

Lecture on Communication Security and Signal Intelligence Activities

AS-14 AS-22 22 July  
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1. The Organization and Training Section has been given the responsibility of coordinating the preparation of a four (4) hour lecture on Communication Security and Signal Intelligence Activities. The course, of which this is a part, will be presented initially in the Pentagon to a group of prospective instructors for the Command and Staff College. Later, the same course will be presented again, with any necessary revision, at the Command and Staff College, Fort Leavenworth, Kansas.

2. With reference to draft of Lecture on Communication Security and Signal Intelligence prepared by this office and now in your possession, the memorandum for record, subject, "Speech on Signal Intelligence and Communication Security", dated 19 July 1946, and the Brief as prepared by Captain Campbell for submission to USCIB concerning the scope of activities to be discussed in the lecture, it is requested that a revised lecture be prepared and submitted to this office by 10 August 1946.

3. It should be noted also, that in view of General Peabody's comments, it is not only possible, but desirable, that this lecture be more inclusive than the lecture as prepared originally by this office.

GEORGE A. BICHER  
Colonel, Signal Corps  
Deputy Chief, ASA  
Extension 498

As-22 As-14 15 Aug 1946 Draft and one carbon copy have been forwarded to you on 13 August 1946. The document has been classified ~~TOP SECRET~~ in view of the directive in Paragraph 3 above.

WILLIAM F. FRIEDMAN  
Director of  
Communications Research  
Ext 215

SIS  
DATE  
SIG

OUTLINE OF COURSE~~SECRET~~By Authority of the *Officer*  
Commanding General

Initials

Date

WZ

24 July 46

(Four) periods of 50 minutes each)

First Period - - - 50 Minutes

Estimated  
Time Re-  
quired  
(Minutes)

## I. "MAGIC" - "The Effect"

(A recital of about 10 or 12 dramatic incidents and cases wherein the results obtained by signal intelligence or communications security played the principal role).

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## II. "The Cause" - or how it's done.

1. Signal intelligence - the central clue. Reasons for withholding publicity.
2. Very brief history of cryptography and cryptanalysis, but going back only to World War I.
3. How the responsibilities and activities were scattered through several agencies after World War I.
4. Necessity for integration -
  - a. In respect to cryptanalytic activities.
  - b. In respect to cryptographic activities.
  - c. In respect to both activities, because of interaction on each other.
  - d. Brief statement of how the necessary integration was brought about by 6 Sept. 1945 directive.

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## III. Signal Intelligence Operations - General

1. Introductory
  - a. *Responsibilities of Intelligence Officer*
  - b. Signal intelligence is only one of the several kinds of intelligence.
  - c. Comparison of reliability, timeliness, and cost of signal intelligence with the same factors in the case of other kinds of intelligence.
  - d. Necessity for occasional checking with information from other sources.
2. Operations involved in obtaining signal intelligence.

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Estimated  
Time Re-  
quired  
(Minutes)

*- 9 to place other plans  
in place - 10/2/50*

a	Interception	
b	Traffic analysis	
c	Cryptanalysis	
d	Translation	
e	Processing on large scale ("Assembly-line" De- cryption and translation)	
f	Publication	
g	Evaluation and dissemination-the responsibility and function of Intelligence	
3	"Fusion" or "Regenerative" effects of the respective operations - how they affect one another	<u>20</u>
4	<i>Need for security to protect source</i>	
	Total Minutes	50

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Second Period - - - 50 Minutes

Estimated  
Time Re-  
quired  
(Minutes)

## IV. Intercept Operations.

1. General or introductory--(Operating data-freq, calls, schedules; types of nets and workings; radio procedures; operators chatter; D/F, RFP, Tina; other collateral information).
2. Strategic and tactical intercept. (Differences and similarities. Difficulties in fixing line of demarcation between functions and activities at fixed and mobile stations).
3. Primary bases of and factors in interception efficiency.
4. How the ASA Officer and the Intelligence Officer can be of assistance to each other in this phase. 10

## V. Traffic Analysis

1. Introductory-an analogy to make clear what it is about.
2. Techniques.
3. How traffic analysis and cryptanalysis assist and affect each other.
4. The importance of traffic analysis when cryptanalysis is unsuccessful.
5. The intelligence derivable from traffic analysis--its limitations, dangers, and possibilities. 10

## VI. Cryptanalysis

1. Introductory remarks - Progress made in last 25 years.
2. High level (or strategic) vs medium and low-level (or tactical) cryptanalytic operations.
3. Size and nature of organizations required for efficiency.
4. Requirements in regard to space, communications facilities, special machinery, and specialist personnel.
5. Priorities and intercept control. (How priorities are determined by the relationships among intelligence, T/A, C/A).
6. Special role played by rapid communications in successful signal intelligence operations.
7. How the ASA Officer and the Intelligence Officer can be of mutual assistance in the production and most effective use of signal intelligence. 30

Total Minutes

50

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## Third Period - - - 50 Minutes

Estimated  
Time Re-  
quired  
(Minutes)

## VII. Communications Security-The other of the Siamese Twins.

1. Introductory: scope, definitions and components of communications security.
2. Importance of communications security in modern signal communications; and a few examples of insecurity and their consequences.
3. Communications security is a responsibility of command.
- ✓ 4. Responsibilities of Intelligence Officer.
5. Responsibilities of ASA Officer.
6. Security measures: physical security; cryptographic security-authorized codes and ciphers when properly used give adequate security; transmission security.
7. Different levels of security: high-grade; medium-grade; low-grade.
8. Modern crypto-mechanisms; their possibilities and limitations; effects of misuse; necessity for indoctrination and training.
9. Problems of plain language transmissions and approved circuits.
10. Problems of coordination in Joint and Combined communications.
11. Evaluation of our security as seen through TICOM operations.
12. Tactical traffic of small units-where most of present-day insecurity arises.
- ✓ 13. How the Intelligence Officer can assist. 40

## VIII. Friendly traffic analysis, cover, and deception.

1. Effect of our knowledge of T/A techniques on our own security.
2. Strategical and tactical T/A.
3. Cover and deception.
4. Coordination required.
5. Examples of accomplishments. 10

Total Minutes 50

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## Fourth Period - - - 50 Minutes

Estimated  
Time Re-  
quired  
(Minutes)

## IX. The Army Security Agency

1. Functions and responsibilities.
2. How it operates in Z/I.
3. How it operates in theaters.
4. How it coordinates and integrates.
5. Liaison activities.

## X. Summary, conclusions, and informal discussion

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1. Emphasis on limitations, pitfalls, and dangers, but assurance of value and validity of successful signal intelligence operations.
2. The role played by good evaluation and dissemination.
3. Necessity for protection of sources of signal intelligence; effects of poor communications security on signal intelligence success.
4. Security regulations for protection of ultra.
5. Security regulations for protection of our own communications.

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Total Minutes

50

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