

We hope that we have answered most of your questions about blasting. We also hope that we have given you insight into the precautions taken to protect you, your family, and your property. If you have additional questions, however, do not hesitate to direct them to supervisory personnel employed by Maine Drilling and Blasting Inc. They will be happy to discuss them with you.

Sincerely,

MAINE DRILLING AND BLASTING, INC.

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The following is a list of the **WARNING WHISTLE** announcements that Maine Drilling and Blasting Inc., will be using.

- 3 whistles - blasting in 5 min.
- 2 whistles - blasting in 1 min.
- 1 whistle - blasting is complete-all clear

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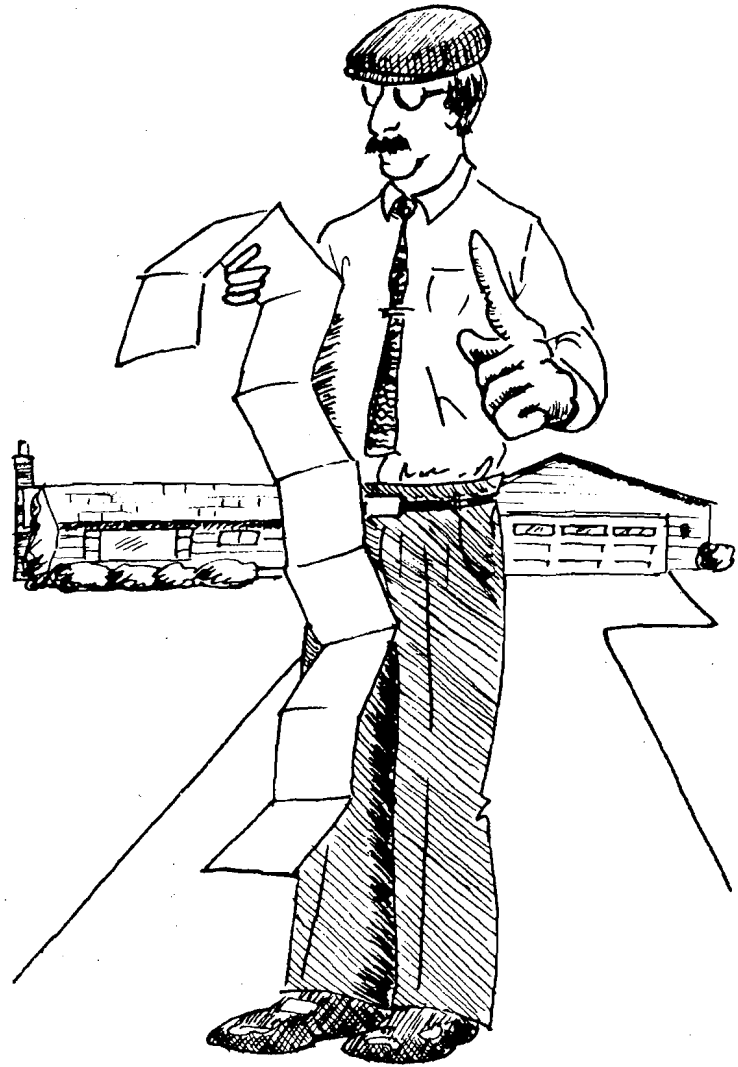
**Maine Drilling  
& Blasting** *SINCE 1966*

Maine Drilling and Blasting, Inc.  
P.O. Box 1140 - Brunswick Road  
Gardiner, ME 04345  
(207) 582-2338

Regional Offices:  
New Hampshire (603) 647-0299  
Vermont (802) 479-3341  
Connecticut (860) 242-5993

