SECRET

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

SUBJECT: Minutes of Army Security Agency Technical Committee Meeting No. 6

TO: Interested Members, Army Security Agency Technical Committee and Other Interested Agencies

1. A meeting of the Army Security Agency Technical Committee was held 2 December 1949, Room 117, Headquarters Building, Arlington Hall Station. Attendance was as follows:

Acting Chairman	Col. John C. Arrowsmith
Secretary	1st Lt. Mac C. Eversole

Members and Alternates Present

ARMED FORCES SECURITY AGENCY

AFSA-14	Mr. William Friedman, Member
AFSA-03A1	Dr. S. Kullback, Member
AFSA-03A2	Mr. Leo Rosen, Alternate

DEPARTMENT OF THE ARMY

GENERAL STAFF, UNITED STATES ARMY

Research and Development Group	Lt. Col. Richard J. Meyer, Member

ARMY SECURITY AGENCY

Plans and Operations Section, Staff	Lt. Col. D. W. Bernier, Member
Logistics Section, Staff	Maj. A. V. Whitehead, Member

ARMY FIELD FORCES

Ground Signal Section	Lt. Col. S. S. Hoff, Member

SIGNAL CORPS

Engineering and Technical Division	Col. E. R. Petzing, Member
	Mr. O. I. Lewis, Alternate
Plans and Operations Division	Capt. R. H. Kiley, Alternate

Observers Present

ARMED FORCES SECURITY AGENCY

AFSA 03A6	Lt. Col. C. C. Renfro
AFSA 31	Mr. H. C. Barlow
	Mr. C. C. Wright
AFSA 33A	Mr. Arthur B. Moulton

DEPARTMENT OF THE ARMY

ARMY SECURITY AGENCY

Office Special Ass't to Chief, ASA	Mr. Albert Small
Logistics Section, Staff	Col. Myles J. Connor
	Mr. David Wolfand

DEPARTMENT OF THE NAVY

CNO	Mr. R. E. Miller
OP-202D	Lt. Cdr. U. Stenback

2. The Subcommittee Reports listed below were recommended for approval by the Army Security Agency Technical Committee. Recommendations contained in these reports have been approved for the Chief, Army Security Agency by the Chairman, Army Security Agency Technical Committee and for the Secretary of the Army by a designated representative of the Director of Logistics, General Staff, United States Army.

Pages	Item	Subject	Action
4 - 7	#43	Review of Cryptographic Research and Development Projects	Approval of Recommendations
8 - 11	#44	Review of Ciphony, Cifax and Civision Research and Development Projects	Approval of Recommendations
12 - 15	#45	Review of Cryptologic Research and Development Projects	Approval of Recommendations
16 - 18	#46	Review of Intercept and Direction Finding Research and Development Projects	Approval of Recommendations
19 - 27	#47	Adoption of Revised Military Characteristics for the ASAM 7	Approval of Recommendations
28 - 37	#48	Adoption of Revised Military Characteristics for the ASAM 9	Approval of Recommendations
38 - 46	#49	Adoption of Military Characteristics for ASAY 4	Approval of Recommendations

Pages	Item	Subject	Action
38 - 46	#49	Adoption of Military Characteristics for ASAY 4	Approval of Recommendations
47-54	#50	Adoption of Military Characteristics for ASAY 5	Approval of Recommendations
55-63	#51	ASAY 9	Approval of Recommendations

3. The following Memorandum for the Record of the Army Security Agency Technical Committee was approved for inclusion in the records of the Committee:

Pages	Item	Subject
64	#52	Research and Development Service Project

4. There being no further business to come before the Committee it adjourned to meet at the call of the Chairman.

John C. Arrowsmith
JOHN C. ARROWSMITH
Colonel, Corps of Engineers
Acting Chairman, ASATC

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

Minutes Consists of a total of
64 Pages

Minutes Page 3

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

2 Dec 49

ITEM # 43

SUBCOMMITTEE REPORT FOR THE ARMY SECURITY AGENCY TECHNICAL COMMITTEE

SUBJECT: Review of Cryptographic Research and Development Projects

1. REFERENCES:

a. IRS from Secretary, Army Security Agency Technical Committee to Chairman, Cryptographic Subcommittee, subject, "Review of Research and Development Projects," dated 15 August 1949.

b. Department of the Army Special Regulation 705-5-1, subject, "Research and Development, Classification, and Modification of Materiel," dated 17 March 1949.

c. Department of the Army Special Regulation 705-20-1, subject, "Priority for Research and Development Projects," dated 17 March 1949.

2. DISCUSSION:

a. Agencies concerned:

(1) Directing Agency: Army Security Agency
(2) Other Interested Agencies: Chemical Corps, Signal Corps, AFF, USAF, Navy

b. Purpose:

To insure conformity with the Department of the Army Research and Development Program, and to eliminate unproductive and duplicating activities.

3. RECOMMENDATIONS:

The Subcommittee recommends that:

a. The following projects be continued and the assigned priorities remain the same as indicated:

DA Project No.	Title	Priority
1-29-41-001	ASAM 9	1-B
1-29-41-003	Cold Cathode Tube	1-B
1-29-41-004	ASAM 7	1-B
1-29-41-005	ASAM 13	1-B
1-29-41-006	ASAM 3	1-B

b. The following projects be continued and the assigned priorities changed as indicated:

DA Project No.	Title	Priority From	Priority To
1-29-43-002	ASAD 1	1-B	2-B
1-29-45-003	ASAM 12	1-C	2-C

c. The following projects be terminated as completed:

DA Project No.	Title
1-29-90-041	Management, Electro-mechanical Branch

d. The following projects be cancelled:

DA Project No.	Title
1-29-60-002	System Indicator Encipherment

This activity will be continued under DA Project No. 1-29-60-001, General Cryptologic Research.

1-29-95-041	Laboratory Facilities, Electromechanical Branch

This activity will be continued under DA Project No. 1-29-95-013, Research and Development Division ~~Facilities~~, Facilities.

1-29-93-041	Laboratory Maintenance, Electromechanical Branch

This activity will be continued under DA Project No. 1-29-93-001, Research and Development Division ~~Facilities~~, Maintenance.

e. The following projects be continued, the assigned priorities remain the same and the nomenclature changed as indicated:

DA Project No.	Title From	Title To	Priority
1-29-43-001	ASAM 10	ASAD 2	1-B
1-29-40-001	Preliminary Development of Cipher Machine Components	General Research on Cryptographic Machines.	1-B

4. EXHIBITS:

None.

5. COORDINATION:

None.

Howard C. Barlow

HOWARD C. BARLOW
Chairman, Cryptographic
Subcommittee

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

2 December 1949

SUBJECT: Approval of Army Security Agency Technical Committee Subcommittee Report No. 43

TO: Interested Members of Army Security Agency Technical Committee and Other Interested Agencies

1. Subcommittee Report No. 43, Subject: Review of Cryptographic Research and Development Projects, dated 2 December 1949, having been presented by Mr. H. C. Barlow at Army Security Agency Technical Committee meeting No. 6, above date, was recommended for approval. This recommendation was concurred in by all members present, a listing of whom is included in the minutes of the meeting.

