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**U. S. FLEET**  
**UMPIRE INSTRUCTIONS**

*Superseded by.*  
*Edition of 1932*

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DECLASSIFICATION OF WWII RECORDS

To be turned in to Force Commander by ship being decommissioned,  
placed in reserve, or transferred from U. S. Fleet.

# U. S. FLEET

## UMPIRE INSTRUCTIONS

### - 1931 -

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U. S. FLEET  
EMPIRE INSTRUCTIONS

- 1931 -

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**UNITED STATES FLEET**  
**U. S. S. PENNSYLVANIA, Flagship,**

**CONFIDENTIAL**

San Pedro, California,  
27 October, 1931.

**From:** Commander-in-Chief, United States Fleet.

**To :** Fleet.

**Subject:** U. S. Fleet Umpire Instructions.

1. This pamphlet contains rules for umpiring fleet problems, for making reports on fleet problems, and for imposing constructive casualties on the forces engaged in fleet problems. It is provided primarily for use in United States Fleet problems, but should be used in force exercises when applicable.

2. The articles in this pamphlet relating to the assessment of damage and imposition of constructive casualties are known as "damage rules".

3. The damage rules provide for the assessment of constructive damage by an umpire on the spot as soon as it is incurred.

4. Constructive damage incurred by a ship is expressed in terms of percentage of the life of the ship. A ship under gun fire at a given range suffers a reduction in life at the rate of a certain percentage per minute. Torpedo and bomb hits are translated into terms of percentage of the life of the ship which is hit. Exception to this rule is made in case of destroyers under certain circumstances, and in the case of tugs, submarines and aircraft, where damage is assessed in terms of a number of vessels or aircraft totally destroyed.

5. A ship suffers no reduction in gun power as the result of constructive damage until she is declared out of action.

6. Damage rules do not apply in major fleet actions. A fleet action usually occurs at the end of a problem when but little is to be gained by imposing constructive casualties. The conditions in a fleet action usually are so complex that rapid and accurate assessment of damage is impracticable. The rules therefore prescribe that the imposition of constructive casualties shall not apply to vessels engaged in a major fleet action after the battle lines open fire. Casualties imposed up to that moment remain in effect during the fleet action. Provision is made for recording in detail the events of a fleet action in order that the results of the action may be studied from a plot prepared subsequent to the completion of the problem.

7. The damage rules are based on War College rules condensed and modified for the sake of simplicity and rapidity of computation, and in order to accord with the limited knowledge of conditions which umpires afloat possess in comparison with the information at the disposal of game board umpires. Furthermore, the rules are intended to avoid excessive losses of ships in the early phases of a problem. This feature has been introduced because a ship put out of action prematurely loses the benefit of the training the problem should provide. There must not be too drastic sacrifice of realism, and the aim has been to adhere to War College principles but to slow the War College rates of attrition. In this connection it will be observed that the gun fire damage tables have in general been reduced to half the War College values and that the damage to destroyers in formation attacks (rule 33-2) has been reduced decidedly below the values used in game board problems. In connection with damage to aircraft on carriers the usual game board rules relating to damage to flight decks, damage to planes on deck when the carrier is bombed, and damage incurred incident to aircraft in flight being unable to land because of carrier damage have been replaced by one rule (rule 38) providing that carrier based aircraft shall suffer damage whenever the carrier is damaged and to the same extent. This has been done partly for the sake of simplicity in computing losses but mainly for the purpose of preventing the loss of all carrier planes so early in a problem that aircraft will receive no benefit from the experience which the problem should afford.

8. It should be kept in mind that damage rules are intended primarily for the purpose of causing changes in the situation, thus exercising officers in the making of decisions. The rules can not and do not take into account the many intangible factors that govern success in battle. The vital lessons of a problem are learned, not from counting the number of ships sunk, but from study of the methods employed to deal with the changes in situation brought about by own and enemy action and by constructive losses imposed by umpires.

9. It is intended to revise this pamphlet from time to time. Suggestions are invited.

10. These instructions become effective upon receipt.

**FRANK H. SCHOFIELD.**

UNITED STATES BUREAU OF INVESTIGATION  
U. S. DEPARTMENT OF JUSTICE

San Francisco, California  
October 10, 1944

CONFIDENTIAL

From: [Redacted]

To: [Redacted]

Subject: U. S. Trust Company Insolvency

1. The attached contains information for handling the matter in connection with the report on the insolvency of the U. S. Trust Company. It is provided for your information and is not to be disseminated outside your office unless you deem it appropriate.

