OSHA Requirements for checklists before putting a forklift into use

What does OSHA require regarding forklift checklists?
The Occupational Safety and Health Administration (OSHA) requires that all forklift operator training programs include instruction explaining how operators are to “examine” forklift trucks before placing them in operation. Standard 1910.178(l)(3) reads: “Training program content. Powered industrial truck operators shall receive initial training in the following topics, except in topics which the employer can demonstrate are not applicable to safe operation of the truck in the employer’s workplace...Any vehicle inspection and maintenance that the operator will be required to perform; 1910.178(l)(3)(i)(J).”

Despite this requirement, a very high percentage of forklift users are not aware that they are violating an OSHA mandate if they fail to perform these inspections. This examination requirement is found in OSHA’s rules for Powered Industrial Trucks, 1910.178.

The specific requirement is found in OSHA Reg: 1910.178(q)(7) and reads, “Industrial trucks shall be examined before being placed in service, and shall not be placed in service if the examination shows any condition adversely affecting the safety of the vehicle. Such examination shall be made at least daily. Where industrial trucks are used on a round-the-clock basis, they shall be examined after each shift. Defects when found shall be immediately reported and corrected.”

Exactly what components of their forklift trucks does OSHA require an operator to examine? This seems clear enough to those of us in the forklift business, but how clear is this to the average, possibly non-technically inclined, customer? If customers seek clarification in the OSHA regulations, they may find that this resource is not much help. There is NO specific regulation of what must be checked, just that a preshift checklist be done. The closest the OSHA regulations come to clarifying exactly what the operator is examining for in 1910.178(q)(7) is found in the first sentence of 1910.178(q)(10), “Industrial trucks shall be kept in a clean condition, free of lint, excess oil, and grease. Noncombustible agents should be used for cleaning trucks.” Besides the general guidelines OSHA covers in 1910.178(q)(10), all the daily checklists I’ve been exposed to include checks of fluid levels and safety checks not specifically listed in 1910.178.

What should an operator check during the visual pre-start check?
- General condition and cleanliness.
- Floor - clear of objects that could cause an accident.
- Overhead - no obstructions---interfering with safe forklift usage.
- Nearby objects to avoid as you drive away.
- Fire extinguisher - present and charged.
- Engine oil level, fuel level, radiator water level (LPG, gas and diesel forklifts).
- Battery - fully charged; no exposed wires; plug connections not loose, worn or dirty; vent caps not clogged; electrolyte levels in cells is adequate; secured in place by holddowns or brackets.
- Bolts, nuts, guards, chains, or hydraulic hose reels not damaged, missing or loose.
• Wheels and tires - check for wear, damage, and air pressure, if pneumatic tires.
• Forks - forks not bent; no cracks present; positioning latches in good working condition; carriage teeth not broken, chipped or worn.
• Chain anchor pins - not worn, loose or bent.
• Fluid leaks - no damp spots or drips.
• Hoses - held securely; not loose, crimped, worn or rubbing.
• Horn - working and loud enough to be heard in working environment; other warning devices operational.
• Seatbelt and/or operator restraint device (if equipped) - belts and restraints work properly; no visible wear or damage; anchors, buckles, etc. function properly.
• Overhead guard - no damaged areas.

What should an operator check during the operational pre-start check?
• Foot Brake - pedal holds, unit stops smoothly.
• Parking Brake - holds against slight acceleration.
• Lift Mechanism - operates smoothly (check by raising forks to max height then lowering forks).
• Tilt Mechanism - moves smoothly, holds (check by tilting mast all the way forward and backward).
• Deadman Seat Brake - holds when operator rises from seat.
• Clutch and Gearshift - shifts smoothly with no jumping or jerking.
• Dash Control Panel - all lights and gauges are operational.
• Steering - moves smoothly.
• Cylinders and Hoses - not leaking after above checks.
• Listen for any unusual sounds or noises.
• Lights - headlights and warning lights are operational.

Report any problems in daily check to the supervisor immediately.

