



T-shore
Education

Learning Scenario Manual



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Module:

**Teamwork and
Communication**

**Learning scenario:
Effective Teamwork
and Communication**



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***Note** This is a fictive generic equipment checklist intended for training purposes and therefore may vary from the equipment checklist provided by a company. It is important that a technician always read and fill checklist carefully prior to any task.*

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1 List of equipment

Table 1. List of equipment

Tool name	Model / Version	Quantity
Inspection report	V01	1 for each participant
Lego Instructions	From Lego set	1 copy for the instructor
Lego set	Any set containing 10-20 components	1 set for the builder
Communication radio	Motorola	1 for each team member
A pre-assembled Lego Technic crane (LEGO Technic Liebherr Crawler Crane or similar)		1 used in exercise 2 and 3
A set of small objects to serve as “loads” (e.g., Lego bricks, small weights, set of keys)		1 used in exercise 2 and 3
A small length of thread or twine to act as lifting chains		1 used in exercise 2 and 3
A printed guide of standardised crane hand signals for reference		1 for each participant

2 Instruction

2.1 Exercise preparation

Step 1: Team setup

- Divide participants into teams of 2.
- Assign one person as the **instructor** and the other as the **builder**.

Note It would be useful to have two different Lego sets per team so the roles can be reversed.

Step 2: Documentation

- Each team will be provided with a set of instructions that only the **instructor** can see.
- The **instructor** should read all steps fully before commencing construction
- Fill out *Table 1. Documentation overview* and *Table 2. Report overview* of the Teamwork and Communication Inspection Report before starting

Step 3: Safety procedures

- Do NOT eat the Lego components 😊

Step 4: Communication tools

- Test your radio to ensure contact with team member can be made.
- Different rooms for each team member.

2.2 Exercise 1 – Lego Building Challenge

Materials Needed:

- An unassembled Lego set (comprising 10 – 20 components).
- A set of instructions for the Lego set.
- A communication radio.
- Two separate rooms, one designated for the builder and one for the instructor.

Step 1: Initial briefing

- The instructor reviews the instructions to understand the structure that needs to be built.
- The builder prepares the workspace with the Lego components.
- The instructor tells the builder which Lego components to begin with by following the instructions (step 1 – step x).

Tip Suggest a standardised communication protocol before commencing

Step 2: Communication and Building

- The instructor uses the radio to describe the first step of the build process to the builder. This should include specific details about which components to use and how they should be connected.
- The builder follows the instructions given by the instructor and starts building.
- The instructor continues to guide the builder through each step, providing clear and concise instructions.

Step 3: Iterative Feedback and Adjustment

- As the builder constructs the model, they should inform the instructor about any challenges or uncertainties they encounter.
- The instructor provides feedback and adjustments based on the builder's progress, ensuring that the build aligns with the instructions.

Step 4: Completion and Review

- Once the builder completes the structure, the instructor checks it against the original instructions to ensure accuracy.
- The team reviews their process, discussing what worked well and what could be improved in terms of communication and teamwork.
- Record all observations accurately in the inspection checklist – *Table 4. List of inspection points* in **Teamwork and Communication inspection report**

Note Observe flow of communication – at start who leads the communication, at the end does the lead communicator who describes to the instructor what has been built. The instructor then must sign off on it.

Step 5: Debriefing and Reflection

- Facilitate a team discussion after the exercise and ask participants to reflect on their experience, what worked well and what could be improved.
- Highlight specific scenarios of effective communication observed during the task.
- Facilitate a group discussion by gathering all teams to share insights and lessons learned about teamwork and communication.
- Conclude by summarising the importance of clear communication and collaboration in achieving a common goal.

2.3 Exercise 2 – Verbal Communication

Materials Needed:

- A pre-assembled Lego Technic crane (LEGO Technic Liebherr Crawler Crane or similar).
- A set of small objects to serve as “loads” (e.g., Lego bricks, small weights, set of keys).
- A small length of thread or twine to act as lifting chains.
- A printed guide of standardised crane hand signals for reference.
- A designated “work zone” for the exercise.

