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CODE AND SIGNAL MEMORANDA

NAVY DEPARTMENT  
CODE AND SIGNAL SECTION  
DIVISION OF OPERATIONS

1917

DECLASSIFIED  
Authority *NND 947022*

*[Certified to be unclassified]*

DECLASSIFIED per Sec. 3, E. O. 12065  
by Director, NSA/Chief, CSS

*[Signature]*  
Date: *4/4/79*

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NAVY DEPARTMENT

# Code and Signal Memorandum No. 1

(C. and S. Memo. 1)

C. S. P. 103

CODE AND SIGNAL SECTION  
DIVISION OF OPERATIONS



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Authority *NND 947022*

WASHINGTON  
GOVERNMENT PRINTING OFFICE  
1917

Refer to C. S. P. 103.

[Code and Signal Section.

NAVY DEPARTMENT,  
OFFICE OF NAVAL OPERATIONS,  
Washington, October 10, 1917.

## CODE AND SIGNAL MEMORANDUM NO. 1.

(C. and S. Memo. 1.)

1. This memorandum is confidential and will be handled in accordance with the provisions of paragraph 13.

2. Distribution of this memorandum is indicated herein under "Allowance of publications for classes of ships." Its distribution is practically the same as that of the General Signal Book.

3. Under present conditions there has been a large increase in the number of signal books, codes, ciphers, radio regulations, radio and visual calls, etc., issued to the service, and, due to lack of published instructions on the subject, some uncertainty and confusion as to the issue and use of publications of this kind has resulted. This memorandum is issued with a view to furnishing in compact form information on this subject, to increasing the efficiency of confidential communications, and to simplifying the question of handling this class of matter on board ship, at naval stations, and in the department. Additional memoranda will be issued from time to time in order to bring up to date the information contained herein.

### Organization for Handling Codes, Ciphers, Signals, etc., in Department.

4. Matter of this kind is handled in the department by three offices: (1) The Office of Naval Intelligence, (2) the Director of Naval Communications, and (3) the Code and Signal Section of the Division of Operations. It should be noted here that at present these three offices, while in cooperation under the Chief of Naval Operations, are in different buildings and maintain separate records. It is important, therefore, that requests for publications, general correspondence, and returns of publications handled by these offices be properly addressed to each office and not included in the same correspondence. It is planned eventually to assign the Code and Signal Section to the Office of the Director of Naval Communications when office facilities become available.

### Office of Naval Intelligence.

5. In addition to the service of Intelligence, the Office of Naval Intelligence handles certain codes and ciphers, but these are limited in issue to attachés and special agents, and do not concern the service at large. They are not further considered in this memorandum.

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## Director of Naval Communications.

6. This office handles the following:
- United States Radio Regulations.
  - Extracts from Radio Regulations.
  - War Time Radio Instructions for United States Merchant Ships (W. R. I.).
  - Radio Signaling Instructions for United States Operators of Merchant Ships (W. R. I.-A).
  - Commercial Traffic Regulations.
  - Radio Signal Calls and Changes. (Up to and including Change No. 5.)
  - Commercial Radio Calls.

## Code and Signal Section.

7. This section handles the following United States publications and changes and addenda thereto:

- General Signal Book, 1913.
- Battle Signal Book, 1913.
- Service Radio Code, 1914.
- Navy Secret Code (1908).
- N. C. B. and N. C. B. Ciphers.
- Secret Fleet Ciphers.
- S. C. Ciphers (Sigcode Ciphers). (Now being prepared to supersede "Secret Fleet Cipher.")
- D. P. Ciphers (District Patrol Ciphers).
- M. S. Ciphers (Merchant Ship Ciphers). At present these ciphers are included in War Time Radio Instructions for United States Merchant Ships (W. R. I.), issued by the Director of Naval Communications, but hereafter they will be published separately and handled by the Code and Signal Section, the War Time Radio Instructions for United States Merchant Ships continuing to be published by the Director of Naval Communications.
- Cover for Naval Ciphers.
- United States Recognition Signals. (Now in preparation.)
- War Instructions for United States Merchant Vessels.
- Visual Calls Memoranda.
- Radio Calls. (Except commercial calls.)
- Signal Letters of United States and Foreign Government Vessels (four-letter visual calls).
- Code and Signal Memoranda.
- Record Book for Signal Books, Codes, Ciphers, etc.

8. The old Navy Secret Code (1887) and the Navy Secret Code (1908) are considered as having been compromised. The former is practically obsolete; the latter can be relied upon for secrecy only when blinded and hereafter will be issued only in special cases. The following publications are no longer issued or recorded:

- Larrabee's Cipher Code.
- Useful Curves, Scouting, and Torpedo Danger Area.
- Naval Militia Tactical Signal Book.
- Radio Signals (1913).
- Western Union Code.

NOTE.—The International Signal Book (International Code of Signals) is issued by and should be requested for from the Hydrographic Office.

9. This section also handles the following allied publications, furnished the department by allied Governments for issue:

All allied codes, ciphers, lists of call signs, signal books, etc., a complete list to date being shown on page 9.

NOTE.—From this point this memorandum concerns only the matter handled by the Code and Signal Section, except where reference is made to the Director of Naval Communications (D. N. C.).

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Issuing Offices for United States Publications.

10. United States publications, except N. C. B., and N. C. B. Ciphers, may be obtained from the following issuing officers.

Commanders in chief of fleets.

Commander United States Forces in European waters.

Senior officer based on Gibraltar.

Commander, division two, Pacific Fleet.

Commandants of navy yards, naval stations, and naval districts. (Due to facilities for handling, publications are issued in some cases under the authority of the commandants of yards and in some cases under that of the commandants of districts. Where such an officer has an office in a navy yard, publications are handled by the district communication superintendent.) The N. C. B. and N. C. B. Ciphers will for the present be handled either directly by the Code and Signal Section or through issuing officers under special instructions from the department.

Issuing Offices for Allied Publications.

11. A stock of all allied publications is maintained at the following points, with issuing officers as indicated:

Navy yard, Boston.

Navy yard, New York.

Navy yard, Philadelphia.

Navy yard, Norfolk.

} District communication superintendent.

Aid to the commandant.

12. The British Mercantile Tables and accompanying instructions and Key Memorandum 6 (Auxiliary Patrol Recognition Signals), which are published periodically, may be obtained by naval vessels upon request, from the Commander in Chief, Atlantic Fleet, or commandants of yards or districts on the Atlantic and Gulf coasts. In this connection, and as a matter of information, British Mercantile Tables and accompanying instructions are issued by British issuing officers at the principal Atlantic and Gulf ports to important United States merchant vessels engaged in the Atlantic and Mediterranean (including all vessels carrying an armed guard). Arrangements for this issue are made through local naval district authorities.

Issue of Publications.

13. Upon arrival within communicating distance of an issuing office, after an appreciable absence, and also before sailing, commanding officers shall direct the officer whose duties require the handling of codes, signals, etc., to report in person to the issuing officer with a carefully prepared list, signed by the commanding officer, showing the United States and allied codes, signal books, ciphers, etc., on hand, in order that the issuing officers may check and bring the outfit up to date. The issuing officer will not be expected to visit a ship to check up publications. In this connection it should be borne in mind that facilities for storage and issue are limited on board flagships, and issuing officers afloat should not be called upon to furnish any publication which it is possible to obtain from issuing officers at shore stations. Flag officers will cause a similar report to be made of flag outfits. When this list is submitted it may be accompanied by copies of worn-out publications that it is desired to replace. When such worn copies are replaced by the issuing officer, they shall be destroyed by burning in the presence of an officer and report forwarded to the department (Form C. and S. 8).

14. Where the issuing officer has reason to believe that the above report has not been made, he will request the report from the commanding officer concerned. In cases of newly commissioned vessels, the commanding officer will request his allowance of publications from the issuing officers as soon as there are appropriate facilities on board for safeguarding them. If this request is not received, the issuing officer will inform the commanding officer that publications will be furnished when ready to receive them.

15. Where transportation for an issuing officer is necessary, such transportation will be furnished by the vessel concerned and not by the issuing officer. In all cases where publica-

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tions are obtained from issuing officers a copy of the transfer receipt (C. and S. Form 5, C. and S. Form 6, and C. and S. Form 7) will be forwarded to the department immediately by the issuing office. It is highly important that this be done promptly in order that the department's records may be kept up to date and duplication avoided. Issuing officers will submit a report of publications on hand on the first of each month and in addition will inform the department of any prospective shortage.

16. (a) **Men-of-war:** Allowances of Publications for Classes of Ships.

*United States publications—*

Complete set (except that further copies of the Navy Secret Code will be issued only in special cases).

*Allied publications—*

Complete set.

NOTE.—For the purposes of this classification, the following are *not* included: Submarines, submarine chasers, mine sweepers, vessels of naval districts, yachts (except seagoing yachts for distant service), and auxiliary vessels. The following are included in this classification: Seagoing yachts for distant service, destroyer and submarine tenders, Vestal, Prometheus, Baltimore, San Francisco, Dubuque; and Coast Guard cutters assigned to the fleet.