SAMPLE PAPER CHECKLIST
Int Comb  Engine Industrial Truck - Gas/LPG/Diesel Truck

Record of Fuel Added

<table>
<thead>
<tr>
<th>Date</th>
<th>Operator</th>
<th>Fuel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truck#</td>
<td>Model#</td>
<td>Engine Oil</td>
</tr>
<tr>
<td>Department</td>
<td>Serial#</td>
<td>Radiator Coolant</td>
</tr>
<tr>
<td>Shift</td>
<td>Hour Meter</td>
<td>Hydraulic Oil</td>
</tr>
</tbody>
</table>

SAFETY AND OPERATIONAL CHECKS (PRIOR TO EACH SHIFT)
Have a qualified mechanic correct all problems.

<table>
<thead>
<tr>
<th>Engine Off Checks</th>
<th>OK</th>
<th>Maintenance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leaks – Fuel, Hydraulic Oil, Engine Oil or Radiator Coolant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tires – Condition and Pressure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forks, Top Clip Retaining Pin and Heel – Check Condition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Load Backrest – Securely Attached</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydraulic Hoses, Mast Chains, Cables and Stops – Check Visually</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overhead Guard – Attached</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Finger Guards – Attached

Propane Tank (LP Gas Truck) – Rust Corrosion, Damage

Safety Warnings – Attached (Refer to Parts Manual for Location)

Battery – Check Water/Electrolyte Level and Charge

All Engine Belts – Check Visually

Hydraulic Fluid Level – Check Level

Engine Oil Level – Dipstick

Transmission Fluid Level – Dipstick

Engine Air Cleaner – Squeeze Rubber Dirt Trap or Check the Restriction

Alarm (if equipped)

Fuel Sedimentor (Diesel)

Radiator Coolant – Check Level

Operator's Manual – In Container

Nameplate – Attached and Information Matches Model, Serial Number and Attachments

Seat Belt – Functioning Smoothly

Hood Latch – Adjusted and Securely Fastened

Brake Fluid – Check Level

**Engine On Checks – Unusual Noises Must Be Investigated Immediately**

Accelerator or Direction Control Pedal – Functioning Smoothly

Service Brake – Functioning Smoothly

Parking Brake – Functioning Smoothly

Steering Operation – Functioning Smoothly

Drive Control – Forward/Reverse – Functioning Smoothly

Tilt Control – Forward and Back – Functioning Smoothly

Hoist and Lowering Control – Functioning Smoothly

Attachment Control – Operation

Horn and Lights – Functioning

Cab (if equipped) – Heater, Defroster, Wipers – Functioning

Gauges: Ammeter, Engine Oil Pressure, Hour Meter, Fuel Level, Temperature, Instrument Monitors – Functioning

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**Operator's Daily Checklist - Electric Industrial Truck**

**Record of Fluid Added**

<table>
<thead>
<tr>
<th>Date</th>
<th>Operator</th>
<th>Battery Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truck#</td>
<td>Model#</td>
<td>Hydraulic Oil</td>
</tr>
<tr>
<td>Department</td>
<td>Serial#</td>
<td></td>
</tr>
<tr>
<td>Shift</td>
<td>Drive Hour Meter Reading</td>
<td>Hoist Hour Meter Reading</td>
</tr>
</tbody>
</table>
SAFETY AND OPERATIONAL CHECKS (PRIOR TO EACH SHIFT)
Have a qualified mechanic correct all problems.

