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THE
INSTRUCTIONS
A. S. S.
CONFIDENTIAL FILE

MANUAL

OF THE

WAR PLANS DIVISION

OF THE

GENERAL STAFF

COPY NUMBER

255

not classified

War Plans Div.

WAR DEPARTMENT
OFFICE OF THE CHIEF OF STAFF
WASHINGTON.

April 6, 1920.

MEMORANDUM FOR Sec., General Service Schools, Ft. Leavenworth:

Subject: Changes in Manual of War Plans Division.

The following amendments to the Manual of the War Plans Division, General Staff, are published for the information and guidance of all concerned:

1. Pages 31, 45-c, 49, and 50 are rescinded and new pages, herewith, should be substituted therefor.
2. Page 51 - Note at bottom of page should be changed to read:
Two copies of above form should be used; they should bear the usual initials of branch and stenographer.
3. Lines 22, 23, and 24 (last half of Par. "q"), page 65, are rescinded.
4. The memorandums on pages 45-a and 45-b should be changed to read Memorandum for the Director of Operations Division instead of "Memorandum for the Chief, Personnel Branch, Operations Division".
5. New page 45-d herewith.

By direction of the Acting Director, W.P.D.:

R. M. BECK, JR.,
Colonel, General Staff,
Executive Officer.

x/wsb

WAR DEPARTMENT
War Plans Division, OFFICE OF THE CHIEF OF STAFF
WAR DEPARTMENT.

AG 321.1 Haw. Dept.
In reply refer to
O.C.S., W.P.D.
1367

January , 1920.

From: Director, War Plans Division, Assistant Chief of Staff.
To: The Commanding General, Hawaiian Department,
Subject: Defense Project.

1. There are being transmitted under separate cover * * *
2. It is requested that * * *

W. G. HAAN,
Major General, General Staff.

2 incls.
w/ooo

- - - - -

NOTE:

Three copies of the above letter should be made, and one carbon should bear in the upper right hand portion of the page close to the letterhead the initials of the officer who drafted the letter and directly above should be written the letters WPD.

WAR PLANS DIVISION WAR DEPARTMENT
OFFICE OF THE CHIEF OF STAFF
WASHINGTON

February , 1920.

MEMORANDUM FOR THE ADJUTANT GENERAL OF THE ARMY:

Subject: Travel orders for Colonel John Smith, G.S.,
 War Plans Division.

The Secretary of War directs that the necessary orders be issued directing Colonel John Smith, General Staff, War Plans Division, to proceed from this city to Chicago, Ill., thence to Camp Grant, Ill., thence to Camp Taylor, Ky., on temporary duty, for the purpose of attending a Convention of the National Society for the Promotion of Vocational Education at Chicago, and to consult with the Education and Recreation Officers at the camps named, with reference to vocational training matters and upon completion of this duty, to return to his proper station, Washington, D.C.

e/lmd

- - - - -

NOTE:

Memorandums requesting travel orders for officers under the jurisdiction of the Director, War Plans Division, should be prepared in the form of a memorandum for The Adjutant General of the Army.

The purpose of the travel should be specifically stated, and the phrase "to carry out the orders of the Chief of Staff" will not be used.

When the officer is traveling on temporary duty and is to return to his proper station upon the completion of same, the order should so state.

Where the mailing address of the officer concerned is other than the War Plans Division, it should be stated.

Five (5) copies should be made, and the original and 1st carbon should not bear the initials of the dictating officer.

The name, rank, and organization of the officer concerned should be verified from the Army List & Directory.

War Plans Div.

WAR DEPARTMENT
OFFICE OF THE CHIEF OF STAFF
WASHINGTON,

April , 1920.

MEMORANDUM FOR THE ADJUTANT GENERAL OF THE ARMY:

Subject: Travel Orders for 1st Lieutenant David B.
Todd, Jr., Inf., War Plans Division.

The Secretary of War directs that confirmatory orders in substance as follows, be issued:

The travel performed by First Lieutenant David B. Todd, Jr., Inf., War Plans Division, in proceeding on March 29, 1920, from Patterson, N. J., to New York City, and return to Patterson, N. J., on March 31, 1920, on official business in carrying out instructions of the Secretary of War in connection with the employment of discharged soldiers, is confirmed as having been necessary in the military service, it having been impracticable to issue the necessary orders in advance.

t/tfc

4711

April 4, 1920.

MEMORANDUM FOR THE JUDGE ADVOCATE GENERAL OF THE ARMY:

Subject:

I. Papers accompanying.

* * * * *

II. The basic problem presented.

* * * * *

III. Pertinent Facts bearing on problem.

1. * * *

2. * * *

IV. or III. Opinion is requested on the following questions.

1. * * *

2. * * *

3. * * *

x/tfc

- - - - -

NOTE: All papers bearing on the questions presented must accompany the memorandum.

Par. III is used only in exceptional cases when the accompanying papers do not fully present the case or when the question is original.

Every question to which answer is desired must be specifically stated, as the Judge Advocate General will not answer any question that is not definitely asked.

Three copies of the above style of memorandum should be made one carbon only bearing the initials of the officer who drafted same.

War Plans Div.
AG 201, Higgins, Hugh E.
WPD 4881

WAR DEPARTMENT
OFFICE OF THE CHIEF OF STAFF
WASHINGTON

January , 1920.

MEMORANDUM FOR THE ADJUTANT GENERAL OF THE ARMY:

Subject: Changes in Paragraph 159, A. R., 1913.

The Secretary of War directs that the papers (AG 201 Higgins, Hugh E.) herewith be filed in your office and that the first sentence, first sub-paragraph, paragraph 159, Army Regulations, 1913, (Changed by C.A.R. Nos. 13, and 64) be changed as follows:

159. (Changed by C.A.R. Nos. 13 and 64). When an enlisted man becomes unfitted ~~unfit~~ for military service because of wounds ~~or disease, mental or physical disability~~, a certificate of disability for discharge will be ordered by the soldier's immediate commanding officer and forwarded to a board of at least two medical officers convened by the post or regimental commander, which will critically examine the soldier and enter on the certificate the data required in Paragraph 161.

1/flr

- - - - -

NOTE: Five (5) copies, all (3) except the original and first carbon bearing the initials of the officer who drafted same.

Proposed changes in War Department publications should show ~~new~~ words underscored and words to be rescinded should ~~be~~ crossed out as shown.

War Plans Div.

WAR DEPARTMENT
OFFICE OF THE CHIEF OF STAFF
WASHINGTON.

April 6, 1920.

File No. 2691.18
INSTRUCTORS CONFIDENTIAL FILE
A. S. S. 4/16/20

MEMORANDUM FOR Commandant, General Service Schools,

Subject: Changes in Manual of War Plans Division.

The following amendments to the Manual of the War Plans Division, General Staff, are published for the information and guidance of all concerned:

1. Pages 31, 45-c, 49, and 50 are rescinded and new pages, herewith, should be substituted therefor.
2. Page 51 - Note at bottom of page should be changed to read:
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4. The memorandums on pages 45-a and 45-b should be changed to read Memorandum for the Director of Operations Division instead of "Memorandum for the Chief, Personnel Branch, Operations Division".
5. New page 45-d herewith.

By direction of the Acting Director, W.P.D.:

R. M. BECK, JR.,
Colonel, General Staff,
Executive Officer.

x/wsb

WAR DEPARTMENT
OFFICE OF THE CHIEF OF STAFF
WAR DEPARTMENT.
War Plans Division,

AG 321.1 Haw. Dept.
In reply refer to
O.C.S., W.P.D.
1367

January , 1920.

From: Director, War Plans Division, Assistant Chief of Staff.
To: The Commanding General, Hawaiian Department,
Subject: Defense Project.

1. There are being transmitted under separate cover * * *
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Major General, General Staff.

2 incls.
w/ooo

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WAR PLANS DIVISION WAR DEPARTMENT
OFFICE OF THE CHIEF OF STAFF
WASHINGTON

February , 1920.

MEMORANDUM FOR THE ADJUTANT GENERAL OF THE ARMY:

Subject: Travel orders for Colonel John Smith, G.S.,
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The Secretary of War directs that the necessary orders be issued directing Colonel John Smith, General Staff, War Plans Division, to proceed from this city to Chicago, Ill., thence to Camp Grant, Ill., thence to Camp Taylor, Ky., on temporary duty, for the purpose of attending a Convention of the National Society for the Promotion of Vocational Education at Chicago, and to consult with the Education and Recreation Officers at the camps named, with reference to vocational training matters and upon completion of this duty, to return to his proper station, Washington, D.C.

e/lmd

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The purpose of the travel should be specifically stated, and the phrase "to carry out the orders of the Chief of Staff" will not be used.

When the officer is traveling on temporary duty and is to return to his proper station upon the completion of same, the order should so state.

Where the mailing address of the officer concerned is other than the War Plans Division, it should be stated.

Five (5) copies should be made, and the original and 1st carbon should not bear the initials of the dictating officer.

The name, rank, and organization of the officer concerned should be verified from the Army List & Directory.

War Plans Div.

WAR DEPARTMENT
OFFICE OF THE CHIEF OF STAFF
WASHINGTON.

April , 1920.

MEMORANDUM FOR THE ADJUTANT GENERAL OF THE ARMY:

Subject: Travel Orders for 1st Lieutenant David B.
Todd, Jr., Inf., War Plans Division.

The Secretary of War directs that confirmatory orders in substance as follows, be issued:

The travel performed by First Lieutenant David B. Todd, Jr., Inf., War Plans Division, in proceeding on March 29, 1920, from Patterson, N. J., to New York City, and return to Patterson, N. J., on March 31, 1920, on official business in carrying out instructions of the Secretary of War in connection with the employment of discharged soldiers, is confirmed as having been necessary in the military service, it having been impracticable to issue the necessary orders in advance.

t/tfc

April 4, 1920.

MEMORANDUM FOR THE JUDGE ADVOCATE GENERAL OF THE ARMY:

Subject:

I. Papers accompanying.

* * * * *

II. The basic problem presented.

* * * * *

III. Pertinent Facts bearing on problem.

1. * * *

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IV. or III. Opinion is requested on the following questions.

1. * * *

2. * * *

3. * * *

x/tfc

- - - - -

NOTE: All papers bearing on the questions presented must accompany the memorandum.

Par. III is used only in exceptional cases when the accompanying papers do not fully present the case or when the question is original.

Every question to which answer is desired must be specifically stated, as the Judge Advocate General will not answer any question that is not definitely asked.

Three copies of the above style of memorandum should be made, one carbon only bearing the initials of the officer who drafted same.

War Plans Div.
AG 301, Higgins, Hugh E.
WPD 4881

WAR DEPARTMENT
OFFICE OF THE CHIEF OF STAFF
WASHINGTON

January , 1920.

MEMORANDUM FOR THE ADJUTANT GENERAL OF THE ARMY:

Subject: Changes in Paragraph 159, A. R., 1913.

The Secretary of War directs that the papers (AG 201 Higgins, Hugh E.) herewith be filed in your office and that the first sentence, first sub-paragraph, paragraph 159, Army Regulations, 1913, (Changed by C.A.R. Nos. 13, and 64) be changed as follows:

159. (Changed by C.A.R. Nos. 13 and 64). When an enlisted man becomes unfitted unfit for military service because of ~~wounds or disease, mental or physical disability~~, a certificate of disability for discharge will be ordered by the soldier's immediate commanding officer and forwarded to a board of at least two medical officers convened by the post or regimental commander, which will critically examine the soldier and enter on the certificate the data required in Paragraph 161.

1/flr

- - - - -

NOTE: Five (5) copies, all (3) except the original and first carbon bearing the initials of the officer who drafted same.

Proposed changes in War Department publications should show ~~new~~ words underscored and words to be rescinded should be crossed out as shown.

WAR PLANS DIVISION.

WAR DEPARTMENT
OFFICE OF THE CHIEF OF STAFF
WASHINGTON.

April 8, 1920.

MEMORANDUM:

1. Par. 11, page 17, MANUAL OF THE WAR PLANS DIVISION requires that "whenever a paper is referred to in the body of a communication, a reference in parenthesis stating the file number and the date and office concerned will be made."

2. When a reference is made to a War Plans Division memorandum, a parenthetical notation will be made, immediately following the statement of the reference, which will give in addition to the W.P.D. number and date, a brief statement of the subject of the document referred to. When the context of the memorandum clearly expresses the subject of the document referred to, the subject need not be stated in the parenthetical notation, although the WPD number and the date will be.

Ex.

"the above facts appear in reports submitted by the Inspector General of the Army (332.8-Claims 15-0 OIG, 1st Ind. Feb. 25-18). On recommendation of this Division (WPD 4153, Jun. 3, 1918, subj: H.R. 10239 - relief of John Smith) The Adjutant General, etc., etc."

Ex.

"This question was previously before the War Department for consideration (W.P.D. 4258 Jun. 5, 1919) and no additional facts are presented, etc., etc."

3. Page 17 of MANUAL OF WAR PLANS DIVISION is rescinded and the accompanying new pages 17 and 17 $\frac{1}{2}$ will be substituted therefor.

By direction of the Actg. Director:

R. M. BECK, JR.,
Colonel, General Staff,
Executive Officer,

x/lmd

File No. 3691.18
INSTRUCTIONS CONFIDENTIAL FILE
A. S. S.
4/13/20

7. Dating of Papers. In dating papers which are to be signed by the Director or Assistant Director, War Plans Division, or higher authority, only the month and year will be written, four spaces being left between the month and year for insertion of the date. On the last three days of the month all will be omitted. This rule is necessary in order that communications may bear the date they are actually mailed from the office; otherwise any delay that might occur between the date of actual typing and the date of dispatch would necessitate a correction being made.

8. Punctuation. The accepted rules of punctuation are in force in military paper work.

9. Capitalization. The generally accepted rules for capitalization will be followed.

10. Inclosures. In writing letters, indorsements, memorandums, or other communications, where inclosures are added in the War Plans Division, or referred to as accompanying, an appropriate notation will be made at the left margin below the body of the communication and immediately above the stenographer's initials. Where the inclosures referred to are sufficiently described in the body of the communication, they need not be described in the note below; otherwise, they should be. When inclosures are referred to as being sent under separate cover, appropriate notation to that effect will be made. The rule as to the notation of inclosures is absolutely essential to the proper, correct, and expeditious handling and dispatch of communications, and no excuse will be considered for failure to comply with it.

11. References & File Numbers. Whenever a paper is referred to in the body of the communication, a reference in parenthesis stating the file number and the date and the office concerned will be made. When a reference is made to a War Plans Division memorandum, a parenthetical notation will be made immediately following the statement of the references, which will give, in addition to the WPD number and date, a brief statement of the subject of the document referred to. When the context of the memorandum clearly expresses the subject of the document referred to, the subject need not be stated in the parenthetical notation, although the WPD number and the date will be.

Ex. "The above facts appear in reports submitted by the Inspector General of the Army (322.8-Claims 15-0 OIG, 1st Ind., Feb.25-18). On recommendation of this Division (WPD 4153, June 3, 1918, subj: H.R. 10239 - relief of John Smith), The Adjutant General, etc., etc."

(As amended April 8, 1920)

Ex.

"This question was previously before the War Department for consideration (WPD 4258, June 5, 1919). and no additional facts are presented, etc., etc."

The file number of the Office of The Adjutant General, whenever the original papers in the case bear such a number, will be placed in the upper left-hand corner just underneath the printed words "War Plans Division" on all copies; so also will be written the letters WPD and the tally number of the War Plans Division, which appears in pencil on the original papers in the case just below the War Plans Division "date received" stamp.

Examples:

War Plans Division.
AG 301.25 (Ft. Crook, Neb.)
WPD 3506

- - - - -

In reply refer to
O.C.S., W.P.D. (In the case of letters not written on War Plans
3507. Division stationery.)

12. Titles. The following names and titles are common to paper work of the War Plans Division and should be written as indicated:

NEWTON D. BAKER,
Secretary of War.

PEYTON C. MARCH,
General, Chief of Staff,

W. G. HAAN,
Major General, General Staff,
Director, W.P.D., A.C. of S.

WM. LASSITER,
Colonel, General Staff,
Asst. Director, W.P.D.

(As amended April 8, 1920)

**WAR DEPARTMENT
OFFICE OF THE CHIEF OF STAFF
WAR PLANS DIVISION**

FEBRUARY 15, 1920.

**THIS MANUAL IS PUBLISHED FOR THE GUIDANCE AND COMPLIANCE
OF ALL OFFICERS AND CIVILIANS OF THE WAR PLANS DIVISION WITH A
VIEW TO PROMOTING EFFICIENCY AND UNIFORMITY OF METHODS.**

**ALL PREVIOUS INSTRUCTIONS IN CONFLICT WITH THIS MANUAL ARE
REVOKED.**

**W. G. HAAN
MAJOR GENERAL, GENERAL STAFF,
DIRECTOR, W. P. D., A. C. OF S.**

TABLE OF CONTENTS.

	Page
Part 1. Organization and Functions	1 - 13.
Part 2. Instructions for the Preparation of Studies and Correspondence:	
A. For the guidance of officers	14 - 15.
B. For the guidance of typists	16 - 29.
C. Model forms of Studies and Correspondence	30 - 53.
Part 3. Regulation and Information:	
A. For officers	54 - 61.
B. For civilians	62 - 73.
Part 4. Index.	

PART I

ORGANIZATION AND FUNCTIONS

ORGANIZATION AND FUNCTIONS OF WAR PLANS DIVISION.

1. The War Plans Division will be organized into branches by the Director, who assigns the general functions, the Chief of Branch, and the officers thereto. Each branch, in turn, will be organized by the Chief of Branch into committees or sections if necessary.

2. There shall be an Assistant Director, an Executive Officer for the Division, and an officer in each branch designated by the Chief of Branch as Branch Executive.

3. The Assistant Director performs such duties as are imposed by the Director.

4. The Executive Officer of the Division is the staff representative of the Director and Assistant Director, and, as such, gives instructions in their name for carrying out their policies and instructions and also in general routine matters.

He is responsible to the Director and Assistant Director for the receipt and distribution to branches of communications assigned to the Division for action, and that the solutions of the problems are promptly and properly presented to those officers. He supervises the records and civilian employees of the Division and is Personnel Officer of the Division.

5. The Chief Clerk of the Division, under the supervision of the Executive Officer, will have charge of all civilian employees assigned to the Division. There shall be a Division Stenographic Section, including a Mimeograph Sub-section, a Messenger Sub-section, and a Personnel Sub-section, under the direct charge of the Chief Clerk. Each branch of the Division will be allotted sufficient employees to perform the ordinary work that is handled by the branch. (These employees will be considered as detached from the Division Stenographic Section.) The Chief Clerk shall, by using the Division Stenographic Section or the allotted employees of other branches, handle the clerical work of the branch when such branch, with its allotted force, is unable to complete it expeditiously.

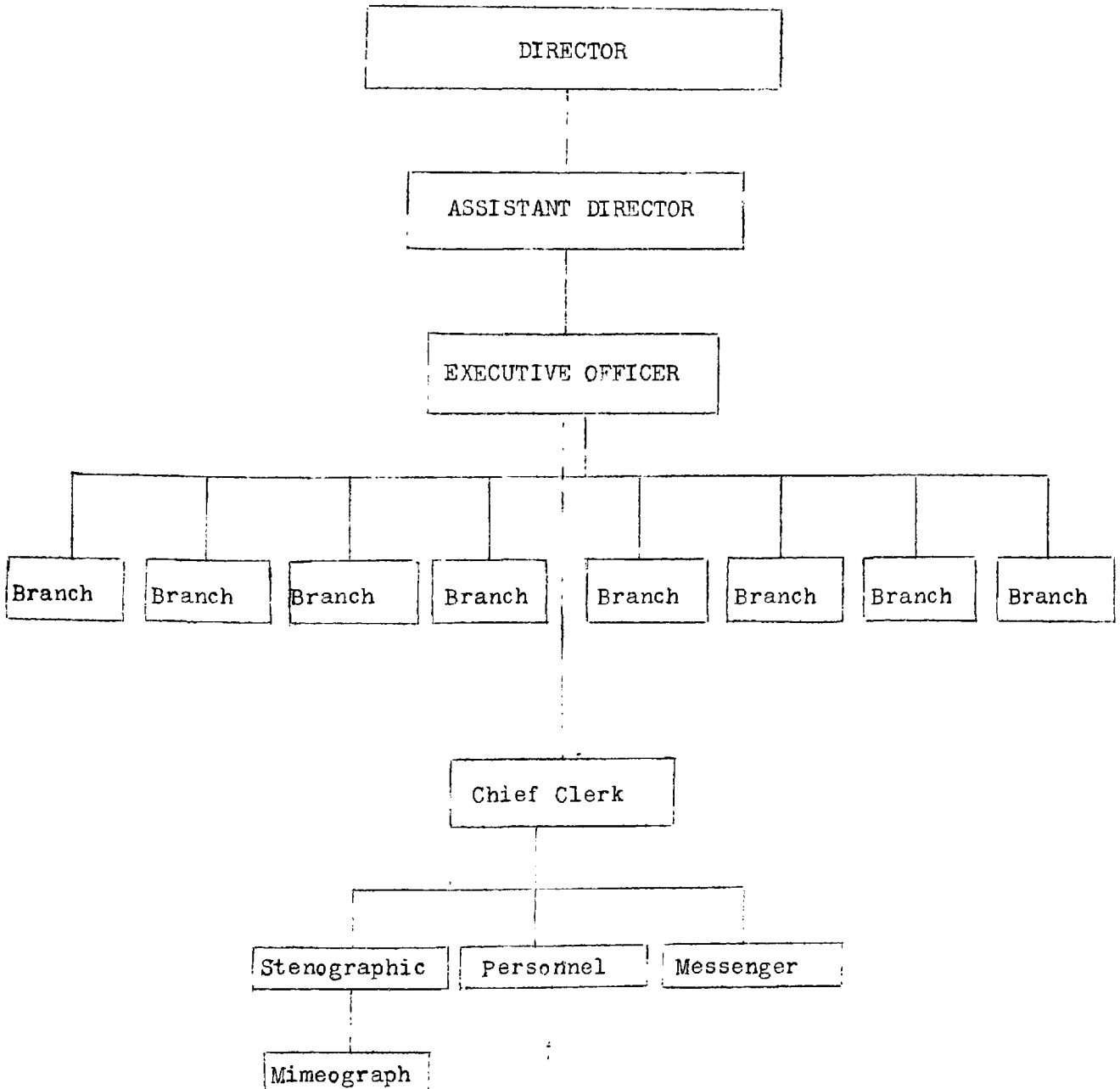
6. A Chief of Branch is responsible to the Director for the proper functioning of his branch and for the proper form and wording of all papers and studies emanating from his branch. His knowledge of the studies must be thorough to enable him to pass upon the solution as being logical, clear, and practical; he must see that every means possible has been taken to present a solution that is constructive and for the best interest of the service as a whole, and also that all the concurrences and comments necessary have been obtained. The Director or Assistant Director will call upon the Chief of Branch in most instances to discuss solutions, and it will be the exception when individual officers of the branch are thus consulted; therefore he must be able to present personally (if called upon) any solution to the Director or Assistant Director and be able to discuss the problem thoroughly and give the reasons for the particular solutions submitted;

this is especially necessary in important papers or when the problem necessitates much study and reading in order to become informed of the governing facts. These latter classes of papers will be submitted personally, through the Executive Officer, to the Director or Assistant Director by the Chief of Branch.

The Chief of Branch must allow the individual members of the branch freedom of opinion, but at the same time should guide, by argument or advice, the reasoning of the individuals into logical and proper channels; he shall in no way deter the initiative of the officer.

7. Branch Executive. This officer, in addition to other duties, will be responsible for the receipt and record of all papers submitted to the branch and will see that all papers are properly and securely assembled before they are transmitted to the Executive Officer; he will make an additional check to that of the Chief of Branch upon the wording of papers and will be held responsible that no clerical or grammatical errors appear therein. It is the primary duty of the executive to see that if action is involved in a solution all necessary memoranda to proper bureaus are submitted to secure such action. He is also responsible for the rendition of all periodical reports.

The Branch Executive functions as assistant to the Executive Officer, and as such is Personnel Officer of the branch. Papers submitted to the branch "For necessary action" will be disposed of in accordance with instructions from higher authority, and if no specific action has been laid down by precedent, he will carry out the policies established by, or the instructions of, the Chief of Branch as to their disposition; this rule is promulgated so as to allow Chiefs of Branches freedom of action in all studies or problems presented to their branches. The Branch Executive must, therefore, be thoroughly familiar with general staff practice and the functions and internal regulations of all bureaus with which the branch has to cooperate.



SKELETON CHART

For complete charts of Division and individual branches
see pages immediately following.

Room 348

EXECUTIVE.

'Phone 1267

DIRECTOR: Major General W. G. Haan, G. S.
ASST. DIRECTOR: Col. Wm. Lassiter, G. S.
ASST. DIRECTOR: Col. F. E. Lacey, Jr., G. S.
EXEC. OFFICER: Col. R. M. Beck, Jr., G. S.

Room 360.

WAR PLANS BRANCH.

'Phone 1291

Chief: Colonel J. C. Gilmore, Jr., G. S.
General mily. policy, strategic plans, & employment of combat troops; plans for orgzn. of all branches of the Army; preparation of T. of O.; Joint Planning Comte. with the Navy.

Room 354.

TRAINING & INSTRUCTION BRANCH.

'Phone 1281

Chief: Colonel Peter Murray, G. S.
Tactics and methods of warfare; military training; military schools, inspection to insure promulgation of training policies.

Room 350.

EDUCATION & RECREATION BRANCH.

'Phone 1280

Chief: Colonel R. I. Rees, G. S.
Educational and vocational training; character training; camp activities and recreation in the Army.

Room 358.

R. O. T. C. BRANCH.

'Phone 1679

Chief: Colonel F. J. Morrow, G. S.
All matters pertaining to organization and control of military training in civil educational institutions and of summer camps.

Room 371.

MORALE BRANCH.

'Phone 1594

Chief: Colonel E. L. Munson, G. S.
Matters relating to the efficiency of the officer and enlisted man through the betterment of morale. To secure information as to state of morale and environment of all commands. Supervision of service periodicals.

Room 356.

LEGISLATION, REGULATIONS, RULES BRANCH.

'Phone 1240

Chief: Colonel F. E. Lacey, Jr., G. S.
Proposed legeln. (not involving policies); reg's., & orders, & decisions thereon. Decisions on funds pertaining to training schools and funds not pertaining to W.D. appropriations, i.e., regtl., co., hosp., &c. Proposed conventions, etc., with foreign powers on military subjects.

Wash. Bks.

HISTORICAL BRANCH.

'Phone

Chief: Lt. Col. O. L. Spaulding, Jr., G. S. W.B.Br. 79

Collection, indexing, and preservation of historical records and the preparation of monographs based thereon.

Tempy. Bldg. #8.

SERVICE AND INFORMATION BRANCH.

'Phone 325

18th & D Sts., N.W.

Chief: Lt. Col. M. C. Smith, G. S.

Secure employment for dischgd. ofcers. and e.m. Rendering assistance by means of inf. or advice to dischgd. ofcers. & e.m. and members of their families.

Room 360.

EXECUTIVE.

'Phone 1251

Chief: Colonel J. C. Gilmore, Jr., G. S.

Exec. Officer: Colonel F. J. Miller, G. S.

ORGANIZATION COMMITTEE.

Room 360 'Phone 1251.
Chief: Col. Jerome G. Pillow, G. S.
Orgzn. ques. concern. Cavalry, Eng.
Corps, Sig. Corps, P.S. & T. Div. &
Philippine Scouts.

Room 360. 'Phone 1251.
Major Charles S. Blakely, F. A.
Orgzn. ques. concern. F. A., Ord.
Dept., J.A.G. Dept. & Med. Dept.,
incl. Med. Vet. & Dental Corps.

Room 360. 'Phone 1251.
Major Varlen D. Dixon, G. S.

Room 360. 'Phone 1251.
Major Edgar S. Gorrell, A. S.
Orgzn. ques. concern. Air Service,
Tank Corps & Chem. Warfare Service;
also acts on Comte. on War Plans &
Def. Projects on Air Serv. matters.

Room 360. 'Phone 1251.
Captain Arthur W. Lane, G. S.
In chg. of Orgzn. Tables, Orgzn.
ques. concern. Inf., M.T.C., Construc-
tion Div., Mil. Bureau, Recruiting
Serv., Schl. Detachments & Guards at
Discb. Barracks.

Orgzn. ques. concerning services not
especially indicated above; questions
of gen. mil. policy & miscl. subjects
ref. to War Plans Branch are handled
by the various members or sub-comtes.
of this Committee.

COMTE. ON WAR PLANS & DEFENSE PROJECTS.

Room 359. 'Phone 1244.
Chief: Col. S. D. Embick, G. S.
Member of Joint Army and Navy Plan-
ning Committee.

Room 359. 'Phone 1244.
Lt. Col. Briant H. Wells, G. S.
Member Joint Army & Navy Planning
Committee.
Chief of Sub-comte. on War Plan-Green.

Room 359. 'Phone 1244.
Major Wm. A. Burnside, Inf.
Member Sub-committee on War Plan-
Green.

Room 359. 'Phone 1244.
Major John W. Gulick, G. S.
Member Joint Army and Navy Planning
Comte. Member Sub-comte. on War Plan-
Green.

Room 359. 'Phone 1244.
Major John J. Kingman, G.S.
Member Joint Army and Navy Planning
Comte. Member Sub-comte. on War Plan-
Green.

Room 359. 'Phone 1244.
Major William Bryden, G. S.
Member Jnt. Army & Navy Planning
Committee.

Room 359. 'Phone 1244.
Captain William F. Robinson, Jr.,
General Staff.

ORGANIZATION AND FUNCTIONS OF THE WAR PLANS BRANCH.

Room 354	<u>EXECUTIVE.</u>	'Phone 1231
Chief:		
Colonel Peter Murray, G.S.		
Executive Officer:		
Colonel G. T. Bowman, G.S.		

Room 350	<u>SECTION I.</u>	'Phone 1269
Military Education & Schools.		
Colonel M. C. Kerth, G.S.	Colonel D. McCaskey, G.S.	
Colonel F. W. Honeycutt, G.S.	Colonel D. I. Sultan, G.S.	

Room 350	<u>SECTION II.</u>	'Phone 1269
Publications (including moving pictures for training).		
Colonel G.E. Mitchell, G.S.	Colonel C.R. Alley, G.S.	Colonel H.M. Cooper, G.S.

Room 350.	<u>SECTION III.</u>	'Phone 1269
Military Training, Tactics; Methods of Warfare; Tactical Inspections; Miscellaneous.		

<u>Colonel C. R. Alley, G.S.</u>
Coast Artillery & Ordnance Training.

<u>Colonel W. H. Walston, G.S.</u>
Infantry Training.

<u>Lt. Col. H. M. Cooper, G.S.</u>
Motor Transport Corps Activities.

<u>Colonel D. McCaskey, G.S.</u>
Cavalry Training; Horse Shows.

<u>Lt. Col. H. M. Groninger, G.S.</u>
Automatic Weapons; Cavalry Training.

<u>Colonel G. E. Mitchell, G.S.</u>
Cavalry Training; Signal Corps Activities.

<u>Colonel F. W. Honeycutt, G.S.</u>
<u>Field</u> Artillery Training; Bands.

<u>Colonel D. I. Sultan, G.S.</u>
Engineer & Air Service Training.

<u>Colonel M. C. Kerth, G.S.</u>
Infantry Training; Combined Training.

<u>Lt. Col. T. Whelan, G.S.</u>
Infantry & Cavalry Weapons; Small Arms Firing.

ORGANIZATION AND FUNCTIONS OF THE TRAINING AND INSTRUCTION BRANCH.

Va.Bldg. EXECUTIVE. 'Phone 350

CHIEF: Colonel R. I. Rees, G.S.
ASST. TO CHIEF: Lt.Col. R.W.Winton, Inf.
EXEC.OFFICER: Lt.Col. T. W. Brown, Inf.
(Room 350 SW&N Bldg., 'Phone 1280)

Va.Bldg. EXECUTIVE SUB-SECTION, ADMINISTRATION. 'Phone 630

Major M. B. Birdseye, Inf.

Administration of affairs of Branch, incl. receipt, distribution, collection, and transmission of papers; files, correspondence; civilian personnel records.

Va.Bldg. EXECUTIVE SUB-SECTION, PERSONNEL. 'Phone 532

Captain A. F. Bedinger, Inf.

Procurement of commissioned and civilian personnel; travel orders; rosters; appointment of civilian assts. Liaison with various staff depts. & other services.

Va.Bldg. EXECUTIVE SUB-SECTION, PROPERTY. 'Phone 510

Captain J. A. Praether, Q.M.C.

Procurement & distribution of property; transfer & accounting of same. Liaison with P.S. & T., M.T.C., & other depts.

Va.Bldg. EXECUTIVE SUB-SECTION, FINANCE. 'Phone 532

1st Lieut. J. A. Doherty, Inf.

Accounting for all funds, govt. and private, received from all sources; disbursement of certain funds allotted to Branch; Smileage accounts.

Va.Bldg. EDUCATION SECTION. 'Phone 170

Colonel H. N. Cootes, G.S. Major W. T. Morgan, Inf., Asst.

Genl. & vocational training of the soldier. Questions of genl. policy affecting education. Reports and returns.

Gen. Education Sub-Section.

Col. J. G. Tyndall, F.A.

2nd Lt. L. N. Koontz, Inf., Asst.
Concerning general education of the soldier; equipment for genl. education. Preparation of courses.

Vocational Tr. Sub-Section.

Col. G. Robinson, M.T.C.

Concerning vocational training of the soldier. Designation of technical & other equipment to be procured.

Standards & Tests Sub-Sec.

Lt.Col. B. P. Lentz, Inf.

Col. W. E. Larned, F.A., Asst.
Concerning standardization of courses & tests.

ORGANIZATION AND FUNCTIONS OF EDUCATION AND RECREATION BRANCH.

(PART I.)

EXECUTIVE (Cont'd)

Va. Bldg.	<u>MORAL TRAINING SECTION.</u>		Phone 359
	Colonel Godwin Ordway, G.S. A. W. Gross, Civilian Expert Advisor, Asst. Character building and moral training of the soldier. Chaplain's duties.		
<u>Chaplain's Sub-Section.</u> <u>Major J. E. Yates, Chaplain.</u> Duties of chaplains.			<u>Law Enforcement - Sex Morality Sub-Sec.</u> <u>Captain Theo. Hall, San. Corps.</u> Questions concerning anti-venereal measures and sex morality.
Va. Bldg.	<u>CAMP ACTIVITIES SECTION.</u>		Phone 728
	Lt. Col. J. S. Joy, F.A. Major L. Watrous, Inf., Asst. Capt. W. C. Weiss, Inf., Asst. All matters relat. to recreation of the soldier. Policies affecting athletics, music, drama, clubs, exchanges, libraries, theatres, & community co-operation.		
<u>Service Club Sub-Section.</u> <u>Major J. C. Rose, Inf.</u> <u>Major J. A. Weeks, Inf., Asst.</u> Operation of welfare of the soldier within camp, post, or station limits.			<u>Athletic Sub-Section.</u> <u>Major E. V. Graves, Q.M.C.</u> <u>1st Lieut. B. W. Leran, Inf., Asst.</u> Questions concerning athletic programs & schedules. Unit athletic equipment matters. Recreational athletics.
<u>Music Sub-Section.</u> <u>Major W. L. Dixon, Inf.</u> Questions concerning instr. & vocal music, bands, etc. - Mass singing & musical entertainments.	<u>Theater Sub-Section.</u> <u>Major W. P. Woolbridge, Q.M.C.</u> <u>1st Lieut. H. L. Stecken, Inf., Asst.</u> Questions concerning management & operation of theaters, motion picture service, traveling dramatics, booking of shows.		
<u>Library Sub-Section.</u> <u>Major C. R. Diffenderffer, Inf.</u> Questions concerning libraries in camps, posts, & stations. Textbooks for distribution for educational work.			<u>Post Exchange Sub-Section.</u> <u>Major A. E. Foote, Inf.</u> <u>1st Lieut. J. M. Corner, Inf., Asst.</u> Questions affecting operation of post, camp & station exchanges. Study of problems looking to betterment of conditions in this respect.
<u>Community Sub-Section.</u> <u>1st Lieut. E. L. Clewell, Inf.</u> Questions affecting leisure time of the soldier when out of camp. Close co-operation with local author. & communities.			
Va. Bldg.			<u>INSPECTORS.</u>
	Lt. Col. R. W. Winton, Inf., In Chg. Major C. Towner, Inf. Major S. G. Blanton, Inf. Questions concerning conduct and procedure of inspections. Details of inspections re education, moral training, & camp activities. Concerning routing of inspectors.		Phone 350

ORGANIZATION AND FUNCTIONS OF EDUCATION AND RECREATION BRANCH. (PART II.)

