

COMMUNICATIONS SECURITY

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ADVANCE SHEET



APRIL 1967

**UNITED STATES ARMY AVIATION SCHOOL
FORT RUCKER, ALABAMA**

DEPARTMENT OF TACTICS
UNITED STATES ARMY AVIATION SCHOOL
Fort Rucker, Alabama

File No. 504-1

PERFORMANCE OBJECTIVES

COMMUNICATIONS SECURITY

1. KNOWLEDGES: Without the aid of notes or references and without error, the student will be able to list in writing—
 - a. Two of the three methods of increasing transmission security as stated in class.
 - b. The definition of the SOI (signal operation instructions) and SSI (standing signal instructions).
 - c. Three of the five types of information normally found in an aviation SOI extract.
 - d. The two channels and two procedures to be followed in reporting the compromise of an SOI or SSI.
2. SKILLS: Without the aid of notes, and by using only the SOI extract issued, the student will be able to determine or locate the following:
 - a. Call signs and frequencies.
 - b. Proper voice authentication.
 - c. Brevity codes accurately.
 - d. Map coordinate coding accurately.

NOTES

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ADVANCE SHEET

COMMUNICATIONS SECURITY

PURPOSE: This advance sheet is designed to supplement the reading assignment found in the "Communications Reference Handbook for Army Aviators." The additional information found in the advance sheet is concerned with communications security, the SOI, and SSI.

GENERAL:

1. Communications security.
 - a. General. Communications security includes all measures taken to deny the enemy or other unauthorized personnel information which might be derived from a means of communications.
 - b. Physical security. Physical security is the safeguarding of communications equipment and materials from unauthorized persons. Each radio station must be physically secure, since this will enable the radio operators to use and handle information and materials without fear of disclosure to unauthorized persons.
 - c. Cryptographic security. Cryptographic security is that component of communications security which deals with cryptographic systems and their proper use. Responsibility for cryptographic security rests with the commander and with the individuals engaged in cryptographic duties.
 - d. Transmission security. Transmission security includes all security measures designed to protect transmissions from interception, direction finding, and imitative deception, and is of prime importance to the aviator. Since every means of transmission is subject to interception, protective measures must be taken to keep to a minimum the information obtainable by the enemy. The relative security of one means of transmission over another varies with circumstances. Transmission security is improved by practicing the following security measures:
 - (1) Use trained radio operators whenever possible.
 - (2) Adhere to authorized procedures.
 - (3) Make minimum transmissions.
2. Signal operation instructions (SOI) and standing signal instructions (SSI).
 - a. General. The signal (communications) officer at each echelon of command is responsible to his commander for the technical control of, and staff supervision over, communications within his command. The instructions which govern the technical

operations of the communications of the command are contained in the command signal operation instructions (SOI) and standing signal instructions (SSI).

b. Signal operation instructions (SOI). The SOI contains specific instructions for the operation of communications systems. SOI items are normally temporary in nature and subject to frequent change. SOI items of the subordinate echelons of command are either extracted from or based upon those of the higher command. A standard system is used within the command to facilitate reference to the specific item of the higher command from which the item is extracted or upon which the item is based.

c. Standing signal instructions (SSI). The SSI contains instructions explaining the use of items included in the SOI. Those items not required by subordinate echelons are omitted from their SSI's.

d. Responsibility. The SOI and SSI are prepared, issued, and usually authenticated for the commander by his signal officer. Subordinate elements of the command will prepare SOI's and SSI's, or extracts of the command SOI and SSI, to meet their own requirements. SOI's and SSI's prepared by the subordinate elements conform to the instructions contained in the command SOI and SSI.

e. Format.

(1) General. The format for SOI's and SSI's is similar. The physical size of SOI's and SSI's is established to meet the needs of the unit or using personnel. The standard size for SSI's at all echelons, and for SOI's at division or higher echelons, is 8 by 10 1/2 inches. The standard size for SOI extracts and for SOI's of units below division is 4 by 5 1/4 inches. In the higher echelons where facilities are available for safeguarding the SOI, extracts may be the same size as the complete SOI.

(2) Heading. The heading of the SOI or SSI item contains the —

(a) Designation of the preparing headquarters.

(b) Item number and title of the item. The item number consists of a base number which identifies the item and a suffix which indicates the edition number of the item. For example; SOI Item 1-1 is the first item of the SOI and the first edition of this item. SOI Item 4-6 is the fourth item of the SOI and the sixth edition of the item. Edition numbers start with "1," with the first edition of each calendar year, and are numbered consecutively to the end of the year. The index is the first item of the SOI and SSI.

(3) Body. The body of the item contains instructions governing those phases of communications operation indicated by the title of the item.

(4) Page numbering. The page number of each item and the total number of pages contained in the item are placed in the center of the bottom of the page as "Page 1 of 4 Pages." A single page is indicated as "Page 1 of 1 Page." The number of pages in the item is included to assure that the item is complete and that all pages are accounted for. The item number is repeated and placed in the lower right hand corner of each page to facilitate locating an item in the SOI or SSI.

f. Distribution.