2. The recommendations contained in subject report are hereby approved.

FOR THE CHIEF, ARMY SECURITY AGENCY:

JOHN C. ARROWSMITH
Col. Corps of Engineers
Acting Chairman, ASATC

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

Approved by order of the Secretary of the Army:

RICHARD J. MEYER
Lt. Colonel, GSC
R&D Group, Logistics Div. GSUSA

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

ITEM # 44 1 Dec 49

SUBCOMMITTEE REPORT FOR THE ARMY SECURITY AGENCY TECHNICAL COMMITTEE

SUBJECT: Review of Ciphony, Cifax, and Civision Research and Development Projects

1. REFERENCES:

a. IRS, dated 15 August 1949, from Secretary, Army Security Agency Technical Committee to Chairman, Ciphony, Cifax, and Civision Subcommittee, subject, "Review of Research and Development Projects."

b. Department of the Army Special Regulation 705-5-1, subject, "Research and Development of Materiel," dated 17 March 1949.

2. DISCUSSION:

a. Agencies concerned:

(1) Directing Agency: Army Security Agency
(2) Other Interested Agencies: Navy, USAF, AFF, and Signal Corps.

b. Purpose:

To insure conformity with the Department of the Army Research and Development Program, to eliminate duplicating and unproductive activities, to insure records on all projects are kept current, and to insure prompt action on all completed projects.

3. RECOMMENDATIONS:

The Subcommittee recommends that:

a. The following projects be continued and the assigned priorities remain the same as indicated:

DA Project No.	Title	Priority
1-29-20-001	General Ciphony Research	1-B
1-29-20-002	Wide Band Low Echelon Pulse Type Ciphony System (ASAY 8)	1-B

DA Project No.	Title	Priority
1-29-22-002	Further Development of Teletypewriter Adapter for Speech Equipment ASAY 2, 3	1-C
1-29-22-003	Development of an Eight-Level High Security Ciphony System with On-Off Transmission (ASAY 6)	1-B
1-29-22-004	Speech Equipment ASAY 4	1-B
1-29-22-005	Speech Equipment ASAY 5	1-B
1-29-22-007	Modification of Speech Equipment ASAY 2, 3	1-B
1-29-22-008	Cryptographic Design of Key Generator for AN/TRC-25 (ASAY 7)	1-B
1-29-25-001	General Cifax Research	1-B
1-29-26-002	Development of ASAX 2	1-B
1-29-26-003	Development of ASAX 3	1-B

b. The following projects be continued and the assigned priority changed as indicated:

None.

c. The following projects be terminated as completed:

DA Project No.	Title	Priority
1-29-20-003	Voice Frequency Halving and Doubling	1-C
1-29-22-001	Liaison and Testing ASAY 2, 3	1-B
1-29-22-006	Recorder and Reproducer for One-Time Key for ASAY 2, 3	1-B
1-29-90-021	Management, Ciphony and Cifax Branch	1-B

d. The following Projects be cancelled:

DA Project No.	Title	Priority
1-29-93-021	Laboratory Maintenance, Ciphony and Cifax Branch	1-B

This activity will be continued under DA Project No. 1-29-93-001, Laboratory Maintenance, Research and Development Division.

1-29-95-021	Laboratory Facilities, Ciphony and Cifax Branch	1-B

This activity will be continued under DA Project No. 1-29-95-013, Research and Development Facilities.

4. EXHIBITS:

There are no exhibits to this report.

5. COORDINATION:

None.

Clarence C. Wright

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

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

2 December 1949

SUBJECT: Approval of Army Security Agency Technical Committee Subcommittee Report No. 44

TO: Interested Members of Army Security Agency Technical Committee and Other Interested Agencies

1. Subcommittee Report No. 44, Subject: Review of Ciphony, Cifax and Civision Research and Development Projects, dated 2 December 1949, having been presented by Mr. C. C. Wright at Army Security Agency Technical Committee meeting No. 6, above date, was recommended for approval. This recommendatinn was concurred in by all members present, a listing of whom is included in the minutes of the meeting.

2. The recommendations contained in subject report are hereby approved.

FOR THE CHIEF, ARMY SECURITY AGENCY:

JOHN C. ARROWSMITH
Col., Corps of Engineers
Acting Chairman, ASATC

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

Approved by order of the Secretary of the Army:

RICHARD J. MEYER
Lt. Colonel, GSC
R&D Group, Logistics Div., GSUSA

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

ITEM # 45 2 Dec 49

SUBCOMMITTEE REPORT FOR THE ARMY SECURITY AGENCY TECHNICAL COMMITTEE

SUBJECT: Review of Cryptologic Research and Development Projects

1. REFERENCES:

a. IRS from Secretary, Army Security Agency Technical Committee to Chairman, Cryptologic Subcommittee, subject, "Review of Research and Development Projects" dated 12 August 1949.

b. Department of the Army Special Regulation 705-5-1, subject, "Research and Development, Classification, and Modification of Materiel," Section II, Paragraph 5b, dated 17 March 1949.

c. Department of the Army Special Regulation 705-20-1, subject, "Priority for Research and Development Projects," Paragraph 2d, dated 17 March 1949.

2. DISCUSSION:

a. Agencies concerned:

(1) Directing Agency: Army Security Agency
(2) Other Interested Agencies: Navy, USAF

b. Purpose:

To insure conformity with the Department of the Army Research and Development Program, to eliminate duplicating and unproductive activities, to insure records on all projects are kept current, and to insure prompt action on all completed projects.

3. RECOMMENDATIONS:

The Subcommittee recommends that:

a. The following projects be continued, the assigned priorities remain the same as indicated, and project titles be changed as indicated:

DA Project No.	Title	Priority
1-29-48-005	ASAF 35	1-B
1-29-48-011	ASAF 30	1-B

DA Project No.	Title	Priority
1-29-50-001	Miscellaneous Services for Research and Development Division	2-C
1-29-50-002	Miscellaneous Services for Other Divisions and Branches	2-C
1-29-50-004	Plant Engineering	1-B
1-29-66-028	Development of High Speed Teletype Tape Punch (Change project title to "ASAF 39")	1-C
1-29-90-001	Research and Development Division Management	1-B
1-29-91-001	Research and Development Division Liaison	1-B
1-29-91-002	Army Security Agency Museum	3-A
1-29-95-011	Research and Development Division Stockroom	1-B
1-29-95-013	Research and Development Division Facilities	1-B
1-29-95-067	Procurement of CXCO Equipment	3-A

b. The following projects be continued and the assigned priorities changed as indicated:

None.

c. The following projects be terminated as completed:

DA Project No.	Title
1-29-50-005	Electroplating and Heat Treating Services
1-29-66-002	Miniature Counter
1-29-90-011	Technical Staff Management
1-29-90-051	Management, Laboratory Services Branch
1-29-90-061	Management, Cryptologic Branch
1-29-90-071	Management, Electronics Branch
1-29-91-003	Legal Operations Research and Development Division
1-29-91-004	Research and Development Division Histories
1-29-91-005	Patents Section
1-29-95-052	Construction and Installation of Partitions for Research and Development Division
1-29-95-061	Laboratory Modification, Cryptologic Branch
1-29-95-063	Battery Replacement for 48 Volt Supply
1-29-95-066	Procurement of Electronic Photographic and Electrical Materials and Supplies .

d. The following projects be cancelled:

DA Project No.	Title
1-29-95-051	Shop Facilities Laboratory Services Branch
1-29-95-062	Laboratory Facilities, Cryptologic Branch
1-29-95-071	Facilities, Electronic Branch

Above activities to be continued under DA Project No. 1-29-95-013, Research and Development Division Facilities.

