



Vehicle Recovery Standard

1.0 PURPOSE

This standard supports the Motor Vehicle Safety Policy and specifies the requirements for Vehicle Recovery at SaskPower.

2.0 DEFINITIONS

2.1 Design Factor

A measure of safety added into the design by a professional engineer to account for assumptions made during calculations.

2.2 Gradient

Incline, slope or embankment as in up or down a hill or grade.

2.3 Gross Vehicle Weight Rating (GVWR)

The total weight all designed components of a vehicle can withstand/support (i.e. the manufacture says all designed components can withstand this amount of weight in total.)

2.4 Rated Attachment Points

Engineered attachment points on vehicle. These points are colour (Yellow) coded to indicate they are rated attachment points for that vehicle. These attachments points are rated for 2:1 for an in-line pulls. Attachment points are de-rated for angular pulls (refer to vehicle specific charts).

2.5 Recovery System

Includes the rated attachment points on the vehicle and all related rigging.

2.6 Rigging (for vehicle recovery)

Rigging includes rope, wire rope, cable, chain, sling, sheave, shackles and associated fittings. All rigging is to be rated at a 2 to 1 safety factor (twice the GVWR of the vehicle being recovered).

2.7 Shock Load

A force that results from rapid application of a force (such as impact or jerking) or rapid movement of a static load. A shock load significantly adds to the static load.

2.8 Sling Shotting

Rapidly taking up slack in the recovery system to dislodge the stuck vehicle.

2.9 Static Load

The tongue weight is the static force the trailer tongue exerts on the hitch.

2.10 Total Vehicle Resistance

The total weight of resistance after calculating the mire resistance and factoring in any gradient resistance.



2.11 Vehicle Recovery

A controlled pull to extricate a stuck vehicle. May include pulling with another vehicle or winching.

2.12 Working Load Limit

The maximum force which the recovery system can be loaded to in general service.

3.0 METHOD / PRACTICE

3.1 Hazard & Risk Assessment

3.1.1 Before attempting recovery of any vehicle or equipment, a hazard identification and risk assessment shall be completed.

- a) Recovery vehicle resistance charts in vehicle logbook shall be used. (Refer to Attachment A).
- b) Work shall be reassessed and hazard and risk assessment performed if conditions change.

3.2 Equipment Selection

3.2.1 The vehicle recovery system kit and rigging shall be rated for the vehicle being recovered not the pulling vehicle.

- a) Recovery system kits shall be a stock coded item available from stores and include:
 - Tow/recovery rope/ straps.
 - Rigging hardware
- b) Recovery system kits will be supplied with all new vehicles from Fleet Services.
- c) Recovery rigging shall be rated at 2 to 1 safety factor (twice the GVWR of the vehicle being recovered).
- d) Recovery rigging for vehicles with non-engineered attachment points (not retrofitted) shall refer to the Safety Alert – Tow Directive.
 - Tow ropes shall be equipped with soft eyes.
 - Metal hardware shall not be used for joining of synthetic tow ropes.
 - Tow ropes can be joined for additional length using the basket rigging method.

3.2.2 Rated attachments points shall be engineered to Fleet Services Technical Specifications.

- a) Off-Highway Trucks shall meet the heavy duty chassis technical specifications issued by Fleet Services with continuous frame rail to the front bumper.
- b) Attachment Points shall be colour coded (Yellow) to indicate they are a rated attachment point for that vehicle.

3.2.3 Recovery vehicle(s) weight must be equal to or of greater weight than the total vehicle resistance weight of the vehicle being recovered.

- a) When using all terrain vehicles i.e. track machines, farm tractors etc. as a recovery vehicle, 3.2.3 may not apply.

3.3 Equipment Use and Inspection

3.3.1 SaskPower approved recovery system kits supplied for the vehicle shall be used for vehicle recovery.

- a) Rated shackles shall only be permitted when terminating a tow rope on a closed eye attachment point.

3.3.2 Rated attachment points shall be used for vehicle recovery.

- a) When 2 attachment points are available both shall be used in the recovery.

3.3.3 When the vehicle to be recovered has a trailer attached, when possible the trailer should be disconnected and recovered separately.

3.3.4 A recovery vehicle shall drop any trailer prior to extrication.



- 3.3.5 Sling shotting is strictly prohibited under any circumstance, do not shock load the recovery system.
- 3.3.6 Recovery systems shall be inspected prior to and after use and document recovery history in the vehicle logbook.
- 3.3.7 Damaged rigging shall be removed immediately from service and replaced as soon as possible based on manufacturer's guidelines.

3.4 Vehicle Recovery – Rated Attachment Points

- 3.4.1 When vehicle is mired, avoid making the situation worse by continuing to attempt to extricate the vehicle without adequate assistance.
- 3.4.2 Vehicle recovery shall be supervised to ensure all personnel (including contractors) are informed of all hazards.
- 3.4.3 Consider reducing total vehicle resistance by shoveling, lifting wit outriggers to install traction aids, etc. (Refer to vehicle specific chart in vehicle logbook).
- 3.4.4 When vehicle is mired at body depth or proper equipment is unavailable, assistance from a commercial towing service should be considered.
- 3.4.5 Ensure that all personnel (employees and public) stay clear of the recovery area to avoid pinch points and prevent injury in the event of a recovery system component failure.
- 3.4.6 Identify and maintain communication methods to be used by all personnel involved during the recovery process (i.e. hand signals, radios, spotters, etc.).
- 3.4.7 Ensure the recovery vehicle takes up the rigging slack slowly to preload the recovery system before applying recover power.
- 3.4.8 Whenever possible an inline pull shall be used to recover the vehicle.
 - a) Refer to vehicle charts if pulling at angles.

3.5 Training

SaskPower Divisions shall:

Identify employees who require training on vehicle recovery and extrication.

Develop and provide training on:

- a) Hazards of vehicle recovery.
- b) Use and maintenance of vehicle recovery systems kits.
- c) Use of vehicle specific mire resistance tables and forms for vehicle recovery.
- d) RU procedures for vehicle recovery.

4.0 REFERENCES

- SaskPower
 - Motor Vehicle Safety Policy
 - Job Hazard Assessment Policy
 - Hazard and Risk Assessment Standards
 - SaskPower Safety Briefing #7 Towing/Equipment Retrieval Safe Work Directive
 - Safety Briefing # 7 SaskPower Towing / Equipment Retrieval Safe Work Directive
 - Preparation Supplemental Q&A