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AFSA-OOT

MEMORANDUM FOR: Distribution

SUBJECT: SCAG Conference

Enclosures: (A) Draft agenda
(B) Notes to accompany draft agenda

1. The enclosures are forwarded for telephonic concurrence and/or comments (Ext. 60240).

2. It is proposed to distribute copies of the agenda to SCAG members at the opening session. Enclosure (B) is intended only for AFSA personnel.

Distribution:

Adm. Stone - 1 copy
Col. Collins - 1 copy
Capt. Wenger - 1 copy
Col. Hetherington - 1 copy
Capt. Holtwick - 4 copies
Capt. Harper - 4 copies

William F. Friedman
WILLIAM F. FRIEDMAN
Technical Consultant

This letter may be reduced to CONFIDENTIAL when enclosures are removed.

~~APPENDED DOCUMENT CONTAINS
CODE WORD MATERIAL~~

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SPECIAL CRYPTOLOGIC ADVISORY GROUP
(SCAG)

Agenda
for
First Conference of SCAG
4-5 June 1951

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REF ID: A66052
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DRAFT

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SPECIAL CRYPTOLOGIC ADVISORY GROUP (SCAG)

Agenda

for

First Conference of SCAG

4-5 June 1951

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OPENING SESSION

Morning of 4 June 1951

Time: 10:00 A.M.

Place: Office of the Director, Armed Forces Security Agency, Room 118,
Building 19, Naval Security Station, 3801 Nebraska Avenue, North West,
Washington.

Time

- 10:00 1. Address of welcome:

Dr. William Webster, Chairman, Research and Development Board (RDB)
- 10:05 2. a. Presentation regarding the Armed Forces Security Agency (AFSA):

Organization of AFSA; position in Department of Defense and Armed Forces; relationships with other U.S. agencies and bodies such as the United States Communications Intelligence Board (USCIB), and the Armed Forces Security Agency Council (AFSAC).

Rear Admiral Earl E. Stone, USN, Director, AFSA
- b. Question and discussion period.
- 10:30 3. a. Presentation regarding the use and value of communications intelligence (COMINT) in national defense:

Capt. J.N. Wenger, USN, Deputy Director, AFSA
- b. Question and discussion period.
- 11:00 4. a. Presentation on procedural matters in connection with the functioning of SCAG as an agency of RDB and a consultative body of AFSA:

Mr. Edwin A. Speakman, Executive Director, Committee on Electronics, RDB
- b. Question and discussion period.
- 11:30 5. Outline of program for technical sessions:

Mr. William F. Friedman, Technical Consultant, AFSA
- 11:35 6. Indoctrination of SCAG members not already indoctrinated:

Capt. J.N. Wenger, USN, Deputy Director, AFSA
- 12:00 Luncheon: Conference Room, adjoining Admiral Stone's Office, Room 19-125.
ARMED FORCES SECURITY AGENCY

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TECHNICAL SESSIONS

Commencing after lunch on 4 June 1951

Time: 1:00 P.M.

Place: Room 202, Building 20, Naval Security Station

Time:
1:00

1. a. Presentation to illustrate how a complex COMINT problem was successfully handled in World War II:

LCDR Andrew M. Gleason, USNR

I. The cryptographers' point of view

- A. Requirements
- B. Codes and ciphers
- C. Mechanics of a cipher system

II. Single-letter substitution ciphers

- A. General description
- B. Machine systems
- C. Pad systems; additives

III. Wired-wheel machines and the German Enigma

- A. General description
- B. The commercial Enigma
- C. The steckered Enigma
- D. The Bombe
- E. Duenna

2:00 b. Question and discussion period.

3:00 2. a. Tour of special cryptanalytic machines at the Naval Security Station:

Dr. H. Campaigne and Dr. J.J. Eachus

I. Atlas

Presentation regarding AFSA's position and program in the field of electronic computers

II. Demon I and Demon II

III. Goldberg

IV. World War II Bombe for Enigma solution

4:00 b. Question and discussion period.

ARMED FORCES SECURITY AGENCY

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TECHNICAL SESSIONS, Cont'd

Morning of 5 June 1951

Time: 9:00 A.M.

Place: Room 202, Building 20, Naval Security Station

PRESENTATIONS REGARDING A CURRENT HIGH-PRIORITY AFSA PROBLEM

Time
9:00

1. a. Introduction to Albatross

I. Background of the Albatross problem

II. What is known about the machine

III. Present indicator system

IV. The Round Robin machine

To be presented by Mr. F.A. Raven and Mr. D.H. Shepard

10:00

b. Question and discussion period.