2. The attached in this connection is the statement of assets and liabilities of the U. S. Trust Company as shown in the attached.

3. The attached also provides for the assessment of damages by the U. S. Trust Company as it is indicated.

4. General's damage caused by a ship is expressed in terms of percentage of the value of the ship. A ship under way at a given time is a floating asset and its value is determined by the market. The value of the ship is determined by the market value of the cargo on board at the time of the loss. The value of the cargo is determined by the market value of the cargo at the time of the loss. The value of the cargo is determined by the market value of the cargo at the time of the loss.

5. A ship which is destroyed or rendered inoperative as the result of constructive damage shall be treated as if it were destroyed.

6. Damage does not apply in cases of total loss. A total loss occurs when the ship is completely destroyed or rendered inoperative. In such cases, the value of the ship is determined by the market value of the ship at the time of the loss. The value of the cargo is determined by the market value of the cargo at the time of the loss.

7. The attached also provides for the assessment of damages by the U. S. Trust Company as it is indicated. It is provided for your information and is not to be disseminated outside your office unless you deem it appropriate.

8. It should be kept in mind that damage cases are handled primarily for the purpose of settling claims in the event of a total loss. The value of the ship is determined by the market value of the ship at the time of the loss. The value of the cargo is determined by the market value of the cargo at the time of the loss.

9. It is intended to provide this information to you for your information and is not to be disseminated outside your office unless you deem it appropriate.

10. These instructions become effective upon receipt.

WALTER H. GIBSON

## ASSIGNMENT AND DUTIES OF UMPIRES

ASSIGNMENT  
OF  
UMPIRES

11. In U. S. Fleet problems the following umpires are required:

(a) **CHIEF UMPIRE.** Appointed by the department or CinCUS. Keeps a running record of the problem, decides disputed umpire decisions, acts on questions referred to him by umpires, and prepares a critique of the problem from umpires' reports. When he considers it advisable to do so for the purpose of illustrating certain lessons in a phase of the problem or for the purpose of correcting improper decisions of umpires, the chief umpire may impose arbitrary casualties or revoke or change the decision of an umpire.

(b) **FLEET UMPIRES.** The Department or the Commander-in-Chief will appoint one Fleet Umpire for each task fleet. A fleet umpire keeps a running record of the progress of the problem; decides, or refers to the chief umpire, questions referred to him by junior umpires; keeps the chief umpire informed of important events; and upon the conclusion of the problem submits the report required by article 15(c).

(c) **SHIP AND UNIT UMPIRES.** One officer, preferably the executive officer, shall be appointed by the commanding officer of each ship to perform the duties prescribed in article 12. Commanding officers shall appoint their umpires well in advance of the start of a problem and require them to become familiar with the conditions of the problem and the duties of umpires. No report of the appointment of umpires is required. The umpire on the ship of the commander of any unit automatically becomes the unit umpire in addition to being the ship umpire. There are two exceptions to this rule. First, in the flagship of a task fleet there must be one officer detailed as ship umpire in addition to the officer detailed as fleet umpire. Second, any flag officer may if he so desires appoint a member of his staff as unit umpire, in which case the ship umpire of the flagship functions as ship umpire only. Unit umpires are designated by the title of the task unit to which they are attached. Examples: "UMPIRE BLACK TRAIN", "UMPIRE BLACK NORTHERN SCOUTS", "UMPIRE BATDIV ONE."

(d) **TYPE GROUP UMPIRES.** In the instructions that follow certain definite duties are assigned to "type group umpires". These are umpires on the flagships of type groups. A "type group" is defined as a unit of vessels of the same type operating in close company. Example:—

- (1) Destroyer squadron acting alone or with vessels of other types.
- (3) Destroyers in convoy escort.
- (4) Train.
- (5) Cruisers in one formation.
- (6) Any ship acting singly or at a distance from other vessels, as a scout on a widely spaced line.

(e) **AIRCRAFT UMPIRES.** The commanding officer of an aircraft squadron, or smaller independent unit, is the umpire for the unit. He will comply with the instructions for unit umpires. Individual planes have no umpires except when operating alone in which case the commanding officer is the umpire.