~~CONFIDENTIAL~~

DA Project No.	Title
1-29-93-051	Maintenance, Laboratory Services Branch
1-29-93-061	Laboratory Maintenance Cryptologic Branch
1-29-93-071	Maintenance, Electronics Branch

Above activities to be continued under DA Project No. 1-29-93-001, Laboratory Maintenance, Research and Development Division.

4. EXHIBITS:

None.

5. COORDINATION:

None.

Leo Rosen

LEO ROSEN
Chairman, Cryptologic
Subcommittee, ASATC

~~CONFIDENTIAL~~

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

2 December 1949

SUBJECT: Approval of Army Security Agency Technical Committee Subcommittee Report No. 45

TO: Interested Members of Army Security Agency Technical Committee and Other Interested Agencies

1. Subcommittee Report No. 45, Subject: Review of Cryptologic Research and Development Projects, dated 2 December 1949, having been presented by Mr. Leo Rosen at Army Security Agency Technical Committee meeting No. 6, above date, was recommended for approval. This recommendation was concurred in by all members present, a listing of whom is included in the minutes of the meeting.

2. The recommendations contained in subject report are hereby approved.

FOR THE CHIEF, ARMY SECURITY AGENCY:

JOHN C. ARROWSMITH
Col., Corps of Engineers
Acting Chairman, ASATC

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

Approved by order of the Secretary of the Army:

RICHARD J. MEYER
Lt. Colonel, GSC
R&D Group, Logistics Div., GSUSA

~~RESTRICTED~~

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

ITEM # 46

2 Dec 49

SUBCOMMITTEE REPORT FOR THE ARMY SECURITY AGENCY TECHNICAL COMMITTEE

SUBJECT: Review of Intercept and Direction Finding Research and Development Projects

1. REFERENCES:

a. IRS from Secretary, Army Security Agency Technical Committee to Chairman, Intercept and Direction Finding Subcommittee, subject, "Review of Research and Development Projects," dated 15 August 1949.

b. Department of the Army Special Regulation 705-5-1, paragraph 12.

2. DISCUSSION:

a. Agencies Concerned:

(1) Directing Agency: Army Security Agency
(2) Other Interested Agencies: Navy, USAF, Signal Corps

b. Purpose:

To insure conformity with the Department of the Army Research and Development Program, to eliminate duplicating and unproductive activities, to insure records on all projects are kept current, and to insure prompt action on all completed projects.

3. RECOMMENDATIONS:

The Subcommittee recommends that:

a. The following projects be continued and the assigned priorities remain the same as indicated:

DA Project No.	Title	Priority
1-29-32-001	Multicouplers	1-C
1-29-32-003	Impulse Recorder-Reproducer, ASAN 10	1-C
1-29-32-004	Precision Disc Recorder-Reproducer, ASAN 11	1-C
1-29-32-006	High Precision Recorder-Reproducer, ASAN 9	1-C

~~RESTRICTED~~

b. The following projects be continued and the assigned priorities changed as indicated:

None.

c. The following projects be terminated as completed:

DA Project No.	Title
1-29-32-005	Special Oscilloscopes
1-29-32-007	Antenna Matching Transformer
1-29-32-010	Tape Feed-Out Counter, ASAN 4
1-29-90-031	Management, Intercept Equipment Branch

d. The following projects be cancelled:

DA Project No.	Title
1-29-93-031	Laboratory Maintenance Intercept Equipment Branch

This activity to be continued under DA Project #1-29-93-001, Laboratory Maintenance, Research and Development Division

1-29-95-031	Laboratory Facilities Intercept Equipment Branch

This activity to be continued under DA Project #1-29-95-013, Research and Development Division Facilities.

4. EXHIBITS:

None.

5. COORDINATION:

None.

Arthur B. Moulton
for R. C. HIX
Chairman, Intercept
and Direction Finding
Subcommittee, ASATC

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

2 December 1949

SUBJECT: Approval of Army Security Agency Technical Committee Subcommittee Report No. 46

TO: Interested Members of Army Security Agency Technical Committee and Other Interested Agencies

1. Subcommittee Report No. 46, Subject: Review of Intercept and Direction Finding Research and Development Projects, dated 2 December 1949, having been presented by Mr. A. Moulton at Army Security Agency Technical Committee Meeting No. 6, above date, was recommended for approval. This recommendation was concurred in by all members present, a listing of whom is included in the minutes of the meeting.

2. The recommendations contained in subject report are hereby approved.

FOR THE CHIEF, ARMY SECURITY AGENCY:

JOHN C. ARROWSMITH
Col., Corps of Engineers
Acting Chairman, ASATC

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

Approved by order of the Secretary of the Army:

RICHARD J. MEYER
Lt. Colonel, GSC
R&D Group, Logistics Div., GSUSA

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

2 Dec 49

ITEM NO. 47

SUBCOMMITTEE REPORT FOR THE ARMY SECURITY AGENCY TECHNICAL COMMITTEE

SUBJECT: Adoption of Revised Military Characteristics for the ASAM 7

1. REFERENCES:

a. Letter from Hq AGF to CG ASF, Subject: Security Equipment, dated 23 Mar 45 wherein Military Characteristics for the subject equipment are proposed for adoption. By 1st Ind the CG ASF directed the CSigO to consider the proposed Military Characteristics for adoption and by 2d Ind the correspondence was referred to the CG AAF for comment and/or concurrence.

b. Cryptographic plan prepared by Signal Security Agency and approved by G-2 WDGS in 1st Ind, 27 February 1945.

c. 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. (Specifically Military Characteristics No. 5, and Military Characteristics No. 6, ASAG 22-1.)

d. SCTC Item No. 1408, SCTC Meeting No. 363, 23 April 1945.

2. DISCUSSION:

a. Agencies Concerned:

(1) Cognizant agency: Army Security Agency
(2) Directing agency: Army Security Agency
(3) Requesting agency: AFF: USAF
(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 an off-line crypto-equipment, operational characteristics of which will permit encipherment and decipherment of tactical messages faster than available machines.

c. Description:

The ASAM 7 will be an off-line cipher machine to be used wherever twenty-four (24) volts dc is available. A conversion unit will be provided to permit one hundred and fifteen (115) volts ac operation. It will be keyboard operated and produce printed tape copy at normal typing speeds.

d. Related Material: None.

e. Development History and Status:

The military characteristics of the ASAM 7, (MX-507( )/T), was originally submitted by the Army Field Forces on 20 March 1945, and approved at a meeting of the Signal Corps Technical Committee on 23 April 1945. The ASAM 7 was approved as a research and development project by the Chief, Army Security Agency on 17 September 1947, prior to the organization of the Army Security Agency Technical Committee. Subsequently, the project has been reviewed and aporoved for continuation by the Army Security Agency Technical Committee. The ASAM 7 was the second cipher machine in the long term cipher

machine program and has progressed very satisfactory since its inception. Breadboard models were developed at the Army Security Agency and to date two (2) progressive research and development contracts have been let with a commercial organization. It has become apparent through research and development that the final model of the ASAM 7 will also satisfy requirements of the USAF Military Characteristics for Low Echelon Literal Systems. The attached Military Characteristics are a consolidation of AFF and USAF requirements which can be met by the ASAM 7.

f. Proposed Development:

Continued development under Project No. 1-29-41-004.

g. Security Classification:

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

3. RECOMMENDATIONS:

Adoption of revised Military Characteristics for the ASAM 7 as shown in Exhibit "A."