Step 1: Initial briefing

- The lesson instructor facilitates the verbal communication exercise using the LEGO Technic Liebherr Crawler Crane.
- Divide participants into teams of 2.
- Assign one person as the **crane operator** and the other as the **banksman/slinger signaler**.
- Set up the workspace with clear boundaries for the **crane operator** and the **banksman/slinger signaler**.
- Provide the banksman with clear instructions to move an object from one location to another location using the crane, that mimics real-life crane operations.
- Brief participants on their roles:
 - a) Crane operator: Controls the Lego crane but cannot see the task area directly.
 - b) Banksman: Provides verbal instructions to guide the operator in completing the task.

Step 2: Overview

- Explain the purpose of the exercise which is to develop verbal communication skills critical for safe and efficient crane operations.
- Highlight key communication principles, such as clarity, brevity, active listening, and using standardised terminology.
- Establish a structured language / terminology between the crane operator and the banksman, for example, boom up/boom down, direction description (team members will be facing each other, who’s right and left will be followed).

Step 3: Execution



- Begin the exercise by having the banksman guide the crane operator verbally to complete the assigned task.
- Observe interactions closely, noting strengths and areas for improvement in communication.

Step 4: Observation

- Pay attention to:
 - a) How clearly instructions are given by the banksman.
 - b) The operator's ability to follow instructions accurately.
 - c) Any misunderstandings or challenges in communication.
 - d) Team dynamics, such as trust and responsiveness.

Step 5: Intervention (if needed)

- Step in only if participants are significantly off-track or if safety (in real-world context) would be compromised.
- Provide hints or reminders about effective communication techniques without solving problems for them.

Step 6: Debriefing

- Facilitate a group discussion after the exercise and ask participants to reflect on what worked well and what could be improved.
- Highlight specific scenarios of effective communication observed during the task.
- Discuss how these skills are directly applicable to real-world crane operations or other teamwork scenarios.
- Provide constructive feedback to each participant based on their performance.

Step 7: Wrap-up

- Summarise key takeaways from the exercise, emphasising how strong verbal communication ensures safety and efficiency in high-risk environments like crane operations.
- Encourage participants to apply these skills in their professional roles.

2.4 Exercise 3 – Non-Verbal Communication

Materials Needed:

- A pre-assembled Lego Technic crane (LEGO Technic Liebherr Crawler Crane or similar).
- A set of small objects to serve as "loads" (e.g., Lego bricks, small weights, set of keys).
- A small length of thread or twine to act as lifting chains.
- A printed guide of standardised crane hand signals for reference.
- A designated "work zone" for the exercise.

Step 1: Set-up

- Position the crane and loads in the work zone.
- Divide participants into teams of 2.
- Assign roles: one participant as the crane operator and the other as the banksman.





- Ensure the operator cannot see the load area directly (e.g., by creating a visual barrier).

Step 2: Initial briefing

- Brief participants on the purpose of the exercise, highlighting how non-verbal communication is critical in noisy or hazardous environments.
- Explain how standardised hand signals are universally used to ensure safety and efficiency during crane operations.
- Demonstrate key hand signals
 - a) **Hoist (Raise)**: Forearm vertical, index finger pointing up, move hand in small horizontal circles.
 - b) **Lower**: Arm extended downward, index finger pointing down, move hand in small horizontal circles.
 - c) **Swing Boom**: Arm extended, point with finger in the direction of swing.
 - d) **Stop**: Arm extended, palm down, move arm back and forth horizontally.
 - e) **Move Slowly**: Use any motion signal with the other handheld motionless in front of it.
- The instructor provides a specific task (e.g., move the load from Point A to Point B).

Step 3: Execution

- The banksman uses only hand signals to guide the crane operator through each step of moving the load from Point A to Point B.
- The crane operator must rely solely on hand signals to control the crane and complete the task.
- Repeat with increasingly complex tasks and switch roles.

Step 4: Observation

- The instructor monitors participants' use of hand signals, noting clarity, accuracy, and teamwork.