(b) **Naval transports commanded by regular officers (including ex-German liners):**

*United States publications—*

Complete set (except Navy Secret Code).

*Allied publications—*

Complete set.

(c) **Auxiliary vessels of the Navy (this includes chartered vessels when commanded by reserve officers, ex-German vessels when commanded by reserve officers, and former vessels of the Naval Auxiliary Service, such as the "Jason," whether commanded by regular or reserve officers):**

*United States publications—*

Complete set except Navy Secret Code, N. C. B., and N. C. B. Ciphers.

*Allied publications—*

A "short set." This includes all publications except the A. F. R., A. D. P. 17, and collateral publications which concern them only. At this date the short set comprises the following (see par. 21 for full titles) P, Q, R, S, HH, JJ, RR, SS, YY, ZZ, AC, AD, AJ, AL, AM, AN, AP.

(d) **Submarines:**

*United States publications—*

Complete set (except Navy Secret Code, United States Recognition Signals, N. C. B., and N. C. B. Ciphers.

*Allied publications—*

None unless on distant service, in which case they will be supplied direct from the allied country concerned.

(e) **Mine sweepers (attached to fleet):**

*United States publications—*

Complete set except Navy Secret Code, N. C. B., N. C. B. ciphers, and United States Recognition Signals.

*Allied publications—*

Short set (see (c) above).

(f) **Submarine chasers (attached to fleet):**

*United States publications—*

Service Radio Code, 1914.

D. P. Ciphers.

Deck and Boat Book (nonconfidential—to be obtained on requisition).

Extracts from Radio Regulations (D. N. C.).

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*Allied publications—*

None unless on distant service, in which case they will be supplied direct from allied country concerned.

**(g) Vessels assigned to naval districts:***United States publications—*

Service Radio Code.

D. P. Ciphers.

Deck and Boat Book (nonconfidential; to be obtained on requisition).

Extracts from United States Recognition Signals as furnished by district authorities.

Extracts from Radio Regulations (issued by the D. N. C.).

NOTE.—The most important district vessels may be furnished the following in addition, provided (1) it is considered desirable by the commandants, (2) a commissioned officer is in command, (3) proper facilities for safeguarding are available, and (4) vessels are on offshore or important harbor-entrance patrol duty involving frequent communication with seagoing naval vessels.

General Signal Book.

S. C. Cipher.

M. S. Cipher.

W. R. I.

W. R. I.-A.

*Allied publications—*

W/T Commercial Call Signs (CB 1283)  
W/T Ship and Shore Stations (CB 1284) } and amendments thereto.

Extracts from Current Key Memorandum 6.

**(h) Troop transports with a senior naval officer and a large armed guard on board (to be issued to the senior naval officer):***United States publications—*

Complete set (except Navy Secret Code, United States Recognition Signals, N. C. B., and N. C. B. Ciphers.

*Allied publications—*

Complete set (except A. D. P. 17 and addenda).

**(i) Armed guard officers (or petty officers in charge):***United States publications—*

Service Radio Code.

War Time Radio Instructions for United States Merchant Ships (W. R. I., issued by the D. N. C.).

Radio Signaling Instructions for United States Operators of Merchant Ships (W. R. I.-A, issued by the D. N. C.).

M. S. Cipher.

War Instructions for United States Merchant Vessels.

**(j) United States merchant vessels in the Atlantic and Mediterranean trade:***United States publications—*

Service Radio Code.

War Time Radio Instructions (W. R. I. and W. R. I.-A, issued by the D. N. C.)

M. S. Cipher.

War Instructions for United States Merchant Vessels.

*Allied publications—*

Mercantile Tables.

War Time Instructions for Operators and Masters of British Merchant Vessels.

NOTE.—These allied publications are furnished by British issuing officers to the masters of more important United States merchant vessels in Atlantic and Mediterranean waters and include all vessels with United States armed guards. (See par. 12.)

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## Transporting and Safeguarding Publications.

17. Publications of this nature are divided into two classes: (1) SECRET and (2) CONFIDENTIAL.

*Secret* matter is assigned registered numbers. It is not intrusted to the mails under any circumstances and it is invariably transported by commissioned officers. It should be safeguarded to the utmost and kept in safes or confidential lockers provided for that purpose, and where inadequate facilities are provided it shall be the duty of officers concerned to bring the fact to the attention of proper authorities and to use every endeavor to obtain adequate protection. Matter of this kind may be handled and inspected by commissioned officers only and then only by such officers as whose actual or prospective duties makes their knowledge of the publications desirable. Secret matter shall be handled by officers of the regular service if practicable. Reserve, N. N. V., and Militia officers, when detailed by proper authority to duty requiring the use of these publications, may handle them, but it should be understood that the possession of a commission does not entitle an officer of even the regular service to study secret publications unless in connection with his duties. It should be borne in mind by all concerned that, notwithstanding the character or qualifications of officers, long experience has demonstrated the fact that the fewer the people having knowledge of or access to secret information, the smaller is the chance of its being compromised by inadvertence or espionage.

18. *Secret United States publications:*

- N. C. B. Ciphers.
- N. C. B. Cipher strips.
- D. P. Ciphers.
- M. S. Ciphers.
- S. C. Ciphers.
- U. S. Recognition Signals.
- Navy Secret Code.
- Secret Radio Calls.
- Secret Merchant Radio Calls.

19. *Confidential* matter may or may not bear a registered number, depending on the character and distribution. It may be transported by registered mail, but is invariably put under double cover, the inner cover sealed securely with wax and marked "Confidential." It shall be handled by commissioned officers (Regular, Reserve, N. M., or N. M. V.) unless the publications contain specific authority for its being handled by others.

20. *Confidential United States publications:*

- General Signal Book.
- Battle Signal Book.
- Service Radio Code. (May be handled by certain enlisted men.)
- Radio Regulation. (May be handled by certain enlisted men.)
- Extracts from Radio Regulations. (May be handled by certain enlisted men.)
- War Time Radio Instructions for United States Merchant Ships (W. R. I.). (Contains special instructions).
- Radio Signaling Instructions for United States Operators of Merchant Ships (W. R. I.-A. (Contain special instructions.)
- General Radio Calls.
- District Radio Calls.
- Visual Calls Memoranda. (May be handled by certain enlisted men.)
- Signal Letters of United States and Foreign Government Vessels. (May be handled by certain enlisted men.)
- Code and Signal Memoranda.

21. *List of allied publications.*

The following are lists of allied publications, comprising a "complete set" at this date (October 25). List (a) is arranged in sequence of department's reference letters; list (b) is arranged with connected publications in groups. Space is provided for additions and for notes when items are superseded or go into effect.

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Handled by *3307 Signal Section*

LIST "A."

Allied Publications.

Department's letter.	Title.	Admiralty No.	Notes.
- F	A. F. R. Signal Book, 1915.....		
- J	Instructions for Telegraphists (A. F. R. Sig. Book, 1915).....		
- P	Auxiliary Code No. 13 (Code).....	CB 0322	
- Q	Auxiliary Code No. 13 (Decode).....		
- R	Wireless Telegraphy Commercial Call Signs, February, 1917.....	CB 1283	
- S	Wireless Telegraphy Shore and Ship Stations, February, 1917.....	CB 1284	
- V	Addendum No. 11 to A. F. R. Signal Book.....	CB 0112M	
- W	Instructions for Entry of Allied War Vessels into Allied Defended Ports (A. D. P. No. 17).....	CB 0338	
- X	Addenda No. 1 to A. D. P. 17 (CB 0338).....	CB 0338A	
- AA	Interallied W/T Call Signs No. 1. Short Title, List ICN No. 1.....	CB 0347	
- HH	W/T Signaling Instructions for Operators British Merchant Ships, April, 1917.....	CB 370	
- JJ	Allied W/T Code "A".....	CB 0480	
- KK	W/T Memoranda (Leviathan, May 15, 1917).....		
- LL	Auxiliary W/T Call Signs.....	CB 316	
- MM	Allied W/T Instructions, 1917 (Document M. P. L.).....	CB 414	
- NN	Allied Operating Table (Code F).....	CB 1310	
- QQ	Mercantile Tables No. 3.....	CB 430	
- RR	(1) Wireless Telegraphy Commercial Call Signs, 1st Sup. 5/17.....	CB 1283A	
- SS	(1) Wireless Telegraphy Shore and Ship Stations, 1st Sup. 5/17.....	CB 1284A	
- TT	Interallied W/T Call Signs No. 1 (corrections to British publication CB 0347).....		
- UU	Corrections No. 1 to Auxiliary W/T Call Signs (CB 316).....		
- WW	Allied Recognition Signals No. 1 (Document R. E. C. No. 1).....	CB 0461	
- XX	Addendum No. 12 to A. F. R. Signal Book.....	CB 0112N	
- YY	Key Memorandum No. 6K.....	CB 1340	
- ZZ	Mercantile Tables No. 4.....	CB 431	
- AB	Corrections No. 1 to A. D. P. 17.....		
- AC	War Instructions for Mercantile W/T Operators, June, 1917.....	CB 418	
- AD	W/T Instructions for Masters of British Merchant Ships, 6/1917.....	CB 439	
- AF	Allied Operating Table No. 2 (Code F, No. 2).....	CB 1344	
- AJ	Mercantile Tables No. 5.....	CB 432	
- AL	Mercantile Tables No. 6.....	CB 433	
- AM	(2) Wireless Telegraphy Shore and Ship Stations.....	CB 1283A-2	
- AN	(2) Wireless Telegraphy Commercial Call Signs.....	CB 1284A-2	
- AP	Key Memorandum 6L.....	CB 1354	
- AQ			
- AR			
- AS			
- AT			
- AU			
- AV			
- AW			
- AX			
- AY			
- AZ			

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## LIST "B."