4. EXHIBITS:

Exhibit "A," Revised Military Characteristics for ASAM 7.

5. COORDINATION:

Coordination was accomplished with the following agencies:

AGENCY	Representative and Title
Army Field Forces	Col. D. G. McBride Lt. Col. S. S. Hoff
Signal Corps	Col. E. R. Petzing Capt. R. H. Kiley
Air Force	Major W. B. White

Howard C. Barlow

HOWARD C. BARLOW
Chairman, Cryptographic
Subcommittee, ASATC

D R A F T

Prepared by: Cryptographic Subcom ASATC
Date 15 Sep 49
Approved by: ASATC
Date 2 Dec 49
EXHIBIT "A" Submitted by:
Date

REVISED MILITARY CHARACTERISTICS FOR ASAM 7

I - GENERAL INFORMATION

1. Objective

There is a military requirement for an off-line crypto-equipment, the operational characteristics of which will permit the encipherment and decipherment of tactical messages faster than available machines.

2. Proposed Service Employment

a. This equipment may be utilized in all echelons.

b. This equipment will be utilized in mobile, field, and/or fixed installations.

c. This equipment will be utilized off-line.

II - OPERATIONAL CHARACTERISTICS

1. Security

a. The security shall be Grade IV. (Minimum fourteen (14) days. See ASAC 22-1.)

b. Time limits of the crypto-period shall be a minimum of twenty-four (24) hours.

c. Number of stations in a crypto-net shall be limited only by operational requirements.

d. Number of transmissions and/or word groups in a crypto-net within a crypto-period shall be unlimited.

2. Functional Requirements

a. The clear text produced or accepted shall be the twenty-six (26) alphabetical characters, ten (10) digits, and space.

b. The cipher text produced or accepted shall be the twenty-six (26) alphabetical characters, spaced in five (5) letter groups.

c. The nominal input shall be from a keyboard and the nominal output shall be printed copy on 3/8" gummed tape.

d. The cipher text shall be capable of transmission by any means.

e. The equipment shall be capable of operation at speeds up to sixty (60) words per minute.

f. Normally the key setting shall be accomplished once every crypto-period.

g. Clear text indicators shall be used for each message.

3. 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.

4. Spurious Radiation of Clear Text

There shall be no perceptable radiation of the clear text signal from the ASAM 7.

5. Power Requirement

This equipment shall operate from twenty-two (22) to thirty-one (31) volts dc power source. A conversion unit shall be provided to permit operation from a 115 (±10%) volt, 50/60 (±10%) cycle ac power source.

6. 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

a. The desired weight shall be fifteen (15) pounds, and the maximum acceptable weight limit shall be twenty (20) pounds, when enclosed in its own immersion-proof, operating case.

b. The desired volume shall be .5 cubic feet and the maximum acceptable volume shall be .7 cubic feet, when enclosed in its own immersion-proof case.

2. Operation, Transportation, Packaging, and Storage Requirements

a. This equipment shall withstand vibration and shock encountered in fixed station, mobile installation and normal field use.

b. This equipment shall be capable of operation and storage in the following ambient conditions:

(1) Operation temperatures from +20°F to +125°F and storage at -80°F to +160°F.

(2) Humidity from 0% to 95%.

c. This equipment shall be capable of operation at pressure altitudes up to thirty thousand (30,000) feet.

d. This equipment shall be capable of operation during normal field service dust and spray conditions.

e. This equipment when encased shall be capable of operation after submersion in three (3) feet of water for five (5) minutes.

f. This equipment shall be capable of air transportability in Phase II.

(SR 705-30-10 7 Sep 49).

3. Destruction Requirements

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

SECRET

IV - EQUIPMENT OPERATION AND MAINTENANCE CHARACTERISTICS

1. Operating Time

The equipment shall be capable of a continuous twenty four (24) hour 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 ten (10) minute period daily for preventative maintenance and operational adjustment (which includes key setting.)

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

The equipment shall require a maximum of five (5) minutes to prepare from a packaged condition to a standby condition.

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

No time required.

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

2 December 1949

SUBJECT: Approval of Army Security Agency Technical Committee Subcommittee Report No. 47

TO: Interested Members of Army Security Agency Technical Committee and Other Interested Agencies

1. Subcommittee Report No. 47, Subject: Adoption of Revised Military Characteristics for the ASAM 7, dated 2 December 1949, having been presented by Mr. H. C. Barlow at Army Security Agency Technical Committee meeting No. 6, above date, was recommended for approval. This recommendation was concurred in by all members present, a listing of whom is included in the minutes of the meeting.

2. The recommendations contained in subject report are hereby approved.

FOR THE CHIEF, ARMY SECURITY AGENCY:

JOHN C. ARROWSMITH
Col., Corps of Engineers
Acting Chairman, ASATC

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

Approved by order of the Secretary of the Army:

Richard J. Meyer
RICHARD J. MEYER
Lt. Col., GSC
R&D Group, Logistics Div., GSUSA

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

ITEM NO. 48 2 Dec 49

SUBCOMMITTEE REPORT FOR THE ARMY SECURITY AGENCY TECHNICAL COMMITTEE

SUBJECT: Adoption of Revised Military Characteristics for the ASAM 9

1. REFERENCES:

a. Letter from Hq., AGF to OCSigO, Subject: Security Equipment for use with Teletypewriter, dated 4 April 1945.

b. Letter from Hq., ASF to OCSigO, Subject: Security Equipment for use with Teletypewriter, File 413.44/116 (Code equipment) (s), dated 9 April 1945, wherein a requirement is indicated for the subject equipment and Military Characteristics are proposed for adoption.

c. Cryptographic plan prepared by Signal Security Agency and approved by G-2 WDGS, in 1st Ind, 27 Feb 45.

d. 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 Sep 46, with indorsement from War Department, General Staff, Research and Development Division, to Chief, Army Security Agency, through the Director of Intelligence. (Specifically Military Characteristics No. 2 and Military Characteristics No. 15, ASAG 22-1).

e. SCTC Item No. 1427, SCTC Meeting No. 365, 7 May 45.

