20-209987

DEPARTMENT OF THE ARMY
HEADQUARTERS ARMY SECURITY AGENCY
WASHINGTON 25, D. C.

25 May 1949

SUBJECT: Notification of Army Security Agency Technical Committee Meeting

TO: Chief, Operations Division
Attn: Mr. Frank Rowlett

1. There will be a meeting of the Army Security Agency Technical Committee at 1015 hours, 10 June 1949, Room 117, Headquarters Building, Arlington Hall Station.

2. The following items will be presented for consideration by the Committee:

Item	Subject	Agencies Concerned	To Be Presented By
#29	Aircraft Movement Communication Security Equipment, ASAM 15	ASA USAF Sig C AFF	Mr. H. C. Barlow Code 147 Ext 265
#30	Adoption of M/C's for an Airborne Ciphony System, ASAY 8.	ASA USAF Sig C AFF	Mr. C. C. Wright Code 147 Ext 434
#31	Adoption of M/C's for ~~an Airborne Ciphony~~ medium high echelon System, ASY 6. (and all other ref tapes)	ASA USAF Sig C AFF	Mr. C. C. Wright Code 147 Ext 434

3. The following item will be presented for information and record:

Item	Subject
#32	Project title change.

4. In the event that additional information with reference to the above noted items is desired prior to presentation, it is requested that the individuals indicated above be contacted immediately so that questions may be clarified prior to presentation.

5. In the event that your office is interested in the items mentioned and a representative of your office will not be present, it is requested that the Secretary, Lt. Wac C. Eversole, Code 147 Ext 216 or 469, be advised prior to the date of the meeting of your concurrence in such action as the Committee may take on these items.

John A. Geddes

JOHN A. GEDDES
Lt. Colonel, Signal Corps
Chairman, ASATC

4 Incls
1. Subcom Rpt
   Item #29
2. Subcom Rpt
   Item #30
3. Subcom Rpt
   Item #31
4. Memo for Record
   Item #32

DEPARTMENT OF THE ARMY
HEADQUARTERS ARMY SECURITY AGENCY
WASHINGTON 25, D. C.

DRAFT COPY

ITEM NO. 29

SUBCOMMITTEE REPORT FOR THE ARMY SECURITY AGENCY TECHNICAL COMMITTEE

SUBJECT: Aircraft Movement Communication Security Equipment, ASAM 15

1. REFERENCES:

Letter to War Department, General Staff, Research and Development Division, from Chief, Research and Engineering Division AC/AS-4, Subject: Military Characteristics for Communication Security Equipment, dated 30 September 1946, with Indorsement from War Department, General Staff, Research and Development Division, to Chief, Army Security Agency, through the Director of Intelligence.

2. DISCUSSION:

a. Agencies concerned:

(1)	Cognizant agency:	Army Security Agency
(2)	Directing agency:	Army Security Agency
(3)	Requesting agency:	U. S. Air Force
(4)	Participating agency:	None
(5)	Coordinating agency:	SigC, AFF, USAF
(6)	Other probable interested agencies:	U. S. Navy

b. Purpose:

There is a military requirement for a compact crypto-equipment, the operational characteristics of which will permit encipherment and decipherment of messages, particularly aircraft movement messages, faster than with equipment now available.

c. Description:

The ASAM 15 will be an on-line, synchronized teletype encipherment-decipherment equipment, with the automatic and imperceptible insertion of random text between messages.

d. Related Material: None.

e. Development History and Status:

Research and study has been accomplished under DA Project No. 1-29-40-001, "Preliminary Development of Cipher Machine Components."

f. Proposed Development:

(1) It is proposed to develop ten (10) service test models for test by the USAF.

(2) The estimated total cost is one million five hundred thousand dollars ($1,500,000.00). FY 50 - $300,000, FY 51 - $500,000, FY 52 - $700,000.

