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THE ARTILLERY INFORMATION SERVICE

General Headquarters
A. E. F.
(No. 1328)



WAR PLANS DIVISION
SEPTEMBER, 1918

42266

WAR DEPARTMENT
DOCUMENT NO. 860
OFFICE OF THE ADJUTANT GENERAL

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WAR DEPARTMENT.

DOCUMENT No. 860.

Office of The Adjutant General.

WAR DEPARTMENT,
WASHINGTON, *September* 17, 1918.

The following pamphlet, entitled "The Artillery Information Service," is published for the information of all concerned.

[062.1 A. G. O.]

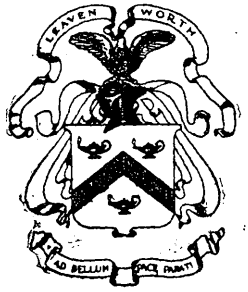
BY ORDER OF THE SECRETARY OF WAR:

PEYTON C. MARCH,
General, Chief of Staff.

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Acting Adjutant General.

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THE ARTILLERY INFORMATION SERVICE.

CHAPTER 1.

General.

1. On the staff of the commander of each artillery unit from the army artillery down to include battalions or even batteries, there is an officer who has direct charge of the *Artillery information service* (A. I. S.) of that unit.

In the army and army corps this officer is called the artillery information officer (A. I. O.). In artillery brigades and smaller units he is called the artillery intelligence officer (A. I. O.). By the terms *army A. I. S., corps A. I. S.* and *division A. I. S.,* as used hereafter, is meant the A. I. S. of the army artillery, the army corps artillery and the division artillery, respectively.

A. I. O.'s will receive special instruction. In the larger units they should be officers of considerable artillery experience.

The A. I. S. of an artillery unit pertains only to the staff of that unit and has no direct control over the A. I. S. of subordinate units. Supervision over the latter can be exercised only by authority of the tactical commanders involved.

2. *Functions.*—The functions of the A. I. S. are as follows:

(*a*) In general, to furnish the artillery all necessary information in regard to the enemy and to cooperate with other agencies in collecting, coordinating and disseminating information.

(*b*) To furnish artillery commanders complete information as to the organization, disposition and activity of the enemy artillery. This is done by means of verbal and written reports, conferences and by maps and charts.

(*c*) To furnish artillery units *promptly* the information necessary for the execution of their missions, such as:

Exact position of enemy batteries.

Location of command posts, observation posts, visual signalling posts.

Location of camps, dugouts, ammunition dumps. Trails and roads most used, with hours of heaviest traffic.

For counter-batteries, the most active and effective of the enemy batteries and the exact time when they can be most effectively attacked with destruction or neutralizing fire.

Responsibility for the transmission of information in any form to artillery units rests with the A. I. S.

(*d*) The direct control of the work of the flash ranging sections (F. R. S.) and the sound ranging sections (S. R. S.), regulation of their use by artillery units, the maintenance of communication with them and the prompt handling of information thus obtained.

(*e*) Adjustments of artillery fire by the F. R. S. and S. R. S. (see artillery firing).

(*f*) The A. I. S. works in close cooperation with G-2 in receiving, comparing and forwarding information. Important information is communicated at once by telephone, daily bulletins are exchanged and frequent conferences are held where all information received is discussed and verified. For this purpose G-2 sends to each army and corps A. I. S. an intelligence officer, whose function is to obtain all artillery information required by G-2.

3. *The chief of artillery, A. E. F.,* will supervise the training of officers for the A. I. S., including the A. I. officers of brigades and smaller units, in organizations which have not yet joined their tactical units. He will inspect the A. I. S. in other organizations and make suitable recommendations to the chief of staff, A. E. F., to secure efficiency.

4. *Army and corps A. I. S.*—The functions of the army and corps A. I. S. are generally similar. Both have artillery units to which direct information is furnished, and the reports, maps, charts and office routine are substantially the same.

The corps A. I. S. is the office in which artillery information is centralized and from which it is disseminated to other units. The corps chief of artillery, through the corps commander, exercises active control over all subordinate artillery information agencies, including the F. R. S. and S. R. S. For tactical control, the F. R. sections and S. R. sections are under the army A. I. S., since army corps may be moved from sector to sector and since these sections may cover the fronts of two adjoining army corps. The army A. I. S. delegates to the various corps A. I. S. the immediate operation of appropriate sections.

5. The *corps A. I. S.* receives, usually with little delay, all information collected by the various agencies. It coordinates and verifies this information. *Speedy transmission to those concerned is of prime importance.*

6. The *army A. I. S.* consolidates the artillery information received from the various army corps, verifies and completes it, using means at its disposal not usually available for the corps A. I. S.

It collects, records and supplies information necessary to the operations of the army artillery.

It sees that the A. I. S. in the subordinate units is uniformly conducted.

7. *Counter batteries.*—The usefulness of counter batteries depends on the efficiency of the A. I. S., the operation of a well-organized telephone system, the experience and judgment of the counter-battery officer (C. B. O.) and his familiarity with the objectives to be attacked. Since the A. I. O. is thoroughly familiar with all artillery objectives it is very advantageous for him to also act as C. B. O. if conditions permit. Decision will be required concerning objectives to be attacked, methods of fire, ammunition expenditure and arrangements between corps chiefs of artillery and division artillery commanders as to the batteries to be used.

In an army there is no difficulty in the A. I. O. being the C. B. O. and this should be the practice. In an army corps varying conditions make it necessary for the corps chief of artillery to decide whether the two functions can be exercised by the same officer. The location of the corps headquarters, the corps artillery units and the front covered, as well as other considerations, will influence this decision.