2. DISCUSSION:

a. Agencies Concerned:

(1)	Cognizant Agency:	Army Security Agency
(2)	Directing Agency:	Army Security Agency
(3)	Requesting Agency:	AFF; USAF
(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 crypto-equipment, the operational characteristics of which will provide security to teletype messages sent via either wire or radio channels, faster than available machines.

c. Description:

The ASAM 9 will be an on-line and/or off-line portable high security cipher machine for use with teletypewriter to provide secure transmission over wire and/or radio channels.

d. Related Material:

None.

e. Development History and Status:

The military characteristics of the ASAM 9, (MX-519/TG) were originally submitted by the Army Field Forces on 20 March 1945, and approved at a meeting of the SCTC on 7 May 1945. The ASAM 9 was approved as a research and development project by the Chief, Army Security Agency on 17 September 1946. Subsequently, the project has been reviewed and approved for continuation by the Army Security Agency Technical Committee. The ASAM 9 was the first cipher machine in the long term cipher machine program and has progressed very satisfactorily since its inception. Breadboard

models were developed at the Army Security Agency and to date four (4) research and development contracts have been let with commercial organizations. Three (3) progressive contracts have been let on the electromechanical version and one (1) on the electronic version. One (1) electromechanical engineering model has been received and studied by the Army Security Agency. It has become apparent through research and development that the final model of the ASAM 9 will also satisfy requirements of the USAF Military Characteristics for a High Echelon Literal System and a Weather Collecting System. The attached Military Characteristics are a consolidation of AFF and USAF requirements which can be met by the ASAM 9.

f. Proposed Development:

Continued development under Project No. 1-29-41-001.

g. Security Classification:

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

3. RECOMMENDATIONS:

Adoption of revised military characteristics for the ASAM 9 as shown in Exhibit "A".

4. EXHIBITS:

Exhibit "A", Revised Military Characteristics for ASAM 9.

5. COORDINATION:

Coordination was accomplished with the following agencies:

Agency	Representative & Title
Army Field Forces	Colonel D. G. McBride Lt. Colonel S. S. Noff

Agency	Representative and Title
Signal Corps	Colonel E. R. Petzing Captain R. H. Kiley
Air Force	Major W. B. White

Howard C. Barlow

HOWARD C. BARLOW
Chairman, Cryptographic
Subcommittee, ASATC

D R A F T

Prepared by: Cryptographic Subcom ASATC
Date: 15 Sept 49
Approved by: ASATC
Date: 2 Dec 49
Submitted by:
Date:

EXHIBIT "A"

REVISED MILITARY CHARACTERISTICS FOR ASAM 9

I - GENERAL INFORMATION

1. Objective

There is a military requirement for a crypto-equipment, the operational characteristics of which will provide security to teletype messages sent via either wire or radio channels, faster than available machines.

2. Proposed Service Employment

a. This equipment may be utilized in all echelons.

b. This equipment will be utilized in mobile, field, and/or fixed installations.

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

d. The equipment will be utilized with communication systems which operate "start-stop" at speeds of sixty (60), seventy-five (75) or one hundred (100) words per minute.

II - OPERATIONAL CHARACTERISTICS

1. Security

a. The security shall be Grade II. (Minimum five (5) years. See ASAG 22-1.)

b. Time limits of the crypto-period shall be a minimum of twenty-four (24) hours.

c. Number of stations in a crypto-net shall be limited only by operational requirements.

d. Number of transmissions and/or word groups in a crypto net within a crypto-period shall be unlimited.

2. Functional Requirements

a. The clear text 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 sloop.

b. The enciphered signal produced or accepted shall be a dc, neutral "start-stop," teletype signal, twenty (20) or sixty (60) milliamperes.

c. This equipment shall be capable of transmitting by wire and/or radio teletype, on-line and/or off-line communications.

d. This equipment shall operate over one (1) normal teletype channel.

e. Types of data to be transmitted:

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

f. The equipment shall be capable of enciphering and deciphering messages at a speed of sixty (60), seventy-five (75), or one hundred (100) word groups per minute.

g. Normally the key setting shall be accomplished once each crypto-period.

. Clear text indicators shall be used for each message.

1. The equipment shall not adversely affect the performance of the associated communication equipment.

3. 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.

4. Spurious Radiation of Clear Text

There shall be no perceptible radiation of the clear text signal from the ASAM 9.

5. Power Requirement

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

6. 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

a. The desired weight shall be twenty-five (25) pounds, and the maximum acceptable weight limit shall be forty (40) pounds, when enclosed in its own immersion-proof, operating case.

b. The desired volume shall be one (1) cubic foot and the maximum acceptable volume shall be one and a half (1.5) cubic feet, when enclosed in its own immersion-proof case.

2. Operation, Transportation, Packaging, and Storage Requirements

a. This equipment shall withstand vibration and shock encountered in fixed station, mobile installation or normal field use.

b. This equipment shall be capable of operation and storage in the following ambient conditions:

(1) Operation temperatures from /20°F to /125°F and storage at -80°F to /160°F.

c. This equipment shall be capable of operation at pressure altitudes up to thirty thousand (30,000) feet.

d. This equipment shall be capable of operation during normal field service dust and spray conditions.

e. This equipment when encased, shall be capable of operation after submersion in three (3) feet of water for five (5) minutes.

f. This equipment shall be capable of air transportability in Phase II. (AGAO-S 452.1 Ltr dtd 15 Sep 47, CSGRD/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 a continuous twenty-four (24) hour 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 Packaged for Storage or Shipment Conditions to Secured or Power Off Conditions.

The equipment shall require a maximum of fifteen (15) minutes to prepare from a packaged condition to a standby condition.

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

The equipment shall require a maximum of thirty (30) seconds to prepare from a standby to a fully operational condition.

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

2 December 1949

SUBJECT: Approval of Army Security Agency Technical Committee Subcommittee Report No. 48

TO: Interested Members of Army Security Agency Technical Committee and Other Interested Agencies

1. Subcommittee Report No. 48, Subject: Adoption of Revised Military Characteristics for ASAM 9, dated 2 December 1949, having been presented by Mr. H. C. Barlow at Army Security Agency Technical Committee meeting No. 6, above date, was recommended for approval. This recommendation was concurred in by all members present, a listing of whom is included in the minutes of the meeting.

2. The recommendations contained in subject report are hereby approved.

FOR THE CHIEF, ARMY SECURITY AGENCY:

JOHN C. ARROWSMITH
Col., Corps of Engineers
Acting Chairman, ASATC

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

Approved by order of the Secretary of the Army:

RICHARD J. MEYER
Lt. Colonel, GSC
R&D Group, Logistics Div., GSUSA

Item 48, Page 10

Minutes Page 37

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

ITEM NO. 49 2 Dec 49

SUBCOMMITTEE REPORT FOR ARMY SECURITY AGENCY TECHNICAL COMMITTEE

SUBJECT: Adoption of Military Characteristics for ASAY 4.

1. REFERENCES:

a. Letter from Army Security Agency to Commanding General, Army Ground Forces, subject: Requirements for Cryptographic Devices, dated 30 July 1947, with seven indorsements.

