

# Tractor Preventive Maintenance

Steve VanValkenburg

- Know your tractor: sources of information
  - Owner/Operator manual: hard copy, CD, online Source: tractor dealer, aftermarket, online
  - Local tractor company
  - Independent mechanic
  - Farmers & others
  - Fuel distributors, tire companies, etc.
- Owner/Operator manual: read it and keep it handy
  - Controls and instruments (nomenclature): location and operation of controls
  - Location of service points and service interval
  - Safe operating procedures
  - Maintenance schedules and procedures (instructions)
  - Specifications and capacities
  - Basic adjustments and minor repair information
- For the hard-core: Service/Technical manual and Parts manual
  - Overhaul and major repair of tractor systems
  - Parts numbers, exploded views of assemblies
- Fuels: Gasoline, LP, Diesel
  - Buy fresh fuel and keep it clean!
  - Gasoline: no more than a 90 day supply, ethanol free?
  - Diesel: keep it clean and water free!
  - Filters: change on regular basis; See owner/operator manual for procedure, especially for diesels.
  - Label date, engine hours on filter, sticker or record sheet.
  - Keep storage cans clean and contaminant free, use filters on bulk tanks
  - Long term storage of tractor: full tank or drain. Stabilizer for gasoline
- Oils and lubricants
  - Diesels and gasoline engines have different requirements
    - API Grade: C for diesel, S for gasoline and LP engines. Ex.: CD, SH, or CG/SL
    - SAE viscosity: Single viscosity or multi-grade. Ex.: SAE 30 or SAE 15-40
  - Transmission, differential, final drives, power steering, hydraulics
  - Grease: chassis lube, wheel bearing lube
  - Change/service lubricants by hour meter or at least annually as recommended.
- Air filters; the oft-neglected!
  - Neglect leads to premature wear and severe engine damage.
  - Dry element or oil-bath type
  - Pre-filters; check and empty often
  - Make sure all connections between air filtration and intake manifold are air and dirt tight.
- Engine coolant
  - Keep anti-freeze in system year around.
  - Top off when needed with 50/50 mix of water/antifreeze to maintain protection.
  - Check protection level before winter with hydrometer.
  - Keep hoses and belts in good condition.
  - Keep radiator clear of debris and dirt.
- Batteries and charging system
  - Keep charged up, water/electrolyte level up, battery surface clean.
  - Remove corrosion from terminals.
  - Keep battery cables in good condition.
  - Keep battery securely anchored.
  - Extend the life of your battery and starter by using starting aids in cold weather such as block heaters and/or glow plugs in diesels.
  - Keep generator/alternator belts properly adjusted and wires secured and in good condition.
- Tires and weights
  - More weight = traction and stability
  - More tire = flotation

# Tractor Preventive Maintenance

Steve VanValkenburg

- Overinflation = increased soil compaction, increased tread wear
- Underinflation = increased tire sidewall wear
- Check ballasted tires with valve stem on top using gauge intended for tractor tires.
- Iron weights: check for mounting and security
- Lights and signage
  - SMV sign clean and visible on rear for road travel
  - Lights: work lights, warning/hazard lights for road travel
- Steering, tire spacing
  - Adjusted for work needs, stability, safe road travel and proper toe-in.
- Brakes and clutch
  - Working properly and adjusted to specs in owner/operator manual
  - Brakes adjusted and locked together for road travel
- Muffler/exhaust system
  - In good working order, provides proper rain proofing for engine and safe exhausting of engine gasses. Only start and run in well-ventilated areas.
- Operator station: seat, ROPS, controls and instrumentation
  - Adjusted and in proper working order
  - Seat belt needed for proper and safe ROPS operation
  - Hand holds and steps secured and safe for mounting/dismounting
  - Area clean and clear of slipping surfaces (mud and manure)
- Hitch points: drawbar and 3-point hitch
  - Adjusted for safe work, properly sized for tractor and implements
  - All points working and easily adjustable, in good repair
- Clean your tractor!
  - Dirt and manure contribute to corrosion, pre-mature wear, hides maintenance problems.
  - Dirt and debris on cooling surfaces and engine causes overheating and fires.
  - Frequent cleaning is much easier than when it gets really filthy!
- Tips:
  - Scheduled maintenance: by hour meter or annually (a fall or winter day?)
  - Maintain some kind of records on maintenance - date filters, record page in operators' manual.
  - Keep an area in shop/garage/barn/shed for commonly used maintenance items for your tractor: lubrication products, filters, antifreeze, specific tools, etc.
- Basic tractor maintenance list:
  - Tire gauge for tractor tires, battery filler, battery cleaner brush, baking soda or battery cleaner, battery terminal protectant, filter wrench, grease gun and extra zerk fittings, funnel and drain pans, containers for used fluids, antifreeze hydrometer, battery hydrometer, cleaning supplies.