

MILITARY CHARACTERISTICS FOR CRYPTO-EQUIPMENT  
(GENERAL GUIDE FOR PREPARATION OF)

INSTRUCTIONS FOR USE OF GUIDE

1. In preparing military characteristics only pertinent information need be included. Omission of any of the applicable subheadings does not minimize the importance which may be attached thereto by design and development agencies, but implies rather that their inclusion is not vital to an adequate statement of the proposed requirement in the military characteristics. Some of the items in the guide need be mentioned only if the characteristics or requirements differ from established standards, however, items II-4, Radio Interference Reduction; III-4.c., Temperature and Humidity Requirements; and III-4.j. Air Transportability, must be included by Department of Army Direction.

2. The minimum acceptable standards, as well as the ideal or optimum standards, which may be unattainable but which should be sought whenever practicable, should be clearly stated to permit design flexibility and avoid unnecessary complications in attempting to reach arbitrarily established requirements.

3. It is anticipated that in many cases a proposed development will form an integral part of, or be associated with, some other system, equipment, or development. In these cases, the proposed military characteristics must be closely integrated therewith. In the interest of simplification and to avoid unnecessary duplication, appropriate reference should be made to the previously approved military characteristics of the associated system, equipment, or development.

4. This outline is published as a guide, and it is not intended that any statement of military characteristics not in conformance herewith shall not be considered. However, military characteristics in final form for presentation to the Army Security Agency Technical Committee will be in accordance with this outline.

5. In the preparation of military characteristics using this general guide, only the headings and subheadings preceded by the Roman and Arabic numerals should be repeated verbatim. Subheadings should be numbered consecutively regardless of omissions.

Prepared by \_\_\_\_\_  
 Date \_\_\_\_\_  
 Approved by ASATC \_\_\_\_\_  
 Date \_\_\_\_\_  
 (To be completed by SQA) \_\_\_\_\_

MILITARY CHARACTERISTICS for \_\_\_\_\_  
 (Descriptive title or nomenclature)

Submitted by \_\_\_\_\_  
 Date \_\_\_\_\_

### I - GENERAL INFORMATION

#### 1. Objective

- a. A statement in general terms of the primary operational need to be satisfied.
- b. A statement of the secondary operational needs to be satisfied, directly related to or directly affecting the primary need.

#### 2. Proposed Service Employment

- a. Units or echelons in which equipment is to be utilized.
- b. Mobile or fixed installations in which equipment is to be utilized, (man pack, type of aircraft, vehicles, and/or ground locations.)
- c. Proposed internal location of equipment.

Note: Any special requirements of the equipment (its location, placement, environment requirements, or equipment operations, etc.) necessitating special considerations in the design of the physical characteristics of the station, aircraft, or vehicle or any special requirements for associated equipments should be stated.

d. Inter- or intra-system relationship. A statement of the general operational relationship the equipment is to have with other equipment and/or system(s).

e. Equipment or systems relationship. Related military characteristics and/or nomenclature for associated systems, equipments, or developments.

f. Technical characteristics of associated equipment, existing or under development.

## II - OPERATIONAL CHARACTERISTICS

Note: The data furnished in this section should include all features which are required to meet the stated operational need.

### 1. Security

- a. Grade of security.
- b. Time limits of a cryptoperiod.
- c. Time period in which security of intelligence is assured.
- d. Number of stations in a cryptonet.
- e. Number of transmissions and/or word groups transmitted in a cryptonet

within a cryptoperiod.

### 2. Functional Requirements

- a. Input signal.
- b. Output signal.
- c. Type of transmission.
- d. Bandwidth.
- e. Channel requirements.
- f. Types of data to be transmitted.
  - (1) Types of data acceptance.
  - (2) Types of data presentation.

- g. Speed of operation.
  - h. Provision for key setting.
  - i. Provision for indicators.
3. Range of Transmission/Reception (include a brief statement of range required under average and anticipated extreme operating conditions, including comments on weather, topography, geography, etc., which may affect range.)
4. Radio Interference Rejection (including anti-jamming)
- Note: Mention should be made of the interference problem with specific statement of the required standards necessary to protect proposed equipment from external interference, whether acoustical, electrical or electromagnetic, including jamming, and to prevent interference to other equipments from the equipment proposed. (D.A. Memo. 105-25-6, 10 June 48 and D.A. Memo. 105-25-8, 1 Dec 48, Inclosure 1.)
5. Spurious Radiation of Cleartext
6. Stability
- a. Electrical and/or electronic (including frequency.)
  - b. Mechanical.
  - c. Thermal.
7. Resolution
- a. Selectivity.
  - b. Sensitivity.
  - c. Signal-to-noise ratio.
  - d. Accuracy or fidelity.
8. Power Requirement (voltage, frequency, wattage)
- a. Main.
  - b. Emergency or standby.
  - c. Permissible variation.

9. Equipment Operating Position Requirements
10. Special Features (significant operational characteristics not in above outline)

### III - PHYSICAL CHARACTERISTICS

Note: In the interest of universal adaptability, simplification of maintenance, minimizing the number of special spare parts and facilitating procurement, all systems and equipments should be outlined herein with the view towards using a maximum of standard items of equipment, components and parts, where such standardization will not restrict design and development or introduce undesirable operational characteristics. Equipment shall be so designed as to permit use of standard meters and test equipment, wherever possible and to be adaptable to alteration.

1. Weight and Volume Factors
  - a. Desired and maximum acceptable weight limits.
  - b. Desired and maximum acceptable volume limits.
2. Arrangement and Coordination of Component Units (power supply, mounting rack, tables, safes, etc.)
3. Arrangement and Coordination of Crypto-Equipment in relation to Associated Equipment
4. Operation, Transportation, Packaging, and Storage Requirements
  - a. Vibration and shock.
  - b. Acceleration.
  - c. Temperature and humidity requirements (AGAO-S 400.24 (12 Apr 48) CSOSP-K, Inclosure 2.)
  - d. Ventilation.

- e. Atmospher. pressure.
- f. Dust and spray.
- g. Submersion.
- h. Wind.
- i. Illumination.
- j. Air transportability (phase of air operation) (AGAO-S 452.1 (15 Sep 47)

CSXED/D-M, Inclosure 3.)

5. Destruction Requirements

6. Special Features (significant physical characteristics not within above outline)

IV - EQUIPMENT OPERATION AND MAINTENANCE CHARACTERISTICS

1. Operating Time (hours per day) (probable maximum continuous operating periods)

2. Permissible Scope of Continuous and Periodic Adjustments, Tuning, Calibrating, Maintenance, etc.

Note: The conditions under which maintenance is to be performed and the extent of maintenance anticipated, including time, space for necessary repair and replacement work, should be clearly defined.

3. Safety Features

- a. Operating personnel.
- b. Maintenance personnel.
- c. Equipment.

4. Maximum Acceptable Preparation Periods from Packaged for Storage or Shipment Conditions to Secured or Power Off Conditions

**5. Maximum Acceptable Preparation Periods from Secured or Power Off Conditions**

- a. To semi-readiness or standby (heaters on, filaments lighted, etc.)
- b. To full operation (all power on.)

**6. Personnel Considerations (number and skill of operators and maintenance personnel permissible)**

**Note:** An estimate of any special training or skills required for operational and maintenance personnel.

**7. Equipment Arrangements to Promote Operators Efficiency**

- a. Number of controls.
- b. Location of controls.
- c. Location of speakers, lights, fans, ventilation, noise reduction materials, connecting cords.
- d. Operators seating arrangement.

**8. Special Features (significant information which does not logically fall within above outline)**