(f) **ASSISTANTS TO UMPIRES.** The commanding officer of a ship will appoint such officers as may be necessary to aid the umpire in recording data. For example, in a battleship the navigator may be appointed to record navigational data for the umpire, and officers in the fire control organization may be appointed to record fire control data.

12. A ship, unit, type group, or aircraft umpire performs two duties:—

- (a) He imposes damage as required by damage rules.
- (b) He keeps the chronological history of the problem.

13. The chronological history kept by each umpire will run from the beginning to the end of the problem. It will relate, in the order in which they occur, all events connected with or having a bearing on the problem. Times of events will be recorded. Brevity is desirable, but all pertinent information will be recorded fully. The "damage record" (Rule 6) will be appended to the history submitted by each ship and aircraft umpire.

(a) A unit umpire who is also a ship umpire will keep only one history which will cover both ship and unit activities.

(b) The history of an aircraft umpire will contain a complete record of events occurring while on flight. A brief statement that the aircraft unit was at a base or on board a carrier will suffice to cover periods when not flying. Exception:— The activities of aircraft attached to battleships or cruisers will be reported by the umpires of the ships to which they are attached, and no other report is required.

(c) The following is a guide to what should be included in the history kept by a ship umpire:—

(1) Latitude and Longitude at the start of the problem; at 0800, noon and 2000; and whenever course is changed. Also times of changing course and speed. Exception:— This data is required only from flagships of vessels in company.

(2) Times of sighting land, vessels, mine fields and other objects of interest. Include true bearing and distance of object sighted.

(3) Weather conditions, particularly in relation to their effect on strategy, tactics and gunnery.

(4) Complete data on all contacts with enemy (Time, place, type and number of enemy, what own force did, what enemy did, what contact reports were made).

(5) Paraphrases of important despatches sent and received.

(6) In case of encounter with aircraft, a brief general account of the action including time planes were under fire and the number of rounds fired.

(7) In case of action between ships, a detailed account including designation of target fired on and (at 3-minute intervals) the true and relative bearing and range of the target, and the number of rounds of each caliber fired.

(8) In case torpedoes are fired constructively or actually, the firing ship will record firing data and true bearing and distance of target. The ship fired at will record true bearing and distance of the firing ship. Changes of course and speed incident to maneuvering to avoid torpedoes will be recorded in detail.

(9) Times of launching and recovering planes.

(10) Information reported by aircraft scouts and observers during flight and upon return to the ship.

(11) In a summary at the end of the history, the number of bombs, depth charges, mines, torpedoes and rounds of gun ammunition expended during the problem, noting each instance in which expenditure exceeds the service allowance.

(12) In the case of a flagship, all changes of formation made by the unit.

(13) Umpires of flagships and of ships acting singly will at intervals record true bearings and distances of own and enemy formations and single ships in sight. The observations should be taken with sufficient frequency to make the data suitable for later plotting of relative movements of units. In case a number of units are in sight it will ordinarily suffice to record the bearing and distance of one enemy flagship and the flagship of the senior officer present of own force.

(14) In case a non-flagship in formation observes nothing of interest during a problem, the history should be briefed. Example:— "Operated with Batdiv One throughout the problem. Nothing of interest observed".

14. A unit commander when dealing with a change in situation should make a brief of his estimate and decision, in order that the situation as it appeared to him and his reaction may be understood when the results of the problem are studied. The brief should either be included in the unit commander's report on the problem or else be given to the unit umpire for inclusion in the chronological history.

**REPORTS OF  
REESTIMATED  
SITUATIONS.**



## REPORTS ON FLEET PROBLEMS

### REPORTS OF SHIP UMPIRES AND COMMANDING OFFICERS

15. (a) Each umpire will submit his chronological history to his commanding officer with sufficient copies to provide two for CinCUS and one for the files of each officer through which the report passes. The commanding officer will endorse thereon his comments on the problem and forward it to the task fleet commander via the channels of the task organization. Aircraft umpires will submit histories via the commanding officers of their carriers or bases, except in the case of battleship or cruiser based planes. Activities of these will be reported orally to their ship umpires and will be included in ship umpires' reports.

(b) Each unit commander will assemble all reports forwarded via his office and add thereto all operation orders etc., issued by him and the comments of the unit umpire. These papers he will enclose with his report on the problem which he will forward to the task fleet commander via task organization channels.

