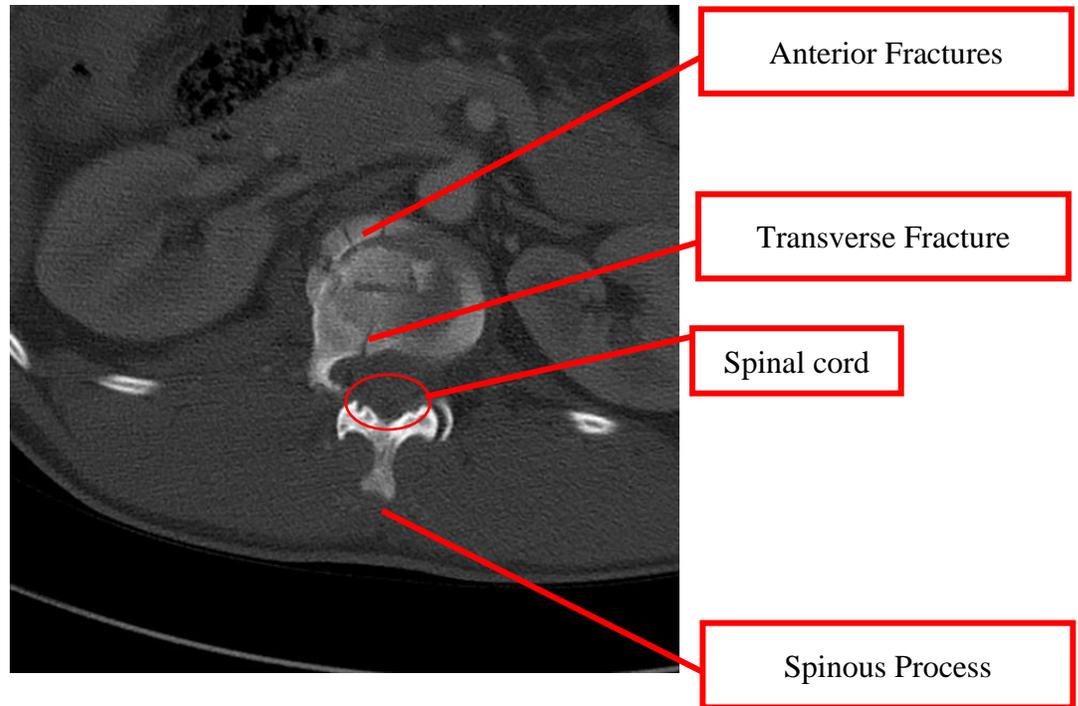
warranted an ambulance, he was assisted into a pickup and chose to remain prone on the back seat as that was the most comfortable position. Therefore, the crewmember was not immobilized for transportation.

Upon arrival to the hospital at 1130, the crewmember was aided into a wheelchair and was transported to the Triage Nurse. After his vitals were assessed, he was admitted to a bed in the Emergency Room. During this time, there was no additional spinal immobilization performed. When the attending physician evaluated the injured crewmember his chief concern was to assess him for back and spinal injuries.

Injury More Serious Than Expected

After an MRI was performed, the attending physician reported that the injury was more serious than expected. The crewmember had a “Chance Fracture” of the 11th thoracic vertebra and would require surgery. This report occurred at approximately 1300.

Throughout the time in transport and at the hospital, the crew leader remained with the injured crewmember and ensured all appropriate notifications were made. This included Forest staff notifications and activating a Hospital Liaison to begin the OWCP documentation. Additionally, the crewmember was encouraged to notify his parents and was assisted in doing so by the crew leader.



This generic photo—not from the patient in this incident—shows an “axial view” of a Chance Fracture.

After Surgery, Crewmember Spends Five Days in the Hospital

The crewmember underwent surgery to fuse the 10th thoracic vertebra to the 9th thoracic vertebra and the 12th thoracic vertebra 1st lumbar vertebra. He was released from the hospital five days later. Three days after that, on August 17, he returned home to his parents, with follow-up scheduled with an orthopedic surgeon near his home.

