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Combine Fire Safety: Protecting People, Machines, & Crops

Every harvest season we hear stories of combines going up in flames. It only takes one spark, one bearing, or one hot exhaust pipe to turn a good day in the field into a disaster. **A combine can be replaced — people cannot.** That's why fire safety needs to be part of your daily harvest routine.



(Photo courtesy of Andrew Winger/Winger Farms)

Fire Basics — Know the Enemy

A fire needs **three things**:

- Oxygen (always present in the field)
- Fuel (chaff, residue, diesel, grease, hydraulic oil)
- Heat/Ignition (exhaust, hot bearings, electrical shorts, worn belts)

Take away one of these, and you prevent fire.

Fire Extinguishers — Be Ready

- Mount two ABC dry-chemical extinguishers on every combine: one near the cab, one near the rear.
- Check extinguishers regularly. A half-charged extinguisher is no extinguisher at all.
- Train every operator how to use one. *Carry and check extinguishers in all trucks and tractors this year.*

Prevention — Keep It Clean

Start each day with a clean machine.

- Pay special attention to the engine compartment — where 3 out of 4 combine fires start.
- Blow off dust and chaff often, especially around belts and bearings.
- Wash off caked grease, oil, or hydraulic fluid.

Prevention — Maintain and Inspect

- Follow the operator's manual for lubrication and maintenance.
- Walk around the machine daily: check hoses, fuel lines, wiring, and belts.
- Repair or replace worn or leaking parts immediately.
- Watch for heat sources: cracked exhausts, worn bearings, bypassed fuses.

If a Fire Starts

- Pull out of standing crop.
- Shut down the engine.
- Grab your extinguisher and phone.
- Call 911 before fighting the fire.
- Only try to put it out if it's small and safe to do so.

If field fire spreads, a tractor with tillage hooked up can create a break line.

Remember: Your Safety Comes First

- Don't take risks with a fire you can't control.
- Insurance can replace a combine or crop — it cannot replace you.
- A culture of safety starts with communication and daily habits.

Bottom line: A few minutes of cleaning and checking your machine each day can save your combine, your crop, and maybe your life.

Beyond the basics, here are additional points to consider this harvest:

How Quickly?

- Combine fires can escalate in minutes or even seconds once crop residue ignites.
- Dry dust, chaff, and stalks are highly flammable, and with air movement from fans and wind, a small spark can spread fire across the machine very quickly.
- In many documented cases, by the time flames are visible in the cab, the fire is already too large for a handheld extinguisher to control.

How Hot?

- Typical combine fires can easily exceed 1,200–1,800°F (650–980°C) in localized areas (engine compartment, exhaust, turbocharger).
- Plastics, rubber, hydraulic hoses, and fuel add to the intensity, often creating temperatures that will melt or warp metal components.
- Once hydraulic fluid or diesel ignites, the fire becomes almost impossible to control with a small extinguisher — and spreads extremely fast.

Using a Thermal Gun/Camera for Combine Fire Prevention

- From the operator's seat, you can't tell how hot a component really is. A bearing can feel "warm" to the touch but actually be hundreds of degrees hotter and on the verge of failing.
- Check bearings, belts, and other moving parts midday when temperatures are at their peak.
- Inspect equipment at the end of day can help prevent overheated components from catching fire during the night.
- Avoid parking a hot combine inside a shed. Let machines cool outdoors first — many shed fires start hours after shutdown.
- Point the gun at bearings, hydraulic lines, electrical panels, and the exhaust system.
- Most parts will run warm under load, but one "hot spot" that's much hotter than the others is a red flag.
- Jot down readings if possible. If a bearing runs hotter each day, it's likely failing.



What's at Stake?

- People lives — operators, farm employees, and nearby property owners
- Combine — one of the most expensive pieces of equipment on the farm....especially at critical times.
- Crop — standing grain or residue can fuel a fire across acres in minutes
- Neighboring homes and property — fire spreads fast, putting others at risk
- Emergency Services — local firefighters and first responders put themselves at risk providing protection

Team Awareness

- Hold short harvest safety meetings to remind everyone of their role.
- Operators cannot see behind the cab — so everyone around the field should watch for smoke.
- Set the expectation: If you see any smoke, radio or call the operator immediately.
- Stress: *"If it's bigger than a trash can fire — walk away and let the professionals handle it."*
- Assign roles: Who calls 911? Who runs the tractor/tillage tool if a fire break is needed?

Bottom line:

A combine fire will get very hot, very fast — often beyond safe control in a few short minutes. That's why the focus must always be on prevention, early detection, and personal safety. ***Take time each day to clean, inspect, and prepare — it could save your combine, your crop, and your life.***