## A. F. R. Publications.

De- part- ment's letter.	Title.	Admiralty No.	Remarks.
F	A. F. R. Signal Book, 1915.....		
J	Instructions for Telegraphists, A. F. R. Signal Book, 1915.....		
V	Addendum No. 11 to A. F. R. Signal Book.....	CB 0112M	
MM	Allied W/T Instructions, 1917, (Document M. P. L.).....	CB 414	
NN	Allied Operating Table (Code F).....	CB 1310	Superseded by AF.
WW	Allied Recognition Signals No. 1 (Document R. E. C., No. 1).....	CB 0461	
XX	Addendum No. 12 to A. F. R. Signal Book.....	CB 0112N	
AF	Allied Operating Table No. 2 (Code F, No. 2).....	CB 1344	
AA	List I. C. N. No. 1, W/T Call Signs.....	CB 0347	
TT	Interallied W/T Call Signs No. 1 (correction to British Publication CB 0347).		Also used with A. D. P.

## A. D. P. Publications.

W	Instructions for Entry of Allied Vessels into Allied Defended Ports (A. D. P. 17).	CB 0338	
X	Addenda No. 1, A. D. P. 17 (CB 0338).....	CB 0338A	
AB	Correction No. 1 to A. D. P. 17.....		
AA	List I. C. N. No. 1, W/T Call Signs.....	CB 0347	
TT	Interallied W/T Call Signs No. 1 (Correction to British Publication CB 0347).		Also used with A. F. R.

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LIST "B."—Continued.

Mercantile Tables.

De- part- ment's letter.	Title.	Admiralty No.	Remarks.
QQ	Mercantile Tables No. 3.....		
ZZ	Mercantile Tables No. 4.....	CB 430	
AJ	Mercantile Tables No. 5.....	CB 431	
AL	Mercantile Tables No. 6.....	CB 432	
HH	W/T Signal Instructions for Operators of British Merchant Ships, April, 1917.	CB 433	
AC	War Instructions for Merchant W/T Operators.....	CB 370	Superseded by AC.
AD	W/T Instructions for Masters of British Merchant Ships, June, 1917..	CB 418	
		CB 439	

Key Memorandum 6.

YY	Key Memorandum 6K.....	CB 1340	
AP	Key Memorandum 6L.....	CB 1354	

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## LIST "B"—Continued.

## Lists of Calls, Etc.

Department's letter.	Title.	Admiralty No.	Remarks.
R	W/T Commercial Call Signs, February, 1917.....	CB 1283	} Supply exhausted, will soon be superseded.
S	W/T Shore and Ship Station, February, 1917.....	CB 1284	
RR	W/T Commercial Call Signs, Supplement 1.....	CB 1283A(1)	
SS	W/T Shore and Ship Station, Supplement 1.....	CB 1284A(1)	
AM	W/T Shore and Ship Station.....	CB 1283A(2)	
AN	W/T Commercial Call Signs.....	CB 1284A(2)	
LL	Auxiliary W/T Call Signs.....	CB 316	
UU	Correction No. 1, Auxiliary W/T Call Signs.....	CB 316	

## Miscellaneous.

P	Auxiliary Code (Code), No. 13.....	CB 0322	} Supply exhausted.
Q	Auxiliary Code (Decode), No. 13.....	CB 0323	
JJ	Allied W/T Code A.....	CB 0480	

In this connection the following additional notes are supplied:

*AG.*—A few copies of *AG*—Secret W/T Call Signs of Transports and Fleet Auxiliaries have been issued. Further copies will not be issued at this time.

*KK.*—W/T Memorandum (Leviathan, 15 May, 1917) is being revised and will be issued under a new identification letter.

*AE* and *AL* are special publications of very limited distribution.

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## Reports and Returns.

22. The following forms are being provided for use in connection with reports and returns of codes, signal books, etc.:

C&S5.—Report of Secret and Confidential United States Publications distributed by the Code and Signal Section of Operations.

C&S6.—Report of N. C. B., N. C. B. Ciphers, and Naval Code A-1.

C&S7.—Report of secret and confidential Allied Publications distributed by the Code and Signal Section, Division of Operations.

C&S8.—Report of destruction of secret and confidential publications distributed by the Code and Signal Section, Division of Operations.

Forms C&S5, C&S6, and C&S7 are combined quarterly return and transfer receipt. They supersede the present form N. Nav. 2-Q, Annual (or Quarterly) Return. Supply of these forms may be obtained from issuing officers upon request.

23. Publications without registered numbers need not be reported on quarterly returns, or upon transfer.

24. Upon sinking, capture, or destruction of a naval vessel immediate report by dispatch shall be made concerning disposition of Secret or Confidential Publications. Any circumstances such as safes having been left unlocked, or Secret Publications having been left unguarded, which may possibly involve compromising of secret matter shall be immediately reported to the Department, Division of Operations (Code and Signal Section).

W. S. BENSON,

*Admiral, U. S. Navy, Chief of Naval Operations.*

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Code 121

NAVY DEPARTMENT

Code and Signal Memorandum No. 2

(C. and S. Memo. 2)

C. S. P. 121

*C. S. P.*

NAVAL COMMUNICATION SERVICE  
CODE AND SIGNAL SECTION

*[Handwritten signature]*



WASHINGTON  
GOVERNMENT PRINTING OFFICE  
1917

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ENCLOSURE (2)



## CODE AND SIGNAL MEMORANDUM NO. 2.

(C. and S. Memo. 2.)

NAVY DEPARTMENT,  
NAVAL COMMUNICATION SERVICE,  
CODE AND SIGNAL SECTION,  
Washington, December 1, 1917.

1. This memorandum is effective upon receipt. It supersedes Code and Signal Memorandum No. 1, which, if retained for reference, shall be marked "Canceled."
2. The distribution of this memorandum is indicated under "Allowances of Publications for Classes of Ships." The distribution is practically the same as that of the General Signal Book.

### ORGANIZATION FOR HANDLING CODES, CIPHERS, SIGNAL BOOKS, ETC., IN THE DEPARTMENT.

3. Matter of this kind is handled in the department by three offices: (1) Office of Naval Intelligence, (2) Office of the Director of Naval Communications (Southern Building, Washington), and (3) the Code and Signal Section of the Naval Communication Service (State, War, and Navy Building). It should be noted here that these three offices are in different buildings and maintain separate records. It is important, therefore, that requests for publications, correspondence, and returns for these offices be addressed to the proper office and not included in the same correspondence. Since the publication of C. and S. Memorandum No. 1, the officer in charge of the Code and Signal Section has been made the assistant to the Director of Naval Communications for codes and signals and this section is now a branch of the Naval Communication Service. However, owing to the arrangement of offices in the department, the mail address of this section remains, for the present, the Code and Signal Section, Division of Operations.

#### Office of Naval Intelligence.

4. In addition to the service of intelligence, the Office of Naval Intelligence handles certain codes and ciphers, but these are limited in issue to attachés and special agents, and do not concern the service at large. They are not further considered in this memorandum.

#### Director of Naval Communications (Southern Building).

5. This office handles the following publications which hereafter will be distributed through the distributing stations in the same manner as described for the publications issued from the Code and Signal Section:

- United States Radio Regulations.
- Extracts from Radio Regulations.
- War Time Radio Instructions for United States Merchant Ships (W. R. I.).
- Radio Signaling Instructions for United States Operators of Merchant Ships (W. R. I.—A).
- Commercial Traffic Regulations.
- Radio Signal Calls and Changes (up to and including Change No. 5).
- Commercial Radio Calls.

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## Code and Signal Section.

6. This section handles the following United States publications, changes and addenda thereto and weighted covers for binding:

- General Signal Book, 1913.
- Battle Signal Book, 1913.
- Service Radio Code, 1914.
- Navy Secret Code (1908).
- Naval Code A 1.
- N. C. B. and N. C. B. Ciphers.
- Secret Fleet Ciphers.
- S. C. Ciphers (Sig. Code Ciphers).
- D. P. Ciphers (District Patrol Ciphers).
- M. S. Ciphers (Merchant Ship Ciphers).
- United States Recognition Signals.
- War Instructions for United States Merchant Vessels.
- Visual Calls Memoranda.
- Atlantic District Visual Calls.
- Radio Calls (except commercial calls).
- Signal Letters of United States Government Vessels.
- Signal Letters of Foreign Men-of-War.
- Code and Signal Memoranda.
- Record Book for Signal Books, Codes, Ciphers, etc.