Room 358

EXECUTIVE.

'Phone 1679

Chief:

Colonel F. J. Morrow, G.S.

Executive Officer:

Major C. W. Elliott, Inf.

Room 358

Colonel E. T. Smith, F.A.

'Phone 1679

Field Artillery units; R.O.T.C. credit for former service; enlisted detachments; physical training; incomplete inductions, S.A.T.C.; moving picture films; commissions in O.R.C.; veterinarian service for R.O.T.C.

Room 358

Colonel R. U. Patterson, G.S.

'Phone 173

Medical units; physical examinations; legislation; decisions.

Room 357

Colonel Wm. T. Merry, Inf.

'Phone 1679

Estimates of costs; appropriations; equipment and clothing, commissioned and enlisted personnel; uniforms and insignia.

Room 356

Colonel F. W. Rowell, Inf.

'Phone 1679

District headquarters; investigations and irregularities; civilian military organizations; purchases by institutions from War Department.

Room 356

Lt. Col. Elvid Hunt, G.S.

'Phone 173

Summer camps; Infantry units; text books and publications; publicity; colored units; Insular units; rifle practice and competitions.

Room 356

Lt. Col. H. L. Archer, A.G.D.

'Phone 1679

Retired officers; G.O.#70 and Act of April 27th, schools; letters of commendation; record forms and reports; requests to teach or take courses; State military legislation.

Room 357

Major Pearson Mencher, G.S.

'Phone 1679

New units; G.O.#48, schools; Cavalry and special units; travel orders; honor schools and distinguished institutions; withdrawal of units.

ORGANIZATION AND FUNCTIONS OF RESERVE OFFICERS' TRAINING CORPS BRANCH.

Room 367 EXECUTIVE. 'Phone 3223

Chief: Colonel E. L. Munson, G.S.
Asst. Chief: Major R. J. Burt, Inf.
Exec. Officer: Maj. G. Munteanu, A.G.

Room 371 Lt. Col. J. B. Richardson, Inf. 'Phone 1594
Liaison to Air Serv., M.T.C. Motor Transportation. Standard presentation of morale ideas thru morale officer to regtl. comdrs. Periodical morale report to C. of S. on depts., camps, hosp., and separate stations. Liaison to officers espec. interested in morale work. Reply to morale requests. Spec. investgn. for S. of W.

Room 371 Captain F. M. Sears, Engrs. 'Phone 1594
Field reports and replies. Check on points to be improved in morale. Physical environments of posts, camps, and stations.

Room 371 Lt. Col. E. N. Woodbury, C.A.C. 'Phone 3742
Liaison to Engrs. & any special liaison. Morale units on transports. Civilian rehabilitation. Graphic morale charts. Pay, as affected by foreign exchange. Foreign army morale. The married enlisted man. Statistical summation of officer questionnaire. The married officer's family outside of station.

Room 371 Major W. W. Smith, S.C. 'Phone 3742
Liaison to service papers and periodicals; civilian newspapers. Editorials. Statistical data for publication. Supply of printing material to camps, posts, etc. Congressional decisions on service publications.

Room 371 Major A. H. Miller, C.A.C. 'Phone 3742
Liaison to C.A.C., R.O.T.C., Insp. Gen. Preparation of circulars, editorials, & special articles. Hints to co. & regtl. comdrs. & chiefs of organizations of civilian employees. Holiday celebrations, regtl. & division days. Practical instruction to new morale officers.

Room 371 Captain H. E. Potter, Inf. 'Phone 3223
Liaison to Am. Red. Cross, S.C., Navy Dept., C.W.S., Ord. Dept., M.I.D., Labor Dept., Agr. Dept., Int. Dept., W.R.I. Moving pictures; slides for lectures; war films to isolated stations; public opinion of army as expressed in photoplay; Nat'l apprn. for schooling army children. Regtl. pictorial histories.

Room 371 Colonel R. C. Richardson, Cav. 'Phone 3742
Liaison to Remount Service, border stations. Mexican characteristics; relations between army & Mexican people; pay of army; morale effect of rotation of troops on border; stimulation of morale due to Medals of Honor.

Room 371 Lt. Col. Philip Mathews, C.A.C. 'Phone 3742
Psychology. Institution of morale in entire army school system. Nat'l. Guard. American Legion. M.I.D. information on morale abroad. Distribution of M.I.D. information to schools.

Room 371 Captain R. C. Shaw, U.S.A. 'Phone 3742
Liaison to J.A.G.; Psychological Sec., S.G.O. Research, causes of crime. Psychological studies. Law reports. Monthly reports of Morale Branch activities. History of morale. Extracts of letters on practical cases of handling men. Expansion of morale to nation (military and civil).

Room 371 Major H. S. Mueller, Inf. 'Phone 3742
Liaison to art centers. Posters. Cartoons. Medals & badges. Designs for certificates for discharge, retirement. General subject of advertising.

ORGANIZATION AND FUNCTIONS OF MORALE BRANCH.

Room 356

'Phone 1240

EXECUTIVE.

Chief:

Colonel F. E. Lacey, Jr., G.S.

Room 356

Colonel C. A. Romeyn, G.S.

'Phone 1240

Funds, company, post exchange, and other. Baggage, shipment of mounted service and animals. Army Regulations, especially proposed new edition. Enrolled bills. Legislation.

Room 356

Colonel W. H. Johnson, G.S.

'Phone 1240

Reservations. Army Regulations, (Medical Department). Special Regulations. World War Organizations. Miscellaneous.

Room 356

Lt.Col. J. A. Howell, G.S.

'Phone 1240

Legal questions. Preparation of legislation. Conventions with foreign governments on military matters.

ORGANIZATION AND FUNCTIONS OF THE LEGISLATION, REGULATIONS, RULES BRANCH.

Wash.Bks.

EXECUTIVE.

W.B. 78

Chief:

Lt.Col. O. L. Spaulding, Jr., G.S.

Executive Officer:

Major R. C. Cotton, G.S.

Studies & Monographs on Mobilization in United States. W.D. Br. 924

Lt.Col. R. H. Fletcher, Jr., G.S.

1st Lieut. R. A. Gibson, Inf.

Wash.Bks.

Studies & Monographs on Service of Supply.

W.B. 37

Colonel J. W. Wright, Inf.

Lt.Col. C. P. Mills, Cav.

Captain Henry Humann, F.A.

Wash.Bks.

Special Studies & Monographs on Operations.

W.B. 78

Lt.Col. C. C. Winnia, Inf.

Lt.Col. C. F. Crain, Inf.

Captain A. K. Eloan, Inf.

Captain J. S. Switzer, Jr., Inf.

1st Lieut. C. W. Moffett, Inf.

Wash.Bks.

Report on Inter-Allied Supply.

W.B. 37

Colonel Harry L. Hodges, Cav.

Captain F. K. Shapin, Cav.

Wash.Bks.

Archives.

W.B. 77

Documents.

Captain L. Higgins, Inf.

Photographs.

Major R. P. Lemly, Inf.

ORGANIZATION AND FUNCTIONS OF HISTORICAL BRANCH.

(Located in Bldg. "E", Washington Barracks.)

Tempy. Bldg. #8
18th & D Sts. EXECUTIVE. 'Phone 325
Chief:
Lt. Col. Mathew C. Smith, G.S.
Executive Officer:
Major Wm. A. Woodlief, A.G.D.

Tempy. Bldg. #8
18th & D Sts., N.W. Colonel R. L. Foster, Inf. 'Phone 332
1st Lieut. D. P. Todd, Jr., Inf., Asst.
Publicity. Newspaper and magazine articles. Pamphlets, Awarding of citations.

Tempy. Bldg. #8
18th & D Sts., N.W. 1st Lieut. James Harten, M.I.D. 'Phone 377
Personally interviewing discharged officers and specially trained men. Placing of those who desire employment. Giving information to those who desire to locate outside of Washington. Liaison with Citizens' Employment Bureau, Washington.

Tempy. Bldg. #8
18th & D Sts., N.W. Major Harry A. Taylor, Inf. 'Phone 356
Supervises activities of field force and co-ordinates their work. Co-ordinates activities of employment agencies, welfare, civic, and commercial organizations, American Legion and other government agencies. Connects up sick and disabled ex-service men with vocational training and U.S. Public Health Service. Employment situation throughout the country. Keeps statistical records of registrations and placements and other records of employment situation. Periodical reports.

Tempy. Bldg. #8
18th & D Sts., N.W. Captain S. T. Thomas, A.S., S.R.C. 'Phone 368
1st Lieut. R. Robinson, Inf., Asst.
Miscellaneous information. Service to discharged soldiers, sailors, and marines in their dealings with government departments where need arises out of their military or naval service. Clearing discharged soldier, sailor, and marine placements throughout the country (except Washington, D.C.). Liaison with all government departments. Stenographic reservoir. Tri-weekly newsletters. Positions for discharged officers and specially trained men, through correspondence. Information to men qualified for such positions. Keeps in touch with business opportunities throughout the country through correspondence. Listing positions offered by firms throughout the country, through correspondence.

ORGANIZATION AND FUNCTIONS OF SERVICE AND INFORMATION BRANCH.

(Located in Temporary Bldg. #8, 18th & D Sts., N.W.)

PART 2

INSTRUCTIONS FOR THE PREPARATION

- OF -

STUDIES AND CORRESPONDENCE

A - FOR THE GUIDANCE OF OFFICERS.

B - FOR THE GUIDANCE OF TYPISTS.

**C - MODEL FORMS OF STUDIES AND
CORRESPONDENCE.**

INSTRUCTIONS FOR THE PREPARATION
- OF -
STUDIES AND CORRESPONDENCE

A - FOR THE GUIDANCE OF OFFICERS.

INSTRUCTIONS FOR OFFICERS IN THE
PREPARATION OF STUDIES AND CORRESPONDENCE.

1. All communications that are to be acted upon by the Division must pass through the Executive Officer, who will record their receipt and assign them to the proper branches for action. If such communications are received in any branch without first passing through the Executive Officer, they will be transmitted to him, prior to taking action thereon.
2. All memoranda or letters destined to be sent from the Division bearing upon problems or communications assigned to the Division for solution, will be an action of the Division and not that of any particular branch thereof; they will, therefore, be signed by the Director or Assistant Director and must pass through the Office of the Executive Officer.
3. All official actions of the Division must be recorded in the Office of the Executive Officer before being dispatched to outside offices or persons.
4. Exception to the rules laid down in paragraphs 1, 2, and 3 above will be made only by authority of the Director obtained through the Executive Officer.
5. Official papers assigned to the Division by the Chief of Staff or originating in the Division, are considered staff studies or problems and present one of two classes of solutions: (a) a statement of policy, (b) the coordination of the interests or functions of two or more independent arms or services; matters that present solutions other than above are purely administrative and should form no part of General Staff work.
6. Solutions are presented in the form of one or more memoranda of action, which are generally accompanied by a carrying memorandum. The solution must be presented in such a clear and concise manner as to warrant prompt and unreserved action of the Director or Assistant Director and the Chief of Staff; it is only when the memoranda of action will not accomplish this that a carrying memorandum is used.
7. A carrying memorandum is for the purpose of bringing to the attention of the officer or officers who have to review the solutions important facts bearing upon the problem, opinions based on these facts, and recommendations as to the action. The gist of the carrying memorandum is to assist the reviewing officer in his final decision without the necessity in his part of a detailed study; it is, therefore, necessary to bear in mind that such memoranda must be brief and to the point, with clear-cut statements of facts, opinions and recommendations. Completeness and clearness in these memoranda can only be secured by placing yourself in the position of

the reviewing officer and reading it from his point of view.

8. Memoranda or letters that will initiate the action necessary to put an approved solution into effect must be clear and concise, great care being taken to eliminate ambiguous and other phrases open to misinterpretation and must cover instructions to all necessary bureaus or services.

INSTRUCTIONS FOR THE PREPARATION

- OF -

STUDIES AND CORRESPONDENCE

B - FOR THE GUIDANCE OF TYPISTS.

Instructions for the stenographers and typists
in the preparation of correspondence.

1. The methods of writing letters, memorandums, indorsements, telegrams, etc., described herein will be used in all official correspondence of the War Plans Division.

2. These different kinds of correspondence will be treated individually under the following heads:

- (a) General instructions.
- (b) Address.
- (c) Margins.
- (d) Initials.
- (e) Signature.
- (f) Number of copies.
- (g) Assembly.
- (h) Models.

3. They will be treated collectively under the following heads:

Paragraphing.
Numbering of Pages.
Stationery.
Dating of Papers.
Punctuation.
Capitalization.
Inclosures.
References and File Numbers.
Titles.

4. Paragraphing. All paragraphs will begin at 5 spaces from the left writing margin. In military form of correspondence ("From; To") the paragraphs are numbered if there are two or more. Exceptions to this rule are letters written to persons outside the military service.

5. Numbering of Pages. Pages will be numbered at the top midway of the page about one inch from the top.

6. Stationery. All communications, which are to be signed by any member of the War Plans Division, should be on the War Plans Division letterhead. Stationery to be used for communications to be signed by the Chief of Staff, or the Secretary, General Staff Corps, is the same as the War Plans Division stationery with the exception that it does not bear in the upper left-hand corner the words "War Plans Division". Plain paper will be used for the second and succeeding pages. Special stationery is used for communications to be signed by the Secretary of War.

6 $\frac{1}{2}$. Style of Type. All communications which are to be signed by the Secretary of War or the Chief of Staff must be typed on machines equipped with "Elite" type.

7. Dating of Papers. In dating papers, which are to be signed by the Director or Assistant Director, War Plans Division, or higher authority, only the month and year will be written, four spaces being left between the month and year for insertion of date. On the last three days of the month all will be omitted. This rule is necessary in order that communications may bear the date they are actually mailed from the office, otherwise any delay that might occur between the date of actual typing and the date of dispatch would necessitate a correction being made.

8. Punctuation. The accepted rules of punctuation are in force in military paper work.

9. Capitalization. The generally accepted rules for capitalization will be followed.

10. Inclosures. In writing letters, indorsements, memorandums, or other communications, where inclosures are added in the War Plans Division, or referred to as accompanying, an appropriate notation will be made at the left margin below the body of the communication and immediately above the stenographer's initials. Where the inclosures referred to are sufficiently described in the body of the communication, they need not be described in the note below; otherwise, they should be. Where inclosures are referred to as being sent under separate cover appropriate notation to that effect will be made. The rule as to the notation of inclosures is absolutely essential to the proper, correct and expeditious handling and dispatch of communications and no excuse will be considered for failure to comply with it.

11. References & File Numbers. Whenever a paper is referred to in the body of the communication, a reference in parenthesis stating the file number and the date and the office concerned will be made. For instance (AGO 320.1, Fort Crook, December 15, 1919). The file number of the Office of The Adjutant General, whenever the original papers in the case bear such a number, will be placed in the upper left-hand corner just underneath the printed words "War Plans Division" on all copies; so also will be written the tally number of W.P.D. which appears in pencil on the original papers in the case just below the War Plans Division "date received" stamp.

12. Titles. The following names and titles are common to paper work of the War Plans Division and should be written as indicated:

NEWTON D. BAKER
Secretary of War.

PEYTON C. MARCH,
General, Chief of Staff.

W. G. HAAN,
Major General, General Staff,
Director, W.P.D., A. C. of S.

WM. LASSITER
Colonel, General Staff,
Asst. Director, W.P.D.

F. E. LACEY, JR.,
Colonel, General Staff,
Asst. Director, W.P.D.

R. M. BECK, JR.,
Colonel, General Staff,
Executive Officer.

13. Travel Orders. In requests for travel orders for officers, the name, rank and organization of the officer must be correctly given; otherwise, it will be necessary to make a request on The Adjutant General for an amendatory order. Therefore, typists will verify the spelling, etc., in each case by consulting the Army List and Directory.

14. Stenographer's Initials. All typewritten work must bear the initials of the clerk who typed it, placed a short distance below the last typewritten line, and in addition, the first letter of the designation of the Branch in which prepared; thus r/ms. This indicates the R.O.T.C. Branch, Mary Smith.

15. Proper Names. Care should be exercised in the spelling of proper names, such as names of places, etc. In case of doubt the spelling should be verified by the dictator or writer of the rough draft.

Officers have been instructed to prepare rough drafts legibly so as not to waste the time of the stenographer in trying to decipher the writing.

16. Checking Work. The stenographer is always responsible for a careful comparison of any quotation before submitting the finished typed matter, and should always read the finished work over carefully to correct misspelled words and typographical errors, relieving the officer to whom assigned of such detail and inspiring a confidence in the accuracy and reliability of the operator. All copied work must be compared by at least two persons and errors of any kind noted in the original document called to the attention of the writer or principal clerk.

17. Confidential communications. Two envelopes are prepared in the case of confidential communications; one to go inside the other, the inner one should be marked "Confidential", the outer one should not be so marked.

18. Work to be Photographed. When the typing is to be photographed, it is necessary to use a heavy ribbon.

19. Corrections. Stenographers should use great care and endeavor to correct as far as possible any grammatical or other errors in manuscript or notes.

Corrections should be neatly made; carbon copies are as important as the original ones in this respect.

20. Binding. Binding should preferably be along the left side and not at the top. Memorandums of 15 pages or over must be bound on the left side with title cover of suitable material on top.

21. Number of copies. Whenever referring to the number of copies of a paper, it should be understood that the original or ribbon copy is included. This is much better than saying "1 original and so many copies".

22. Check List. The following check list is suggested as an aid to officers and clerks in insuring correct and accurate preparation of papers before being sent to the Executive Officer:

1. Have the original papers been definitely disposed of?
2. Have all necessary concurrences been obtained?
3. Does the memorandum for the Chief of Staff show concurrence of any other branch of W.P;D. (Such concurrence should appear on O.K. sheet only.)
4. Has the job been compared?
5. Has the proper stationery been used?
6. Are there sufficient number of copies?
7. Have the initials of the officer been typed on proper copies?
8. Have initials of branch and stenographer been typed on?
9. Have the A.G.O. and W.P.D. tally number been typed on?
10. Have the enclosures been noted?
11. Are the copies assembled according to instructions?
12. Has the job been securely fastened to prevent papers becoming separated in transit?

23. Letters. Letter correspondence of the Division comprises the three following classes:

1. Military letters,
2. Non-military letters,
3. Complimentary or "third person" letters.

24. MILITARY LETTERS.

a. General Instructions. The letter will be written single space with a double space between paragraphs and will begin with the place and date. Below this, beginning at the left writing margin, will come the word "From", followed by the official designation of the writer, or, in the absence of an official designation, the name of the writer, with his rank, regiment, corps or department; below this, also beginning at the left writing margin, will come the word "To", followed by the official designation or name of the person addressed and his address; next will come the "Subject", also beginning at the left writing margin, followed by the subject of the communication indicated briefly and to consist of not more than ten words.

All letters prepared for the signature of the Chief of Staff or Sec-

retary of War will bear in the upper left hand corner the words "In reply refer to W.P.D., O.C.S.".

b. Address. All ceremonial forms such as "Sir", "I have the honor" etc., will not be used. See general instructions just above.

c. Margins.

Top	-	Date about 1/2 inch below letterhead. "From" 5 spaces below date. 2nd and succeeding pages, 2 inches.
Left	-	1-1/2 inches.
Right	-	Approximately 3/4 inch.
Bottom	-	1-1/4 inch.

d. Initials. The initials of the officer preparing the letter will appear in the upper right hand portion of the page, close to the letterhead, on one carbon copy, and immediately above will be written the letters WPD.

e. Signature. If the rank, regiment, and corps or department of the writer appear at the beginning of the letter, they will not appear after the writer's signature, but if they do not appear the beginning of the letter, they will follow under the signature. The name of the writer will appear in capital letters. The signature will be typed in on all carbon copies as well as the original of letters. All ceremonial forms such as "Very respectfully", etc., will not be used.

f. Number of copies.

When signed in WPD and alone.....3 copies.

When signed by higher authority than WPD.....7 copies.

g. Assembly.

a. When signed in WPD and alone

1. Original without initials,
 2. One carbon without initials,
 3. Original papers, if any,
 4. One carbon with initials.
- Total - 3 copies.

When signed by higher authority than WPD and alone

1. Original with 4 carbons of same, 1 without initials,
2. O.K. sheet,
3. Original papers,

4. Two carbons with initials.
Total - 7 copies.

When signed by higher authority than WPD & accompanied by memorandum for CofS or T.A.G. or both,-
See under MEMORANDUMS, page 26.

- h. For models of military letters see pages 30-35.

25. NON-MILITARY LETTERS.

a. General Instructions. Non-military letters are written to persons outside the military service. An exception to this rule is that letters to the Secretary of the Navy are written in the military form of correspondence. (See page 32). Letters for the signature of the Chief of Staff should invariably close "Very truly yours". The originals of letters to the President will bear no initials, ink marks or file notations. Typing will be single spaced with a double space between paragraphs. Letters prepared for the signature of the Chief of Staff or the Secretary of War will have in upper left hand corner the words - "In reply refer to O.C.S., W.P.D.".

b. Address. The address will be written single spaced, the second line (street address) will be indented five spaces, and the third line (city address) should be intended ten spaces.

c. Margins.

Top - Date: 1/2 inch below letterhead.
First line of address: 1 inch below date.
Second & succeeding pages: 2 inches.

Left: 1-1/2 inches.
Right: Approximately 3/4 inch.
Bottom: 1-1/4 inch.

d. Initials. When for signature in the War Plans Division, all copies except the original will bear in the upper right hand portion of the pages, close to the letterhead, the initials of the officer who drafted the letter, and immediately above should be written the letters "WPD".

When prepared for the signature of higher authority than the War Plans Division, all copies except the original and one carbon will bear the above initials. (Exception: In the case of letters to the Chairmen of the Senate or House Military Affairs committees, the original and two carbons will be without initials).

e. Signature. The name of the writer will appear in capital letters,

on original and all carbons. The rank and title of the writer will be centered below his name.

f. Number of copies.

When for signature in the War Plans Division and unaccompanied by memorandum for the Chief of Staff or The Adjutant General of the Army..... 2 copies.

When to be signed by higher authority than the War Plans Division..... 7 copies.

(NOTE: If letter is to Chairman, Senate or House Military Affairs Committee.....8 copies.)

g. Assembly.

When signed in the War Plans Division and unaccompanied, etc.:

1. Original without initials.
2. One carbon with initials.
3. Original papers, if any.
4. Total - 2 copies.

When signed by higher authority than the War Plans Division and unaccompanied, etc.:

1. Original with 4 carbons, one carbon without initials.

(NOTE: Original of letter and 5 carbons, if letter is to the Chairman, Senate or House Military Affairs Committee, two of which will not bear initials.)

2. O.K. sheet.
3. Original papers.
4. Two copies with initials.
5. Total - 7 copies. (If to Chairmen, Senate or House Military Affairs Committees - 8 copies.)

When signed by higher authority than the War Plans Division and accompanied by memorandum for the Chief of Staff or The Adjutant General of the Army, or both, see under MEMORANDUMS, Page 26.

h. Models. For models see pages 36 - 42.

26. COMPLIMENTARY OR THIRD PERSON LETTERS.

a. General Instructions. The letter will invariably begin "The Secretary of War presents his compliments to", etc. About one inch below the body of the letter at the left margin will appear the letters O.C.S. and under them the letters W.P.D.

b. Address. The letter will bear no address.

c. Margin.

Top - Date:- 1/2 inch below letterhead.
First line of letter:- 1 inch below date

Left:- 1-1/2 inches.
Right:- Approximately 3/4 inch.
Bottom:- 1-1/2 inches.

d. Initials. All copies, except the original and one carbon, should bear in the upper right hand portion of the page near the letterhead the initials of the officer who drafted the letter, and immediately above should be written the letters "WPD".

e. Signature. There will be no signature.

f. Number of copies......7.

g. Assembly.

When unaccompanied by memorandum for the Chief of Staff,
The Adjutant General of the Army, or both:

1. Original and 4 carbons, one carbon without initials.
2. O.K. sheet.
3. Original papers.
4. 2 copies with initials.
5. Total - 7 copies.

When accompanied by memorandum for the Chief of Staff, The
Adjutant General of the Army, or both:

See under MEMORANDUMS.

h. Models. See page 43.

27. MEMORANDUMS.

a. General Instructions. Memorandums for the Chief of Staff will ord-

inarily treat the subject under the following six (6) heads:

- I. Papers accompanying.
- II. The problem (study) presented.
- III. Facts bearing upon the problem (study).
- IV. Opinion of the War Plans Division.
- V. Action recommended (Recommendations).
- VI. Concurrence.

These six headings will be designated by Roman numerals and underscored as shown. Arabic numerals will be used for subparagraphs.

For model form of Memorandum for the Chief of Staff see page 44.

Memorandums for The Adjutant General of the Army usually begin with the phrase "The Secretary of War directs, etc.". Where more than one direction is contained, they are set out by paragraphs, designated by Roman numerals; Arabic numerals will be used for subparagraphs of these directions. The phrase itself will not be preceded by a number.

Every memorandum should have its subject indicated briefly, if possible, in ten words. The word "Subject" will begin fifteen (15) spaces from left margin.

Memorandums of seven (7) lines or less will be written on half-sheet paper.

b. Address. The words "Memorandum For" followed by the name of the person or official addressed will be written in large type.

c. Margin.

Top - Date:- About 1/2 inch below letterhead.
"Memorandum":- 1 inch below date.
Second and succeeding pages:- 2 inches.

Left:- 1-1/2 inches.
Right:- Approximately 3/4 inch.
Bottom:- Approximately 1-1/4 inches.

d. Initials.

1. Memorandums addressed to any official except the Chief of Staff or The Adjutant General of the Army, -- all copies except the original and one (1) carbon will bear, in the upper right hand portion of the page close to the letterhead, the initials of the officer who drafted

same, and immediately above will appear the letters "WPD".

2. Memorandums for the Chief of Staff -- all copies.

3. Memorandums for The Adjutant General of the Army -- all copies except the original and first carbon.

e. Signature. Memorandums which are to be signed by the Director or Assistant Director of the Division will not be prepared for signature.

f. Number of Copies.

1. Memorandums addressed to a member of the War Plans Division -- 2 copies.
2. Memorandums addressed to a Bureau or Staff Department -- 5 copies.
3. Memorandums for the Chief of Staff -- 3 copies.
4. Memorandums for The Adjutant General of the Army -- 5 copies.

g. Assembly:

Memorandum for the Chief of Staff:

Original with initials,
O.K. sheet,
Original papers,
2 copies with initials,
Total copies - 3.

Memorandum for The Adjutant General:

Original without initials,
Carbon copy without initials,
Carbon copy with initials,
O.K. sheet,
Original papers,
2 copies with initials,
Total copies - 5.

Memorandum for any Bureau of War Department.

Same as for The Adjutant General.

Memorandums for Chief of Staff and
The Adjutant General:

Original for C. of S. with initials.
Original for T. A. G. without initials.
Carbon copy for T.A.G. without initials.
Carbon copy for T.A.G. with initials.

O.K. sheet;
Original papers,
1 copy each of memo. for C. of S. and T.A.G., both with initials,
1 " " " " " C. of S. " T.A.G., " " "
Total copies -- 3 of C. of S., - 5 of T.A.G.

Memorandums for C. of S. and T.A.G. and
other War Department bureaus:

Original of memo. for C. of S.
Original of memo. for T.A.G.
1 carbon copy of T.A.G. without initials.
1 carbon of T.A.G. with initials.
Original of memo. for other W.D. bureaus, without initials.
1 carbon copy of memo. for other W.D. bureaus without initials.
1 carbon copy of memo. for other W.D. bureaus with initials.
O.K. sheet.
Original papers.
1 copy each of memo. for C. of S., T.A.G. and other W.D.
bureaus, with initials.
1 copy each of memo. for C. of S., T.A.G. and other W.D.
bureaus, with initials.
Total copies -- 3 of C. of S.; 5 of T.A.G.; 5 of other W.D.
bureaus.

Memorandum for Chief of Staff accompanied by letter.

Original of memo. for C. of S. with initials.
Original of letter with four (4) carbons of same, one (1)
without initials.
(NOTE: Original of letter and five (5) carbons, if letter
is to chairman of Senate or House Military Affairs Commit-
tee, two (2) of which will not bear initials of officer
who drafted same.)
O.K. sheet.
Original papers.
1 copy each of memo. for C. of S. and letter, both with initials.
1 " " " " " C. of S. " " " "
Total -- 3 of C. of S.; 7 of letter; if to chairman of Senate or
House Military Affairs Committee -- 8.

Memorandums for C. of S. and T.A.G. accompanied by letter.

Original of memo. for C. of S. with initials.
Original of memo. for T.A.G. without initials.
1 carbon for T.A.G. without initials.
1 carbon for T. A. G. with initials.
Original of letter with four (4) carbons of same, one without
initials.

(NOTE: Original of letter and five (5) carbons, if letter is to Chairman of Senate or House Military Affairs Committee, two (2) of which will not bear initials of officer who drafted same.)

O.K. sheet.

Original papers.

1 copy each of memo. for C. of S., T.A.G. and letter, all with initials.

1 copy each of memo. for C. of S., T.A.G. and letter, all with initials.

Total copies:-- 3 of C. of S.; 5 T.A.G.; 7 of letter; if letter to Chairman of Senate or House Military Affairs Committee - 8.

h. For models see pages 44 to 51.

28. INDORSEMENTS.

a. General Instructions. The width of indorsements should be the same as that of letters. Indorsements will be numbered serially. The indorsement will begin about one-half (1/2) inch below the rank after the signature of the writer of the letter or preceding indorsement. Should an additional sheet be necessary for an indorsement, it should be the same size as the letter. In referring, transmitting, forwarding, and returning papers the expression "Respectfully referred", "Respectfully transmitted" will not be used. The proper abbreviation for the word "Indorsement" is "Ind." and not "End.".

b. Address. The first line of the indorsement, or address, will commence at the left margin with the abbreviation W.P.D., O.C.S., then follows on the same line of writing the date and the word "To", and the name of the office addressed.

c. Margin. Top:-- about one-half (1/2) inch below the rank of the writer of the letter or preceding indorsement.

Left and right margins to conform to the margins of the letter.

d. Initials. One carbon will bear close to the abbreviation "Ind." the initials of the officer who prepared the indorsement.

e. Signature. The signature will be left blank.

f. Number of copies -- 3.

g. Assembly.

1. Original of indorsement.

2. One carbon without initials.
3. Papers in the case.
4. One carbon with initials.

h. Models.

See page. 52.

29. TELEGRAMS.

a. General Instructions. Telegrams will be written on War Department standard form No. 1. Plain paper will be used for carbons. In the upper left hand corner following the printed words "Charge to" will be written the words "Office of the Chief of Staff". In the lower left hand portion of the telegraph blank will be written the word "Official", and below that the name and title of the officer who approves the message. Telegrams will be written double spaced instead of single spaced.

b. Address. The street and city address of the party, to whom the telegram is to be sent, should be indented five and ten spaces respectively.

c. Margin.

Top - Date:- 1/2 inch below letterhead.

Address:- About 1/2 inch below date.

Left:- 1-1/2 inches.

Right:- Approximately 3/4 inches.

Bottom:- About 1-3/4 inches.

d. Initials. Initials should appear on all copies except the original.

e. Signature. The name of the sender will be typed in on all copies.

f. Number of copies. Two (2) if alone; four (4) if accompanied by memorandum for Chief of Staff.

g. Assembly. When alone.

1. Original of telegram.
2. Papers in the case.
3. Copy of telegram with initials.

When accompanied by memorandum for the Chief of Staff:

1. Original memorandum for the Chief of Staff with initials.
2. Original of telegram without initials.
3. One (1) carbon of telegram with initials.
4. O.K. sheet, if any.
5. Original papers, if any.
6. One (1) copy each of memorandum and telegram, both with initials.
7. One (1) copy each of memorandum and telegram, both with initials.

Total:-- 3 copies of memorandum, - 4 copies of telegram.

h. For models see page 53.

INSTRUCTIONS FOR THE PREPARATION

- OF -

STUDIES AND CORRESPONDENCE

**C - MODEL FORMS OF STUDIES AND
CORRESPONDENCE.**

WAR DEPARTMENT
OFFICE OF THE CHIEF OF STAFF
WASHINGTON

Subject: Correction in Army List and Directory. January 23, 1920.

From: Colonel J. J. Jones, G.S.

To: The Adjutant General of the Army.

1. The January, 1920, issue of the Army List and Directory carries the undersigned as on duty at the Army War College. This is in error and should read "War Plans Division, Office of the Chief of Staff."

2. It is requested that the necessary corrections be made in future issues of the Directory.

J. J. JONES.

w/iii

- - - - -

The above style of letter is prepared when window envelopes are to be used for mailing same.

Nothing but the word "To" and the name and address of the office or person addressed will appear on the first fold for a distance of 1-11/16 inches from the bottom of the fold. The address will be so placed that no part of it will be hidden by reason of a shifting of the letter in the envelope. These instructions relate to letter paper 8 by 10 1/2 inches and to a 3-7/8 by 8-7/8 inch window envelope. The paper must be folded so that the first fold will be 3-1/2 inches wide. For full instructions, see Changes No. 22, Compilation of Orders, War Department.

Three (3) copies should be made.

WAR DEPARTMENT
OFFICE OF THE CHIEF OF STAFF
WASHINGTON

AG 321.1 Haw. Dept.
In reply refer to
O.C.S., W.P.D.,
1367

January , 1920.

From: Director, War Plans Division, Assistant Chief of Staff.
To: The Commanding General, Hawaiian Department.
Subject: Defense Project.

1. There are being transmitted under separate cover * * *.
2. It is requested that * * * * *.

W. G. HAAN,
Major General, General Staff,
Director, W.P.D., A. C. of S.

2 incs.
w/ooo

- - - - -

NOTE:

Three copies of the above letter should be made, and one carbon should bear in the upper right hand portion of the page close to the letterhead the initials of the officer who drafted the letter and directly above should be written the letters WPD.

WAR DEPARTMENT.
WASHINGTON.

In reply refer to
O.C.S., W.P.D.
11120

January , 1920.

From: The Secretary of War.
To: The Secretary of the Navy.
Subject: Transportation of Troops.

1. Etc., Etc.
2. Etc., Etc.

NEWTON D. BAKER.

w/iob

- - - - -

NOTE:

Seven copies should be made of the above letter. The heading should be typed in on each carbon copy. On all carbon copies except the first should appear the initials of the dictating officer, placed in the upper right hand portion of the page, close to the letterhead, together with the letters WPD just above.

WAR DEPARTMENT
OFFICE OF THE CHIEF OF STAFF
WASHINGTON

January , 1920.

From: Executive Officer, War Plans Division, General Staff.
To: Captain John Smith, Inf., 1314 K St., N. W., Washington,
D. C.
Subject: Failure to comply with Instructions.

You are directed to submit without delay an explanation of your failure to comply with instructions issued from this office directing you to report at 462 Louisiana Ave., N. W., at 3 p. m., January 12, 1920, for the purpose of undergoing the annual physical examination.

By direction of the Director, War Plans Division:

R. M. BECK, JR.,
Colonel, General Staff.

x/wsb

- - - - -

NOTE:

Three copies of the above style of letter should be made, and one carbon should bear in the upper right hand portion of the page, close to the letterhead, the initials of the person who drafted the letter and directly above should be written the letters WPD.

WAR DEPARTMENT
OFFICE OF THE CHIEF OF STAFF
WASHINGTON

January , 1920.

From: Major John Smith, Inf.
To: The Chief of Staff,
(Thru Director, War Plans Division).
Subject: Leave of absence.

1. Request is made for 3 days ordinary leave of absence effective Jan. 20, 1920, to enable me to visit my home in Norfolk, Va.

2. Amount of leave due: 70 days.

3. Amount and dates of ordinary leave during preceding four years:

<u>Date:</u>	<u>Leave:</u>	<u>Credit:</u>	<u>Balance:</u>
July 1, 1916,		115 plus 30(120)	120
Sept. 25, 1916,	10	120 ✓	110
June 12, 1917,	5	110	105
Oct. 17, 1917	3	105 plus 30(120)	117
Dec. 25, 1918,	20	117 plus 30(120)	100
May 2, 1919,	30	100	70

4. My address while on leave will be c/o Mrs. John Smith, 910 Roanoke St., Norfolk, Va.

JOHN SMITH.

O.K.
O.L.S.

1st Ind.

W.P.D., O.C.S., January , 1920, --- To The Chief of Staff.

Forwarded, approval recommended.

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NOTE:

Four (4) copies of the request should be submitted. Application should state:

1. Reason for request.
2. Amount of leave due.
3. In detail, giving dates, amount of ordinary leave taken during preceding four years.
4. Address while on leave.
5. Should be accompanied by a slip or bear on its face an indication of the approval of the chief of branch.

SPECIAL DELIVERY LETTER

is communication will receive the immediate attention given to a telegram, and prompt action will be taken when necessary.

