

Thompson: JAWS Jannatec Advanced Warning System

Orientation

1. JAWS-TRAINING MANUAL (1)

1.1 JAWS Training Material



1.2 OUTLINE

OUTLINE



1. WHAT IS JAWS?
2. HOW JAWS WORKS
3. ZONES & ASSETS
4. JAWS SCREEN
5. TESTING VEHICLE JAWS UNITS
6. USING/TESTING CAP LAMPS



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1.3 WHAT IS JAWS

WHAT IS JAWS



1. Jaws is a Peer to Peer application that leverages radio frequency transceivers for proximity detection without the need for any additional mine infrastructure.
2. Improves situational awareness of vehicle operators and personnel.
3. Uses 900 MHz radio frequencies to relay proximity of:
 - A. Vehicle to vehicle
 - B. Vehicle to personnel
 - C. Personnel to Vehicle
 - D. Fixed Hazard to vehicle
4. Easily integrated into current safe working practices



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1.4 HOW JAWS WORKS


HOW JAWS WORKS

ZONES AND ASSETS

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1.5 HOW JAWS WORKS


HOW JAWS WORKS



ZONES AND ASSETS

JAWS uses three zones to inform vehicles of objects they need to be aware of:

- Working Zone (safe zone)
- Warning Zone (in range of potential hazard) (yellow)
- Critical Zone (caution advised – close proximity) (red)



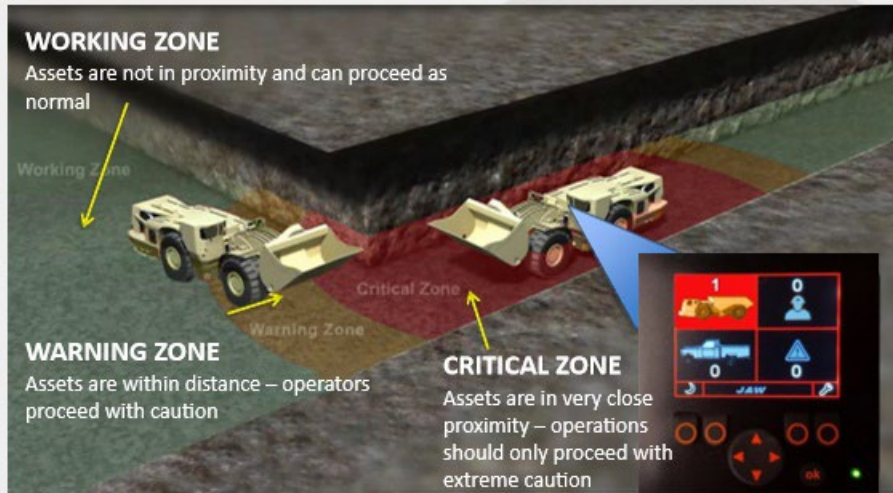
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1.6 HOW JAWS WORKS

HOW JAWS WORKS




ZONES AND ASSETS



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1.7 HOW JAWS WORKS

HOW JAWS WORKS



JAWS SCREEN

Consists of Four Quadrants

Primary Movers


Light Duty Vehicles

Personnel

Fixed Hazard
(vehicles in off status register as fixed assets)

This feature is not used in the Thompson Operation due to conflict with other legislation


Note: all proximity events are stored in-memory for review in case of incidents.




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1.8 HOW JAWS WORKS


HOW JAWS WORKS



SCREEN FUNCTIONALITY




- INITIAL PROXIMITY WARNING**
 - Asset has come into warning zone
 - Associated asset in that quadrant turns orange. The number of assets in warning zone is indicated above/below the icon.
 - Number indicates quantity of asset type within range.
 - Operators should proceed with caution
- CRITICAL PROXIMITY WARNING**
 - Image of asset type fills entire screen (red) for short duration to indicate asset in critical zone
 - Audible alert provides notification of asset entry to Critical Zone
 - Quadrant remains **RED** with indicator of number of assets in critical range below/above number.
 - Number of assets in warning zone displayed in box found in the corner of associated quadrant.
 - Operators should proceed with extreme caution***



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1.9 HOW JAWS WORKS

HOW JAWS WORKS

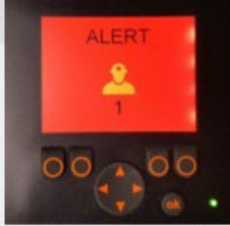


SCREEN FUNCTIONALITY



INITIAL PROXIMITY WARNING



CRITICAL PROXIMITY WARNING
(full screen red with audible alert)



ASSET REMAINS IN CRITICAL ZONE
(initially whole screen red then moves to solid red quadrant with associated numbers near icon)



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1.10 HOW JAWS WORKS

HOW JAWS WORKS



SCREEN FUNCTIONALITY

If there are assets in both the warning and critical zones, the critical zone assets will take priority and be indicated via a number above that asset while the quadrant continues to flash white and red.