2. DISCUSSION:

a. Agencies Concerned:

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

b. Purpose:

There is a military requirement for ciphony equipment for use over wire and radio circuits in echelons up to and including Division.

c. Description:

The ASAY 4 will be a low echelon ciphony system which will provide crypto-security for at least ten (10) hours. The equipment will operate over wire and radio voice circuits and will weigh not more than fifteen (15) pounds.

d. Related Materials:

None

e. Development History and Status:

Project 1-29-22-004 was established 12 October 1945. A contract for four (4) service test models is underway.

f. Proposed Development:

Following service tests on the models now under contract additional models incorporating modifications will be procured.

g. Security Classification:

The classification of the Military Characteristics is SECRET.

3. RECOMMENDATIONS:

The Subcommittee recommends:

The adoption of Military Characteristics for ASAY 4 as shown in Exhibit "A".

4. EXHIBITS:

a. Exhibit "A", proposed Military Characteristics for ASAY 4, dated 8 September 1949.

5. COORDINATION:

Coordination was accomplished with the following agencies:

Agency	Representative and Title
Department of the Air Force	Major William B. White U. S. Air Force
Department of the Army	Colonel Dana G. McBride Army Field Forces

Agency	Representative and Title
Department of the Army	Colonel Edwin R. Petzing Captain Richard H. Kiley Office of the Chief Signal Officer

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

1 Incl
Exhibit "A"

Prepared by CC&C Subcommittee
Date 8 September 1949
Approved by ASATC
Date 2 December 1949
(To Be Completed by ASA)

REVISED MILITARY CHARACTERISTICS FOR ASAY 4

Submitted by AFF
Date 13 F bruary 1948

I - GENERAL INFORMATION

1. Objective

The AFF has a military requirement for ciphony equipment to be used for voice communication over wire and radio circuits in echelons up to and including the Division.

2. Proposed Service Employment

This equipment will be used in:

a. Echelons up to and including Division

b. Vehicular and field installations.

II - OPERATIONAL CHARACTERISTICS

1. Security

This equipment shall provide crypto-security for at least ten (10) hours based upon the general requirements as set forth in ASAG 22.

2. Functional Requirements

This equipment shall:

a. Receive plain-text voice signals from a standard microphone or standard field telephone handset.

b. Provide enciphered voice signals which are capable of being transmitted over standard radio and wire trunk facilities in conjunction with standard switchboard equipments.

c. Provide deciphered voice signals capable of operating a standard headset or standard field telepho dset.

d. Be so constructed that changing of the key can be performed by an operator after a maximum of two hours special training.

e. Provide a clear, unmistakable, uncomfortable warning to the user at the transmitting terminal if transmission of the clear is occurring after the equipment has been set to the security condition.

3. Radio Interference Reduction

Radio frequency noises generated within this equipment shall be a minimum and shall not interfere with the operation of radio sets in the immediate vicinity of the equipment.

4. Stability

Stability of the equipment shall be such as to require no corrections by the user after initial adjustments have been made.

5. Resolution

a. Intelligibility of speech received ov system shall be not less than that obtainable over a good telephone c having a transmission band

width of at least 2800 cycles.

b. The noise introduced into a circuit by this equipment shall be a minimum and shall not perceptibly affect the quality of the signals.

6. Power Requirement

a. Power consumption shall be as low as is feasible.

b. The equipment shall be operable from a power source of 24 volts DC, or by applique unit(s) from the following: 6 volts DC, 12 volts DC, 115 volts 50-60 cps, or the output of hand generators concurrently in use.

7. Special Requirements

This equipment shall require no modification of the radio sets or telephone equipment with which it works.

III - PHYSICAL CHARACTERISTICS

1. Weight and Volume Factors

This equipment shall:

a. Not weigh more than 15 pounds, exclusive of primary source of power and aplique unit(s); applique unit(s) shall have a maximum weight of 10 pounds each.

b. With necessary power applique unit be of such size and shape as to be readily carried on a standard quartermaster pack board.

2. Operation, Transportation, Packaging, and Storage Requirements

This equipment and its power applique unit(s) shall:

a. Be capable of operating under all conditions encountered by tactical radio equipment and be immersion proof in their carrying cases.

b. Be so constructed as to be capable of operation and storage under climatic conditions as specified in AGO letter, File AGAO-S44.24 (12 April 1948) CSGSP-M 15 April 1948, subject: Temperature Requirements for the Performance and Storage of U. S. Army Equipment and Supplies.

c. Be capable of operation at all atmospheric pressures encountered from sea level to 18,000 feet above sea level and of transport at altitudes of 25,00 feet above sea level.

d. Meet the Signal Corps Standard specification regarding moisture, fungus and climatic conditions.

e. Within the specified temperature range, be capable of operation at 100% relative humidity at temperatures below 90° F. and at the maximum obtainable relative humidity above 90° F., but not in excess of that corresponding to a vapor pressure of 36 mm of H.

f. Be transportable in any standard aircraft and be capable of utilization in Phase I of air operations as specified in SR 705-30-10, 7 Sep 49.

3. Destruction Requirements

This equipment shall be provided with a simple means of emergency construction of the crypto-components.

IV - EQUIPMENT OPERATION AND MAINTENANCE CHARACTERISTICS

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

This equipment shall be designed such that:

a. Installation and preliminary adjustments can be performed by trained wire and radio installation personnel.

b. Operation, subsequent to initial installation and adjustment, shall be capable of being performed by personnel after a maximum of 2 hours special training.

c. A maximum of essential maintenance operations may be performed by appropriate field communication maintenance personnel.

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

2 December 1949

SUBJECT: Approval of Army Security Agency Technical Committee Subcommittee Report No. 49

TO: Interested Members of Army Security Agency Technical Committee and Other Interested Agencies

1. Subcommittee Report No. 49, Subject: Adoption of Military Characteristics for ASAY 4, dated 2 December 1949, having been presented by Mr. C. C. Wright at Army Security Technical Committee meeting No. 6, above date, was recommended for approval. This recommendation was concurred in by all members present, a listing of whom is included in the minutes of the meeting.

2. The recommendations contained in subject report are hereby approved.

FOR THE CHIEF, ARMY SECURITY AGENCY:

JOHN C. ARROWSMITH
Col., Corps of Engineers
Acting Chairman, ASATC

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

Approved by order of the Secretary of the Army:

RICHARD J. MEYER
Lt. Colonel, GSC
R&D Group, Logistics Div., GSUSA

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

ITEM NO. 50 2 Dec 49

SUBCOMMITTEE REPORT FOR ARMY SECURITY AGENCY TECHNICAL COMMITTEE

SUBJECT: Adoption of Military Characteristics for ASAY 5.

1. REFERENCES:

a. Letter from Army Security Agency to Commanding General, Army Ground Forces, subject: Requirements for Cryptographic Devices, dated 30 July 1947, with seven indorsements.

2. DISCUSSION:

a. Agencies Concerned:

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

b. Purpose.

There is a military requirement for ciphony equipment for use over wire and radio circuits in Army, Corps and Division.

c. Description:

The ASAY 5 will be a medium echelon ciphony system which will provide Grade V security. The equipment will operate over wire and radio voice circuits and will be capable of operation in a 3/4 ton weapon carrier.

d. Related Materials:

None

e. Development History and Status:

DA Project No. 1-29-22-005 was established 17 July 1945. Design of two approaches to ASAY 5 is underway.

f. Proposed Development:

Six (6) 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 ASAY 5 as shown in Exhibit "A".