IN REPLY
REFER TO

WAR DEPARTMENT
Office of the Chief of Staff
War Plans Division.

January , 1920.

From: Chief, Education & Recreation Branch.
To: Colonel John Smith, Inf.,
C/o E. & R. Officer, Camp Travis, Texas.
Subject: Completion of reports of Inspection.

1. Certain matters have arisen which will require that estimates for funds necessary to complete construction projects in connection with the educational and recreational facilities at posts and camps be expedited.

2. You will, therefore, complete your itinerary as rapidly as possible and may disregard your original instructions in so far as they pertain to matters not directly connected with construction.

R. I. REES,
Colonel, General Staff.

e/wsb

CIRCULAR }
No. 493. }

WAR DEPARTMENT,
WASHINGTON, October 28, 1919.

REDUCTION OF TELEGRAPHIC COMMUNICATIONS.

1. It is necessary that the tremendous volume of communications by telegraph to and from the War Department and between the various departments, posts, camps, and stations be reduced.

2. To effect such reduction instructions, information or communications of the classes indicated herein, and which heretofore have been sent by telegram, will be forwarded on the new form described in paragraph 4 by special-delivery mail.

3. The classes of communications to be sent by special-delivery mail are:

a. Communications whose contents are important in their nature and require prompt attention but upon which immediate action is not necessary.

b. Communications from the War Department to headquarters of departments, posts, camps, or stations which require prompt attention and action and which under normal conditions should be received within 18 hours after mailing by special-delivery mail.

c. Communications to the War Department requiring prompt attention and action and which should normally reach the War Department from departments, posts, camps, or stations within the period indicated in b.

d. Communications between departments, posts, camps, or stations requiring prompt attention and action and which should be received within the period indicated in b.

The communications referred to in this paragraph will include indorsements which come under the conditions stated.

4. There is being printed for distribution a blank form, Form No. 723; A. G. O., for use for communications indicated in paragraph 3. This form will be on letter-size paper, 8 by 10½ inches, containing the following heading, "SPECIAL DELIVERY LETTER." "This communication will receive the immediate attention given to a telegram, and prompt action will be taken when necessary," and will have a ¼-inch border. The printing and border will be red. The office heading of the sending office may be printed, but if not printed will be typewritten as on other communications.

The form will be used for the first page only of a communication which, because of its extent, covers more than one page, the ordinary letter paper to be used for additional pages. The form will not be used for carbon copies.

When the form is not available it may be improvised by typewriting with red copy ribbon or by writing in red ink on the ordinary letter paper the words "Special Delivery Letter."

When forwarded a special-delivery postage stamp will be placed on the envelope containing the communication.

5. When a communication is received on the form it will be considered as a telegram with reference to the action to be taken, and when the communication so indicates action will be expedited.

6. To prevent the indiscriminate use of the form, thereby nullifying the purpose for which it is designed, great care will be taken that it is used only for such instructions, information, or other communications as require special attention or expedited action, and under former conditions would have been sent by telegraph.

The form will not be used by individuals merely for the purpose of expediting action on communications which relate solely to themselves, except in the cases which are covered by paragraph 3.

7. Telegrams will be used as heretofore when urgency of the matter forwarded is such that the use of the new form will unduly delay important instructions or information.

[311, A. G. O.]

BY ORDER OF THE SECRETARY OF WAR:

PEYTON C. MARCH,
General, Chief of Staff.

OFFICIAL:

P. C. HARRIS,
The Adjutant General.

WAR DEPARTMENT
OFFICE OF THE CHIEF OF STAFF
WASHINGTON

January , 1920.

Mr. John Smith,
Nashville, Tenn.

Dear Sir:

I am in receipt of your letter of January 3, 1920, applying for position as instructor in mathematics upon the institution of the vocational and educational program for the Army.

I regret to inform you that no vacancies for this position exist at the present time, but your name has been placed on file and if an opportunity arises in which I may avail myself of your services, I will be very glad to take the matter up with you.

Very truly yours,

W. G. HAAN,
Major General, General Staff,
Director, W.P.D., A. C. of S.

e/xyz

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NOTE:

Two copies of the above letter should be made and the carbon should bear the initials of the officer who drafted same.

In reply refer to
O.C.S., W.P.D.
3705

WAR DEPARTMENT
WASHINGTON

February , 1920.

To the Chairman,
Committee on Military Affairs,
House of Representatives.

Sir:

There is submitted herewith a draft of a bill to provide a per diem allowance not to exceed \$5.00, in lieu of subsistence, to military observers and military attaches and their assistants in European countries, to cover extraordinary personal expenses due to the present high cost of living.

The necessity for this legislation is manifest. The increase in cost of food stuffs, due to the war, is too well known to require repetition here.

Favorable consideration of the legislation proposed is earnestly requested.

Respectfully,

NEWTON D. BAKER,
Secretary of War.

1 incl.
1/ezt

- - - - -

Eight (8) copies of this letter should be made and heading should be typed in on each carbon copy.

The original and two carbons will not bear the initials of the dictating officer.

For proper stationery, see page 32.

The President,
The White House.

Dear Mr. President:

* * * * *

Very sincerely,

NEWTON D. BAKER,
Secretary of War.

To the Speaker,
House of Representatives.

Sir:

* * * * *

Respectfully,

NEWTON D. BAKER,
Secretary of War.

Honorable George E. Chamberlain,
United States Senate.

My dear Senator:

* * * * *

Very sincerely (cordially, or
similar ending)

NEWTON D. BAKER,
Secretary of War.

To the Chairman,
Committee on Military Affairs,
United States Senate.

Sir:

* * * * *

Respectfully,

NEWTON D. BAKER,
Secretary of War.

WAR DEPARTMENT
WASHINGTON

January , 1920.

The President,
The White House.

Dear Mr. President:

I am returning herewith H. R. 7752, an Act relating to detached service of officers of the Regular Army, transmitted to me by Mr. Tumulty for a statement as to whether or not there is any objection to its approval.

In reply I have the honor to state that the War Department knows of no reason why this act should not be approved.

Very sincerely,

NEWTON D. BAKER,
Secretary of War.

1 incl.

- - - - -

NOTE:-

Seven copies of the above letter should be made; the original and first carbon will not bear the initials of the officer who drafted same. Original of letter to the President will bear no ink marks, initials or file notations. For proper stationery see Page 32.

In reply refer to
W.P.D., O.C.S.
435

WAR DEPARTMENT
WASHINGTON

January , 1920.

The Speaker,
House of Representatives.

Sir:

Referring to, Etc., Etc.

Respectfully,

NEWTON D. BAKER,
Secretary of War.

1/flr

- - - - -

NOTE:

Seven copies of above letter should be made; the original
and first carbon will not bear initials of officer who
drafted same.

For proper stationery, see page 32.

In reply refer to
W.P.D., O.C.S.
638

WAR DEPARTMENT
WASHINGTON

January, , 1920.

The Honorable,
The Secretary of State.

Sir:

I have the honor to acknowledge receipt of Etc., Etc., Etc.

Very respectfully,

NEWTON D. BAKER,
Secretary of War.

w/iob

- - - - -

NOTE:

It sometimes occurs that the salutation "My dear Mr. Secretary" is used, in which case the ending will be "Very sincerely yours".

Seven copies of the above letter should be made and the original and one carbon should not bear the initials of the officer who drafted same.

For proper stationery, see page 32.

In reply refer to
O.C.S., W.P.D.
1267

WAR DEPARTMENT,
OFFICE OF THE CHIEF OF STAFF,
WASHINGTON.

January , 1920.

Honorable Howard Sutherland,
United States Senate.

My dear Senator:

I beg to acknowledge receipt of etc., etc., etc.

Very truly yours,

PEYTON C. MARCH
General, Chief of Staff.

m/bhs

- - - - -

NOTE:

Seven copies of the above letter should be made, the original and first carbon not bearing the initials of the officer who drafted same.

All letters prepared for the signature of the Chief of Staff will invariably close "Very truly yours,".

WAR DEPARTMENT
WASHINGTON

January , 1920.

The Secretary of War presents his compliments to The Honorable, The Secretary of State, and, replying to his letter of the 21st instant (811567/243), has the honor to state that in the United States Army the formation of separate companies, regiments or brigades of Poles or people of other nationality is not permitted.

The forming of organizations from unnaturalized residents of the United States in order that they may serve in Allied Armies as distinctive units is not permitted.

O. C. S.
W. P. D.

- - - - -

NOTE:

Seven copies of this letter should be made and the original and first carbon should not bear the initials of the officer who drafted same.

For proper stationery, see page 32.

AG 211.221 Misc. Di..
WPD 22456WAR DEPARTMENT
OFFICE OF THE CHIEF OF STAFF
WASHINGTONWPD
XYZ

January , 1920.

MEMORANDUM FOR THE CHIEF OF STAFF:

Subject: Handling Registered and Insured Mail in
Military Camps.I. Papers accompanying.Memorandum to the Chief of Staff from The Adjutant General of
the Army, dated January 24, 1920.

Recommendation of Camp Inspector, Camp Upton, N. Y.

II. The problem (study) presented.Shall post offices at Camps be asked to send regular notices
of registered letters and insured parcels and do away with using present
mail orderly system.III. Facts bearing upon the problem (study).1. Camp Inspector, Camp Upton, recommends that regular notices
be sent by post office.

2. The Adjutant General states * * * * .

3. Many complaints have heretofore and still continue * * .

4. Postal authorities state that if they * * * .

5. Postal authorities request that a letter be submitted by
the Secretary of War to the Postmaster General if a change is contem-
plated.6. That the present system may be satisfactory at most camps
and no change desired by the majority of camp commanders.IV. Opinion of War Plans Division.

That no definite action be taken at this time owing to the***.

V. Action recommended (Recommendations).

Memorandum for The Adjutant General of the Army.

VI. Concurrence.

The Adjutant General (Colonels Learned and Lewis) concurs.

WM. LASSITER,
Colonel, General Staff,
Acting Director, W.P.D.x/wsb
NOTE:The above is model form for "Carrying Memorandums" and for present-
ing studies. In the case of studies the word "study" will be used in
place of problem, and the heading for Par. V. will be Recommendations.
Three copies of above memorandum should be made, all bearing initials of
officer who prepared same.

WAR DEPARTMENT
OFFICE OF THE CHIEF OF STAFF
WASHINGTON

WPD
W. W. S

January , 1920.

MEMORANDUM FOR THE CHIEF OF STAFF:

Subject: Reports of Printing Required by W.D.Cir.No.
549, 1919.

1. In compliance with War Department Circular No. 549, 1919, the following reports on printing are submitted herewith:

* * * * *

2. It is recommended that these reports, together with a copy of this memorandum, be forwarded to the Assistant and Chief Clerk of the War Department for transmission to the Joint Committee on Printing.

m/ah

- - - - -

NOTE:

Four copies of this memorandum should be made, instead of the usual three, in order that one copy may be furnished the Assistant and Chief Clerk, as indicated in paragraph 2 above.

All copies will bear the initial of the officer who prepared the memorandum.

WAR DEPARTMENT
OFFICE OF THE CHIEF OF STAFF
WASHINGTON

February , 1920.

MEMORANDUM FOR THE CHIEF, PERSONNEL BRANCH, OPERATIONS DIVISION:

Subject: Detail of Major John Smith, Transportation Corps, to Historical Branch, War Plans Division.

1. It is recommended that Major John Smith, Transportation Corps, be assigned to duty with the Historical Branch, War Plans Division.
2. Major Smith has had training and experience before and during the war which peculiarly fit him for the duty desired.
3. If this detail is approved the quota of officers allotted the War Plans Division will not be exceeded.
4. The Chief, Transportation Corps, (General Hines) has been consulted and concurs.
5. Major Smith is now on duty in the Office of the Chief of Transportation, this city.

h/ss

NOTE: Memorandums dealing with -

1. A change of status of an officer, or
 2. Travel of an officer not under the jurisdiction of the Director, War Plans Division,
- will be made up in the form of a memorandum for the Chief, Personnel Branch, Operations Division.

Par. 1 will contain a brief statement of what action is desired of the Personnel Branch.

Par. 2 should give the reasons for the request.

Par. 3 (in case of detail or assignment to W.P.D.) should state that the proposed detail will not exceed the quota of officers allotted to the Division.

Par. 4 should show what concurrence has been obtained in the matter.

Par. 5 should state the present whereabouts of the officer concerned.

The attention of the dictating officer is called to the necessity for absolute accuracy in the name, rank and organization of the officer concerned. Errors of this nature necessitate the issuance of correcting orders.

Three (3) copies should be made and 1 carbon should bear the initials of the dictating officer.

WAR DEPARTMENT
OFFICE OF THE CHIEF OF STAFF
WASHINGTON

February , 1920.

MEMORANDUM FOR THE CHIEF, PERSONNEL BRANCH, OPERATIONS DIVISION:

Subject: Travel Orders for Major John Doe, Infantry,
Camp Taylor, Ky.

1. It is recommended that the necessary orders be issued to Major John Doe, Infantry, directing him to proceed from Americus, Ga., to Jacksonville, Fla., and return to Americus, Ga., for the purpose of inspecting the supplies and equipment contained in Army warehouses and supply depots at the above cities.
2. The travel recommended above is desired in order that this Division may obtain information as to what supplies and equipment are available for educational and vocational training in the Army.
3. The Commanding Officer, Camp Knox, Ky., has been consulted and concurs.
4. It is requested that orders be telegraphed to Major Doe, care of Hotel Jefferson, Richmond, Va.

x/wsb

NOTE:

Memorandums requesting travel orders for officers not under the jurisdiction of the War Plans Division will be made out in the form of a memorandum for the Chief, Personnel Branch, Operations Division.

Par. 1 should state what action is desired of the Personnel Branch and the duty to be performed by the officer in compliance with the travel orders. The duty should be stated specifically, and such phrases as "to carry out the orders of the Chief of Staff" will not be used.

Par. 2 should state the reasons for the request.

Par. 3 should show what concurrences have been obtained in the matter.

Par. 4 should state the present whereabouts of the officer concerned.

The attention of the dictating officer is called to the necessity for the absolute accuracy in the name, rank, and organization of the officer for whom travel orders are requested, since errors of this nature necessitate the issuance of correcting orders.

Three (3) copies should be made, and one carbon should bear the initials of the dictating officer.

WAR DEPARTMENT
OFFICE OF THE CHIEF OF STAFF
WASHINGTON

February , 1920.

MEMORANDUM FOR THE ADJUTANT GENERAL OF THE ARMY:

Subject: Travel orders for Colonel John Smith, G.S.,
War Plans Division.

The Secretary of War directs that the necessary orders be issued directing Colonel John Smith, General Staff, War Plans Division, to proceed from this city to Chicago, Ill., thence to Camp Grant, Ill., thence to Camp Taylor, Ky., on temporary duty, for the purpose of attending a Convention of the National Society for the Promotion of Vocational Education at Chicago, and to consult with the Education and Recreation Officers at the camps named, with reference to vocational training matters. Upon completion of this duty, he should be directed to return to his proper station, Washington, D. C.

e/opc

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NOTE:

Memorandums requesting travel orders for officers under the jurisdiction of the Director, War Plans Division, should be prepared in the form of a memorandum for The Adjutant General of the Army.

The purpose of the travel should be specifically stated, and the phrase "to carry out the orders of the Chief of Staff" will not be used.

When the officer is travelling on temporary duty and is to return to his proper station upon the completion of same, the order should so state.

Where the mailing address of the officer concerned is other than the War Plans Division, it should be stated.

Five (5) copies should be made, and the original and 1st carbon should not bear the initials of the dictating officer.

The name, rank, and organization of the officer concerned should be verified from the Army List & Directory.

WAR DEPARTMENT
OFFICE OF THE CHIEF OF STAFF
WASHINGTON

January , 1920.

MEMORANDUM FOR THE ADJUTANT GENERAL OF THE ARMY:

Subject: Authorization for publication of Corregidor
(P.I.) Weekly.

The Secretary of War directs that a cablegram substantially as follows be sent to the Commanding General, Fort Mills, P.I.

Kernan,
Manila.

Number:

Paragraph:

For Davis:

Reference your twenty-eight paragraph two. Publication Corregidor Weekly authorized provided no expense to Government and not designated as official.

m/bhs

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NOTE:-

Cablegrams should be embodied in memorandum for The Adjutant General.

Five (5) copies of memorandum should be made, and the original and 1st carbon should not bear the initials of the officer who prepared same.

Cables should be addressed as follows:

Allen, Coblentz.	Kernan, Manila.	Kennedy, Panama.	Graves, Amexforce, Vladivostok.
Morton, Honolulu.	Mott, Military Attache, Paris.	Solbert, Military Attache, London.	

WAR DEPARTMENT
OFFICE OF THE CHIEF OF STAFF
WASHINGTON

In reply refer to
WPD 472

February , 1920.

MEMORANDUM FOR THE DIRECTOR OF OPERATIONS, GENERAL STAFF:

Subject: Wearing of Medals and Decorations.

1. The War Plans Division recommends, &c, &c-

m/b

NOTE:

Five (5) copies, all (3) except original and 1st carbon bearing initials of officer who drafted same.

WAR DEPARTMENT,
OFFICE OF THE CHIEF OF STAFF,
WASHINGTON.

In reply refer to
WPD 753

January , 1920.

MEMORANDUM FOR THE DIRECTOR, PURCHASE, STORAGE & TRAFFIC DIVISION:

Subject: Memorandum from the Director of Purchase,
Storage & Traffic on H. R. 9109.

1. The Chief of Staff directs that your memorandum, &c, &c.

w/wsb

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NOTE:

Five (5) copies; all (3) except original and 1st carbon
bearing initials of officer who prepared same.

WAR DEPARTMENT
OFFICE OF THE CHIEF OF STAFF
WASHINGTON

February 31, 1920.

MEMORANDUM:

Leave of absence is granted Colonel John Doe, General Staff,
to visit New York, N. Y.

By direction of Major General Haan:

R. M. BECK, JR.,
Colonel, General Staff,
Executive Officer.

x/wsb

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NOTE:

In cases of absence of 24 hours only, the above form of
authority for absence is used.

WAR DEPARTMENT
OFFICE OF THE CHIEF OF STAFF
WASHINGTON

WPD 257

January , 1920.

MEMORANDUM FOR THE ADJUTANT GENERAL OF THE ARMY:

Subject: Method of Transmitting Receipts from
Motion Pictures.

The Secretary of War directs that the attached letter dated January 8, 1920, from the Education and Recreation Officer, Fort Terry, N. Y., to the Officer in Charge, Camp Activities Section, be returned by indorsement substantially as follows:

Etc. Etc. Etc.

e/wsb

NOTE:

Five (5) copies, all (3) except the original and first carbon bearing the initials of the officer who drafted same.

WAR DEPARTMENT
OFFICE OF THE CHIEF OF STAFF
WASHINGTON

February , 1920.

MEMORANDUM FOR THE ADJUTANT GENERAL OF THE ARMY:

The Secretary of War directs that the attached papers (A.G.O. 210.11; 193.26; 520.4) be filed in your office.

or (be referred to blank office for remark.)

or (be transmitted to your office for the necessary action).

W. G. HAAN,
Major General, General Staff,
Director, W.P.D., A. C. of S.

NOTE: This paper is not to be construed as an indorsement and should not accompany the original papers if they are transmitted by indorsement.

e/rms

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NOTE:

Only one copy of above form should be used; it should bear the usual initial of branch and stenographer.

2nd Ind.

C. G., Eastern Dept., Governor's Island, N. Y., Dec. 12, 1919 -- To
The Adjutant General of the Army.

Recommending approval.

E --- F ---
Brig. Gen., Comdg.

3d Ind.

314.87 (Misc. Div.)

War Dept., A. G. O., Jan. 26, 1920 --- To The Chief of Staff.

4th Ind.

O.C.S., W.P.D., January 28, 1920 --- To The Chief of Staff.

1. No information, &c.
2. It is recommended, &c.

WM. LASSITER,
Colonel, General Staff,
Asst. Director, W.P.D.

x/wsb

CHARGE TO Office of Chief of Staff.
GOVERNMENT RATE.

WAR DEPARTMENT TELEGRAM.

OFFICIAL BUSINESS.

WASHINGTON.

January 28, 1920.

Captain James Harding,
1130 W. Trade St.,
Charlotte, N. C.

Letter sixteenth received period extension of leave approved.

BECK.

OFFICIAL:

R. M. BECK, JR.,
Colonel, General Staff,
Executive Officer.

x/wsb

WAR DEPARTMENT
OFFICE OF THE CHIEF OF STAFF
WAR PLANS DIVISION
WASHINGTON.

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PERSONAL CERTIFICATE.

_____, 192__.

I hereby certify, on honor, that my absence from _____,
192__, to _____, 192__, both dates inclusive, was caused by
sickness which incapacitated me for the performance of my official duties dur-
ing the entire period of my absence, and confined me to the house ____ days.

(Signature).

(Branch)

PHYSICIAN'S CERTIFICATE.

_____, 192__.

This is to certify that _____ has been under my
professional care from _____, 192__, to _____,
192__, both dates inclusive, during which time he has been unable, by reason
of sickness, to perform his official duties. I am duly licensed to practice
medicine under the law.

_____, M.D.
(Signature)

(Address)

PART 3

REGULATIONS AND INFORMATION

A - FOR OFFICERS.

B - FOR CIVILIANS.

REGULATIONS AND INFORMATION

A - FOR OFFICERS.

REGULATIONS FOR COMMISSIONED PERSONNEL.

1. Reporting for duty. An officer selected for duty in the War Plans Division and whose orders direct him to report to the Chief of Staff, will, upon arrival, report to the Office of the Secretary of the General Staff Corps, Room 218, State, War and Navy Building, where he will be furnished with a memorandum order assigning him to duty in the War Plans Division. He should then proceed to Room 348 and report in person to the Executive Officer, War Plans Division, who will issue a memorandum assigning him to duty with a Branch of the Division. He should also furnish the Chief Clerk, Room 348, with his Washington, D. C., address and Telephone Number, if any.

Officers whose orders direct them to report to the Director, War Plans Division, need not report to the Office of the Secretary, General Staff Corps.

2. Change of Address. In order that this Office may be kept informed at all times of the correct address of officers, any change of address and residence telephone numbers will be reported by the officer concerned to the personnel officer or clerk of his Branch within twenty-four hours after such change occurs.

3. Report of change of Status. Officers departing on leave of absence or detached service will report to the Executive Officer, War Plans Division, preferably in writing, their departure and likewise their return. This regulation is essential in order that the Executive Office may be kept informed at all times of the movements of officers on duty in the War Plans Division and in order that an accurate morning report and report of changes may be submitted in compliance with Special Regulations No. 57-A. Officers concerned will be held responsible that this data is promptly reported.

4. Sick Report. When on account of sickness it is necessary for an officer to be absent from duty, such absence must be confirmed by the Attending Surgeon, Washington, D.C., or other medical officer of the Army, whose certificate of admission to sick report should be addressed to the Executive Officer, War Plans Division, General Staff, Room No. 348, State, War and Navy Building.

5. Relief from duty. Upon relief from duty in the War Plans Division an officer will turn in whatever official property he may be charged with and will leave proper instructions with the Chief Clerk for forwarding his personal mail.

6. Office hours. The office hours for the officers of the Division will be from 9 a. m. until 4:30 p. m., daily, except Sunday and holidays, and a reasonable time will be allowed daily for luncheon during the period from 12:30 p. m. to 2:00 p. m.

The above hours may be extended by a chief of Branch or the Director when important matters are pending or when the volume of work requires it. A chief of Branch is authorized to act in the name of the Director in extending the working hours of employees under circumstances which require the extension of hours for officers.

During these hours, there will be available in every Branch at all times an officer (preferably the chief of Branch or Branch executive) who is cognizant of current matters before the Branch and whose knowledge of the work of the Branch as a whole will make possible a prompt and reliable response to requests for information.

7. Physical Exercise. In compliance with Paragraph 22, Compilation of Orders, Circulars, and Bulletins, 1881-15, as amended, officers will make a certificate on the last day of the month, on form which will be supplied them, that they have taken the exercise prescribed therein.

8. Appearance before Congress. In connection with any pending or other proposed legislation, no Army officer on duty in the War Plans Division will present himself before a committee of Congress to advocate any project without the knowledge of the Director of the Division, and without having previously obtained the consent of the Chief of Staff of the Army.

9. Information not to be Divulged. Officers are directed not to furnish to persons outside the War Plans Division information, either official or semi-official, relative to action that has been taken by the Division on papers submitted for the approval of the Chief of Staff. (W.P.D. 6277-150) It interferes materially with the work of the Office of the Chief of Staff in that inquiries by telephone are constantly being made with reference to papers and efforts made to get action on papers prior to their submission in the regular routine of business. (W.P.D. 6277-161).

Officers are cautioned against saying anything or writing anything which may be published affecting the policy of the War Department, other than that which is authorized for publication. This applies particularly to subjects that are more or less discussed in the press. (W.P.D. 187).

Information concerning the details of the work of the office will not be disclosed to newspaper men or to anyone who is not an officer of the General Staff. Persons inquiring for such information should be referred to the Executive Officer, Room 348, telephone branch 1259.

10. Personal use of Clerks. Officers on duty in the War Plans Division will not make use of their own time nor that of clerks in securing information for parties desiring the same when it is not properly pertinent to, or connected with, the business of the office, but is connected with private affairs or interests. The time and efforts of the officers and clerks of this Office belong exclusively to the Government during office hours.

11. Authority over Civilian Personnel. No officer on duty in the War Plans Division has authority to excuse any civilian from duty for any period whatever, unless in case of illness or any emergency, in which event the action must be promptly reported to the Chief Clerk for proper entry in the time records of the civilian personnel. If an officer to whom a civilian has been assigned for duty is absent for any cause, or if there is no present need for the services of a civilian, that fact should be reported to the Chief Clerk with a view to assigning the employee to some other duty in the office. (W.P.D. 2153).

Employees assigned to Branches of the Division or to individual officers will perform such duties and work as they may be directed to do by the officer immediately in charge of them. Matters affecting them relating to the general administration of the clerical force or not pertaining particularly to the business on which employed will be handled exclusively by the Chief Clerk.

12. Custody of Rooms. The regulations of the Superintendent, State, War and Navy Building require that all doors and rooms be locked and keys turned in to the watchman at the main entrance by the person last leaving the room. This regulation applies to officers as well as to civilians. The practice of the office is for the messengers at the close of business to extinguish lights, stop fans, close windows, and lock doors of any rooms not still occupied. In case of rooms which are still occupied, such duties devolve upon the last person leaving the room. (W.P.D. 49-5).

13. Case Cards. Cases referred to officers of the General Staff for study or solution bear a white charge card, commonly known as "case card"; the stub of this card should be detached, signed by an officer, preferably the Executive Officer of the Branch concerned, and returned at once to the Assistant Chief Clerk. Messengers are instructed not to leave papers without obtaining such receipt. The portion of this charge card which remains with the

paper, as well as the pink slip, will under no circumstances be detached therefrom and care should be taken that these cards remain with the papers in the case until they are returned to the Executive Office.

14. Safeguarding Official Papers. Necessary precautions should be taken to safeguard official papers and Government property. Particular care should be exercised not to leave in plain view on the desk or unguarded confidential or secret papers. During office hours, including luncheon, no room should be left without some responsible person in charge thereof.

15. Use of Telephone. The private use of official telephones of the War Department for outgoing calls, except in cases of real emergency, is prohibited. Officers desiring to make calls on private business should use the pay telephones. (W.P.D. 809).

Requisitions for new installations, transfers, extensions or removals are made by the Executive Officer of the Division only, on special form provided for that purpose.

No change in the position of a 'phone or in the wiring thereof should be made except by an authorized representative of the telephone company.

Any change in the location of an officer or civilian which results in a change in his telephone number will be promptly reported to the Chief Clerk by the proper Branch Executive.

In order to expedite the sending and receiving of messages by telephone all officers answering telephone calls, instead of saying "Hello" will respond by stating the office or section and their name. The person calling should at once reply by stating his office or section and name.

16. Economy in the Use of Supplies. Economy will be exercised in the use of office supplies and equipment. Particular care will be taken to prevent the unnecessary wastage of paper. To this end the number of copies of papers will not exceed the minimum requirements of office practice, as set forth in the portion of this Manual dealing with the general instructions to Stenographers in the preparation of correspondence; scrap paper should be used for "rough draft" and "before finals" and not the regular typewriter paper. Mimeograph work should be fairly closely estimated in order to prevent the usual great wastage in running off the large quantities of unnecessary copies.

17. Officers should familiarize themselves with instructions to Stenographers in the preparation and assembling of memoranda, etc., in order to prevent delay and wasted effort.

INFORMATION FOR COMMISSIONED PERSONNEL.

18. Leave of Absence. Application of an officer on duty in the War Plans Division, General Staff, for leave of absence should be addressed to the Chief of Staff, through the Director, War Plans Division. The application should state: (1) reason for request, (2) amount of leave due, (3) in detail giving dates, the amount of ordinary leave taken within preceding four years, and (4) address while on leave. (Cir.#68,W.D.,Feb.13,1920.) Four copies of the application should be submitted to the Executive Officer, War Plans Division, and the application should be accompanied by a slip, or bear on its face, an indication of the approval of the Chief of Branch. For specimen model of application for leave, see page 34 of this manual. Inquiries as to the action of the Chief of Staff on requests for leave will be made of the Chief Clerk, War Plans Division, and personal inquiry of the Office of the Secretary, General Staff Corps, for such purpose is prohibited, unless specially authorized by the Executive Officer, War Plans Division.

19. Method of Obtaining W.D. Documents & Blank Forms. Such War Department documents as General Orders, Bulletins, etc., regularly furnished by The Adjutant General of the Army to officers, will be supplied to officers on duty in the War Plans Division upon request to the Chief Clerk that their names be placed on the distribution list for that purpose. Requests for additional copies or for documents not usually furnished, but needed in connection with an officer's duties, or for blank forms, pay vouchers, etc., should be made to the Chief Clerk.

Individual requests for such documents should not be made upon the Publication Division, Office of The Adjutant General.

Private publications which have to be purchased will not be supplied to individual officers, but where needed in connection with the work of a branch of the Division and funds are available for their purchase, they may be furnished for the files of the branch, upon recommendation of the Chief of Branch.

20. Library of the General Staff College. The old War Department Library and the Library of the Army War College have been combined into the Library of the General Staff College, at Washington Barracks, D. C. Material contained therein is available to all officers visiting the Library, or by loan upon application.

For officers on duty in Washington, D. C., a formal call is not necessary; a telephone call to the Librarian will be sufficient.

Written applications for information should be addressed to the Secretary, General Staff College, Washington, D. C.

21. Maps. The Graphic Section, M.I.D., located at the General Staff College, is charged with the collection and preparation of maps of the United States and foreign countries. Copies are available for loan for official purposes upon application to the officer in charge of the Map Room, General Staff College.

22. Stationery Room. The stationery room of the War Plans Division proper is located in the small room between rooms 348 and 350. Requests for stationery, desk equipment, and office supplies should be made to the Assistant Chief Clerk.

23. Holiday Duty. No general roster for Sunday and holiday duty is maintained. Special details for this purpose are made from time to time and ample notice given to officers concerned.

24. Course of Papers Received. All papers intended for the consideration of the War Plans Division are received in the Office of the Chief Clerk, Room 348, where they are stamped to show the fact and date of receipt, a brief record is made of the contents, and assignment made to the particular branch of the Division whose function it is to prepare the solution. The paper is then sent to the branch concerned with a receipt card attached, the stub of which should be signed and returned to the Assistant Chief Clerk at once. When the solution has been prepared in final form and is ready for signature, the papers should be sent to the Chief Clerk's Office. Following signature by the Director, or Assistant Director of the Division, the papers are returned to Room 348 for dispatch to the office concerned.

25. Records. Copies of all memorandums, letters, etc., prepared in the Division are kept in the office of the Executive Officer, Room 348, where they may be obtained upon request. Officers are informed of the action taken upon memoranda prepared by them by being furnished, for their notation, a copy of such memoranda, bearing on its face a notation of the action taken. This copy is known as the "come-back" copy and should be returned promptly to Room 348.

26. Monthly Reports. In order that there may be available at all times a comprehensive continuous report of the operations of the War Plans Division, each branch submits, on the last day of the month, a report of its operations for the month. These reports are on file, and may be seen upon request.

27. Congressional Correspondence. If it is desired to expedite delivery of communications addressed to any Senator, Representative, or other official at the Capitol, such communications may be sent by special messenger on application to Room 219, State, War and Navy Building.

28. Private Mail. Official and private mail for officers is received in Room 345½, State, War and Navy Building. Distribution to officers is promptly made by messenger. It is essential that officers departing on leave of absence or on being relieved from duty in the Division, leave with the Chief Clerk a forwarding address; otherwise the mail will be forwarded to The Adjutant General of the Army for disposition. Owing to the large quantity of mail received at the War Department, it is always advisable to have private mail addressed to places of residence rather than to the Department.

29. Registered Mail. In order to have official mail registered, the same should be sent to the Chief Clerk and should bear in the upper left-hand corner the name of the writer. Return receipt will not be asked for unless requested,

30. Directory of Officers of War Plans Division. In the office of the Chief Clerk is maintained a card system showing the name, residence address, and telephone number, if any, of all officers on duty in the War Plans Division, General Staff.

31. Messenger Service. Messengers are assigned duties by the Chief Clerk, under whose immediate supervision they work. A complete round of the rooms of the Division (State, War & Navy Building) is made every twenty minutes. Messengers should not be called to carry papers or messages which could as well wait for the next regular trip. Messengers will not be used for private errands, either within or without the building. When there is need for messenger service for official purposes outside of the building, request should be made to the Chief Clerk.

32. Outside Messenger Service. Messenger service between the State, War & Navy Building and the Historical Branch and General Staff College, Washington Barracks, is maintained, four trips each day being made, leaving the State, War & Navy Building at 9 and 11 a.m. and 1 and 3 p.m. In addition, at 10 a.m. and 2 p.m., this service is available for other points in the city, for official purposes. This messenger is not available for the purpose of getting checks cashed, buying postage stamps, or any like errands of a personal nature. He will deliver only such messages and papers as are given him in the Chief Clerk's Office. Such communications must bear the name of the sender and the full and complete address of the party to whom delivery is to be made. The latter is essential, as the messenger's regular schedule does not permit him to devote any time in attempting to locate an indefinite address. Highly important or confidential papers to be delivered by this messenger should have their nature called to the attention of the Chief Clerk; communications which require a receipt should so indicate on the envelope.

33. Repairs to Building or Equipment. All repairs or work pertaining to the building itself, such as painting walls and floors, renewal of electric lights, regulation of heat, etc., are under the control of the Superintendent of the building, and written request for work of this nature is made on the Superintendent by the Chief Clerk of the Division. Repairs to furniture or similar carpenter work is under the jurisdiction of the Assistant Chief Clerk of the War Department. Upon notification to the Chief Clerk, War Plans Division, proper steps will be taken to have the work done.

34. Sales Commissary. The Sales Commissary Office is located at First and B Streets, N. W.

35. Real Estate Desk. A desk of information concerning houses and apartments for rent to officers is maintained in the Real Estate Service, War Department, Room 2603, Munitions Building, 19th and B Streets, N. W., telephone branch 279.

Officers upon being relieved from duty in Washington should advise the Rent Desk, Real Estate Service, of the quarters they are vacating, in order that other officers may benefit thereby, and the outgoing officers be assisted in sub-leasing.

36. Duplicating Facilities. The War Plans Division has facilities for duplicating work by means of the mimeograph and multigraph. In special cases it may be possible to enlist the services of the Graphic Section of the Military Intelligence Division for photostat work. All stenographers and typists are trained in the preparation of mimeograph stencils. Requests for work on the multigraph or for photostat work must be made to the Executive Officer, and in no case will direct application be made to the Military Intelligence Division or other agency of the War Department for photostat work.

37. Information Concerning Activities of General Staff. Information concerning the activities of the General Staff and of the various bureaus or other agencies of the War Department can be secured in the Coordination Section of the General Staff, Room 346, State, War & Navy Building, telephone branch 2774.

38. Pay vouchers. Officers' pay vouchers should be submitted direct to the Zone Finance Officer, Lemon Building, Washington, D. C., about the 20th of the month.

39. Motor Transportation. One passenger automobile is assigned to the War Plans Division for official use between the hours of 9 a.m. and 4.30 p.m. Application for the use of this car should be made to the Executive Officer.

40. Street Car Tickets. Street car tickets will be furnished officers by the Chief Clerk whenever their duties require such trips on official business.

REGULATIONS AND INFORMATION

B - FOR CIVILIANS.

REGULATIONS FOR CIVILIAN PERSONNEL.

