Glossary of Terms

Listed below are definitions of common words and terms pertaining to emergency flares and signaling devices.

Aerial Flares

These are pyrotechnic devices that are launched into the air to create an emergency signal that can be seen for miles around – the greater the elevation, the larger the sighting distance. Aerial Flares are most often used in marine applications and such signals are designed to meet or exceed the requirements established by the United States Coast Guard. Aerial Flares are also used in setting Backfires by wildfire firefighters. Orion Aerial Flares can be launched by a variety of mechanisms, including a pistol-style safety launcher (25mm or 12-gauge), a pen-style safety launcher (16.5mm) or Self-Contained (Skyblazer XLT and Orion SOLAS rockets). Certain Orion aerial flares also have parachutes attached to the signal, such that the emergency signal or illumination flare can be suspended aloft for a longer burn (up to 30 seconds).

Anti-Roll Device

Highway Flares that do not have the Wire Stand attachment can roll if placed on a hill or uneven terrain. To prevent such rolling, each Orion Highway Flare has an anti-roll device included as part of the Plastic Cap. After the Highway Flare has been ignited, the lid should be put back onto the Plastic Cap and the Plastic Cap should be pushed onto the bottom of the Highway Flare. The tab that protrudes from the lid of the Plastic Cap will prevent the Highway Flare from rolling. The Anti-Roll Device is easy to use and effective to prevent an ignited Highway Flare from rolling off the roadway into combustible grass or other roadside debris.

Backfire

A Backfire is the deliberate use of fire in wildfire suppression. It is a tactic whereby a smaller fire is ignited along a control line ahead of the main fire. The strategy is to consume fuel loads ahead of the wildfire in a controlled manner, denying the wildfire of fuel so it can be weakened and more readily extinguished. Backfire Torches manufactured by Orion are lighter, cheaper and more easily transported than drip torches. Orion Backfire Torches are often used by wildfire fighters to set Backfires.

Backfire Torch

These are special flares designed to produce a long, hot flame and which can be connected end-to-end to create a “reaching pole” used for setting Backfires. The Backfire Torches manufactured by Orion typically burn for 10 minutes each and in excess of 1,400 degrees Fahrenheit.

Bonneted Cap

This is a feature Orion offers on Railroad Flares and Backfire Torches. A Bonneted Cap is a cardboard enclosure which is wrapped with paper to protect and encapsulate the ignition end of the Flare. To ignite a Flare with a Bonneted Cap, a cloth tear-strip is pulled upwards to allow the cap to be removed from the Flare, also exposing the red phosphorus coating on the flare cap. The exposed cardboard cap is then removed from the body of the Flare. The cardboard cap with red phosphorus exposed is then pulled across the ignition button of the Flare to cause ignition.

Emergency Flare

This is a term used generally to describe a Highway Flare, Railroad Flare, Road Flare, Safety Flare, or Pyrotechnic Flare. All such devices are Flares.

Flare

A Flare is a pyrotechnic device that produces a brilliant light as it burns and is most commonly used as an emergency warning signal or an illumination device. Flares also burn very hot and are therefore also commonly used to ignite combustible materials. Orion sells many types of Flares for differing applications, including Aerial flares, Hand-Held Flares and Smoke Flares.

Fusee

The term Fusee is interchangeable with Railroad Flare in the railroad industry.

Hand-Held Flare

This is a term used to generally describe any type of Flare held in your hand during operation of the Flare (as opposed to Aerial Flares or Floating Smoke Flares). Hand-Held Flares include Highway Flares, Railroad Flares, Safety Flares, Road Flares, Emergency Flares, Marine Flares and certain Smoke Flares.

Highway Flare

Also known as a Safety Flare, Road Flare, Emergency Flare or Pyrotechnic Flare, the Highway Flare is a Flare typically used to identify an emergency situation or danger. Highway Flares have been proven to slow traffic and push traffic away from the emergency scene, thereby creating a “safety zone”. Highway Flares manufactured by Orion can have a burn duration (i.e., light production) of 5, 10, 15, 20 or 30 minutes. Highway Flares can have a number of options added: Waxed Flares are available to prevent environmental degradation; Wire Stand or Paper Stand Highway Flares can be used to elevate the Highway Flare and increase sighting distances; and Spikes can be added in lieu of Wire Stand or Paper Stand to elevate the Flare, prevent rolling and allow for unique deployment situations (e.g. on railroad tracks or in snow/ice).

Marine Flares

These are pyrotechnic devices that are designed to meet United States Coast Guard requirements for emergency distress signaling. Marine Flares include Hand-Held Flares, Aerial Flares and Smoke Flares (both floating and held-held varieties).