<table>
<thead>
<tr>
<th>Motor Off Checks</th>
<th>OK</th>
<th>Maintenance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leaks – Hydraulic Oil, Battery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tires – Condition and Pressure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forks, Top Clip Retaining Pin and Heel -- Condition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Load Backrest Extension – Attached</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydraulic Hoses, Mast Chains, Cables &amp; Stops – Check Visually</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Finger Guards – Attached</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overhead Guard – Attached</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safety Warnings – Attached (Refer to Parts Manual for Location)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battery – Water/Electrolyte Level and Charge</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydraulic Fluid Level – Dipstick</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transmission Fluid Level – Dipstick</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operator's Manual in Container</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capacity Plate Attached – Information Matches Model, Serial Number and Attachments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battery Restraint System – Adjust and Fasten</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operator Protection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sitdown Truck - Seat Belt – Functioning Smoothly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Man-up Truck – Fall protection/Restraining means - Functioning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brake Fluid – Check level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motor On Checks (Unusual Noises Must Be Investigated Immediately)</td>
<td>OK</td>
<td>Maintenance</td>
</tr>
<tr>
<td>Accelerator Linkage – Functioning Smoothly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parking Brake – Functioning Smoothly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service Brake – Functioning Smoothly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steering Operation – Functioning Smoothly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drive Control – Forward/Reverse – Functioning Smoothly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tilt Control – Forward and Back – Functioning Smoothly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hoist and Lowering Control – Functioning Smoothly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attachment Control – Operation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Horn – Functioning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lights &amp; Alarms (where present) – Functioning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hour Meter – Functioning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battery Discharge Indicator – Functioning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instrument Monitors – Functioning</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ALL OPERATORS MUST BE TRAINED AND EVALUATED ON THE TYPES OF INDUSTRIAL TRUCKS AND ATTACHMENTS THEY WILL BE OPERATING.
Different Types and Styles of Forklift Forks

"Standard" Forks

Utilizing Class 2 ITA type carriages. Mount and slide on carriage with locking pins

Stainless Steel Clad Forks

For use in highly sanitary applications such as the food and beverage industry

Gypsum / Drywall Handling Forks

Provides optimum product protection when handling gypsum wallboard

Shaft Forks / Pin Forks

Typically found on forklifts with a capacity greater than 12,000 lbs @ 24" load center

Drum Handling Forks

Fast material handling of barrels and drums

Brick Forks & Block Forks

Allows secure handling of bricks and blocks

Quick Disconnect Forks

Designed to be easily and quickly removed from the lift truck carriage

Folding Forks

These forks fold up so lift trucks can maneuver in areas where movement is restricted, ie elevators

Fork Extensions

Used to temporarily extend the length of the fork blade when handling longer loads

Lumber Forks / Plywood Forks

Available with forged heel, square heel, single taper, double taper, with or without peek-a-boo backs and more

Coil Handling Forks

Fork blade is contoured to handle coils. Fork capacity is reduced according to the size of the coil
How often should forklift forks be inspected?
**Daily:** Operators should make visual inspection of forks during the pre-start-up check, with special attention for damage, bending distortions and cracks.
**Six months:** A thorough inspection of forks should be done every six months, preferably by a trained individual wear caliper, to check for any cracks and distortion. Forks may need inspections more often, depending on the use of the equipment.

Where can I get more information on forklift wear calipers?

What if I can see excessive wear on the bottom of my forks?
If excessive wear is showing on the “elbows” of the forks----it is an indication that the forks may be set too low and the carriage chain may need adjustment. Train the operator NOT to “drag” the forks on the floor while traveling (loaded or unloaded). This will lead to excessive wear of the “elbow” and premature replacement requirement of the forks.

Do excessively worn forks effect my forklift’s lifting capacity?
Yes!!! A 10% reduction in fork blade thickness results in 20% reduction in operating capacity! ANSI/ITSDF B56.1 – 6.2.8.1 (f) recommended practices advise that forks be withdrawn from service when the thickness of the blade has worn by 10% (90% of original thickness)

What if I see a difference in the angle (tip) of my forks?
The fork should be withdrawn from use if the deviation from straightness exceeds 3 degrees.

What if my fork blade or upright shank are not straight?
If the deviation from straightness exceeds .5% of the length of the blade and or the height of the upright shank---the fork shall not be returned to service until it has been repaired back to acceptable specifications.