(c) The task fleet commander will make unit commanders' reports available to the fleet umpire for study and comment. The task fleet commander will assemble all reports received by him, will add thereto copies of all operation orders etc., issued by him and the comments of the fleet umpire, and will forward them to CinCUS with his comments on the problem.

## COMMUNICATIONS

16. (a) During the course of a problem communication between a fleet umpire and the umpires within that fleet is authorized. During radio silence radio will not be used for this purpose. When ships are darkened only important messages will be sent by visual, and these by blinker tube only.

COMMUNICATION  
BETWEEN  
UMPIRES

(b) Fleet umpires are the only umpires authorized to communicate with the chief umpire. For this purpose high frequency schedules will be announced by CinCUS.

(c) If practicable there will be provided a special high frequency "chief umpire's circuit" for the sole use of the chief umpire and task fleet umpires. Radio silence shall not apply to this circuit.

(d) Messages sent via the chief umpire's circuit may be in plain language. The chief umpire and fleet umpires may at any time authorize plain language transmission of umpire messages on any circuit or circuits. Certain damage rules prescribe that messages relating thereto shall be in plain language. With these exceptions communications between umpires will be enciphered. Umpires ciphers for each task fleet will be furnished by the Commander-in-Chief or by the Department.

(e) Every umpire message will be distinguished by inserting "UMP" in plain language as the first and last words in the body of each enciphered or plain language despatch.

"UMP"  
DESPATCHES

(f) "UMP" messages are for the information and use of umpires only. The contents of "UMP" messages and the fact that they have been received or sent should not reach flag or commanding officers or members of their operating staffs, or become known to any person except umpires and the personnel of the communication organization that handle the transmission and receipt of the messages. Ships which are not concerned therewith shall not listen in or copy the chief umpire's circuit. Adequate precautions shall be taken to see that this rule is understood by communication organizations.

(g) No attempt will be made to break "UMP" ciphers.

(h) Radio bearings will not be taken on "UMP" messages or on transmissions using peace time calls. If inadvertently taken, the bearings will not be reported.

(i) "UMP" despatches within each task fleet will be sent by usual channels using problem calls.

(j) "UMP" despatches will be transmitted with the minimum possible delay. Umpires will use priority despatches with comparative freedom.

(k) Strict compliance with the above communication rules is essential if the full benefits of problem work are to be realized.

COMMUNICATIONS

18. (a) During the course of a problem communication between a fleet unit and the unit with which it is authorized, fleet radio silence rules will not be used for this purpose. When this is required, only important messages will be sent by voice, and these by direct radio only.

(b) Fleet units are the only units authorized to communicate with the fleet unit. For this purpose, high frequency schedules will be amended by C-130.

(c) If practicable there will be provided a special high frequency "fleet unit's circuit" for the use of the fleet unit and fleet radio silence rules shall not apply to this circuit.

(d) Messages sent via the fleet unit's circuit may be in plain language. The fleet unit and fleet unit may at any time authorize the transmission of message messages on any circuit or circuit. Certain damage to messages is being reported. With these conditions, communication between units will be authorized. Messages sent for each fleet unit will be authorized by the Commander-in-Chief or by the Department.

(e) Every unit message will be distinguished by the "UMF" in plain language as the first and last words in the body of each message and in plain language schedules.

(f) "UMF" messages are for the information and use of units only. The contents of "UMF" messages and the fact that they have been received or sent should not reach any commanding officer or member of their operating staff, or become known to any person except units and the personnel in the communication organization that handle the transmission and receipt of the message. Steps which are not concerned should not be taken in or copy the fleet unit's circuit. Adequate precautions shall be taken to see that this rule is understood by communication organizations.

(g) The attempt will be made to break "UMF" signals.

(h) Radio bearings will not be taken on "UMF" messages or on transmissions using voice time calls. If inadvertently taken, the bearings will not be reported.

(i) "UMF" messages within each task force will be sent by naval channels using proper calls.

(j) "UMF" messages will be transmitted with the minimum possible delay. Units will use priority designations with comparative freedom.

(k) Strict compliance with the above communication rules is essential if the full benefits of problem work are to be realized.

## DAMAGE RULES

(See guide to damage rules, appendix B).

**RULE 1.** Damage rules will be applied categorically when they definitely cover the situation. In cases not covered by the rules or when the application of a rule is doubtful the responsible umpire will render a decision in accordance with the spirit of the rules.

