

# Pyrotechnic decoys

Pyrotechnic decoys are used on military aircraft, ships, land vehicles and other assets which must be protected against enemy threats. TNO has unique expertise in the field of IR flare technology, (multi spectral) smoke and other types of pyrotechnic decoys. The know-how of performance, safety, quality -and environmentally aspects of pyrotechnics make TNO a very dedicated partner to support the Ministry of Defense and the Defense Industry.

## Technology

One of the most well known pyrotechnic decoys is the IR flare used for the protection of military aircraft. TNO has essential know-how on many types of flares, and flare performance. TNO supports the Dutch Ministry of Defence in this area. TNO is also researching smoke products to protect military assets on land and sea.

TNO continuously participates in international research -and user groups to keep the knowledge on pyrotechnic decoy systems and the application by their users at the highest level.

## Services on pyrotechnic decoys

- In general, TNO can give advise on flares; (patented) and smoke compositions;



*IR decoy flare ejected by an F-16.*

- Testing of flare infra red emission, flare ejection and ignition;
- Flare life time and health monitoring;
- Support on flare-to-plane contact, out gassing and post fire conductivity;
- Transmission testing of smokes.

## Facilities

- Fourier transform Infrared Spectrometer (FTIR);
- Multi spectral Radiometer Transmissometer (MSRT);
- Pyrotechnic testing tunnel;
- High-speed video equipment;
- Equipment to characterize impulse cartridges (measure pressure/time traces).



*Static tests of an IR-decoy flare at TNO.*



*Examples of pyrotechnic smoke decoys.*



**Defence, Security and Safety**

'TNO Defence, Security and Safety' is the title under which TNO operates as a strategic partner for the Dutch Ministry of Defence and makes innovative contributions to enhancing the security of the Netherlands both at home and abroad. We also use our accumulated knowledge for foreign governments and for defence-related industries.

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