(3) It is anticipated that development will be initiated ~~1 July 1949~~ in fiscal year 1950 and user tests completed ~~1 Jan 1953~~. during fiscal year 1950.

g. Security Classification:

The equipment while under development will be classified SECRET. Crypto clearance will be required by the contractor for development of the crypto-components.

3. RECOMMENDATIONS:

a. Adoption of military characteristics for the ASAM 15 as shown in Exhibit "A".

b. Establishment of Department of the Army Project #1-29-41-007, ~~Aircraft Movement Communication Security Equipment~~, ASAM 15.

c. Assignment of a 1-B priority to Project #1-29-41-007 which is justified by the concepts of par 3a, SR 705-20-1.

d. Project #1-29-41-007 be classified SECRET.

e. Classification of the ASAM 15 as Development Type.

f. The RDB Master plan Technical Objective of Project #1-29-41-007 to be IO-5.

4. EXHIBITS:

Exhibit "A", Proposed Military Characteristics for ASAM 15.

5. COORDINATION:

Coordination was accomplished with the following agencies:

Agency	Representative and Title
Department of the Army	Lt. Col. G. H. Fletcher Office, Chief Signal Officer
Department of the Army	Colonel Edwin K. Petzing Office, Chief Signal Officer
Department of the Army	Colonel Dana G. McBride Army Field Forces, Development Section
Department of the Army	Lt. Col. Stuart S. Hoff Army Field Forces, Signal Section
~~United States~~ Air Force (Department of)	Major John E. Morrison, JR ~~Director~~ (Directorate) of Communications.

HOWARD C. BARLOW
Chairman, Cryptographic
Subcommittee, ASATC

1 Incl
Exhibit "A"

Prepared by Cryptographic Subcom.
ASATC
Date 28 February 1949
Approved by ASATC
Date
Submitted by - USAF
Date

Replace word "equipment" for system where applicable

EXHIBIT "A"

MILITARY CHARACTERISTICS FOR ASAM 15

I - GENERAL INFORMATION

1. Objective

a. There is a military requirement for a compact crypto-equipment, the operational characteristics of which will permit encipherment and decipherment of messages, particularly aircraft movement messages faster than equipment now available.

b. The movement of all point-to-point aircraft traffic must be reported in a timely and adequate manner to permit communication with aircraft during flight and servicing upon arrival, to make possible the prompt identification of aircraft passing through zones and to inform headquarters concerning flight progress.

c. A similar requirement exists for handling other than aircraft movement communications.

2. Proposed Service Employment

a. This equipment may be utilized in all echelons.

b. This equipment will be utilized in mobile and fixed installations.

c. This equipment will be utilized on-line with wire/radio teletype communication systems.

d. The associated systems shall operate "start-stop" at speeds of sixty (60) and one hundred (100) words per minute.

II - OPERATIONAL CHARACTERISTICS

1. Security

a. The security shall be Grade I.

b. Time limits of the cryptoperiod shall be twenty-four (24) hours.

c. Time period in which security of intelligence is assured shall be unlimited.

d. The number of stations in a cryptonet shall normally be two (2). It shall be possible to establish multiple receiving stations when required.

e. The maximum number of transmissions and/or word groups transmitted in a cryptonet within a cryptoperiod shall be limited to one hundred (100) words per minute for a twenty-four (24) hour period. Approximately eight hundred thousand (800,000) word groups.

2. Functional requirements

a. The enciphered signal produced or accepted shall be a dc, neutral, "start-stop", teletype signal, twenty (20) or sixty (60) milliamperes. Line current shall be supplied for only the local loop.

b. This equipment shall be capable of transmitting by wire/radio teletype automatic on-line communications.

c. The equipment shall operate over one (1) duplex teletype channel.

d. Types of data to be transmitted:

(1) The equipment shall accept perforated teletype tape.