8. *The army A. I. O.*, under the army chief of artillery, directs the counter-battery work of the army artillery and also that of one army corps against objectives in the normal zone of another army corps. He coordinates the work of the army corps counter batteries, in accordance with the army plan of action and the supply of ammunition and matériel.

9. *A. I. S. in smaller units.*—The functions of the A. I. S. in artillery brigades, regiments and battalions are performed by the intelligence officers of those units and constitute the major portion of their duties. They therefore have a dual role. On the one hand they are agents of the corps and army A. I. S. and are charged with the A. I. S. of their units; on the other hand they are agents of the division G-2 and bear the same relation to him as the intelligence officers of the infantry.

Although the functions of these agencies are somewhat restricted they are an indispensable link both in the chain of

artillery information on the one hand and intelligence on the other. The sources of information under their control are few.

10. *Open warfare.*—The organization and methods of the A. I. S., as prescribed herein, are those found to give the greatest efficiency under the conditions of position warfare.

Many features are not practicable in open warfare and will break down in passing from position to open warfare. The extent to which this will occur will depend on the particular situation and on the measures which are taken beforehand and at the time to meet the changed conditions.

Experience at this time is too limited to make definite prescriptions for open warfare. It appears quite certain that much information handled and acted on in the army corps in position warfare will of necessity be a function of the division in open warfare.

Observers will be replaced more or less by scouts. The F. R. sections should still operate although with less refined methods. S. R. sections will be available only intermittently at best.

But whatever temporary interruption of the A. I. S. may be caused by rapid movements it must be in readiness to be reestablished as soon as conditions become even momentarily stabilized.

Chapter 2.

Corps Artillery Information Service.

11. *The corps A. I. S.* collects all possible information useful to the artillery in its sector and, after verification and coordination, makes an appropriate distribution.

As the objectives for the corps artillery are largely enemy batteries the corps A. I. S. collects, files and distributes all possible data concerning these batteries, such as location, protection, dates of firing, objectives, etc.

The corps A. I. S. carefully supervises observation and communication, in order that information may be promptly obtained and exploited by the artillery.

12. *Sources of information.*—For the corps A. I. S. these are:

(*a*) Flash ranging sections (F. R. S.)

(*b*) Sound ranging sections (S. R. S.), including their forward O. P.'s.

(*c*) Air service (balloons, airplanes, photographs).

(*d*) A. I. S. of smaller units.

(*e*) Army A. I. S.

(*f*) G-2.

(*g*) Radio interception.

(*h*) Listening posts.

(*i*) Unexploded shells, fragments, fuses, etc.

(*j*) Weather forecasts and meteorological observations.

13. *F. R. S.*—Each section consists of a central station connected by telephone to a number of C. P.'s.

The principal functions of the F. R. S. are:

(*a*) To locate enemy batteries in action by the flash or smoke of discharge.

(*b*) To locate the point of fall of enemy shots as well as the battery or region from which they are coming.

(*c*) To observe constantly and report everything seen as, for example, balloons and airplanes, working parties, suspected new battery positions, circulation on roads and railroads, signals.

(*d*) To assist in the adjustment of fire, both percussion and by the method of high air bursts (see artillery firing).

14. The F. R. S. are installed and operated by the engineers, under the direction of the A. I. S. (paragraph 4). Their technical operation is in charge of the section commanders, under the supervision of the company and battalion commanders of the ranging battalion.

The functions of the corps A. I. S., with respect to the F. R. S., are:

(*a*) To direct their work, assign specific missions and fields of observation and specify the information to be furnished.

(*b*) To keep them informed as to:

(1) The organization of the sector.

(2) Changes in units, command posts, etc.

(3) Contemplated operations.

(*c*) To transmit to them the A. I. S. bulletins, reports, photographs and all other necessary information concerning the enemy.

(*d*) To make frequent visits to see that the requirements of the artillery are being complied with and to know what results may be expected from each section.

Reports in this connection will be made to G-2 C.

(*e*) To regulate the transmission of information from them, as:

(1) Hours and methods of rendering reports.

(2) Kinds of information to be sent at once by telephone and to whom.

(*f*) To regulate their use for the adjustment of fire.

15. The functions enumerated in the preceding paragraph are generally applicable to artillery O. P.'s. These are, however,

under the direct and exclusive control of their artillery units and the needs of these units take precedence.

The corps A. I. S. should, however, frequently consult with the brigade and regimental A. I. O.'s with a view to utilizing artillery O. P.'s, as much as possible, for the collection of general information.

16. *Daily report of F. R. S.*—The C. O. of each F. R. S. makes daily reports on forms furnished by G-2, at an hour designated by the A. I. S., and distributes them as directed. These reports should show:

(*a*) Enemy batteries located (or region from which shots came), together with their objectives.

(*b*) Results of adjustments.

(*c*) General information.

(*a*) and (*b*) are the most important, but (*c*) should be made as complete as possible. The general information obtained from O. P.'s is useful, not only to the artillery but to G-2, since it frequently gives new indications of the enemy's probable intentions or verifies information already received from other sources.

17. *Sound ranging sections* (*S. R. S.*)—These sections are organized and operated according to the same principles as the F. R. S. (paragraph 14).

They are used to locate enemy batteries in action and for the adjustment of the fire of the larger calibers (see artillery firing).

Their forward O. P.'s form a part of the general observation system and furnish information in the same manner as the F. R. S.