1. Knowledge of Regulations. All civilian employees must have a thorough knowledge of all regulations and instructions which are now, or may hereafter be, in force in reference to the work upon which they are engaged. In preparing the efficiency reports such knowledge will be considered as a factor in arriving at the general efficiency rating, and those found deficient therein will be rated accordingly.

Principal clerks are responsible for the observance of regulations by those under their supervision. It is their duty, in addition, to report any breach of regulations or laxity on the part of anyone under their supervision.

Principal clerks of branches located in the
Virginia Building (E. & R. Branch)
Bldg. "B", Wash. Bks. (Hist. Branch)
Council of Natl. Def. Bldg. (S. & I. Branch)
may depart from the regulations herein set forth only so far as to adapt them to conditions peculiar to the location of their personnel in the buildings named. In no case will they issue any instructions at variance with the general intent of those laid down in this manual without having previously received the approval of the Chief Clerk of the Division.

2. Office Hours.

Messengers	- 8 a.m. to 4:30 p.m.
Other employees	- 9 a.m. to 4:30 p.m.

3. Lunch Time. The business of the office will be suspended each day for one-half hour from 12:30 p.m. to 1 p.m. for lunch, the Chief Clerk only remaining at his desk (and any others whose work will not permit taking lunch at that time).

4. Punctuality. Punctuality is a factor which is considered in the efficiency rating of employees of this Division. Employees are expected to be at their desks ready for work at 9 a.m. sharp. All preliminary arrangements must be made prior to that time. The day's work ends at 4:30 p.m. All preliminary arrangements for leaving must be made after the day's work is finished.

5. Leave of Absence. By the terms of the Act of March 15, 1898, 30 Stat., 316, and acts amendatory thereof, employees of the Executive Departments at Washington are not entitled to leave of absence as a matter of right, but only at the discretion of the proper administrative officers.

The following rules relative to absence from duty are promulgated for the government of clerks and other employees of the War Plans Division:

a. A record will be kept in the Chief Clerk's office, on which will be noted daily the duration of all absences from official duty on the part of employees.

b. Annual leave with pay not to exceed 30 days in any calendar year in any one case may be granted.

c. Leaves of absence will be granted in such order as shall interfere as little as possible with the public business.

d. Leaves of absence for more than one day will be granted for consecutive days only.

e. Leaves of absence will not be granted for periods of less than one-half hour, and all time lost for any cause will be charged in periods of not less than one-half hour.

f. In the case of employees transferred from one bureau to another within the calendar year, the entire service rendered by them during the calendar year, together with the time lost by them for all causes during that year, will be taken into account in considering applications that may be made by them for leaves of absence and in determining whether pay shall be allowed for additional time lost by them on account of sickness or other causes.

In the case of employees transferred from another executive department or other government establishment to the War Department, they will be given credit for the unused portion of their annual leave and sick leave in the department or other government establishment from which transferred.

g. Leaves of absence at the rate of two and one-half days for each month of service may be granted to employees who have been in the service of the government less than one year.

h. When by reason of exposure to contagious disease the presence of an employee in the department would jeopardize the health of fellow employees, an indefinite leave will be granted to him, and he will not be permitted to return to duty until all danger from contagion is removed and a satisfactory medical certificate to that effect is filed by him. Pay may be allowed for such compulsory absence, provided that the period of such absence, added to all other previous periods of absence with pay during the calendar year, shall not exceed 60 days in that year.

i. Formal leave on account of personal illness, or so-called sick leave, whether with pay or without pay, will not be granted in advance. Pay for time lost on account of personal illness will only be allowed as provided herein.

j. When an employee is unavoidably absent from duty by reason of personal illness, pay will be allowed for such unavoidable absence provided

that the period of such absence, added to all previous periods of absence with pay during the calendar year, shall not exceed sixty days in that year, and that the absence is accounted for to the satisfaction of the Director, War Plans Division. The personal certificate of the employee so absent will be supported by the certificate of the attending physician if the employee has medical attendance, or by such other certificate as may establish to the satisfaction of the Director, War Plans Division, that the employee was incapacitated for work during the entire period of absence. These supporting certificates will not be accepted as conclusive by the Director, War Plans Division, if he has reason to believe that they do not set forth the correct facts in the case. For blank form of sick leave certificate, see the end of Part 2-C.

k. Absence on account of personal illness which is not accounted for by a medical certificate, not to exceed two days in any one month or at any one time, may be charged, the first as sick leave with pay and the second day as part of the annual leave, if so much thereof remains unused, or as leave without pay if the annual leave be exhausted, upon the personal certificate of the employee so absent, provided the certificate is satisfactory to the Director, War Plans Division.

l. The certificate of an employee will not be accepted as satisfactory unless it contains a statement, on honor, showing whether or not the sickness certified to incapacitated him for the performance of his official duties during the entire period of his absence; also whether or not he was confined to the house by his sickness, and, if so confined, the duration of his confinement. A physician's certificate will not be accepted as satisfactory unless it shows the fact and period of his professional attendance upon the employee; also whether the latter was unable by reason of sickness to perform the duties of his office, and if so, the exact period during which he was unable to perform those duties.

m. If for any reason the certificate of the employee, or of a physician, is not considered satisfactory, the employee may be called upon to submit further evidence in support of his claim. Such evidence, to receive consideration, must be the sworn testimony of two or more reliable persons who are cognizant of the facts of the case.

n. All employees will be held to a strict accountability for the statements made by them in certificates of inability to perform duty by reason of sickness. Proof of any willful misstatement in such a certificate, or of any attempt of an employee to mislead or deceive his official superiors, directly or indirectly, in regard to absence on account of alleged sickness, will be cause for the dismissal of the person so offending.

o. All absence on account of alleged sickness that is not accounted for by satisfactory certificates, as prescribed herein, will be charged as absence without leave.

p. In case of continued unavoidable absence on account of personal illness, whether with pay or without pay, the employee so absent must keep his immediate superior periodically informed, by written communication, of the cause of his absence; also whether he believes that he will be able to return to duty, and, if so, the earliest date on which he believes that he will be able to return. In case of extended absence on account of illness, a notification such as that herein prescribed must be sent in every fifteen days, and must be accompanied with the certificate of the attending physician. Should the employee be so ill as to be unable to make the certificate required of him by this section, the certificate should be made for him by some member of his family, or by his physician, or by some person who can state from his own knowledge the condition of the employee and the prospect of his return to duty.

q. Whenever absence on account of illness, whether continuous or intermittent, amounts to more than three months in any calendar year, it will be reported to the Secretary of War for action, accompanied by the recommendation of the Director, War Plans Division. In case of illness indicating a probable absence of more than three months, all the facts in the case must be reported to the Secretary of War, accompanied by the recommendation of the Director, War Plans Division, and also by a statement of the attending physician as to the probable duration of the absence.

Absence of less than a day on account of illness will be charged as annual leave, unless all annual leave has been exhausted, in which case it will be charged as sick leave.

r. In addition to annual and sick leave, an employee will be allowed pay, as if engaged in his regular work, for time absent on official business (including attendance at court) under orders of his superior officer. He will be allowed pay also for time in attending court and in going and returning when he attends under subpoena as a witness on behalf of the United States in a case in which the United States is a party or is interested.

s. An employee who is a member of the National Guard of the District of Columbia will be allowed, in addition to annual and sick leave, the time provided for in the Acts of March 1, 1898 (25 Stats., 679), and July 1, 1902 (32 Stats., 615). Applications for such leave must be accompanied by a certificate of a competent officer of the National Guard.

t. Absence from duty for any cause without leave having been previously granted will be made the subject of special inquiry unless satisfactorily explained. Any employee who is absent without leave for any cause must explain to his immediate superior, in writing, at the earliest practicable moment, the cause of his absence and of his failure to ask for permission to be absent. If it is found that he was absent upon insufficient cause, or if his failure to obtain permission to be absent is not satisfactorily accounted for, the time lost will be charged as absence without leave, and such further action as may be deemed necessary will be taken.

Avoidable or willful absence without leave is an offense against office discipline.

u. Pay will not be allowed for any period during which an employee is absent without leave.

v. Whenever an employee is late in arrival, he will be required to explain the cause. If the explanation is unsatisfactory, the occurrence will be made the subject of special action, as in the case of absence without leave.

x. Sundays, legal holidays, and half-holidays, at the beginning or end of annual leave or within the period of an annual leave will not be charged, but those which occur within a period of absence on account of sickness or exposure to contagion, or leave without pay, will be charged.

y. Applications for leave without pay, not necessitated by illness, for a period of more than 30 days in any calendar year, will be submitted to the Secretary of War with recommendation of the Director, War Plans Division.

z. Annual leave of absence with pay granted employees on the eve of resignation shall be limited so that the total amount of annual leave granted in the calendar year in which resignation is made shall not be in excess of two and one-half days per month of service during that calendar year.

6. Overtime Leave. Whenever practicable, credit in additional leave will be given for overtime work. Upon being required to work overtime on official business, report will be made to the Chief Clerk immediately thereafter of the nature of the work and the time spent thereon, in order that proper record of the same may be kept by the Time Clerk. Overtime leave will be granted only after all annual leave of an employee is exhausted, and then only when the employee's services can be spared without detriment to the work of the office. Credit for overtime work will not be allowed for a period of less than one-half hour.

7. Messengers. Messengers are assigned duties by the Chief Clerk, under whose immediate supervision they work. They are required at all times to comply promptly and cheerfully with instructions, and to be courteous and respectful to everyone.

A complete round of the rooms is made by a messenger every twenty minutes. Clerks will not ring for messengers to carry papers and messages unless there is need of having the matter attended to at once. Bells will be answered and instructions complied with promptly, but messengers should not be called to carry papers and messages that could as well wait for the next round. Messengers will not read communications given them for delivery, except when verbal or other directions for such delivery are not indicated, and then only such part of the communication as is necessary to determine its destination.

When specific messenger duties do not require their entire time, messengers are available for other and miscellaneous duties.

When delivering papers sent to officers, to which a case card or charge card is attached, the messenger will detach the stub of the card, have it signed, and take it direct to the Assistant Chief Clerk. If the officer is not at his desk or is engaged in conversation or conference in which he should not be interrupted, the messenger will return the papers to the Assistant Chief Clerk. A messenger will in no instance leave the papers without receiving the receipt therefor.

After office rooms have been vacated for the day, messengers or laborers assigned to certain rooms will furl the awnings, place window shades at half height, extinguish lights, stop fans, close windows, and do whatever else is required in particular rooms. When these cannot be attended to at the closing hour, due to some officer or clerk remaining at work, such officer or clerk will be requested by the messenger to do what is necessary, and the messenger or laborer will be relieved of responsibility for the same.

8. Care of Rooms. Messengers and laborers will be assigned to certain rooms by the Chief Clerk or Captain of the Watch for the purpose of policing these rooms and keeping the fixtures in order. Upon reporting at 8 a.m. each day, these employees will clean the rooms assigned to their charge. Typewriters will be covered, to avoid dust getting inside of them. Dusters or brushes will not be used in cleaning desks, inkstands, or other office equipment. Cloths will be used for this purpose. Tops of desks and other office furniture will be wiped off with a damp cloth daily.

Water bottles in all rooms will be thoroughly washed, inside and out, once a week, and under no circumstances will anything but the filtered water be used in the bottles for drinking purposes. All drinking glasses will be washed and dried once a day; clean towels will be kept especially for this purpose.

Each officer's desk will be kept supplied with sharp pencils, fresh ink, pen points, and clean blotters; and calendar pads will be changed and sponge cups moistened daily. All supplies needed for his rooms should be requisitioned by the messenger at one time daily, thus avoiding frequent trips to the Property Clerk during the day.

All office rooms will be thoroughly aired every morning by opening windows. When the weather is damp or cold, the windows will be closed each morning not later than 8:45 a.m.

9. Outside Messenger Service. Messenger service between the State, War & Navy Building, and the Historical Branch, W.P.D., and the General Staff College, Washington Barracks, is maintained, four trips each day being made leaving the State, War & Navy Building at 9 and 11 a.m. and 1 and 3 p.m. In addition, at 10 a.m. and 2 p.m. this service is available for other points.

in the city for official purposes. This messenger is not available for the purpose of getting checks cashed, buying postage stamps, or any like errands of a personal nature. He will deliver only such messages and papers as are given him in the Chief Clerk's office. Such communications must bear the name of the sender and the full and complete address of the party to whom delivery is to be made. The latter is essential as the messenger's regular schedule does not permit him to devote any time in attempting to locate an indefinite address. Highly important or confidential papers to be delivered by this messenger should have their nature called to the attention of the Chief Clerk; communications which require a receipt should so indicate on the envelope.

10. Private Business. Private business is not to be transacted in the public office. The selling of "chances" or the raffling of any articles throughout the office by employees is prohibited. Contributions for any purpose will not be solicited without permission in advance from the Chief Clerk. Visits to other rooms, except on public business, are prohibited.

11. Use of Telephone. The private use of official telephones of the War Department for outgoing calls, excepting in cases of real emergency, is prohibited. Officers and employees desiring to make calls on private business should use the pay telephones.

In order to expedite the sending and receiving of messages by telephone, all persons answering telephone calls, instead of saying "Hello!", will respond by stating the office or section and their name. The person calling should at once reply by stating his office or section and name.

12. Information Not to be Divulged. In view of the confidential nature of the business of the War Plans Division, all civilian employees are cautioned to engage in no discussion whatever, in or out of the office, on official matters that come to their attention, not necessary to the performance of their duties. A violation of this rule will result in dismissal.

The following extract from the Act of Congress approved June 15, 1917, is published for the information of all concerned:

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled: * * * That whosoever, lawfully or unlawfully having possession of, access to, control over, or being intrusted with any document, writing, code-book, signal book, sketch, photograph, photographic negative, blue-print, plan, map, model, instrument, appliance, or note relating to the national defense, willfully communicates or transmits or attempts to communicate or transmit the same to any person not entitled to receive it, or willfully retains the same and fails to deliver it on demand to the officer or employee of the United States entitled to receive it; or (e) whoever, being entrusted with or having lawful possession or control of any document, writing, code-book, signal book,

sketch, photographic negative, blue-print, plan, map, model, note, or information relating to the national defense, through gross negligence permits the same to be removed from its proper place or custody or delivered to anyone in violation of his trust, or to be lost, stolen, abstracted, or destroyed, shall be punished by a fine of not more than \$10,000, or by imprisonment for not more than two years, or both."

Information concerning details of the work of the office will not be disclosed to newspaper men or to anyone who is not an officer of the General Staff. Persons inquiring for such information should be referred to the War Department News Bureau, Room 290.

The official records and business of the Division are strictly confidential, and are not to be disclosed to anyone nor made the subject of conversation out of office, nor in the office, except in so far as is necessary to the proper discharge of official business.

13. Care of Official Papers. Necessary precautions should be taken to safeguard official papers and Government property. Particular care should be exercised not to leave in plain view on the desk or unguarded confidential or secret papers. During the office hours, including luncheon, no room should be left without some responsible person in charge thereof.

14. Care of Desks. Clerks will keep their desks in an orderly condition, and prior to leaving, papers should be arranged and the desk set in order. Messengers are not required to do this work. Papers carried in individual desks should be kept in a tidy condition and none left on top of desks or tables. All work unfinished at the close of the day will, if confidential, be turned in to the Chief Clerk to be placed in the steel cabinet in his office; if the work is not confidential, it should be placed in baskets on the desk and weighted down. Under no circumstances will official papers be placed in desk drawers, as such practice may result in the loss of important papers or delay in completing action on the same. Confidential papers should be carefully guarded at all times and the work in connection therewith expedited as quickly as possible.

15. Care of Typewriters. For the purpose of securing greater economy and efficiency in the use of typewriting machines in use in this Division, the following rules will be observed.

(a) Clerks to whom typewriting machines are assigned will be held responsible for the care and condition of the machine.

(b) Typewriters will be carefully cleaned each day by the operator thereof, dust from carriage removed, and type cleaned.

(c) Clerks operating typewriters will see to it that the machines are adjusted with a light carriage and key tension as is consistent with proper work.

(d) Typewriters will be kept covered when not in use.

(e) Frequent inspections of typewriters will be made by principal clerks.

(f) The transfer of a typewriting machine between operators will not be made without authority of the principal clerk.

16. Economy in Use of Government Property. Employees will exercise economy in the use of Government property. Paper should not be wasted, lights, and fans should be turned off when not in use, and machines and furniture must not be carelessly handled or injured.

17. Signed Communications Will be Mailed Without Delay. In every case a communication must be mailed the day it is dated. The clerk mailing the same will check the papers carefully to see that they are properly addressed, signed, and dated; that inclosures are correct, and that a proper record of the communication has been made. When these precautions have been taken, the out-going papers will be placed in proper envelopes and left in out-going baskets to be collected by messengers on the next round.

18. Periodical Reports. Principal clerks who are charged with submitting periodical reports, such as report of change in status of officers, report of change in 'phone numbers, monthly roster, etc., will submit reports promptly on the dates required.

19. Securing War Department Publications. Requests for War Department publications, such as General Orders, Bulletins, etc., will be made to the Chief Clerk, and employees are forbidden to make such requests direct upon the Publication Clerk of The Adjutant General's Office.

20. Stenographers' Note Books. All stenographers' notes will be made in numbered books issued by the Clerk in charge of the Supply Room, Room 398, State, War & Navy Building. Under no circumstances will stenographers' notes on official business be made in duplicate or copied, nor will any pages be removed from the numbered books. Additional books will be furnished by the Clerk in charge of Room 398 only upon the surrender of the ones previously issued.

21. Visitors. Visitors are not allowed in the rooms in which clerks are employed, except by permission of the Chief Clerk in each case.

INFORMATION FOR CIVILIAN PERSONNEL.

22. Civil employees of the War Plans Division may be divided into three general classes:

Class 1. Classified Civil Service Employees on the Statutory Roll. (Appropriation for Support of Army).

Class 2. Classified Civil Service Employees paid from a temporary appropriation. (Appropriation for Additional Employees, War Department.).

Class 3. Employees without Civil Service status paid from temporary appropriation. (General Appropriation, Quartermaster Corps, and "Other Funds").

23. Class 1: Promotion. As far as practicable the promotion or demotion of employees of this class is based upon a semi-annual efficiency rating, by a Board composed of the Chief Clerk, General Staff, and representatives from each division of the General Staff.

Demotion. Recommendations for reduction must be preceded by furnishing the employee in writing with the specific reasons therefor, and giving him a reasonable time to answer the same in writing. The same procedure must be followed in making recommendations for dismissal (as prescribed by Act of Congress approved August 24, 1912, 37 Stat., 555). Recommendations to the Secretary of War for reduction and dismissal must be accompanied by a copy of the reasons as furnished the employee and also his answer to the same.

24. Class 2: Promotions. The promotion of employees of this class is dependent upon available funds. However, every possible effort is made by the office to reward meritorious employees.

Demotion. Same as Class 1.

25. Class 3: Promotions. Same as for Class 2.

Demotion or Separation. Employees of this class may be demoted or discharged for delinquency or misconduct or other cause by the Director of the Division forthwith, and without regard to the requirements set forth as applicable to such cases among employees of Classes 1 and 2.

26. Resignation. The date an employee last performed duty is the effective date of resignation.

27. Re-instatement. A person separated without delinquency or misconduct from a competitive position, or from a position which he entered by transfer or promotion from a competitive position, may be reinstated in the department or office in which he formerly served, upon certificate of the Civil Service Commission, subject to the following limitations:

(a) The separation must have occurred within one year preceding the date of requisition of the appointment officer for such certificate. The limitation does not apply to honorably discharged Civil War or Spanish War veterans, or their widows, or to Army nurses in those wars.

(b) No person may be re-instated to a position requiring an examination different from that required for the position from which he was separated, without passing an appropriate examination.

28. Holiday Duty. A roster of stenographers of the Office of the Executive Assistant to the Chief of Staff and of the War Plans Division on duty in the State, War and Navy Building, is maintained for the purpose of providing a Sunday and Holiday detail.

Stenographers so detailed should report at Room 219 at 9 a. m. on the day named and remain on duty until 1 p. m. unless sooner excused.

29. Repairs to Typewriters. All needed repairs to typewriters will be reported to the Principal Clerk of the Section, who will examine the machine, and if the repair cannot be made by an operator, request will be made to the Chief Clerk to secure the services of a repair man from the typewriter company concerned. Any repairs ordered by a clerk without authority will be paid for by the individual concerned.

30. Membership. Membership in any form of organization not having to do with strikes against the United States will not be cause for reduction or removal from the service. Also, the rights of persons employed in the civil service, either individually or collectively, to petition Congress or any member thereof, or to furnish information to either House of Congress, or to any Committee or Member thereof, will not be denied or interfered with.

31. Pay day. Class 1. By cash, 1st and 15th of the month.
Class 2. By cash, 15th and last day of month.
Class 3. S. & I. Branch, by check, 15th and last day of month.
E. & R. Branch, by cash, 15th and last day of month.

32. Excuse from Duty. No officer on duty in the War Plans Division has authority to excuse any civilian from duty for any period whatever, unless in case of illness or an emergency in which event the action must be promptly reported to the Chief Clerk for proper entry in the time records of the civilian personnel.

33. Suggestions from any employee, looking to the promotion of the efficient conduct of the business of the Office, are welcomed.

INDEX.

	Pages.		Pages.
ABSENCE, LEAVE OF		CIVILIAN EMPLOYEES, Cont'd.	
Civilian employees.....	62-66	Information for.....	71-73
Form for officers request.....	34,49	Membership in organizations.....	72
Officers.....	58	Pay day.....	72
ABSENCE WITHOUT LEAVE (Civilians)	65,66	Promotion of.....	71
ADDRESS		Regulations for.....	62-70
Change of officers'.....	54	Reinstatement of.....	72
Complimentary or 3d person letters	23	Resignation of.....	71
Indorsements.....	27	COMMISSARY.....	60
Memorandums.....	24	COMPARING OF PAPERS BY TYPISTS.....	18
Military letters.....	20	COMPLIMENTARY LETTERS	
Non-military letters.....	21	General instructions, address,	
Telegrams.....	28	margin, initials, signature,	
ASSEMBLY		no. of copies, and assembly.....	23
Complimentary or 3d person letters	23	Models of.....	43
Indorsements.....	27,28	CONCURRENCE,	
Memorandums.....	25-27	(See duties of officers).....	1-13
Military letters.....	20,21	CONFIDENTIAL COMMUNICATIONS.....	18
Non-military letters.....	22	CONFIDENTIAL INFORMATION.....	55,56,68,69
Telegrams.....	28,29	CONGRESS, Appearance before by ofcra.	55
ASST. AND CHIEF CLERK, WAR DEPT.		CORRECTIONS IN TYPING.....	18
Method of furnishing copy of		CORRESPONDENCE.....	
memo. for C.of S. to.....	45	Congressional.....	59
ASSISTANT DIRECTOR.....	1	General information..	14,15,16-29
BLANK FORMS, method of obtaining....	58	Models of (see under model forms)	30-53
BRANCHES		COURSE OF PAPERS.....	59
Chief of.....	1	DATING OF PAPERS.....	17
Monthly reports of.....	59	DEMOTION OF CIVILIAN EMPLOYEES.....	71
BUSINESS METHODS.....	1,14,15	DESKS, care of by clerks.....	69
CABLEGRAMS.....	46	DIRECTORY OF OFFICERS.....	60
CAPITALIZATION.....	17	DISCHARGE OF CIVILIAN EMPLOYEES.....	71
CARE OF ROOMS.....	56,67	EDUCATION & RECREATION BRANCH,	
CASE CARDS.....	56	Chart of organization.....	7,8
CHIEF CLERK.....	1	ENVELOPES, WINDOW, preparation of	
CHIEF OF STAFF, Letters for		letters for.....	30
signature of.....	42	EXCUSE FROM DUTY OF CIVILIANS.....	73
CIVILIAN EMPLOYEES		EXECUTIVE OFFICER OF DIVISION.....	1
Authority of officers over.....	56	EXECUTIVE OFFICERS OF BRANCHES.....	2
Custody of rooms.....	56	EXERCISE FOR OFFICERS.....	55
Demotion of.....	71	FILE NUMBERS.....	7
Discharge of.....	71	FORM MEMORANDUMS FOR T.A.G.....	1
Excuse from duty.....	73	GENERAL STAFF, Information re.....	72
Holiday duty.....	72		

INDEX, Cont'd.

	Pages.		Pages.
HISTORICAL BRANCH, chart of organization	12	LETTERS, Cont'd.	
HOLIDAY DUTY		To Secretary of State.....	41, 43
Civilians.....	72	To Speaker, House of Representatives.....	38, 40
Officers.....	59	To U. S. Senator.....	38, 42
HOUSE OF REPRESENTATIVES		To Congressman (See letter to U. S. Senator).....	38, 42
Letters to members of (See Models to U.S. Senator).....	38, 42	LIBRARY, GENERAL STAFF COLLEGE.....	58
Letter to Speaker of.....	38, 40	LUNCH TIME.....	62
INCLOSURES.....	17	MAIL.....	59, 60, 70
INDORSEMENTS		MAPS.....	58
Address.....	27	MARGINS	
Assembly.....	27, 28	Complimentary or 3d person letters	23
General instructions.....	27	Indorsements.....	27
Initials.....	27	Memorandums.....	24
Margins.....	27	Military letters.....	20
Models.....	52	Non-military letters.....	21
Number of copies.....	27	Telegrams.....	28
Signature.....	27	MEMBERSHIP OF CIVILIANS IN ORGANIZATIONS.....	72
INFORMATION		MEMORANDUMS	
For civil employees.....	71-73	Address.....	24
For officers.....	58-61	Assembly.....	25-27
INITIALS		Leave of absence.....	49
Complimentary or 3d person letters	23	Form memos. for T.A.G.....	51
Indorsements.....	27	General instructions.....	23, 24
Memorandums.....	24, 25	Initials.....	24, 25
Military letters.....	20	Margins.....	24
Non-military letters.....	21	Models for C. of S.....	44
Telegrams.....	28	Models for C. of S. with extra copy for Asst. and Chief Clerk.....	45
Typists.....	18	Models for Dir. of Oper., Dir. P.S. & T. or other bureaus and corps.....	47, 48
INSTRUCTIONS		Models for Personnel Branch, 45-a, 45-b	
For officers in prep. studies.....	14, 15	Models for T.A.G.....	45-c, 46, 50, 51
For stenographers and typists.....	16-29	MESSENGER SERVICE.....	60, 66, 67
LEAVE OF ABSENCE		MESSENGERS.....	60, 66
Civilian employees.....	66-66	MILITARY AFFAIRS COMMITTEES, Letter to.....	37, 38
Form for officers' request.....	34, 49	MILITARY LETTERS,	
Officers.....	58	Address, margins, initials, signature and no. of copies.....	20
LEGS, REGS. RULES BRANCH, chart of organization.....	11	Assembly.....	20, 21
LETTERS		General instructions.....	19, 20
Complimentary or 3d person.....	23, 43	Models of.....	180-85
Military.....	19, 21	MIMEOGRAPH SECTION.....	62
Non-military.....	21, 22		
Special delivery.....	35		
To Military Affairs Committees.....	37, 38		
To The President, U.S.....	38, 39		
To Secretary of the Navy.....	32		

INDEX , Cont'd.

	Pages,		Pages,
MODEL FORMS		OFFICERS, Cont'd.	
Cablegrams.....	46	Case cards.....	56
Complimentary or 3d person letters	43	Change of address.....	54
Detail of officer to W.P.D.....	45-a	Change of status.....	45-a
Indorsements.....	52	Confidential information.....	55,56
Leave of absence, request of		Custody of rooms.....	56
officers for.....	34,49	Directory of.....	60
Letter for signature of C. of S....	42	Exercise.....	55
Letter to members of H. of R. (see		Holiday duty.....	59
models to U.S.Senator).....	38,42	Information for.....	58-61
Letter to President, U. S.....	38,39	Leave of absence.....	34,58
Letter to Secretary of State.....	41,43	Office hours.....	55
Letter to Secretary of the Navy..	32	Personal use of clerks.....	56
Letter to Speaker, H. of R.....	38,40	Regulations for.....	54-57
Letter to U. S. Senator.....	38,42	Relief of.....	54
Letters for window envelopes.....	30	Report of change of status.....	54
Memorandums.....	44-51	Reporting for duty.....	54
Military letters.....	30-35	Request for detail to W.P.D. of... 45-a	
Non-military letters.....	36-42	Safeguarding official papers.....	57
Special delivery letter.....	35	Sick report.....	54
Telegrams.....	53	Supplies.....	57
Travel of officers not under		Travel of, not under jurisdiction,	
jurisdiction of W.P.D.....	45-b	of W.P.D.....	45-a,45-b
Travel orders for ofcers.under WPD.	45-c	Travel of, under jurisdiction WPD.	45-c
MORALE BRANCH, chart of organ.....	10	Use of telephones.....	57
MULTIGRAPH SECTION.....	61	OFFICIAL PAPERS, care of by clerks..	69
NAVY, SECRETARY OF, form of Secretary		ORGANIZATION	
of War letter to.....	32	Chart of War Plans Division.....	3,4
NON-MILITARY LETTERS		Education & Recreation Branch.....	7,8
General instructions, address,		Historical Branch.....	12
initials.....	21	Legs.Regs.Rules Branch.....	11
Models of.....	36-42	Morale Branch.....	10
No. of copies and assembly.....	22	Reserve Ofcers.Training Corps Branch	9
Signature.....	21,22	Service and Information Branch....	13
NUMBER OF COPIES		Training & Instruction Branch.....	6
Complimentary of 3d person letters	23	War Plans Branch.....	5
Computation of.....	19	War Plans Division.....	1
Indorsements.....	27	OVERTIME.....	66
Memorandums.....	25	PARAGRAPHING.....	16
Military letters.....	20	PAY DAY FOR CIVILIANS.....	72
Non-military letters.....	22	PAY VOUCHERS.....	61
Telegrams.....	28	PHOTOSTAT.....	18
NUMBERING OF PAGES.....	16	PRESIDENT, U. S., letter to.....	38,39
OFFICE HOURS.....		PRIVATE BUSINESS, transaction of by	
Civilian employees.....	62	civilians.....	68
Officers.....	55	PROMOTION OF CIVILIAN EMPLOYEES.....	71
OFFICERS		PROPERTY	
Appearance before Congress.....	55	Economy in use of, by clerks.....	70
Authority over civilian employees	56	Economy in use of, by officers....	57

INDEX

INDEX , Cont'd.

	Pages.		Pages.
PUBLICATIONS, method of obtaining.....	58, 70	STENOGRAPHIC SECTION.....	1
PUNCTUATION.....	17	STREET CAR TICKETS.....	61
QUARANTINE (Civilians).....	63	SUPPLIES	
REAL ESTATE DESK.....	61	Economy in use of, by clerks.....	70
RECORDS.....	59	Economy in use of, by officers.....	57
REGULATIONS		Supply room.....	59
For civilian employees.....	62-70	TELEGRAMS	
For officers.....	54-57	Assembly.....	28, 29
REINSTATEMENT OF CIVILIAN EMPLOYEES.....	72	General instructions, address,	
RELIEF OF OFFICERS FROM DUTY.....	54	margin, initials, signature,	
REPAIRS.....	60	no. of copies.....	28
REPORTING FOR DUTY (officers).....	54	Models.....	53
REPORTS, MONTHLY.....	59	TELEPHONES	
RESERVE OFFICERS' TRAINING CORPS		Installation of.....	57
BRANCH, Chart of organization.....	9	Report of changes.....	57
RESIGNATION OF CIVILIAN EMPLOYEES.....	71	Use of, by civilians.....	68
SALUTATION		Use of, by officers.....	57
Complimentary or 3d person letters	23	THIRD PERSON LETTERS:	
Military letters.....	20	General instructions, address,	
Non-military letters.....	21	margin, initials, signature,	
SENATE, U.S., LETTERS to members of..	38, 42	number of copies and assembly....	23
SERVICE & INFORMATION BRANCH, Chart		Models of.....	43
of organization of.....	13	TITLES.....	17, 18
SICK CERTIFICATE		TRAINING & INSTRUCTION BRANCH, chart	
Civilians.....	64	of organization of.....	6
Form for civilians.....	53 1/2	TRANSPORTATION.....	61
SICK LEAVE		TRAVEL ORDERS	
Civilians.....	63-65	Officers, not under jurisdiction	
Form for report (civilians).....	53 1/2	of W.P.D.....	45-a, 45-b
SICK REPORT (officers).....	54	Officers under W.P.D.....	45-c
SIGNATURE		Preparation of.....	18
Complimentary or 3d person letters	23	TYPE, STYLE OF.....	16
Indorsements.....	27	TYPEWRITERS	
Memorandums.....	25	Care of.....	69
Military letters.....	20	Repairs to.....	72
Non-military letters.....	21, 22	VISITORS OF CIVILIAN EMPLOYEES.....	70
Telegrams.....	28	WAR PLANS BRANCH, chart of organ-	
SPECIAL DELIVERY LETTERS.....	35	ization of.....	5
STATE, SECRETARY OF, letters to.....	41, 43	WAR PLANS DIVISION	
STATIONERY.....	16	Chart of organization.....	3, 4
STENOGRAPHERS AND TYPISTS		Organization of.....	1
Assignment of.....	1		
Check list for, in prep. of papers.	19		
Instructions for.....	16-29		
Note books.....	70		
Personal use of, by officers.....	56		

B - NAMES.

The room location, branch telephone number, and duties of the officers of the War Plans Division are shown on the pages set opposite their names below:

<u>Name:</u>	<u>Page:</u>	<u>Name:</u>	<u>Page:</u>
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Beck, R.M., Jr., Col., G.S.	4	Harten, James, 1st Lt., M.I.D.	13
Bedinger, A.F.G., Capt., Inf.	7	Higgins, L., Capt., Inf.	12
Birdseye, M.B., Major, Inf.	7	Hodges, Harry L., Col.,	12
Blakely, C.S., Major, F.A.	5	Honeycutt, F.W., Col., G.S.	6
Blanton, S.G., Major, Inf.	6	Howell, J. A., Lt.Col.,	11
Bowman, G.T., Col., G.S.	6	Humann, Henry, Capt., F.A.	12
Brown, T.W., Lt.Col., Inf.	7	Hunt, Elvid, Lt.Col., G.S.	9
Bryden, Wm., Major, G.S.	5	Johnson, W. H., Col., G.S.	11
Burnside, Wm. A., Col., Inf.	5	Joy, J. S., Lt.Col., F.A.	8
Butt, R. J., Major, Inf.	10	Kerth, M.C., Col., G.S.	6
Chapin, F. K., Capt., Cav.	12	Kingman, J.J., Col., G.S.	5
Clewell, E. L., 1st Lt.	8	Koontz, L. K., 2nd Lt., Inf.	7
Connor, J. M., 1st Lt.	8	Lacey, F.E., Jr., Col., G.S.	4
Cooper, H. M., Col., G.S.	6	Lane, A.W., Lt. Col., G.S.	5
Cootes, H. N., Col., G.S.	7	Larned, W.E., Col., F.A.	7
Cotton, R.C., Maj., G.S.	12	Lassiter, Wm., Col., G.S.	4
Crain, C. F., Lt.Col., Inf.	12	Leman, B. W., 1st Lt., Inf.	8
Diffenderffer, C.R., Maj., Inf.	8	Lemly, R.P., Major, Inf.	12
Dixon, V. D., Col., G.S.	5	Lentz, B. P., Lt.Col.,	7
Dixon, W. L., Major, Inf.	8	Mathews, Philip, Lt.Col.,	10
Doherty, J. H., 1st Lt.,	7	McCaskey, D., Col., G.S.	6
Elliott, C.W., Major, Inf.	9	Mencher, Pearson, Maj., G.S.	9
Embick, S.D., Col., G.S.	5	Merry, W.T., Col., Inf.	9
Fletcher, R.J., Jr., Lt.Col., G.S.	12	Miller, A. H., Major, C.A.C.	10
Fedo, A.E., Major, Inf.	8	Miller, F.J., Col., G.S.	5
Foster, R. L., Col., Inf.	13	Mills, C.P., Lt. Col., Cav.	12
Gibson, R.A., 1st Lt., Inf.	12	Mitchell, G.E., Col., G.S.	6
Gilmore, J. C., Jr., Col., G.S.	5	Moffett, C.W., 1st Lt., Inf.	12
Gerrell, E.S., Col., A.S.	5	Morgan, W.T., Major, Inf.	7
Graves, E.V., Maj., Q.M.C.	8	Morrow, F.J., Col., G.S.	4
Greninger, H.M., Lt.Col., G.S.	6	Mueller, H.S., Major, Inf.	10
Gulick, John W., Col., G.S.	5	Munson, E.L., Col., G.S.	4
		Munteanu, G., Major, A.G.D.	10
		Murray, Peter, Col., G.S.	4

B - NAMES, Cont'd.