(2) The clear text output shall be a dc, neutral, "start-stop", teletype signal acceptable by standard teletype receiving equipment of appropriate speed.

e. The speed of operation shall be capable of enciphering or deciphering messages at a speed of sixty (60) or one hundred (100) word groups per minute.

f. Normally the key setting shall be accomplished once each cryptoperiod and no individual message setting shall be required.

g. Transmission of indicators is not required.

3. Range of Transmission/Reception

The equipment shall not adversely affect the range of the associated communication equipment.

4. Radio Interference Reduction

The equipment shall comply with the provisions of DA Memorandum 105-25-6, dated 10 June 1948, and DA Memorandum 105-25-8, dated 1 December 1948.

5. Spurious Radiation of Clear Text

There shall be no perceptable radiation of the clear text signal.

6. Power Requirement

This equipment shall operate from 115/230 (±10%) volts, 50/60 (±10%) cycle ac power source.

7. Equipment Operating Position Requirements

The equipment shall operate when tilted up to twenty-five (25°) degrees from its normal position.

III - PHYSICAL CHARACTERISTICS

1. Weight and volume factors

The desired weight shall be less than one hundred (100) pounds. The maximum accertable weight shall be two hundred (200) pounds.

2. Operation, Transportation, Packaging, and Storage requirements

a. This equipment shall withstand vibration and shock encountered in fixed station and mobile installations.

b. This equipment shall be capable of operating in the following ambient conditions:

(1) Temperatures from ±20°F to ±125°F and storage at -80°F to ±160°F.

(2) Hunidity from 0 to 95%.

c. This equipment shall be capable of air transportability in Phase II. (AGAO-S 452.1 Ltr dtd 15 Sep 47, OSGRD/D-M).

3. Destruction Requirements

The equipment shall be provided with a simple emergency destruction means.

IV - EQUIPMENT OPERATION AND MAINTENANCE CHARACTERISTICS

1. Operating Time

The equipment shall be capable of continuous twenty-four (24) hr operation except for the time required to perform normal preventative maintenance.

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

This equipment shall require not more than a thirty (30) minute period daily for preventative maintenance and operational adjustment (which includes key setting).

3. Maximum Acceptable Preparation Periods from Storage or Shipment Conditions to Secured or Power Off Conditions

This equipment shall be capable of being prepared from a storage condition to a power off condition in a period of one (1) hour.

4. Maximum Acceptable Preparation Periods from Secured or Power Off Conditions

a. The equipment shall require a maximum of five (5) hours to prepare from a power off to a standby condition (heaters on, filaments lighted, etc.)

b. The equipment shall require a maximum of thirty (30) minutes to prepare from a standby to a fully operating condition.

DEPARTMENT OF THE ARMY
HEADQUARTERS ARMY SECURITY AGENCY
WASHINGTON 25, D. C.

DRAFT

Replace equipment with equipment

ITEM #30

SUBCOMMITTEE REPORT FOR ARMY SECURITY AGENCY TECHNICAL COMMITTEE

SUBJECT: Adoption of Military Characteristics for ~~an Airborne Ciphony~~ med. high echelon System

1. REFERENCES:

a. Letter to War Department General Staff, Research and Development Division, from Chief, Research and Engineering Division AC/AS-4; subject: Military Characteristics for Communication Security Equipment, dated 30 September 1946, with indorsement from War Department General Staff, Research and Development Division to Chief, Army Security Agency through the Director of Intelligence.

b. Revised U. S. Air Force Military Characteristics for Airborne Ciphony System resulting from conferences held at Army Security Agency on 14 November 1946 and 21 November 1946 with representatives of the U. S. Air Force.

