

TACTICAL ORDERS AND DOCTRINE, BATTLESHIPS AND CRUISERS, U.S. NAVY

I. BATTLESHIP TACTICS AND DOCTRINE

A. GENERAL-The U.S. Navy's basic battleship tactics and doctrine were formulated as a result of the various fleet problems conducted during the between wars period. Fast battleships of the NORTH CAROLINA, SOUTH DAKOTA and IOWA classes changed some of the numbers used in the tactical publications, but not the principles. The Operations Orders of the Fast Battleship Force reflected those changes. Radar also changed some of the considerations involved in night and gunnery doctrine.

B. TACTICS-1938-1942-In the U.S. Navy the basic evolution unit in battleship tactics is the two-three ship division (BATDIV). Most of the 1938-1942 battleships are organized in three ship divisions. Standard distance for individual ships is 700 yards, with interval between divisions set at 2100 yards.

Battleship engine order telegraph speeds are as follows unless signaled otherwise:

ENGINE ORDER TELEGRAPH SETTING	SPEED
1/3	6 knots
2/3	9 knots
STANDARD	12 knots
FULL	18 knots
FLANK	Maximum sustained speed

In formation the 1938-1942 battleships accelerate (after engines are adequately warmed up) at the following rate:

KNOTS	RATE OF CHANGE OF PROPELLER RPM	TOTAL TIME TO MAKE CHANGE THROUGH RANGE OF REVOLUTION INDICATED
0-10 knots	5.00 kts/min.	2 minutes
10-15 knots	1.00 kts/min	5 minutes
15-18 knots	0.50 kts/min	6 minutes
18-20 knots	0.25 kts/min	8 minutes

An old battleship formation can accelerate from 10 to 20 knots in 19 minutes. Generally deceleration is accomplished as "rapidly as possible without lifting safety valves" unless the order was STOP in "which case the throttle shall be closed immediately."

C. TACTICS-FAST BATTLESHIPS, 1943-1945-The basic evolution unit for Fast Battleships is the two ship division. Standard distance for Fast Battleships is 1000 yards with the interval between divisions set at 3000 yards. In formation Fast Battleships accelerate and decelerate in accordance with the following table:

FOR USE IN FORMATIONS INCLUDING BB 55-60

<u>ACCELERATE</u>		<u>DECELERATE</u>	
<u>Minutes</u>	<u>Speeds</u>	<u>Minutes</u>	<u>Speeds</u>
1	0-15	3	27-26
3	15-21	2	26-25
2	21-23	1	25-24
2	23-24	1	24-22
3	24-25	1	22-15
4	25-26	1	15-0*
5	26-27	1	
<u>20</u>		<u>9</u>	

Higher rates may be used in emergency

*In deceleration tables the figure "0" indicates throttles closed.

FOR USE IN FORMATIONS INCLUDING BB 61 CLASS BUT NOT INCLUDING BB 55-60

<u>ACCELERATE</u>		<u>DECELERATE</u>	
<u>Minutes</u>	<u>Speeds</u>	<u>Minutes</u>	<u>Speeds</u>
1	0-15	4	32-30
1	15-20	3	30-27
2	20-24	2	27-24
3	24-27	2	24-20
6	27-30	1	20-0*
8	30-32	1	
<u>21</u>		<u>12</u>	

In Fast Battleships the engine order telegraph speeds unless signalled otherwise are:

<u>ENGINE ORDER TELEGRAPH SETTING</u>	<u>SPEED</u>
1/3	5 knots
2/3	10 knots
STANDARD	16 knots
FULL	21 knots
FLANK	26 knots

Tactical diameter is generally 1000 yards. For zigzagging tactical diameter will be 2000 yards.

The order of divisions in the Fast Battleship Force unless signalled otherwise is SEVEN, SIX, EIGHT, NINE, van to rear and right to left.

CRUISING DISPOSITIONS IN USE IN THE FAST BATTLESHIP FORCE-The following are dispositions employed by the Fast Battleship Force.

