

## THE EDD CAPABILITY

### **INTRODUCTION:**

The Explosive Detection Dog (EDD) capability is a proven and effective aid to search operations, available for use within the Combat Engineer Regiment (CER). The EDD team (EDDT) is compact, mobile and can work in a variety of environments, including confined spaces and difficult terrain. It will reduce the manpower required for many operations and increase the speed of searches. However, teams should only be employed after a careful appreciation has been made of the operational situation, climatic conditions and terrain.

### **ROLE:**

The role of an EDD team is to provide EDD support to the ADF and civilian agencies, in the detection of IEDs, explosives, ammunition and weapons caches during proactive and reactive search operations. EDDs are not to be employed as mine dogs, guard dogs or mascots.

### **CAPABILITIES:**

1. They can detect a variety of explosives, weapons & ammunition caches
2. They can conduct 4 types of search (building, area, route & vehicle)
3. They work off lead so they can cover a greater area & provide "stand-off"
4. They can work during the day and at night
5. They can be used where metal detectors are of little use (rubbish tips)
6. They can travel in all forms of transport.

### **LIMITATIONS:**

1. They have a reduced ability to detect target odours above 1.2m in height
2. They have a varied buried hide capability, depending on training & the environmental conditions
3. They cannot detect target odours on personnel, unless trained to do so (SOER)
4. They are in danger of initiating an explosive device, especially tripwire devices
5. Their work performance may be affected by adverse weather conditions
6. Their work performance may be affected by excessive distracting elements within or close to the search area (animals etc)
7. They may be reluctant to search areas that are harmful to themselves (glass and chemicals). Dog boots are used to mitigate this.

### **WORKING TIMES:**

Planning factor: 30 – 40 minutes, with a 5-10 min break, for a total of 3 - 4 hours per day.

### **FACTORS EFFECTING SCENT:**

Environmental factors have a significant effect when searching for explosives, therefore the following effects applies;

- a. **Temperature.** Cold temperatures will increase the harness time of the EDD, but make scent detection more difficult due to the condensing and freezing of the odour pool. Hot temperatures are more favourable for scenting, however harness time is considerably decreased. Dogs are more efficient at generating a high body temperature in cold weather than reducing body temperature in hot weather.

- b. **Humidity.** If the soil surface and the air are extremely dry, this will greatly reduce the transportation of target molecules from the soil to the air, making detection more difficult. Humid conditions will have the opposite effect.
- c. **Soil type.** Hot and wet soil provides optimal vapour detection conditions. Snow can restrict scent although it is known to hold the scent well. When snow is melting, it may release encapsulated scent, which may make vapour detection favourable. Sand is extremely difficult because it is generally dry and has no air pockets.
- d. **Wind speed and direction.** The EDD must be searched into the wind whenever possible. Strong wind speeds (above 18m/s) may reduce the ability for the dog to indicate accurately.
- e. **Rain.** A heavy downpour will force explosive odours deeper within the soil. A short light rain will have minimal impact. Sunshine will cause evaporation and enhance detection.
- f. **Vegetation.** Dense vegetation is a limitation, due to the dog and handler having restricted access and visibility to the search area.
- g. **Environmental contamination.** Smoke, burning materials, explosive residue and pollution may disturb the dog and prevent it from working effectively. EDD's can be employed post blast and post assault if trained to do so.
- h. **Soak Time.** The longer an explosive is placed in the environment, the larger the developing odour pool will be, enhancing detection.
- i. **Container type.** Explosive substances are released into the soil or atmosphere at different rates due to differences in the construction and design of the exterior casing.
- j. **Explosive size.** The amount of explosive material that is present, and its surface area, will affect the release of explosive molecules into the air.
- k. **Explosive type.** Some explosives due to their chemical nature are more easily detectable than others.
- l. **Explosive age.** The scent picture produced by any explosive will start to degrade when buried and vary with time.
- m. **Explosive depth.** A shallow hide (less than 50mm) will be more easily detected by the EDD than a deeper hide.

#### CONSIDERATIONS:

1. EDD's do not verify suspicious items
2. Allow EDD team's first undisturbed access to the search site when possible
3. EDD's must be allocated time for continuation training and rest
4. EDDH do not carry the ECM when working a dog
5. EDD teams require a No 2 as a cover-man and
6. Do not pat or distract the EDD when they are working.

## CONCLUSION:

- Dogs are not infallible and are subject to burn-out & off days,
- Searches should remain vigilant and not focus on the EDD when searching,
- Do not use EDD's indiscriminately and
- Include the handler during the planning phase for advice on the EDD capability.

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