2. DISCUSSION:

a. Agencies Concerned:

(1) Cognizant Agency: Army Security Agency
(2) Directing Agency: Army Security Agency
(3) Requesting Agency: USAF
(4) Participating Agencies: None
(5) Coordinating Agencies: USAF, AFF, Sig C
(6) Other Probable Interested Agencies: Navy

b. Purpose:

The U. S. Air Force has a military requirement for voice security equipment for use in low echelon air-to-air, and air-to-ground communications providing security to include the minimum classification of CONFIDENTIAL and which is designed for use with aircraft communications equipments and their complimentary ground equipments.

c. Description:

These Military Characteristics cover the requirements for

voice security equipment having Grade IV security for use in low echelons. The equipment is intended for use with standard VHF or UHF line-of-sight aircraft radio equipments and will be installed in any standard aircraft.

d. Related Material:

None.

e. Development History and Status:

Project No. 1-29-20-003 was approved 20 February 1947. Design of an airborne ciphony system is underway.

f. Proposed Development:

A laboratory model will be constructed at Army Security Agency and six (6) service test models will be constructed under contract for test by the U. S. Air Force.

g. Security Classification:

The classification of the Military Characteristics is SECRET.

3. RECOMMENDATIONS:

The Subcommittee recommends:

The adoption of Military Characteristics for an Airborne Ciphony System as shown in Exhibit "A".

4. EXHIBITS:

a. Exhibit "A", proposed Military Characteristics for an Airborne Ciphony System, dated 13 May 1949.

5. COORDINATION:

Coordination was accomplished with the following agencies:

Agency	Representative and Title
Department of the Army	Colonel W. J. Klepinger Army Field Forces
Department of the Air Force	Major John E. Morrison Directorate of Communications

Agency	Representative and Title
Department of the Army	Colonel E. R. Fetzing Lt. Colonel G. H. Fletcher Office of the Chief Signal Officer

CLARENCE C. WRIGHT
Chairman, Ciphony, Cifax and
Civision Subcommittee

1 Incl
Exhibit "A"

Prepared by CCC Subcommittee
Date 13 May 1949
Approved by ASATC
Date

MILITARY CHARACTERISTICS for Airborne Ciphony ~~System~~ Equipment AS A Y 8

Submitted by USAF
Date

I - GENERAL INFORMATION

1. Objective

a. The U. S. Air Force has a military requirement for voice ~~secrecy~~ security equipment for use in low echelon air-to-air, and air-to-ground communications providing security to include the minimum classification of CONFIDENTIAL and which is designed for use with aircraft communications equipments and their complimentary ground equipments.

2. Proposed Service Employment

This equipment:

a. Will be used in low echelons.

b. Will be used [redacted], air-to-air, and air-to-ground.

c. Shall be capable of being installed in standard fighter, bomber or transport aircraft.

d. Will be used with complimentary Air Force ground equipments.

II - OPERATIONAL CHARACTERISTICS

1. Security

This equipment shall:

a. Have Grade IV security.

b. Provide crypto-security for at least two weeks.

c. Provide for multi-station net operation.

d. Be so constructed that the security of subsequent transmissions will not be endangered by the enemy's possession of the general mechanism, provided he is not in possession of the specific key.

e. Be capable of handling highly stereotyped air-to-air and air-to-ground weather messages.

2. Functional Requirements

This equipment shall:

a. Accept clear, conversational speech and reproduce speech or speech-equivalent undistorted and readily intelligible.

b. Be operable from a standard microphone.

c. Be designed primarily for use with standard VHF or UHF line-of-sight aircraft radio equipment and be readily adaptable to complimentary ground sets.

d. Be provided a key variable without the use of a tool.

3. Range of Transmission/Reception

a. This equipment shall not cause a loss in transmission range in the circuit in which it is being used.

4. Radio Interference Reduction

a. This equipment shall provide a signal not unduly affected by interference and atmospherics and which shall not interfere with the operation of other communications equipment.

5. Stability

a. This equipment shall not require constant control of synchronization.

6. Power Requirement

a. This equipment shall be operable from power sources of 115/230 volts 50/60 cps AC; 115 volt 400 cps AC; and 24 to 28 volt DC; by means of separable power supplies.

7. Special Features

a. This equipment shall introduce no perceptible lag between the time of transmission and the time of reception.

