## PHRED SEZ....

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## **Breakaway Switch**

Regarding trailer hook-up Rick Bell, WBCCI #3485, asks, "How should things be attached in regards to the 7 pin connection length, the chain (crossed) length, and the breakaway switch cable length?" Rick's DeadMan breakaway switch is hooked up so that it will come on if the trailer comes off the hitch ball. But at the Florida State Rally trailer safety seminar, Herb Quade, WBCCI #3575, suggested that you do not want the trailer brakes to lock up unless the trailer has left the vehicle. Rickfelt a discussion on this topic would be helpful to the club at large.

After placing the hitch on the ball, attach the sway bars and the sevenway plug. Next, the breakaway switch cable should be attached to a nonhitch mount. Then the safety chains should be crossed under the hitch, at a length that would cradle the hitch ball (should it detach) at least five inches above the roadway. Ideally, a detached hitch will not move far enough to disturb the seven way electric plug or the breakaway switch. That will allow you to use gentle, on/off applications of the tow vehicle/trailer brakes to gently bring the rig to a safe stop. Herb is correct in his suggestion!

From Herb's seminar, Rick learned that he had needed a longer cable on his breakaway switch, so that it would

not trigger as soon. If the trailer detached from the hitch ball, dropped to the safety chains, and also pulled the DeadMan breakaway switch, it would activate maximum trailer brakes utilizing power from the trailer 12-volt battery. But maximum trailer brakes could rip the unit totally away from the tow vehicle, giving absolutely no hope for any control. Keep some measure of control as long as possible!

Remember that a runaway trailer is a deadly missile. You want to stop it immediately so it does not injure other motorists, by standers, or property. So at what length should the chains, the seven-way wire, and the breakaway cable be set so that there is the best chance for safety when they sequentially fail? Lengths should be set to allow the following sequence:

- 1. Hitch falls off ball down to safety chains
- 2. Safety chains fail or pull the "S" hooks straight.
  - 3. Seven way plug rips out.
- 4. Breakaway switch activates maximum trailer brakes.

Random thoughts while contemplating this topic:

- 1. Any trailer over 26 feet has enough hitch weight so that the safety chains need cast grab hooks on the end, not bent "S" hooks. With ideal hitch weights at 12% to 15% of trailer weight for best towing without sway, a 9000-pound trailer should have at least 1100 pounds at the hitch; therefore an "S" hook may not be strong enough to contain the trailer as it jerks around.
- 2. The breakaway cable is attached to a nonhitch mount on the tow vehicle so if the hitch itself detaches from the tow vehicle, the breakaway switch will still activate.
- 3. Shorten safety chains by running appropriate sized, hardened bolts through the chain.
- 4. Test your breakaway switch at least four times during the camping year. These things have a tendency to become nonfunctional in time and need to be part of your safety check list. When you are ready to go home from a rally, pull the pin and attempt to drive forward. You should not get more than a foot or so until the trailer brakes lock. Get a compass and hold it by each trailer wheel hub. The compass needle should jump over to point to each hub, indicating the electromagnet is working on each wheel's brake. Then plug the breakaway switch back in before moving the rig.

The new book, <u>Phred Sez - the First Ten Years</u>, is now available on computer CD (written in Microsoft Works and also Microsoft Word). Order by mail for yourself or for loved ones by sending a check for \$15 each (includes shipping)

Help me with topics for the <u>PHRED SEZ</u> column. Send your creative experiences and ideas by US mail, E-Mail, Fax, or phone: Fred Ettline Email <u>ettlinef@netzero.net</u>

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