The diagrams illustrate the formation as follows: 1) van to rear

USING DISPOSITION 4 R-Ready Dispositi

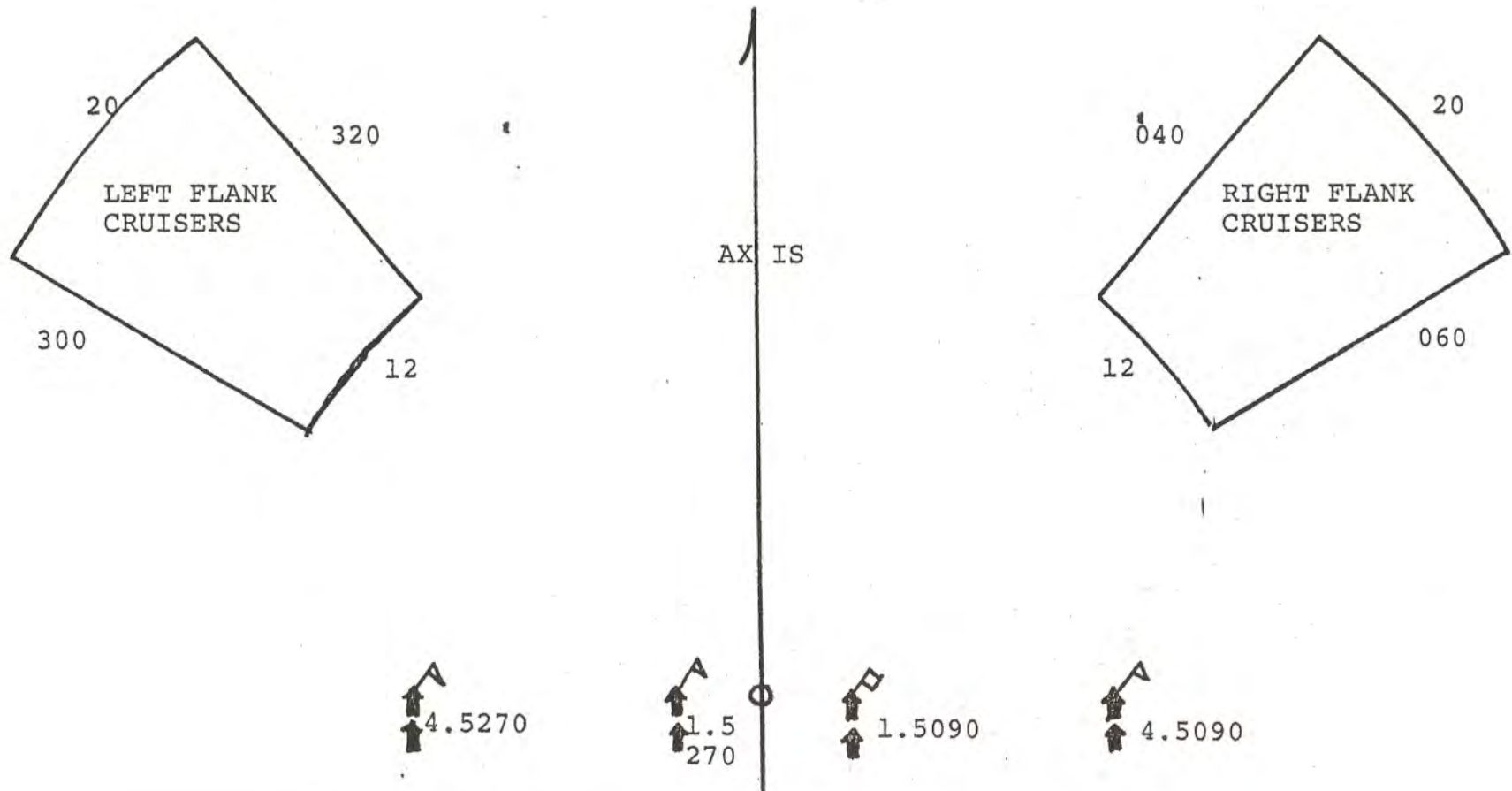
STATION ASSIGNMENTS

<u>Battle Line</u>	<u>4 Divisions</u>	<u>3 Divisions</u>	<u>2 Divisions</u>
Right Division	4.5090	3090	1.5090
Right Center Division	1.5090 (G)		
Center Division		0000	
Left Center Division	1.5270		
Left Division	4.5270	3270	1.5270

Left Flank Cruisers-Between circles 12 & 20 in Sector 300-320. Destroyers in A/S screen.

Center Force-Between circles 12 & 20 in sector 340-020. Destroyers in A/S screen.

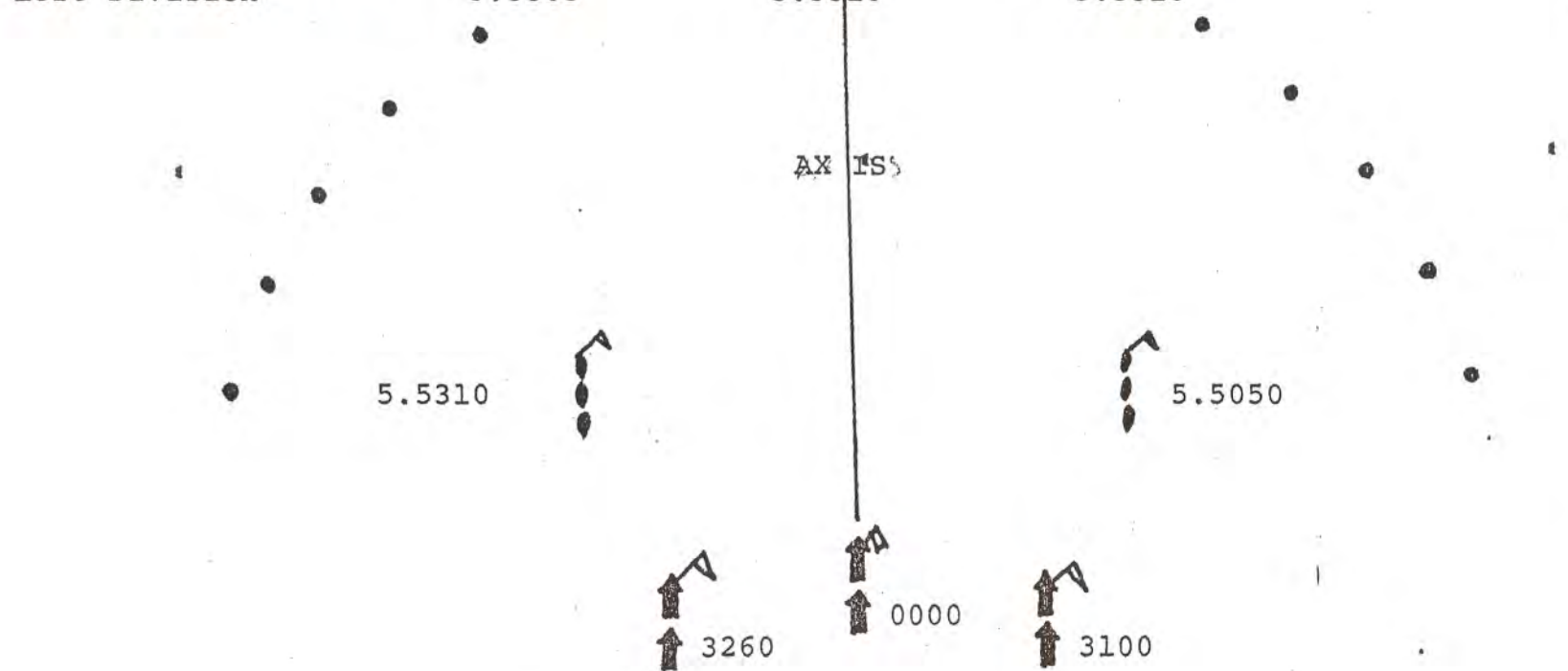
Right Flank Cruisers-Between circles 12 & 20 in sector 040-060. Destroyers in A/S screen.



CRUISING DISPOSITION 4 N-Normal day or night cruising disposition.

STATION ASSIGNMENTS

<u>Battleships</u>	<u>4 Divisions</u>	<u>3 Divisions</u>	<u>2 Divisions</u>	
Right Division	4.5100	3100	1.5090	
Right Center Division	1.5090 (G)			
Center Division		0000 (G)		
Left Center Division	1.5270			
Left Division	4.5260	3260	1.5270	
<u>Cruisers</u>	<u>4 Divisions</u>	<u>3 Divisions</u>	<u>2 Divisions</u>	<u>1 Division</u>
Right Division	5.5055	5.5050	5.5050	
Right Center Division	5020			
Center Division		5000		5000
Left Center Division	5340			
Left Division	5.5305	5.5310	5.5310	



SCREEN: Circle 10(10,000 yds). Sufficient destroyers present-complete circle-otherwise orient to fleet course.