III - PHYSICAL CHARACTERISTICS

1. Weight and Volume Factors

a. This equipment shall not weigh more than 15 pounds, exclusive of power supply.

2. Operation, Transportation, Packaging, and Storage Requirements

a. This equipment shall be so constructed as to be capable of operation and storage under climatic conditions as specified in AGO letter, File AGAO-S400.24 (12 April 1946) OS&SP-M, subject: Temperature Requirements for the Performance and Storage of U. S. Army Equipment and Supplies, dated 15 April 1946.

3. Destruction Requirements

a. This equipment shall be provided a simple emergency destruction means.

DEPARTMENT OF THE ARMY
HEADQUARTERS ARMY SECURITY AGENCY
WASHINGTON 25, D. C.

DRAFT

ITEM #81

SUBCOMMITTEE REPORT FOR ARMY SECURITY AGENCY TECHNICAL COMMITTEE

SUBJECT: Adoption of Military Characteristics for a Medium High Echelon Ciphony System

1. REFERENCES:

a. Letter to War Department General Staff, Research and Development Division, from Chief, Research and Engineering Division AC/AS-4; subject: Military Characteristics for Communication Security Equipment, dated 30 September 1946, with indorsement from War Department General Staff, Research and Development Division to Chief, Army Security Agency through the Director of Intelligence.

b. Revised U. S. Air Force Military Characteristics for Medium High Echelon Ciphony System resulting from conferences held at Army Security Agency on 14 November 1946 and 21 November 1946 with representatives of the U. S. Air Force.

2. DISCUSSION:

a. Agencies Concerned:

(1) Cognizant Agency: Army Security Agency
(2) Directing Agency: Army Security Agency
(3) Requesting Agency: USAF
(4) Participating Agencies: None
(5) Coordinating Agencies: USAF, AFF, Sig C
(6) Other Probable Interested Agencies: Navy

b. Purpose:

The U. S. Air Force has a military requirement for voice security equipment for command and conference purposes among high and medium echelons. This equipment shall be designed to afford security from enemy analysis to voice communications of all classifications transmitted over radio and wire facilities.

c. Description:

These Military Characteristics cover the requirements for

voice security equipment having Grade II security for use in high and medium echelons over normal long range wire and radio voice circuits.

d. Related Material:

(1) SIGSALY which is classified as wartime reserve equipment.

(2) ASAY 2, 3 which are classified as substitute standard type equipment.

e. Development History and Status:

Project No. 1-29-22-003 was established 22 April 1947. A laboratory model of a medium high echelon ciphony system has been constructed and is currently undergoing field tests.

f. Proposed Development:

Three (3) service test models will be constructed under contract for test by using agencies.

g. Security Classification:

The classification of the Military Characteristics is SECRET.

3. RECOMMENDATIONS:

The Subcommittee recommends:

The adoption of Military Characteristics for a Medium High Echelon Ciphony System as shown in Exhibit "A".

4. EXHIBITS:

a. Exhibit "A", proposed Military Characteristics for a Medium High Echelon Ciphony System, dated 13 May 1949.

5. COORDINATION:

Coordination has been accomplished with the following agencies:

Agency	Representative and Title
Department of the Air Force	Major John E. Morrison Directorate of Communications
Department of the Army	Colonel H. J. Kepinger Army Field Forces

Agency	Representative and Title
Department of the Army	Colonel E. R. Petzing Lt. Colonel G. H. Fletcher Office of the Chief Signal Officer

CLARENCE C. WRIGHT
Chairman, Ciphony, Cifax and
Civision Subcommittee

1 Incl
Exhibit "A"

~~SECRET~~

Prepared by	CCC Subcommittee
Date	13 May 1949
Approved by	ASATC
Date	

MILITARY CHARACTERISTICS for Medium High Echelon Ciphony ~~System~~ equipment ASAYC

Submitted by	USAF
Date	

I - GENERAL INFORMATION

1. Objective

a. The U. S. Air Force has a military requirement for voice ~~secrecy~~ security equipment for command and conference purposes among high and medium echelons. This equipment shall be designed to afford security from enemy analysis to voice communications of all classifications transmitted over radio and wire facilities.