7. The old Navy Secret Code (1887) and the Navy Secret Code (1908) are considered as having been compromised. The former is practically obsolete; the latter can be relied upon for secrecy only when blinded and hereafter will be issued only in special cases. The following publications are no longer issued or recorded:

- Larrabee's Cipher Code.
- Useful Curves, Scouting, and Torpedo Danger Area.
- Naval Militia Tactical Signal Book.
- Radio Signals (1913).
- Western Union Code.

NOTE.—The International Signal Book (International Code of Signals) is issued by and should be requested for from the Hydrographic Office.

The Deck and Boat Book is not confidential and is obtained upon requisition.

8. This section also handles the following allied publications, furnished the department by allied Governments for issue:

All allied codes, ciphers, lists of call signs, signal books, etc., a complete list to date being shown on page 14.

## Issuing Offices for United States Publications.

9. United States publications, including class G, N. C. B. ciphers, may be obtained from the following issuing officers:

- Commandant, navy yard, Portsmouth.
- District Communication Superintendent, navy yard, Boston.
- District Communication Superintendent, naval station, Newport.
- Commander, submarine base, New London.
- District Communication Superintendent, navy yard, New York.
- District Communication Superintendent, navy yard, Philadelphia.
- Commandant, navy yard, Norfolk.

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Commandant, navy yard, Charleston.  
 Commandant, naval station, Key West.  
 Commandant, naval station, New Orleans.  
 Commander, naval forces in Canal Zone.  
 Commandant, naval station, Guantanamo.  
 Commandant, navy yard, Mare Island.  
 Commandant, navy yard, Puget Sound.  
 Commandant, Fourteenth Naval District.  
 Commander in Chief, Atlantic Fleet.  
 Commander, United States forces in European waters.  
 Senior Officer, Gibraltar.  
 Senior Officer, Azores.  
 Commander in Chief, Pacific Fleet.  
 Commander, Division 2, Pacific Fleet.  
 Commander in Chief, Asiatic Fleet.

The above list indicates the officers to whom publications will be forwarded from the department. Naval district organizations are charged with issuing the necessary publications to naval district vessels, merchant vessels, and radio stations within the district. They will arrange to obtain supplies from the nearest issuing officer. The naval operating base, Hampton Roads, and the naval training station, San Francisco, will obtain their outfits of publications from the commandants at Norfolk and Mare Island, respectively.

#### Issuing Offices for Allied Publications.

10. A stock of all allied publications is maintained at the following points with issuing officers as indicated:

Commander in Chief, Atlantic Fleet.	
Navy yard, Boston	} District communication superintendent.
Navy yard, New York	
Navy yard, Philadelphia	
Navy yard, Norfolk.	Aid to the commandant.

While it is practicable to maintain a complete set of allied publications only at the above points, allied publications will, in many cases, be distributed through other issuing officers in accordance with instructions from the department in each case.

11. The British mercantile tables and accompanying instructions and Key Memorandum 6 (Auxiliary Patrol Recognition Signals), which are published periodically, may be obtained by naval vessels from United States issuing officers on the Atlantic and Gulf coasts. In this connection and as a matter of information, British mercantile tables and accompanying instructions are issued by British issuing officers at the principal Atlantic and Gulf ports to important United States merchant vessels engaged in the Atlantic and Mediterranean (including all vessels carrying an armed guard). Arrangements for this issue are made through local naval district authorities.

12. Upon arrival within communicating distance of an issuing office, after an appreciable absence, and also before sailing, commanding officers shall direct the officer whose duties require the handling of codes, signals, etc., to report in person to the issuing officer with a carefully prepared list, signed by the commanding officer, showing the United States and allied codes, signal books, ciphers, etc., on hand, in order that the issuing officer may check and bring the outfit up to date. The issuing officer will not be expected to visit a ship to check up publications. In this connection it should be borne in mind that facilities for storage and issue are limited on board flagships and issuing officers afloat should not be called upon to furnish any publication

which it is possible to obtain from issuing officers at shore stations. Flag officers will cause a similar report to be made of flag outfits. When this list is submitted it may be accompanied by copies of worn-out publications that it is desired to replace. When such worn copies are replaced by the issuing officer, they shall be destroyed by burning in the presence of an officer and report forwarded to the department (Form C. and S. 8).

13. Where the issuing officer has reason to believe that the above report has not been made, he will request the report from the commanding officer concerned. In cases of newly commissioned vessels the commanding officer will request his allowance of publications from the issuing officers as soon as there are appropriate facilities on board for safeguarding them. If this request is not received, the issuing officer will inform the commanding officer that publications will be furnished when ready to receive them.

14. In home waters, issuing officers will furnish publications only to vessels in the immediate vicinity and then only when satisfied by report or otherwise that such vessels have not previously received such publications. This applies to mailable publications as well as those to be transported by officers. It does not apply, of course, to district officers charged with supplying publications to vessels of that district. Vessels in Atlantic home waters which will not fall in with issuing officers will be furnished publications by the department. Such vessels in the Pacific will be supplied by the commander, Division 2, Pacific Fleet. Vessels in European waters, except at Gibraltar and the Azores, will be supplied both United States and allied publications by the commander, United States forces in European waters. Vessels at Gibraltar and the Azores will be supplied United States publications by the department through the senior officer present and allied publications by the commander, United States forces in European waters. All vessels and stations in Asiatic waters will be supplied by the commander in chief, Asiatic Fleet, except that the department will supply Guam.

15. In a recent case, the master of an American merchant vessel, when attacked by a submarine, destroyed his United States confidential publications but allowed the British publications of similar character to be captured. Officers issuing United States or allied publications to United States merchant ships will obtain a statement in writing from the master that he understands the instructions as to the care of these publications and that they are to be destroyed in case capture or sinking is imminent.

16. Where transportation by an officer is necessary, such transportation will be furnished by the vessel concerned and not by the issuing officer. In all cases where publications are obtained from issuing officers, a copy of the receipt will be forwarded to the department immediately by the issuing office. Forms C. and S. 5, C. and S. 6, and C. and S. 7 will not be used for this purpose. It is highly important that this be done promptly in order that the department's records may be kept up to date and duplication avoided. Issuing officers will submit a report of publications on hand on the 1st of each month and in addition will inform the department of any prospective shortage.

17. The issuing officer at the Canal Zone is the commander, naval forces in the Canal Zone. In addition to supplying vessels stationed in these waters, he will particularly see that United States naval and United States merchant vessels passing from the Pacific to the Atlantic are equipped. Naval vessels will report to him as prescribed in paragraph 12.

18. When publications do not contain the date upon which they become effective, the department announces by dispatch, the placing in effect of each publication. Upon receipt of such information issuing officers will prepare a memorandum giving this information, copy of which he will furnish with each copy of the publication affected which may be issued thereafter. Attention of issuing officers is called to the importance of this provision as failure to furnish such a memorandum would result in serious confusion. For example, if an Atlantic dispatch of 10 December announces that a publication is placed in effect on the 15 December, a vessel com-

missioned on the 22d December receiving this publication would have no way of knowing that it is in effect unless the issuing officer furnishes a memorandum to that effect on issue.

19. All United States publications except N. C. B. ciphers issued from the Code and Signal Section are now assigned a C. S. P. number, beginning with C. S. P. 100 (cover for naval ciphers). Special weighted envelopes and covers are included. All forms, blanks, etc., used in this section bear C. and S. numbers, beginning with C. and S. No. 1. The following table shows the C. S. P. numbers assigned to date and also the number of each allowed to ships, flag officers, or stations, entitled to receive it. In this connection it should be noted that United States corrections to allied publications are assigned identification letters in the same manner as allied publications and do not carry C. S. P. numbers.

United States publications.