Paper Stand

This is a device offered by Orion as an alternative to Wire Stands or Spikes to elevate Highway Flares off the roadway (increasing sighting distances and therefore increasing the visibility of the signal). The typical Paper Stand is a square shaped piece of rigid paper with a hole in the lower portion of the square. The Highway Flare is inserted through the hole (bottom end first) such that the stand serves to elevate the ignition end of the Highway Flare.

Plastic Cap

This is a feature Orion offers on Highway and Railroad Flares. As the name implies, it is a plastic cap that encloses the ignition end of the Flare. Each Plastic Cap has a removable lid which covers a red phosphorus sticker. To ignite the Flare, the lid is removed from the Plastic Cap and then the Plastic Cap is removed from the body of the Flare. The Plastic Cap with red phosphorus sticker exposed is then pulled across the ignition button of the Flare to activate the Flare.

Pyrotechnics

This is the science of materials capable of undergoing self-contained and self-sustained chemical reactions for the production of heat, light, gas, smoke and sound. The pyrotechnics manufactured by Orion are primarily focused on the production of light (Highway Flares, Railroad Flares, Hand-Held Marine Flares, Aerial Flares), smoke (Marine Hand-Held and floating Smoke Flares, wilderness smoke flares) and sound (Aerial Flares).

Pyrotechnic Flare

This is term used generally to describe a Highway Flare, Railroad Flare, Safety Flare, Road Flare, Emergency Flare, Pyrotechnic Flare, Aerial Flare or Smoke Flare.

Railroad Flare

Also known as a Fusee, Safety Flare, Railway Flare or Emergency Flare, a railroad Flare is a Flare used to signal different circumstances in the railroad environment (e.g. hazard ahead, slow moving train, backing up, etc.). Railroad Flares can be Bonneted or Plastic Cap and some have handles for manual signaling purposes.

Road Flare

This is a term used generally to describe a Highway Flare, Safety Flare, Emergency Flare, Incendiary Flare or Pyrotechnic Flare. As the name implies, these are Flares used primarily at emergency scenes along roadways to create a “safety zone” around accidents, disabled vehicles, unexpected roadway conditions or emergency situations.

Safety Flare

This is a term used generally to describe a Highway Flare, Railroad Flare, Road Flare, Emergency Flare or Pyrotechnic Flare.

Self-Contained

These are Aerial Flares in which the launch platform is designed into the device (i.e., no external apparatus like a safety launcher is required). The Skyblazer XLT and SOLAS Rocket offered by Orion are Self-Contained such that no additional apparatus is needed to launch the signal into the air. The Skyblazer XLT employs a pull-wire friction igniter at the base of the launch tube assembly. Pulling the friction wire initiates combustion, creating adequate backpressure to expel the pyrotechnic signal into the air. The Orion SOLAS rocket has a cantilever firing apparatus, which when activated, ignites a rocket motor which propels the signal into the air. Self-Contained Aerial Flares have the advantage of not requiring any separate devices to launch the signal into the air (you have everything you need in a single device). The disadvantage of Self-Contained Aerial Flares is that they are one-time use devices and the user cannot purchase lower cost replacement signals for multiple firings (as is the case with the Orion pistol-style or pen-style launchers).

Smoke Flare

These are pyrotechnic devices that come in two basic varieties: hand-held or floating. Unlike a common flare, instead of producing light as a byproduct of the combustion process, these flares produce copious amounts or colored smoke that can be seen in daylight conditions for long distances. Smoke flares can be used on land or sea as an emergency distress signal (e.g., for lost boaters or hikers) or as a visible wind gauge (for direction and speed in helicopter rescue or wildfire firefighting situations). Orion smoke flares produce orange smoke.

Spikes

This is a feature Orion offers on Highway Flares and Railroad Flares. The spike (a nail) protrudes out of the bottom of the Flare body. The spike can be driven into a variety of surfaces to fix the Flare in place. Spikes can be utilized in lieu of Wire Stand or Paper Stand to elevate the Flare, prevent rolling and allow for unique deployment situations (e.g. on railroad tracks or in snow/ice).

Waxed Flare

This is a Highway Flare or a Railroad Flare that has a thin wax coating to protect the body of the Flare from environmental conditions. With a Bonneted Flare, the wax coating is applied to the bonnet cap as well as the Flare body.

Wire Stand

This is a u-shaped piece of malleable wire that is affixed to a Highway Flare by a collar made from low ash red paper. To deploy the Wire Stand, the wings are bent down perpendicular to the flare body to create a stand which allows the Highway Flare to sit upright (i.e., not lay on the roadway). Wire stands are useful in preventing Highway Flares from laying in puddles, mud or snow and increasing sightlines (i.e., increasing visibility from longer distances). Note: the Wire Stand should be deployed (bent into position) before ignition of the Flare.