Reports are submitted daily on forms furnished by G-2.

18. The F. R. S. and S. R. S. are the two most reliable information agencies at the disposal of the smaller units. The latter should be given every facility for quick communication with them. The sections should communicate information directly by telephone or otherwise to the proper units when immediate action is required. Such matters are subject to regulation by the corps A. I. S. and should be carefully worked out.

The corps A. I. S. is responsible for the prompt transmission of information from the F. R. S. and the S. R. S., including the installation and maintenance of the necessary communications between them and the corps A. I. S.

19. *Air Service.—Balloons.*—When the visibility is good, balloons furnish a great part of the information concerning enemy activity, such as batteries in action, circulation on roads and railroads, working parties, troop movements, etc. This information is sent to the batteries at once so that fire may be opened

promptly on fleeting objectives or batteries in action. A daily report is rendered on A. I. S. form 1.

The corps A. I. S. is responsible that balloons have the necessary telephone communication for transmitting artillery information, that they understand what information is desired and to whom it is to be transmitted.

20. *Airplanes.*—The two most important duties of airplanes, in connection with the A. I. S., are:

(*a*) Furnishing information concerning artillery objectives by reconnaissance and photographs.

(*b*) The observation of fire (see aerial observation for artillery).

The importance of air photographs can not be over-estimated. They furnish the surest means of positively identifying enemy batteries and of following their positions and construction from day to day.

21. Airplanes, assigned for the observation of fire, work under the direction of the C. B. O. of the unit to which assigned. Their work is divided into two categories:

(*a*) Pre-arranged destruction firing. A list of such firing is prepared every afternoon in the office of the C. B. O. for execution on the following day. The number of objectives averages eight to fifteen daily on an army corps front.

(*b*) Neutralizing or destruction fire on batteries seen in action. This is usually delivered by previously designated batteries upon signal from an airplane on patrol duty direct to the battery to fire.

22. *Air photographs.*—Applications to have photographs made will be made through G-2 (see intelligence regulations). G-2, after considering the relative needs and urgency of the various requests, formulates the program for aerial reconnaissance and photography and prepares orders for its execution for issue by the chief of staff.

A request for a new photograph will indicate the coordinates of the point to be covered. In the case of an area the map squares will be stated as, for example, area 755 to 759 and 465 to 471.

Requests for reprints or correspondence concerning existing photographs will indicate both the aero squadron serial number and the coordinates of the center of the photograph (see paragraphs 6 and 7, G. O. 80, G. H. Q., A. E. F., 1918.

23. Air photographs may be divided into three classes:

(*a*) Photographs of front line trenches, machine gun emplacements, O. P.'s, etc., including oblique photographs taken from a low altitude. These are of interest chiefly to divisions.

(*b*) Photographs of the zone from immediately in rear of the first enemy position to about 8 kilometers in rear of this. This zone includes most of the enemy batteries and is of interest chiefly to the corps A. I. S. Such photographs are usually taken by squadrons at the disposal of the army corps. Reconnaissances are made covering the areas desired. The photographs are forwarded to the corps A. I. S. where they are studied and the results are published in the daily bulletins.

(*c*) Photographs of the zone in rear of (*b*). These are of interest only to the army. They are taken at the request of the army A. I. S. to G-2, by airplanes at the disposal of the army. The zone extends as far to the rear as there are objectives for the army artillery.

Copies of all air photographs are sent to the army A. I. S.

24. The corps A. I. S. maintains a close liaison with the air service unit which takes its photographs. Frequent visits are made to the squadrons for the purpose of discussing the photographs with the pilots or observers. A representative from the corps A. I. S. lives at the aviation field. Under these conditions daily conferences are held there, attended by representatives of the corps A. I. S. and G-2, primarily to discuss the photographs taken during the day. At the same time information from other sources may be compared.

For instructions concerning the notations on air photographs and filing, see G. O. 80, G. H. Q., A. E. F., 1918.

25. A daily report is furnished the corps A. I. S. on form 2 by the representative of the corps A. I. S. on duty at the aviation field (paragraph 24).

26. *A. I. S. of smaller units.*—The corps A. I. S. has as agents (*a*) the A. I. O. in division artillery brigades and (*b*) the A. I. O. in corps artillery units. These smaller agencies have at their disposal many valuable sources of information, such as regimental A. I. O.'s, artillery liaison officers with infantry, artillery command posts and O. P.'s.

Daily reports are submitted by the division artillery A. I. O. on A. I. S. form 3, and by the corps and army artillery units on A. I. S. form 4. All important information is telephoned at once. These reports include (*a*) enemy artillery activity, (*b*) our artillery fire, (*c*) general information. The latter should be made as complete as possible (paragraph 16).

27. *Army A. I. S.*—The army A. I. S. has at its disposal means not unusually available for the corps A. I. S. and can furnish the latter valuable information. Such information may be several days old but serves to verify and complete that received from other sources. It is ordinarily furnished in the form of the daily bulletin of the army A. I. S. (paragraph 43).

The army A. I. S. also supplies the army corps with maps, charts and other documents giving the latest and best data available, such as:

(*a*) Complete list of enemy batteries on the army front, with coordinates.

(*b*) Maps showing the location and activity of enemy batteries, new batteries, etc.

(*c*) Lists of other objectives, such as O. P.'s, command posts, visual signalling posts.

(*d*) Maps showing objectives for the artillery, such as roads, railroads, bridges, supply depots, ammunition dumps, up to the extreme ranges of our artillery.