CRUISING DISPOSITION 4 S-Anti-Submarine Disposition

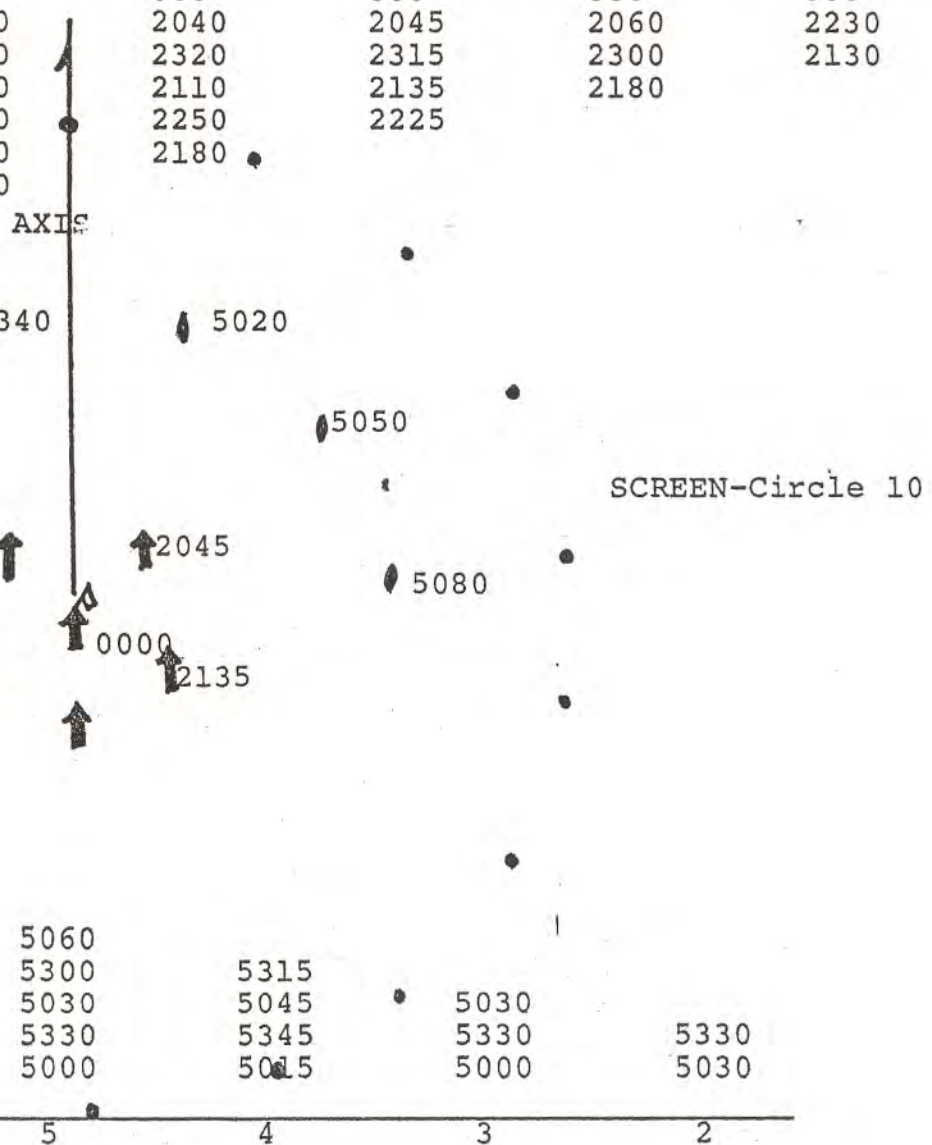
STATION ASSIGNMENTS

Battleships

# Ships- 10	9	8	7	6	5	4	3
Station							
0	000	000	000	000	000	000	000
1	3.5020	3.5040	3030	2030	2040	2045	2060
2	3.5340	3.5320	3330	2330	2320	2315	2300
3	3.5060	3.5080	3080	2090	2110	2135	2180
4	3.5300	3.5280	3280	2270	2250	2225	
5	3.5100	3.5120	3130	2150	2180		
6	3.5260	3.5240	3230	2210			
7	3.5140	3.5160	3180				
8	3.5220	3.5200					
9	3.5180						

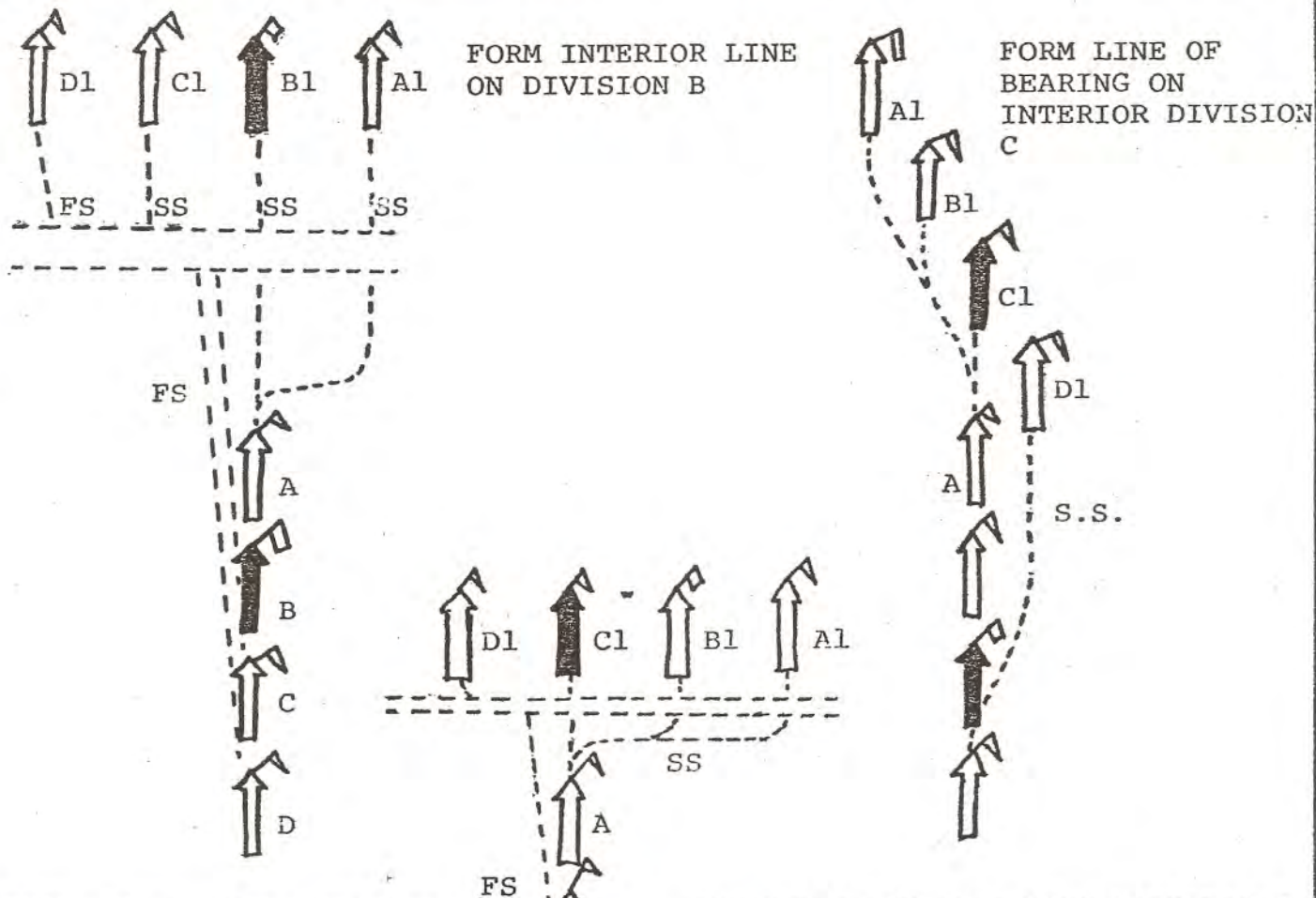
Cruisers

Station	8	7	6	5	4	3	2
24	6230						
23	6130	6120					
22	6250	6240					
21	6110	6100					
20	6270	6260					
19	6090	6080					
18	6290	6280					
17	6070	6060					
16	6310	6300	5280				
15	6050	6040	5080	5060			
14	6330	6320	5310	5300	5315		
13	6030	6020	5050	5030	5045	5030	
12	6350	6340	5340	5330	5345	5330	5330
11	6010	6000	5020	5000	5015	5000	5030



