

SAUDI ARABIAN OIL COMPANY (Saudi Aramco) GENERAL INSTRUCTIONAL MANUAL *ISSUING ORG. TRANSPORTATION & EQUIPMENT SERVICES DEPARTMENT SUBJECT: SAFE PRACTICES FOR TOWING EQUIPMENT AND TRAILERS	G.I NUMBER Approved 1010.007	
	ISSUE DATE	REPLACES
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1.0 PURPOSE

This General Instruction (GI) specifies the methods, procedures, and responsibilities for towing equipment and trailers.

2.0 SCOPE

All towed equipment trailers operating within Saudi Aramco facilities, on Saudi Aramco jobsites outside of operating facilities, or off Saudi Aramco property under a Saudi Aramco contract are included. It also covers all Saudi Aramco and contractor personnel.

3.0 REFERENCES

It shall be the responsibility of Saudi Aramco USERS and contractors to make themselves familiar with the most current version of the publications referenced below. (ASME standards are adopted by ANSI).

GI: Saudi Aramco General Instruction
 ANSI: American National Standards Institute
 AS: Australian Standard
 ASME: American Society of Mechanical Engineers
 ISO: The International Organization for Standardization
 T&ESD: Transportation & Equipment Services Department
 SAES: Saudi Aramco Engineering Standard
 QT: Queensland Transport

- A) AS 2321 Australian Standard Short-Link Chain for Lifting Purposes
- B) AS 4177.4 Australian Standard Caravan and Light Trailer Towing Components
- C) ASME B.56.9a Safety Standard for Operator Controlled Industrial Tow Tractors
- D) GI 2.702 Moving Drilling Rigs, High Clearance Equipment / Loads, Or Operating Cranes Under Or Near Power-Lines
- E) GI 202.305 Definition of Property, Plant and Equipment Account in the General Ledger
- F) GI 710.009 Material/Equipment Movement Gate Passes
- G) ISO 3731 Electrical Connections between Towing and Towed Vehicle With 24V Systems
- H) ISO 3853 Towing Vehicle Coupling Device to Tow Caravans or Light Trailer
- I) ISO 11406 Mechanical Coupling between Towing Vehicles with Rear Mounted Coupling and Drawbar Trailer
- J) QT Vehicle Standards and Safety (Safe Towing)

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4.0 DEFINITIONS

- 4.1 Controller: Person who prepares the towing vehicle as well as the equipment being towed. He is responsible for ensuring that all equipment is safe for towing.
- 4.2 Coupling Device: Device including towing bracket, towing ball, and towing hitch.
- 4.3 Custodian: Owner of the equipment.
- 4.4 Driver: Experienced and skilled person in towing operations. The driver of the towing equipment trailer could be the controller. He shall be physically capable to drive and tow equipment. The driver shall hold the appropriate SAG license.
- 4.5 Equipment Trailer: Use of the word "Trailer" in this instruction includes, but is not limited to:
 - 4.5.1 Equipment mounted on a frame and axle(s) designed for towing, for which the trailer is incidental to, and considered part of, the mounted equipment. Examples are: portable air compressors, flood lights, generator sets, utility power units, air conditioning machines, pumps, welding machines, etc.
 - 4.5.2 This group does not include any trailers, equipment, or units not designed to be used on highways, such as storehouse materials trucks.
- 4.6 Gross Combination Weight Rating (GCWR): Allowable combined weight of the tow vehicle, trailer, passengers, equipment, fuel, etc. that the tow vehicle can safely handle.
- 4.7 Safety Chain: Steel chain connected to the equipment or trailer used to prevent it from being disconnected from the towing equipment.
- 4.8 Towing Equipment Vehicle: A piece of equipment designed to tow a specific type of trailer.
- 4.9 User: Saudi Aramco proponent department or other organization authorized to act on behalf of Saudi Aramco proponent department.
- 4.10 Utility Trailer: Trailer designed to carry small equipment that weighs no more than 6.0 metric tons. Trailers can be single or tandem axle.

5.0 IDENTIFICATION OF TRAILERS

All Saudi Aramco owned equipment/utility trailers shall be identified by a unique asset plant number and Saudi Aramco logo in accordance with GI 202.305. Contractor trailers shall be identified by the company's name and unique trailer serial number.

