



TECHNICAL GUIDANCE MATERIAL

for

Aviation Security Explosive Detection Dog Team (EDDT) Team Certification

SUBJECT: AVIATION SECURITY EXPLOSIVE DETECTION DOGS (EDD) TEAM CERTIFICATION

EFFECTIVE DATE: 21 JULY 2025

1. APPLICABILITY

This technical guidance material applies to Authorized Officers, Aviation Security Canine Teams, Canine/EDD Trainers and Assessors when preparing or conducting assessments for purposes of SACAA certification.

2. PURPOSE

- 2.1 The main purpose of this document is to guide the industry on certification criteria utilised by SACAA to assess the canine's ability to detect explosive odours and to improve the canine team's proficiency in the detection of explosives. The team's ability to locate explosives and traces of explosives
- 2.2 This TGM is to provide guidance on the established certification criteria and process for all Explosive Dog Detection Team (EDDT) and trainers providing service to civil aviation, as required by SACAR Part 110 to enable EDD screening personnel to be certified

3. REQUIREMENTS

It is a requirement under the South African Civil Aviation Regulations (SACARs) Part 110.02 and South African Civil Aviation Technical Standard (SACATS) 110.02.1, for screeners to undergo assessment for certification. The assessments are to be conducted with a view to achieving the outcomes outlined in SACAR 110. This guideline will detail how best to ensure that EDDT assessments are conducted in a manner that achieves the desired outcome.

4. REFERENCE:

- i. ICAO Annex 17
- ii. South African Civil Aviation Regulations (SACARs) Part 110
- iii. South African Civil Aviation Technical Standards (SACATS) Part 110

5. LIST OF DEFINITIONS AND ABBREVIATIONS USED IN THIS DOCUMENT

5.1. Definitions

| TERMINOLOGY | DESCRIPTION |
|-----------------------|--|
| "Designated Examiner" | An authorised person, designated as such, approved to conduct skills tests and proficiency checks on persons other than pilots in terms of the delegation referred to section 88 of the act. |

5.2. Abbreviations

| ABBREVIATION | MEANING |
|--------------|--|
| ASSO | Aviation Security Screening Organisation |
| AVSEC | Aviation Security |
| C4 | Cyclotrimethylenetrinitramine Explosive |
| DE | Designated Examiner |
| EDD | Explosive Detection Dog |
| EDDT | Explosive Detection Dog Team |
| FREDDs | Free Running Explosive Detection Dogs |
| K9 | Canine |
| KDE | Canine Designated Examiner |
| NASP | National Civil Aviation Security Program |
| NQF | National Qualifications Framework |
| OJT | On-The-Job-Training |
| PENT | Pentaerythritol tetranitrate Explosive |
| SACAR | South African Civil Aviation Regulation |
| SACATS | South African Civil Aviation Technical Standards |
| TGM | Technical Guidance Material |
| TNT | Trinitrotoluene Explosive |
| TSO | Testing Standards Officer |

6. GENERAL

- 6.1 This certification criteria will determine the proficiency and reliability of EDD teams in the detection of explosives. All EDD teams must be tested on all basic explosive odours. It is recommended that authentic explosives to be used.
- 6.2 SACAA authorised officer will have the responsibility of assessing and certifying AVSEC EDD team under the testing rules set forth as per Part 110 technical standards.
- 6.3 The authorised officer shall conduct the necessary logistical, administrative and equipment required to conduct the examination. These shall include but not limited to:
- 6.3.1 Confirm availability of examination venue.
- 6.3.2 Request examination and testing tools.
- 6.3.3 EDD team assessment will be conducted using reliable, controlled samples of live explosives detailed in the substance list of the assessment test.
- 6.3.4 The search areas for the assessment will be at the discretion of the EDD assessor and will be decided in consultation with the Aviation Security Screening Organisation (ASSO).
- 6.3.5 Ensure that all candidates scheduled for initial examinations have completed OJT as required by SACAR 110.
- 6.3.6 Ensure that all candidates scheduled for recertification are in possession of a valid screener certification as required by SACAR 110.

- 6.3.7 Ensure that the candidate has passed the relevant theoretical knowledge examination with the Authority before commencing the practical certification examinations.
- 6.3.8 Verify the EDD team by verifying dog chip, to ensure that the handler uses their assigned EDD.
- 6.3.9 Conduct the practical K9 Examination as planned.
- 6.3.10 Conduct debriefing with candidates that were deemed not yet competent, outlining areas that require attention and document the debriefing minutes
- 6.3.11 In the event of a failure, the test form must contain notes on the de-briefing done and the candidate must acknowledge such notes.
- 6.3.12 Competency test forms where the tests resulted in a failure must be forwarded to the TSO for record-keeping
- 6.3.13 Ensure that assessment and certification examination results on every assessment and certification are submitted to TSO no later than 24 hours from the date conducted, in the format that may be requested by the Director.
- 6.3.14 Always maintain confidentiality.