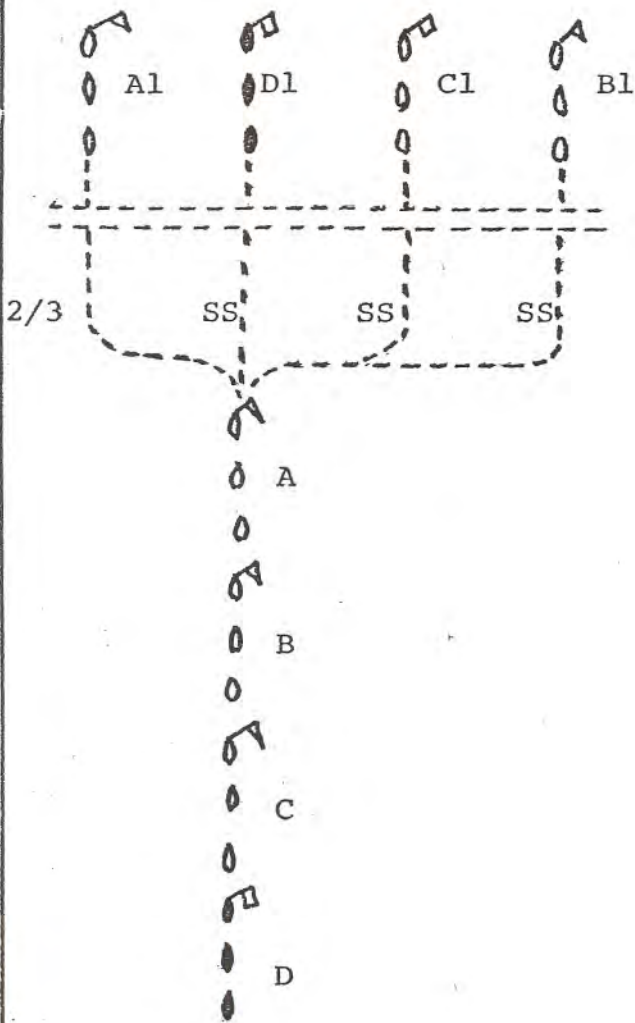
# Ships	8	7	6	5	4	3	2
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MANEUVERS OF A BATTLESHIP FORMATION—The following plates illustrate typical battleship maneuvers and are by no means all inclusive. In all cases the ships are assumed to be at standard interval and distance, and at standard speed at the beginning and end of the maneuver. A three ship division is the evolution unit (i.e. a total of 12 ships). The notations for speed of an individual unit are as follows: FS=full speed; S.S. standard; 2/3=2/3; 1/3=1/3. The evolution units are marked at the beginning of the maneuvers from van to rear or right to left A, B, C, D. Subsequent positions are noted A1, B1, C1, D1; A2, B2, C2, D2; etc. The base or guide unit is black. The order for divisions is: old battleships (1938-1942) 4-2-1-Fast battleships 7-6-8-9., van to rear, right to left. When required course change precedes realignment.



SIGNAL: Form with division guides bearing as indicated (indicating bearing and designating base unit) _____ Base unit take speed indicated. _____ Steam at speed indicated for maneuver (addressed to units in rear of base unit and indicating speed if desired that they take other than full speed.)

FORM LINE ON INTERIOR DIVISION C

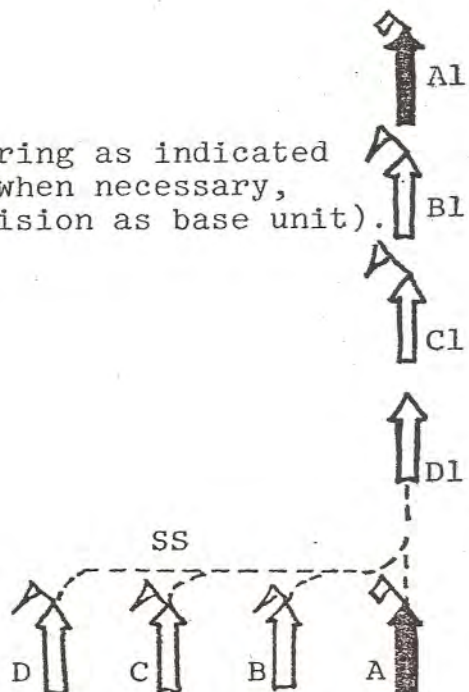


TO FORM LINE OF DIVISIONS

SIGNAL: Form with division guides bearing as indicated. _____
 Base unit take speed indicated. _____
 Steam at speed indicated for maneuver. _____

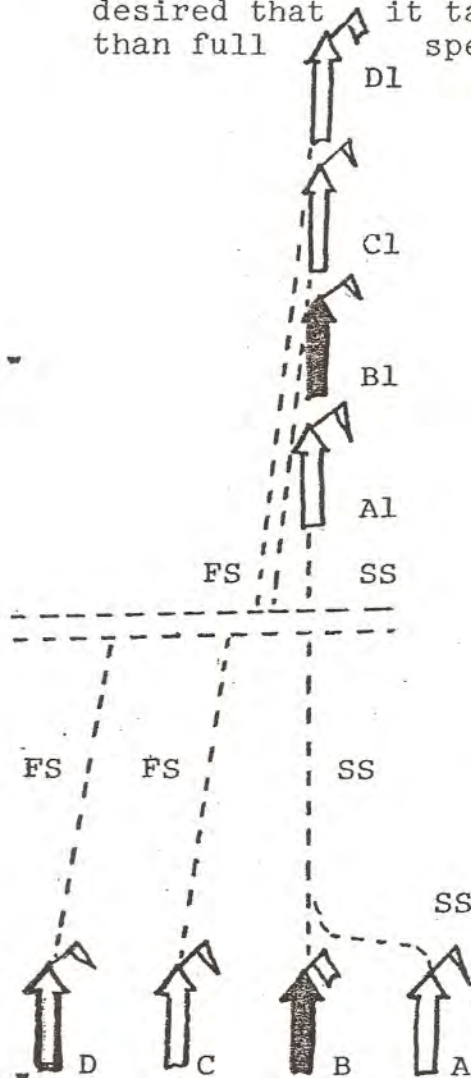
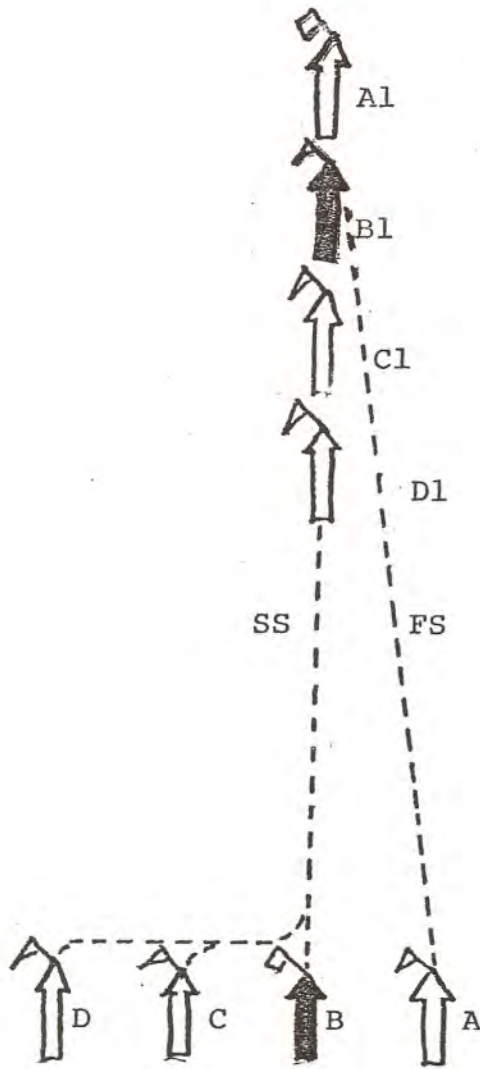
TO FORM COLUMN OF DIVISIONS

SIGNAL: Form with divisions bearing as indicated (indicating 180° and, when necessary, designating a flank division as base unit).



