# Competency Standard B: Operate bulldozer

**Overview**: This competency standard covers the skills and knowledge required to operate a bulldozer and perform different operations.

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| Competency Units | Performance Criteria |
| 1. Operate controls | ***Trainee will be able to:***   1. Operate controls smoothly and safely 2. Operate different operating controls simultaneously as required 3. React to changing conditions/situations |
| 1. Strip and stockpile surface materials | ***Trainee will be able to:***   1. Distinguish waste layer from structural layer 2. Remove waste layer 3. Move full blade load with optimum capacity 4. Clean up windrows and any remaining waste material 5. Stockpile waste materials. |
| 1. Cut and fill material | ***Trainee will be able to:***   1. Estimate the height of cuts and fills 2. Apply grade checking instruments 3. Cut “humps” and create enough loose material to fill blade before pushing to haulage distance 4. Push material to fill depressions 5. Match blade load with available power and traction 6. Perform rough leveling of ground 7. Eliminate windrows and clean up |
| 1. Create slopes | ***Trainee will be able to:***   1. Interpret stakes/specifications 2. Apply grade checking instruments 3. Cut the slope next to each row of stakes 4. Perform heavy cuts down hill 5. Match blade load with available power and traction 6. Apply safe practices regarding stability issues 7. Grade area to a given slope and eliminate windrows and cleanup |
| 1. Create ditches | ***Trainee will be able to:***   1. Identify the required profile using grade checking instrument 2. Create ditch of specified dimensions 3. Stockpile or blend in material 4. Level the ground roughly, eliminate windrows and clean up |
| 1. Spread ballast | ***Trainee will be able to:***   1. Identify dumping location and pattern 2. Match blade load with available power and traction 3. Spread material 4. Grade to requisite level |
| 1. Rip dense materials | ***Trainee will be able to:***   1. Rip hard strata 2. Balance ripper load depth & load to available power and traction |
| 1. Clear land | ***Trainee will be able to:***   1. Work around obstructions and hazards 2. Clear land in accordance with job specifications |
| 1. Push scraper | ***Trainee will be able to:***   1. Balance engine power to load and traction 2. Minimize wear & tear impact, track spinning 3. Assess grade and level. 4. Remove obstacles and rocks |

**Knowledge & Understanding**

The candidate must be able to demonstrate the underpinning knowledge and understanding required to carry out the tasks covered in this competency standard. This includes the knowledge of:

1. Define basic operating functions
2. Describe different operating controls and their functions
3. Describe different situations which an operator can encounter under different conditions.
4. Describe types of soils and their characteristics
5. Describe attachments to be used for different types of soil
6. Describe techniques for clearing and scrubbing.
7. Describe methods for spreading / stock pile of materials
8. Define capacities & capabilities of Machine
9. Describe method for estimation of cuts and fill
10. Describe grade checking instruments
11. Describe techniques how to cut humps and fill depressions
12. Describe method of rough leveling of ground
13. Describe stakes/specifications
14. Describe grade checking instruments
15. Describe methods of making slope in different conditions
16. Describe problems faced while making slope
17. Describe types/shapes of ditches
18. Describe special attachments to be used for making ditch
19. Describe problems faced while making ditch
20. Describe ditches to be made under different environment/conditions.
21. Describe types of ballast
22. Describe methods of spreading of ballast
23. Describe blade load versus power and traction in different soils conditions.
24. Describe different levels to be maintained during spreading of ballast
25. Describe ripper and its functions.
26. Describe techniques/methods to rip dense materials or hard strata
27. Describe types of obstructions and hazards
28. Describe how to work around obstructions and hazards.
29. Describe scrapper and techniques to push it
30. Describe problems faced during pushing of scrapper.
31. Describe selection of engine power rating to the desired load and traction

**Critical Evidence(s) Required**

The candidate needs to produce following critical evidence(s) in order to be competent in this competency standard:

* Create a slope.
* Breaks the hard strata.
* Operate different levers.
* Place material in a stockpile
* Cut and fill material.
* Maintain the pit floor, level, smooth and clear obstructions.
* Levels the road properly.
* Spread materials at work area.
* Maintain a smooth and levelled surface area.