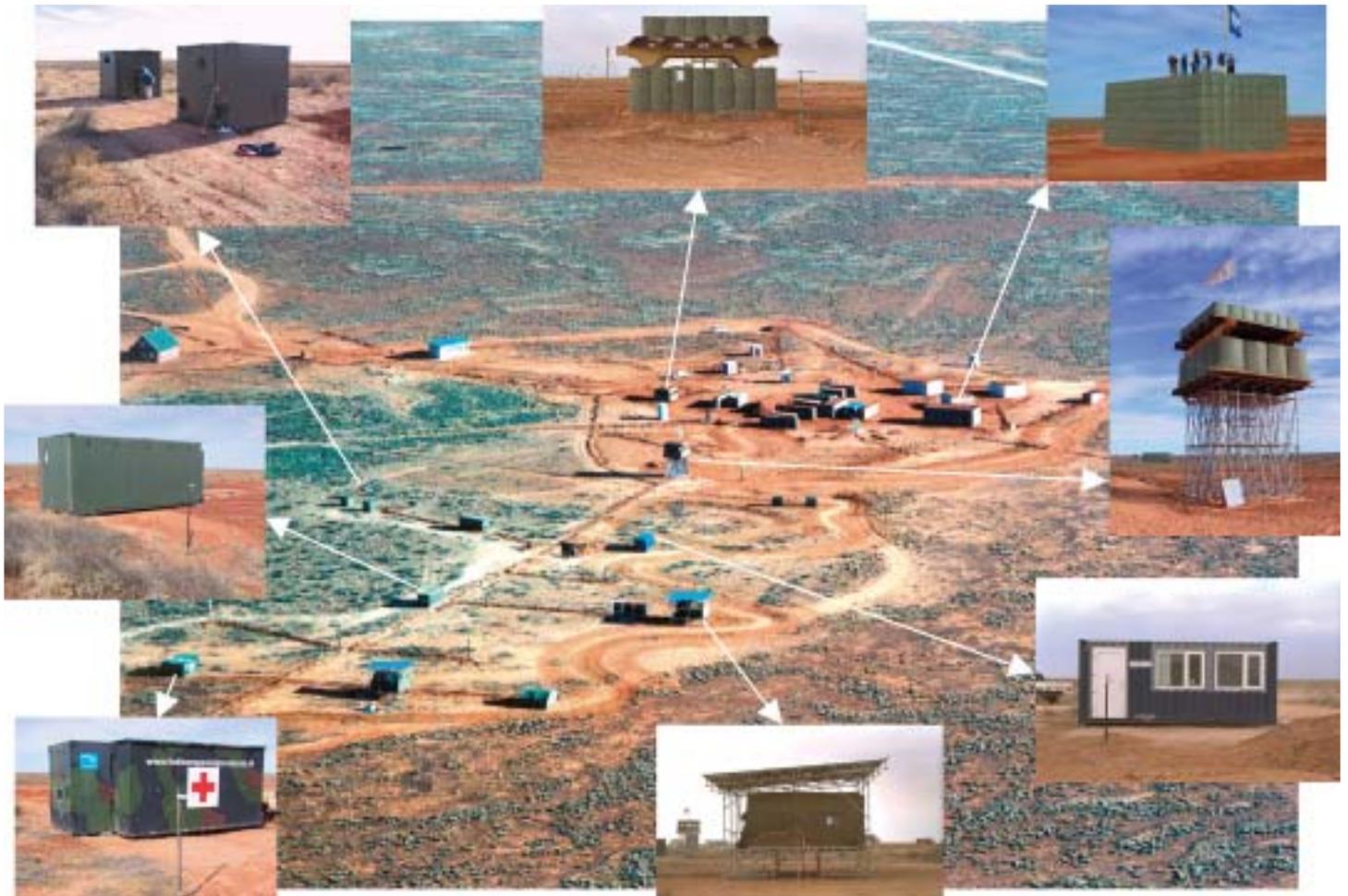


Safe Field Storage of Ammunition



Aim:

- Develop guidelines for safe operational storage of ammunition and explosives in Out-of-Area conditions;
- Gain better understanding of sympathetic detonation phenomena and blast vulnerability of troops in military field structures.

Problem description:

- Temporary storage high risk as compared with permanent storage (enemy fire, storage conditions, handling, small perimeter);
- Balance between explosives safety principles and operational demands.



Research programme:

- Effects based approach;
- Fundamental research;
 - Theoretical;
 - Numerical simulation explosion phenomena and structural response.
- Validation Trials:
 - Participation in UK-Australian Defense Trials;
 - 40-tonnes trial (1999), 27-tonnes and 5-tonnes trial (2002), 5-tonnes trials (2004);
 - Woomera, South Australia;
 - Measurement of blast/fragment loading and structural response.



Results:

- New optimized Quantity Distances have been developed for;
 - Preventing sympathetic detonations;
 - Protecting troops and materiel.

Future:

- Risk based approach;
- Joint NATO effort.



TNO Defence, Security and Safety

Located at Rijswijk
Lange Kleiweg 37
P.O. Box 45
2280 AA Rijswijk

T +31 15 284 2842
F +31 15 284 3991

www.tno.nl

Ph. van Dongen,
T +31 15 284 3396
E dongen@pml.tno.nl

Dr. L.H.J. Absil
T +31 15 284 3395
E absil@pml.tno.nl