<u>Name:</u>	<u>Page:</u>	<u>Name:</u>	<u>Page:</u>
Ordway, Godwin, Col.	8	Stephen, H.L., 1st Lt., Inf.	8
Palmer, John McA., Col., Inf.	4	Sultan, D.I., Col., G.S.	6
Patterson, R.U., Col., G.S.	9	Switzer, J. S., Jr., Capt., Inf.	12
Pillow, J.G., Col., G.S.	5	Taylor, Harry A., Maj., Inf.	13
Potter, H.E., Capt., Inf.	10	Thomas, S.T., Capt., A.S., S.R.C.	13
Praether, J.A., Capt., Q.M.C.	7	Todd, D.B., Jr., 1st Lt., Inf.	13
		Towner, C., Major, Inf.	8
Rees, R.I., Col., G.S.	4	Tyndall, J. G., Col., F.A.	7
Richardson, J.R., Lt.Col., Inf.	10		
Richardson, R.C., Jr., Col., Cav.	10	Waldron, W.H., Col., G.S.	6
Robinson, G., Col., M.T.C.	7	Watrous, L., Major, Inf.	8
Robinson, R., 1st Lt., Inf.	13	Weeks, J. A., Major, Inf.	8
Robinson, Wm. F., Jr., Lt.Col.	5	Weiss, W.C., Capt., Inf.	8
Romeyn, C.A., Col., G.S.	11	Wells, B.H., Lt. Col., G.S.	5
Rose, W.C., Major, Inf.	8	Whelen, T., Lt.Col., G.S.	6
Rowell, F.W., Col., Inf.	9	Winnia, C.C., Lt.Col., Inf.	12
		Winton, R.W., Lt.Col., Inf.	7
Sears, F.M., Capt., Engrs.	10	Woodbury, E.N., Lt.Col., C.A.C.	10
Shaw, R.C., Capt., U.S.A.	10	Woodlief, Wm. A., Major, A.G.D.	13
Sloan, A.K., Capt., Inf.	12	Woodridge, W.P., Major, Q.M.C.	8
Smith, E.T., Col., F.A.	9	Wright, J.W., Col., Inf.	12
Smith, M.C., Lt.Col., G.S.	4		
Smith, W.W., Major, San. C.	10	Yates, J. E., Major Chaplain.	8
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- - - - -

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Campbell, Thomas F.	Civ. Personnel Clerk.	Executive	348	1267
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Cowan, Katherine E., Miss.	Prin. Clerk.	L. R. R. Br.	357	1240
Pero, Helen T., Mrs.	Prin. Clerk.	R. O. T. C. Br.	358	1679
Baker, Ida O., Mrs.	Prin. Clerk.	War Plans	360	1251
Kellams, Harry W.,	Prin. Clerk.	Morale	371	1594
Green, J. P.,	Prin. Clerk.	E. & R. Br.	(1)	639
Kerr, C. O., Prin	Prin. Clerk.	S. & I. Br.	(2)	344
Thomas, Robt. S.	Prin. Clerk.	Historical	(3)	(3)
Basinger, Walter S.	Publications Clerk to	Executive	348	1267
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- (2) National Defense Building, Room 1113.
- (3) Building "B", Washington Barracks, 'phone M. 8775, Br. 79.

WAR DEPARTMENT
Office of the Chief of Air Service
Washington

September 13, 1923.

Subject: Annual Report.

To: The Adjutant General of the Army.

Transmitted herewith is my Annual Report for
the Fiscal Year ending June 30, 1923.

Mason M. Patrick,
Major General, A.S.,
Chief of Air Service.

U-664, A.S.

A N N U A L R E P O R T

of the

C H I E F O F A I R S E R V I C E

for the

F I S C A L Y E A R - J U L Y 1, 1922 t o J U N E 30, 1923 .

CONTENTS

Chapter

- I Organization
- II Personnel
- III Air Service Stations
- IV Air Service Medical Section
- V Finance
- VI Engineering and Research
- VII Supply
- VIII Training
- IX War Plans
- X Industrial War Plans
- XI Operations and Special Projects
- XII Airways
- XIII Radio Communication and Meteorology
- XIV R.O.T.C., National Guard and Organized Reserve
- XV Civil and Commercial Aviation
- XVI Conclusions and Recommendations

(NOTE: Due to the expense in the reproduction of this Report, the Charts and Photographs listed below have been omitted excepting the organization chart of the Office, Chief of Air Service.)

LIST OF CHARTS AND PHOTOGRAPHS

Organization Chart, Office Chief of Air Service

Active Stations of the Air Service

Proposed Standard Permanent Air Service Field for Four Squadrons

Organization Chart, Engineering Division, Air Service

The Engineering Division, TP-1 Airplane

The Barling Bomber

The Verville-Sperry Racer

Curtiss Pursuit Plane, PW-8

Improved Highly Mobile Balloon Winch

Almen Barrel Type Engine

18 Cylinder, 700 H.P., W-1 Engine

Balsa Wood Propeller for RS-L Airship

Aluminum Alloy Propeller for Liberty Engines

Estoppey Bomb Sight, D-1

Improved Vertical Scale Instrument Board

The Curtiss Racer - World's Record Speed Plane

Example of Aerial Survey of Los Angeles Area showing
foothills of the Santa Monica Mountains

Proposed Airway System of the United States

Course Check Markers at McCook Field, Dayton, Ohio

Block Signal System, Bolling Field

Aeronautical Bulletin

Section of Improved Type of Aerial Map

Air Service Model Airways System

CHAPTER I

ORGANIZATION

THE AIR SERVICE

The Army Reorganization Act, approved June 4, 1920, amending the National Defense Act, established the Air Service as a coordinate combat branch of the line of the Army and invested it with the responsibility for the development and supply of its own technical equipment.

Office Chief of Air Service

To meet the complicated executive and administrative requirements of these functions the Office of the Chief of Air Service was modeled very closely after the proven staff organization of the American Expeditionary Forces. This organization still obtains in its salient features although numerous minor changes, necessitated in many cases by the continued reduction in personnel and based more upon expediency than efficiency, have been adopted.

Since the last report, the Civilian Personnel Section has been removed from the Personnel Division and placed under the immediate supervision of the Chief Clerk. In like manner, and in order to expedite the disposition of large quantities of surplus equipment remaining after the war, the Materiel Disposal and Salvage Section was withdrawn from the Supply Division and given an independent status directly under the Executive.

The organization as it exists at present, and as shown in the attached chart provides for five main divisions and eight specialized sections. The responsibility for the coordination of these various activities is placed with the Executive.

The Bureau of Aircraft Production

The Bureau of Aircraft Production exists in name only and its activities are limited solely to the fulfillment of the duties imposed upon its director by the Act of Congress, authorizing the United States Spruce Production Corporation.

Major Oscar Westover, on duty in the Office of the Chief of Air Service was appointed Director of Aircraft Production per Par. 4,

G.O. 7, W.D., February 10, 1921, and continues to hold that office.

United States Spruce Production Corporation

The United States Spruce Production Corporation was organized during the World War under the provisions of Army Appropriation Act of June 30, 1918, to continue the work of the Spruce Production Division of the Signal Corps. Since the Armistice, its activities have been limited to the disposal of remaining properties and to the preliminary processes of liquidation and dissolution.

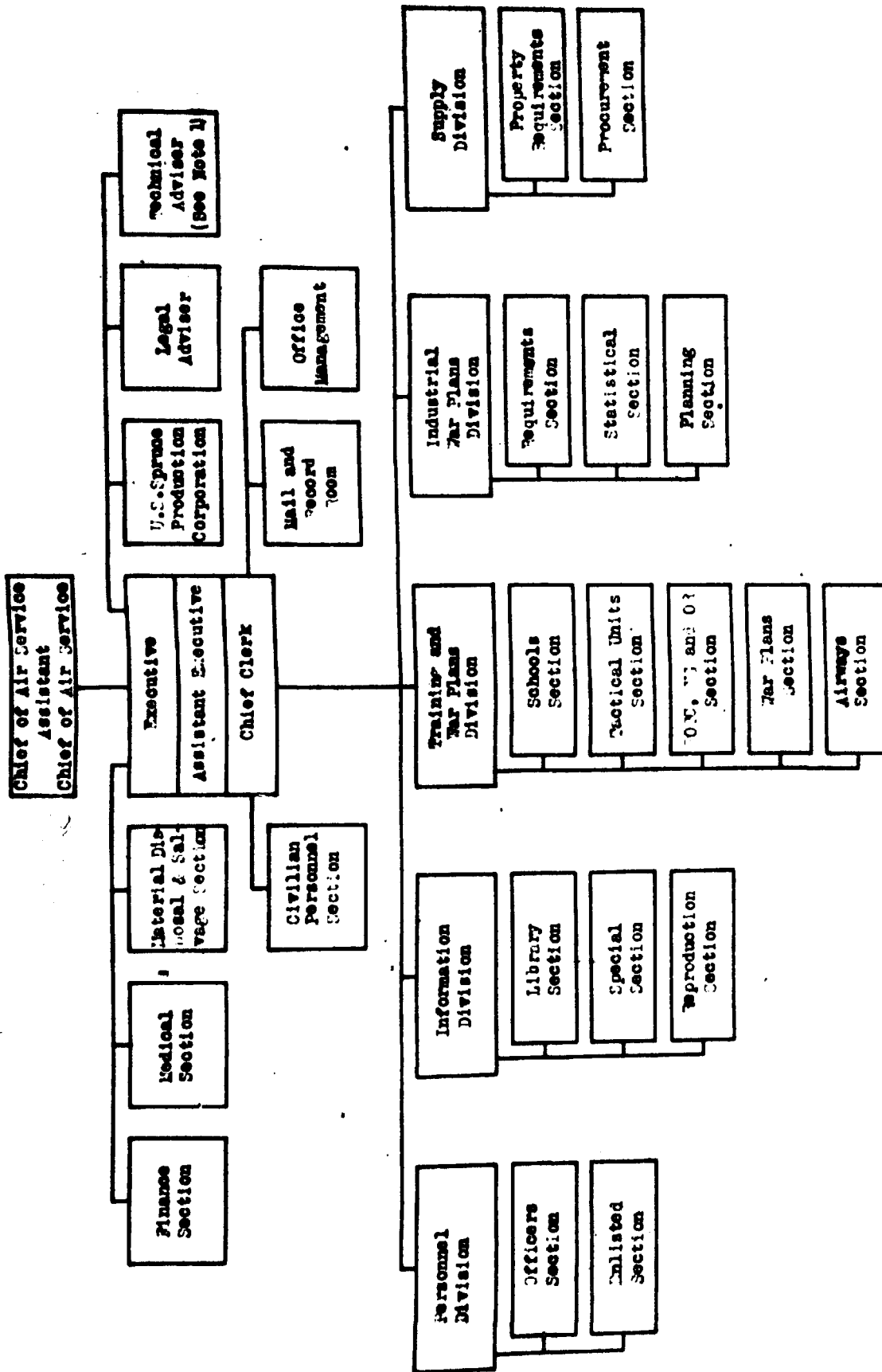
A recent statement by the president of the corporation indicates that when liquidation is completed the net return to the United States will be a very substantial percentage of the total expenditures. Certain of the major properties have been sold under long term contract, partial payments to be made at specified dates. These deferred payments bear interest. There are certain suits against the corporation now pending and until all of these matters are settled, the exact return to the United States cannot be known. It is confidently expected, however, that the total realized, including therein a sum which will represent the value of the lumber actually used by the United States, will be something more than 80 percent of the total expenditures.

The work of the corporation is being brought to a conclusion as rapidly as possible. There still remain, however, a number of perplexing, legal and financial problems which require most careful handling and which will necessitate the maintenance of an office in Portland, Oregon, for at least two years longer.

Air Service in the Field

Besides the personnel in the Office of the Chief, the Air Service is composed of tactical units, special service schools and numerous agencies incidental to its experimental, production and supply activities. Tactical organizations are in general under the jurisdiction of the commanding generals of the corps areas in which located, and to assist in the exercise of this control air officers are included on the staffs of all such commands. The special service schools are supervised by the War Department, through the Chief of Air Service; and the Air Service Reserve and Intermediate Depots, experimental and production activities and manufacturing plants are also exempt from the jurisdiction of corps area commanders, except in matters relating to routine supply and the administration of military justice.

In addition to these activities, numerous individual officers are assigned to special duties, both of a purely Air Service nature and in connection with the administration of the Army at large. Among this number are student officers at the general service schools and at various technical institutions, instructors at Air Service Officers



Note 1 - Representative in O.C.A.S. of Air Service Engineering Division, McCook Field.

ORGANIZATION CHART - OFFICE CHIEF OF AIR SERVICE

Training Corps Units, assistant military attaches for Air at the American Embassies in England, France and Italy, military observers in Germany and officers on duty in several offices and bureaus of the War Department.

Contact with other Governmental Agencies

The coordination on personnel, supply and technical matters effected by numerous boards and committees of the War Department is supplemented in the Air Service through the maintenance of definite and permanent contact with several of the other governmental agencies interested in the development of aeronautics.

The Aeronautical Board is composed of members from the Bureau of Aeronautics of the Navy and from the Air Service of the Army. It is intended to eliminate unnecessary duplication and to insure proper coordination in all undertakings involving joint action by the two services. The Joint Army and Navy Board deals with the broader policies affecting the Army and Navy at large and in this capacity frequently reviews the findings of the Aeronautical Board. Recommendations prepared by these boards are forwarded to the Secretary of War and Secretary of the Navy for final action.

Other similar coordinating agencies which include Air Service membership are the Army and Navy Helium Board, the National Advisory Committee for Aeronautics, the Federal Board of Surveys and Maps and the Committee for Aeronautical Safety Code under the Bureau of Standards.

CHAPTER II

PERSONNEL.

Commissioned

The Army Organization Act approved June 4, 1920, fixed the commissioned strength of the Air Service at 1516 officers including a Chief of Air Service with rank of Major General and an Assistant Chief with rank of Brigadier-General. These figures continued effective until June 30, 1923 although at no time did the actual strength exceed 60 percent of that authorized.

With the passage of the Army Appropriation Act for the fiscal year 1923 limiting the number of officers to 12,000 for the Army at large, a more or less proportionate reduction in all arms became necessary. The application of this law by the War Department resulted in an authorized strength of 1061 officers for the Air Service. This allowance although far short of requirements is nevertheless in excess of the actual strength of the Air Service and was adopted to serve until such time as adequate procurement methods might be devised and put into operation.

On July 1, 1922 there were 903 officers commissioned in the Air Service and 55 detailed from other arms; a total of 958 exclusive of six emergency officers remaining in hospitals undergoing physical reconstruction. During the year five of the emergency officers were discharged and the total of 958 commissioned and detailed, suffered a net reduction of 91, leaving the Air Service with a commissioned strength of 867 on June 30, 1923.

The gains and losses which resulted in this reduction are shown in detail in the following table:

<u>Cause of gain or loss</u>	<u>Commissioned in A.S.</u>		<u>Detailed in A.S.</u>	
	<u>Gain</u>	<u>Loss</u>	<u>Gain</u>	<u>Loss</u>
Transfer to Air Service	28			11
Transfer from Air Service to other arms		6		
Detail			7	
Termination of detail				25
New Commission	30			
Death (a) as result of aircraft accident		27		1
(b) Other causes		4		

<u>Cause of gain or loss (cont)</u>	<u>Commissioned in A.S.</u>		<u>Detailed in A.S.</u>	
	<u>Gain</u>	<u>Loss</u>	<u>Gain</u>	<u>Loss</u>
Retirement (a) physical disability		12		1
(b) under Act of June 30, 1922		12		2
Honorably discharged (a) under Sec. 24b. Act of June 4, 1920		1		
(b) Under Act of June 30, 1922		41		1
Resignation		12		
		58	7	41
TOTALS		115		
NET		57		34
AGGREGATE LOSS		91		

The gain of thirty by new commission includes seventeen graduates of the class of 1922 of the Military Academy and thirteen appointees as a result of the competitive examination for civilians held in October 1922. It is pointed out that these new appointments, far from serving to build up the Air Service to its authorized strength, do not even offset the losses due to death alone.

Of the 115 officers lost from among those actually commissioned in the Air Service fifty-three were resignations or retirements as a direct result of the Act of June 30, 1922. Only ten of this number were rated below average, and the remainder included many of the most efficient officers of the Air Service. It is of noteworthy importance that a majority of the officers who applied for discharge did so as a result of the positions they occupied upon the single list.

Due to the extended training period required of candidates for commission in the Air Service during the war the majority of junior officers find themselves hopelessly outranked by officers of corresponding or even less age and experience in other arms. General Shanks' board appointed by the War Department to investigate alleged injustices and inequalities of the single list stated in its final report as follows: "The board is of the opinion that this situation will affect adversely the efficiency of the Air Service * * *". "The Air Service is the only branch or arm of the service which is adversely affected as a corps by the promotion situation". Approximately 80 percent of the Air Service officers are near the bottom of the promotion list and cannot hope to be captains for many years. A number of them in the normal course of events will never become majors.

This limitation is perpetuated through the high casualty rate due to aircraft accidents. During the calendar year 1922 there were 78 deaths among the commissioned personnel of the army at large. Of the 48 violent deaths included in this number 38 were Air Service officers killed in aircraft accidents. The ten violent deaths in other arms were distributed through 12,000 officers while the 38 in the Air Service were applied against a total of less than 900. This gives at a glance an idea of the comparative accident casualty rate. The replacement of these losses by new appointments at the bottom of the list completes a cycle of negative acceleration which under the present system serves to keep the bulk of Air Service officers at or near the bottom of the list.

Such a condition can be remedied only by placing Air Service officers on a separate list for promotion under a system somewhat similar to that now in effect for the Medical Corps. A draft of legislation covering these requirements has been submitted to the War Department and it is recommended that the passage of this bill is urged upon Congress at its next session.

Two other problems of vital importance present themselves for immediate consideration. The first of these is the total inadequacy of the Air Service; the second is the need for a radical change in the methods of procurement replacement and elimination.

The peace organization of the Air Service now bears no relation to war requirements and affords little or no foundation upon which war requirements in either personnel or materiel can be built.

The Air Service is expected to perform the dual functions of a supply and combat arm, to develop its own flying equipment, to operate a system of storage supply repair and maintenance, to provide observation aviation for work with the Infantry, Field Artillery, Coast Artillery and Cavalry and to develop an Air Force capable of bearing the initial burden of any emergency.

A thorough analysis of these requirements indicates a peace strength of 4,000 officers as necessary for their fulfillment. The extended period required for the training of flying personnel, the fact that Air Forces will come into contact immediately upon the declaration of war together with a consideration of all other factors serves to establish this minimum.

Such an increase, representing as it does, over four times the actual strength of the present Air Service, cannot be affected at once but should parallel in annual increments an appropriate production program over a period of ten years.

A large percentage of this increased commissioned strength should be made up of Reserve Officers on active duty for short periods of four or five years. Such a system offers the best solution to the ideal requirement that at least seventy-five percent of the total commissioned strength be active flyers in the grades of Lieutenant and Captain and between the ages of twenty-one and thirty. If adopted it will insure an even flow through the various grades of the regular contingent, will provide a continuous supply of junior officers at their period of maximum efficiency as flyers and will build up a large reserve of thoroughly trained officers capable of limited service in case of war.

Enlisted Personnel

The authorized enlisted strength of the Air Service is 8764, including 190 flying cadets. In spite of generally poor recruiting conditions an actual strength not far short of that authorized has been

maintained during the year with a quality of recruits well above average. As far as possible these men were sent to the Air Service Technical School for training before assignment to organizations.

In the Air Service as in all other arms the reduction in strength at the beginning of the year and the consequent necessity for the demotion of a number of specialists holding higher grades and ratings worked a hardship on those men and affected adversely the morale of enlisted personnel throughout the service. In the maintenance of a small nucleus designed to permit of immediate and extensive expansion in time of war it is essential that the important positions be filled by men of ability and training. In photography, in radio and in the specialized mechanical and technical pursuits of the Air Service it is impossible to retain such men at a rate of pay far below that which prevails in the commercial work. The opportunities in civil life induce many of them to seek discharge as soon as possible after having gained proficiency in their particular line and it is recommended that consideration be given to the need of an increased quota in the higher grades and ratings.

The same considerations which call for additional officers in the Air Service demand a substantial and a corresponding increase in its enlisted strength. A minimum of 25,000 is required to provide the essential combat and observation units and to enable the Air Service to successfully perform its peace time functions.

Civilian Personnel

In the Office of the Chief of Air Service the civilian pay roll for the fiscal year 1922 amounted to \$415,000.00. Of the 234 employees, 207 were paid from the \$350,000.00 Statutory Roll and 27 from the \$65,000 allotment for technical experts. For the fiscal year 1923 the Statutory roll was decreased to \$195,000.00 while the Allotment roll was increased to \$90,000.00 making available a total of \$285,000.00. The net reduction of \$130,000.00 necessitated a substantial cut in every division and has seriously impaired the efficiency of this office. The limitation placed upon the number of officers on duty in Washington has prevented the use of commissioned personnel to offset the cut in the civilian force and as a result numerous activities have been curtailed if not entirely eliminated.

The same situation obtains in the field. The total of 3250 civilians so employed during the year represents a reduction of approximately 900 from the fiscal year 1922. Of this total 1180 are included on the rolls of the Engineering Division at McCook Field and are engaged in experimental and engineering pursuits.

Conclusions

As a result of these various reductions and inadequacies

the Air Service is operating on a basis which does not permit the fulfillment of its mission. Any further reduction will result in greater deficiencies and only a substantial increase can enable it to meet the demands placed upon it. If the required number of officers were available, if the enlisted strength were adequate or if sufficient civilians might be employed the difficulties would not be so perplexing, but with continued reductions in every class of personnel, efficient operation becomes an impossibility.

The question of an increased Air Service competent to meet the requirements of peace time service and capable of proper expansion in case of an emergency has been considered in every detail by a special committee appointed by the Secretary of War. It is urged that the recommendations of this committee be made effective through the enactment of appropriate legislation at the next session of Congress.

CHAPTER III

AIR SERVICE STATIONS

The operations of the Air Service, involved at the close of the fiscal year a total of seventy-one stations and real estate holdings exclusive of office space and exclusive also of several railroad rights of way awaiting final purchase or adjustment.

Purpose.

A general idea as to the purpose of these stations can be conveyed most clearly and most expeditiously by the following summary:

Within the continental limits of the United States there are:

- 5 Air Service Special Service Schools
- 1 Experimental and Engineering Station
- 5 Air Intermediate (Supply) Depots.
- 11 Active Flying Fields operated by Air Service tactical units
- 26 Auxiliary Airdromes and Intermediate Landing Fields
 - 1 Bombing Area
 - 1 Radio Site
 - 1 Hangar Site
- 8 Inactive Flying Fields, the disposition of which has not yet been determined
- 5 Government owned properties in process of disposal (by sale)

In our insular possessions there are:

In Panama

- 1 Active Flying Field
- 1 Auxiliary Landing Field

In the Philippine Islands

- 3 Active Flying Fields

In Hawaii

- 2 Active Flying Fields

The classification given above is in accordance with the primary function of the station. In some cases in the United States there are two purposes served by the same station; for example, one of the Special Service Schools includes also an Air Intermediate Depot and one of the Experimental Stations and one of the Active Flying Fields has each a Special Service School in addition to its other activities.

Among the active flying fields, two, those at Fort Riley, Kansas and at Fort Sill, Oklahoma are operated primarily in conjunction with the Cavalry and Field Artillery Schools, the one at Aberdeen is an auxiliary to the Ordnance Proving Ground while that at Fort Bliss, Texas performs the dual function of border patrol service and contact with the Cavalry Division at that station.

Of the twenty-six intermediate and auxiliary fields, eight are border patrol stations and ten were established largely to encourage flying among Reserve officers. However, all of these stations fulfill a variety of needs. They supplement the larger Air Service stations in each of the Corps Areas, fit in with the general scheme of airways development and are available for all federal and legitimate commercial activities.

Location

In the establishment of new flying fields and in the selection for retention of certain ones among those which were operated during the war, every possible effort has been made to develop a comprehensive airways system, to stimulate commercial aeronautics as well as to fulfill the strategic requirements of national defense. The achievement of this ideal has been quite impossible due to the reduced strength of the Air Service, to the enforced concentration of activities and to the consequent lack of operating personnel necessary for a full complement of stations.

The map included herewith gives a bird's-eye view of the Air Service set-up in the field. Major activities are indicated by a star. There are fourteen of these, including the five Special Service Schools, the Experimental Station, the five Air Intermediate Depots and three of the Active Flying Fields. The deficiency of these major activities which represent our military potentiality in the air, is particularly noticeable on the South Atlantic and on the Pacific Coasts.

Stations indicated by a square are of second importance and include all of the remaining Active Flying Fields.

The twenty-six circles represent the eight border patrol stations together with the rest of the auxiliary and intermediate fields.

Forty-eight stations are thus shown on the map and these

may be considered as representing the entire active Air Service establishment within the continental limits of the United States. They are exclusive of the eight inactive fields, the five properties awaiting sale, the bombing area, the radio site and the hangar site. These omitted activities which number sixteen, together with the seven stations in our insular possessions make up the grand total of seventy-one as reported at the opening of this chapter.

Ownership and Cost.

Forty-five of the seventy-one stations are government owned, twenty-five are leased by the War Department and one is on property leased by the Navy Department.

Of the forty-five government owned stations, nineteen are on reservations purchased or set aside primarily or originally for other purposes and the establishment of Air Service activities within such reservations has been in practically every case a secondary consideration. These nineteen stations include thirteen in the United States and two each in the Philippines, Hawaii and Panama. Those in the United States are made up of one Air Intermediate Depot, seven Active Flying Fields and five auxiliary airdromes, while those in our insular possessions are all active flying fields with the exception of one auxiliary field in Panama.

The nature of the original acquisition of these reservations and the inaccuracy of data as to the area occupied, prevent even a rough estimate as to the proportion of the original cost which might be properly charged against the Air Service. However, the improvements and installations for aviation purposes at these nineteen stations represent an expenditure of \$6,580,385.*

The remaining twenty-six government owned properties were all purchased during or shortly after the war for aviation purposes. They include five Air Service Special Service Schools, four Air Intermediate Depots, three Active Flying Fields and the thirteen properties listed as inactive or awaiting disposal by sale. The original cost of these twenty-six stations was \$9,167,750. and \$62,391,661. has been expended for improvements. Of these sums \$1,669,125. in the first instance and \$29,842,125. in the second may be charged against the thirteen stations listed as inactive or awaiting disposal by sale. On this basis the thirteen out of the twenty-six government owned properties acquired primarily for aviation purpose, which are really on an active status represent a total outlay for real estate and improvements of \$40,048,161. This figure added to the cost of improvements at sta-

*All of the figures as to cost and acreage in this chapter are given in round numbers and although necessarily approximate they are sufficiently accurate for all practical purposes.

tions located on previously held government reservations gives \$46,633,546. as the total cost valuation of government owned Air Service stations on an active status.

Considering now the twenty-five Air Service properties held under lease by the War Department, it is shown that these are all within the continental limits of the United States and consist of:

- 1 Experimental Station
- 1 Active Flying Field
- 8 Border Patrol Stations
- 12 Auxiliary and Intermediate Landing Fields
- 1 Bombing Area
- 1 Hangar Site
- 1 Radio Site

These properties are leased annually with renewal privileges varying from one to one hundred years. For the fiscal year 1923, the rental amounted to \$46,949.30 and of this total \$33,498.80 was for an Experimental Station (The Air Service Engineering Division, McCook Field, Dayton, Ohio) and \$7,500. for an Active Flying Field (Wilbur Wright Field, Fairfield, Ohio). The eight Border Patrol Stations involve a total of \$1,915. leaving \$4,035. for the fifteen remaining stations, chief among which is the Bombing Area near San Antonio, Texas at \$3,000. per annum.

The proportionate share of rent borne by each of these various stations is reflected somewhat in the total cost of improvements with which they are severally charged. McCook Field and Wilbur Wright Field come first and second with \$3,000,000. and \$2,342,716. respectively. Hangars and other improvements at the eight Border Patrol Stations amount to \$140,500. and the remaining fifteen stations are provided with installations valued at \$148,000.; a total of \$5,631,216. for improvements at these twenty-five leased properties.

Size and Suitability

No figures are available upon which to base an estimate of the area occupied by Air Service activities on the nineteen government reservations or on the site leased by the Navy Department. The remaining fifty-one properties however are made up of 17,443 acres of government owned land and 4,669 acres held under lease. Assuming that the twenty excepted stations have an average area equal to the average of the fifty-one known properties the total for the seventy-one would be about 30,800 or roughly 48 square miles.

The ideal flying field requires a clear level unobstructed area at least a mile square. With the exception of those awaiting disposal by sale, the majority of the twenty-six government owned properties purchased primarily for aviation purposes, fulfill this requirement. Even among the eight inactive stations all except one, Park Field, Tennessee, are excellent sites and could be readily converted to an active status in case of emergency or to accommodate an increased Air Service.

The twenty-five leased properties have all been selected from the best accommodations available for the particular purpose in view and most of them are entirely satisfactory.

It may be stated then, as a general summary, that with the exceptions noted hereinafter, all of the Air Service stations and activities at present retained on an active status are admirably suited for the fulfillment of the requirements imposed upon them. The exceptions are Bolling Field, Anacostia, D.C., Selfridge Field, Mt. Clemens, Michigan and McCook Field, Dayton, Ohio.

Bolling Field consists of 275 acres of government land set aside as a military reservation under the provisions of the Army Appropriation Act of 1921. It is a long irregular strip bounded on one side by the Anacostia River and on the other by a range of low wooded hills.

Due to its unfortunate shape, airplanes, in landing, must at all times parallel the major axis of the field regardless of the wind direction. This restriction coupled with the unfavorable surroundings and the poor drainage facilities render it unsuitable for any but the most limited flying activities. These undesirable features have been appreciated from the very start and improvements for the present site have been withheld in the hope that another and better location might be secured.

The desirability of having an attractive, efficient and accessible Air Station in the immediate vicinity of Washington is readily apparent, not only as a military requirement but as an added attraction and an educational influence upon the thousands of prominent citizens who visit this city yearly.

The two large areas now under reclamation on the Virginia side of the Potomac River, together with their adjoining properties present possible solutions to the problem. The first of these, just above the Highway Bridge, has been given careful consideration and although the ground is extremely favorable, much of it is now occupied by the Department of Agriculture and the possibility of obtaining it for military purposes is extremely remote. Moreover, the contemplated bridge across the Potomac River between Arlington and the Lincoln Memorial would when completed seriously interfere with flying activities.

The other possibility, a promising site just below the Highway Bridge, seems to present none of these difficulties. It is within ten minutes of the State, War and Navy Building by automobile or motor cycle, an important consideration in any emergency requiring the use of airplanes for transportation or communication purposes. It is therefore recommended that every effort be made to secure this location for the establishment of a model Air Service station suitable for all military purposes and in keeping with the beauty and charm of the National Capital.

Selfridge Field located on the western shore of Lake St.

Claire in the immediate vicinity of Mt. Clemens and about twenty-five miles north of Detroit, is one of the government owned properties purchased shortly after the war for aviation purposes. It consists of approximately 642 acres of low marshy land and although the location near the northern boundary of the United States is admirable from a strategic point of view, the field itself is ill adapted for retention as a permanent station. Constant pumping is necessary to keep it from flooding and if permanent buildings were attempted the cost of construction would be excessive. Due to the increase of real estate values in this locality it is believed that the \$190,000. expended for the purchase of the land can be more than realized on disposal. The buildings and improvements constructed during the war were of a temporary nature, are rapidly deteriorating and would in any event demand replacement in a few years.

It is therefore recommended that Selfridge Field be scheduled for abandonment and disposal by sale and that steps be taken at once to provide for the purchase of another and a suitable site in that general locality.

Such a project should contemplate the immediate initiation of a permanent construction program in order that the important activities of Selfridge Field may be carried on without interruption and transferred to the new field upon its completion.

McCook Field, the present location of the Air Service Engineering Division comprises 250 acres of leased land on the outskirts of the city of Dayton, Ohio.

This site is entirely inadequate for the extensive and important experimental work with which the division is charged. Its location renders it not only unsuitable but positively dangerous for flying purposes and the constantly increasing rental involved presents a serious monetary consideration. The buildings are of a temporary character, insufficient in number and very expensive to maintain. No provisions exist for quartering the sixty or so officers normally on duty at the station and they are obliged to live in the city where accommodations are limited, expensive and inconvenient. For the fiscal year 1923 the cost of the twenty-eight leases involved was \$33,498.; for 1924 this figure increased to \$51,417. and present negotiations indicate an annual rental in excess of \$68,000. for subsequent years with the probability of complete withdrawal of renewal privileges by the principal owners after the close of the fiscal year 1925. Since 1917 the city has gradually built up around this property, restricting the approaches and rendering its meagre area still less suitable for the operation of aircraft. The following extract is quoted from the Report of the Inspector who investigated, upon specific instruction from the Secretary of War, a recent serious accident at McCook Field:

"Conclusions:

- (7) McCook Field is wholly unsuitable and dangerous as a flying field, and, for the safety of flyers and of citizens of Dayton should be abandoned at

the earliest possible date.

- (8) The land offered the United States Government by the citizens of Dayton is suitable for flying purposes and should be accepted.

"Recommendations:

- (3) That McCook Field should be abandoned at the earliest possible date."

The unsatisfactory conditions surrounding McCook Field and the inadequacy of the field itself have been appreciated ever since the war, and a persistent effort has been made to find a suitable permanent location.

After several years of study and investigation it is believed that the 4,000 acre tract offered by the citizens of Dayton at the nominal price of \$1.00 presents the most practical solution to the problem.

This site, located about five miles from Dayton, includes the present Wilbur Wright Field, an active flying field held under lease at a rental of \$7,500. per annum, and is adjacent, conjointly with that field, to the Fairfield Air Intermediate Depot. Although not absolutely ideal, it offers many advantages, is eminently well suited for flying purposes and has been tentatively accepted by the Secretary of War.

In a letter dated June 29, 1923 the Chief of Air Service recommended to the War Department the inclusion of \$1,000,000. in the 1924 Budget for the initiation of a building program on this property. Such a sum would provide for fencing and grading, for the installation of gas, water, power and drainage facilities and for the erection of warehouses and a central heating plant, all of which are necessary before the construction of quarters, hangars, machine shops and laboratories is undertaken.

An additional \$4,000,000. will be required for the completion of this project and these funds should be provided all in 1925 or else divided equally between 1925 and 1926.

The importance of this matter can hardly be overestimated and it is urged that no effort be spared to secure the necessary appropriations at the proper time.

Construction Projects

Construction at Air Service stations is divided into two distinct classifications insofar as the source of the funds is concerned, although the actual work is in all cases handled by the Quartermaster Corps. Hangars, gas plants, repair shops, technical buildings and landing and take off runways are paid for and main-

tained from Air Service appropriations, while all other buildings, quarters and utilities, together with the maintenance thereof, are charged against funds applicable, for that purpose, to the Army at large.

Of the first classification, major projects in excess of \$2,000,000. were completed during 1923 from funds appropriated in previous fiscal years. These included the large airship hangar at Scott Field at a cost of \$1,390,000. and the installation of gasoline and oil storage facilities in both Panama and Hawaii.

For the fiscal year 1923 funds for this purpose were limited to \$324,000. and have precluded the initiation of any but the most urgent projects. Among these the principal item has been the erection of new hangars and the maintenance of those already in service. The covering of steel hangars erected during the war is being replaced as rapidly as possible with asbestos protected sheathing and in addition, sliding steel doors are being substituted for the canvas curtains originally provided.

Construction work from funds appropriated for the Army at large has been extremely limited. About the only items worthy of note are the eleven sets of temporary officers' quarters at Bolling Field and two sets of officers' quarters at Langley Field.

In this connection attention must be again invited to the deplorable conditions which prevail at all Air Service stations. With the exception of a very few isolated permanent buildings the entire Air Service outlay was initiated during the war, pushed to a hasty conclusion and designed to last from but two to four years. These accommodations have now been in continual use since 1917 and while the maintenance costs mount higher and higher with each succeeding year the living conditions become more and more unsatisfactory. Langley Field is the only Air Service station with an appreciable amount of permanent construction and even Langley has no barracks for enlisted men except the one building for which Congress recently authorized an expenditure of \$85,000. A complete reconstruction program is imperative and nothing short of immediate and general relief can be relied upon to meet the situation.

In anticipation of this necessity a general plan has been prepared which will be applicable in principle to all of the major Air Service stations. This plan which is believed to represent the ideal outlay for an Air Station, provides for the concentration of all facilities at the corner of a square field in such a way as to insure the maximum efficiency in ground activities and a minimum interference with the operation of aircraft. While the details have not yet been worked out a tentative arrangement of buildings has been determined upon and is shown in the attached print.