LESSONS

CREW

- ❖ Training for loading and unloading ATVs on trailers should be incorporated into ATV training. Take advantage of terrain to assist in this process.
- ❖ It is standard practice for this crew to load ATVs while in low gear and 4-wheel drive so as to “creep” the ATV up the trailer. It is not known if the ATV was in low gear. It was in 4-wheel drive.
- ❖ Take advantage of terrain to assist in this process. For example, position the trailer to load downhill or from a natural berm to reduce the angle of the approach, also allowing the machine to be manually loaded in some cases. Such a berm was available at this location.
- ❖ A patient should not be triaging their own injuries. If there are qualified personnel available, they should be utilized and patient care should be left to their expertise.
- ❖ The Medical Incident Report should be used on every medical incident.

- ❖ Utilize Dispatch to assist in completion of the Medical Incident Report/9 Line.
- ❖ Training needs to occur on the activation of emergency response system (911). Each module needs a pre-determined plan in place that identifies who the first responders will be and where a patient is likely to be transported (Level 1 vs Regional Hospital).
- ❖ Need to provide continuing education and training for current EMTs/First Responders. Possibly include more practice with immobilization, decision making, etc.
- ❖ Ensure all modules have access to EMS equipment such as spine and head immobilizers.
- ❖ Evaluate the size/displacement of an ATV needed for the specific tasks and the skill level of the equipment's operators.
- ❖ In hindsight, this patient, being an EMT himself, said if he had been the attending EMT on scene, he would have immobilized and transported by ambulance.
- ❖ Recruit and/or develop EMTs to provide for, at a minimum, one per module, in the absence of a formalized medical program. This is occurring at the local unit level across the agency.

DISPATCH

- ❖ Medical Incident Report or the 9 Line should be used on every medical incident.
- ❖ Utilize Dispatch to assist in completion of the Medical Incident Report/9 Line.

ORGANIZATION

- ❖ Incorporate training for loading and unloading ATVs on trailers into ATV training.
- ❖ Ensure the trailer is rated for the load being transported. (Trailing not an issue in this incident.)
- ❖ Need to provide continuing education and support for EMTs across the agency. This is currently being addressed at the national and regional levels. Currently, the local units are responsible for the cost of certification and continuing education through courses offered by accredited institutions.
- ❖ Need access to additional EMS equipment such as spine and head immobilizers.
- ❖ Need to provide for continuity of care—following release from hospitals through returning home—utilizing Hospital or Family Liaison.
- ❖ Know your training level. Ask the question: *“What’s my training level?”*
- ❖ Know your resource’s capabilities as it applies to the ability to initiate a medical response using on-scene resources.
- ❖ Are we utilizing the proper medical reporting tools on our home units or lower-priority assignments as frequently as we would on large-scale/high-profile incidents? (Medical Incident Report/9 Line from the IRPG.)
- ❖ Encourage: Continuous training. Tailgate safety sessions. Proper/current JHAs.

- ❖ Within the fire organization, there is an unwritten practice that “*We don’t load ATVs into pickup trucks.*” Evaluate whether this practice is occurring elsewhere on the Forest and formalize a policy in that regard.
 - ❖ Maintain records (copies of licenses, training rosters, JHAs, etc.) in a centralized location on the District.
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POSITIVE EVENTS

- ❖ This District has an individual identified to escort patients and/or meet at the care facilities to assist with the OWCP process.
 - ❖ The patient assessment was rapid and accurate as to location of injury.
 - ❖ Up-to-date and proper PPE (full-face helmet, long-sleeve shirt, eight-inch-high boots) was worn during time of incident.
 - ❖ Intra-crew communication was a key factor to transporting patient to proper care facility in a timely manner.
 - ❖ There was a representative from the agency who stayed and provided continuous support to the patient.
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RLS TEAM MEMBERS

Helen C. Graham, Team Leader

Deputy Fire Staff Officer, Tonto National Forest

**Darryl SanSouci, Forest Safety and Occupational Health
Manager**

Coconino National Forest

**Lindsay McElfresh, Engine Captain/ATV Subject Matter
Expert**

Flagstaff Ranger District, Coconino National Forest

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