

# New Guidelines for Transporting Perforating Guns, as Defined by PHMSA



## WHAT YOU NEED TO KNOW TO ENSURE COMPLIANCE

Safety regulations for transporting perforating guns to and from wellsites have recently changed. Because perforating activities are some of the most dangerous activities performed on location, regulatory bodies regularly modify and update regulations, procedures and training to improve safety and reduce incidents involving perforating guns.

Understanding compliance guidelines for perforating guns is not easy. Adding to that complexity, there are three different governing bodies defining these regulations and safety procedures.

1. American Petroleum Institute (API) through [API RP 67](#) Recommended Practice for Oilfield Explosives
2. Institute of Makers of Explosives (IME) with [SLP 20](#) Safety Guide for the Prevention of Radio Frequency Radiation Hazards in the Use of Commercial Electric Detonators (Blasting Caps)
3. Pipeline and Hazardous Materials Safety Administration (PHMSA) through Hazard Materials Regulations [HMR; 49 CFR](#).



Each body controls a different aspect of perforating gun safety, either during transportation or for wellsite activities. API RP 67 is concerned with safe detonator arming distances from radio frequency (RF) signals. SLP 20 details a representative list of transmitter types and associated safe distances from the wellhead. HMR; 49 CFR regulates how perforating guns are transported from an assembly plant or storage location to the wellsite.

## HOW HAVE THE REGULATIONS CHANGED?

Because loaded perforating guns are considered explosive devices, any company that transports these guns to and from a gun-loading facility and/or wellsite must obtain approval from PHMSA. PHMSA has recently published new guidelines (HMR; 49 CFR) that restrict transporting of perforating guns that have detonators installed (capped guns), which is common practice in wireline operations.

The new guidelines state that each perforating gun that is to be transported with a detonator installed must have an interrupt system that is integral to the switch/detonator system, and it must be verified by an independent third party. Typically, the verification responsibility falls on the wireline company as the transporter and consumer of perforating guns.

With the new regulations, most perforating systems on the market today are no longer in compliance. Any company that is transporting perforating guns with prewired detonators installed or without third party-approved interrupt systems is out of compliance. PHMSA will not approve any perforating guns with detonators without a test report from an approved laboratory certifying the interrupt system.

In addition, service companies that currently have approval from PHMSA to transport armed guns are now required to surrender that approval or test the interrupt system and submit the data to PHMSA. Service companies can no longer ship loaded perforating guns with detonators attached.

PHMSA is not pushing service companies to comply with these new requirements. For the time being, they have chosen to let service providers police themselves and submit their perforating systems for new testing and certification in good faith.

### **HOW CAN I BE COMPLIANT QUICKLY?**

At DynaEnergetics, we have introduced the industry's first and only intrinsically safe detonator as part of the DynaStage™ perforating system. This system removes the risks incurred during the gun-arming process by providing an addressable and RF-safe system with immunity to high voltage and current levels. This detonator complies with the most stringent regulations from API, IME and PHMSA.

The detonator is a simple plug-and-go design with no onsite wiring required. Because the detonator and gun assembly are transported as separate units, the system complies with the new guidelines as documented in the newly revised PHMSA HMR; 49 CFR.

### **HOW DOES THIS IMPACT SAFETY?**

In a short time since its introduction, the DynaStage system has proven to be extremely reliable—reaching a 99.9% efficiency rate—while vastly improving gun safety during manufacturing and assembly, transportation, and wellsite operations. The detonator cannot be energized by AC or DC electrical power, battery, induced static electricity, lightning strike to the lubricator, or an accidental Megger test of the wireline cable. Accidents like these have been avoided by using intrinsically safe detonator technology. The detonator itself is shipped separately from the DynaStage gun modules, eliminating risks associated with shipping armed JPGs that are central to the recent PHMSA changes.

With the DynaStage system, technological advancements have delivered a perforating gun system that is easier to arm and test, safer to transport and handle, and more efficient to operate.