C. S. P. No.	Title.	Number to each ship, flag officer, or station entitled to receive it.
100	Cover for Naval Ciphers.....	One.
101	S. C. Cipher No. 1.....	One.
102	U. S. Recognition Signals No. 1.....	One.
103	C. & S. Memorandum No. 1.....	Large vessels, 2. Others, 1.
104	Visual Calls Memorandum No. 3.....	One for each signal book and four additional.
105	Signal Letters for Foreign Men-of-War.....	Large vessels, 3. Cruisers, gunboats, etc., 2. Small vessels, 1.
106	Signal Letters for U. S. Government Vessels.....	Large vessels, 3. Other vessels, 2.
107	Reserve N. C. B. Cipher G 26 in weighted envelope.....	One.
103	Naval Code A 1.....	One (two volumes).
103	Change No. 6, Service Radio Code.....	One for each book.
110	Change No. 8, General Signal Book.....	One for each book.
111	D. P. Cipher No. 3.....	One.
112	Cover for Secret Radio Calls.....	One.
113	Secret Radio Calls No. 1.....	One.
114	M. S. Cipher No. 5.....	One.
115	Record Book of Signal Books, Codes, etc.....	Large vessels, 2. Other vessels, 1.
116	Correction No. 2, War Instructions for U. S. Merchant Vessels.....	One.
117	Secret Merchant Radio Calls.....	One.
118	Cover for Radio Calls.....	Battleships and large cruisers, 3. Other vessels, 2.
119	General Radio Calls No. 1.....	Battleships and large cruisers, 6. Cruisers, gunboats, destroyers, etc., 3. Auxiliary and small vessels, 2.
120	Cover for U. S. Recognition Signals.....	One.
121	C. and S. Memorandum No. 2.....	Large vessels, 2. Other vessels, 1.
122	Atlantic District Visual Calls No. 1.....	One for each signal book. Four additional for large vessels, 2 for smaller vessels.
123	District Radio Calls No. 1.....	Large vessels, 2. Other vessels, 1.
124	A. and P. Radio Calls No. 1.....	Large vessels, 3. Other vessels, 2.
125	Secret Radio Calls No. 2.....	One.
126	S. C. Cipher No. 2.....	One.
127	M. S. Cipher No. 6.....	One.
123	D. P. Cipher No. 4.....	One.
129	General Radio Calls No. 2.....	Battleships and large cruisers, 6. Gunboats, destroyers, etc., 3. Auxiliary and small vessels, 3.
130	C. and S. Memorandum No. 3.....	Large vessels, 2. Other vessels, 1.

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## Radio Calls.

20. As stated in paragraph 6, the Code and Signal Section now prepares and issues all radio calls except commercial calls. A system of radio calls has been adopted comprising six separate lists as follows:

- Secret Radio Calls.
- General Radio Calls.
- District Radio Calls.
- A. and P. (Asiatic and Pacific) Radio Calls.
- Secret Merchant Radio Calls.
- Commercial Radio Calls.

(a) *Secret Radio Calls* include and are issued to important men-of-war in the Atlantic. They are changed at frequent intervals.

(b) *General Radio Calls* include vessels, radio stations, officers, etc., in the Atlantic and in general correspond to the present "Changes in Radio Signal Calls," except that calls in the Asiatic and Pacific are not included. They are changed at frequent intervals and do not include district vessels.

(c) *District Radio Calls* include naval district vessels (except of twelfth, thirteenth, and fourteenth districts) and certain shore stations. They are issued to radio stations and district vessels and to other naval vessels in American Atlantic waters.

(d) *A. and P. Radio Calls* include vessels and stations of the Asiatic and Pacific stations and in general correspond to the present "Changes in Radio Signal Calls," except that only Asiatic and Pacific vessels are included. This list will be changed from time to time but less frequently than the Secret and General Calls. In addition to vessels and stations listed therein, it is distributed to stations on the Atlantic coast and to men-of-war in American Atlantic waters.

(e) *Secret Merchant Radio Calls* include calls for all United States merchant vessels. This list, however, is furnished only to United States and allied men-of-war in the Atlantic and certain radio stations. It is not furnished to merchant vessels. Each merchant vessel receives its own secret call only.

(f) *Commercial Radio Calls* contain calls of ships and stations corresponding to the Berne list. It should be noted that this publication is not handled by the Code and Signal Section but is issued from the office of the Director, Naval Communications, Southern Building, Washington.

21. While the general distribution of each class of radio calls is indicated above, more detailed instructions are contained in each publication. These instructions should be consulted by issuing officers.

## N. C. B. and Naval Code A 1.

22. The distribution of the N. C. B. is handled either directly from the department or by special instructions to issuing officers. Officers holding reserve N. C. B. outfits will, however, issue an outfit to destroyers not already supplied, and to new destroyers when commissioned, without reference to the department. Class G, N. C. B. ciphers will be issued by issuing officers to all holders of the N. C. B. The Naval Code A 1 is soon to be issued, and will be supplied through distributing officers to all holders of the N. C. B.

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## Radio Regulations, Etc.

23. The various forms of radio regulations issued from the office of the Director of Naval Communications will be supplied by issuing officers on the following basis:

(a) *Radio Regulations.*

All naval vessels except district vessels and submarine chasers.  
All radio stations.

(b) *Extracts from Radio Regulations.*

All naval district vessels and submarine chasers.

(c) *W. R. I. (War Time Radio Instructions for U. S. Merchant Ships), W. R. I.—A (Radio Signaling Instructions for U. S. Operators of Merchant Ships).*

All United States naval and merchant vessels and radio stations in the Atlantic.

## S. C. Cipher No. 1.

24. The following minor modifications of the distribution of S. C. Cipher No. 1, as given on the first page thereof, are announced:

The Naval Attachés at London and Paris will be the only attachés furnished this cipher. It will not be furnished to the Marine Barracks, Washington, Annapolis, Quantico, Paris Island, San Diego, nor to the Advance Base Headquarters, Philadelphia, nor to the Naval Prison, Portsmouth. A note to this effect should be made on S. C. Cipher No. 1.

## Allowances of Publications for Classes of Ships.

25. The term "complete set" used in paragraph 26 comprises the following in connection with United States publications, but issuing officers, in checking up outfits of vessels, will consult paragraphs 20, 21, and 22 also in connection with issues of radio calls, N. C. B. and Naval Code A 1.

General Signal Book.

Battle Signal Book.

Service Radio Code.

Secret Fleet Ciphers.

S. C. Ciphers.

D. P. Ciphers.

M. S. Ciphers (in Atlantic only).

U. S. Recognition Signals.

War Instructions for United States Merchant Vessels.

Visual Calls Memoranda.

Atlantic District Visual Calls (Atlantic home waters only).

Signal Letters of United States Government Vessels.

Signal Letters of Foreign Men-of-war.

Code and Signal Memoranda.

Record Book for Signal Books, Codes, etc.

Radio Regulations.

War Time Radio Instructions for U. S. Merchant Ships (W. R. I.) (in Atlantic only).

Radio Signaling Instructions for U. S. Operators of Merchant Ships (W. R. I.—A) (in Atlantic only).

The term "complete set" applied to allied publications refers to list "A" on page 14, excepting where a note "limited distribution" appears, in which case special instructions are furnished the distributing officers.

26. (a) *Men-of-war and Vessels of the Transport Force.**United States Publications.*

Complete set.

*Allied Publications.*

Complete set.

NOTE.—For the purpose of this classification, the following are not included:

Submarines, submarine chasers, tugs, mine sweepers, vessels of naval districts, yachts (except seagoing yachts for distant service), and auxiliary vessels. The following are included in this classification: Yachts for distant service, destroyer, mine force, and submarine tenders, *Vestal*, *Prometheus*, and Coast Guard cutters attached to the fleet, mine planters such as *Aroostook*, *Shawmut*, etc.

(b) *Auxiliary Vessels of the Navy (this includes chartered and ex-German vessels when commanded by Reserve Officers, former vessels of the Naval Auxiliary Service, such as the Jason, whether commanded by Regular or Reserve Officers):**United States Publications.*

Complete set.

*Allied Publications.*

A "short set" as indicated by the asterisk on list "A," page 14.

(c) *Submarines.**United States Publications.*

Complete set, except U. S. Recognition Signals.

*Allied Publications.*

None unless equipping for distant service, in which case they will be supplied with a "partial set," as follows:

Allied W/T Code A.

Current Interallied W/T Call Signs (List I. C. N.) and corrections.

Current Allied Recognition Signals (Doc. R. E. C.).

Current Mercantile Tables and accompanying instructions.

Current Key Memorandum 6.

(d) *Mine Sweepers (attached to the fleet).**United States Publications.*

Complete set except U. S. Recognition Signals.

*Allied Publications.*

A "short set."

(e) *Submarine Chasers attached to the fleet (and for distant service).**United States Publications.*

Service Radio Code.

D. P. Ciphers.

M. S. Ciphers.

W. R. I.

W. R. I.—A.

Visual Calls Memoranda.

Atlantic District Visual Calls (home waters only).

Signal Letters of U. S. Government Vessels.

Cover for Naval Ciphers.

Record Book for Signal Books, Codes, etc.

Signal Letters of Foreign Men-of-war (distant service only).

Deck and Boat Book (nonconfidential—to be obtained on requisition).

Extracts from Radio Regulations.

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(g) *Submarine Chasers attached to the fleet—Continued.**Allied Publications.*

None unless equipping for distant service, in which the following will be supplied:

Current Key Memorandum 6.

Current Mercantile Tables and accompanying instructions.

W/T Commercial Call Signs (CB 1283) and amendments thereto.

W/T Ship and Shore Stations (CB 1284) and amendments thereto.

(f) *Tugs equipping for distant service.**United States Publications.*

Complete set except U. S. Recognition Signals.

*Allied Publications.*

Current Key Memorandum 6.

Current Mercantile Tables and accompanying instructions.

W/T Commercial Call Signs (CB 1283) and amendments thereto.

W/T Ship and Shore Stations (CB 1284) and amendments thereto.

(g) *Vessels assigned to naval districts:**United States publications.*

Service Radio Code.