INITIATIVE  
OF  
UMPIRES

(a) An umpire when in doubt as to his ability to make a sound decision may refer the question to his fleet umpire, who may make the decision or in turn refer to the chief umpire. This procedure should be followed only in case of real doubt in an important matter. The delay incident to referring to a superior umpire will often defeat the purpose for which damage rules are provided, which is prompt decision on the spot.

**RULE 2.** A ship umpire when in doubt as to whether or not a superior umpire is umpiring for his ship should assess his own damage, cancelling his assessment if later he receives notice from a superior umpire assigning damage for the event in question.

INITIATIVE  
OF  
SHIP UMPIRES

(a) In connection with this rule it will be found that situations arise in which it is not evident whether a ship is acting "alone" or "in company". For instance, in a raid on a large formation, such as a convoy, the attacking ships may be "in company" to the extent that they are operating simultaneously in one area, but nevertheless they may be not sufficiently close together for one umpire to observe events as they affect ships other than his own. In such cases the only possible procedure is for each ship umpire to assess his own damage. It is important that he do so with prompt initiative.

(b) It will be of assistance to umpires if task force commanders, when ordering operations in which ships will be scattered just enough to raise a doubt as to whether they are in company or not, will prescribe whether ship umpires or unit umpires will assess damage.

**RULE 3.** Damage rules apply to all day and night actions (including aircraft attacks on ships and encounters between aircraft) except major fleet actions. When the battle lines open fire in a major fleet action the assessment of constructive damage will cease for all vessels participating in the action.

WHEN DAMAGE  
RULES APPLY

(a) Damage incurred prior to a fleet action remains in effect.

**RULE 4.** In certain of the rules which follow the unit umpire is directed to distribute by lot among the ships of his unit the total damage assessed against the unit. In such case the unit umpire will:

DISTRIBUTING  
DAMAGE BY  
LOT.

(a) Divide the total damage into "shares" of damage. For torpedo and bomb hits a share of damage is one hit. For gun fire damage a share is the total damage (expressed in terms of the percentage of the life of one ship) divided by the number of target ships. Omit fractions of 1%. For example, a unit of 6 ships is assessed a total gun fire damage of 289%. One share is  $289/6$  or 48%.

(b) Write the name of each ship of the unit on a card. If constructive ships are involved, prepare a card for each constructive ship.

(c) Shuffle the cards.

(d) Draw one card. The ship thus drawn is assigned one "share" of damage.

(e) Return to the pack the card thus drawn.

(f) Again draw a card, and assign a share of damage to the ship thus drawn. Note that it is possible for this to be the same ship that received the first share.

(g) Continue the process until all shares of damage are distributed. Always return to the pack the last card drawn so that all ships of the unit are in jeopardy on each draw.

NOTIFYING  
SHIPS OF  
DAMAGE

**RULE 5.** The unit umpire having determined the damage of each ship of his unit by rule 4 will forward a plain language despatch (by visual if practicable) notifying ships concerned of the damage assessed against them.

(a) Express gun fire damage in terms of percentage of the life of the ship concerned.

(b) Express bomb and torpedo damage in terms of hits. The ship umpire will translate hits into terms of percentage of the life of his ship.

(c) Specify the period of time during which damage was assessed or identify the event that caused the damage in some definite way.

(d) Examples of despatches:—

0119 UMP DAMAGE IN GUN ACTION ZERO NINE FIVE ZERO TO ONE ZERO ONE FIVE DENT SIX PERCENT DECATUR ZERO HALE TWELVE PERCENT UMP 1021

1019 UMP DAMAGE DURING DESTROYER ATTACK AT ONE ONE THREE ZERO CALIFORNIA HIT BY TWO TORPEDOES TEXAS BY THREE NEW YORK BY TWO ELLIOTT BY ONE OTHER SHIPS NO DAMAGE UMP 1135

1119 UMP IN LAST HEAVY BOMBING ATTACK FOLLOWING SHIPS HIT BY THOUSAND POUND BOMBS ARIZONA BY TWO COLORADO BY ONE DETROIT BY ONE COMMA THREE CONSTRUCTIVE TRANSPORTS EACH HIT BY ONE COMMA ONE CONSTRUCTIVE STORESHIP HIT BY ONE UMP 1233

## KEEPING THE DAMAGE RECORD OF A SHIP

**RULE 6.** Each ship umpire will keep a running record of the damage received by his ship, with brief notes as to how it was received.

