

~~SECRET~~
NORTH ATLANTIC TREATY ORGANIZATION
ORGANISATION DU TRAITE DE L'ATLANTIQUE NORD

MILITARY AGENCY FOR STANDARDIZATION (MAS)
BUREAU MILITAIRE DE STANDARDISATION (BMS)

1110 BRUSSELS

MAS/196-LAND/4357
6 August 1991

To : See MAS Distribution List No. 2

Subject : STANAG 4357 LAND (EDITION 1) - ALLIED VEHICLE TESTING
PUBLICATIONS (AVTPs)

Reference : AC/225-D/1117 dated 7 December 1989

Enclosure : STANAG 4357 (Edition 1)

1. The enclosed NATO Standardization Agreement which has been ratified by nations as reflected in page iii is promulgated herewith.
2. The reference listed above is to be destroyed in accordance with local document destruction procedures.
3. AAP-4 should be amended to reflect the latest status of the STANAG.

ACTION BY NATIONAL STAFFS

4. National staffs are requested to examine page iii of the STANAG and if they have not already done so, to advise the Defence Support Division, IS, through their national delegation as appropriate of their intention regarding its ratification and implementation.



E. STAI
Major-General, NOAF
Chairman, MAS

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STANAG 4357)
(Edition 1)

NORTH ATLANTIC TREATY ORGANIZATION
(NATO)



MILITARY AGENCY FOR STANDARDIZATION
(MAS)

STANDARDIZATION AGREEMENT

SUBJECT: ALLIED VEHICLE TESTING PUBLICATIONS (AVTPs)

Promulgated on 6 August 1991

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Major-General, NOAF
Chairman, MAS

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STANAG 4357

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RECORD OF AMENDMENTS

No.	Reference/date of amendment	Date entered	Signature
1		10/07/0	D E

EXPLANATORY NOTES

AGREEMENT

1. This NATO Standardization Agreement (STANAG) is promulgated by the Chairman MAS under the authority vested in him by the NATO Military Committee.
2. No departure may be made from the agreement without consultation with the tasking authority. Nations may propose changes at any time to the tasking authority where they will be processed in the same manner as the original agreement.
3. Ratifying nations have agreed that national orders, manuals and instructions implementing this STANAG will include a reference to the STANAG number for purposes of identification.

DEFINITIONS

4. Ratification is "The declaration by which a nation formally accepts the content of this Standardization Agreement".
5. Implementation is "The fulfilment by a nation of its obligations under this Standardization Agreement".
6. Reservation is "The stated qualification by a nation which describes that part of this Standardization Agreement which it cannot implement or can implement only with limitations".

RATIFICATION, IMPLEMENTATION AND RESERVATIONS

7. Page iii gives the details of ratification and implementation of this agreement. If no details are shown it signifies that the nation has not yet notified the tasking authority of its intentions. Page iv (and subsequent) gives details of reservations and proprietary rights that have been stated.

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Agreed English/French Texts

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(Edition 1)

NAVY/ARMY/AIR

NATO STANDARDIZATION AGREEMENT
(STANAG)

ALLIED VEHICLE TESTING PUBLICATIONS (AVTPs)

Annexes:

- A. Indication of the Allied Vehicle Testing Publications
- B. Indication of Trial Series
- C. Criteria for the application of the different Allied Vehicle Testing Publications
- D. List of current Allied Vehicle Testing Publications (to be published later)
- E. Example of an Allied Vehicle Testing Publication

Related documents:

- STANAG 4107, Mutual Acceptance of Government Quality Assurance
- STANAG 4108, Allied Quality Assurance Publications (AQAPs)
- STANAG 4358, Mutual Acceptance of Government Vehicle Test and Evaluation (not yet promulgated)
- WEU Agreement 4FT6

AIM

1. The aim of this agreement is to register national acceptance of Allied Vehicle Testing Publications (AVTPs).

AGREEMENT

2. Participating nations agree to:
 - (a) encourage suppliers of military vehicles within their nations to use the relevant AVTPs in research, development and testing to assure delivery of vehicles meeting the performance specifications and characteristics in accordance with the procedures of the AVTPs listed in Annex D of this document.