It is hoped that such a program may be initiated without delay and prosecuted in such a manner as to permit a continued and progressive construction of permanent buildings at selected stations without interfering with present accommodations. A portion of the

buildings embraced in the general plans for the different stations should be authorized each year, and, in order to insure the construction of those most urgently needed, a priority schedule should be outlined and subjected to a careful annual revision.

CHAPTER IV

THE AIR SERVICE MEDICAL SECTION

Organization

The Air Service Medical Section was organized during the World War, in correlation with the rapid development of aviation at that time. Its purpose was to study the effect of flying from a medical point of view in order that aircraft accidents attributable to physical unfitness might be reduced to a minimum. This was accomplished through the determination of proper physical requirements, through the conduct of frequent and thorough examinations, and through close personal contact with the flying personnel. The rapid strides in this new branch of medicine, made during the period of emergency have formed the basis for continued research and progressive development since the cessation of hostilities and it is gratifying to report that not one of the 264 major and minor accidents recorded during the year can be considered as resulting from the physical or mental condition of the pilot.

Under its present organization the Medical Section consists of a chief and one assistant in the Office of the Chief of Air Service, a School of Aviation Medicine at Mitchel Field, Long Island, and a corps of Flight Surgeons on duty at the various stations. It includes among its other duties and function the supervision of all matters pertaining to sanitation and hospitalization at activities under the direct control of the Chief of Air Service.

The School of Aviation Medicine

The former "Medical Research Laboratory and School for Flight Surgeons" was officially recognized as a special service school in 1921 and redesignated "The School of Aviation Medicine" in the fall of 1922.

In addition to the continuing research work carried on by its staff, the school provides three distinct courses of instruction for Medical personnel. The first, for Flight Surgeons, is of about four months duration and graduates two classes each year. The second is a two months course for Flight Surgeon's Assistants and is given at such times as students become available. The third, a correspondence course for Medical officers of the National Guard and Organized Reserve, extends over a period of two years and covers practically all phases of Aviation Medicine. During the year fifteen Medical Officers of the Army and twenty of the Navy were graduated as Flight Surgeons while three Reserve and one National Guard officer completed a month of practical training in preparation for the correspondence course.

Flight Surgeons

Medical officers of the Regular Army upon graduation from the School of Aviation Medicine are designated Flight Surgeons and assigned to duty at the various Air Service stations. During the year just completed ten new Flight Surgeons were appointed and three were relieved from such assignment making a total of forty-eight on June 30, 1923.

These officers continue to render efficient service and occupy a very definite and important place in Air Service activities. As has been indicated in the opening of this chapter their primary function is the prevention of loss of life and property through the elimination of accidents attributable directly or indirectly to the physical condition of the pilots. Under the provisions of the Act of Congress approved June 10, 1922, flight surgeons have again been placed on flying status and as a result of this enlightened legislation, have regained that close touch and sympathy so essential to a proper appreciation of the difficulties and anxieties of flying duty.

A thorough physical examination is given to all candidates for flying training and the same is required semi-annually for officers and enlisted men on flying status. The total number of such examinations during the F.Y. 1923 was approximately 4200. The 901 Reserve officers included in this total represent an increase of 682 over the number examined in 1921 and may be considered as a slight indication of growing interest in aviation on the part of this class of personnel.

Accidents and Casualties

One of the important duties of flight surgeons is the investigation from a medical point of view of all aircraft accidents. The reports of these investigations are carefully coordinated with the report prepared by the Air Service engineering officer at the station and together therewith provide the data for an accurate cause analysis.

A total of 264 crashes, both major and minor in Army aircraft were recorded during the year. Of this number 261 were in airplanes and three in lighter-than-air craft.

The three airship accidents resulted in six serious injuries and four slight injuries; the 261 airplane accidents were of more serious consequences as is indicated by the brief summary given herewith.

Airplane Accidents

		<u>Pilots</u>	<u>Passengers</u>	<u>Total</u>
Killed	-	32	25	57
Seriously injured	-	12	11	23
Slightly injured	-	35	27	62
		79	63	142

A classification of the fifty-seven fatalities is shown in the following table:

Airplane Accidents

	<u>Pilots</u>	<u>Passengers</u>
Commissioned officers, Air Service		
Regular Army	26	1
Commissioned officers, other arms		
Regular Army		1
Commissioned officers, Air Service		
Reserve	4	3
Flying cadets, Air Service	1	
Enlisted men, Air Service, Regular		
Army	1	16
Enlisted men, Air Service, Reserve		1
Civilians		3
	32	25

The Air Service honors the memory of these gallant officers and men who gave their lives no less in the cause of national defense than in the development of aviation. To those bereaved it offers its deepest sympathy and the determined assurance that the loyalty, devotion and courage of their loved ones shall not have been sacrificed in vain.

CHAPTER V

FINANCE

Estimates, Appropriations and Expenditures

In preparing the budget for the F.Y. 1923, a tentative allotment of \$13,064,068.00 for Air Service purposes was made by the War Department. Actual requirements were, on the other hand, computed by the Chief of Air Service at \$26,263,908.00 and in submitting these estimates particular stress was laid on the urgent necessity of providing sufficient funds for the production of new aircraft. Reserve supplies accumulated during the war are now practically exhausted, the present equipment, already inadequate, is rapidly deteriorating and no provisions have been made for its replacement. The length of time required in the production of new aircraft makes it imperative that funds for this purpose be appropriated several years in advance of the actual needs.

As a result of these presentations the preliminary estimate submitted to the Director of the Budget by the War Department contained an item of \$15,000,000.00 for Air Service purposes, a modest increase of about \$2,000,000.00 over the previous tentative allotment. Unfortunately even this inadequate figure was not allowed to stand and as finally included in the Army Appropriation Act, funds for the maintenance and operation of the Air Service for the F.Y. 1923 came to a total of \$12,700,000.00. The classification and the maximum and minimum limits imposed are indicated herewith:

Pay and expenses of civilian personnel, other than experimental and research work, not more than	\$ 2,750,000.00
Experimentation, conservation and production of helium, not more than	400,000.00
Experimental and research work with airplanes, or lighter-than-air craft, and their equipment, including pay of civilian employees, not more than	3,500,000.00
Production of lighter-than-air equipment, not more than	450,000.00
Improvement of stations, gas plants, and hangars, not more than	324,000.00

Purchase of new airplanes and their equipment,
not less than \$ 2,053,000.00

Damages to persons and property by aircraft
where claim is not in excess of \$250.00, not
more than 4,000.00

Other purposes 3,219,000.00

TOTAL \$12,700,000.00

The allocation of these funds by the Chief of Air Service is given in the following table:

	Approved Quotas	Amount of Allotments	Balance
Expenses of civilian employees	\$2,637,000.00	\$2,635,626.70	\$1,373.30
Normal Operating Expense	2,865,814.65	2,861,062.84	4,751.81
Claims for Damages	1,500.00	1,500.00	None
Improvement of stations, gas plants and hangars	313,507.24	313,507.24	None
Production new aircraft engines and accessories, airplane	2,989,497.11	2,989,415.23	81.88
Production new aircraft, engines and accessories, airship	338,100.00	338,009.45	.55
Helium, experimentation, conser- vation and production	400,000.00	400,000.00	None
Experimental research engineer- ing and development	<u>3,154,581.00</u>	<u>3,154,581.00</u>	<u>None</u>
TOTAL	\$12,700,000.00	\$12,693,792.46	\$6,207.54

Each station is now required to submit detached requisitions by purpose number for all supplies and services and commanding officers are called upon to personally investigate these requisitions and see that they cover only essential requirements. This method has proven most efficient in controlling from this office expenditures in the field and has an added advantage in that the limited funds available may be used where they are most needed. The results obtained are reflected in a saving of \$265,161.15 over the F.Y. 1921 and a saving of \$402,822.29 over the F.Y. 1922.

War Contracts and Sales

Investigation of thirty-two war contracts, conducted in accordance with instruction of the Secretary of War have been completed

and indicate a total overpayment in excess of \$30,000,000.00. As a result a special board was appointed in the Air Service to audit these accounts to determine the actual amount overpaid to each contractor and to recommend further appropriate procedure.

The following cases have been completed and forwarded to the Department of Justice for recovery of the amount indicated:

Duesenberg Motors Corporation	-	\$1,060,207.32
Goodyear Tire and Rubber Co.	-	158,142.79
Grand Rapids Airplane Co.	-	297,722.25
Hayes Ionia Company	-	59,832.31
Herbrand Company	-	193,657.00
Sutton Chemical Company	-	182,275.36
Shelby Chemical Company	-	104,811.47
Lewis Spring & Axle Company	-	15,632.23
B.F. Goodrich Company	-	106,055.83
Engle Aircraft Company	-	26,439.26
C.R. Wilson Body Company	-	11,745.26

The ten remaining cases listed below are still under consideration by the Air Service Board. All of them involve many complicated legal and accounting features and will require careful study before final decision is made:

- Bon Air Coal and Iron Company
- Fisher Body Corporation
- Ford Motor Company
- General Motors Corporation
- Packard Motor Car Company
- Nordyke & Marmon Company
- Standard Aircraft Corporation
- Union Switch & Signal Company
- West Virginia Pulp & Paper Company
- Willys Overland Company

The Department of Justice has reported a recovery of \$1,550,000.00 in the case of the Lincoln Motor Company, previously submitted by the Air Service. The following cases are reported by the Department of Justice as in the courts for suits to recover amounts claimed as overpaid:

- Duesenberg Motor Company
- American Electro Products Company
- Dayton Wright Airplane Company

The Duesenberg Motor Company suit has been referred to a special master for determination as to amount that shall be returned to the United States.

During the war, sales of equipment and materials were made to contractors and government agencies. The following statement shows the work that has been accomplished during the fiscal year in settlement of these accounts:

	<u>Contractors</u>	<u>U.S. Govt. Depts.</u>	<u>Total</u>
Balance due U.S. July 1, 1922	\$448,165.96	\$30,010.98	\$478,176.94
Transferred to Dept. of Justice	400,694.19		400,694.19
Transferred to General Accounting Office	13,113.10		13,113.10
Collections	4,076.42	35.63	4,112.05
Balance June 30, 1923	30,282.25	29,975.35	60,257.60

Claims

A total of 105 claims for damages to private property and persons due to the operation of Army aircraft were received and reviewed by the Air Service during the year. The following is a summary of the action taken:

69 claims approved and paid F.Y. 1922	\$1,764.75	
F.Y. 1923	<u>1,325.36</u>	\$3,090.11
3 claims approved by Special Acts of Congress		6,059.21
3 claims to Chief of Finance for settlement- not payable from Air Service appropriation		725.29
8 claims disapproved		5,667.30
4 claims pending in Congress - amounts not stated		
11 claims held pending special legislation		31,948.10
7 claims under investigation		<u>387.01</u>
105		<u>\$47,877.02</u>

Conclusions

It is considered that the annual appropriations for the support of the Air Service since the World War have been inadequate. In view of the rapid development of aviation the requirements of continued engineering and research work constitute an imperative need while the shortage of aircraft occasioned by the lack of funds for replacement will shortly present an extremely critical situation. It is therefore urgently recommended that a program involving an appropriation of no less than \$25,000,000.00 a year, be adopted and adhered to until this service is properly equipped and on an efficient operating basis.

CHAPTER VI

ENGINEERING AND RESEARCH

Organization

The Air Service Engineering Division located at McCook Field, Dayton, Ohio, is charged with the design, experimental construction and test of airplanes, airships, aircraft engines, armament installations and miscellaneous accessories with a view to the development of the highest possible type of equipment for all Air Service purposes.

In carrying out this vitally important work every effort has been to employ the most efficient practices now recognized in the commercial world. The Engineering Division operates under carefully prepared programs, maintains an accurate system of cost analysis and conducts its numerous and varied activities with the utmost thoroughness and economy. Under such trying conditions as have been imposed by the continued curtailment of appropriations the splendid achievements of the division are particularly noteworthy and have been made possible only through the unselfish loyalty and whole-hearted cooperation of its entire personnel.

The organization of the Division as of July 1, 1923 is shown in the attached chart.

Personnel

The military personnel of the Engineering Division consists of eight majors, one captain, thirty-three first lieutenants and one second lieutenant, a total of forty-three Air Service officers as compared with fifty-two for the F.Y. 1922. In addition, five officers, two warrant officers and eleven enlisted men of other arms are attached on special duties.

In view of the limited number of officers in the Air Service fully qualified along technical lines, the requirements of foreign service and duty with troops have imposed a particularly hardship upon the Engineering Division. In many cases officers have been relieved from duty at the period of their greatest usefulness with a resultant loss of efficiency and progress. However, there appears to be no means of avoiding this difficulty until the commissioned strength of the Air Service shall have been increased to such size as will permit a reasonable excess of personnel to fill these recurring vacancies.

Among the civilian personnel the inadequacy of funds available for their employment has resulted not only in a reduction of force but has prohibited any increase in pay for the many employes who by virtue of long service are considered deserving of additional compensation.

The Engineering Division entered upon its work for the F.Y. 1923 with a civilian personnel representing a pay roll of \$2,169,000. Since the appropriation for the year provided only \$2,000,000, for this purpose a series of eliminations covering a period of four months was instituted and the total strength was gradually reduced from approximately 1400 to 1180. In this process it was necessary to retain on the pay roll a maximum number of employees at a minimum cost to the government. It is believed that the average salary paid to the highly technical men is lower than it should be, and the problem of retaining a competent and contented personnel is one of the most difficult problems with which the division is confronted.

Appropriations and Expenditures

Funds available for the conduct of the research and experimental activities of the Engineering Division for the F.Y. 1921 amounted to \$5,000,000. In 1922 this figure was reduced to \$4,300,000., and in 1923 to \$3,500,000.

To meet this final cut of \$800,000., a saving of \$200,000., was effected through the discharge of approximately 220 civilian employes, and \$600,000. was eliminated from important experimental projects.

A brief summary of expenditures is given in the following statement:

Civilian employees, pay and travel expenses	\$2,042,163.95
Aircraft, accessories and spare parts	307,832.16
Engines, accessories and spare parts	188,216.42
Combat material for aircraft	38,009.45
Equipment, general	155,280.19
Material research	20,977.15
Printing and binding	6,481.51
Stock replenishment	221,899.63
Plant, maintenance and improvement of	152,139.54
	<hr/>
	3,133,000.00
 To Advisory Committee for Aeronautics	 12,000.00
Reserve, Office Chief of Air Service	355,000.00
	<hr/>
	\$3,500,000.00

The continued decrease in appropriations permits the undertaking of only the most immediate and important problems and practically precludes the possibility of research work. The effects of this have already been made too apparent through failures due to unknown strains and stresses in high speed airplanes. Fundamental research though a tedious process, and one which is fruitful only after long periods of

patient application, is nevertheless the vital need and the surest means of real advancement in the science of aviation. It is urgently recommended that increased appropriations be made available for this purpose in subsequent years.

Outstanding Accomplishments

Airplanes

The Engineering Division TP-1 airplane, a two seater pursuit biplane with fuselage of welded steel tubing, powered with a supercharged Liberty 12 engine, attained a high speed of 149.8 M.P.H. at an altitude of 20,300 feet. In conjunction with this the CO-5, a corps observation airplane has been produced which is practically the TP-1 with however a slight change in the location of the engine and the substitution of a nose radiator rather than the side radiators.

The Barling bomber, the largest airplane ever built in America, with a span of 120 feet, an overall length of 65 feet and a height of 27 feet has been completed and assembled. Powered by six Liberty 12 engines, utilizing six propellers (four tractors and two pushers), it is estimated that this airplane will attain a speed of 100 miles an hour and climb to 10,000 feet. Its gross weight is about 41,000 pounds, with a carrying load of eight tons.

In line with general experimentation, the Engineering Division supervised the design, construction and test of the Thomas-Morse, Loening and Curtiss racers entered in the Pulitzer Races. In the case of the Verville-Sperry racer, the design was actually accomplished by Air Service Engineering personnel. In order to increase the speed of the Curtiss R-6 racer, the Engineering Division designed and built a long propeller embracing a narrow blade and a low angle of attack and laid out to develop 230 M.P.H. Using this propeller over a one kilometer course the World's speed record of 236.9 M.P.H. was set for that distance. The Verville-Sperry racer, although it did not seriously compete in the Pulitzer Races, is a remarkable development in that it is readily adaptable to pursuit work and is at the present time the fastest monoplane ever built. Recently this airplane equipped with extra fuel tanks, established a new record for the 500 kilometer distance. A DH-4B airplane was remodeled to carry 201 gallons of gasoline and thus equipped, set a new World's record for each of the 100, 1500 and 2000 kilometer courses. The T-2 airplane powered by a single Liberty 12 engine, piloted by Lieutenant Kelly and Lieutenant MacReady established the World's endurance record and achieved a non-stop flight from New York to San Diego.

The various systems of fire prevention presented to the division have all included the insurmountable defects of excessive weight, complicated construction and uncertain operation. Careful investigation and analysis indicate the proper location of tanks, so that spilled gasoline will not be sprayed over the hot engine and flaming exhaust manifolds, as the most logical and satisfactory solution. A DeHaviland plane has been equipped with gasoline tanks slung under the fuselage and another has been redesigned with tanks built into a thick lower wing section

on each side of the fuselage. Flight tests are now being conducted with these planes. Another interesting experiment with the DeHaviland is the installation of an inverted Liberty engine. The engine has been run upside down with satisfactory results and placed in the airplane in this manner permits of greatly increased visibility to the front.

The Engineering Division has developed a system of static testing entire airplanes which is one of the most highly perfected methods now in use. During the year five complete airplanes and various other items such as box spars, bomb racks and shock absorbing devices were so tested.

Twenty-five different models of airplanes were given flight and performance tests. This simple statement is of vital importance considering that all of these craft were of new and untried design, none had ever been flown before and little was known of their characteristics save the theoretical compilations as to speed and balance. From among sixteen other types which have been in the process of development an improved training plane has been adopted and put in production.

Balloons and Airships.

The Engineering Division is supervising the construction of the RS-1, a semi-rigid airship for long range reconnaissance work. This craft designed for the use of helium has a volume of 700,000 cubic feet, a lift of 42,800 pounds and a useful carrying capacity of 17,675 pounds. Its speed is estimated at 70 miles per hour, with a ceiling of 15,000 feet. The main feature of the construction is an interior keel patterned after the Forlanini design, attached to and supported by the envelope and by interior fore and aft curtains.

An air-tight aluminum cabinet for high altitude balloon flights capable of withstanding an internal pressure of ten pounds per square inch is being constructed. This cabinet is provided with non-frosting glass windows and is designed to carry 4,000 pounds of shot ballast.

A highly mobile balloon winch, designed by the Engineering Division, has been built and delivered for test. This winch, mounted on a four-wheel drive chassis, is capable of attaining a speed of 35 M.P.H., and is so equipped as to allow the installation of a track-laying adapter for rough or very soft terrain. One engine furnishes power both to the chassis and to the windlass, and is capable of hauling down a type R observation balloon at the rate of 1600 feet per minute in a 20 mile wind. A special windlass transmission has been developed whereby the hauling speeds can be varied while the balloon is being hauled down without cessation of torque on the winding drums.

An experimental grab winch for maneuvering airships is under construction. This machine grabs the drag rope when it is dropped and immediately begins to haul down at the desired speed thus accomplishing the work of a great number of men. The main vehicle itself is of the track-laying type; the grabbing device and travel being accomplished by the use of one motor.

Engines and Accessories

A barrel type engine built in collaboration with Almon Motors, Inc., and test work on the Curtiss D-12 engine and on the Wright radial engine R-1 have been among the outstanding features of engine development during the year.

Experimentation in supercharger development has brought out the side type turbine supercharger as being the most important development along this line. Mounted on the side of the engine, the supercharger is kept cool while running, presents a much cleaner installation and at the same time offers a greatly reduced head resistance. In addition a geared supercharger, particularly adaptable to the pursuit engine and designed to meet the rapid acceleration of such types has been developed. The altitude records for both single seater and multi-engined planes have been made possible only through the use of superchargers.

Two geared drives one for a central power plant consisting of four Liberty engines and another for a racing airplane, equipped with two Curtiss D-12 engines, arranged in tandem have been developed and placed on order.

A great deal of experimental and research work has been done in connection with air cooled cylinders. Two very successful types have been produced. The first of these is now being used, one on the Lawrence J-1 engine; the other in the Wright radial 9-cylinder air cooled engine.

Continued and satisfactory progress has been made in the development of spark plugs, carburetors, mufflers and other accessories and parts. In view of the fact that the Mercury-cooled valves are patented and quite expensive, the Engineering Division has developed a valve, which, utilizing some of the uncommon salt compounds, is superior in performance to the Mercury-cooled valve. This valve in use shows little scaling or other detrimental heat effects, and when running does not heat up to a glow.

Propellers

A wood propeller 17½ feet in diameter, with a balsa wood core and covered with a skin of 1/64 inch mahogany veneer has been designed and built for the RS-1 airship. There are six plys of veneer at the tip and forty-five at the hub, giving a weight of only 110 pounds as compared with 300 pounds for a standard propeller of the same size.

A drop forged aluminum propeller has been developed for use on Liberty engines. A set of forging dies has been completed and it is believed that the propeller can be finished in the dies thus permitting rapid and inexpensive production.

It has been the policy of the Engineering Division to accept no propellers regardless of the source unless they have satisfactorily passed the destructive whirling test. The wisdom of this is evidenced by the fact that not a single propeller so tested has failed while in service. During the year 106 such tests were run by the Engineering Division on

experimental steel duralumin reversible and adjustable propellers. Of this number thirty-seven were for the United States Navy Department alone.

Armament

The Engineering Division inspects and supervises the placing of armament installations on aircraft and in many cases actually designs the equipment. The automatic calculator of the Seversky bomb sight has been tested and an average of ten flights ranging between 6,000 and 13,000 feet altitude indicates an error of $1/2$ a degree or eighty feet. The Estoppey D-1 bomb sight now ready for production was recently tested at an altitude of between 3,000 and 4,000 feet. Results were more than satisfactory and for high altitude and cross wind bombing this sight is the best yet developed.

An internal bomb rack is being designed which is capable of carrying forty 100-pound, fourteen 300-pound, eight 600-pound or four 1100-pound demolition bombs. Another rack capable of carrying one 4000-pound bomb has been constructed and tested with satisfactory results. By using Quartermaster Corps four wheel drive (TTL) truck, a special body and bomb carrying equipment has been devised to carry one 4000-pound bomb or an equivalent load of smaller bombs and also provides a mechanical means of loading and unloading. The truck will be capable of attaining a speed of forty miles on good roads and has enough power to carry this load over soft or rough terrain.

Among the many other important projects handled are: synchronizers for Nelson gun control; electric machine gun synchronizers; wing tip flare bracket, which eliminates glare and reduces fire hazard; flare rack and release handles; Foster type gun mount for 30 caliber machine gun; double Browning floor mount for mounting two 30 caliber guns on floor of an airplane; optical sight, which supersedes the unit gun sight, embracing a reduction of weight and overall dimension, and an increased field of vision and speed of compensation. In addition, a wind vane sight is being designed which is capable of being adjusted to compensate the various speeds and at the same time maintain perfect balance.

Miscellaneous Equipment

Aircraft equipment can be generally classified as instruments, electrical appliances, photographic equipment, radio equipment and parachutes. More than ninety projects involving design, development and test of various items under these major classifications are under way at McCook Field. The advent of vertical scale instruments has led to the development of a board using this type alone. The advantages to be gained are compactness, standardization for all types of airplanes and less interference with armament installation.

Very successful test flights have been conducted with a new running light, consisting of a twenty-one candle power bulb enclosed in a colored celluloid streamline. These lights have no blind angles and were visible for a distance of from four to five miles by observers on the ground. An additional item of electrical equipment is the new landing light for installation on aircraft, known as Model 1923. This

is smaller, more compact and lighter than the original model. Fifteen sets of these lights have been purchased and will be installed on a number of airplanes for service tests.

Parachutes have now been standardized and all that have been delivered under contract are being given a thorough test. The fact that two pilots recently saved their lives by jumping from airplanes which had become disabled in flight, has firmly established the importance of this item of equipment and orders have been issued requiring their use on all Army aircraft.

The Engineering Division has developed a hospital marker which is clearly recognizable at an elevation of 25,000 feet and at that altitude is discernible for a distance of fifteen miles measured horizontally. This marker is portable when packed, takes up but a small space and is easily and cheaply constructed.

Considerable progress has been made during the year in aerial photography. A 36 inch Tessar type lens for high altitude work has been submitted by the Eastman Kodak Company. This is one of the few of this type ever produced in America and the utmost cooperation is being offered to stimulate the manufacture of fine lenses in this country. The Bagley tri-lens camera, equipped with a fourth chamber has been perfected at McCook Field by Major Bagley of the Engineer Corps. In a recent test with this camera 2,200 square miles of terrain were photographed in one hour and fifteen minutes.

Material

The investigation of new materials is constantly under way and the Engineering Division has been accorded recognition for the great progress made in metalography of aluminum alloys.

A casting alloy with a tensile strength of 45,000 lbs., per square inch has been developed and can be used in cases where it is feasible to lighten a structure by decreasing the webs and lugs. A magnesium alloy having two-thirds the weight of aluminum has been used in making instrument cases and other special castings where resistance to corrosion is unimportant. Methods of casting these alloys have been fully perfected.

An enamel has been developed for air-cooled cylinders which will stand baking temperature of 500° F. without cracking. This enamel is being used on the Lawrence engine, as well as engines being developed by the Engineering Division.

A protective coating for duralumin has been brought about by means of a sodium silicate treatment, which gives an excellent protection against the action of salt spray and practically inhibits corrosion.

Manila rope has been so developed to act as a substitute for Italian hemp rope.

Considerable research has been made relative to the fatigue resistance of non-ferrous alloys, notably magnesium-zinc, duralumin, and manganese-bronze. In order that these data may be available to the engineering profession at large, a paper has been prepared for the American Society of Testing Materials.

Technical Information.

One of the important functions of the Engineering Division is the dissemination of technical information and advice. Through the medium of bulletins, reports, photographs, lantern slides and motion picture films, a vast amount of research and engineering data is made available for the use of the service and as an aid and a stimulus to the aeronautical industry. In order that some idea may be gained as to the volume of this work the following statistics for 1923 are quoted:

6,000 photographs, 32,000 photographic prints, 1,500,000 blue prints, 1,500 lantern slides and 115,000 feet of moving picture film were produced; 10,730 documents and 500,000 blueprints were furnished to the various Air Service activities; 30 translations were made from the French, German, Italian and Spanish, 20 publications were compiled and 2,400 Engineering Division reports were assembled, bound and distributed.

In addition there is maintained at McCook Field a museum of aeronautical equipment together with a complete file of descriptive data available to all accredited persons interested in the development of aviation.

Conclusions

There are two vital considerations which seriously affect the continued efficiency of the Air Service Engineering Division. The first of these, the necessity for a larger and more suitable site than the present McCook Field, has been covered fully in Chapter III (see page 16).

The second is the imperative need for increased appropriations to provide adequate compensation for the civilian employees and to enable the division to meet the constantly increased demands of research and experimentation. Until the aeronautical industry of the United States has become firmly established the burden of original endeavor must be borne by government agencies and nothing short of an annual appropriation of \$5,000,000., will permit the Air Service to continue effectively the important work it has undertaken along this line.

CHAPTER VII

SUPPLY

Functions and Organization

The procurement, storage, issue and maintenance of all Air Service supplies and equipment, excepting that used for experimental purposes, the transportation of supplies, the compilation of cost statistics, Air Service functions relative to the rental, lease or purchase of land and buildings, and the preparation of Basic Tables of Allowances, Equipment Tables, and other such publications are under the direct supervision of the Supply Division. This division is divided into the Procurement Section and the Property-Requirements Section, and each of these is further subdivided into appropriate branches.

Procurement

The Procurement Section is charged with the procurement of all Air Service supplies and equipment, excepting those procured for experimental or development purposes and those small quantities procured by depots, stations and organizations, to meet emergencies.

Briefly stated its activities include, in the first place, the negotiations up to and including the execution of contracts, and in the second place, the inspection of raw materials and of equipment in the process of manufacture under such contracts.

The organization for this work includes the controlling office in Washington and District Offices in New York and Akron, Ohio. The personnel is made up largely of civilian inspectors, nearly all of whom gained their experience during the World War and are experts in their several lines.

Procurement methods employed are those required by law, as set forth in Revised Statutes and in Army Regulations. Wherever possible and practicable competition is required, and contracts in all cases carry with them appropriate patent license clauses. However, in accordance with policies approved by the War Department, every effort is made, through the judicious distribution of contracts, to maintain on an active status manufacturers equipped with plant facilities adequate for major aircraft production. The importance of such a procedure, serving in a measure to nourish an industry which must be capable of rapid expansion in time of war, can hardly be overestimated.

Competitive bidding is always required in the production of equipment developed by the Air Service Engineering Division, except where such development has been accomplished in cooperation with some particular manufacturer. In other cases where designs are made by outside agencies, and this is encouraged, and where the designing organization is the sole source of supply, contracts are awarded without competition, provided a fair price can be agreed upon.

In an effort to stimulate development, the Engineering Division occasionally offers awards in sums of money varying from three to five thousand dollars for the competitive design of types of airplanes required for particular military purposes. When any design is considered sufficiently meritorious, an order is usually given for not more than three such aircraft. These are thoroughly analyzed and tested from the engineering point of view, and, if entirely acceptable, an additional order of ten is procured and turned over to tactical organizations for service test. Should the planes thus exhaustively tested prove satisfactory and desirable for service use, contracts for larger quantities are then placed.

A recapitulation of Air Service funds obligated by the Procurement Section is given herewith:

Normal operating expenses,	\$1,637,042.69
Hangars and ground equipment,	71,265.42
New Aircraft, engines and accessories,	2,496,690.24
Experimental and research,	<u>9,328.67</u>
	\$4,214,327.02

Of this sum \$743,016.40 was transferred to the Navy and \$20,954.10 to the Ordnance Department.

In addition to the foregoing a total of 92 Inter-branch procurements, in the aggregate amount of \$736,755.61 were received for the procurement of Air Service material and equipment from other Bureaus and Departments of the Government.

The following list indicates the major items included in the total of \$4,214,327.02 given above:

Remodelling 180 DH-4's	\$ 885,197.67
8 Loening Seaplanes and spares	133,460.00
20 Primary Training Planes TW-3's and spares	182,500.00
3 "C" Type Airships	148,194.00
4 Spherical Balloons, 35,000 cu.ft. capacity	19,161.00
75 CD-12 Engines	712,500.00
Airplane and engine spare parts,	247,732.18
10 K-3 Cameras, Bodies for, and motors	42,481.50
Airplane Dope,	181,751.72
400 Parachutes,	128,360.00
Hangar material	138,420.98
Hydrogen Gas and minor equipment required	42,523.56
Aviation Gasoline	469,929.47
Aero Engine Oil	58,081.84
200 Micarta Propellers for Liberty Engines	85,400.00

Storage, Issue and Maintenance

The Property-Requirements Section is charged with all other functions relating to supplies. For convenience, a Branch Office is maintained at the Fairfield Air Intermediate Depot, Fairfield, Ohio, and charged with a considerable share of this work.

During the year the following Air Service supply activities were discontinued and the stations placed on an inactive status or otherwise disposed of:

Air Intermediate Depots at:

Richmond, Va.
Montgomery, Ala.
Americus, Ga.

Reserve Depots at:

Long Island City, N.Y.
Buffalo, N.Y.
Houston, Tex.

Temporary Storage Depots at:

Love Field, Dallas, Texas.
Ellington Field, Houston, Tex.
Chapman Field, Miami, Fla.
Dorr Field, Arcadia, Fla.
Morrison, Va.
Park Field, Millington, Tenn.

Savings in operating expenses thus effected aggregate approximately \$1,300,000.00 per year divided equally between the Air Service and the Quartermaster Corps.

An Air Intermediate Depot for Airship and Balloon equipment has been established at Scott Field, Belleville, Ill. Bulk stocks of lighter-than-air material have been concentrated at this Depot for the service of all stations and organizations requiring such property. Repair shops are also maintained in conjunction with this Depot, and are actively engaged in the repair, overhaul, and reconditioning of lighter-than-air equipment. The Air Intermediate Depot at Little Rock, Arkansas is active as a Storage Depot for the bulk stock of aeronautical engines and their spare parts. The Air Intermediate Depots at Middletown, Pa., Fairfield, Ohio, San Antonio, Texas and San Diego, Calif. (Rockwell) are operated as the main Supply Depots for the Air Service. The following Corps Areas, Territorial Departments, and other subdivisions, are grouped together for supply purposes, and served by the Air Intermediate Depots indicated:

1st Corps Area)	
2nd Corps Area)	
3rd Corps Area)	Middletown Air Intermediate Depot
Panama Canal Dept.)	
Porto Rico)	
District of Columbia)	
4th Corps Area)	
5th Corps Area)	Fairfield Air Intermediate Depot
6th Corps Area)	
7th Corps Area)	
8th Corps Area)	San Antonio Air Intermediate Depot
9th Corps Area)	
Philippine Dept.)	Rockwell Air Intermediate Depot
Hawaiian Dept.)	

At the Air Intermediate Depots at Fairfield, Ohio, San Antonio, Texas and San Diego, Calif., repair facilities are maintained for the repair, overhaul and reconditioning of heavier-than-air equipment damaged in service or rendered unfit through deterioration in storage.

Complete standardization in the organization and operation of Air Intermediate Depots has been effected during the year. Depots at which repair shops are maintained are divided into two main departments, viz., The Depot Supply Department, and the Engineering Department. The Supply Department is under the supervision of a Depot Supply Officer, and the Engineering Department, or repair shops, are under the supervision of an Engineering Officer. In addition to these major activities, appropriate auxiliary offices are charged with the details of: Inspection, Personnel, Cost, and Station Supply.

As a further step toward efficiency and economy in the procurement, storage, issue and maintenance of supplies, the compilation of a catalog, containing a standardized nomenclature for all items of Air Service equipment was initiated during the year and is being completed as rapidly as possible. Conformity with the descriptions and nomenclature prescribed in this publication is required in the preparation of all property records, reports, requisitions and communications.

A revised system of reporting Air Service property on hand and consumed, has been worked out and will shortly be put into operation. The success of any such effort to obtain worth while consumption statistics, depends primarily on the maintenance of accurate records by each issuing agency. Under the present regulations (Special Regulations 120 W.D.1921) expendable items when issued to an Organization are dropped from all Accountable Records and no records of these supplies are therefore available. A large percentage of Air Service supplies are necessarily classed as expendable and due to the regulations cited above, accurate consumption statistics cannot be obtained. In order that this condition may be corrected and that proper accounting may be insured, Property Accounting Regulations should require all expendable items of Air Service equipment to be taken up on the organization Property records and thus carried until issued for immediate consumption. Under such a method of procedure

it is anticipated that a substantial reduction in the number of items of Air Service material at present maintained will be possible.

Air Service Cost Accounting was initiated during the year at the Fairfield Air Intermediate Depot, Fairfield, Ohio and at Mitchel Field, Long Island. The system improved and developed through these trials and is now being extended to include all Air Intermediate Depots and many of the other Air Service activities. Through this means it is hoped to record in detail the operating cost of the Air Service as a whole, the value of all supplies consumed, the cost of operating different types of equipment, and the cost of supplies manufactured, repaired, and reconditioned by the Air Service. Such statistics will be of value in selecting types of equipment to be adopted as standard, in comparing the efficiency of various Air Service activities and in preparing estimates for appropriations.

Tables of Basic Allowances prescribed for Air Service organizations are at present subjected to a thorough service test. The condition with regard to expendable items, outlined in a preceding paragraph, should be corrected as soon as possible in order that the allowances of such equipment may, at the next revision, be based on actual consumption. Equipment Tables are in course of preparation and those for Division Air Service, Army Air Service, and Corps Air Service have been approved and published.

During the year various problems in connection with the maintenance of Air Service equipment have been carefully studied and analyzed. As a result a new system, greatly simplified and revised to cover in detail the standardized methods of repair, overhaul, and manufacture has been tried out at the Fairfield Depot and is now being installed at all Air Service activities. Current information and instructions are issued as a series of Technical Orders. These orders are numbered in a manner similar to that now employed for Army Regulations, the basic number being in each case the same as that assigned to the major classification to which the particular item of equipment belongs.

Equipment

Emphasis must be placed on the critical condition which exists with regard to major items of equipment, viz., airplanes, airships and balloons.

The great majority of aircraft now on hand were produced during the war, are rapidly deteriorating and even when completely reconditioned, have but a very short life. Furthermore, 80% of the airplanes are of obsolescent training type, unsuitable for combat purposes. It is absolutely essential that the purchase of new and up-to-date equipment to offset this constantly increasing shortage, be undertaken immediately. Since it requires about eighteen months to secure delivery after a contract has been placed, it is apparent that no relief from the present situation can be expected before 1926. Appropriations now being made for the purchase of new aircraft are insufficient to meet the demands of even the present diminutive peace-time establishment of the Air Ser-

vice and bear no relation whatever to the requirements of a nucleus reasonably adequate for war expansion.