Step 5: Debriefing

- The instructor facilitates a group discussion after the exercise and asks participants to reflect on what worked well, what challenges they faced and what could be improved.
- Discuss how effective non-verbal communication contributed to task success or failure.
- Provide feedback, highlighting scenarios of clear signalling and effective teamwork, offering suggestions for improvement, where needed.

Step 6: Wrap-up

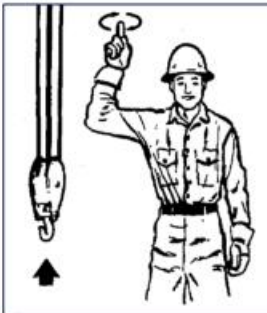
- Summarise key takeaways from the exercise, emphasising how non-verbal communication is essential for safety and efficiency in environments where verbal communication may not be practical.





- Encourage participants to master standardised hand signals to ensure consistent understanding between team members and apply these skills in their professional roles.

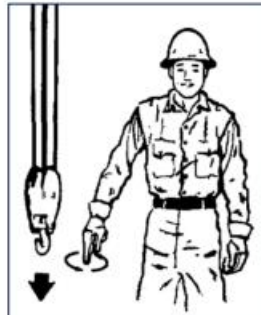
2.5 Appendix 1 – Basic hand signals

Crane Action	Verbal Instruction	Pictogram OSHA	Description	Pictogram BS 712
Stop	Stop		Arm extended, palm down, move arm back and forth horizontally.	
Emergency stop	Stop		Both arms extended, palms down, move arms back and forth horizontally.	
Raise the load	Raise or Hoist		With forearm vertical, fore finger pointing up, move hand in small horizontal circle.	



Lower the
load

Lower

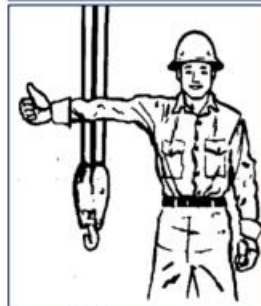


With arm
extended
downwards,
fore finger
pointing down
move hand in
a small
horizontal
circle.



Raise the
Boom

Boom Up
or
Raise
Boom

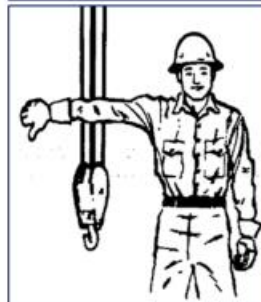


Arm extended,
fingers closed,
thumb
pointing
upward.



Lower the
Boom

Boom
Down or
Lower
Boom

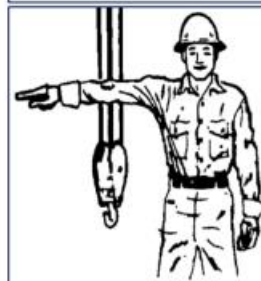


Arm extended;
fingers closed
thumb
pointing
downward.



Slew /
Swing

Slew left
Slew Right
Or
Swing left
Swing
right



Arm extended,
point with
finger in
direction of
slew / swing.





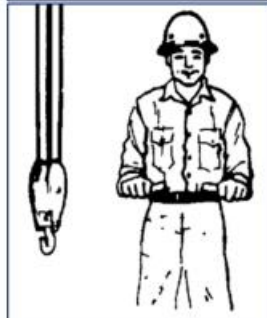
Extend the Boom Out



Both fists in front of body with thumbs pointing outwards.



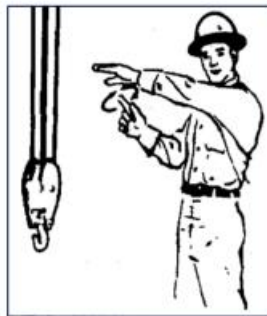
Retract the Boom In



Both fists in front of body with thumbs pointing toward each other.



Move Slowly ...



Use one hand to give any motion signal and place other hand above the hand giving the motion signal. (Slowly raise the load shown as an example)



Hoist slowly



Lower slowly



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