(*e*) Data pertaining to the triangulation system.

The corps A. I. S. is responsible that this information is forwarded to its proper destination.

28. *G-2.*—The corps G-2 and A. I. S. must work in close cooperation, each supplying the other with all possible information. Daily bulletins are exchanged and frequent conferences are held. The artillery intelligence officer G-2 furnishes the means of liaison, working both with G-2 and the corps A. I. S.

The kind of information collected by G-2, its sources and use, is covered by intelligence regulations. The following is a brief outline of the sources of information utilized by G-2:

Documents.
Prisoners and deserters.
Radio stations and telephone listening posts.
O. P.'s.
Airplane reconnaissance.
Balloons.
Photographs.
Patrols.
F. R. S. and S. R. S.

From the foregoing sources, useful artillery information can be obtained concerning the following:

Enemy front and support lines.
Listening posts.
O. P.'s.
Visual signalling posts.
Telephone centrals.

Command posts.
Machine gun emplacements.
Trench mortar emplacements.
Dugouts.
Kitchens.
Strong points.
Roads and paths.
Railroads, standard and narrow gauge.
Stations.
Railroad yards.
Bridges.
Rest camps.
Supply depots.
Ammunition dumps.
New work, working parties.
Infantry activity.
Gas attacks.
Enemy battery positions.
Railway artillery positions and epis.
Effects of our fire.

Examples of the application of such information are the following:

The circulation on paths, roads and railroads indicates suitable points for interdiction fire.

The presence of working parties often leads to the discovery of new battery positions and may also give indications as to the effect of our fire by showing that repairs are necessary.

Railroads, stations, yards, supply depots and ammunition dumps are suitable objectives for long-range destruction fire by corps or army artillery. Kitchens and rest camps may be objectives for harassing or reprisal fire.

Important crossroads, termini of narrow gauge railroads, bridges, sawmills, quarries, etc., are also suitable objectives.

In preparing for an attack or a raid it is very important to blind the enemy and destroy his communications. Therefore the location of the O. P.'s telephone centrals, visual signalling posts and command posts involved, as well as other important points, must be known.

29. In general, most of the information concerning enemy batteries is collected by the A. I. S., while that concerning objectives other than batteries is obtained through G-2.

The maps published by the topographic section combine the information collected by both G-2 and the A. I. S.

30. *Radio interception.*—By intercepting the emissions from an airplane to a ground receiving station and, knowing the batteries pertaining to this station, our counter batteries can often be warned before the enemy opens fire so that prompt neutralization can be effected.

31. *Telephone listening posts.*—This means of collecting information is in general use throughout all the armies but its value to the A. I. S. is undetermined.

32. *Unexploded shells, fragments, fuses, etc.*—Infantry, artillery and other units subjected to artillery fire will be required to furnish immediate information as to the time and duration of such fire, the number, kind and caliber of the shells falling in their vicinity being also reported (paragraph 52). With this information enemy batteries can frequently be connected with their habitual objectives and the efficiency of the country-battery work increased.

When complete information can not be supplied, fragments of shells and fuses should be sent to the nearest intelligence officer with an explanatory note showing where found. Special manuals are issued, from time to time, giving descriptions and diagrams of enemy ammunition.

In case of an unexploded shell a sketch should be made showing as far as possible the following:

Caliber.
Kind of metal.
Length, in calibers and millimeters.
Number and dimensions of rotating bands.
Number of grooves.
Pitch of grooves.
Form of grooves.
Fuse.
Special features.
Distinctive markings.
Color.

33. *Weather forecast.—Meteorological observations.*—These data are supplied by the meteorological division, A. E. F. A description of the data supplied is given in intelligence regulations. Their use by the artillery is described in artillery firing.

The long-range corps and army artillery require meteorological data before each firing.

The A. I. S. is charged with the communication of these data to the artillery units concerned.

34. The information collected from the various sources previously described is studied by the A. I. O. and by the artillery intelligence officer G-2. The comparative value of that from the different sources is appraised and that considered of no value discarded.

In order to do this the A. I. O. should know:

(*a*) The relative value of the different sources of information, their organization, operation and method of work.

(*b*) The causes which affect the value of information, such as atmospheric and local conditions.

(*c*) The personal characteristics of those who collect it.

(*d*) The methods used by the enemy to deceive, such as camouflage, anti-smoke and anti-flash powder, false discharges, etc.

As information received must, after study, coordination and elimination, be:

(*a*) Furnished to the commander and units.

(*b*) Kept on file so that it will be accessible at any time.

35. *Reports.*—The following is a list of reports received and made by the corps A. I. S.

Daily Reports Received.

F. R. S., paragraph 16.

S. R. S., paragraph 17.

Balloon company, A. I. S. form 1, paragraph 19.

Aero squadron, A. I. S. form 2, paragraph 25.

Division artillery, A. I. S. form 3, paragraph 26.

Corps artillery, A. I. S. form 4, paragraph 26.

Reports from the A. I. S. of army corps on the right and left, A. I. S. form 5. This is the daily bulletin of these army corps.

Army A. I. S. bulletin, paragraph 27.

Weather forecast and meteorological data.

G-2, army corps and division.

Photographic service. This will show what areas have been photographed and will be accompanied by the photographs.

Radio interception.

Telephone listening posts.

Other Reports Received.

Semi-monthly report of the army A. I. S. This shows the general artillery situation and is accompanied by a map showing the location of enemy batteries.

Reports and maps, from time to time, from the army and corps topographic sections, showing all artillery objectives, lists of enemy batteries, O. P.'s, command posts, etc.