Any assets that remain in the warning zone will be indicated via a box in the corner of the quadrant that contains the quantity of assets in the warning zone.



Number of Personnel Assets in Warning Zone

Number of Personnel Assets in Critical Zone



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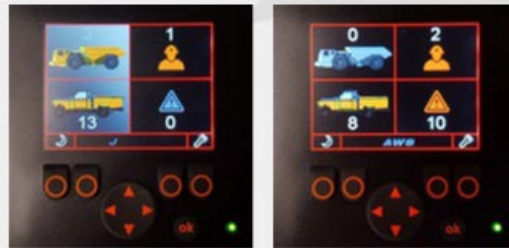
1.11 HOW JAWS WORKS

HOW JAWS WORKS



SCREEN FUNCTIONALITY

JAWS will display all of the assets within range at one time as in the images below:



This feature is not used in the Thompson Operation due to conflict with other legislation

IMPORTANT NOTE:

When a vehicle is turned off/not running since the JAWS unit is connected to the primary power of the vehicle it will always be recognized by the JAWS system. Any vehicle turned off will appear as a fixed asset on the system until turned on at which point it will automatically then switch to be recognized as it's vehicle ID type.



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1.12 TESTING JAWS VEHICLE UNITS PRIOR TO SHIFT - STEPS

TESTING JAWS VEHICLE UNITS PRIOR TO SHIFT - STEPS



1. Vehicle operator turns on ignition of vehicle
2. The JAWS unit will power up and an audio tone (beep) will sound
3. Operator will have to acknowledge the disclaimer screen or the unit will continue to beep until this has been done.
4. The vehicle operator will be prompted to perform a functional check. ***If you are not near another vehicle, your cap lamp will need to be turned on to perform this test.***
5. The vehicle operator will select the 'OK' button to start test
6. The test commences to ensure RF functionality is working by displaying the standard JAWS screen with assets.
 - Each asset quadrant will turn **RED** one by one verifying screen functionality



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1.13 TESTING JAWS VEHICLE UNITS PRIOR TO SHIFT - STEPS

TESTING JAWS VEHICLE UNITS PRIOR TO SHIFT - STEPS



Screen Display Test Sequence (Animated)