WEB: *mdandb.com*

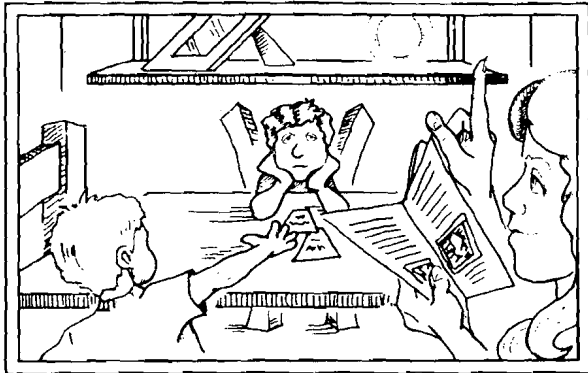
**BLASTING ?**



**I HAVE A FEW QUESTIONS...**

**Is there anything that I can do to reduce the effects of blasting on my house and on my family?**

In our experience, the start of blasting activities in a new area often generates much concern by the public, primarily due to a lack of awareness about the extensive precautions normally taken both to protect property and to reduce inconvenience. We believe that your concern can be minimized by informing yourself about what is going on.



Our specific recommendations include:

1. Learn something about the scope of the blasting by reading this or similar material and by questioning those involved with the project. Generally, they will be glad to answer any questions which you may have.
2. So that you will not be startled by the blasts, learn what the blasting schedule is and/or what warning whistles or sirens will be used.
3. Since vibration or airblast may rattle dishes and disturb pictures, results similar to those from a sonic boom or nearby thunderclap, make sure that pictures are securely hung, that dishes are stored flat, and that glassware is well away from shelf edges.

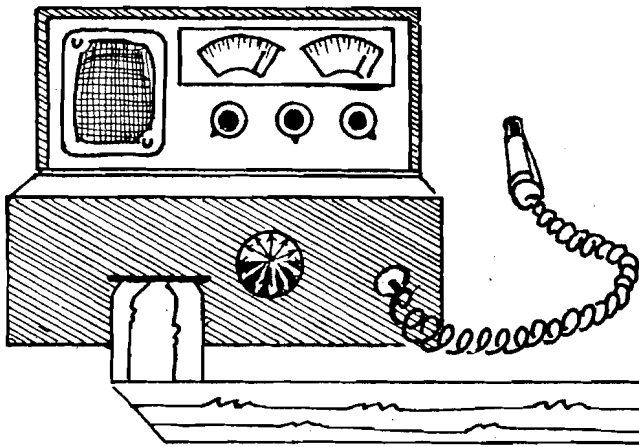
Dear Homeowner:

Here are some facts you should know about blasting and its effects:

1. The most accurate measurement of groundborne vibration is "particle velocity".
2. The human body can feel particle velocities as low as 0.03 or 0.04 inches per second. That is less than **two percent** of the vibration necessary to do any damage at all. The vibration you may feel, therefore is not an indication of possible damage to a structure.
3. Because the sound of the blast is heard at about the same time that the vibration is felt, the effect of the blast is psychologically emphasized. In most cases, if it were not for the noise accompanying it, the vibration, in all probability, would not even be noticed.
4. Concern can also result from airborne waves. In relatively quiet surroundings particularly when unexpected or forewarned, the noise can be quite startling.
5. Most people are not aware of some of the minor flaws and blemishes in their homes. For instance, cracks in plaster walls, particularly with seasonal humidity changes. These defects may go completely unnoticed until the noise and vibrations generated by the blast causes the occupant to look for some damage which he sincerely believes may have been caused by the blast.

### How can the vibration and airblast hitting my house be measured?

By knowing both the amount of explosives being detonated at any one instant and the distance between the blast and your house, experienced users of explosives can usually predict the amount of vibration and noise that will be produced on your property. However, sophisticated instruments called seismographs are often employed to measure accurately the ground motion and airblast. The seismographs used by Maine Drilling and Blasting print out the results of the blast either on a graph or a print out tape. These graphs and tapes can be analyzed by an independent consulting firm comprised of geologists, seismologists, physicists and/or mining engineers if any questions should arise.



