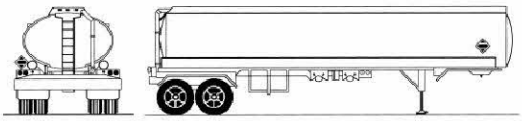
Transportation Vessels

MC-306 (DOT-406)
Non (low) pressure bulk liquid cargo tank

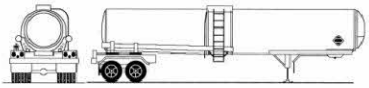


- MC 306--Maximum operating pressure of up to 3 psi
- DOT 406--Maximum operating pressure of up to 4 psi
- Oval or "egg" shaped cross section
- Flat or nearly flat ends
- Aluminum—primary material of construction
- Usually multi-compartmented
- Separate manhole for each compartment
- Emergency shutoff –drivers side front
- Rollover protection to prevent manholes from opening up on rollover
- Average maximum capacity--9, 000 gallons

Contents:

- NORMALLY—petroleum products, however, may be water or milk

MC-307 (DOT-407)
Low-pressure bulk liquid cargo tank



- Pressure—up to 40 psi @ 70ºF
- Horse shaped" shaped cross section
- Flat or slightly rounded ends
- Stainless steel is primary material of construction
- May be insulated. Insulation may hide tank shape—may not appear to be horseshoe shaped.
- Manway usually center (top) of tank
- Discharge valves usually center (bottom) of tank
- If multi-compartmented, will have a separate manhole for each compartment
- Emergency shutoff –drivers side front
- Rollover protection to prevent manholes from opening up on rollover, normally center of tank top
- Average maximum capacity--6, 000 gallons

Contents:

- NORMALLY—mild acids, however, may be water, milk, or combustible liquids

MC-312 (DOT-412)
Corrosives Cargo Tank

- Pressure—5 to 25 psiExterior strengthening (stiffener) rings often visible
- Lined tank—usually lined with rubber or plastic
- Round cross section
- Stainless steel is primary material of construction
- May be insulated, insulation may hide tank shape
- Manway usually rear (top) of tank
- Discharge valves usually rear (bottom) of tank
- If multi-compartmented, will have a separate manhole for each compartment
- Emergency shutoff –drivers side front

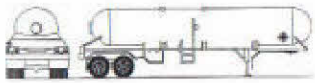
- Cigar shaped tank—long, small diameter
- Average maximum capacity—4,000 to 6,000 gallons

Contents:

- Corrosives
- High weight (specific gravity) liquids

MC-331

Gasses that are liquefied by pressure application only



- Circular cross section
- Rounded ends
- Single shell carbon steel construction
- All valves, gauges, piping protected against damage from rollovers
- Painted white for reflecting suns UV light rays
- Pressure—100 to 500 psi
- Gases that are liquefied by pressure application
- Capacity—from 2,500 gallons for bobtail to 11,500 gallons for highway transport truck

Contents:

- Propane (LPG)
- Butane
- Chlorine
- Anhydrous ammonia

MC-338

Cryogenic Cargo Tank

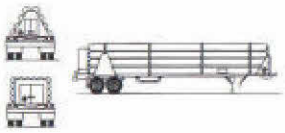
- Cryogenic liquids (DOT definition of cryogenic states that substance must be at least
  -130°F
- Cylindrical shape with “box cabinet” on rear of tank, door for loading/unloading operations are usually within these doors

- Thermos bottle design; 2 cylinders, cylinder-within-a-cylinder
- Area between 2 cylinders evacuated of air (vacuum)
- It is normal to see vapors escaping from the vent “stack” on rear cabinet area of container
- Pressures from 23.5 to 500 psi—normally low pressure

Contents:

- Substances which cannot be liquefied by pressure application alone, these substances must be “super cooled” to become a liquid
- Liquid oxygen, hydrogen, carbon dioxide

High-Pressure Tube - Gasses that cannot be liquefied with pressure application



- Each tube is a separate container
- Each tube is thermally protected with a thermal plug that is designed to melt out under fire conditions to relieve internal pressure
- Tubes are individually controlled in rear compartment
- Off-loaded by “cascade style” (same method as used to fill SCBA bottles)