Heavy Equipment Communication Safety Talk

Most struck-by and run-over events around heavy equipment start with one root cause: people and machines sharing space without clear, shared communication. Dozers have broad blind areas at the front corners and rear; material handlers with grapplers add rotating upperworks and sweeping swing radii. Standardized signals, line-of-sight rules, and pre-job protocols are proven ways to cut these risks.

Pre-Shift "Comms" Huddle (2–3 minutes)

- Identify the operator, the single designated spotter, and a backup. Only one person gives signals; everyone else stays out of the signal loop.
- Review the task (grading pass sequence or pick/laydown plan), travel paths, swing arcs, dump zones, and no-go areas.
- Agree on primary channel (hand signals vs. radio), exact signal set, "STOP" priority, and how to re-establish comms after any loss of contact.

Positioning & Exclusion Zones

- Spotter stands where the operator can always maintain eye contact or has an unobstructed mirror/camera view, with an escape path pre-planned.
- For dozers, spotter offsets to the operator's line-of-sight side, clear of blade corners and anticipated track turns. Never stand in front of the blade or under a raised blade.
- For grapplers/material handlers: spotter stays outside the swing radius and beyond the "bite zone" of the open/closing tines; never under a suspended load. If the upperworks rotates out of view, pause operations and reposition.

Hand-Signal Set (agree and use consistently)

When noise or distance makes speech unreliable, hand signals are the default. Use one designated signaler; operators must obey any STOP signal from anyone. Recommended conventions:

- **STOP (normal):** one arm raised with palm out. **EMERGENCY STOP:** both arms raised or crossed overhead—machine motion ceases immediately.
- **SLOW:** one arm extended, palm down, moving up-and-down slowly.
- **MOVE FORWARD/REVERSE:** arms making beckoning motion toward the body (forward) or pushing motion away (reverse).
- **RAISE/LOWER IMPLEMENT (dozer blade):** palm up making upward circular motion (raise), palm down making downward circular motion (lower); add small left/right motions to indicate **tilt/angle** adjustments for grading.
- **SWING / HOLD (grappler):** open hand circling to indicate slew direction; clenched fist for **HOLD**.

Train crews on the exact set used on site and post a pocket card in cabs and at the tailgate board.

Radio Protocols (when used)

- Use dedicated channel; run a quick radio check before the first cut or first pick.
- Keep it crisp and clear: “Dozer 21, Spotter—blade down 0.1, creep forward 2 meters, STOP.”
- One motion per command; operator repeats back before executing. If radios fail or messages are unclear, default to STOP and re-establish contact.

Dozer-Specific Cues (grading & slope work)

- **Approach & alignment:** spotter gives small, precise cues (e.g., “left track +10 cm”) to line up the blade with the grade stake or stringline.
- **Cut/Fill passes:** use pre-agreed signals for blade height changes in tenths of a foot (or centimeters) and for blade **tilt** and **angle**—avoid vague gestures.
- **Turning/cross-slope:** spotter moves to the outside of the turn, keeping clear of track swing and berm collapse zones; stop the machine if eye contact is lost. These behaviors reduce blind-spot surprises during short, repetitive maneuvers.

Grappler-Specific Cues (material handling)

- **“In the clear” rule:** the spotter does not signal “GO AHEAD/CLOSE” until all personnel are above/behind the load and clear of the grab path; no one under a suspended bundle.
- **Close/open/rotate:** standardize three distinct signals so the operator never confuses “close tines” with “lower boom.”
- **Laydown & release:** require a visual “grounded/settled” confirmation before **OPEN**. If the operator loses sight of the spotter during a slew, stop, re-establish line of sight, then resume.

Summary

Safe dozer and grappler operations rely on disciplined communication between operators and spotters. Assigning a single signaler, confirming eye or radio contact before any movement, stopping immediately when in doubt, and retraining whenever crews or tasks change transforms chaotic, high-risk yards into coordinated, predictable, and incident-free worksites.

Discussion Points

1. *Discuss how all the different hand signals keep workers safe.*