2. Proposed Service Employment

This equipment:

a. Will be used in medium and high echelons.

b. Will be used in fixed and semi-fixed installations.

c. Shall be operable with corresponding communications equipment of the Department of the Army.

II - OPERATIONAL CHARACTERISTICS

1. Security

This equipment shall:

a. Have Grade II security.

b. Provide crypto-security for at least five years.

c. Provide for at least four station conference operation per cryptonet.

d. Be so constructed that the security of subsequent transmissions will not be endangered by the enemy's possession of the general mechanism, provided he is not in possession of the specific key.

2. Functional Requirments

This equipment shall:

a. Accept clear, conversational speech and reproduce speech or speech-equivalent undistorted and readily intelligible.

b. Be operable from a standard telephone handset if consistent with other characterisitcs.

c. Be capable of transmitting over normal long range voice circuits (wire, carrier, and/or radio) which accommodate amplitude modulated signals of a nominal 300 cps to 3300 cps band.

d. Be provided a key variable without the use of a tool.

e. Provide for six subscriber operation off one terminal.

f. Emit a clear, strident warning to both subscriber and attendent when transmission in the clear is occuring.

3. Range of Transmission/Reception

a. This equipment shall not cause a loss in transmission range in the circuit in which it is being used.

4. Radio Interference Reduction

a. This equipment shall provide a signal not unduly affected by interference and atmospherics and which shall not interfere with the operation of other communications equipment.

5. Power Requirement

a. This equipment shall be operable from a 115/230 volt, 50/60 cycle power source and be provided with a standard power plant capable of continuous operation.

III - PHYSICAL CHARACTERISTICS

1. Weight and Volume Factors

a. This equipment shall be separable into components each not to exceed a two man load.

2. Operation, Transportation, Packaging, and Storage Requirements

This equipment shall:

a. Be light, sturdy, compact and of the simplest possible design consistent with other requirements.

b. Be so constructed as to be capable of operation and storage under climatic conditions as specified in AGO letter, File AGAO-S400.24 (12 April 1948) OSGSP-M, subject: Temperature Requirements for the Performance and Storage of U. S. Army Equipment and Supplies, dated 15 April 1948.

c. Be housed in a submersion-proof carrying-case or cases which are of sufficiently rugged and weatherproof construction to withstand normal usage in the field.

d. Be transportable in any standard cargo aircraft and be capable of utilization in Phase II of air operations.

3. Destruction Requirements

a. This equipment shall be provided subsidiary means for complete destruction of the specific key and such other component parts as are necessary to security.

IV - EQUIPMENT OPERATION AND MAINTENANCE CHARACTERISTICS

1. Special Features

a. This equipment shall be capable of being installed by two men.

DEPARTMENT OF THE ARMY
HEADQUARTERS ARMY SECURITY AGENCY
WASHINGTON 25, D. C.

DRAFT COPY

ITEM NO. 32

MEMORANDUM FOR THE RECORD OF THE ARMY SECURITY AGENCY TECHNICAL COMMITTEE

SUBJECT: Project Title Change

1. Reference:

IRS to ASATC thru AS-70 and AS-20 with 3 comments, Subject: Changes in Project Titles, dated 27 April 1949.

2. The following project title changes were approved by above referenced IRS and are hereby made a matter of record:

a. DA Project #1-29-32-001.
Old Title: Hi Frequency Multicouplers and Antennas.
New Title: Multicouplers.
The old title is descriptive of only one phase of this project.

b. DA Project #1-29-32-004.
Old Title: Interim Precision Recorder, ASAN 11.
New Title: Precision Disc Recorder Reproducer, ASAN 11.
The old project title is not descriptive.

MAC C. EVERSOLE
1st Lt., Signal Corps
Secretary, ASATC