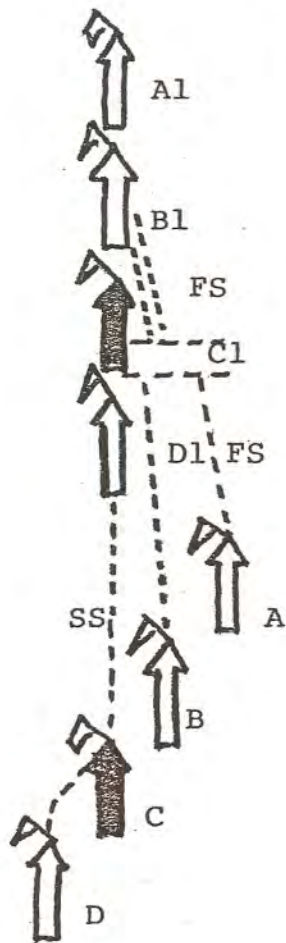
TO FORM COLUMN ON INTERIOR DIVISION B
(TWO EXAMPLES)

SIGNAL: Form with divisions bearing as indicated. _____ (indicating 0° or 180° and designating an interior division as base unit.) Guide(base unit) take speed indicated for maneuver (if desired that base unit take speed other than standard speed). Steam at speed indicated for maneuver (addressed to division(s) which take station ahead of base unit and indicating speed, if desired that it take speed other than full speed).

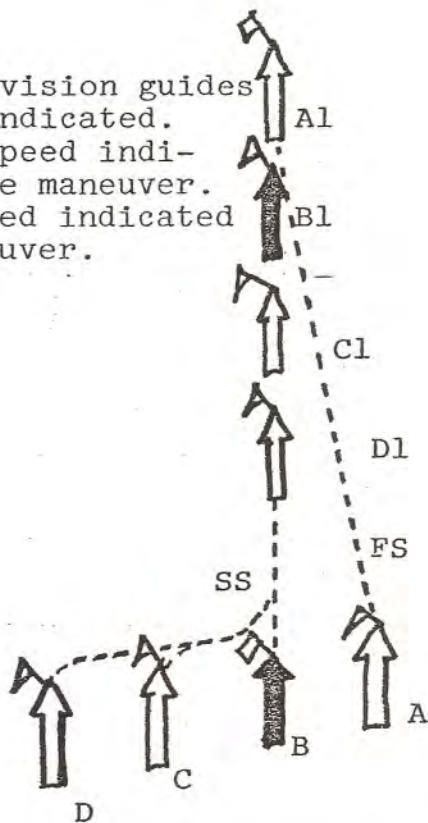


TO FORM COLUMN OF DIVISIONS (THREE EXAMPLES)

TO FORM COLUMN ON INTERIOR DIVISION C

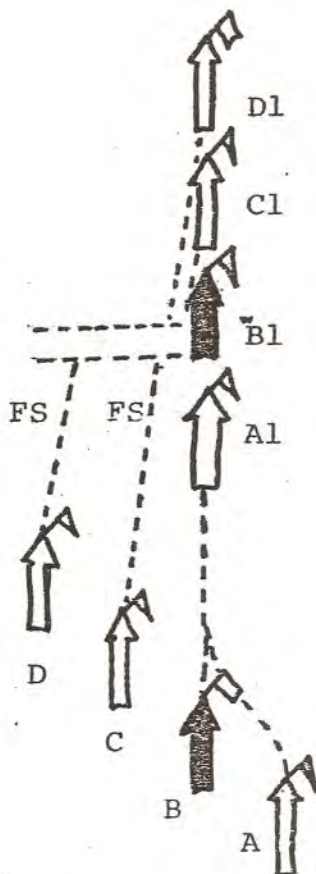


SIGNAL: Form with division guides bearing as indicated. Guide take speed indicated for the maneuver. Steam at speed indicated for the maneuver.