4. EXHIBITS:

a. Exhibit "A", proposed Military Characteristics for ASAY 5, dated 8 September 1949.

5. COORDINATION:

Coordination was accomplished with the following agencies:

Agency	Representative and Title
Department of the Air Force	Major William B. White U.S. Air Force
Department of the Army	Colonel Dana C. McBride Army Field Forces

Agency	Representative and Title
Department of the Army	Colonel Edwin R. Petzing Captain Richard H. Kiley Office of the Chief Signal Officer

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

1 Incl
Exhibit "A"

Prepared by CC&C Subcommittee
Date 8 September 1949
Approved by ASATC
Date 2 Dec 49
(To Be Completed by ASA)

REVISED MILITARY CHARACTERISTICS FOR ASAY 5

Submitted by AFF
Date 13 February 1948

I - GENERAL INFORMATION

1. Objective

The AFF has a military requirement for ciphony equipment to be used for voice communication over wire and radio circuits in Army, Corps and Division.

2. Proposed Service Employment

This equipment will be used in:

a. Army, Corps and Division.

b. Vehicular installations, mobile radio stations, fixed and semi-fixed communication centers.

II - OPERATIONAL CHARACTERISTICS

1. Security

This equipment shall have Grade V security as defined in ASAG 22.

2. Functional Requirements

This equipment shall:

a. Receive plain-text voice signals from a standard microphone or standard field telephone handset.

b. Provide enciphered voice signals which are capable of being transmitted

over standard radio and wire trunk facilities and in conjunction with standard switchboard equipments.

c. Provide deciphered voice signals capable of operating a standard headset or standard field telephone handset.

d. Be so constructed that changing of the key can be performed by an operator after a maximum of two hours special training.

e. Provide a clear, unmistakable, uncomfortable warning to the user at the transmitting terminal if transmission in the clear is occurring after the equipment has been set to the security condition.

3. Radio Interference Reduction

Radio frequency noises generated within this equipment shall be a minimum and shall not interfere with the operation of radio sets in the immediate vicinity of the equipment.

4. Stability

Stability of the equipment shall be such as to require a minimum of corrections after initial adjustments have been made. Any necessary corrections must be capable of being made without interfering with traffic going over the system.

5. Resolution

a. Intelligibility of speech received over the system shall be not less than that obtainable over a good telephone circuit having a transmission band width of at least 2800 cycles.

b. The noise introduced into a circuit by this equipment shall be a minimum and shall not perceptibly affect the quality of the signals.

6. Power Requirement

a. Power consumption shall be as low as is feasible.

b. The equipment shall operate from a 115/230 volt, 50-60 cps power source, and from 24 volts DC.

7. Special Requirements

This equipment shall require no modification of the radio sets or telephone equipment with which it works.

III - PHYSICAL CHARACTERISTICS

1. Weight and Volume Factors

This equipment shall be of such size, shape and weight as to be readily transported and operated in a 3/4 ton weapons carrier.

2. Operation, Transportation, Packaging, and Storage Requirements

This equipment shall:

a. Be capable of operating under all conditions encountered by tactical radio equipment and be immersion proof in its carrying cases.

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) CSGSP-M, 15 April 1948, subject: Temperature Requirements for the Performance and Storage of U. S. Army Equipment and Supplies.

c. Be capable of operation at all atmospheric pressures encountered from sea level to 18,000 feet above sea level, and it shall be capable of transport at altitudes of 25,000 feet above sea level.

d. Meet the Signal Corps standard specifications regarding moisture, fungus and climatic conditions.

e. Within the specified temperature range, be capable of operation at 100% relative humidity at temperatures below 90° F. and at the maximum obtainable relative humidity above 90° F., but not in excess of that corresponding to a

vapor pressure of 36 mm of Hg.

f. Be transportable in any standard aircraft of adequate cargo capacity and be capable of utilization in Phase II of air operations as specified in AGO letter, File AGAO-S&F.1 (15 September 1947) CSGRD/D-M, 24 September 1947, subject: Air Transportability.

3. Destruction Requirements

This equipment shall be provided with a simple means of emergency destruction of the crypto-components.

IV - EQUIPMENT OPERATION AND MAINTENANCE CHARACTERISTICS

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

This equipment shall be designed such that:

a. Installation and preliminary adjustments can be performed by trained wire and radio installation personnel.

b. Operation, subsequent to initial installation and adjustment, shall be capable of being performed by trained switchboard and radio operators, after a maximum of 2 hours special training.

c. A maximum of essential maintenance operations may be performed by appropriate field communication maintenance personnel.

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

2 December 1949

SUBJECT: Approval of Army Security Agency Technical Committee Subcommittee Report No. 50

TO: Interested Members of Army Security Agency Technical Committee and Other Interested Agencies

1. Subcommittee Report No. 50, Subject: Adoption of Military Characteristics for ASAY 5, dated 2 December 1949, having been presented by Mr. C. C. Wright at Army Security Agency Technical Committee meeting No. 6, above date, was recommended for approval. This recommendation was concurred in by all members present, a listing of whom is included in the minutes of the meeting.

2. The recommendations contained in subject report are hereby approved.

FOR THE CHIEF, ARMY SECURITY AGENCY:

John C. Arrowsmith

JOHN C. ARROWSMITH
Col., Corps of Engineers
Acting Chairman, ASATC

Mac C. Eversole

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

Approval by order of the Secretary of the Army:

Richard J. Meyer

RICHARD J. MEYER
Lt. Colonel, GSC
R&D Group, Logistics Div., GSUSA

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

ITEM NO. 51 2 Dec 49

SUBCOMMITTEE REPORT FOR THE ARMY SECURITY AGENCY TECHNICAL COMMITTEE

SUBJECT: ASAY 9

1. REFERENCES:

a. D/F from Office of the Chief Signal Officer to Chief, Army Security Agency, subject: Approval of M/C's and Initiation of Project for Fixed Plant Ciphony Equipment, dated 26 July 1948.

b. IRS from Secretary, Army Security Agency Technical Committee to Chairman, Ciphony, Cifax and Civision Subcommittee, subject: Approval of M/C's and Initiation of Project, dated 12 August 1948.

2. DISCUSSION:

a. Agencies concerned:

(1) Cognizant agency: ASA
(2) Directing agency: ASA
(3) Requesting agency: Signal Corps
(4) Participating agency: None
(5) Coordinating agency: Signal Corps, AFF, AF
(6) Other probable interested agencies: Navy

b. Purpose:

There is a military requirement for ciphony equipment to be used for staff communications of high echelon headquarters over commercial wire facilities, as well as military fixed plant and/or tactical wire facilities.

c. Description:

The ASAY 9 will be a high echelon ciphony system which will provide Grade II security. It will operate over at least 25 miles of a nominal 4 KC trunk and/or loop.

d. Related Material: None.

e. Development History and Status:

Research and study of key generator techniques are being accomplished under DA Project No. 1-29-20-001, "General Ciphony Research."

f. Proposed Development:

(1) Two experimental models will be constructed at Army Security Agency and it is proposed to develop four (4) service test models for test by the Signal Corps.