D. P. Ciphers.

Deck and Boat Book (nonconfidential; to be obtained on requisition).

Visual Calls Memoranda.

Atlantic District Visual Calls.

Signal Letters for U. S. Government Vessels.

Extracts from Radio Regulations.

NOTE.—The most important district vessels may be furnished the following in addition, provided (1) it is considered desirable by the commandants, (2) a commissioned officer is in command, (3) proper facilities for safeguarding are available, and (4) vessels are on offshore or important harbor-entrance patrol duty involving frequent communication with seagoing naval vessels.

General Signal Book.

S. C. Cipher.

M. S. Cipher.

W. R. I.

W. R. I.—A.

Signal Letters of Foreign Men-of-war.

Cover for Naval Ciphers.

Record Book of Signal Books, Codes, etc.

Code and Signal Memoranda.

War Instructions for United States Merchant Vessels.

*Allied publications.*

W/T Commercial Call Signs (CB 1283) and amendments.

W/T Ship and Shore Stations (CB 1284) thereto.

Extracts from Current Key Memorandum 6.

(h) *Armed guard officers (or petty officers in charge).*

W. R. I.

W. R. I.—A.

M. S. Cipher.

War Instructions for United States Merchant Vessels.

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## (i) United States merchant vessels in Atlantic and Mediterranean trade:

*United States publications.*

W. R. I.

W. R. I.—A.

M. S. Cipher.

War Instructions for United States Merchant Vessels.

*Allied Publications.*

Current Mercantile Tables.

War Instructions for Mercantile W/T Operators.

W/T Instructions for Masters of British Merchant Ships.

NOTE.—These allied publications are furnished by British issuing officers to the masters of more important United States merchant vessels in Atlantic and Mediterranean waters, and include all vessels with United States armed guards. (See par. 11.)

*Transporting and Safeguarding Publications.*

27. Publications of this nature are divided into two classes: (1) Secret and (2) Confidential.

*Secret* matter is assigned registered numbers. It is not intrusted to the mails under any circumstances and it is invariably transported by commissioned officers. It should be safeguarded to the utmost and kept in safes or confidential lockers provided for that purpose, and where adequate facilities are not provided it shall be the duty of officers concerned to bring the fact to the attention of proper authorities and to use every endeavor to obtain adequate protection. Matter of this kind may be handled and inspected by commissioned officers only and then only by such officers as whose actual or prospective duties make their knowledge of the publications desirable. *Secret* matter shall be handled by officers of the regular service if practicable. Reserve, N. N. V., and Militia officers, when detailed by proper authority to duty requiring the use of these publications, may handle them, but it should be understood that the possession of a commission does not entitle an officer of even the regular service to study *secret* publications unless in connection with his duties. It should be borne in mind by all concerned that, notwithstanding the character or qualifications of officers, long experience has demonstrated the fact that the fewer the people having knowledge of or access to *secret* information, the smaller is the chance of its being compromised by inadvertence or espionage.

28. *Secret United States publications.*

— N. C. B. Ciphers.

— N. C. B. Cipher strips.

— Naval Code A 1.

— D. P. Ciphers.

— M. S. Ciphers. (Handled by masters and first officers of merchant vessels.)

— S. C. Ciphers.

— U. S. Recognition Signals.

— Navy Secret Code.

— Secret Radio Calls.

— Secret Merchant Radio Calls.

29. All *allied publications* are considered *secret* except in cases where they contain authority for handling by other than commissioned officers.

30. *Confidential* matter may or may not bear a registered number, depending on the character and distribution. It may be transported by registered mail, but is invariably put under double cover, the inner cover sealed securely with wax and marked "Confidential." It

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shall be handled by commissioned officers (Regular, Reserve, N. M., or N. N. V.) unless the publications contain specific authority for its being handled by others.

31. *Confidential United States publications.*

- General Signal Book.
- Battle Signal Book.
- Service Radio Code.
- Radio Regulations.
- Extracts from Radio Regulations.
- War Time Radio Instructions for United States Merchant Ships (W. R. I.).
- Radio Signaling Instructions for United States Operators of Merchant Ships (W. R. I.—A.)
- General Radio Calls.
- District Radio Calls.
- A. and P. Radio Calls.
- Visual Calls Memoranda.
- Atlantic District Visual Calls.
- Signal Letters of United States Government Vessels.
- Signal Letters of Foreign Men-of-War.
- Code and Signal Memoranda.
- Record Book for Signal Books, Codes, Ciphers, Etc.

32. If capture or sinking of a vessel is imminent, it shall be the duty of the commanding officer to take efficient means to prevent any secret or confidential United States or allied publications being exposed to capture by the enemy or otherwise falling into the possession of unauthorized persons. If time permits, publications shall be burned; otherwise they shall be properly weighted and thrown overboard. In this connection, attention is invited to the last paragraph of this memorandum.

List of Allied Publications.

33. The following is a list of allied publications comprising a "complete set" at this date, 17 December. List A is arranged in the order by which the department's reference letters were assigned; list B is a classified list. The asterisk indicates publications included in a "short set" (see par. 26). The status of publications on 17 December is indicated by footnotes. These should be kept corrected in accordance with information received until the receipt of the "Record Book for Signal Books, Codes, etc."

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## List A.

## Allied Publications.

Department's letter.	Title.	Admiralty No.	Notes.
F	A. F. R. Signal Book, 1915.		
J	Instructions to Telegraphists A. F. R. Signal Book.		
*P	Auxiliary Code No. 13 (Code).	CB 0112	A, H.
*Q	Auxiliary Code No. 13 (Decode).	CB 112A	H.
*R	Wireless Telegraphy Commercial Call Signs, February, 1917.	CB 0322	B.
*S	Wireless Telegraphy Shore and Ship Stations, February, 1917.	CB 0323	B.
V	Addendum No. 11 to A. F. R. Signal Book.	CB 1283	A, H.
W	Instructions for Entry of Allied War Vessels into Allied Defended Ports (A. D. P. 17).	CB 1284	A, H.
X	Addenda No. 1 to A. D. P. 17 (CB 0338).	CB 0112M	B, H.
AA	Interallied W/T Call Signs No. 1 Short title, List ICN No. 1.	CB 0338	A, J.
JJ	Allied W/T Code "A".	CB 0338A	A, J.
*KK	W/T Memoranda (Leviathan, 15 May, 1917).	CB 0347	A, H.
*LL	Auxiliary W/T Call Signs.	CB 0480	A, H.
*MM	Allied W/T Instructions, 1917 (Document M. P. L.).		A.
NN	Allied Operating Table (Code F).	CB 316	A.
TT	U. S. Correction No. 1 to I. C. N. No. 1 (CB 0347).	CB 414	A.
*UU	Corrections No. 1 to Auxiliary W/T Call Signs (CB 316).	CB 1310	J.
WW	Allied Recognition Signals No. 1 (Document R. E. C. No. 1).		A, H.
XX	Addendum No. 12 to A. F. R. Signal Book.		A.
AB	Corrections No. 1 to A. D. P. 17.	CB 0461	A.
*AC	War Instructions for Mercantile W/T Operators.	CB 0112N	C.
*AD	W/T Instructions for Masters of British Merchant Ships.		A, J.
*AE	Secret Mercantile Call Signs.	CB 418	A.
*AF	Allied Operating Table No. 2 (Code F, No. 2).	CB 439	A.
AJ	Mercantile Tables No. 5.	CB 431	A.
*AL	Mercantile Tables No. 6.	CB 1344	A.
*AM	Wireless Telegraphy Commercial Call Signs (2d Supplement).	CB 432	D, G.
*AN	Wireless Telegraphy Shore and Ship Stations (2d Supplement).	CB 433	A.
*AP	Key Memorandum 6L.	CB 1283A-2	A, H.
*AQ	Mercantile Tables No. 7.	CB 1284A-2	A, H.
AR	Addendum No. 1 to Mercantile Tables No. 7.	CB 1354	A.
*AS	West Atlantic W/T Call Signs.	CB 434	E.
AT	Document I. F. C. (French).	CB 434A	E, F.
*AU	U. S. Correction No. 1 for W. A. C. No. 1 (CB 558).	CB 558	G.
AV	Interallied W/T Call Signs No. 2, List I. C. N. No. 2.		A.
*AW	Auxiliary Code No. 23 (Code).	CB 0533	G.
*AX	Auxiliary Code No. 23 (Decode).	CB 0465	G.
AY	Convoy Cipher No. 2.	CB 0466	G.
AZ	Mercantile Convoy Instructions, 1917.	CB 0497	F, G.
BA	U. S. Correction No. 1 to List I. C. N. No. 2 (CB 558).	CB 585	A, F.
BC	Addendum No. 13 to A. F. R. Signal Book.		G.
*BD	Secret W/T Call Signs for Transports and Fleet Auxiliaries.	CB 0112P	D, G.
BE	Addendum No. 23 to Auxiliary Code.		A.
*BF	U. S. Correction No. 1 to Code F, No. 2 (CB 1344).	CB 0470	D, G.
*BG	Key Memorandum 6M.		C, G.
BH	Addendum No. 5 to Auxiliary Code.	CB 1375	E.
*BJ	U. S. Correction No. 2 to Auxiliary W/T Call Signs CB 316.	CB 0367	B.
BK	Bulletin Indicatif de Corrections, Document I. F. C. (French).		A.

