



Premature Detonation

CAGC SAFETY ALERT

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Canadian Association of Geophysical Contractors

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Safety Alert

05-00

A recent near-miss incident occurred on a helicopter portable seismic operation that involved electric blasting caps. Hand held portable radios were in use on the site.

Anyone including seismic contractors and drilling companies that are using explosives and electric detonators are reminded that radios, cellular telephones, pagers, portable walkie-talkies, aircraft communication devices and other hand held electronic devices produce Rf energy.

Rf energy can and does produce electrical current in wire when the broadcast frequency and wire lengths match the frequency wavelength or multiple fractions of the broadcast wavelength in close proximity. Rf energy has been proved to detonate the electric blasting caps when those conditions are met. Radios must be kept at a safe distance away from electric blasting caps and should be switched off at all times when there are detonators outside of magazines or dayboxes. Cellular telephones broadcast even when receiving calls. Be aware of your specific situation.

Please consult Institute of Manufactures of Explosives (IME) publication SLP #20 for specific guidelines on the use of radios in an explosive loading operation. IME SLP #20 can be obtained from your explosive supplier or directly from the IME at 202- 429-9280.

Dyno Nobel is making available, free of charge, a software program that couples the IME SLP #20 publication and radio frequencies calculations to determine possible hazardous situations. Contact Bob Levan or David Swagar for an email copy of the software.

PREMATURE DETONATION

The following incident has been reported to the CAGC.

Sequence of Events

On May 31st on a heli-portable program near Nordegg, Alberta a premature detonation was experienced while loading a hole. The charge detonated at approximately eight meters. Exhaustive investigation has been done and is ongoing by Alberta Workplace Health and Safety, independent industry experts and the manufacturer's experts. At this time no definite cause has been found.

Possible Cause

The only *identifiable* source of energy in the immediate area was the portable radios carried by both the Driller and Helper. No deliberate radio transmission took place during the loading procedure. The following procedures have been implemented until the investigation is complete.

Recommendations

- Before any magazine is opened the person handling the explosives will turn off his radio and hand it to his partner;
- The partner will continue to monitor his radio and position himself a minimum of *twenty feet* away from the explosives. This distance conforms to I.M.E. guidelines for a five watt radio in the seismic frequency range;
- This procedure maintains radio communication with the rest of the crew while removing the possibility of a radio transmission in close proximity of the explosives.

Please ensure this information is posted and discussed with all drillers and their helpers.