Reports Made.

Daily bulletin, A. I. S. form 5, or other suitable form.

Semi-monthly report. No form is prescribed, but the general form of the daily bulletin is suggested. It should cover thoroughly the artillery activity for the period and make a comparison with the preceding period. It should be accompanied by a map showing the location of all active enemy batteries and all positions believed to be occupied on the last day of the period.

The system of numbering hours from 0 to 24 will be used; 0 and 24 hours are midnight.

Daily reports will cover the hours from 6 to 6. Semi-monthly reports will cover the period from 6 hours on the 1st or 15th of the month to 6 hours on the 15th or 1st, respectively. Monthly reports will cover the period between 6 hours on the first of each month.

Reports must be transmitted promptly, particularly by the smaller units; otherwise the work of studying, verifying and comparing various reports will be greatly hampered.

36. *Maps kept by the corps A. I. O.*

(*a*) *Location and activity of enemy batteries.*—Issued by the topographic section and kept up to date by the corps A. I. O., using all available information. The activity is usually indicated by concentric circles around the battery position, one for each day the battery is reported in action. The usual direction of fire is also indicated. A new map is issued from time to time and the process repeated.

(*b*) *Objectives other than batteries.*—Issued by either the army or corps topographic section, showing in general all artillery objectives other than batteries, such as enemy circulation, cantonments, O. P.'s, etc.

(*c*) *Ground hidden from enemy balloons and O. P.'s.*—Important for use in selecting new battery positions and roads pertaining to them.

(*d*) *Shelled areas.*—Colors are used to show the areas, both enemy and friendly, most heavily shelled. It shows areas to be avoided by our circulation and also the general distribution of our artillery fire. A record should be kept, in conjunction with

this map, showing the hours at which the various areas are usually shelled.

(*e*) *Field of view and dead spaces for our O. P.'s.*—Dead spaces are cross-hatched, using a different color for each post.

(*f*) *Destruction by our artillery.*—Showing whether destruction is complete, points at which fires or explosions have occurred, etc. Different colors may be used for different days.

(*g*) *Relief or colored contour map.*—Showing at a glance the general topography of the sector, fields of view of O. P.'s, locations for new O. P.'s, etc.

37. *Charts and files of the corps A. I. O.*

(*a*) *Daily activity chart, A. I. S. form 6.*—Enemy batteries are divided into groups according to their location. Blank lines should be left for new batteries. This chart shows whether a battery is inactive, doubtfully active or active and the degree of activity and also the caliber, number of pieces and habitual objectives. It shows at a glance the enemy artillery activity for each day and is useful in arranging the counter-battery program and tracing the movements of a battery from one position to another.

(*b*) *Battery histories, A. I. S. form 7, or other suitable form.*—One form is used for each enemy battery. The sheets are filed according to groups, for convenience of reference and to detect errors or duplication in the designation of batteries.

(*c*) *Miscellaneous objectives, A. I. S. form 8.*—This is generally similar in plan to the battery histories. It covers the objectives of our artillery, except batteries. The sheets may be indexed by coordinates or according to the nature of the objectives.

(*d*) *Points subject to enemy artillery fire, A. I. S. form 9.*—A sheet should be kept for each of our battery positions or other important point. When a point is fired upon by an enemy battery the fire is noted on the proper sheet. During a bombardment the point fired upon may telephone, for example, that it is being fired upon by a 150. By referring to the sheet for this point it can be seen which batteries of this caliber have fired on this point recently and counter-battery work undertaken at once.

(*e*) *Friendly O. P.'s.*—The following records for all friendly O. P.'s should be on file:

A large scale panoramic sketch.

A panoramic photograph if possible.

A card showing, on one side, by means of a section of the plan directeur, the location of the O. P., the routes of approach, the location of the nearest telephone connection and of the

central to which it pertains; on the other side standing orders as to protection and concealment, accommodations available and permanent equipment of the O. P.

Visibility maps.

(*f*) *Photo file.*—No form is prescribed. The system of filing by kilometer squares is generally preferable to that of filing by photograph number in connection with an index.

38. *Information supplied to artillery units by the corps A. I. S.*—Units are supplied with all information needed in regard to their objectives and for the preparation of fire. This usually includes lists of enemy batteries, O. P.'s, command posts, telephone centrals and other important points, with maps and accompanied by photographs when necessary. Data pertaining to the triangulation system should be kept up to date.

In order to stimulate and add interest to the work of the batteries they should be supplied with as much general information as possible, such as the destruction caused by our fire, news from other fronts, etc.

CHAPTER 3.

Army Artillery Information Service.

39. The functions of the army A. I. S. are:

(*a*) To act as a direct artillery information agency of the army chief of artillery and for the army artillery units. The maps and files for this purpose are similar to those of the corps A. I. S. (paragraphs 36 and 37).

(*b*) To coordinate and verify the information gathered by the smaller units.

(*c*) To exercise direct control, under the army chief of artillery, over the counter-battery work of the army artillery not assigned to army corps, as well as that of one army corps against objectives in the normal zone of another army corps and to coordinate the counter-battery work of the army corps in accordance with the plan of the army commander (paragraphs 7 and 8).

(*d*) To supervise the tactical use of the F. R. S. and S. R. S. (paragraph 4).

40. The sources of information for the army A. I. S. are generally the same as for the corps A. I. S., with, in addition, the army G-2 and topographic section (paragraphs 6 and 27). Photographs of the distant areas in rear of the enemy lines are taken on the application of the army A. I. S. to G-2 (paragraph 23*c*).