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1.14 Untitled Slide

TESTING JAWS VEHICLE UNITS PRIOR TO SHIFT - STEPS



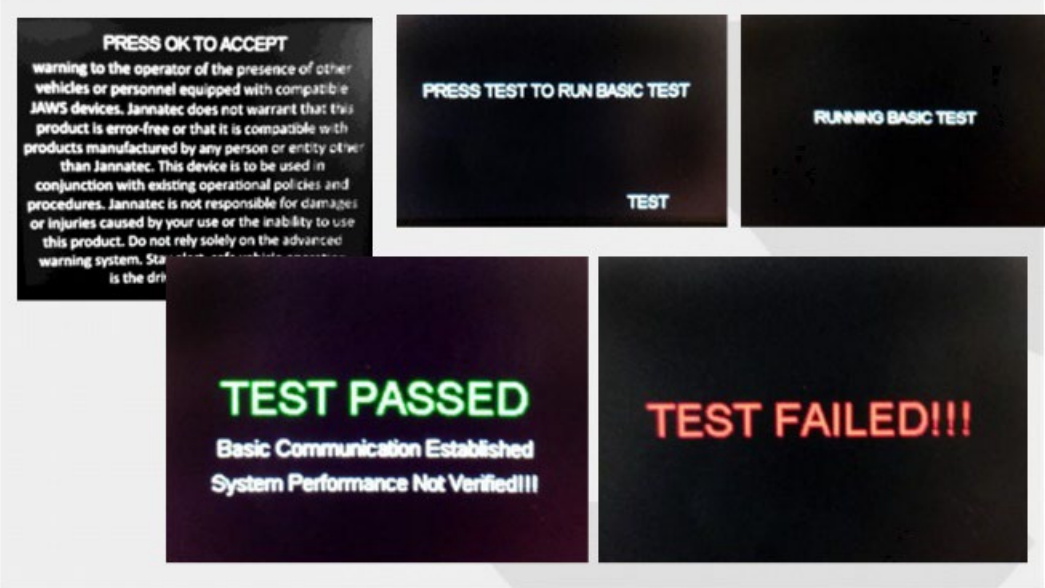

- Once the test is complete the unit will indicate a **PASS/FAIL result on screen.**
- If PASS, the operator can continue with their work
- If FAIL, the unit will continue to emit the audible tone as the JAWS unit will need to be serviced.
- Continued operation after a 'FAIL' result is not recommended and this can be identified based on reviewing stored data on the vehicle unit.
- Operators should follow outlined protocol for replacement of the vehicle JAWS Unit.



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1.15 TESTING JAWS VEHICLE UNITS PRIOR TO SHIFT - STEPS

TESTING JAWS VEHICLE UNITS PRIOR TO SHIFT - STEPS




PRESS OK TO ACCEPT
warning to the operator of the presence of other vehicles or personnel equipped with compatible JAWS devices. Jannatec does not warrant that this product is error-free or that it is compatible with products manufactured by any person or entity other than Jannatec. This device is to be used in conjunction with existing operational policies and procedures. Jannatec is not responsible for damages or injuries caused by your use or the inability to use this product. Do not rely solely on the advanced warning system. Standard safety procedures are the driver's responsibility.

PRESS TEST TO RUN BASIC TEST
TEST

RUNNING BASIC TEST

TEST PASSED
Basic Communication Established
System Performance Not Verified!!!

TEST FAILED!!!



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1.16 CAP LAMP FUNCTIONALITY

CAP LAMP FUNCTIONALITY

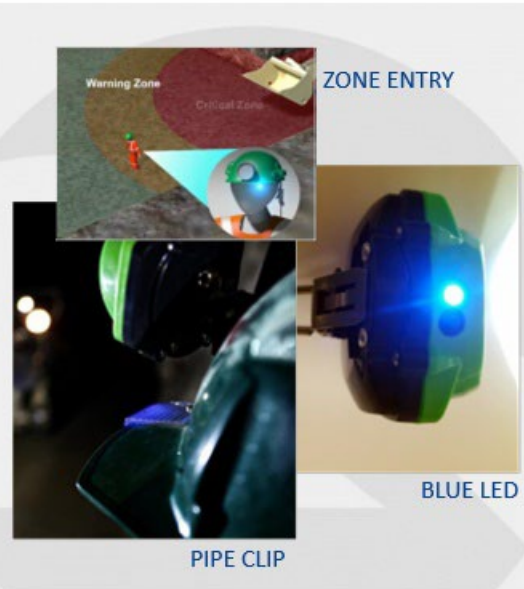


PROXIMITY ALERTS

When a vehicle equipped with a JAWS unit comes within the proximity of personnel wearing a JAWS capable cap lamp, a blue LED on the base of the cap lamp will light up notifying the resource of the proximity alert. The blue LED is very bright and easily visible through a reflection on the pipe clip provided for the workers helmet.

NEVER IGNORE THE BLUE LIGHT!!

Once there are no vehicles within the proximity of that worker, the LED will turn off indicating to the worker that they are back in the safe working zone.



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1.17 CAP LAMP FUNCTIONALITY

CAP LAMP FUNCTIONALITY TESTING YOUR CAP LAMP



Prior to heading underground for each shift, **EVERY** worker is required to test their cap lamps to ensure the JAWS functionality is working.

STEPS:

1. Place your cap lamp on the circular area on one of the personnel verification units. (For best results, always place the lamp front facing the unit while holding the back of the cord to prevent unwanted interference.)
2. Press 'OK' to initiate test. Test Begins.
3. The screen will turn **GREEN** for pass and will turn **RED** for fail.
4. If your cap lamp fails, obtain a replacement unit and re-perform test.
5. **DO NOT PROCEED UNDERGROUND IF YOUR UNIT HAS NOT PASSED!**



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1.18 CAP LAMP FUNCTIONALITY

CAP LAMP FUNCTIONALITY

TESTING YOUR CAP LAMP

JANNATEC Technologies

TESTING CAP LAMP

TESTING DEVICE

PASS

FAIL

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1.19 Untitled Slide



Take a
BITE
Out of Safety

HAVE A SAFE DAY!!

If you have any questions surrounding the functionality of the JAWS System please do not hesitate to contact your Jannatec Account Representative or contact the Jannatec office.

Email: sales@Jannatec.com Phone: 705-566-3939



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