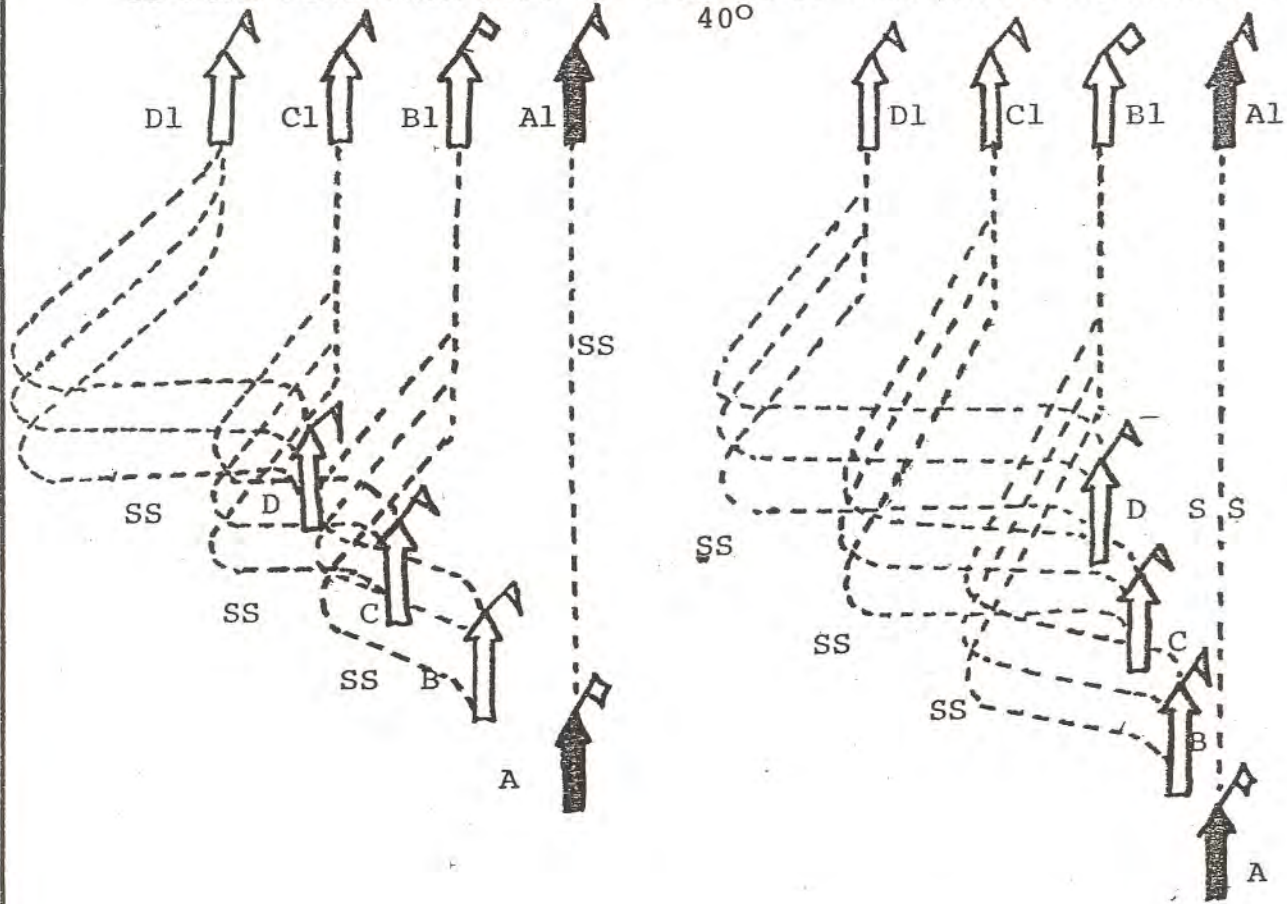


TO FORM COLUMN ON INTERIOR DIVISION B

TO FORM COLUMN ON INTERIOR DIVISION B

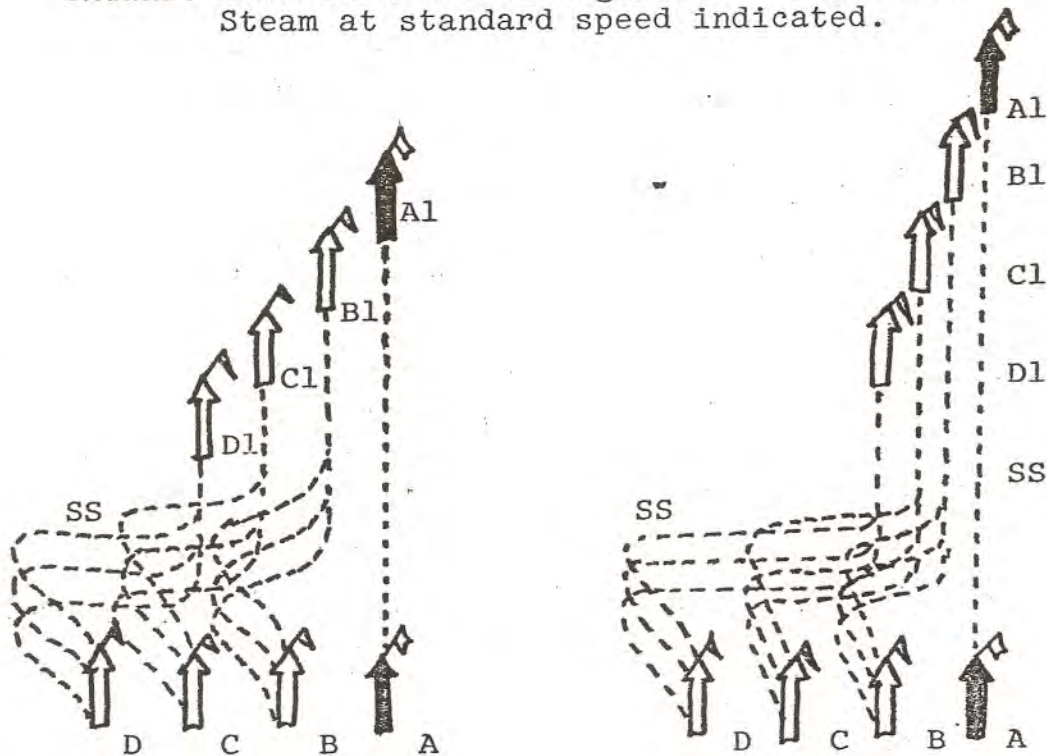


TO FORM LINE FROM LINE OF BEARING BY DROPPING BACK BEARING MORE THAN 40°

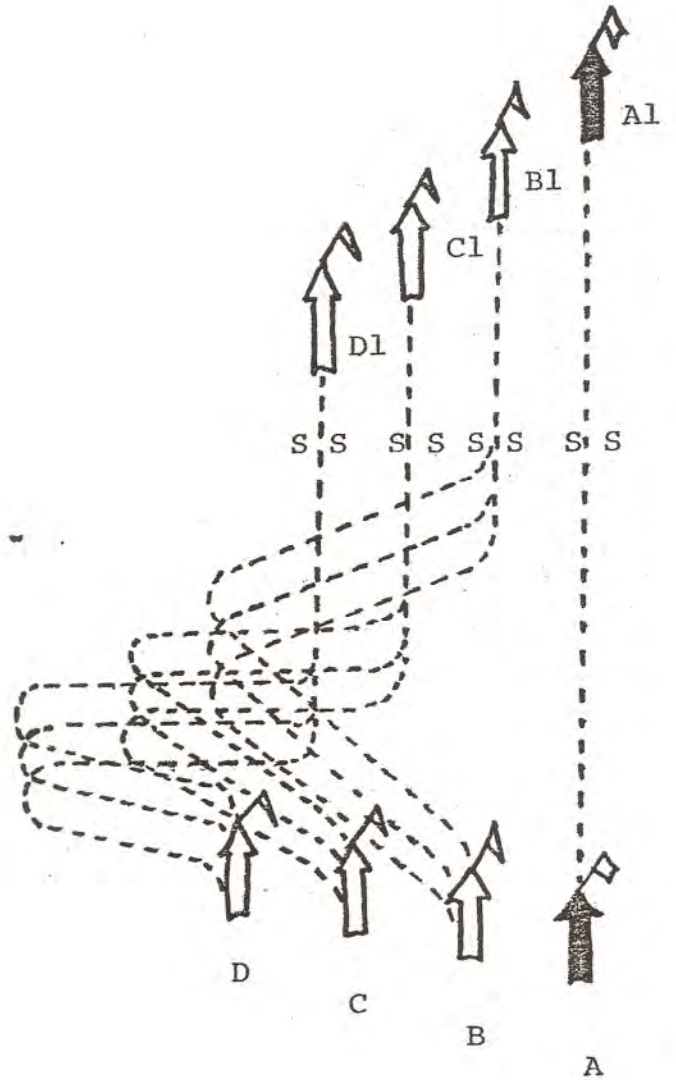
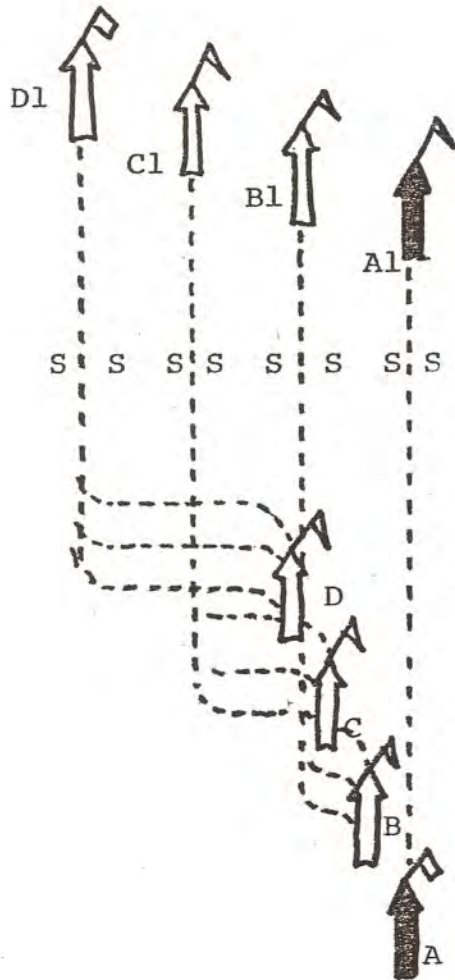