41. *G-2.*—In the army, as in all other units, the A. I. S. works in close cooperation with the G-2. The latter has wide resources for the collection of information, similar in nature to those of the corps G-2 (paragraph 28), but broader in scope. The army G-2 furnishes an intelligence officer as a liaison with the army A. I. S.

The army topographic section publishes maps containing all available information concerning the army zone, some of which is supplied by the army G-2 and some by the army A. I. S. Enemy batteries, with accurately determined coordinates, are given on these maps.

42. *Information received by the army A. I. S.*—This includes daily reports or bulletins from the corps A. I. S., the A. I. S. of smaller units of army artillery, the army G-2, the F. R. S. and S. R. S., radio interception and anti-aircraft units, the semi-monthly corps A. I. S. bulletin and reports from time to time from the army air service (with photographs) and from G-2 giving the results of the examination of prisoners.

43. *Information supplied by the army A. I. S.*—The army A. I. S. issues a daily bulletin on the activity of the enemy artillery. At certain intervals, usually monthly, a report of a more general nature is issued covering:

Activity of the enemy artillery.

Kind of fire.

Enemy heavy artillery.

General deductions.

This report is accompanied by a map showing the location of active enemy batteries and occupied battery positions and is sent to each army corps, to army artillery units, to the army G-2 and to neighboring armies.

In addition, it is important for the army A. I. S. to supply smaller units with the necessary information for the preparation and execution of fire, such as:

Lists of enemy batteries.

Lists of enemy O. P.'s, command posts, telephone centrals, etc.

Special bulletins for important information.

44. *Maps and files of the army A. I. O.*—The information available in the A. I. S. consists generally of that concerning enemy batteries as a whole, that concerning heavy batteries and that concerning objectives other than batteries.

The information is kept in the following general manner:

Battery histories, similar to those of the corps A. I. S. (paragraph 37*b*).

Special battery histories for heavy artillery.

Miscellaneous objectives, similar to those of the corps A. I. S. (paragraph 37*c*).

Maps.

Complete files of all photographs taken in the army.

45. *Information for army artillery.*—The offensive use of heavy artillery requires detailed plans prepared in advance. The objectives are relatively few. The army A. I. S. supplies the artillery units with full information concerning the objectives to be attacked. These include:

(*a*) *Objectives for interdiction fire.*—Roads, railroads, trails and canals used or likely to be used for reinforcements, supply or evacuation and the most suitable points on these routes for firing.

(*b*) *Objectives for destruction fire.*—Shelters, especially distant ones or those too strong for division or corps artillery, bridges, locks, railroad stations and yards, ammunition dumps, supply depots, O. P.'s or other important points.

(*c*) *Enemy batteries.*—Particularly those too distant or well sheltered for division or corps artillery.

46. The army A. I. S. constantly studies enemy heavy artillery positions and suspected positions, as well as other possible objectives for the army artillery. The records kept for this purpose are available in the preparation of offensive and defensive plans. The following will be found useful in this connection:

(*a*) *Objectives for interdiction fire.*—Each objective should have a separate sheet, containing all available information with a section of the plan directeur and photograph. When a plan includes a particular objective the sheet for the objective is supplied to the unit to fire on it.

The sheets may be indexed either by coordinates or by the nature of the objective.

Similar files may be kept for objectives other than batteries for destruction fire.

(*b*) Plans for interdiction fire on the defensive, either with an assumed artillery strength available or without considering the available artillery.

(*c*) Enemy heavy artillery positions, showing whether occupied, location, character of position, caliber of pieces, dates of firing and usual objectives.

Photographs and sections of the plan directeur should accompany such records.

CHAPTER 4.

Artillery Information Service in Smaller Units.

47. The commander of each artillery unit, such as a brigade, regiment, group or battalion, has an artillery intelligence officer

on his staff (paragraph 1). Much valuable information is gathered by the batteries, command posts, O. P.'s of artillery units and it is necessary that an officer be specially charged with its collection, verification and prompt transmission.

Ordinarily, in brigades and regiments, it is necessary that the A. I. O.'s devote their entire time to this duty.

48. *A. I. S. in division artillery brigades.*—The personnel is 1 captain, 1 lieutenant, 1 sergeant and 2 privates (motorcyclists). The duties in general are:

(*a*) To keep the artillery commander informed as to the artillery situation.

(*b*) To gather information concerning the objectives of the division artillery, to study and verify this information, to keep the various units supplied with all available information concerning their particular objectives and to transmit this information to the corps A. I. S. and to the division G-2.

(*c*) To coordinate and supervise the observation and intelligence service throughout the brigade. With reference to intelligence O. P.'s, the A. I. S. is responsible that the entire front line of the division and an area extending to the rear about 2 kilometers are under observation at all times by O. P.'s of the division artillery, with personnel on duty day and night. The A. I. S. keeps on hand, at all times, complete information in regard to firing O. P.'s. This enables it to inform units as to the O. P.'s best suited for firing on a given objective and to supply new observers with panoramic sketches, etc.

The division A. I. S. should not be called upon to gather information, either for the corps A. I. S. or for the division G-2, when there are special services whose functions include the information needed.

49. The brigade A. I. O. ordinarily receives information from the following sources:

(*a*) Regimental A. I. O.'s.

(*b*) S. R. S. (paragraph 18).

(*c*) F. R. S.

(*d*) Corps and army A. I. S. Daily bulletins (paragraphs 35 and 45).