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(Edition 1)

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- (b) require incorporation of the appropriate AVTPs into contracts for vehicle procurement, as appropriate;
- (c) use AVTPs in Government tests and evaluations of military vehicles when appropriate;
- (d) incorporate the appropriate AVTPs into contracts for vehicle procurement where Government testing and evaluation is requested by another NATO country or organization under the terms of STANAG 4358 (Mutual Acceptance of Government Test and Evaluation);
- (e) accept this STANAG as a basis for the issue and revision of Allied Vehicle Testing Publications by AC/225(Panel II);
- (f) encourage the mutual use of test facilities for the purpose of cost reduction.

GENERAL

3. Trials are important to the success of any newly developed and manufactured product. For military vehicles, trials are essential, not only to ensure conformity with the required concept in the form of military and technical characteristics, but also to ensure factual reliability of the vehicle under user conditions and environments.

4. This STANAG covers measurements, trials and tests to be conducted in order to gather data for comparison with the required characteristics, thus giving the opportunity for a complete evaluation of the vehicle.

5. It must be considered as very important to come to fully standardized detailed procedures and criteria for judging each vehicle characteristic.

6. For economic and harmonisation reasons it is important that NATO countries come to a mutual acceptance of test and evaluation results according to STANAG 4358.

7. This STANAG is divided into trial-series, subdivided into tests as described in the different AVTPs.

8. In this STANAG a National Government Test-Centre carrying out tests for other countries could also be considered as a Contractor.

ALLIED VEHICLE TESTING PUBLICATIONS

9. Designation

Allied Vehicle Testing Publication is the title and designation selected by the AC/225 (Panel II) members for these documents issued by their Group. "Allied" since the documents are directly related to STANAGs endorsing their purpose and application.

"Testing" because of dealing with matters pertaining to the creation and improvement of techniques and documentation to ensure vehicle quality and reliability.

"Publication" by reasons of being a generic term which could encompass procedures, specifications, handbooks, informations or any other types of documents best suited to the nature of the content and purpose of the publication.

10. Usage

- Contracts:

To specify the publication(s) applicable to a contract.

- Guidance:

To provide guidance for the application of AVTPs for the development of a Government Test and Evaluation programme or for the preparation of other technical documentation.

- Operation Procedures:

To specify requirements for the execution of Government tests and evaluations.

- Information:

To provide reference material.

IMPLEMENTATION OF THE AGREEMENT

11. This STANAG is implemented when orders have been issued to the personnel of the Government Testing and Evaluation Authority to comply with the provisions of this STANAG and the Allied Vehicle Testing Publications referred to herein.

INDICATION OF THE ALLIED VEHICLE TESTING PUBLICATIONS

The different AVTPs will be indicated as follows:

1. Trial series and test-number

e.g.
AVTP: 03-130 : 03 = trial series
 130 = test-number

2. Relating to wheeled and/or tracked vehicles

- (a) AVTP : 03-130 : relating to wheeled and tracked vehicles
- (b) AVTP : 02-060 W : relating to wheeled vehicles
- (c) AVTP : 06-163 T : relating to tracked vehicles

INDICATION OF TRIAL SERIES

GENERAL SUBJECTS: 00-01 - Philosophy of Testing and Evaluation
00-02 - Quality Assurance of Tests
00-03 - Measurement and Calibration
00-04 - Government Vehicle Testing Programme
00-05 - Government Vehicle Test Reports
00-06 - Glossary and Definitions
00-07 - Categories of Military Vehicles
00-08 - Manufacturer's Information Sheet
00-09 - General Evaluation Procedures
00-10 - List of Test-facilities per country
00-11 - Validation of Test Procedures