11:00

2. Isomorphism and wheel recovery

I. Discussion of isomorphism

II. A sample problem in wheel recovery

To be presented by Mr. A.N. Levenson and Mr. E.D. Marston

12:00

Luncheon: Executive dining room, Naval Security Station Cafeteria

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Afternoon of 5 June 1951

Time: 1:30 P.M.

Assembly point: Room 1082, Building "A", Arlington Hall Station, 4000 Lee Boulevard, Arlington, Virginia. (Transportation from Naval Security Station to Arlington Hall Station will be provided for SCAG members)

Time
1:30

1. Tour of AFSA machines, to be conducted by Mr. Frank B. Rowlett, assisted by Dr. A.E. Highley and Mr. William J. Lawless.

I. The IBM installation

II. RAM equipment

A. Abner
B. Robin
C. ASAF-1

- 2:30 2. a. Discussion period on isomorphism and wheel recovery.

To be held in Room 2010, Building "B", AHS

b. Coffee will be served during this period.

- 3:30 3. a. Presentation regarding AFSA project S EATER: Matrix projection (Room 2032, Bldg. "B")

Mr. Albert E. Roberts

This presentation is of interest primarily to those members of SCAG who are specialists in the field of mathematics.

- 3:30 b. Presentation regarding electronic representation of rotors (Room 2010, Bldg. "B")

Dr. Eachus, assisted by Mr. Ray L. Bowman and Mr. Roger Moulton

This presentation is of interest primarily to those members of SCAG who are specialists in the field of electronics and electrical engineering.

- 4:30 4. Final discussion.

To be held in Army Security Agency Conference Room (Room 117), Headquarters Building, Arlington Hall Station.

5. Closing remarks.

Rear Admiral Earl E. Stone, USN, Director, AFSA

ARMED FORCES SECURITY AGENCY

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OPENING SESSION
Morning of 4 June 1951

Time: 10:00 A.M.

Place: Office of the Director, Armed Forces Security Agency, Room 118,
Building 19, Naval Security Station, 3801 Nebraska Avenue, North
West, Washington

- Time
10:00
1. Indoctrination of SCAG members not already indoctrinated:
 Capt. J.N. Wenger, USN, Deputy Director, AFSA
- 10:15
2. a. Presentation regarding the Armed Forces Security Agency (AFSA):
 Organization of AFSA; position in Department of Defense and Armed
 Forces; relationships with other U.S. agencies and bodies such as
 the United States Communications Intelligence Board (USCIB),
 and the Armed Forces Security Agency Council (AFSAC);
 Mission for SCAG:
 Rear Admiral Earl E. Stone, USN, Director, AFSA
- b. Question and discussion period.
- 10:40
3. Remarks on behalf of Lieut. General Walter B. Smith, USA, Director
 of Central Intelligence:
 Mr. Kingman Douglass, Assistant Director, CIA
- 10:45
4. Address of welcome:
 Mr. William Webster, Chairman, Research and Development Board (RDB)
- 10:50
5. a. Presentation regarding the use and value of communications intelligence
 (COMINT) in national defense:
 Capt. J.N. Wenger, USN, Deputy Director, AFSA
- b. Question and discussion period.
- 11:20
6. a. Presentation on procedural matters in connection with the functioning
 of SCAG as an agency of RDB and a consultative body of AFSA:
 Mr. Edwin A Speakman, Executive Director, Committee on Electronics, RDB
- b. Question and discussion period.
- 11:50
7. Outline of program for technical sessions
 Mr. William F. Friedman, Technical Consultant, AFSA
- 12:00
- Luncheon for SCAG members: Director's Office, Room 19-118.

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TECHNICAL SESSIONS

Commencing after lunch on 4 June 1951

Time: 1:00 P.M.

Place: Room 202, Building 20, Naval Security Station

Time:
1:00

1. a. Presentation to illustrate how a complex COMINT problem was successfully handled in World War II:

LCDR Andrew M. Gleason, USNR

- 2:00 b. Question and discussion period.

- 3:00 2. a. Tour of special cryptanalytic machines at the Naval Security Station:

Dr. H. Campaigne and Dr. J.J. Eachus

I. Atlas

Presentation regarding AFSA's position and program in the field of electronic computers

II. Damon I and Damon II

III. Goldberg

IV. World War II Bombe

- 4:00 b. Question and discussion period.

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TECHNICAL SESSIONS, Cont'd

Morning of 5 June 1951

Time: 9:00 A.M.

Place: Room 202, Building 20, Naval Security Station

Time PRESENTATIONS REGARDING A CURRENT HIGH-PRIORITY AFSA PROBLEM

9:00 1. a. Introduction to Albatross

 To be presented by Mr. F.A. Raven and Mr. D.H. Shepard

10:00 b. Question and discussion period.