7. **METHODOLOGY:**

- 7.1 The assessment of EDD teams involves evaluating both the dog's detection capabilities and the handler's proficiency in managing the dog during searches.
- 7.2 A comprehensive assessment combines **controlled testing, real-world simulations, blind evaluations, and handler proficiency checks**. Regular re-certification ensures that EDD teams maintain high operational standards.
- 7.3 Various methodologies are used to ensure reliability, accuracy, and operational readiness. Below are the key methodologies for conducting such assessments:
- 7.4 Standardized Testing Protocols
 - 7.4.1 Controlled Environment Testing:
 - a) Conducted in a lab or training facility with known quantities of explosive materials.
 - b) Measures detection accuracy, false positives, and false negatives.
 - 7.4.2 Operational Environment Testing:
 - a) Simulates real-world scenarios (e.g., airports, cargo warehouse, vehicles).
 - b) Evaluates the team's ability to work under distractions (noise, crowds, weather).
 - 7.4.3 Blind & Double-Blind Testing
 - a) Single-Blind Tests: The handler is unaware of the target locations, but the assessor knows.
 - b) Double-Blind Tests: Neither the handler nor the assessor knows the target locations (third party controls placement).
 - c) Reduces bias and ensures objective evaluation.
 - 7.4.4 Odor Recognition & Discrimination Testing
 - a) Explosive Varieties: The dog must detect a range of explosives (e.g., TNT, C4, PETN, ammonium nitrate).
 - b) Distractor Odors: Tests the dog's ability to ignore non-target scents (food, drugs, chemicals).
 - 7.4.5 Search Patterns & Handler Skills Evaluation

- a) Systematic Search Assessment^{**}: Evaluates if the dog covers the search area efficiently.
- b) Handler Commands & Reinforcement: Assesses the handler's ability to direct the dog and interpret alerts.

7.4.6 Certification & Re-Certification Programs^{**}

- a) Initial Certification: Tests basic detection proficiency.
- b) Periodic Re-Certification: Ensures sustained performance (every 12 months).

7.5 Free Running Explosive Dog Detection Dogs (FREDDS)

7.5.1 Application of FREDDS requires that the EDDT conduct a search for explosives where the cargo or item is stored or prepared (e.g. a cargo warehouse and an airport terminal). The dog should be trained to indicate where in the cargo consignment or item it detects the scent of an explosive odour it was trained to recognize. The indication needs to be as accurate as possible to determine which consignment (s) or item should go for secondary screening.

The manner which cargo is presented to the EDD team and the screening environment where the EDD team is operating should not impair the performance of the team.

7.5.2 The authorized officer should assess whether FREDDs can be suitable for cargo screening before approving the conduct of FREDDs operations.

7.5.3 A re-assessment by the screening organization conducting EDD screening should be undertaken where material changes to the manner which cargo is presented, or the screening environment have taken place.

7.5.4 The following is a list of factors that will be considered when assessing whether the application of FREDDs is suitable:

- a. **Cargo placement** —The maximum limit in terms of height shall be 180cm from the hinds of the dog for the shipment to be screened, particularly where larger shipments are concerned. No shipment shall be placed against the wall or obstruction of any kind during screening
- b. **Size of consignments** —cargo consignments come in different configurations, such as in homogenized consolidated shipments, loose cargo at piece level, built-up pallets and unit load devices (ULDs). For larger consignments, the EDD team may need to carry out a series of searches, each covering a different part of the consignment to ensure that screening is thorough and covers all sections of the cargo, including the center. The maximum depth each search can cover to ensure EDD teams conduct screening thoroughly shall not exceed 100cm.
- c. **Soak time** —the longer an explosive substance dwells in an environment, the larger the developing odour pool will be, thus enhancing detection. Different explosives have different vapor pressures, and dependent on explosive quantity, the size and type of container, the time required for explosive vapours to become effectively detectable by EDD, or 'soak time', may differ. The minimum soak time for cargo shall be 45 minutes, beginning with the placing of the hides, before an EDD can screen the cargo.

8. EXPLOSIVE ODOR RECOGNITION ASSESSMENT:

8.1 The odour recognition assessment consists of 16 boxes. Inside each box there should be a smaller container holding the aids or distractor or blank. It should have 10cm diameter holes on each lid. Selection and quantity of explosives used should be from an approved list of basic odours list. The containers can be set up in a straight line or a large circle or cross setup. We are giving the teams flexibility in working without changing the way the canine teams have been trained.

