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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.

### 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.



(Photo courtesy of Andrew Winger/Winger Farms)

### 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.***