(2) The estimated total cost is $190,000.
FY 1950 10,000; FY 1951 20,000; FY 1952 155,000; FY 1953 5,000

(3) It is anticipated that development will be initiated during FY 1950 and service tests completed during FY 1953.

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 ASAY 9 as shown in Exhibit "A".

b. Establishment of DA Project No. 1-29-22-009, ASAY 9.

SECRET

c. Assignment of 1-B priority to DA Project No. 1-29-22-009 which is justified by par 3a, SR 705-20-1.

d. DA Project No. 1-29-22-009 be classified SECRET.

e. Classification of ASAY 9 as SECRET.

f. The NDB Master Plan Technical Objective of DA Project No. 1-29-22-009 to be IO-5.

4. EXHIBITS:

Exhibit "A", Proposed Military Characteristics for ASAY 9.

5. COORDINATION:

Coordination was accomplished with the following agencies:

Agency	Representative and Title
Department of the Air Force	Major William B. White U.S. Air Force
Department of the Army	Colonel Dana G. McBride Army Field Force
Department of the Army	Colonel Edwin R. Petzing Captain Richard H. Kiley Office of the Chief Signal Officer

Clarence C. Wright

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

SECRET

SECRET

Prepared by CUAC Subcommittee
Date 15 June 1949
Approved by ASATC
Date 2 Dec 49
(To be Completed by ASA)

MILITARY CHARACTERISTICS FOR ASAY 9

Submitted by Signal Corps
Date 26 July 1948

I - GENERAL INFORMATION

1. Objective

There is a military requirement for ciphony equipment to be used for staff communications of high echelon headquarters over commercial wire facilities, as well as military fixed plant and/or tactical wire facilities.

2. Proposed Service Employment

This equipment will be used:

a. Between staff offices of high echelons.

b. In fixed installations.

II - OPERATIONAL CHARACTERISTICS

3. Security

This equipment shall:

a. Have Grade II security as defined in ASAG 2..

b. Not require a change in key settings more than once per twenty-four hour period.

c. Provide for the operation of a minimum of 20 stations, any pair of which can carry on a conversation with no possibility of transmission of two or more conversations in depth.

SECRET

4. Functional Requirements

This equipment shall:

a. Receive voice signals from a telephone handset.

b. Reproduce speech readily intelligible and with a minimum of distortion. (Refer to design objective for frequency, phase and harmonic distortion as set forth by the Military Communication System Technical Standards Committee).

c. Be designed for use over wire facilities possessing characteristics of a nominal 4 KC voice channel. (Refer to design objective for frequency, phase and harmonic distortion as set forth by the Military Communication System Technical Standards Committee.)

d. Be designed for push-to-talk operation over common or local battery, two or four wire systems.

e. Be so constructed that the crypto-principles of the equipment will be protected by a three combination lock, in order that this device may be used and key settings made by personnel not cryptographically cleared.

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

g. Automatically stop transmission and provide adequate warning to the operator in the event of malfunction.

5. Range of Transmission Reception

This equipment shall be designed to operate over at least 25 miles of a nominal 4 KC trunk and/or loop.

6. Radio Interference Reduction

This equipment shall incorporate systems for the reduction of radio interference to the optimum extent compatible with the state of the art.

7. Stability

This equipment shall incorporate automatic synchronization.

8. Power Requirement

This equipment shall be operable from a power source of 115/230 volts plus or minus 10%, 50/60 c.s as

9. Equipment Operating Position Requirements

This equipment will be operated in an upright position only.

III - PHYSICAL CHARACTERISTICS

10. Weight and Volume Factors

This equipment shall not weigh more than 300 pounds and its cubic content shall not be more than 10 cubic feet.

11. Operation, Transportation, Packaging, and Storage Requirements

This equipment shall be:

a. Constructed to withstand vibration and shock encountered during movement and handling through military and commercial transportation systems.

b. So constructed as to be capable of operation and storage under climatic conditions as specified in AGO letter, File AGAO-S400.24 (14 April 1948) CSGSP-M, 15 April 1948, subject: Temperature Requirements for the Performance and Storage of U. S. Army Equipment and Supplies.

c. Provided with a submersion-proof carrying case which is of sufficiently rugged construction to withstand normal usage in the field.

d. Transportable in any standard aircraft and be capable of utilization in Phase IV of air operations as specified in SR 705-30-01, 7 Sep 49.

SECRET

12. Destruction Requirements

This equipment shall be provided with a simple means of emergency destruction of the crypto-components.

13. Special Features

Shall be designed to conform with the physical appearance and arrangement of office furniture.

IV - EQUIPMENT OPERATION AND MAINTENANCE CHARACTERISTICS

14. Operating Time

This equipment shall be capable of operating 24 hours per day.

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

This equipment shall:

a. Not require continuous manual adjustment for proper operation.

b. Not require periodic readjustment more often than once weekly.

c. Be capable of second echelon maintenance at the equipment location.

d. Be constructed to facilitate all types of maintenance.

e. Make maximum use of preferred components.

f. Utilize, to a maximum, electronic components of the same value and rating, and hardware of the same dimensions.

16. Safety Features

This equipment shall be constructed to protect personnel from dangerously high voltage.

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

This equipment shall be designed to permit stabilization from "power off" to "full operation" conditions within 10 minutes.

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18. Personnel Considerations

This equipment shall be capable of:

a. Being operated by non-technical personnel.

b. Being maintained by one trained maintenance man.

19. Equipment Arrangements to Promote Operators Efficiency

This equipment shall incorporate a minimum number of controls.

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

2 December 1949

SUBJECT: Approval of Army Security Agency Technical Committee Subcommittee Report No. 51

TO: Interested Members of Army Security Agency Technical Committee and Other Interested Agencies

1. Subcommittee Report No. 51, Subject: ASAY 9, dated 2 December 1949, having been presented by Mr. C. C. Wright at Army Security Agency Technical Committee meeting No. 6, above date, was recommended for approval. This recommendation was concurred in by all members present, a listing of whom is included in the minutes of the meeting.

2. The recommendations contained in subject report are hereby approved.

FOR THE CHIEF, ARMY SECURITY AGENCY:

JOHN C. ARROWSMITH
Col., Corps of Engineers
Acting Chairman, ASATC

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

Approved by order of the Secretary of the Army:

Richard J. Meyer
RICHARD J. MEYER
Lt. Colonel, GSC
R&D Group, Logistics Div., GSUSA

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

ITEM # 52 2 Dec 49

MEMORANDUM FOR THE RECORD OF THE ARMY SECURITY AGENCY TECHNICAL COMMITTEE

SUBJECT: Research and Development Service Project

1. Reference:

IRS from AS-71 to AS-24, subject, "Research and Development Service Projects," dated 27 May 1949, with 4 comments.

2. Department of the Army Research and Development Service Project #1-29-93-001, Laboratory Maintenance, Research and Development Division, 1-B Priority, for the upkeep of equipment assigned to the Army Security Agency Research Laboratory, was approved by Comment 4 of above referenced IRS and is hereby made a matter of record.

Mac C. Eversole

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