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6.0 TOWING LIMITATIONS

- 6.1 Towing more than one trailer at a time is prohibited.
- 6.2 Trailers shall not be towed at speeds in excess of posted traffic speed limits, Saudi Aramco requirements, and/or manufacturer's recommendations and shall be governed by the conditions encountered.
- 6.3 In general, the towing of trailers should be limited to inside plant areas or adjacent work areas. For longer moves, they shall be hauled on regular floats or carriers, except:
 - 6.3.1 To and from specified locations that do not have cranes or other suitable loading and off-loading equipment normally available
 - 6.3.2 When the moving agency is sure that the tow can be accomplished safely and that dispatching a crane is not necessary
 - 6.3.3 During an emergency situation
- 6.4 Safety chain(s), when hooked up to the anchor shackle, shall
 - 6.4.1 Be long enough to allow the vehicle and trailer to turn at the maximum angle to prevent chain binding
 - 6.4.2 Cross under the trailer tongue
 - 6.4.3 Be short enough to prevent the tongue from dragging on the ground, if the coupling device should fail

7.0 TIRES

All trailer tires shall be inflated in accordance with the tire manufacturer's specifications and meet the following requirements:

- 7.1 Have none of the following defects:
 - 7.1.1 The first layer of fabric or steel belting is exposed
 - 7.1.2 Cuts longer than 3.0 cm
 - 7.1.3 Side walls showing bulging or bruising
 - 7.1.4 Thread depth is less than 3.2 mm

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7.2 Be the same type, size, and construction.

8.0 NIGHT OPERATIONS/POOR VISIBILITY

8.1 Saudi Aramco-owned trailers shall not be towed at night, except for emergencies.

8.2 All trailers shall have reflective-type yellow tape on all four sides.

8.3 The controller shall have adequate illumination when coupling and uncoupling is performed.

8.4 Brake lights and turn signals shall be functioning and visible.

9.0 INSPECTION

9.1 Prior to towing, the trailer shall be visually inspected by the controller. The visual inspection shall cover:

9.1.1 Suitability of the vehicle used for towing the trailer

9.1.2 Proper coupling connections

9.1.3 Tires

9.1.4 Safety chain location, capacity, and condition

9.1.5 General mechanical condition (bent, broken, loose, worn, etc.) of towing tongue, wheels, axles, frame, brakes, lights, etc.

9.1.6 Compressed gas cylinders secured in an upright position and capped

9.2 If trailer fails to meet any one of the above criteria (Section 9.1), the trailer shall be taken out of service until repairs are completed and approved by the custodian.

9.3 Periodic inspections and maintenance shall be conducted and documented by the custodian of the trailer, at least quarterly or according to manufacturer's specifications.

10.0 SAFE TOWING PROCEDURE

10.1 The driver/controller shall comply with Saudi Aramco towing procedures and the manufacturer's towing procedures/guidelines and recommendations.

10.2 In case of any conflict, Saudi Arabia Government (SAG) regulations shall govern. In case of any conflict between this GI and the manufacturer's recommendations, this GI shall take precedent.

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- 10.3 As the trailer is being towed, the driver/controller must be aware of load parameters including dimensions and weight restrictions, and identify any potential road hazards, such as overhead power-lines, low clearance bridges, etc.
- 10.4 The controller shall arrange for gate passes per GI 710.009, and road permits as required. Transportation Department may be consulted to determine the road permit requirements.
- 10.5 The driver/controller shall connect and test the proper working of all electrical, hydraulic, and pneumatic wires/cables prior to towing any trailer.
- 10.6 Drivers shall know the ground and load effects of the trailer on the towing equipment. This shall include the following:
- 10.6.1 Acceleration and breaking performance
 - 10.6.2 Towing equipment control and maneuverability
 - 10.6.3 Fuel requirements
- 10.7 The driver shall consider the weather conditions, speed, load, road grades, and conditions when braking and comply with all traffic regulations.
- 10.8 Towing equipment shall be suitable for towing in terms of its suspension system and transmission.
- 10.9 Coupling devices shall be suitable for type and capacity of the trailer.
- 10.10 The controller shall properly connect/lock the trailer brake and electrical cables. When the cables are not in use, they shall be properly secured to prevent dragging.
- 10.11 Tow bars and coupling devices shall not obscure the towing equipment license plate or rear lights, if applicable, when the trailer is not connected.
- 10.12 Based on the towing equipment manufacturer's specifications, the GCWR shall not be exceeded.
- 10.13 Trailers, loaded/unloaded, weighing over 750 kgs, shall be fitted with a properly working manufacturer's recommended braking system.
- 10.14 Trailers shall not be used to transport personnel.
- 10.15 The controller shall distribute or position the load on the trailer uniformly, if possible.

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10.16 Controller shall ensure that any load on the trailer is properly secured to prevent damage to the load/trailer.

10.17 Controller of Saudi Aramco-owned equipment shall ensure that the towing equipment is equipped with at least one rotary warning beacon and shall be followed by one escort vehicle with a rotary warning beacon when traveling on SAG and Saudi Aramco primary roads. Contractor traveling on Saudi Aramco properties shall also comply with this requirement.

10.18 Wide side view mirror shall be mounted on the towing vehicle for long/wide trailer loads.

10.19 Maximum allowable combined measurement of towing vehicle and towed equipment shall not exceed SAG requirements.

APPROVED:

 Manager,
 Transportation & Equipment Services Department

Manager,
 Loss Prevention department

Concur
 Executive director,
 Industrial Services

Approved

Sr. Vice President
 Engineering & Operations Services