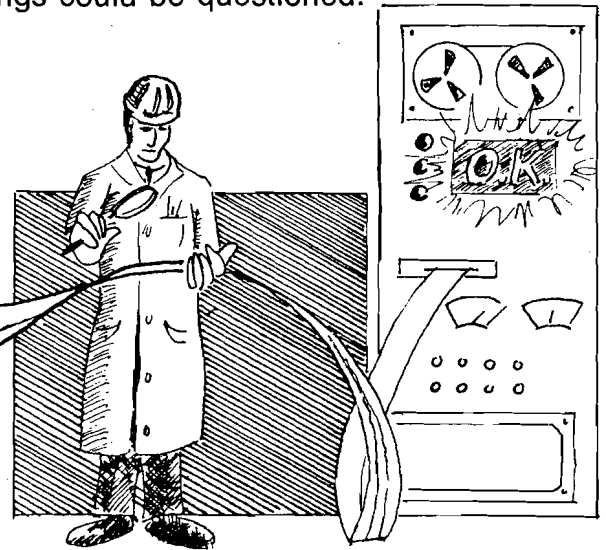
The seismograph machines used by Maine Drilling and Blasting, although expensive, can accurately represent the effects caused by the blasting operation. These results allow our blaster to maintain an effective blasting design while minimizing any inconvenience to you.

### How do I know that the seismograph is accurate?

Before a seismograph is approved for field work, it is thoroughly tested and its accuracy is verified by the supplier. Furthermore, before recording a blast, the seismograph operator performs a simple test which reveals any instrumental problems.

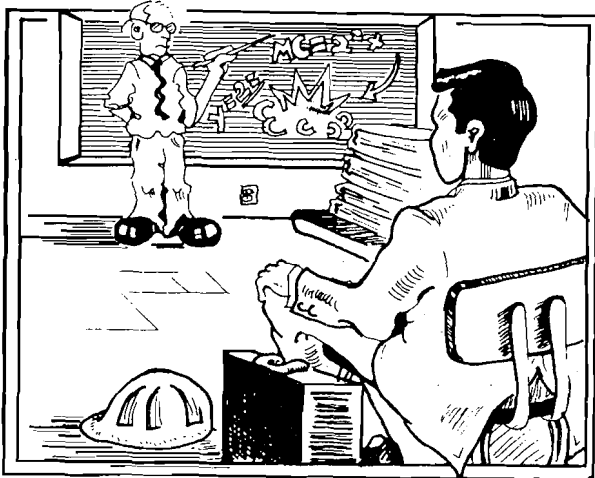
Should discrepancies appear during the analysis of the film records, the consulting company immediately notifies the blaster/seismograph operator so that the instrument can be rechecked. If the instrument is found to be operating incorrectly, it is replaced and the original instrument is repaired.

This emphasis on instrumental accuracy is important to the user. It makes little sense for a blast in order to satisfy governmental regulations or recommendations if the validity and accuracy of the seismic recordings could be questioned.



**What qualifies a person to become a blaster and is there anything they can really do to control the level of ground vibration and noise?**

Blasting is a specialized occupation which requires training in and knowledge of the storage, transport, and field application of explosives and detonating accessories. In many states, blasters are required to be licensed, a process that requires classroom instruction, written exams, and apprenticeship. It is during this training period that blasters learn how to design blasts so as to control rock breakage, the distribution of fragmented rock, and the resulting ground vibration and airblast levels.