(1) SOI's and SSI's are issued to the headquarters of higher and subordinate echelons and to adjacent and supporting units. The requirements of each unit for each item are considered when determining the distribution of the SOI and SSI. Each unit is issued the minimum number of copies required of each item. The complete SOI or SSI of any command is not taken forward of the command post of a maneuver battalion or separate company.

(2) Extracts of items of the SOI are prepared and issued to units and individuals requiring limited portions of the command SOI. The contents of such extracts are limited to the actual requirements of the units or persons to whom issued and are provided instructions for limited periods of time. These extracts are so prepared as to permit their being taken as far forward of the preparing headquarters as is required by users in the accomplishment of their missions.

g. Security.

(1) The security classification of each paragraph and page of the SOI and SSI is determined and marked as prescribed by AR 380-5.

(2) To minimize the possibility of a compromise of the SOI and SSI of a higher headquarters, the complete SOI or SSI of any command is not taken forward of the command post of the subordinate echelon to which issued.

(3) An SOI or SSI, or item, thereof, will be considered compromised when it is known or believed to have been captured, lost, exposed to enemy agents, or when the contents have been so misused as to endanger the security of communications systems.

(4) When an SOI or SSI, or extracts or items, thereof, are compromised, the preparing headquarters and all holders of the compromised document are notified immediately and new items placed into effect. The compromise is reported through command and signal channels as follows:

(a) An immediate report of the compromise is made to the signal officer by the fastest means available.

(b) A written report, containing complete information on the compromise, is forwarded through command channels within 48 hours.

STUDY ASSIGNMENT:

1. STUDY: None.
2. READ: The general section of this Advance Sheet.

SPECIAL INSTRUCTIONS: Bring to class—

1. This Advance Sheet.
2. Student Outline.

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ANNEX A (PRACTICAL EXERCISE) TO ADVANCE SHEET

COMMUNICATIONS SECURITY

1. Item No. 21-2 on an SOI or SSI indicates (Circle correct answer.)—
 - a. Twenty-first edition, second item.
 - b. Twenty-first item, second edition.
 - c. Twenty-first item, second page.
 - d. Twenty-first page, second edition.
2. To minimize the possibility of compromise, the complete SOI or SSI of any command is not taken forward of (Complete the statement.)—

NOTE: The following questions refer to the 129th Airmobile Battalion (Light) SOI extract.

3. What is the call sign of the 129th Airmobile Battalion Commander?
4. What is authentication of DELTA BRAVO?
5. Using the brevity code, encode the following message: "The UH-1 location is north of the company landing zone."
6. Decode the following message: "NOVEL 6 required BILLFOLD and WRONG. ROBUST WARRIER STERN CHARLIE."

7. Using the map coordinate code, encode the coordinates of the aircraft in problem 5 as EK 375824. The code word to be used is WOMAN LIKER.

8. What is the SOI item number of the flight command operations nets?

9. What is the call sign and frequencies used by the 187th Airmobile Company (Light) Commander in the company command operations net?

10. If you were homing to TAC-1 using your AN/ARC-44 (FM) radio, what frequency would you use?

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ANNEX B (SOLUTION TO PRACTICAL EXERCISE) TO ADVANCE SHEET

COMMUNICATIONS SECURITY

1. Item No. 21-2 on an SOI or SSI indicates the twenty-first item, second edition.
2. To minimize the possibility of compromise, the complete SOI or SSI should not be taken forward of the command post (CP) of a maneuver battalion or separate company.
3. The call sign of the 129th Airmobile Battalion (Light) Commander is CLUTCH 6.
4. What is authentication of DELTA BRAVO? Authentication is VICTOR UNIFORM.
5. The encoded message for "The UH-1 location is north of the company landing zone" is BLAZER WIGWAM STRIKE SCROOGE CRUNCH (OR CRACKER).
6. The decoded message is "Company A Commander, 1st Battalion, 72d Infantry, requires rations and 7.62mm ammunition, deliver vicinity position Charlie."
7. EK 375824 is encoded as CMINKOA using code word WOMAN LIKER.
8. The SOI item number for the flight command operations nets is 53-1.
9. The call sign and frequencies used by the 187th Airmobile Company Commander in the company command operations net is PLAYBOY 6, 46.2 mc FM.
10. If you were homing to TAC-1 using your AN/ARC-44 radio, you would use FM frequency 35.4.

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STUDENT OUTLINE

COMMUNICATIONS SECURITY

1. Communications security.
 - a. Physical security.
 - b. Cryptographic security.
 - c. Transmission security.

(1)

(2)

(3)

2. Signal operation instructions (SOI).

3. Standing signal instructions (SSI).

4. Contents.

a. SOI.

b. SSI.

5. Indexes.

6. Item numbering systems.

7. Compromise.

a.

b.

c.

8. Extracts.

a.

b.

9. Notes on practical exercise.

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4. List three of the five types of information normally found in an aviation SOI extract.

5. List the two channels and the two procedures to be followed in reporting the compromise of an SOI or SSI.