

## 6. EXPLOSIVES

- *27 CFR §55.215 (Clearances around Magazines)*
- *27 CFR §55.41 (Explosives, Licenses, and Permits, Classes of Explosive Materials, Types of Storage Facilities, Locations of Storage Facilities, Construction of Storage Facilities, Quantity and Storage Restrictions, and Required Distances from Exposures)*
- *29 CFR §1926.9001 (Disposal of Explosive Containers)*

Explosives are used by wildland industrial operations, particularly construction and mining. When their use is kept in the hands of experienced personnel, their fire starting potential has proven to be low. However, in the hands of untrained or illegal users, their potential for both fire and blast damage increases significantly.

There is a rather large body of both federal and state laws governing the manufacture, sale, transportation, storage and use of explosives. It is primarily aimed at protecting the public from blast damage as well as theft and terrorism. Such laws also address illegal possession and use.

These laws are administered by law enforcement rather than fire agencies. Unfortunately communication between law enforcement and fire agencies is not always as good as would be desirable in the interest of public safety. Consequently, fire agencies are often unaware of the existence of explosives within their area of jurisdiction. When they are aware of explosives within their jurisdiction they need to notify all fire prevention, detection, and suppression personnel within the unit. For this reason, some fire agencies may require blasting permits in addition to any other required explosive permits. The permittee may also be required to notify the local fire agency of the legal location in order to notify staffed fire lookouts.

In the realm of wildland fire protection, three main problems are related to explosives:

- One is use of fuses rather than electric detonation. If properly placed, the explosives themselves will seldom ignite a fire. Cordite, primacord, or other burning fuses, however, will not only ignite any forest fuels they are laid across, but short pieces can be thrown considerable distances by the force of the explosion and cause multiple fires where they land. Therefore, all blasting in forest, range or watershed areas should be detonated electrically.
- Second is the heat of the explosive detonation itself. The rapid (instantaneous) oxidation of the explosive chemicals produces great heat in a small space and time. In contact with, or in close proximity to flammable materials, such heat will cause ignition resulting in fire. Appropriate clearance from forest fuels is mandatory.
- The third fire problem with regard to explosives is storage. This problem has two aspects. One is security. More explosives are stolen from temporary caches on construction and logging projects than from any other location. This is primarily a law enforcement problem; however, significant amounts of the stolen explosives end up being used in the wildland by untrained and inexperienced people and thus become a fire problem.

An explosive becoming exposed to wildfire is the other aspect of the storage problem. Magazines and caches are often deliberately camouflaged. Their locations are usually kept secret as protection against theft. This means that they are often in close contact with forest fuels. Unfortunately, firefighters seldom know where they are. In the interests of fire safety, all magazines and caches for explosives should have no less a clearance of flammable materials around them than that required for

structures in wildland areas (in California this is 30 feet). Several companies provide clearances up to 100 feet. If this cannot be reconciled with the security problem, some other means (e.g., insulation) should be employed to keep the radiated heat of a forest fire from detonating the explosives inside.

Regulations of the Federal Bureau of Alcohol, Tobacco and Firearms (27CFR55.41) provide for explosives licenses and permits, classes of explosive materials, types of storage facilities, location of storage facilities, construction of storage facilities, quantity and storage restrictions, and required distances from exposures. Included among these regulations is one (27CFR55.215) which states, "The area surrounding magazines, or trees (except live trees more than 10 feet tall), for not less than 25 feet in all directions." "Volatile materials are to be kept a distance of not less than 50 feet from outdoor magazines." "Living foliage which is used to stabilize the earthen covering of a magazine need not be removed". A special case of this problem which is related to use rather than storage is discussed under "Choker Setting", in the chapter on "Timber Harvesting."

With the best of control, a certain risk of fire is always associated with the use of explosives in wildland areas. Wildland fuels may be present in an unknown proximity; sparks may be struck by quartz or flint rocks, or some malfunction may occur. Therefore, it is always wise to keep a fire watchers in the area for at least one hour after detonation. Sleeper fires have been known to hang over and spring to life because of the wind, fuel moisture or some other weather change long after work crews have left an area.

## **6.1 Disposal of Explosive Containers**

Federal Regulations 29 CFR 1962.900(l) require the disposal of explosive containers by burning. Burning Permit and approved site may be necessary for large construction projects.