11:00 2. Isomorphism and wheel recovery

 To be presented by Mr. A.N. Levenson and Mr. E.D. Marston

Luncheon for SCAG members and AFSA conferees: Executive dining room,
Naval Security Station Cafeteria

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~~TOP SECRET~~TECHNICAL SESSIONS, Cont'd
Afternoon of 5 June 1951

Time: 1:30 P.M.

Assembly point: Room 1062, Building "A", Arlington Hall Station, 4000 Lee Boulevard, Arlington, Virginia. (Transportation from Naval Security Station to Arlington Hall Station will be provided for SCAG members)

Time

1:30

1. a. Tour of AFSA machines, to be conducted by Mr. Frank B. Rowlett, assisted by Dr. A. E. Highley and Mr. William J. Lawless.

- I. The IBM installation
II. RAM equipment

- b. Tour of AFSA machines under development, to be conducted by Dr. Eachus, assisted by Mr. C.J. Schierlmann.

2:30

2. a. Discussion period on isomorphism and wheel recovery.

To be held in Room 2010, Building "B", AHS.

- b. Coffee will be served during this period.

3:30

3. a. Presentation regarding AFSA project SWEATER: (Room 2032, Bldg. "B")

Mr. Albert E. Roberts

This presentation is of interest primarily to those members of SCAG who are specialists in the field of mathematics.

3:30

- b. Presentation regarding electronic representation of rotors (Room 2010, Bldg. "B")

Dr. Eachus, assisted by Mr. Ray L. Bowman, Mr. Roger Moulton, Mr. Robert E. Gordon and Mr. Arthur Moulton.

This presentation is of interest primarily to those members of SCAG who are specialists in the field of electronics and electrical engineering.

4:30

4. Final discussion.

To be held in Army Security Agency Conference Room (Room 117), Headquarters Building, Arlington Hall Station.

5. Closing remarks.

Rear Admiral Earl E. Stone, USN, Director, AFSA

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NOTES

(for AFSA personnel)

TO ACCOMPANY AGENDA FOR FIRST SCAG CONFERENCE

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Notes (for AFSA personnel) to accompany Agenda for First SCAG Conference

4-5 June 1951

1. a. Arrangements have been made to issue "Conference Badges" to all SCAG members (except in the case of Dr. Engstrom, who already has a "White A" Badge).

b. The badges will be available by 0830 hours on 4 June, and will be picked up by Captain Mary C. Lane, who will deliver them as follows:

<u>Badge for:</u>	<u>To be delivered to:</u>
Dr. William Webster	Capt. Hazard
Mr. Edwin A. Speakman	Capt. Hazard
Dr. John von Neuman ✓	ICDR Gleason
Dr. Stewart S. Cairns ✓	ICDR Hall
Dr. Charles B. Tompkins ✓	ICDR Hall
Dr. R.K. Potter	Dr. Kullback
Dr. Claude E. Shannon	Dr. Campaigne
Mr. John Howard	Dr. Campaigne
Mr. Joseph Desch	Dr. Eachus
Mr. John C. McPherson	Dr. Eachus

2. a. The indicated AFSA personnel will act as "guides" for the following SCAG members:

<u>SCAG member:</u>	<u>"Guide"</u>
Dr. von Neuman	ICDR Gleason
Dr. Cairns	ICDR Hall
Dr. Potter	Dr. Kullback
Dr. Shannon	Dr. Campaigne
Mr. Desch	Dr. Eachus
Mr. McPherson	Dr. Eachus

b. It is assumed that the other members of SCAG (Dr. Tompkins, Dr. Engstrom, and Mr. Howard) are sufficiently acquainted with AFSA and Washington as to make it unnecessary to assign specific "guides" for them; however, AFSA personnel should make every effort to assist those members whenever appropriate.

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3. a. In addition to SCAG members, only the following will be present at the opening session of the Conference at 1000 hours, 4 June, in the office of DIRAFSA, Bldg. 19, NSS (See page 1 of Agenda):

Adm. Stone
 Mr. Webster
 Mr. Speakman
 Mr. Douglass
 Capt. Wenger
 Col. Hetherington
 Capt. Harper
 Capt. Holtwick
 Mr. Friedman

b. Luncheon for SCAG members, Mr. Speakman, Mr. Douglass, DIRAFSA, the Deputies and Mr. Friedman will be served in the Director's Office after 1200 hours.