\* Short set.

A. In effect in west Atlantic and European waters.

B. In effect in west Atlantic.

C. In effect in European waters only (east of longitude 30 west).

D. Held in reserve at issuing stations.

E. In effect in Atlantic after 1 January.

F. Limited distribution.

G. Not yet in effect.

H. In effect in Pacific.

J. In effect in Pacific 1 January, 1918.

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List B.

A. F. R. Superseding and Related Publications.

Department's letter.	Title.	Admiralty No.	Notes.
- F	A. F. R. Signal Book, 1915.....		
- J	Instructions for telegraphists (A. F. R. Signal Book) .....	CB 0112	A.
- V	Addendum No. 11 to A. F. R. Signal Book .....	CB 0112A	H.
- XX	Addendum No. 12 to A. F. R. Signal Book .....	CB 0122M	B, H.
- BC	Addendum No. 13 to A. F. R. Signal Book .....	CB 0112N	C.
- MM	Allied W/T Instructions, 1917 (Document M. P. L.).....	CB 0112P	D, G.
- WW	Allied Recognition Signals No. 1 (Document R. E. C., No. 1).....	CB 414	A.
- NN	Allied Operating Table (Code F).....	CB 0461	A.
- AF	Allied Operating Table No. 2 (Code F, No. 2).....	CB 1310	J.
- BF	U. S. Correction No. 1 to Code F 2 (CB 1344).....	CB 1344	A.

A. D. P. Publications.

- W	Instructions for Entry of Allied Vessels into Allied Defended Ports (A. D. P. 17).....	CB 0338	A. J.
- X	Addenda No. 1, A. D. P. 17 (CB 0338).....	CB 0338A	A, J.
- AB	Correction No. 1 to A. D. P. 17 (CB 0338).....		A, J.

Mercantile Tables.

- AC	War Instructions for Mercantile W/T Operators.....	CB 418	A.
- AD	W/T Instructions for Masters of British Merchant Ships.....	CB 439	A.
- AJ	Mercantile Tables No. 5.....	CB 432	D, G.
- AL	Mercantile Tables No. 6.....	CB 433	A.
- AQ	Mercantile Tables No. 7.....	CB 434	E.
- AR	Addendum No. 1 to Mercantile Tables No. 7.....	CB 434A	E, F.

Key Memorandum 6.

- AP	Key Memorandum 6L.....	CB 1354	A.
- BG	Key Memorandum 6M.....	CB 1375	E.

- A. In effect in west Atlantic and European waters.
- B. In effect in west Atlantic only.
- C. In effect in European waters only (east of longitude 30 west).
- D. Held in reserve at issuing stations.

- E. In effect in Atlantic after 1 January.
- F. Limited distribution.
- G. Not yet in effect.
- H. In effect in Pacific.
- J. In effect in Pacific 1 January, 1918.

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List B—Continued.

Convoy Publications (Vessels on Convoy Duty).

Department's letter.	Title.	Admiralty No.	Notes.
AZ	Mercantile Convoy Instructions, 1917.		
AY	Convoy Cipher No. 2.	CB 585 CB 0497	A. G.

Lists of Calls, Etc.

R	W/T Commercial Call Signs, February, 1917.	CB 1283	A, H.
S.	W/T Shore and Ship Station, February, 1917.	CB 1284	A, H.
AM	W/T Shore and Ship Stations, 2d Supplement.	CB 1283A(2)	A, H.
AN	W/T Commercial Call Signs, 2d Supplement.	CB 1284A(2)	A, H.
LL	Auxiliary W/T Call Signs.	CB 316	A.
UU	U. S. Correction No. 1, Auxiliary W/T Call Signs (CB 316).		A.
BJ	U. S. Correction No. 2, Auxiliary W/T Call Signs (CB 316).		A.
AA	Interallied W/T Call Signs No. 1 (I. C. N. No. 1).		A.
TT	U. S. Correction No. 1 to I. C. N. No. 1 (CB 0347).	CB 0347	A, H.
AV	Interallied W/T Call Signs No. 2 (I. C. N. No. 2).		A, H.
BA	U. S. Correction No. 1 to I. C. N. No. 2 (CB 0533).	CB 0533	G.
D	Secret W/T Call Signs for Transports and Fleet Auxiliaries.		G.
AS	West Atlantic W/T Call Signs.		A.
AU	U. S. Correction No. 1 to W. A. C. No. 1 (CB 558).	CB 558	G.
AE	Secret Merchant Call Signs.		G.
AT	Document I. F. C. (French Secret Merchant Calls).	CB 431	A.

Codes.

JJ	Allied W/T Code A.	CB 0480	A.
P	Auxiliary Code (Code), No. 13.	CB 0322	B.
Q	Auxiliary Code (Decode), No. 13.	CB 0323	B.
AW	Auxiliary Code (Code), No. 23.	CB 0465	G.
AX	Auxiliary Code (Decode), No. 23.	CB 0466	G.
BE	Addendum No. 23 to Auxiliary Code.	CB 0470	D, G.
BH	Addendum No. 5 to Auxiliary Code.	CB 0367	D.

A. In effect in Atlantic.  
 B. In effect in west Atlantic only.  
 D. Held in reserve at issuing stations.

G. Not yet in effect.  
 H. In effect in Pacific.

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## Reports and Returns.

34. The following forms are being provided for use in connection with reports and returns of codes, signal books, etc.:

— C&S5.—Report of Secret and Confidential United States Publications distributed by the Code and Signal Section of Operations.

— C&S6.—Report of N. C. B., N. C. B. Ciphers, and Naval Code A-1.

— C&S7.—Report of secret and confidential Allied Publications distributed by the Code and Signal Section, Division of Operations.

— C&S8.—Report of destruction of secret and confidential publications distributed by the Code and Signal Section, Division of Operations.

— Forms C&S5, C&S6, and C&S7 are combined quarterly return and transfer receipt. They supersede the present form N. Nav. 2-Q, Annual (or Quarterly) Return. Supply of these forms may be obtained from issuing officers upon request.

35. United States publications without registered numbers need not be reported quarterly, upon transfer or upon destruction. They will be included, however, in reports of issues made by issuing officers. Reports of allied publications are not required from vessels in European waters or at the Azores.

36. Upon sinking, capture, or destruction of a naval vessel, immediate report by dispatch shall be made concerning disposition of secret or confidential publications. Any circumstances such as safes having been left unlocked, or secret publications having been left unguarded, which may possibly involve compromising of secret matter shall be immediately reported to the department, Division of Operations (Code and Signal Section).

D. W. TODD,  
Commander, U. S. Navy,  
Director of Naval Communications.

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NAVY DEPARTMENT

# Code and Signal Memorandum No. 3

(C. and S. Memo. 3)  
C. S. P. 130

NAVAL COMMUNICATION SERVICE  
CODE AND SIGNAL SECTION



WASHINGTON  
GOVERNMENT PRINTING OFFICE  
1917

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# CODE AND SIGNAL MEMORANDUM NO. 3.

(C. and S. Memo. 3)

NAVY DEPARTMENT,  
NAVAL COMMUNICATION SERVICE,  
CODE AND SIGNAL SECTION,  
Washington, December 19, 1917.

## COMPROMISING OF CODES AND CIPHERS.

1. The distribution of this memorandum corresponds in a general way to that of the General Signal Book. It is based largely on information furnished by the British Admiralty as the result of its experience with codes and ciphers during the past three years.

2. The two principal causes of the compromising of codes and ciphers are: (1) Capture of books and the work of secret agents, and (2) enemy's ability to reconstruct codes and ciphers from intercepted messages.

3. The capture of books is the worst case because not only does the enemy obtain the latest code but is also able to get a mass of valuable information from old messages intercepted by him. Officers using codes may assist to limit the amount of information thus obtained by the enemy by so wording their messages that the construction of messages never remains constant and the phraseology is varied.

4. The enemy's ability to reconstruct a code may be considered under two main headings: (1) The code may be compromised through excessive use; that is, it may remain too long in force. Steps are being taken to prevent this but difficulties of compiling, printing, and distribution prevent codes from being altered as rapidly as may be necessary; (2) the code may be compromised through misuse. This is found to be the greatest source of compromise, and officers concerned with the use of codes should study the subject with a view to avoiding the most common errors. It is largely for this purpose that the information contained in this memorandum is published.

5. The enemy has the following aids to reconstruction of codes and ciphers. Some are unavoidable, but they are of such a nature, nevertheless, that care on the part of officers using codes will prevent the enemy from securing more information than is absolutely necessary.

(a) *Direction finders, which fix the position of the sender and also that of the receiver.*—These enable the enemy to tell when ships are meeting, entering or leaving port, mine sweeping or performing other routine duties and thus to make corresponding deduction as to the subject matter of messages.