The number of aircraft now available or to become available in the near future on the basis of 1923 and 1924 appropriations is as follows:

<u>Date</u>	<u>Number Available</u>		
	<u>Airplanes</u>	<u>Airships</u>	<u>Balloons</u>
July 1, 1923	1970 (1531 war produced)	9	219
July 1, 1924	988 (686 war produced)	11	64
July 1, 1925	576 (204 war produced)	9	38
July 1, 1926	289 (102 war produced)	6	29

The number actually required for the present establishment, including war reserves for overseas garrisons, is as follows:

	<u>Airplanes</u>	<u>Airships</u>	<u>Balloons</u>
Continental U.S.	1003	10	12
Overseas Garrisons	<u>552</u>	<u>--</u>	<u>13</u>
Total	1655	10	25

A comparison of these two tables clearly indicates that unless immediate steps are taken to remedy this condition the Air Service will become inoperative within a few years.

Further consideration must be given to the requirements of National Defense which indicate the necessity for a substantial increase in peace time establishment of the Air Service, if it is to meet the minimum, and the immediate demands which will be placed upon it in an emergency.

These requirements are covered more fully in the chapter on War Plans and have been made the subject of careful investigation by a Board of Officers appointed at the direction of the Secretary of War.

From the supply point of view, the situation calls for a definite construction program covering a period of years and involving an annual appropriation of \$25,000,000 for Air Service purposes. Of this sum approximately \$15,000,000 would be spent for the production of new aircraft and \$10,000,000 for operating expenses, the first amount decreasing and the second increasing from year to year as the program develops.

It is urgently recommended that Congress enact appropriate legislation covering such a project.

Material Disposal

Prior to July 1, 1922 the Air Service Material Disposal and Salvage Section had been primarily engaged in the disposition of supplies

rendered surplus through the normal liquidation of excessive war stocks. On that date approximately \$28,885,686 worth of such property remained to be cleared and to this was added during the year an additional amount of nearly \$33,000,000 as a result of a decision by the War Department to abandon six supply depots, one repair depot and several flying fields.

On June 30, 1923 all of this property had been disposed of. This was accomplished by fifteen auction sales, fifty sealed bid sales and numerous transfers and fixed price sales. There remains, however, considerable work to be done in collecting purchase money, delivering property, completing records and depositing funds in the Treasury. At the present time there are about 1962 sales in various stages of completion. In the case of 1274 of these, the collections and deliveries have been completed, the funds have been deposited and the Sale Control Sheets which must be filed for permanent record are in process of preparation.

It is anticipated that the completion of all disposal activities and the discontinuance of the organization charged with this work will be accomplished during the fiscal year 1924.

CHAPTER VIII

TRAINING

In taking up the subject of training it is desired to place initial emphasis upon the extremely varied requirements along this line in the Air Service. No other branch of the army and probably but few commercial industries are more diversified in scope of activities than is military aeronautics.

The usual combat functions of tactical organizations are in the Air Service dependent for their success upon a working knowledge and a practical proficiency in armament, internal combustion engines, automotive transportation, radio, aeronautical engineering, shop and factory management, wood working, metal working, fabric working, gas plant operation, aerial navigation, meteorology, photography and in many other occupations and trades necessary to the development, procurement, supply and operation of aeronautical equipment. Practically all of the specialists authorized for other arms and many in addition thereto are required by the Air Service.

Due to the hazards of flying it is an additional requirement more generally applicable to the Air Service than to any other arm that the personnel be brought to a high degree of proficiency before assignment to units. The use of unskilled mechanics and of only partially trained pilots in the maintenance and operation of aircraft introduces an increased risk of life and property and is unjustifiable except in cases of extreme emergency. It follows therefore that Air Service training must be sufficiently varied and thorough to cover the three distinct phases in the development of proficient personnel. First the preliminary training of both officers and men; secondly the application of this preliminary training to the operation of tactical organizations and finally the specialization in the case of commissioned personnel for higher staff command and technical duties within the Air Service. This three phase idea, although not generally recognized in the nomenclature of the existing training system, will nevertheless serve to simplify a discussion of the subject.

Preliminary Training

The Air Service draws its personnel from the same sources available to the army at large. New commissions are granted to graduates of the Military Academy and to successful competitors in the frequent examinations held for civilians; officers are detailed in or transferred to the Air Service from other arms and replacement in the ranks is accomplished by recruiting. In addition the Air Service is

responsible for the training of an annual quota of flying cadets, who upon successful completion of the prescribed courses are commissioned in the Reserve Corps.

Due not alone to the exacting requirements of aviation duty, but dependent also upon the provision of law that not to exceed ten per cent of the officers who fail to qualify as aircraft pilots or observers within one year after their initial assignment, shall be permitted to remain detailed or commissioned in the Air Service, it follows that the initiation of flying training for this class of personnel must not be delayed. Such training is both primary and advanced and may be in either the heavier-than-air or in the lighter-than-air branch of the Air Service.

Heavier-than-air training is concentrated at Brooks Field and Kelly Field, both in the immediate vicinity of San Antonio, Texas. The Primary Flying School at Brooks Field covers the rudiments of airplane pilotage together with such theoretical instruction as is incidental thereto. Graduates are rated as "Junior Airplane Pilots" and transferred immediately to the Advanced Flying School at Kelly Field for specialization in observation, pursuit, bombardment or attack. These two courses are of nine months and eight months duration respectively. Graduation from the latter carries a rating of "Airplane Pilot" or "Airplane Observer" and qualifies the recipient for all routine flying duty with the appropriate tactical organization.

The lighter-than-air training center is located at the Balloon and Airship School, Scott Field, Belleville, Illinois. A nine months course at this school is designed to provide all necessary instruction leading to the ratings of "Airship Pilot" and "Balloon Observer". It includes free ballooning, the operation of captive balloons and the pilotage of non-rigid, semi-rigid and rigid dirigible airships together with the related theoretical and technical subjects for both pilots and observers.

Preliminary training of enlisted men is conducted at a school organized originally for that purpose under the title "Enlisted Mechanics School", but now broadened considerably in scope so as to include several advanced courses for officers and known as "The Air Service Technical School". Located at Chanute Field, Rantoul, Illinois, the major portion of its student body is made up of recruits drawn from the industrial centers in that vicinity. There are twenty-one courses for enlisted men averaging twenty weeks each and covering either singly or in combinations, all of the more important mechanical trades required in the Air Service. The special courses for officers, at this school are in the nature of advanced training and are referred to later on in this chapter.

Briefly summarized the preliminary training of Air Service personnel includes practical and theoretical instruction in pilot and observer duties in all types of aircraft for officers, and specialization in various mechanical trades for enlisted men.

Statistics showing the number and classification of graduates

during the year from the four special service schools devoted to this preliminary phase are given in the following table:

	<u>Commissioned</u> <u>Officers</u>	<u>Flying</u> <u>Cadets</u>	<u>Enlisted</u> <u>Men</u>	<u>Total</u>
Primary Flying School	27	48		75
Advanced Flying School	29	45		74
Balloon and Airship School	42			42
Technical School			622	622
TOTAL	98	93	622	813

Training of Tactical Units

Due to the extreme shortage of personnel and to the great amount of work which the Air Service has been required to carry on in conjunction with other arms and with other departments of the government the proper training of tactical units has been one of its most difficult problems. In order to attain the greatest possible results under existing conditions a complete program, outlining a thorough course of training for each of the various branches of aviation was prepared and issued to the service. As far as possible all officers have been assigned to tactical organizations and no effort has been spared to make this system effective.

As all tactical units fall within one or another of the two subdivisions of military aeronautics, i.e., Air Force and Air Service, this differentiation has been observed in summarizing the activities of the year.

The "Air Force" consists of one pursuit squadron and one bombardment squadron in each of the overseas departments, and, within the continental limits of the United States, a Pursuit Group at Selfridge Field, a Bombardment Group at Langley Field (with a detached squadron at Aberdeen Proving Ground) and an Attack Group at Kelly Field; in all eighteen squadrons.

In our foreign possessions these units have been employed mainly in the conduct of coast defense problems prescribed by the Department Commanders. On the other hand our group organizations in the United States have been primarily concerned in the development of aerial tactics covering the application of "Air Force" to all possible phases of modern warfare.

A special effort was made during the year to emphasize and to stimulate the development of attack aviation. This most recent adjunct to the "Air Force" is designed for direct action against ground troops and is equipped with armored airplanes and a high complement of machine guns. As the use of such equipment in the manner indicated, was untried during the World War the original training schedule was necessarily a tentative one. At the present time the employment of the

group as a combat unit in formation flying, gunnery, low altitude bombing and long distance attack against enemy troop concentrations is being undertaken with satisfactory progress.

The "Air Service" consists of fourteen observation squadrons, five airship companies, eighteen photo sections and six air intelligence sections.

With the exception of one squadron at Langley Field and one squadron at Fort Sill, the entire Heavier-than-air complement is organized into Division Air Services and assigned, one to each corps area and department.

The squadron at Langley Field is maintained in conjunction with the Air Service Tactical School at that station and also for employment with the coast defenses of Chesapeake Bay. At Fort Sill, the observation squadron is assigned to the Field Artillery School to assist in perfecting cooperation between the two services. In the corps areas and departments, the Division Air Services have been used in training of Reserve and National Guard organizations, in connection with the various R.O.T.C. camps and in the combined operations of all arms.

Of the five airship companies which make up the lighter-than-air quota of the Air Service, three are at the Balloon and Airship School at Scott Field, one is at Aberdeen engaged in an experimental bombing program with the Ordnance Department and one is at Langley Field for work with the Coast Artillery.

In addition to these more or less routine functions, several projects of a training nature though not applicable to any particular subdivision of the Air Service have been initiated during the year. One of the most important of these is the development of night flying. Steps have been taken to provide adequate landing facilities by replacing the old pyrotechnic equipment with new and improved electrical installations. A schedule of night work in navigation, cross-country, bombing and pursuit has been prepared and several stations have already undertaken training along these lines.

Another progressive activity has been the transportation of supplies and personnel by air. A Martin Transport was assigned to the Technical School at Chanute Field and two planes of the T-2 type were operated by the Air Service Engineering Division at Dayton, Ohio. These and a number of heavy bombing planes have been used in transporting personnel and supplies from the schools and depots to units in the field. As a result of the marked success which attended this more or less experimental project, a study is now being made with the view of assigning to each group of the "Air Force" a number of transports sufficient to render them independent of ground transportation in time of war.

In view of the rapid development of airways throughout the United States, the increased mobility of organizations so equipped constitutes a factor of real importance in our scheme of National Defense.

Assuming that suitable airdromes provided with hangars and other maintenance facilities are established at strategic points along our coasts and borders the concentration of "Air Force" units capable of immediate action in any desired area may readily be accomplished at a rate of not less than eight hundred miles a day.

Advanced and Specialized Training of Officers

The Air Service activities which particularly require the services of technical experts are aeronautical engineering, radio and photography, while facilities must also be provided to prepare officers for staff and command duties within the Air Service and to cover in a limited degree the requirements of general service with other arms.

Since the aeronautical industry is still in a state of unhealthy infancy, the number of civilian specialists devoted to the solution of its numerous and complex engineering problems is extremely limited. Government agencies therefore, in order that the United States may not lag behind in the development of this service, must bear the burden of research and experiment until such time as the commercial use of aviation shall have become well established.

The Air Service Engineering Division is probably the most complete, the most efficient and the most productive aeronautical laboratory in the world. Its doctrine of progressive conservatism based on thorough research and rigid adherence to sound engineering principles has served to give it a creditable share in practically every record of note now listed in the annals of aviation. One of the most vital considerations in the continuance and growth of this worthy enterprise is the training of new officers to replace those lost through the exigencies of military service and the calls of civil life. To meet this demand and in a general way to disseminate throughout the commissioned personnel of the Air Service a higher technical knowledge, there is maintained at the plant of the Engineering Division an Engineering School with one year course devoted to intensive theoretical and practical training. By no means all of the graduates of this school devote themselves to technical work. The great majority return to general duties with the Air Service, a few are retained temporarily with the division and only a very small percentage are selected for further specialization at the Massachusetts Institute of Technology. In addition to this school, the Engineering Division conducts a five months practical course in Maintenance. One of the most important requirements of Air Service operation is the repair and upkeep of flying equipment in the field. To improve and to standardize this work the engineering officers of the various organizations and stations are, as occasion permits, sent to Dayton for this valuable instruction.

In radio and photography the Air Service is confronted with two technical activities of constantly increasing importance to its military proficiency, and presenting many inherent difficulties in their practical application. The primary requirement of radio from the training point of view is the development of a sufficient number

of qualified enlisted operators and the specialization of officers competent to direct the communications activities and to carry on the necessary research and experiment. Photographic training presents essentially the same problem and differs only in that a much larger number of officers must be trained in the practical phases of their work in the air.

To meet these requirements special courses for officers are conducted at the Air Service Technical School and more advanced work is provided for a limited number at Yale University and at the Signal Corps School at Camp Alfred Vail.

In the preparation of officers for higher staff and command duty within the Air Service, reliance for the time being must necessarily be placed to a great extent on training gained through actual experience with combat organizations. The Tactical School at Langley Field although still in the formative state is intended to supplement and in a sense standardize the thought and practice derived from such experience. Its courses are being rounded into shape and will eventually offer a basis for the development of sound principles in the tactical and strategical application of air power.

The following table gives a brief summary of the officers who graduated during the year from Special Service Schools or completed special courses at civilian educational institutions in furtherance of this advanced training:

<u>School</u>	<u>No. of Graduates</u>
Air Service Engineering School	29
Air Service Tactical School	17
Air Service Technical School (Communications Course)	13
Massachusetts Institute of Technology (Aeronautical Engineering)	3
Yale University (Communications Engineering)	3
Harvard University (Business Administration)	1
University of Pennsylvania (Finance and Commerce)	<u>1</u>
TOTAL	67

In training, as in all other fields of Air Service endeavor, the vital limiting factor at the present time is the shortage of personnel. It is quite impossible to provide a full staff of instructors at the various schools and at the same time to make available a proper quota of student personnel. As a result, both the rate and the proficiency of training are impaired, and must continue to be, until sufficient officers and enlisted men are provided for the Air Service.

CHAPTER IX

WAR PLANS

The discussion of war plans undertaken herewith deals solely with the military phases of that subject. Industrial war plans are covered in the next succeeding chapter.

The War Plans Section in the Training and War Plans Division is charged insofar as the Air Service is concerned, with the formulation of all plans having to do with organization and mobilization for war purposes. In addition it prepares and conducts all special projects of an operational nature undertaken by this office.

During the year its primary activities have included the revision of Air Service annexes to special war and mobilization plans, the revision of tables of organization, the study of various personnel and equipment problems, the conduct of several special operations such as the Pulitzer Races and the Porto Rican flight and finally the compilation of data and statistics and the preparation of detailed plans for a complete reorganization of the Air Service on a basis commensurate with its peace and war requirements.

Of these problems the latter is by far the most immediate and pressing and an appreciation of its various phases demands a recognition of two distinct classifications of military air power - "Air Service" and "Air Force".

The "Air Service" of an Army is made up of observation units, the functions of which are to carry on visual and photographic reconnaissance, to locate enemy targets, to adjust artillery fire and to carry on contact patrol and other liaison with the Infantry. Observation is never offensive and engages in combat only as a means of self-defense when attacked by hostile aircraft.

"Air Force" is made up of pursuit, bombardment and attack aviation and is purely offensive in each of these arms. Pursuit aviation seeks to destroy enemy aircraft of all types, protects friendly observation, bombardment and attack airplanes from hostile aircraft, and assists in attacking ground troops and other objectives in the theatre of operations. The mission of bombardment is to destroy military objectives, both in the theatre of operations and in the enemy's zone of interior. Attack aviation is designed solely for the purpose of harassing enemy ground troops from a low altitude by means of machine guns and fragmentation bombs, and such airplanes are heavily armored as a defense against machine gun and anti-aircraft fire from the ground. Neither attack nor bombardment seek combat in the air,

and engage with hostile aircraft only as a defensive measure.

In a properly balanced Air Service 20 percent of the total strength should be made up of observation units and the remaining 80 percent devoted to "Air Force" or combat aviation.

It had long been apparent that the war organization of the Air Service, approved in 1920 was unbalanced and entirely inadequate to meet any appreciable emergency. The most glaring defect was the insufficiency of bombardment and pursuit aviation. The whole six field army plan included but one bombardment group of fifty-eight airplanes. This matter was the subject of frequent recommendations by the Chief of Air Service and finally a revised organization providing an adequate Air Force of pursuit, bombardment and attack aviation for the six field army plan was submitted to the War Department.

This proposed organization concentrated the Air Force in two Air Divisions under General Headquarters. Each of these divisions consists of three Air Brigades and each brigade is in turn made up of three wings. The first wing includes a bombardment group and a pursuit group, the second wing an attack group and a pursuit group and the third wing two pursuit groups.

Numerically this plan increased the number of officers for the Air Service war organization by 1500 and the number of enlisted men by 15,000.

All Air Force was removed from the army and concentrated in General Headquarters. Attack aviation was reduced by one group; pursuit aviation increased by ten groups and bombardment aviation increased by five groups. No change was made in the number of balloon and airship organizations, except that they were headed up into groups, wings and brigades, so as to establish a proper chain of command. All observation assigned to the divisions were eliminated and concentrated in a group in the corps and a saving of eighteen observation squadrons thereby effected.

Upon completion of this war organization the Air Service prepared and submitted to the War Department a plan for a revised peace establishment representing the minimum necessary to meet the requirement of war expansion.

These two plans were referred to a committee appointed by the Secretary of War for detailed study and appropriate recommendation. Since the report of this committee is of a confidential nature and is available to the War Department no extensive discussion is considered appropriate in this report. It is however desired to emphasize the opinion expressed therein that the Air Service is in a very unfortunate and critical situation and to urge the enactment of remedial legislation.

CHAPTER X

INDUSTRIAL WAR PLANS

In order to carry out certain provisions of the National Defense Act, the Assistant Secretary of War has been specifically charged with the preparation of plans and policies and with the supervision of all activities in connection with the mobilization of materiel and industrial organizations essential for war purposes. In the execution of this work special organizations have been created in all of the various supply branches of the army.

The Industrial War Plans Division of the Air Service functioning directly under the Chief of Air Service in accordance with the approved policies of the Assistant Secretary of War was composed originally of a Requirements Branch, a Statistical Branch and a Planning Branch. As the work progressed this organization was somewhat modified and now consists of a central office in Washington, a branch office at the Middletown Air Intermediate Depot and district offices in the several industrial centers from which Air Service supplies are obtained.

The central office in Washington maintains liaison with the Assistant Secretary of War, keeps record files of the work accomplished, conducts the planning activities, and in general supervises the work of the rest of the division. The Middletown office is concerned primarily with the compilation of requirement and production data. At each of the district offices there will be an officer known as the Procurement Planning Representative. Among the prominent and influential business men, one of high calibre in each locality will be sought to act as District Adviser. The Procurement Planning Representative assigned to that district will act as his executive and will, through him, establish contact with industry. In that way, it is hoped to make a survey of facilities and to obtain the cooperation of manufacturers in working out the problems at hand.

Prior to July 21, 1922, the original organization of the Industrial War Plans Division had been effected; all officers engaged in the work had been instructed in their duties, and the actual work of computing requirements in finished products and raw materials, as based upon the controlling General Staff War Plan was well under way.

The work during the fiscal year 1923 has been dependent largely upon a definite task assigned by the Assistant Secretary of War for completion prior to December 31, 1922. This was the formulation of a tentative, but complete, industrial war plan, including the Air Service requirements in finished products and raw material, the proposed production schedules, a request for allocation of facilities, and a plan for the wartime procurement organization which would be needed.

The required plan was completed, approved by the Chief of Air Service, and submitted to the Assistant Secretary of War at the appointed time. Since then, the plan has been continuously revised as new information has been obtained. In January, 1923, certain of the requested facilities were allocated to the Air Service for survey and steps were immediately taken to establish District offices and to get the Procurement Planning Representatives started on their work.

Previous to the institution of this survey, production data had been obtained from old records, which were meagre and of doubtful accuracy. At the close of the fiscal year, district offices were operating in New York City, Buffalo, Dayton, Chicago, Detroit and San Francisco and later on, a seventh will be established at Akron. Several civilians of the desired type have agreed to act as District Advisers and it is expected that the full complement will have been enrolled within a few months. A wartime procurement organization has been set up, a course of instruction has been prepared for the Regular and Reserve Officers assigned thereto, the District Advisers have been fitted into the general scheme and finally an effort is now being made to locate the right man to assume controlling charge in case of an emergency.

The foregoing resume deals chiefly with those tasks completed by the end of the fiscal year 1923. Projects under way and scheduled for completion prior to December 31, 1923 include an estimate of primary requirements in strategic raw materials; an estimate of the total cost of requirements in finished products for the first year of war; and a plan for the procurement and training of personnel necessary to carry out the complete program.

The work of the Industrial War Plans Division, to be of value, must be continuous and subject to constant revision. It is believed that this need is fully appreciated and no effort will be spared in establishing a close contact and in maintaining a healthy spirit of co-operation with the industrial representatives of the nation.

In conclusion it is desired again to point out the lack of an adequate aeronautical industry in the United States. Unless such an industry can be built up in time of peace the wartime procurement program must fall far short of its goal. The solution of this problem lies in the development of commercial aviation through the timely enactment of suitable legislation and in the judicious expenditure of such funds as may be appropriated for the support of government aeronautical activities.

CHAPTER XI

OPERATIONS AND SPECIAL PROJECTS

Tactical Problems and Maneuvers

Numerous joint exercises were conducted during the year with various arms of the service. Due to the shortage of personnel and equipment these activities were necessarily limited in scope although sufficient data were gathered concerning the limitation and possibilities of such joint action to indicate the general lines of technical development and tactical training to be followed in the future.

Gratifying results were obtained in the maneuvers with the Cavalry Division at Fort Bliss during the month of April. A number of contact missions were performed by planes equipped with radio telephones and the Air Service was highly commended on the outcome of these problems. In the Philippines and Hawaii many missions have been performed for ground troops with excellent radio communication as an important feature and in the Canal Zone a particularly interesting demonstration was given during the visit of the Secretary of War. On May 9th, the Air Service was requested to furnish a plane for spotting fire control. Several members of the Congressional party were in the radio station at Fort Amador and listened to all instructions given to the plane by radio after it had checked in and then heard the sensings of simulated fire sent down by the plane to the Battery Commander. Excellent two way conversation was carried on for about an hour. On the following day a demonstration of voice control formation flying was given at Balboa Field. Instructions were transmitted from a temporary station set up by the Signal Corps and consisting of an SCR-109 set mounted in a radio truck. Tactical maneuvers in the air were carried out by a formation of Martin Bombers and DeHavillands.

A special problem embracing joint action with the Coast Artillery in coast defense work was undertaken during the year at Fort Monroe. The results of this project are now being used as a basis for further study in the Insular Possessions and Panama where the conditions are particularly suitable for such combined action.

At Aberdeen Proving Ground the Air Service troops consisting of one bombing squadron and one airship company have cooperated with the Ordnance Department in proof work and in the conduct of numerous demonstrations, exhibitions and like projects. Approximately 2,000 bombs with a gross weight in excess of 266,000 lbs., were carried and tested during the year. This bombing was done at altitudes ranging from two to eight thousand feet and has afforded an excellent opportu-

ity for the training of both pilots and bombers.

In addition to the problems worked out in conjunction with other arms, many projects of a purely Air Service nature have been undertaken. Of particular importance among these have been the service testing of new equipment and the conduct of maneuvers to determine whether or not the present tables of basic allowances for combat units are satisfactory. Various new and improved aircraft installations have been subjected to exhaustive service tests with satisfactory results and a thorough trial of the tables of basic allowances is now being made by four squadrons representing pursuit, bombardment, attack and observation aviation.

Another interesting maneuver was the change of station of the First Pursuit Group from Ellington Field, Texas to Selfridge Field, Michigan June, 1922. Twenty-one airplanes, most of them of the pursuit type with small fuel capacity covered the 1200 miles in five days without serious mishap. Divided into three flights with one DH-4 as a pathfinder, the group moved in easy stages following the route Dallas, Tulsa, Pittsburg, Kansas, California, Missouri, Rantoul, Illinois and Fort Wayne. Sixteen officers and eight enlisted men accompanied the airplanes; the remainder of the group moved by rail and arrived at Selfridge Field at approximately the same time. The flight comprised a total of 399 flying hours at a cost of about \$2,340.00 or nearly \$6,500.00 less than it would have cost to move the personnel and equipment by rail.

Special Projects

In the spring of 1923 a flight of six Army planes proceeded from San Antonio, Texas around the Gulf of Mexico to Florida and thence across to Cuba, Haiti, Porto Rico and the Virgin Islands. Returning by the same route to Florida the flight turned northward up the Coast to Washington, D.C., covering approximately 5,400 miles in thirty days. Such flights are conducted for purposes of training; to gather information and to stimulate interest in aviation. The efficient operation of all equipment used on this flight was particularly gratifying and offers a further indication of the feasibility of aerial transportation and communication when properly conducted.

Demonstrating the possibilities of lighter-than-air craft the Airship C-a with a crew of four officers and two enlisted men set out on September 14th from Langley Field, Virginia on a transcontinental flight which terminated ten days later at Ross Field, California. The actual flying time for the entire trip was 67 hours and 24 minutes. An exceptional record for this type of craft was made on that portion of the flight from Scott Field, Illinois to Brooks Field, Texas, when a distance of 350 miles was covered in 16 hours and 20 minutes. Several interesting night flights were made in the non-rigid airships C-2 and AC-I. One of these included a midnight cruise from Aberdeen around the Statue of Liberty and another traversed the 800 miles between Langley Field and Scott Field, Illinois.

In the National Balloon Race held during the early summer of 1922 an Air Service entrant piloted by Major Oscar Westover won first place and with it the privilege of representing the Army on the American team to compete in the Gordon-Bennett Race (International) in Switzerland. Major Westover's start from Geneva on the afternoon of August 6, 1922, was extremely propitious and attended with every hope of success. However, on the following day while over Hungarian territory he was forced to descend to a very low altitude in order to take advantage of currents which would carry him further to the east. So close did he come to the ground that the drag-rope was seized by peasants, who suspicious of his intentions, refused to release the balloon until an official investigation had been conducted. This unforeseen delay was of such duration as to effect disqualification. The balloon had also suffered an irreparable loss of gas and it was with great regret that Major Westover and his aide Lieutenant C. F. Bond abandoned the race and returned by rail to Geneva with their equipment.

The Pulitzer Race and associated contests for heavier-than-air craft were held at Selfridge Field, Mount Clemens, Michigan under the auspices of the Detroit Aviation Society on October 12th, 13th and 14th, 1922. This meet was considered by all who attended as the most successful airplane contest ever held in the United States. The Army Air Service won each event including the race for the Pulitzer trophy and in doing so brought to the United States the world's record for the one-hundred and two-hundred kilometer distances. Much valuable information was obtained on motors, airplanes and accessories and, as a direct result, an all American service type pursuit airplane, modelled after the Curtiss Racer, has been built and successfully tested.

Confidence in the Curtiss Racer led to further speed trials with that plane over a measured one kilometer course at Fairfield, Ohio in March 1923 after all arrangements had been made for authentic timing and judging under the rules of the Federation Aeronautique Internationale.

Lieutenants Russell Maughan and Lester Maitland were selected for these trials and each of them bettered the record of 233.01 M.P.H. established in February 1923 by the French aviator Sadi Lecomte. Lieutenant Maitland attained an average of 239.95 M.P.H. in four consecutive flights in alternate directions along the course and on one of these he covered the kilometer distance in 7.95 seconds; a speed of about 287 miles per hour. His record was however disallowed on the grounds that he had not maintained level flight throughout the length of the course. Lieutenant Maughan's average speed was 236.587 miles per hour, a confirmed world's record which will remain with him for all time since the distance for such trials was increased on April 1, 1923 to three kilometers.

Another goal toward which the Air Service set itself during the year was a non-stop transcontinental flight between New York and San Diego; a computed distance of 2,560 miles. In a T-2 airplane equipped with a single Liberty engine Lieutenants Oakley C. Kelly and John A. Macready made three attempts, the last of which, starting from Mitchel Field, Long Island, at approximately noon on May 2, proved successful and brought the wheels of their giant monoplane to rest on the airdrome at

North Island, San Diego in exactly 26 hours 50 minutes, 32 2/5 seconds.

Another noteworthy transcontinental flight was that made by Lieutenant Doolittle from Pablo Beach, Florida to San Diego with one stop at San Antonio, Texas. This was made in a remodelled DH-4 airplane and was completed in less than 22 hours. Lieutenant Doolittle was alone in the plane and of course sustained the entire burden of piloting and navigation during that long period.

As a result of these and various other flights the Army Air Service now holds the "World record for altitude, endurance, distance and for high speed over measured courses of 1,100,200,500,1000,1500, 2000, 2500, 3000, 3500 and 4000 kilometers. The importance of aviation as a means of rapid transportation has been brought home to the public and competition among manufacturers has been stimulated.

Aerial Photography

During the fiscal year the aerial photographic activities of the Air Service have faced many problems, principally occasioned by the difficulty of obtaining and retaining enlisted personnel of proper qualifications and by the lack of adequate buildings and equipment. These difficulties can be overcome only through an increase in the number of grades and ratings for enlisted men, in order that men trained in the highly technical work of a photographic section may be induced to remain in the service, and through increasing appropriations for the necessary materiel.

In other matters, those which are under the control of the Air Service, satisfactory progress has been made. The staff of the Air Service Photographic School, through careful selection and training, has reached a high degree of efficiency. The curriculum of this school has been appreciably enlarged to meet the latest requirements of aerial photography. Great care has been exercised in the selection of officers and enlisted personnel for photographic duty throughout the service and an efficient and economical system of supplying sensitized materials has been inaugurated.

The training and operation of the various photographic activities are coordinated through the Photographic Branch of the Office of the Chief of Air Service. This branch also maintains liaison on photographic matters with other arms and with various federal agencies. It studies foreign developments, recommends lines of research and experimentation, disseminates information to civilian aviators and acts in an advisory capacity in the application of aerial photography to map making through representation on the Federal Board of Surveys and Maps.

The primary function of Air Service photography is of course its application to military operations. Aerial photographs are of great value in reconnaissance work, in the regulation of artillery fire, in the conduct of bombing missions and in the preparation and revision of maps. Year by year the difficulties attending visual observation during

actual hostilities are enhanced. Anti-aircraft artillery is gaining in range and accuracy, combat planes are more numerous and the need for perfected high altitude aerial photography becomes more compelling.

With the development of its military phases, the peace time usefulness of aerial photography has also become increasingly apparent. The aerial camera can do many things besides gathering information about an enemy; new applications are reported daily and a number of these which have been proven practicable are given in the following list:

- Mapping
- Geographical studies
- Archeological research
- Mining operations and development
- Forestry and timber cruising
- Airways development
- Real estate activities
- Fire insurance data
- City planning
- Landscape gardening
- Boundary disputes
- Charting waterways
- Regulation of city traffic
- Automobile guide books
- Railroad engineering
- Great construction projects
- Congested terminal problems
- Architecture
- Newspaper Photography
- Advertising and publicity
- Graphic reports

Much has been done in the development of new and improved equipment during the year. Perfection of film cameras to such an extent as to practically eliminate plates for aerial work is perhaps the outstanding achievement while the Bagley tri-lens camera, the four lens camera, the 36 inch Tessar type lens for high altitude work produced by the Eastman Kodak Company and the vertical view finder are all accomplishments of great importance.

In addition to routine training the Air Service photographic organizations have performed many special and important missions for federal agencies and for other arms of the service.

A mosaic of the entire City of Washington and several showing particular sections in greater detail were completed for the District Engineer.

The request of the Commandant, General Service Schools, a mosaic of the Fort Leavenworth reservation covering an area of 1200 square miles is now being prepared.

In connection with a report on river and harbor work under the Engineer Corps, the Air Service obtained vertical and oblique pho-

tographs or assembled mosaics of twenty-three ports on the Atlantic, Pacific and Gulf Coasts.

In order to comply with requests received from the Chief of Infantry, the Inspector General and the Quartermaster General, aerial views have been secured of fifty-two forts, camps and depots throughout the United States and in our insular possessions. This work will be continued as circumstances permit, until all military establishments have been so covered.

For the Veterans Bureau the Air Service photographed nine of the larger hospitals controlled by that organization.

Twelve hundred and fifty square miles of the Reelfoot Lake area and in the vicinity of Nashville and Memphis, Tennessee was covered for the Geological Survey. Due to the nature of the terrain the accomplishment of this survey by ground methods would have been practically impossible.

The only maps ever made of the Salt Creek-Teapot Dome government oil fields in Wyoming were taken from a 350 square mile aerial mosaic produced by the Air Service in November 1922.

Perhaps the most extensive project of the year was the photographing of the 1600 square miles of Los Angeles County, California. Through the use of these photographs the Geological Survey will accomplish in a few months a map revision of that section which would have required three years by ground methods. With a tri-lens camera the photographs were taken in $7\frac{1}{2}$ hours actual flying time. A sample photograph taken at random from those obtained on this survey is included herewith as an indication of the type of work being accomplished.

Cooperation with Civil Activities

The results obtained in 1922 offer conclusive proof of the valuable assistance which may be rendered by the Air Service in Forest Fire prevention. Unfortunately, reduced appropriations and the shortage of personnel and equipment prevented any extensive participation in this work during the fiscal year 1923. Nevertheless, and although patrol flights on a regular schedule were out of the question, eight planes at Eugene, Oregon and two operating from Montague, California were kept on the alert subject to call by the local District Wardens and Forest Supervisors.

Cooperating with the Department of Agriculture in its efforts toward control of the boll weevil, the Air Service during the summer of 1922 furnished three planes together with the necessary operating personnel. Experiments in the distribution of poison dust by airplanes were undertaken over small selected areas in the vicinity of Tallulah, Louisiana. While very promising, these experiments were not conclusive and the work is being carried out on a larger scale at the present time.

Efforts have also been made to assist the Department of Agriculture in its war on the gypsey moth. Airplanes were furnished originally for this work but, due to their high speed, great difficulty was experienced in properly placing the poison dust. Consequently a motorized balloon with special equipment, was prepared and is now being sent to Henniker, New Hampshire to continue these experiments.

On March 11, 1923, upon the urgent request of local authorities, the Air Service sent four planes from Aberdeen to Port Jervis, N.Y., for the purpose of bombing an ice jam which had formed in the Delaware River and which was expected to cause serious floods in that vicinity. Totally unprepared for a sudden call of such a nature and forced to operate from a very unfavorable landing field at Port Jervis the results were far from satisfactory. Mud thrown from the wheels of the planes in taking off fouled the release mechanisms and rendered accurate bombing impossible. In one case it was necessary for the mechanic to crawl out on the wing, reach under the plane with a stick, and literally pry the bomb out of the rack. Nevertheless, five bombs struck in the area of the jam, and, whether or not as a result of their detonation under the surface, a decided change for the better had occurred within twenty-four hours.

In many other ways the Air Service has endeavored to justify its existence as a peace time organization as well as an agency for war. During the recent floods at Hot Springs, Ark., a representative of the Associated Press was carried into the devastated area in order that he might gather information as to where relief was most needed. In February Selfridge Field furnished a plane to carry a physician to an ice bound island in Lake Michigan for the purpose of caring for a small boy who had been seriously injured and required immediate medical attention. A somewhat similar service was rendered when two Army planes working in conjunction with an air mail plane carried food to the starving inhabitants of Fox Island in Grand Traverse Bay.

CHAPTER XII

AIRWAYS

Proposed Airways System of the United States

The Air Service has held it as a duty and a privilege to foster the growth of aviation through the investigation and development of a comprehensive system of airways covering the continental limits of the United States. This work was undertaken immediately after the World War and as its importance became increasingly apparent an Airways Section charged with all functions incidental thereto was created in this office.

Briefly stated, the plan contemplates an organized system of airways equipped with adequate meteorological and radio stations, embracing terminal facilities for aircraft every two hundred miles, routed when possible so as to keep the planes within gliding distance of substations at all times and provided with markers for both day and night flying.

Since the majority of aircraft accidents result from forced landings on unfavorable terrain or from adverse weather conditions it is apparent that the perfection of such a system is probably the greatest contribution this service could make to the cause of commercial aviation. Assuming the enactment of suitable legislation covering the legal phases of aircraft operation there would remain no other vital impediment to the rapid development of aerial transportation facilities. And not alone to commercial endeavor would such a system lend its aid. The advantages of well defined routes of aerial travel have already made themselves apparent in the routine operations of the Air Service and would become increasingly so in time of emergency with the rapid concentration of Air Force units as a vital concern of National Defense.