4. a. In addition to the SCAG members, the following will be present at the first technical session, 1300 hours, 4 June, in Room 20-202, NSS (See page 2 of Agenda):

AFSA-02:

Capt. Holtwick
 Mr. Rowlett
 Mr. Raven
 Mr. Shepard
 Mr. Levenson
 Mr. Harston

AFSA-03:

Capt. Harper
 Dr. Kullback
 Dr. Campaigne
 Dr. Eachus
 LCDR Gleason
 LCDR Hall

Mr. Speakman, RDB
 Mr. Friedman, AFSA-OOT

b. Coffee will be served at about 1500 hours.

c. At the close of this session AFSA participants will endeavor to see that SCAG members have transportation to their hotels.

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5. a. In addition to the SCAG members, the following personnel will be present at the morning session, 5 June, in Room 20-202, NSS (See page 3 of Agenda):

AFSA-02:

Capt. Holtwick
 Mr. Rowlett
 Mr. Raven
 Mr. Shepard
 Mr. Levenson
 Mr. Marston
 Capt. Dennis
 Mr. Highley
 Mr. Lawless
 Mr. Kirby
 Mr. Reimers
 Mr. Schmitt
 Mr. Shinn
 Mr. Hesse

AFSA-03:

Capt. Harper
 Dr. Kullback
 Dr. Campaigne
 Dr. Eachus
 LCDR Gleason
 LCDR Hall

Mr. Speakman, RDB

Mr. Friedman, AFSA-00T

b. Coffee will be served at about 1030 hours.

c. A special luncheon costing about \$1.00 will be served in the Executive Dining Room, Naval Security Station Cafeteria. In view of the limited facilities, only the following can be readily accommodated:

SCAG members
 Mr. Speakman
 Col. Collins
 Capt. Fenger
 Col. Hetherington
 Capt. L.S. Howeth, Op-202
 Capt. W.M. Gullett, CO, NSS
 Capt. Harper
 Capt. Holtwick
 Capt. Dennis
 Mr. Rowlett
 Dr. Kullback
 Dr. Campaigne
 Dr. Eachus
 LCDR Gleason
 LCDR Hall
 Mr. Friedman

(Total: 25)

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d. AFSA personnel will endeavor to insure that SCAG members requiring transportation from NSS to AHS for the afternoon technical session at AHS will be provided therewith. This should be taken care of before or during the luncheon period.

6. In addition to the SCAG members, the following personnel will participate in the tour of machine installations at AHS (See para. 1, page 4 of Agenda). (The assembly point will be Room 1082. Building "A", at 1330 hours):

AFSA-02

Mr. Rowlett
Mr. Highley
Mr. Lawless

AFSA-03:

Capt. Harper
Dr. Kullback
Dr. Campaigne
Dr. Eachus
LCDR Gleason
LCDR Hall
Mr. Schierlman

Mr. Speakman, RDB
Mr. Friedman, AFSA-COT

7. a. The personnel to be present at the discussion period indicated to follow the tour (see para. 2, page 4 of Agenda), beginning at 1430 hours, in Room 2010, Building "B", AHS, will be the same as in attendance at the session indicated in Paragraph 5.a. above.

b. Coffee will be served during this period.

8. a. For the presentation regarding AFSA project S'EATER (see para. 3 a., page 4 of Agenda), at 1530 hours in Room 2032, Bldg. "B", the following will be present:

SCAG members:

Dr. von Neumann
Dr. Cairns
Dr. Shannon
Dr. Engstrom
Dr. Tompkins

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~~TOP SECRET~~AFSA personnel:AFSA-02:

Mr. Levenson
 Mr. Shepard
 Mr. Schmitt

AFSA-03:

Dr. Kullback
 Dr. Campaigne
 LCDR Gleason
 LCDR Hall

Mr. Albert E. Roberts

b. For the presentation regarding electronic representation of rotors (see para. 3.b., page 4 of Agenda), also scheduled for 1530 hours in Room 2010, Bldg. "B", the following will be present:

SCAG members:

Dr. Potter
 Mr. Desch
 Mr. McPherson

AFSA personnel:AFSA-02:

Mr. Highley
 Mr. Lawless
 Mr. Marston

AFSA-03:

Capt. Harper
 Dr. Eachus
 Mr. Rosen
 Mr. Dumey
 Mr. R.E. Gordon
 Mr. R. Moulton
 Mr. Bowman
 Mr. A. Moulton

Mr. Speakman, RDB

Mr. Friedman, AFSA-OOT

9. In addition to all SCAG members, the following persons will attend the final session at 1630 hours, 5 June 1951, in the ASA Conference Room, Hq Bldg., AHS (see paras. 4 and 5, page 4 of Agenda):

Adm. Stone
 Mr. Speakman
 Capt. Holtwick
 Mr. Rowlett
 Capt. Harper
 Dr. Kullback
 Dr. Campaigne
 Mr. Friedman

10. Record of proceedings will be kept by Dr. Campaigne, assisted by LCDRs Gleason and Hall.

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