(*e*) G-2 of the division, army corps and army. Daily bulletins.

(*f*) Air photographs.

(*g*) Radio interception and telephone listening.

(*h*) Division observers.

50. *Records and maps of the division A. I. S.*—The following records are kept:

(*a*) A file of the objectives of the division artillery and all studies of the same, including photographs.

(*b*) A map, 1/10,000, of the enemy organization. This map includes all the objectives of the division artillery in the preparation of an offensive.

(*c*) A map, 1/10,000, of the complete enemy organization, such as machine guns, trench mortars, observation posts, shelters or dug-outs, distributing points, loop holes, trench system.

These two maps are kept up to date at all times. They afford the division artillery commander a means of studying the tasks of the division artillery in preparing operations.

(*d*) A map showing the division O. P.'s, their visible areas, communications, etc.

(*e*) Such additional records as may be required.

51. A daily report is issued by the brigade A. I. S. on form 3. Copies are sent to the corps A. I. S. (paragraph 26), to G-2 of the division and to the artillery regiments and groups.

52. *Regimental A. I. O.*—The A. I. O. of a regiment of division artillery or division trench mortar battery collects artillery information in his sector and forwards it to the brigade A. I. O., distributes artillery information and supervises the use of O. P.'s of his unit with a view to their full utilization for gathering information. Liaison officers with infantry units are a source of information.

Action should be taken in the case of unexploded shells, fragments, fuses, etc., as indicated in paragraph 32.

A daily report is submitted to the brigade A. I. O. in the form prescribed by him, covering the activity of friendly and enemy artillery and general information. Form 3 is ordinarily suitable for this purpose.

Important information should be immediately transmitted by telephone (paragraph 26), but is also included in the written report.

53. *Battalion A. I. O.*—There will be an officer in each battalion of the division artillery who performs the duties of A. I. O. in addition to his other duties. His duties are similar for the battalion to those of the regimental A. I. O. for the regiment. In addition he has charge of the training of observers for the permanent O. P.'s.

54. *Liaison officers with the infantry.*—These officers maintain close touch with the appropriate A. I. O.'s, to whom they transmit all important artillery information, such as:

(*a*) Enemy fire, points shelled, number of rounds or duration of fire, time, caliber, source of fire, number of pieces in action, use of gas, barrages, etc.

(*b*) Our fire, barrages, sector, time called for, time of first shots, erratic firing, if ragged, etc.

(*c*) General information of interest to the artillery with reference to our own and enemy activity.

The liaison officer transmits to the artillery all interesting information gathered by infantry intelligence officers.

55. *A. I. O. of corps and army artillery units.*—The duties of the A. I. O. of a battalion of corps or army artillery, during quiet periods, are similar to those of the division A. I. O. He keeps on hand all necessary information concerning objectives for his battalion, such as objectives for counter-battery work, roads, railroads, trails, for interdiction fire and rest camps, shelters, ammunition dumps, for harassing or destruction fire.

Most of his information is supplied by the corps and army A. I. S., but he should arrange to receive first-hand information from any valuable sources in his sector, especially for firing on enemy batteries or fleeting objectives. The F. R. S., S. R. S., balloons, division artillery brigade, etc., near the battalion, are useful in this connection.

A daily report is rendered on form 4. Important information is transmitted by telephone at once.

56. *Group A. I. O.*—When groups are formed, for large offensive or defensive actions, the group A. I. O. should be selected with care. He should be sent to the army A. I. S. sufficiently in advance to study carefully all the information needed by his group. He will be supplied with files of objectives and other data made up specially for the purpose and be prepared to supply them in suitable forms and numbers to the units immediately upon their arrival.

He arranges with the army (or corps) A. I. S. for the prompt transmission of information from the F. R. S. and S. R. S. and from balloons and also for meteorological data.

The group A. I. O. will ordinarily be unable to gather information as the agencies usually available will be otherwise occupied. It is generally impracticable for him to render reports, but he should be supplied with the F. R. S. and S. R. S. reports, G-2 bulletins and the necessary photographs.

A. I. S. FORM 1.

Daily Report of Balloon Company.

(See the artillery information service, paragraph 19).

Balloon Co. No.....

Visibility { a. m. / p. m.

From 6 o'clock.....

to 6 o'clock.....

Enemy Artillery Activity.

Date	Hour	Battery	Region	Cal.	No. of Shots	No. of Pieces	Objective	Remarks

ADJUSTMENTS.

Date	Hour	Battery	Region	Cal.	No. of Shots	Objective	Effect

GENERAL INFORMATION.

Infantry activity .....

Aeronautics—Airplanes .....

Balloons .....

Movements—Troops .....

Trains .....

Work .....

Miscellaneous .....

General impression of the day:

Enemy activity .....

Own activity .....

Aeronautics .....

Visibility .....

A. I. S. FORM 2.

Daily Report of Aero Squadron.

(See the artillery information service, paragraph 25).

Squadron No.....

V sibility { a. m. / p. m. } From 6 o'clock..... to 6 o'clock.....

Enemy Artillery Activity.

Date	Hour	Battery	Region	Cal.	No. of Shots	No. of Pieces	Objective	Remarks

ADJUSTMENTS.

Date	Hour	Battery	Region	Cal.	No. of Shots	Objective	Effect

GENERAL INFORMATION.

Infantry activity .....

Aeronautics—Airplanes .....

Balloons .....

Movements—Troops .....

Trains .....

Work .....

Miscellaneous .....

General impression of the day:

Enemy activity .....

Own activity .....