**THE "DAMAGE RECORD" OF A SHIP.**

- (a) Damage is cumulative throughout a problem.
- (b) If the ship umpire is also a unit umpire, his damage record will include notes on all damage he assesses against his unit.
- (c) Sample damage records are furnished in appendix A and should be used as guides.
- (d) The ship umpire will keep the commanding officer informed of the damage assessed against his ship and of how it was incurred.

**RULE 7.** The ship umpire will inform his commanding officer that penalties are incurred by the ship when the total damage reaches the following percent of the life of the ship. Umpires of aircraft carriers will in addition comply with rule 38.

**IMPOSING CASUALTIES.**

### Total Damage

### PENALTY

30%	Ship can not steam at more than 90% of maximum speed. ("Maximum speed" is the maximum speed required by the statement of the problem for the type of ship concerned. If speeds are not limited by the statement of the problem, then "maximum speed" is that required for full power trial).
50%	Ship can not steam at more than 50% of maximum speed.
80%	Ship can not exceed 5 knots speed and radio (both sending and receiving) is permanently destroyed. See rule 9.
100%	Ship is out of action.

### ACTION BY COMMANDING OFFICERS OF PENALIZED SHIPS

**RULE 8.** The commanding officer when notified by the ship umpire that a constructive casualty has been imposed will handle his ship for the purposes of the problem as if the casualty actually had occurred.

**HOW HANDLE SHIP.**

- (a) Constructive casualties shall be disregarded if necessary for safety.
- (b) A ship penalized in speed shall sheer out of formation before slowing.
- (c) Ships declared "Out of Action" shall disregard speed penalties while enroute to the rendezvous for "Out of Action" ships.

**RULE 9.** When radio is declared destroyed, or when the ship is declared out of action, watches will be continued on prescribed radio circuits, but there will be no radio communication concerning activities of the problem.

**CONSTRUCTIVE RADIO CASUALTIES.**

- (a) The ship will not answer her problem call.
- (b) The ship will answer her peace time call, which will be used by superior authority for despatches a ship should receive regardless of her status, such as notification of the completion of the problem and emergency messages.
- (c) The ship may send essential "UMP" despatches.
- (d) The ship may receive such despatches as are addressed to her peace time call.
- (e) The ship may send despatches concerning emergencies not connected with the problem.



**RULE 11. The chief umpire is the only umpire who has authority to assess damage from mines.**

(a) Whenever floating or anchored mines are planted the commander of the fleet that plants them will notify the chief umpire of the location and extent of the fields.

(b) The notification should be by letter, enclosing charts of the fields, if mining plans are perfected before the start of the problem. Otherwise the notification should be given to the fleet umpire for transmission to the chief umpire by despatch.

(c) The chief umpire will give each fleet umpire sufficient information to enable him to determine when any vessel or force runs afoul of mines.

(d) When a vessel or vessels foul a mine field the fact with attending circumstances will be reported by the fleet umpire to the chief umpire. The latter will impose such penalties as he deems suitable.



## BOMB DAMAGE RULES

BOMB  
ARMAMENT OF  
AIRCRAFT.

**RULE 12.** In a problem aircraft will be assumed to carry the following bombs, regardless of the actual bomb armament:—

VF 2 116 - pound bombs.  
VT 1 1,000 - pound bomb.  
VS 2 116 - pound bombs.  
VP 2 500 - pound bombs.  
VO No bombs.

SIMULATING  
DROPPING OF  
HIGH ALTITUDE  
BOMBS.

**RULE 13.** The simulated dropping of high altitude bombs will be indicated by the leader of each aircraft formation making a puff of smoke.

COMPUTING  
TOTAL HIGH  
ALTITUDE  
BOMB HITS.

**RULE 14.** The umpire on the senior ship of a formation which is attacked by high altitude bombers will compute the hits. He will assume that all attacking planes drop their full allowance of bombs (rule 12) and that 20% (10% if target vessels are submarines, destroyers or smaller vessels) are hits.

(a) Note that the responsible umpire is the umpire on the senior ship of a formation. For example, if the battle line is bombed the umpire on the battle line flagship is responsible for computing bomb hits on battleships and vessels in the anti-submarine screen.