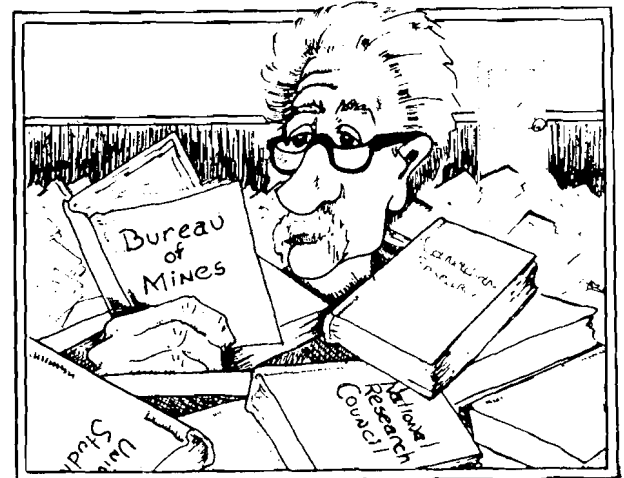


Vibration and noise levels are affected by a number of factors, many of which are under the control of the blaster. These include factors associated with the design of the blast, such as the size and depth of the holes, and the type of explosives utilized. Blasters must also contend with variables that are outside of their control including the weather, slope of the land, and certain geologic conditions.

**Who's to say what levels of ground vibration and airblast are safe for my home, my well, and the rest of my property?**

Much research has been devoted to providing answers to this question since numerous factors concerned with blast design and possible effects from blasting must be considered. Although the U. S. Bureau of Mines is this country's agency which has contributed a major part of the technical data on blast design and control, other agencies, institutions, corporations and individual investigators, both foreign and domestic, have contributed to the accumulated knowledge in this area.

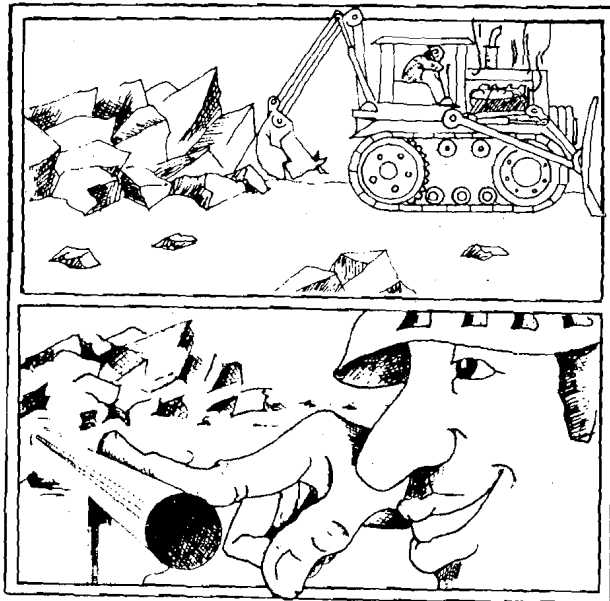
Current legal and recommended vibration limits result from this research. By adhering to these limits and by following safe blasting procedures, the blaster minimizes or eliminates risk to the surrounding area.



**Why do you have to blast the rock?  
Why can't you just dig it out with  
your equipment?**

Blasting is generally the most cost effective method for breaking rock, regardless of whether it is for construction, mining, or quarrying operations. This, in turn, helps to reduce your costs for coal, building materials, utilities, or any other product derived from rock or minerals.

Lower costs to the contractor encourages business expansion and more jobs. Moreover, by improving the efficiency of the operation, the life of the project is shortened and inconvenience to you is minimized.



**Well, if the contract needs to blast near my property, what is going to prevent him from damaging my house and my well?**

Depending upon the nature of the operation, federal, state, or local governments may impose limits on the level of vibration and noise produced by blasting. From a practical standpoint, however, most blasters prefer to "shoot" or blast so that the associated vibrations are at levels far below limits set or recommended by government agencies.

You see, it takes a large amount of energy to break rock, as you know if you have ever attempted to do so by hand. Energy in a blast which fails to contribute to rock breakage is dissipated in the form of vibration either traveling through the ground or through the air (airblast). This represents **wasted** energy. With the high cost of explosives and blasting agents, it is to the blaster's advantage to utilize as much of the energy as possible in fragmentation, thereby minimizing both ground vibration and airblast.