1. Trial series: 01 : VEHICLE BUILD
2. Trial series: 02 : MAINTAINABILITY
3. Trial series: 03 : PERFORMANCE
4. Trial series: 04 : PROTECTION
5. Trial series: 05 : SECURITY FROM DETECTION
6. Trial series: 06 : TRANSPORTATION
7. Trial series: 07 : SPECIAL EQUIPMENT
8. Trial series: 08 : ELECTRICAL SYSTEM
9. Trial series: 09 : ERGONOMICS
10. Trial series: 10 : ENVIRONMENT
11. Trial series: 11 : RELIABILITY, AVAILABILITY, MAINTAINABILITY AND DURABILITY
12. Trial series: 12 : INTEROPERABILITY
13. Trial series: 13 : COMPONENTS
14. Trial series: 14 : SYSTEMS
15. Trial series: 15 : COST-ASPECTS

CRITERIA FOR THE APPLICATION OF THE DIFFERENT ALLIED VEHICLE TESTING
PUBLICATIONS

INTRODUCTION

1. By submitting a vehicle to trials laid down in the programme, its overall image and character can be determined and evaluated by comparing results with the various criteria and by applying the NATO evaluations method. It must be emphasised that the test and evaluation requirements are essential in the phase of design and development of a military vehicle. For that reason it is important to determine which AVTPs are to form part of the contract in the procurement of military vehicles.

2. In general the aim of trials is to get a justified impression with regard to the fitness for use and the reliability. In addition, the interoperability with other kinds of vehicles and equipment may be very important.

3. Trials generally consist of tests for the study of specific characteristics for the evaluation of the vehicle under test. Normally they are conducted in the field (on roads, cross-country, through water, etc.) under normal climatic conditions, but whenever characteristics or performances may be seriously effected by extremes of climate, special controlled and reproducible, laboratory tests may be conducted. On the other hand, modern laboratory test equipment may make it possible to do some trials under laboratory conditions instead of field trials.

APPLICATION CRITERIA

4. The level of testing, or extent of the trials required, should be such as to avoid imposing either excessive or insufficient requirements on the contractor (manufacturer and/or Government Test-Centre). It is essential that vehicles conform to contractual requirements. It is also important that the required data be obtained as economically as practicable, and therefore only the essential test requirements should be placed in a contract.

5. The selection and application of the appropriate test requirements should follow a "process of elimination" path, beginning with a decision regarding the need for AVTPs at all, and progressing, if necessary, to a decision which AVTPs are adequate. If this decision is made it can be effective and economical to determine if all paragraphs mentioned in each AVTP are really adequate - if not, this should be mentioned in the contract and afterwards in the test report.

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6. It is recognised that the procurement authority is responsible for laying down contractual requirements concerning the contractors obligations as regards trials and test. However, since the object of this STANAG is to standardize, as far as possible, among NATO countries and organizations, the nature of the requirements stated in the AVTPs and the way in which they are applied, the following criteria are recommended for the application of the different AVTPs.

<u>Vehicle Class</u> <u>Category</u>	<u>Subject</u>	<u>Recommended AVTPs</u>
	Design	
	Development	
	Fitness for use	
	Reliability	
	Maintenance	
	Interoperability	
	Design	
	Development	
	Fitness for use	
	Reliability	
	Maintenance	
	Interoperability	
	Design	
	Development	
	Fitness for use	
	Reliability	
	Maintenance	
	Interoperability	

LIST OF CURRENT ALLIED VEHICLE TESTING PUBLICATIONS

1.	Number	Date	Description
2.
3.

(To be published later)

EXAMPLE OF AN ALLIED VEHICLE TESTING PUBLICATION

ALLIED
VEHICLE TESTING
PUBLICATION

AVTP :
EDITION NO. :
DATE :

TRIAL SERIES :

TEST TITLE :

REFERENCE :

EQUIVALENT :

FOR COMPLIANCE :
WITH

ABSTRACT :

NATO INTERNATIONAL STAFF-DEFENCE SUPPORT DIVISION

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N A T O U N C L A S S I F I E D

ANNEX E to
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AVTP :
EDITION NO. :
DATE :