Aeronautics .....

Visibility .....

A. I. S. FORM 3.

Daily Report of Division A. I. O.

(See the artillery information service, paragraphs 26 and 51).

.....Division. .....Brigade.

Visibility { a. m. / p. m. } From 6 o'clock..... to 6 o'clock.....

ENEMY ARTILLERY ACTIVITY.

Date	Hour	Battery	Region	Cal.	No. of Shells	Source of Information	Objective	Remarks

Total shots (grouped by calibers).

GENERAL INFORMATION.

Infantry activity .....

Aeronautics—Airplanes .....

Balloons .....

Movements—Troops .....

Trains .....

Work .....

Miscellaneous .....

General impression of the day:

Enemy activity .....

Own activity .....

Aeronautics .....

Visibility .....

FIRING.

Date	Hour	Battery	No. of Shots	Kind of Projectile	Objective	Observed by	Effect

Total shots (grouped by caliber).

A. I. S. FORM 4.

Daily Report of Corps or Army Artillery Units.

(See the artillery information service, paragraph 26).

Unit.....

Visibility { a. m. / p. m. } From 6 o'clock..... to 6 o'clock.....

ENEMY ARTILLERY ACTIVITY.

Date	Hour	Battery	Region	Cal.	No. and kind of Shells	Source of Information	Objective	Remarks

Firing.

Date	Hour	Battery	No. of Shots	Kind of Shells	Objective	Observed by	Effect

Total shots (grouped by calibers).

GENERAL INFORMATION.

Infantry activity .....

Aeronautics—Airplanes .....

Balloons .....

Movements—Troops .....

Trains .....

Work .....

Miscellaneous .....

General impression of the day:

Enemy activity .....

Own activity .....

Aeronautics .....

Visibility .....

A. I. S. FORM 5.

Daily Bulletin of Corps A. I. S.

(See the artillery information service, paragraph 35).

.....Army Corps.

Visibility { a. m. / p. m. } From 6 o'clock.....

to 6 o'clock .....

Enemy Batteries Reported in Action.

Date	Hour	Battery	Region	Cal.	No. of Pieces	No. of Shots	Objective	Source of Information

Location Uncertain.

Date	Hour	Battery	Region	Cal.	No. of Pieces	No. of Shots	Objective	Source of Information

.....batteries reported in action.

.....batteries reported for first time.

No. of Shots Fired.

ENEMY					AMERICAN		
77	105	150	Others	Total	Div. Art.	Corps Art.	Total

GENERAL INFORMATION.

Infantry activity .....

Aeronautics—Airplanes .....

Balloons .....

Movements—Troops .....

Trains .....

Work .....

Miscellaneous .....

General impression of the day:

Enemy activity .....

Own activity .....

Aeronautics .....

Visibility .....

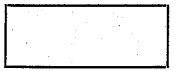
A. I. S. FORM 6.

Daily Activity Chart.

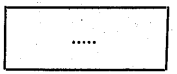
(See the artillery information service, paragraph 37).

Battery	Group	Objective	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

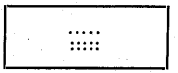
Legend—Activity.



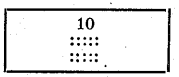
inactive.



doubtfully active—1 gun.



doubtfully active—3 guns.



pos.tively active—4 guns, 10 shots.

Caliber:

Red..... 77
Blue.....105
Yellow.....150
Black.....10L
Green.....15L

Location of Battery

A. I. S. FORM 7.

Battery History.

(See the artillery information service, paragraph 37).

Number of pieces	Habitual Objectives.
Region	
Protection	
(NOTE.—State under subhead "Protection" any knowledge of casements, dugouts, etc., and if possible, the source of such information. Ex: 4 casemates, photo 1232).	

Photo File		Exact Coordinates.	
Date	Number of Photo	Date	Coordinates
	(NOTE.—Photos will not be pasted here, but will be kept in a filing case).		

Record of Activity.						Record of Fire on Battery.					
Date	Cal.	No. of Guns	Objective	Source of Information	Remarks	Date	Battery	Cal.	No. of Shots	Observed by	Effect

A. I. S. FORM 8.

Miscellaneous Objectives.

(See the artillery information service, paragraph 37).

Location .....

Coordinates { x=..... / y=..... }

Section of Plan Directeur.	Description.

Photo Record		Record of destruction fire on objective.					
Date	No. of Photo	Date	Battery	Cal.	No. of Shots	Observed by	Effect

Date	Hour	Source of Information	Observation

A. I. S. FORM 9.

Points Subject to Enemy Artillery Fire.

(See the artillery information service, paragraph 27).

Location and nature of point.

Date	Caliber	Date	Caliber	Date	Caliber	Date	Caliber	Date	Caliber

THE COMMAND AND GENERAL STAFF SCHOOL
Fort Leavenworth, Kansas

LIBRARY REGULATIONS

1. Books, pamphlets, and periodicals must be charged at the loan desk (signature on book-loan card) before being taken from the Library.

2. Any item drawn from the Library must be returned within one month.

Exceptions to this regulation are as follows:

(1) Material issued to classes as a whole.

(2) Material issued to instructors for professional use.

(3) New books which are in demand must be returned within one week.

(4) Books required for faculty use are subject to recall at any time.

(5) All persons having library material in their possession will return same before leaving the post permanently.

(6) Books loaned outside the Schools must be returned within two weeks.

3. Reference books and current periodicals will not be removed from the Library.

48—C. & G. S. Sch., Fort Leavenworth—8-25-32—5M