What are some important points of a periodical (six months) fork inspection?
- Check fork blades for wear. Forks are constantly subjected to abrasion by concrete floors, steel shelving, etc. This abrasion can reduce the thickness of a fork until it cannot lift loads up to the designed capacity.
- Check for distortion. Forks can be bent out of shape. Depending on distortion, some forks can be straightened. The fork manufacturer is best qualified to correct this. Your local forklift supplier can make the arrangements.
- Check for cracks in heel and hanger. Cracks may appear on forks where attachments are welded on or in the inside radius of the bend area. Periodic inspection using a magnetic particle or dye penetrant test can detect cracks. Approved grinding methods may grind out and polish these blemishes, depending on the depth of the crack. Contact your forklift supplier or the manufacturer for additional information.
- Replace, when necessary, with good quality forks. When ordering or reordering forks, make sure you are getting high quality forks that will do your lifting jobs safely. Insist on forged forks or ones with an upset heel.
- Use the proper forks. Custom-designed forks may be needed for:
  1. unusual lifting conditions
  2. spark-free areas
  3. high heat furnace areas
  4. special object lifting
ANSI CHECKLIST REQUIREMENTS FOR FORKLIFTS

ITSDF/ANSI B56.1 Standards  COPIED FROM THE ITSDF WEB SITE

AS THEY RELATE TO ROUTINE DAILY CHECKS AND MAINTENANCE

ITSDF/ANSI B56.1 2012 PART II—FOR THE USER

There is a mandated OSHA Regulation that requires a pre-shift examination of the lift truck. It does require completion of a check-off but does not specify who is to complete the assessment. Note the subsequent ITSDF Standards that follow the pre-shift check off concerning use of truck and planned maintenance schedules. Documentation should be a part of a truck inspection and maintenance program.

5.5 Operator Care of the Truck  Routine daily checks

5.5.1 At the beginning of each shift and before operating the truck, check its condition, giving special attention to the following:

(a) condition of tires
(b) if pneumatic tires, check inflation pressures
(c) warning and safety devices
(d) lights
(e) battery
(f) controls
(g) lift and tilt systems
(h) load-engaging means
(i) chains and cables
(j) limit switches
(k) brakes
(l) steering mechanism
(m) fuel system(s)

(n) additional items or special equipment as specified by the user and/or manufacturer

5.5.2 If during operation the truck becomes unsafe in any way, the matter shall be reported immediately to the user’s designated authority, and the truck shall not be operated until it has been restored to safe operating condition.

If a deficient item arises and that deficiency affects safety, the truck MUST be removed from service until repaired or corrected.

5.5.3 Do not make repairs or adjustments unless specifically authorized to do so.

TEA applies – No one can service or repair a PIT unless they have been Trained, Evaluated, and Authorized. Training must be commensurate with the level of repair being performed. This includes any servicing procedures performed by operators during a routine daily check.
Is there an OSHA regulation for maintaining checklist documents?
This is another area of the regulation that OSHA could be clearer about------ how to document these examinations and how long documentation must be maintained. This question was specifically addressed by Richard Fairfax, OSHA directorate of enforcement programs, in May 2000. Responding to a question about an employer’s right to require employees to fill out a written examination form prior to forklift operation, Fairfax wrote, “Although the standard (1910.178(q)(7)) requires that the examination be conducted, there is no OSHA requirement that the examination be recorded in writing on a checklist such as the one you provided. However, as an employer, it is well within your rights to implement additional safety practices that go beyond OSHA’s requirements such as the completion of your written checklist.” Customers who desire to use written examination checklists may ask how long they should keep the written examination forms. Again, no standard requires the use of a written form in the first place, but I recommend keeping at least a month’s worth of documentation. This should be enough history to assure anyone auditing for compliance that the customer is fulfilling its obligations.

What happens if there is an event prompting an OSHA inspection where written documentation of checklists does not exist?
According to Stanford Thiergood, OSHA’s duty officer on the date of contact and senior compliance officer, the customer is at the mercy of what their employee(s) tell the OSHA investigator. The employee(s) will be asked open-ended questions about what they did from the time they started work until the time forklift operation began.
The investigator will be listening for unsolicited information verifying verbally that a forklift examination occurred prior to its operation. If they get this verbal confirmation, that will be accepted as proper verification by the investigator. Thiergood went on to say that if he learns from the employee that a defect was noted during the examination, he will then look for written documentation that the defect was addressed properly before the forklift was allowed to return to service. 1910.178(q)(1) states, “Any power-operated industrial truck not in safe operating condition shall be removed from service. All repairs shall be made by authorized personnel.”
His position for requiring written documentation is that any defect serious enough to take a forklift out of service should have a repair order of some type generated proving that the defect was corrected. One customer, who kept written documentation of its forklift examinations, told me that it was cited during an investigation for gaps in the printed documentation it kept on file.