(b) *Numerous previous messages and obsolete codes.*—These give the enemy the form of messages and what certain senders normally talk about, particularly routine signals at more or less fixed times of day, such as orders for raising steam, daily sweeping reports, time signals, coal reports, etc.

(c) *Current intercepted messages.*—These furnish the enemy with valuable information, particularly if care is not taken to avoid unnecessarily long messages, mixing codes in the same message, repeating messages in code and plain language, or repeating messages in two or more

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codes without paraphrasing or altering the number of groups. The frequent introduction of dates, numbers, places, and punctuation are also dangerous.

(d) *Comparing a ciphered or coded message with the literal translation; either written or signaled.*—This is particularly simple if there is a repetition of the same group.

6. *Frequency of groups.*—It is a well-known fact that if you take a sufficient quantity of material you will find that individual letters in the English language invariably occur in a fixed order of frequency. For example: E is first, followed by T, then A, and so on down to J and Z, the least frequently used. The same principle holds good with complete words. If, therefore, the code in use is based upon the principle of one word, one group, the enemy could take a large mass of official or nonconfidential documents which he might obtain, dispatches which are published in the press, reports of speeches in Congress, confidential documents which he has captured, and arrange all of the words which occur therein in the order of their frequency of recurrence. If he then adds up the frequency of recurrence of the groups of sufficient intercepted messages and parallels the most frequently used words with the most frequently used groups, he would obtain the significations of a large number of words.

7. *Comparing frequencies in new and old books.*—With a cipher in use for some months, the enemy carefully counts up how many times each group occurs. The cipher is then changed—a fact that the enemy notices at once. He then counts up the frequency of recurrence of the new groups, and makes a fair assumption of the new words. If the old code is compromised, he knows the significations of the old groups and therefore those of the new. It must be remembered that the enemy will presumably count up frequencies in two different ways, viz:

- (a) By combining all intercepted messages.
- (b) By treating each area or station separately.

It is obvious that in the Dover area the group for Dover will be frequently employed, and in the Harwich area the group for Harwich, whereas the group for Harwich will be appreciably less used in the Dover area, and neither Dover nor Harwich will be mentioned at all in the Mediterranean messages.

8. *Use of material.*—Having gotten a certain amount of material from purely mechanical and unskilled work, as shown in the preceding paragraph, he could then proceed to utilize it as follows:

He has discovered, we will say, that CARUT represents "Dover," and HILOV represents "Harwich." He takes an intercepted message, four consecutive groups of which are:

I L U R O  
C A R U T  
Z A F Y L  
H I L O V

As CARUT represents Dover and HILOV represents Harwich, it is a fair assumption that the group between (ZAFYL) represents either "for" or "to." Comparing other places where ZAFYL occurs, he finds that it can not represent "to" and must therefore be "for." It is, therefore, a fair assumption that the first of the four groups mentioned above represents "left." This process could be continued ad infinitum.

9. The enemy notices that two particular groups, ROLIV and IRIQO, frequently follow one another in messages, but are separated by one constantly changing group. For example

(a)	(b)	(c)
ORISO	DILOR	VAMYS
ROLIV	ROLIV	ROLIV
COVIN	TOMIT	SOLIX
IRIQO	IRIQO	IRIQO

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The cipher is compromised and the translation of these three columns is found to be, say:

- (a) 17 officers 254 men.
- (b) 5 officers 96 men.
- (c) 55 officers 438 men.

The cipher is then changed and the enemy observes that where they formerly intercepted ROLIV and IRIQO, they now find ARITO and ZIFUR. It is obvious that these are the new groups for "officers" and "men," and they can trace these through from new cipher to new cipher, even though they do not obtain a copy of a later one. Furthermore, they mark the adjacent groups as figures.

10. Assuming for instance, that the enemy notices (as they must inevitably do) that some one starts a large proportion of his messages with the two groups LIVOP, SIMIQ. The cipher is compromised and these groups found to be, say, "Submarine sighted." The cipher is then changed, and the enemy observing that where they formerly intercepted LIVOP, SIMIQ, they now find ROTIB, SURAT. It is obvious that these are the new groups for "Submarine sighted," and they can trace these through from new cipher to new cipher, even if they do not obtain a copy. Further, they mark down the adjacent groups as positions, courses, etc.

11. Two particular groups, say, ARISO, BUXIZ, very frequently immediately follow each other. The cipher is compromised and these groups found to be, say, "Passed north." The cipher is then changed, and the enemy observing that where they formerly intercepted ARISO BUXIZ, they now find LISAB, NIVOP. It is obvious that these are the new groups for "Passed north," and they can trace this through from cipher to cipher.

12. *Unusual groups.*—Not only are frequently used groups of assistance to the enemy, but also unusual groups, when they do occur, often have an obvious signification. In many cases the enemy has a very good knowledge of the subject of a cipher message which he intercepts. For example, something unusual happens to the steamer *Franz Joseph* in a Mexican port. Thereupon a fixed combination of four or five consecutive and hitherto unknown groups occur with remarkable frequency in a large majority of the dispatches sent and received by the senior officer present at that port. It is obvious that this combination of groups represents the name *Franz Joseph* spelled out. Similarly, an action is fought and the enemy intercepts a long cipher message from the flag officer concerned. Shortly afterwards the press announces that "the commander in chief of the fleet reports that, etc." It is not difficult for the enemy to guess that the substance of the intercepted message is what is published in the press, and although the latter version may be properly paraphrased, yet it affords him a large amount of material. Then, again, the foreign secretary of some power sends for the American ambassador and has a long conference with him. Some hours after the ambassador's departure a long cipher message is dispatched from the embassy to Washington. The foreign office concerned consequently has an almost exact knowledge of the substance of that message, although of course it does not know the exact wording or arrangement of the phrases.

13. It must be accepted that within a few days of the introduction of a new code or cipher the enemy must know the significations of some 200 groups. It can not, therefore, be too strongly impressed upon officers who draft messages that one careless officer in drafting and coding messages can give the enemy more help toward solving codes and ciphers than is afforded by hundreds of properly drafted messages.

14. If messages are begun with expressions similar to "your 10226" in code, the groups for "your," "ten," "two," "twenty-six" may be readily understood by the enemy. For instance, if ship ABC is heard calling ship DEF and transmitting a message with the time group 10226, and if in a few minutes, DEF calls ABC and transmits a code message, it is frequently the case that the second message commences with the groups representing "your 10226." The time group

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at the beginning of a message and the words "your" "our," and "my," if preceding it, should be in plain language. In the body of a message, they should be coded.

15. The use of the same phraseology, particularly at the beginning and end of a message, is liable to compromise the code or cipher. For example, constantly beginning a message with the groups representing say, "Expect to arrive" or "enemy submarine," or ending with those for "acknowledge," will soon disclose the signification of these groups. Moreover, if the code used is one which depends on a keyword, it may be possible to discover the entire keyword from merely a suspicion (confirmed by experiment) that just one intercepted message starts or ends with some particular phrase. The word "acknowledge" at the end of a message should always be in plain language.

16. Similarly, unless not only the phraseology but also the structure of messages of a routine nature, such as fuel reports, reports of movements, etc., are constantly varied, there is a danger of gradual compromise. It is of the greatest importance that not only the wording and arrangement of routine messages should be constantly altered but also that their length be continually varied.

17. Scientifically constructed codes contain a choice of several groups for the more common words and phrases. This is being done in the codes now in preparation in the Navy Department and will be continued and enlarged upon in future codes. It is impossible, however, in many cases, to foresee that certain words and expressions will be frequently used in a given field of operations. Of course new groups can be provided but owing to the fact that when the present system is in full operation, there will be a code in use, another in reserve, and another in preparation, it is difficult to supply such groups immediately that the demand for them arises.

18. As new codes are supplied to the service it is highly important that officers who draft messages and those who use the codes should have a thorough knowledge, not only of general information, such as that contained in this memorandum, but also the more detailed instructions included in each code.

19. In order that the office preparing naval codes may improve them with successive issues, all officers concerned are enjoined to keep records of the following and submit them promptly to the Director Naval Communications (Code and Signal Section).

(a) New words or phrases.

(b) Words or phrases which are frequently used, but which do not appear to have sufficient alternative words provided.

(c) Words frequently used which have to be spelled.

(d) Defects in the arrangement of the code and suggestions for improvement.

20. It is desired to impress upon all concerned that the enemy has a large, scientifically organized, and efficient office, whose only duty is the breaking of codes and ciphers, and that codes and cipher systems which may appear absolutely secure to a person not expert in such work may in the hands of the enemy's cryptographers be comparatively simple. In this connection and as a warning against an undue sense of security, attention is invited to the fact that men who have made a study of such work are able to decipher ancient inscriptions, manuscripts, etc., in which the language, written characters, and subject matter were entirely unknown. Compared with this, the deciphering of cipher messages in which the language and general character of the subject matter are known is relatively simple.

D. W. TODD,  
Commander, U. S. Navy,  
Director of Naval Communications.

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