8.2 The EDD assessment will be conducted using reliable, controlled verified samples of live explosives detailed in substance list. The Authorised officer or Assessor will decide in consultation with the screening organization the evaluation area.

- 8.3 The search area:
- a. Each assigned area may be comprised of four rows of items (boxes/cones/bags/containers).
 - b. Each area shall contain a minimum of 3 hides of explosives substances according to the substance list in the guidelines for assessment test.
 - c. The EDD teams shall be assessed on pipes or boxes, baggage and cargo.
- 8.3.1 A test area may contain a blank row.
- 8.4 A systematic search technique shall be observed.
- 8.5 The handler must await confirmation from the authorized officer before rewarding the dog.
- 8.6 Only one false indication is allowed.
- 8.7 Search items will be presented by an authorized officer; the dog handler shall have no knowledge of how many hides are to be found and he/she is instructed-in case of indication to continue to search the remaining area.
- 8.8 Explosive aids may not be pinpointed to source by the dog due to height, wind current or placement of the aid. In this event the authorized officer shall advise the handler by stating "Not at source" and thereafter the handler shall conduct a follow-up to determine the source no further than one meter in either direction of the shipment.
- 8.9 Reasonable judgement should be considered to all changes in behavior by the dog towards explosive odour.
- 8.10 The authorized officer shall conduct an out brief with each EDDT assessed and provide feedback on areas of excellence or improvement.
- 8.11 8.11 Disqualification Criteria for EDD teams shall include but not limited to:
- a) < 80% detection rate (e.g., misses more than 2 out of 10 hides).
 - b) Indiscriminate alerting behavior (dog cannot differentiate explosives from distractors like food or solvents).
 - c) Ineffective search patterns (misses large areas, lacks systematic coverage).
 - d) Over-handling the dog (constantly correcting, disrupting the dog's focus).
 - e) Failure to recognize the dog's alert (missing clear indications of a find).
 - f) Consistent misses on specific explosive types (e.g., fails to detect PETN repeatedly).
 - g) The EDD shows uncontrolled submissive or aggressive behavior.
 - h) Misconduct by a handler may result in disqualification.
 - i) Physical punishing of the EDD.
 - j) The EDD handler does not follow the instructions of the authorized officer.
 - k) The EDD engages in uncontrolled barking.
 - l) Spike collars or e-collars are used.
 - m) Handler fails to present (guide) the EDD to search the productive areas.

9. REQUIREMENTS

- 9.1 The checklist Checklist should reflect the following:
- a) Date and time.

- b) EDDT names/particulars EDD chip number.
- c) Area of Testing.
- d) Type of screening.
- e) Scent list Comments.

9.2 The EDD team must have the following:

- a) Training records for both handler and EDD.
- b) Immunization records for the EDD.
- c) Initial and maintenance training (i.e., records of EDD periodic exposure to various explosive scents).
- d) Current (6 months) assessment report from assessment Centre.

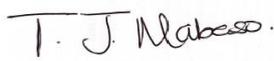
10. CERTIFICATION

- 10.1 A final report and certification letter will be issued detailing the EDD handler, ID number, EDD name and chip number as well as type and method of screening.
- 10.2 The certification is renewable every twelve months.
- 10.3 It is the responsibility of the Aviation Security Screening Organization (ASSO) to submit an application 60 days prior to expiry to ensure that a certification assessment for an EDDT is arranged in time to renew the certification.

11. QUERIES

- 11.1 For any Any queries or requests for further guidance as a result of this TGM should be sent to:
 - a) The Manager, AVSEC Training E-mail address: YendeP@caa.co.za
 - b) The Manager, AVSEC Personnel Certification E-mail address: mabasoj@caa.co.za

12. AUTHORISATION

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|---|------------------------------|--------------------------|
| DEVELOPED BY: | | |
|  | JOYCE MABASO | 15 SEPTEMBER 2025 |
| SIGNATURE OF M: PC | NAME IN BLOCK LETTERS | DATE |
| REVIEWED & VALIDATED BY: | | |
| | MAKHOSUZANA NKABITI | 15 SEPTEMBER 2025 |
| SIGNATURE OF SM: TC | NAME IN BLOCK LETTERS | DATE |
| APPROVED BY: | | |
| | JASON TSHABALALA | 15 SEPTEMBER 2025 |
| SIGNATURE OF E: AVSEC | NAME IN BLOCK LETTERS | DATE |

END