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|-------------------|---------------------------------|---|
| Title of Training | RYCOM, Cable/Pipe/Fault Locator | |
| Equipment Info. | Make/Type/Size/Model | RYCOM LOCATOR |
| Material Needed | RYCOM 8869 Operators Manual | Hard Hat-Safety Glasses (Goggles)-Work Shoes. |
| | | |

RYCOM SAFETY TRAINING

Receiver Controls and Indicators

- **ON/OFF Button** - The unit will load settings from previous usage. Note: Automatic shut off after 10 minute of no use.
- **FREQUENCY Button** Toggles through available active and passive frequencies (model specific).8869 - 82 kHz, 33kHz , 8 kHz, 815 Hz, 50/60 Hz and RF.
- **MODE Button** Toggle through available mode (model specific). 8869 - PEAK, PINPOINT PEAK, NULL, ACC, DFF and SONDE locating modes.
- **DEPTH Button** DEPTH function will first momentarily display the depth mode (Line [LIN] or Sonde [SON]) and then display depth measurement. To change the Depth Measurement from English to Metric, hold the Depth Key for ten seconds.
- **GAIN Button** (Up or Down) Adjusts the gain up or down. If the signal strength shows as “ --- ” on the display, pressing the GAIN will automatically adjust to 85% on the scale display.
- **CURRENT (SHIFT Button + DEPTH Button)** Measure the relative amount of transmitted current.
- **VOLUME (SHIFT Button + MODE Button)** Toggle volume through High, Medium, Low and Off.
- **BACKLIGHT (SHIFT Button + FREQUENCY Button)** Hold the SHIFT Key and press the CURRENT key to toggle on and off the back



WHAT ARE WE LOCATING

1. Locators do not locate cables or pipes, they locate the magnetic field around the line (must be a conductor)
2. The magnetic field is created by an alternating current (AC) flowing along the line
3. This magnetic field forms a cylindrical shape around the line and is known as the 'signal'
4. Principle known as electromagnetic induction

The first step to successful locating is to obtain as much information about the site before the locator is even turned on.

- Obtain utility maps or drawings

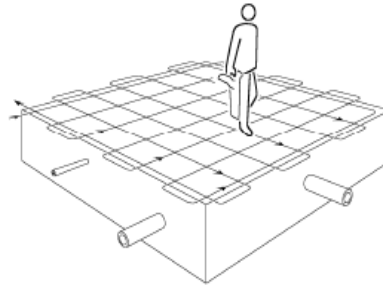
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| Trainee Name (print) | | Signature of Trainee | |
| Instructor Name | | Date of Training | |
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- Observe the site
- Look for physical evidence, i.e. covers, telegraph poles, street lamps, trench scars et

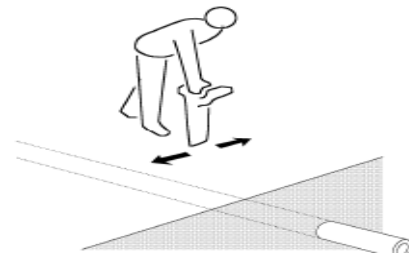
STEP 1

- Select the 50/60~ (Hz) frequency on the Receiver
- Select PEAK mode. Locate the conductor using the PEAK mode.
- Holding the locator vertical at all times, sweep the area with a steady and deliberate motion
- If necessary adjust the receiver to keep the bar graph on scale



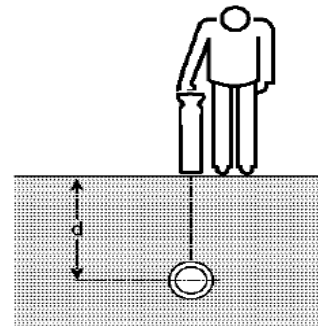
STEP 2

- When a signal is detected continue along the search route until signal reduces, then move back to where the signal is strongest, (Peak).



STEP 3

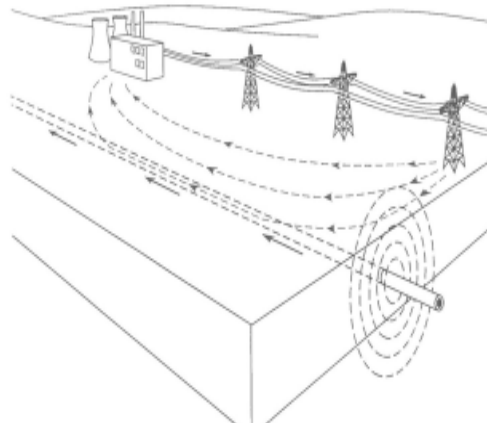
- Mark position
- Measure depth
- Measure current



Passive 50/60 Hz Power

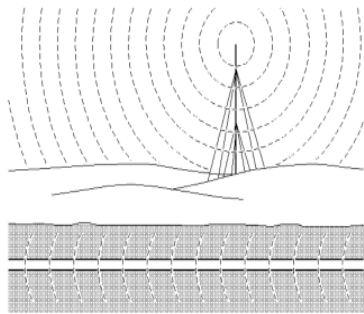
These occur naturally on cables and pipes

- No need for a transmitter
- The main purpose is for avoidance
- Quick
- Relatively easy
- 50/60 Hz radiating from loaded power cables
- 50/60 Hz signals induced into ground



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- These signals travel along metallic cables or pipes
- Enables most, but not all power cables to be located passively

Passive Location (Radio)

- Very low frequency (long wave) radio waves from distant transmitters
- Ground provides return paths for energy
- Metallic lines form preferred paths

Passive Location - Practical Implications...

- Cannot identify... Same signal may appear on any conductor
- Live line with load switched off... no current flow - so no detectable locate signal – **remains a danger**
- 3 phase cables can be difficult to locate...- High voltage are better balanced and cancel their fields- Radio mode valuable complement to Power mode
- **All passive signals can change without warning**



Passive 50/60 Hz Locating

The 8869 Receiver is capable of locating power utility frequencies. This MODE is useful for locating underground primary and secondary power utilities .In certain circumstances, this MODE will also locate water pipes, sewer lines, cable television, and telephone. The reason is that common electrical grounds are sometimes found among these various utilities. Select the 50/60~ (Hz) frequency on the Receiver. Select PEAK mode. Locate the conductor using the PEAK mode.

This method is useful because of its speed and convenience. Start at the know reference point and keep in mind the other conductors in the area may produce the same locating signal

Important Notice

This Safety Training Topic (STT) does not necessarily cover all possible hazards associated with this equipment and should be used in conjunction with equipment manual. It is designed as a guide to be used to compliment training in the field at Brieser Construction and as a reminder to users prior to equipment use.

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| EMPLOYEE NAME (Print or Type) | EMPLOYEE SIGNATURE | TRADE | JOB TITLE |
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