TO FORM LINE OF BEARING FROM LINE BY DROPPING BACK THE BEARING MORE THAN 40°

SIGNAL: Form with division guides as indicated
Steam at standard speed indicated.



TO CHANGE LINE OF BEARING BY DROPPING BACK THE BEARING MORE THAN 4



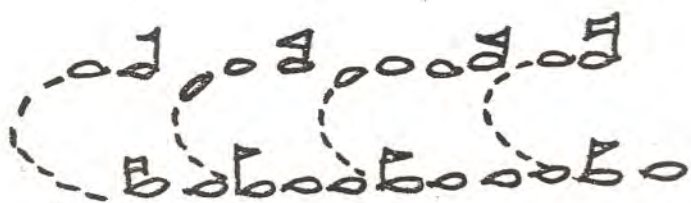
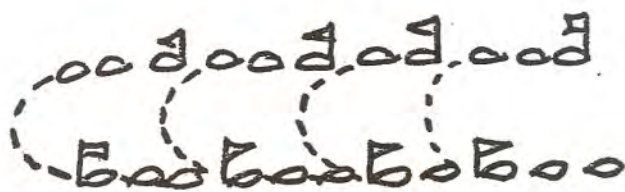
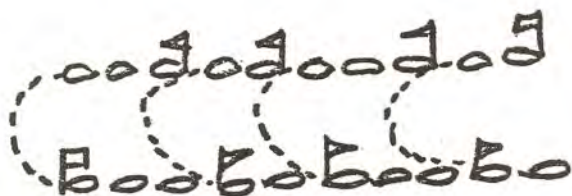
APPROACH, DEPLOYMENT AND BATTLE MANEUVERS

1. Approach-The approach phase should be conducted in a manner to enable all ships to open fire promptly, deploy rapidly at right angles or within 60° of axis and prevent enfilade("T" crossing). The maneuvers in the previous section illustrate realignments used to accomplish these goals.

2. Deployment-Examples of deployment maneuvers are shown on the following pages.

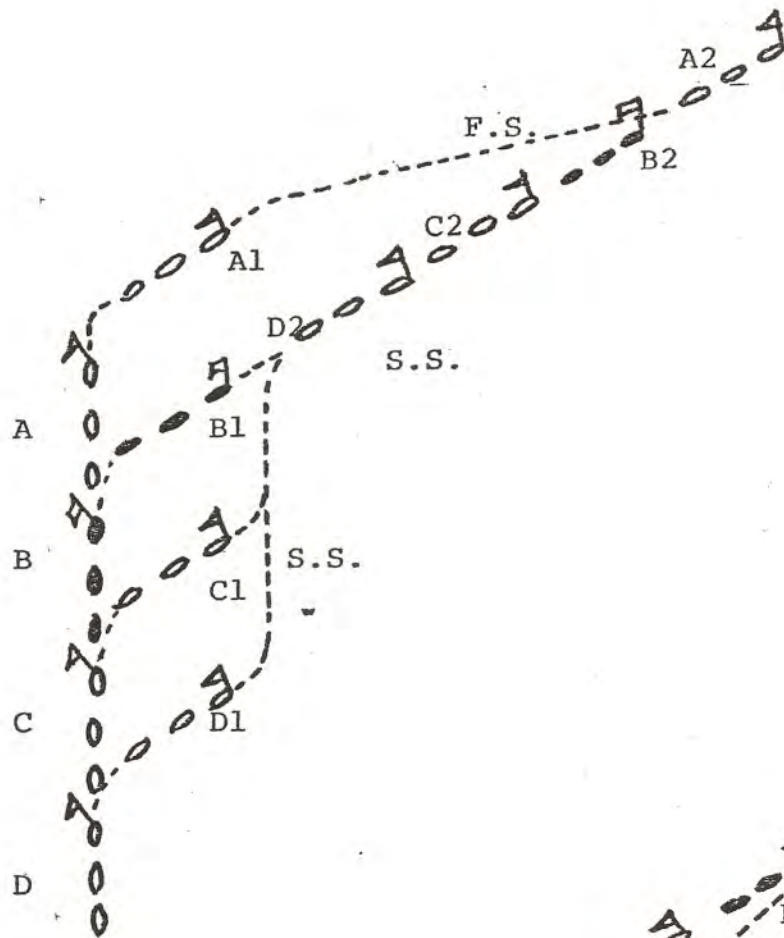
3. Battle Maneuvers-In addition to standard maneuvering instructions, ships should follow the leader in course and speed changes. Ships in line of bearing form column automatically when signalled change of course requires change of course by division or if division guides change course without signal.

The standard countermarch will be by divisions with guides maintaining their relative positions with regard to their divisions, but with the sequence of the divisions reversing.

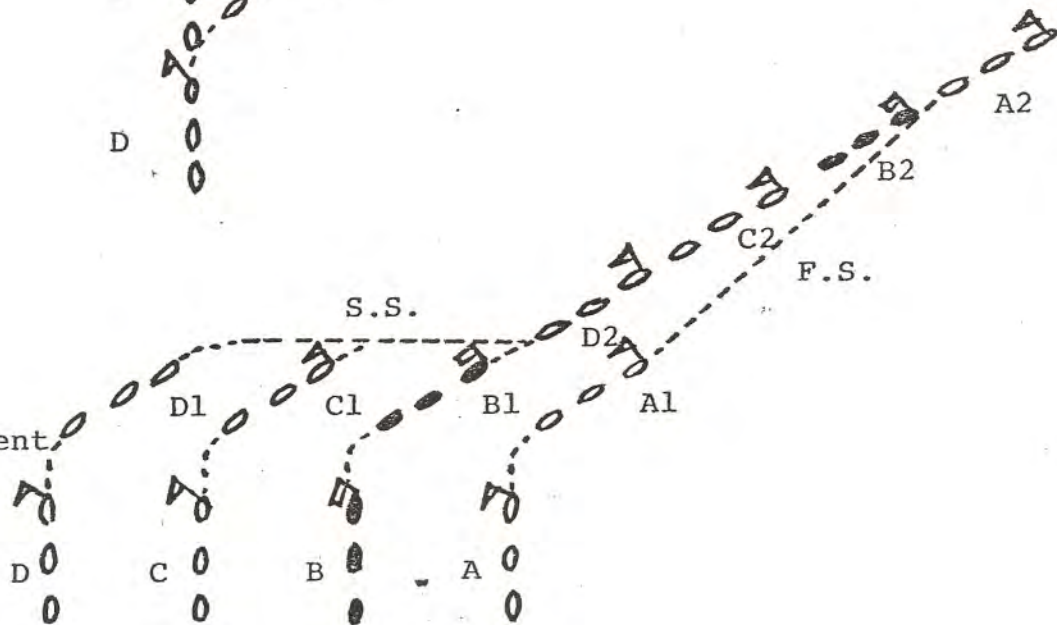


For deployment for battle the following maneuvers are typical:

For Deployment
from Column

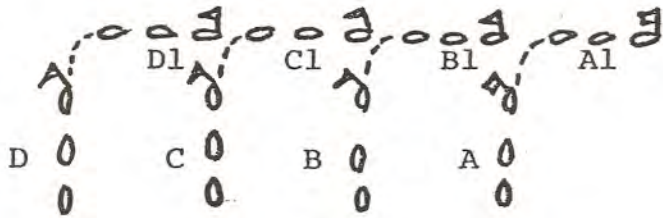


For Deployment
from Line



Deployment of Battle Line (continued)

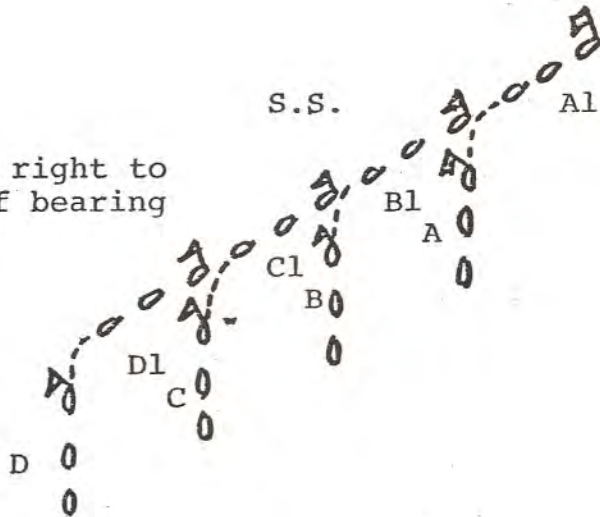
S.S.



From Line 90° to right of present course-

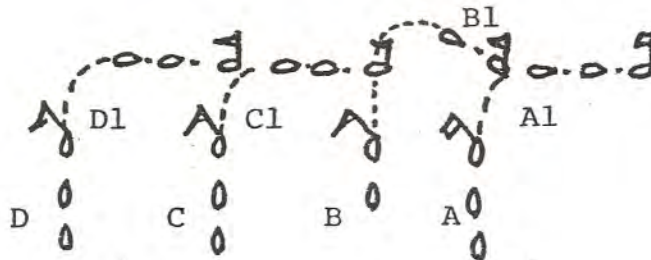
S.S.

From line of bearing right to reciprocal of line of bearing



S.S.

Divisions of unequal strength



2100 2100 1400

D. DOCTRINE

When action appears imminent Readiness for Action, Condition One and Material Condition ZED will be taken without signal.

1. Main Batteries(day)

- a. Fire distribution(number of own ships less than enemy),
Single fire from own van-Divided fire from own rear.
- b. Fire distribution(number of own ships more than enemy),
Double fire from own van-Single fire from own rear.
- c. Fire distribution(number of own ships equals enemy),
Single fire throughout.
- d. Changes in fire distribution.
 - i. Enemy ship drops out-Ship firing on damaged enemy unit continue firing until it is out of effective range; then select new target in accordance with the above instructions.
 - ii. Own ship drops out-Division commander(of damaged ship's division) redistribute fire of his division until new fire distribution order is given. Damaged ship continue firing on its appointed target until it is out of effective range, then fire at targets of opportunity.
 - iii. Enemy maneuvers cause relative position of targets to shift-Fire on old targets as long as enfilade or overlapping of enemy exists then shift using above rules.
 - iv. Prolonged obscuring of part of enemy line-
 - (a) Select visible targets in accordance with above rules.
 - (b) Air spotting available-continue firing on designated target as long as effective spotting maintained.

Prior to initial contact all guns and range finders will be trained on the general bearing line designated by the Commander Battle Line-usually the axis upon which enemy is expected.

Because of ammunition supply considerations rapid fire will not be ordered until hitting range has been established with reasonable accuracy.

- forces* —
- e. Main battery use for destruction of enemy light forces when battle lines not engaged-Generally the guidelines for use of main batteries against enemy light forces are as follows:
 - i. Need for holding main battery fire for instant use against enemy battle line.
 - ii. Need to conserve main battery ammunition.
 - iii. Choice of targets that will most effectively support effort of own light forces and inflict maximum damage.
 - f. Main battery use against light forces concentrating in van or rear during Battle line engagement. If enemy light forces in such strength are able to effect a concentration in own van or rear(in event of countermarch) as to constitute a torpedo threat main batteries may be used under the following guidelines:
 - i. Battle lines equal numerically-van or rear divisions shift forward or aft turret groups on threatening enemy light forces.
 - ii. Own battle line superior-van or rear divisions shift fire to light forces while maintaining ship for ship fire.
 - iii. Generally the enemy battle line is the principal target of own battle line.

2. Main Batteries(night)

Generally the possibility of damaging own spotter aircraft requires the following rules for night battleship engagement with main batteries.

- a. Enemy battleship or battle cruiser-use entire battery.
- b. Enemy cruiser-use forward group only unless necessity outweighs need to retain aircraft.
- c. Battleship under surprise fire will fire any and all weapons required by circumstances regardless of general fire distribution doctrine.

3. Secondary Batteries(day)

To avoid cross fire and insure all targets are covered fire distribution shall be by division from van to rear.

4. Secondary Batteries(night)

Enemy destroyers which have penetrated own inner screen will be taken under fire by battleship secondary armament if own light forces not endangered.

Fire should be opened on enemy cruisers which have penetrated own screen if battleship positions have been disclosed. Destroyers have priority over cruisers in secondary battery employment. If cruisers and destroyers have penetrated then forward main battery guns should be used against the cruisers leaving secondary battery free to engage destroyers.

Battleships should refrain from illumination by searchlight or star shell unless screen illumination is inadequate.

5. Anti-aircraft Batteries(day)

Priority for types of enemy aircraft for five inch batteries:

- a. Strafing aircraft in initial dive.
- b. Horizontal bombers
- c. Dive bombers
- d. Smokers
- e. Torpedo planes

Priority for types of enemy aircraft for machine guns

- a. Dive bombers
- b. Torpedo planes

Priority for threats and rules for engaging aircraft

- a. Major menace
- b. Nearest target first
- c. Don't divide fire unless ship acting singly
- d. Open fire at maximum effective range
- e. Fire on retiring aircraft unless new threat develops.

6. Anti-aircraft Batteries(night)

Generally avoid firing unless own position revealed then use searchlights to blind enemy aviators and apply daytime rules of engagement.