NORTH ATLANTIC ORGANIZATION
MILITARY AGENCY FOR STANDARDIZATION (MAS)

NATO LETTER OF PROMULGATION

1. NATO AVTP is a NATO UNCLASSIFIED publication.
Periodic accounting is not required.
2. AVTP: is effective NATO-wide on receipt.
3. It is permissible to copy or to make extracts from this publication without the consent of the authorizing Agency.
4. It is permissible to distribute copies of this publication to contractors and supplies.
5. Recommended changes to or comments on this publication should be forwarded to the Secretary AC/225 (Panel II), Land Armaments Section, NATO HQ, 1110 Brussels, Belgium.
6. Any ratifying nation may issue supplemental testing information to amplify or clarify these procedures, but in no case will such information contravene the provisions of this AVTP. If a ratifying nation must deviate from a provision of this AVTP due to constraints such as available facilities, national regulations, instrumentation accuracies, etc., the test methods used will be described in the test report. However, such deviation may cause non-acceptance of test data by other nations.

FOR THE MILITARY AGENCY OF STANDARDIZATION

(Signature)

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N A T O U N C L A S S I F I E D

2507/ST4357.10

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AVTP :
 EDITION NO. :
 DATE :

RECORD OF CHANGES, AMENDMENTS AND RESERVATIONS(1)

Identification of Change or Amendment and Reg. No. (if any) and date	Date Entered	NATO Effective Date	By whom entered Signature, Rank Grade or Rate, Name or Command

(1) See Reservations Overleaf

N A T O U N C L A S S I F I E D

ANNEX E to
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(Edition 1)

AVTP :
EDITION NO. :
DATE :

Trial Series:

Test Title:

Page No.

- Paragraph 1. SCOPE
2. FACILITIES AND INSTRUMENTATION
- 2.1 Sub-paragraphs as required
3. REQUIRED TEST CONDITIONS
- 3.1 Sub-paragraphs as required
4. TEST PROCEDURE
- 4.1 Sub-paragraphs as required
5. DATA REQUIRED
- 5.1 Sub-paragraphs as required
6. PRESENTATION OF DATA
- 6.1 Sub-paragraphs as required

NOTE: AVTPs written for Trial Series 00, General Subjects, will be written in a format appropriate to the subject being addressed and do not need to adhere to the format shown above.

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N A T O U N C L A S S I F I E D

2507/ST4357.12

AVTP :
EDITION NO. :
DATE :

1. SCOPE

- a. This paragraph should contain a description of the intention and extent of treatment of the test procedure.
- b. Any limitations associated with the procedure and any other appropriate information should be noted.

2. FACILITIES AND INSTRUMENTATION

2.1 Facilities

- a. This paragraph is sometimes divided into two sub-paragraphs: "Facilities" and "Instrumentation".
- b. Facilities are non-measurement items which are acquired, built or installed for testing, such as test courses or buildings.

2.2 Instrumentation

- a. Instrumentation is equipment used to make test measurement. This sub-paragraph is usually formatted as follows:

DEVICES FOR THE
MEASUREMENT OF:

PERMISSIBLE ERROR
OF MEASUREMENT(1)

- a. (parameter to be measured)
- b.
- c.

3. REQUIRED TEST CONDITIONS

- a. This paragraph should describe the preparation and condition of the vehicle, equipment and facilities for the test.

(1) The permissible error of measurement for instrumentation is the two-sigma value of a normal distribution; thus, the stated errors should not be exceeded in more than one measurement in 20.

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AVTP :
EDITION NO. :
DATE :

4. TEST PROCEDURE

- a. This paragraph should describe the procedure to be used to acquire data. The procedure should be given in enough detail to assure repeatability and to assure acquisition of all the required data of paragraph 5.

5. REQUIRED DATA

- a. This paragraph should list all the data required to address the objectives of the test and assess the performance characteristics of the vehicle or equipment.

6. PRESENTATION OF DATA

- a. This paragraph should indicate how the data is to be presented in the report (e.g., plots, graphs, tables, observations).