This customer explained to the OSHA investigator that the gaps existed because the forklift wasn’t used on the days where written documentation was missing. This inspector explained to the customer that since it kept written records of examinations, it should have kept written documentation on the days where the gaps existed to document that the forklift wasn’t used.

While it can be argued that 1910.178(q)(7) is not perfect, when executed as intended, there can be no disputing its importance in helping to improve forklift safety and productivity. During these difficult times, the little things a distributor does for customers can make an important difference in helping to keep them loyal to that distributor. Offering them unsolicited help in understanding and complying with 1910.178(q)(7) is a good way to distinguish yourself from your competition. Nothing else I’ve ever provided to our customers has generated anywhere near the amount of positive customer feed-back as providing them information about 1910.178(q)(7) has. As you can see, there’s quite a bit of 1910.178(q)(7) that is open to interpretation by both the forklift user and OSHA. OSHA may continue to provide releases clarifying these issues---so keep on the lookout for them.
Automate your checklist with a KEYTROLLER LCD (Model 601 or 602)

- LCD-601 full featured access-monitoring system with impact-speed monitoring
- WiFi transmission of PASS –FAIL electronic logs stored---in SQL database
- Has PRE-START (motor off) items and then POST-START (motor on) items
- Generate OSHA reports on all checklist events---and vehicle usage
- Completely programmable checklist for each vehicle in your fleet
- Automatic emails of failed checklist events
- FMS software can run custom reports on vehicle or operator checklists
- Ability to display checklist items in multiple languages (see below)
- Shut down after critical items (FAILED) and require supervisor interface
- Accountability of checklist (each event time/date stamped to the second)
- Insures checklists are properly completed in allotted time (or vehicle shuts down)
- Allows mundane items to only be checked weekly or monthly (as programmed)
- NO PAPERWORK! NO pens, NO paper, NO turning in, NO storing, retrieving etc

NO upgrade or subscription fees! You control all your own data
Emails on FAILED, IMPACT, SPEED
Auto reports/graphs from FMS SW.
NO MONTHLY FEES!
Automate your checklist with a KEYCHECK rugged WiFi/cellular tablet

- Rugged hand held tablet comes preloaded with custom Android KEYCHECK app
- Completely programmable/customizable checklist for every machine in your fleet
- PASS –FAIL logs are transmitted via cellular or WiFi----automatic FAILED emails
- Transmits data to DROPBOX account---where all checklist data resides
- From DROPBOX---generate Excel reports on checklist events by operator or vehicle
- Ability to display checklist items in multiple languages
- Can be mounted (and powered) on individual vehicle or one tablet does entire fleet
- Comments can be added to any PASS or FAIL event---providing additional info
- Accountability of checklist (each event time/date stamped to the second)
- Operator performing checklist required to password log in before checklist begins
- Typically used on smaller fleets----to easily comply with OSHA regulations
- NO PAPERWORK!  NO pens, NO paper, NO turning in, NO storing , retrieving etc

NO upgrade or subscription fees!  You control all your own data
Emails on FAILED checklists
NO registration required
Generate Excel reports from data
NO MONTHLY FEES!
Automate your checklist with a KEYCHECK Android phone app

- Android app loaded into your smart phone or Android tablet
- Purchase KEYCHECK app from GOOGLE PLAY online store ($49.95)
- Completely programmable/customizable checklist for every machine in your fleet
- PASS –FAIL logs are transmitted via cellular or WiFi----automatic FAILED emails
- Transmits data to DROPBOX account---where all checklist data resides
- From DROPBOX---generate Excel reports on checklist events by operator or vehicle
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