Having in mind the basic conception of airways requirements in the United States a map of the proposed system is maintained in this office and revised from time to time as additional information is received. It was found that the publication of this map excited considerable interest throughout the United States and as a further stimulus arrangements were made for a check of the entire system by Air Service stations in different parts of the country. Planes are being sent out along all routes, data are gathered from every available source and information and advice are freely given to all communities interested in the establishment of local airdromes. At the close of the fiscal year approximately 60 percent of the proposed system had been covered in this manner and plans had been outlined for further checking during the summer of 1923.

Marking of Airways

While the complete development of airways must be gradual and in correlation with the growth of commercial aviation, much can and has been done in working out suitable methods of operation and control applicable in principle to all routes.

One of the most valuable aids to aerial navigation is the accurate identification of cities and towns. For daylight flying this can best be accomplished by simply placing the name in large white letters on a dark background so as to be readily visible from the air. Since railroads are easily traced, the roof of the station or some other point on the right of way offers a particularly favorable location. Where there are no railways the roof of any prominent building or a clear level space on the ground is suitable. The names may be painted, whitewashed or laid in stones of contrasting colors. In an effort toward uniformity the Air Service obtained the approval of the American Railway Association on a plan to secure concessions for the use of rights-of-way throughout the country for this marking. A definite policy was drawn up and forwarded to the presidents of all railroads crossed by the Air Service Model Airway or by the Post Office Air Mail routes. In this instance, willingness to cooperate has been practically unanimous, and to further the project a descriptive pamphlet is being prepared for wide circulation in the hope that local communities will of their own initiation secure the necessary authority from the railroads and place the markers themselves.

In the making of airdromes and auxiliary landing fields the conventional procedure calls for a large white circular band made of lime or finely crushed stone. At terminal airdromes and at points on the intersection of two or more routes the present plans contemplate the use of "course check markers" and "block signals".

Course check markers as is indicated in the accompanying photograph are large white arrows pointing directly to the next station on each of the routes. By flying over these arrows pilots may not only get started on their new course without loss of time but are able accurately to determine the proper compass reading for use in case of fog or darkness. Block signals are intended to indicate unfavorable or dangerous weather conditions along any of the different routes. These signals may be consolidated with the course check markers. For example, the photographic print included herewith shows the course check markers of Bolling Field arranged in the form of a dial with the route to Moundsville closed. A pilot from Aberdeen enroute to Moundsville would see this block on passing over Bolling and would land for further information as to the cause.

Many other means of insuring safe and sane aerial navigation are under consideration or development. Beacons and flood lights for night flying will be installed as occasion demands and funds become available. Great progress has been made in the design and installation of compasses and other instruments which enable the pilot to maintain level undeviating flight at a known distance from the ground at all times. The perfection of radio direction finding apparatus will be far reaching in its effects.

Information on Landing Field and Routes

Until the system of airways is more fully developed, pilots, both civil and military, on cross-country flights will follow the shortest practicable route between any two points. This practice which to a greater or less degree will always obtain in military operations, gives rise to a need for complete and accurate information on airdromes, landing fields and aerial routes throughout the United States, both on and off the proposed airways systems.

Upon the organization of the Airways Section of this office in December, 1921 and in order to meet this growing demand, arrangements were immediately made to collect, tabulate and disseminate all available data. Cross-country flights were authorized for Army Air Service pilots with the understanding that information should be furnished on landing facilities enroute. In addition cooperation was obtained from the flyers of the Navy Department, of the Marine Corps, of the Post Office Department and of commercial activities and recourse was had even to Chambers of Commerce, postmasters, and private individuals in all sections of the country. In the last eighteen months the number of landing fields so covered by the records of this office has increased from 900 to approximately 5,000. These of course are not all organized fields, a large majority of them being merely farm land or unimproved facilities on which landings can be made.

In collecting this information a standard questionnaire was prepared and sent out to all persons called upon for reports. The information thus obtained was transferred to a card index, listed and published as an Air Service Information Circular printed at the Government Printing Office. This circular was made available on requisition to the Navy Department and the Post Office Department, and in addition was placed on sale in the office of the Superintendent of Documents.

A copy of the information forwarded to the Government Printing Office was furnished the United States Touring Information Bureau at Waterloo, Iowa, and from it was prepared the landing field section of a camp site and landing field guide for commercial distribution. A sufficient number of copies of this was given the Army Air Service by the National Aeronautic Association, through whose cooperation the publication was prepared, to furnish each Army Air Service pilot with one of the books.

The information circular did not attempt to carry sketches or photographs of the various landing facilities, and, being printed in pamphlet form could not readily be kept up to date, although it is planned to revise it annually. Authority, therefore, was obtained for the publication of an Aeronautical Bulletin, in loose-leaf form, of such size as to fit a commercial ring binder. These bulletins of which an example is attached herewith, include a sketch showing the location of the field with relation to the most prominent land marks and a second sketch showing the landing facility in detail. They also contain data on the markings, obstructions, repair facilities, means of communication and on the availability of meteorological information. To date approximately fifty-five Aeronautical Bulletins have been published, and, as in the case of

the Information Circular on Airways and Landing Facilities, this bulletin is being obtained by the Bureau of Aeronautics of the Navy Department, the Air Mail Division of the Post Office Department, and by the Superintendent of Documents, at Washington, D.C., for commercial distribution. Most favorable comments have been received on both of these publications and it is believed that they will prove of great value in cross-country flying.

Feeling the need of supplementary information on the general nature of the terrain covered by the various sections of the proposed airway system, and as to the prominent land marks which might be used for navigating over these routes, the Air Service has undertaken a publication which will be to the aviator what the Automobile Blue Book is to the motor tourist. The proposed Airways System has been divided into sections of from 100 to 200 miles and the various Air Service stations have been called upon to furnish accurate two-way descriptions of each of these sections. The two sets of information covering the two directions of flight, will be published in what will be known as the "Route Information Series", of the Aeronautical Bulletin. This publication will afford a means of filling the large number of requests for such information, initiated in the majority of cases, by commercial flyers.

As a final step in the dissemination of information it was considered advisable to produce a map showing graphically the location of the various fields. The Engineer Reproduction Plant was furnished information from which a map of the United States was prepared, differentiating between the classes of fields, insofar as the ownership was concerned, by varied colors, and showing, in addition, the proposed airway system of the United States. The purpose of the map is to furnish a means of permitting pilots, in selecting routes for cross-country flights, to so arrange their flights as to take advantage of the available facilities in their paths. Copies of this map are being furnished all Air Service activities, and sufficient additional copies are being obtained for distribution to the Bureau of Aeronautics, Post Office Department, and to various commercial flyers.

Aerial Maps

With the growth of aviation in the United States, it has become apparent that special aerial navigation maps must be provided. A great variety of such maps were produced during and immediately after the World War but none of them proved to be entirely satisfactory.

Taking up this problem, the Air Service started with a very simple map which was furnished to all stations with instructions that each pilot submit his suggestions as to just what information should be added and how it should be shown. The reports thus received were carefully studied, given further trial on the Model Airways and by this process an excellent map was gradually developed. The general characteristics finally adopted are given in the following extract from a publication on the subject:

- (a) Map covers a strip about 220 miles in length and 80 miles wide; scale 1:500,000
- (b) Map is printed on paper made with a cloth backing
- (c) Altitudes are shown by the vertical tint method; 0 to 500 feet, green; 500 to 1000 lighter green; 1000 to 1500 light yellow, etc.
- (d) Railroads are shown in black, differentiation being made between single track and double track lines
- (e) Highways in white, differentiation being made between main and minor roads
- (f) Towns blocked in according to shape in red
- (g) Rivers and other water in blue
- (h) Compass course for each direction shown in red with mileage shown every ten miles.
- (i) Sketches of landing fields shown along the border in red, giving information as to size and best method of approach.
- (j) Landing fields indicated on the map by crosses and circles, differentiation being made between those which are marked and those unmarked, and between those covered by a sketch and those which are not

From these characteristics the Geological Survey and the Engineer Reproduction Plant immediately began the preparation of strip maps covering the different sections of the country. The first few maps are considered as of an experimental nature, in order that, from the experience gained in their compilation, corrections and changes may be made and a final form decided upon. A copy of the latest example of this Airway Series is attached herewith.

Army Air Service Model Airway

Realizing the importance of aerial traffic and appreciating the need for actual demonstration of operating methods the Air Service organized in the spring of 1922 a model system covering the routes from Washington to Mineola, Long Island, to Hampton, Virginia, and to Dayton, Ohio. Sometime later this system was extended to include Scott Field, Belleville, Illinois, Chanute Field, Rantoul, Illinois and Selfridge Field, Mt. Clemens, Michigan. This provided for participation in the Model Airways operations of seven active Air Service stations; the entire system being shown in the attached map.

A Model Airway Control officer was appointed at Bolling Field with a representative at each of the other terminal airdromes and a regular schedule using DH-4B airplanes was inaugurated. A plane leaves each

station every second week and covers on its round trip approximately 1400 miles. Insofar as possible the pilots are selected by roster from the officers on duty at the various stations. While this does not make for maximum efficiency of operation, it affords an excellent means of training in cross-country flying for a large number of officers and serves to promote esprit de corps and a friendly rivalry between the various fields.

The purpose of the Model Airway is first, to form a basis for the study of ground organization requirements, second to provide a practical test of all aerial navigation instruments and equipment, and finally to promote the development of an adequate system for the collection and dissemination of weather reports.

The regular schedule has been in effect now for approximately thirteen months, operating methods have been constantly improved, much valuable information has been gained and an incidental service in the transportation of passengers and express shipments between the various stations has been rendered.

CHAPTER XIII

RADIO COMMUNICATION AND METEOROLOGY

Radio communication and meteorology are two auxiliary services of prime importance to aviation. For war purposes the development of interplane communication and the perfection of contact with surface stations will increase the efficiency of the Air Service in every phase of its activities while timely and accurate meteorological data are equally essential to the effective employment of aircraft. In time of peace these two services are closely related in that the rapid dissemination of one is entirely dependent upon the other. Radio communication is also used extensively in reporting the arrival and departure of aircraft on scheduled flights and in checking their progress enroute.

Radio Communication

The Air Service communication school at Chanute Field has been completely reorganized during the year and is now operating with increased efficiency. One class of fourteen officers has already graduated and the next, of approximately twenty, will report in September. In addition three officers were sent to Yale University for the course of communication engineers and have since completed their training at the Signal School, Camp Alfred Vail. These officers are being assigned to tactical units or returned to the Air Service Communication School for duty as instructors. Two classes of enlisted men are now taking the course at this school and one special class of ten is undergoing dual instruction as radio electricians and operators and as American Morse operators at the Signal School. This latter class will graduate in August 1923 and will be sent to Air Service stations where both radio and telegraph installations are maintained.

The Signal Corps has devoted its entire laboratory personnel to the perfection of new airplane radio equipment and is pushing this work with all possible speed. Five types of transmitters and one universal receiver are under development and are expected to prove entirely satisfactory when completed.

Using equipment produced during the emergency, the Air Service has carried on its routine training and operations with ground troops. Approximately 2700 flights employing radio communication have been made during the year and due to the increased knowledge on the part of Air Service personnel a marked improvement has been noted.

Considerable progress has been made in developing the radio net of the Model Airways. Eight stations are now included and more are being added as the system expands. Starting a little over a year ago with very little traffic on the regular schedule, the volume has increased to such an extent that during the month of May, 16,000 ten word messages were handled by the control station at Bolling Field. The traffic is made up principally of messages reporting the arrival and departure of airplanes and disseminating weather information.

Upon the extension of the Model Airways to the southwest it is anticipated that the Air Service will have two additional nets with control station at St. Louis and at Fort Sam Houston. In the Philippines, at the direction of the Commanding General a ground net similar to the ones noted above has been established to connect the three major Air Service activities at Clark Field, Kindley Field and Camp Nichols.

It is difficult to train operators for these stations and even more difficult to retain them in the service after they acquire proficiency. The demand for their services is so great in civil life that many of them apply for discharge by purchase immediately upon completion of their schooling. While such continual separations work a material hardship it is felt that in this as in other ways the Air Service is making a worth while contribution to the development of radio throughout the country.

The development of special projects employing communications equipment, or radio frequency circuits has continued throughout the year.

Direction finding apparatus has been experimented with at McCook Field both by the Air Service and the Signal Corps. The best method for direction finding has been determined upon, and complete experimental installations have been made. It is believed that within the next year a series of stations extending across the mountains from Dayton, Ohio to Washington, will be in actual use by pilots flying along the Model Airway. Investigation is now being made as to the feasibility of direction finding equipment on the round-the-world flight.

Progress has also been made in the control of moving bodies by radio. A little car in the form of a whippet tank driven by an electric motor and controlled by a radio frequency relay has been built and tested at McCook Field.

Along this same line experimentation has been carried on with the remote control of airplanes by radio from the ground as well as from other planes. Very encouraging results were obtained at Mitchel Field last summer when planes were taken off the ground in this manner and successfully maneuvered in the air.

Much effort has been expended in the Air Service on these projects and definite results are being obtained. The responsibility for this experimental work is not clearly defined however and as a re-

sult, progress has been seriously retarded.

The Signal Corps is charged by law with the development, procurement, storage and issue of all signal equipment. In addition, it is charged by Army Regulations with the problem of airplane radio direction finding. The problem of radio controlled equipment has never been assigned to either the Signal Corps or the Air Service by regulations, but has been assumed to be an Air Service responsibility. During the year these projects have been carried on in a joint laboratory at McCook Field where both commissioned and civilian personnel belonging to the Air Service and the Signal Corps have been employed. While the efforts of these two agencies have been correlated as efficiently as possible, it is believed that better results would be obtained were these projects made the definite responsibility of one or the other of the two services. In view of the fact that all of these problems must be ultimately solved in the air by airplanes in flight, rather than in the laboratory, on the ground, it is the opinion of this office that they should properly be assigned to the Air Service.

Meteorology

Because of the large amount of cross-country flying undertaken during the year the importance of a perfected system for the collection and dissemination of meteorological data has become increasingly apparent.

Every available means of obtaining weather information has been employed. Foremost among the agencies which have lent their assistance are the Meteorological Section of the Signal Corps, the U. S. Weather Bureau and the Air Mail Service of the Post Office Department. In addition, reports are transmitted back and forth between the various Air Service stations and on a particular section of the Model Airways by contracts with the American Telephone and Telegraph Company.

Close and studied cooperation has been rendered by the Signal Corps and as a result of aviation requirements its Meteorological Section is to be increased from about eighty men and four officers to two hundred men and twenty officers. The two services are cooperating in the instruction of these men and it is believed that excellent results will be obtained when the section is brought to its full strength.

With the development of a national system of airways fully equipped with communication and meteorological facilities the hazards and risks of commercial flying will for the most part have been eliminated.

CHAPTER XIV

R.O.T.C., NATIONAL GUARD AND ORGANIZED RESERVE

Reserve Officers' Training Corps

There has been no increase in the number of Air Service units of the Reserve Officers' Training Corps since date of the last annual report of the Chief of Air Service. The six units now maintained by the Air Service at civilian educational institutions had a total enrollment during the year of 801 students as follows:

<u>Unit</u>	<u>Basic Course</u>		<u>Advanced Course</u>		<u>Total</u>
	1st yr.	2nd yr.	1st yr.	2nd yr.	
Massachusetts Institute of Technology	79	79	43	20	221
Georgia School of Technology	64	28	22	16	130
University of Illinois	116	86	14	8	224
Texas Agricultural and Mechanical College	24	17	20	16	77
University of California	45	20	6	8	79
University of Washington	26	28	11	5	70
TOTAL	354	258	116	73	801

This total represents a gain of 150 since the last report and the Air Service officers in charge of these units confidently predict further increases during the next school year.

On duty with the above named units as directors and assistant directors there are eight officers of the regular establishment and six enlisted instructors. Due to the extreme shortage of commissioned personnel it has not yet been possible to assign officers as assistant directors at all institutions, but it is hoped that this deficiency may shortly be remedied.

Programs of instruction have been continued through the year without change but the curricula will be revised during the next term so as to cover recent developments in equipment and changes in tactics and technique. A study is also being made to determine necessary changes in the basic tables of allowances for these units.

Advanced camps for the six R.O.T.C. units were conducted during the summer of 1922 at the following Air Service fields with the attendance indicated:

<u>Unit</u>	<u>Location</u>	<u>Attendance</u>
Massachusetts Institute of Technology	Mitchel Field	23
Georgia School of Technology	Maxwell Field	19
University of Illinois	Chanute Field	6
Texas Agricultural & Mechanical College	Kelly Field	16
University of California)	Mather Field	18
University of Washington)		

Training programs were compiled as a guide in the preparation of camp curricula, with the object of restricting instruction in each subject to phases that had not been presented during the school year. Class room work was reduced to a minimum and in lieu thereof each student was given practical problems and flight missions as an observer. With minor changes in the time allotted to various subjects, the same program will be effective during the present training period. Reports indicate a high state of morale among the students at all camps and that the instruction given was well, and even eagerly received.

For the first time since the establishment of Air Service units an allocation of funds has been received sufficient to provide for the pay and allowances of twenty-one graduates for a period of four months while on active duty as second lieutenants, undergoing instruction in primary flying. These officers will be sent to the Air Service primary flying school and, upon successfully completing the course, will become entitled to the rating of "Junior Airplane Pilot".

The Chief of Air Service has consistently recommended that funds be provided for the pay and allowances of all graduates of Air Service R.O.T.C. units so that they may be placed on active duty and given flying training. Reserve officers whose experience was obtained during the period of the emergency are now, because of advancing age, increased personal responsibilities, minor physical defects and other reasons, rapidly becoming ineffective as combat pilots and unless the Air Service can replenish its reserve from a continuous source of young flying material, conditions, insofar as this force is concerned, will very shortly become analogous to those which obtained at the outbreak of hostilities in 1917. The number of flying cadets now being trained is not sufficient to offset annual losses and each year sees an increased deficiency in the number of reserve pilots fit for active flying duty. This loss is not apparent in statistics, because although no longer fitted for duty as flying officers, the records will still indicate these individuals as reserve officers holding flying ratings. The situation is very real and demands early remedial action. It is therefore recommended: first, that the number of Air Service units of the Reserve Officers' Training Corps be at once increased from six to twenty and thereafter increased at an annual rate of two per year for five years, or until a total of thirty such units has been established, and second, that all graduates of Air Service R.O.T.C. units be ordered to active duty as second lieutenants, A.S., C.R.C., immediately after graduation for a period of not less than four months to undertake flying training.

Graduation from a civil educational institution after the successful completion of the R.O.T.C. course entails four years instruction in military and technical subjects of Air Service specialization. In addition to the scholastic or engineering course pursued, with the single exception of graduates of the Military Academy, such men are the best officer material available. They are, however, of small value to the Air Service until they have received training as flyers and cannot, therefore, replace the reserve pilots who become ineffective each year. This point is emphasized because any policy other than that recommended will eventually fill our reserve with non-flying officers and, seriously retard the mobilization of reserve units in case of emergency.

The establishment of new Air Service units involves but a slight charge against R.O.T.C. appropriations. With few exceptions, the initial items of Air Service equipment prescribed for such units are available at the Intermediate Depots and many of the maintenance requirements can be met from the same source. An average of twenty graduates annually can be expected after a unit has been in operation for four years and with thirty such units a total of 600 would enter the Air Service Officers' Reserve Corps each year. In view of the situation noted above and the advantages accruing to the service should such a policy be made effective it is believed that its adoption would constitute a real economy.

It is desired to recommend, further, that provision be made to commission in the Regular Army Air Service, without mental examination a certain percentage of each years graduates of Air Service R.O.T.C. units after their successful completion of flying training. Considering the average yearly peace time casualties occurring in this branch, the number of graduates of the Military Academy entering the Air Service annually plus those commissioned from civil life will not suffice to maintain the commissioned personnel of even the present small Air Service at its now authorized strength. Since the specialized training of R.O.T.C. graduates affords particular qualification for Air Service duty, no more satisfactory plan for obtaining a flow of young flying officers in the lower grades of the Air Service can be recommended.

National Guard

There have been no new Air Service units of the National Guard organized during the year. Those now organized and federally recognized, with the commissioned and enlisted strength of each, are as listed below:

<u>Units</u>	<u>Location</u>	<u>Officers</u> <u>Assigned</u>	<u>Enlisted men</u> <u>Assigned</u>
39th Div. Air Service	Alabama	19	89
38th Div. Air Service	Indiana	25	117
29th Div. Air Service	Maryland	21	111
26th Div. Air Service	Massachusetts	17	80
34th Div. Air Service	Minnesota	121	106
27th Div. Air Service	New York	14	97
136th Obs. Sqdn. of IV Corps Air Service	Tennessee	15	91
	<u>TOTAL</u>	<u>232</u>	<u>691</u>

With each of these units there are on duty as instructors one officer and one enlisted man of the regular service. Both officers and men have been carefully selected from among those believed to possess special qualifications for this duty.

Realizing the difficulty frequently encountered by National Guard personnel in absenting themselves from their civilian occupations for any extended period of time, a special course of four months duration was inaugurated at the Air Service Primary Flying School for commissioned officers of the National Guard. Ten National Guard officers undertook this instruction and eight completed the course successfully and were rated Junior Airplane Pilots.

Upon the recommendation of the Air Service, flying personnel of the National Guard will hereafter receive flying training before being commissioned. In line with this policy five flying cadet vacancies are reserved annually for each National Guard squadron. Such an arrangement should not only serve to fill the units with the authorized complement of flying officers, but will provide a method of promotion from enlisted to commissioned status and permit the retirement of pilots whose service has extended beyond their period of usefulness as flyers.

Field training for National Guard units of the Air Service was held at the following Air Service stations between the dates indicated:

<u>Units</u>	<u>Station</u>	<u>Dates</u>	<u>Attendance</u>	
			<u>Officers</u>	<u>Enl. Men</u>
135th Obs. Sq. (Ala.)	Montgomery A.I.D.	July 26 - Aug. 12	16	59
137th Obs. Sq. (Ind.)	Camp Knox, Ky.	Aug. 13 - Aug. 27	21	76
104th Obs. Sq. (Md.)	Langley Fld., Va.	Aug. 20 - Sept. 3	15	82
101st Obs. Sq. (Mass)	Mitchel Fld., N.Y.	Aug. 27 - Sept. 10	16	68
136th Obs. Sq. (Tenn)	Montgomery A.I.D.	Aug. 14 - Aug. 28	15	90

The work of all units indicated a high degree of training; the morale of officers and men was excellent, and a feeling of esprit de corps among the personnel of each unit was manifest. The ability of the flying officers was remarkable considering that only training planes are furnished for the use of the National Guard. Some of the units could, if occasion required, take the field with service equipment and function effectively after a short period of intensive training.

Although it is a requirement that buildings for National Guard organizations must be provided by the state concerned, an exception has been made in the cases of the existing Air Service units, and hangars for these squadrons have been loaned by the Air Service of the Regular Army from stock in excess of current requirements. This excess has, however, now been absorbed and it will be necessary that hangars for units organized hereafter be purchased by the states or by the Militia Bureau. Other equipment is furnished insofar as existing stocks permit, as a free issue and this procedure will obtain until the present surplus has become exhausted.

Due to the limited amount available for the Regular Army no service type airplanes can be furnished the National Guard now, or for several years to come. The handicap thus imposed is largely overcome, however, by affording transition training to service types during the period of the annual summer encampment.

A new procedure of handling supplies for the National Guard has been prepared and recently made operative. As a result, many of the vexing delays encountered in handling requisitions and in preparing and shipping supplies, have been eliminated.

In the last annual report, the Chief of Air Service expressed some doubt as to advisability of continuing the Air Service as a part of the National Guard. This doubt, however, has been dissipated by the excellent showing made during the year. The Militia Bureau has been able to provide sufficient funds for the maintenance of a few enlisted mechanics on continuous active duty with each organization and all but major items of repair can now be performed at the home air-drome. This insures continuity of operation and eliminates to a large degree the expense and delay of shipping equipment to Air Service depots for repair.

That the National Guard Air Service is an effective and efficient force available for practically immediate field service in an emergency cannot now be doubted and the action of the Militia Bureau in authorizing the organization of sufficient new units to provide a divisional Air Service with each of the eighteen National Guard divisions meets with the hearty approval of the Air Service.

Organized Reserve

On June 30, 1922, there was a total of 7995 officers commissioned in the Air Service Officers' Reserve Corps. During the year this number has been increased to 8249 distributed in corps areas and by grades, as follows:

Corps Area	Brig. Gen.	Col.	Lt.Col.	Maj.	Capt.	1st Lt.	2nd Lt.	Totals
First	-	-	1	8	39	122	521	691
Second	2	2	7	38	131	226	774	1180
Third	-	1	1	27	87	167	633	916
Fourth	-	-	-	12	45	109	396	562
Fifth	-	1	2	13	54	126	555	751
Sixth	-	4	2	25	67	141	812	1051
Seventh	-	1	2	6	38	124	747	918
Eighth	-	-	-	9	73	122	542	746
Ninth	-	-	5	15	106	206	977	1309
Outside of U.S.	-	1	-	3	11	24	86	125
TOTALS	2	10	20	156	651	1367	6043	8249

Of this total, 5640 hold flying ratings, 5499 as heavier-

than-air pilots or observers, and 141 as balloon and airship pilots or observers. The increase noted is attributed largely to the inauguration of correspondence courses, to the interest aroused by the establishment of additional airdromes at several of our larger centers of population where flying facilities have been made available for the use of reserve officers.

Progress in organizing Air Service units of the Organized Reserve has been gratifying. Of a total of 539 Air Service units, including photo and communications sections, comprising the reserve component of the Air Service of the six field armies, 213 have been assigned their full quota of commissioned personnel, and the organization of all others is, in this respect, on an average of fifty percent complete.

Enlistment of non-commissioned officers and specialists has not kept pace with the assignment of commissioned personnel. Great difficulty is experienced in obtaining the desired type of specialists. However, the enrollment, though slow, is steady and indicates an ultimate and satisfactory conclusion of this phase of organization.

Every effort has been made to stimulate the interest of Reserve officers by providing flying facilities for them at all Air Service stations. As a result, such flying has gradually increased and exclusive of that performed during the summer training period reached a total of over 5000 hours for the past year. Failure to participate in regular and frequent flights reflects unfavorably upon the pilot's skill and for this reason, the flying time of Reserve officers may, in a broad sense, be accepted as a measure of the efficacy of our reserve force.

As a further step and one of tremendous importance to the growth of aviation, the Air Service has arranged to furnish certain equipment for the establishment of airdromes at strategical points when suitable sites are made available at a nominal rental. Accordingly land was leased at Louisville, Ky., and Cincinnati, O., and authority was obtained from the Navy Department to participate in their lease at Sand Point, Seattle, Washington. One hangar for each of these fields was transported and erected with funds raised by popular subscription and airplanes are now being furnished. Unfortunately, the stock of excess hangars has become exhausted and it is therefore no longer possible to extend federal aid in the establishment of additional airdromes of this nature, although nearly all of our larger cities have advanced offers of suitable sites.

Construction of the airdromes for which contract was placed during the latter part of the fiscal year 1922 has been completed at Richards Field, Kansas City, Mo., and Clover Field, Santa Monica, Calif. Flying equipment has been issued, regular officers have been placed in command and active flying operations are now in progress. Preparation of the land has retarded the completion of the fields at Pittsburgh and Boston, but these should be ready to receive their airplanes within a few months. There are now eleven such airdromes located as follows:

The Boston Airport, Boston, Mass.
Pittsburgh Airdrome, Pittsburgh, Pa.
Richards Field, Kansas City, Mo.
Clover Field, Santa Monica, Calif.
Grisard Field, Cincinnati, Ohio.
Bowman Field, Louisville, Ky.
Sand Point, Seattle, Washington
Vancouver Barracks, Washington
Norton Field, Columbus, Ohio
Schoen Field, Fort Benjamin Harrison, Ind.
Fort Douglas, Salt Lake City, Utah.

In addition to affording training facilities for Reserve officers these fields are thrown open for use as municipal air ports under regulations prescribed by the War Department. That commercial aviation needs but little encouragement is evidenced by the eagerness with which this opportunity has been grasped. At Richards Field twelve aviation companies are already operating and in the 1st Corps Area several more are but awaiting the completion of the Boston Airport.

During the past year, the Air Service correspondence course, open to personnel of the Officers' and Enlisted Reserve Corps, the National Guard and qualified civilians was successfully inaugurated. Although entirely voluntary and calling for considerable work on the part of the students, no less than one thousand Air Service Reserve Officers applied for enrollment.

The second year's course embracing the new training regulations and designed to provide up-to-date instruction in Air Service tactics and technique will start in the fall of 1923. It is believed that this course will make a very strong appeal and an enrollment in excess of two thousand is confidently expected.

Special courses in communications, photography and engineering were prepared at the Technical and Engineering Schools, and available funds permitted the assignment of fifteen Reserve officers to active duty for a period of three months to pursue this training. Of this number fourteen were successful and received certificates of graduation.

Summer camps for the field training of the Organized Reserve were conducted during the past year at the following stations with the attendance indicated:

<u>Corps Area</u>	<u>Station</u>	<u>Number of Reserve Officers Attending</u>
First Corps Area	Framingham, Mass.	15
Second Corps Area	Mitchel Field, L.I., N.Y.	36
Third Corps Area	Langley Field, Va.	38
Fourth Corps Area	Camp McClellan, Ala.	3
	Maxwell Field	30
Fifth Corps Area	Camp Knox, Ky.	43
Sixth Corps Area	Scott Field, Ill.	5
	Chanute Field, Ill.	63
Seventh Corps Area	Fort Des Moines, Ia.	18
Eighth Corps Area	Kelly Field, Texas	12
Ninth Corps Area	Del Monte, Calif.	1
	Camp Lewis, Wash.	5
	Fort Douglas, Utah	9
	Mather Field, Calif.	60
	Presidio of San Francisco, Calif.	3
	TOTAL	341

Programs of instruction were prepared with the view of arousing interest in new developments both tactical and technical. Arrangements were made to provide as much flying in service type equipment as was possible under the limiting conditions of time, and frequent demonstrations and tactical operations were conducted during the period. That these camps succeeded in their mission is indicated by the reserve officers in attendance, many of whom expressed themselves in an enthusiastic manner in commenting upon the nature of the training and the manner in which it was presented.

The most essential phase of the training of reserve officers of the Air Service is actual flying practice. This is true to such an extent that unless means can be provided whereby an officer entering the Reserve after the completion of his flying training can participate in regular and frequent flights, the Air Service Officers' Reserve Corps becomes a 'force' in name only and is in reality nothing more than a pool from which officer material suitable for training may be drawn. To maintain the effectiveness of our Reserve, then, it is imperative that additional airdromes be established near our larger centers of population. The appropriation of funds for this purpose is earnestly recommended. Such fields are not only training centers for the Reserve, but become important terminals on a national system of airways and thus aid materially in the development of commercial aeronautics.

CHAPTER XV

CIVIL AND COMMERCIAL AVIATION

The operation of aircraft for commercial purposes in the United States has unfortunately advanced little, if any, during the last year. The Aeronautical Chamber of Commerce estimates that approximately 1,200 commercial aircraft, the same figure as for 1921, were in operation, losses and depreciation being compensated for in new construction and in the release by the government of additional surplus equipment.

As in 1921 it is estimated that about one-half, or 550 of these aircraft are in the hands of itinerant fliers, or gypsies, whose movements are very difficult to trace and 650 are under the control of fixed-base operators or those whose business responsibility is clearly recognized.

While in 1922 there was perhaps a decrease in civilian flying, as compared with 1921, commercial aviation as a whole has been upon a much sounder basis. Stunt flying with passengers has diminished in favor of paid flying without passengers and under stricter safeguards. There are growing instances of "taxi-flying" or long distance cross-country flights with passengers or cargoes of merchandise. This taxi-flying is an approach toward regular scheduled air transport, which is the aim of commercial aviation.

Of the 129 operators who voluntarily submitted reports to the Aeronautical Chamber of Commerce in 1923, only 17 have been in business three consecutive years and 56 two years, while 56 appear as new activities. Saving of time being a saleable service, the transportation of passengers and merchandise, in the movement of which time is a factor, is an important commercial function, though not at present the most profitable. Of more satisfactory immediate return are aerial photography, mapping and surveying, aerial advertising and timber cruising.

During the year 1922 the Wadsworth Bill to Regulate Civil Aeronautics was carefully analyzed by the various organizations and departments interested, particularly the Department of Commerce. The bill, considerably altered, was finally returned to the House Committee on Interstate and Foreign Commerce, of which Representative Samuel H. Winslow is Chairman. Great care was given to the various constitutional questions involved, - the adopting of existing customs, immigration, public health and other regulations to air travel; administrative details in the creation of a Bureau of Civil Aeronautics; and questions with respect to torts, crimes and court jurisdiction of matters relating to air navigation, and so forth.

On January 8, 1923 Chairman Winslow introduced in final form the bill known as (H.R. 13715) "The Civil Aeronautics Act of 1923". The bill was referred back to Mr. Winslow's committee and the committee as a whole in turn referred it to a special sub-committee, where it rested when the 67th Congress came to an end.

It is to be deplored that no action was taken. Aeronautical development remains without proper legal stimulus, and capital stands aloof, hesitant of entering an uncharted field. At the end of 1922 it appears that forty nations of the world have some sort of air law, based in most instances on the International Convention for Aerial Navigation, while the United States has none.

It is expected that the bill will be re-introduced in the 68th Congress and that, probably in a somewhat modified form, it will become a law during 1924. It is also hoped that the ensuing Congress will enact legislation granting the Post Office Department authority to contract for the carriage of air mail at special air rates. These two steps are urgently needed to place civil aeronautics on a sound footing and to assure its proper development.

CHAPTER XVI

CONCLUSIONS AND RECOMMENDATIONS

With few exceptions the perplexing problems and difficulties with which the Air Service is confronted may be traced to the inadequacy during recent years of appropriations for its support. While great progress has been made in the development of equipment, in the training of personnel and in the perfection of organization, it must be pointed out that these advances have in the ultimate analysis reached their zenith. No further advancement as a whole is possible under existing conditions, and on the other hand the present critical shortage of equipment and personnel portends rather a period of retrogression.

The Air Service is now entirely incapable of meeting its war requirements and, if immediate and adequate remedial measures are neglected, will become practically demobilized within a few years. While it is realized that these considerations apply in a greater or less degree to all arms of the service it is felt that the unusual requirements of personnel, equipment and training in the Air Service are particularly compelling.

With this idea in view the more important recommendations included in the various chapters of this report are here reiterated, and emphasized in the hope that appropriate action, including the enacting of legislation where necessary, may be obtained.

An Increased Air Service

The present organization of the Air Service bears no relation to war requirements and affords little or no foundation for emergency expansion.

An increase in personnel is a vital necessity and likewise provisions must be made for the procurement and maintenance of additional aircraft.

The specific needs as determined by exhaustive study in this office have been presented to the War Department and are referred to on pages 8, 9, 39 and 49 of this report.

It is earnestly hoped that these recommendations will receive favorable consideration, that the War Department's matured project will provide an Air Service of adequate strength and equipment to perform its mission both in peace and war and that every effort will be made to secure the necessary legislation to put into effect such a program.

Legislation for the Correction of the Commissioned Personnel Situation

The injustices of the single list, the unusual requirements of flying duty and the peculiarities of Air Service organization demand a separate promotion list for Air Service officers with appropriate provisions for retirement. As far as possible the excess of officers in the grades of Captain and Lieutenant over and above the number which in view of the small percentage of field officers in the Air Service, can be handled smoothly in the ordinary processes of elimination, replacement and promotion, should be Reserve Officers on active duty for the short period of their maximum efficiency as flyers.

A Program for the Construction of Permanent Stations

Living conditions for officers throughout the Air Service are unsatisfactory and entirely incompatible with the standards to which these officers are entitled. Quarters for enlisted men and housing facilities for all other activities are correspondingly inferior. Practically the entire Air Service outlay consists of temporary construction hastily completed during the emergency. These accommodations are rapidly deteriorating and their further maintenance ceases to be an economy. A progressive and carefully planned building program is essential.

A New Site for the Air Service Engineering Division

McCook Field, the present location of the Air Service experimental and engineering laboratories is inadequate and unsuitable in many ways. An excellent site for the permanent establishment of these activities has been offered to the government at a nominal price by the City of Dayton. It is urged that this property be accepted and that the necessary funds for a complete installation be provided.

Legislation on Civil and Commercial Aviation

The aeronautical industry of the United States, upon which the Air Service must be vitally dependent in time of war continues to languish. In the belief that this state of affairs is largely occasioned by the lack of much needed legislation, it is again recommended that this need be presented to the Congress as strongly as possible at its next session.

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