(b) The umpire will not necessarily assume that all ships in the formation have been taken as targets by the enemy. He will decide upon the most probable targets, his decision being influenced by (1) the position of the planes when they indicate dropping bombs and (2) the probable objective of the bombers. For example, in a formation composed of battleships and a destroyer screen it is probable that the enemy is attempting to bomb only the battleships. If success in the problem depends upon safe-guarding the train it is logical to assume that a bombing attack is aimed at the train and not at the escort.

DISTRIBUTING  
TOTAL HIGH  
ALTITUDE  
BOMB HITS.

**RULE 15.** The total of high altitude bomb hits, as determined by rule 14, will be distributed to individual ships by lot in accordance with rules 4 and 5.

SIMULATING  
DIVE BOMBING.

**RULE 16.** A dive bombing attack will be indicated by the plane diving on the target ship.

(a) In order to avoid confusion in computing dive bomb hits a plane shall make not more than one dive during a flight and shall be assumed to have dropped all its bombs during that one dive.

COMPUTING  
DIVE BOMB  
HITS.

**RULE 17.** Ship umpires compute dive bomb hits. Each ship umpire will count the planes that dive on his ship; will assume that each plane drops its full allowance of bombs (rule 12); will assume that 20% (10% if target ship is a submarine or a destroyer or smaller vessel) of the bombs hit. In case the computation results in any fraction of a hit, spin a coin; if heads, count the fraction as a hit; if tails count the fraction as a miss.

TAKING UP  
BOMB HITS  
ON DAMAGE  
RECORD.

**RULE 18.** The ship umpire will take up bomb hits assessed against his ship (rules 15 and 17) on his damage sheet in terms of percentage of the life of his ship as follows:—

TYPE OF BOMBTYPE OF SHIP BOMBED

	BB	CV	CA	CL	DD	MER- CHANT	SS
1,000 - pound	12%	13%	43%	54%	100%	67%	100%
500 - pound	6%	6%	21%	27%	77%	33%	100%
116 - pound	1%	1%	4%	5%	15%	7%	80%

**TORPEDO DAMAGE RULES**

**RULE 19.** Ships which simulate firing torpedoes will make the signal required by U. S. Fleet Confidential Letter 11-31 for indicating torpedo fire. Aircraft will indicate the simulated firing of torpedoes by the leading plane of each unit making a puff of smoke.

**SIMULATING  
TORPEDO  
FIRE.**

(a) In simulating torpedo fire only the number of torpedoes that could actually be fired in existing circumstance will be counted as fired.

(b) During a problem no vessel will simulate firing more than her service allowance of torpedoes unless existing circumstances of time and availability permit replacements being constructively taken on board.

**RULE 20. (1)** The commander of a unit of surface ships attacking with torpedoes when the enemy formation, rather than individual ships, is the target will determine the total number fired and the average run. This information he will transmit to the commander of the unit attacked by visual despatch. The despatch must be sent promptly before retiring beyond signal distance. It may be sent via any enemy ship. Example of despatch:— "FROM COMDESDIV FIVE TO COMBATSHIPS 0019 SIXTEEN TORPEDOES SIX THOUSAND YARDS 0830"

**SURFACE SHIPS  
FIRING  
TORPEDOES.**

(a) In the case of a destroyer attack "losses incurred before torpedoes are fired" (rule 33) will be taken into account in computing the number of torpedoes fired.

(2) In case the attacking vessels fire torpedoes at individual ships, each firing ship will send a briefed visual despatch to the ship fired at, omitting calls if identity of target is not known. Example of despatch:— "THREE TORPEDOES". This procedure is provided primarily for vessels which make dispersed torpedo attacks at night. The umpire of the ship fired at will estimate the run.

**RULE 21.** Submarines will comply with rule 20. A submarine may surface to notify the enemy that she has fired torpedoes, and while on the surface for this purpose shall be immune from damage.

**SUBMARINES  
FIRING  
TORPEDOES.**

**RULE 22.** No action is required of aircraft which simulate firing torpedoes other than compliance with rule 19.

**AIRCRAFT  
FIRING  
TORPEDOES.**

(a) Aircraft making a torpedo attack incur damage in accordance with rule 37.

(b) Each torpedo plane in a unit will be assumed to have fired one torpedo when the leader of the unit makes a puff of smoke.

(c) The umpire who computes the total hits will estimate the run.

**RULE 23.** The umpire of the unit attacked by torpedoes will compute the total hits as follows:

**COMPUTING  
TOTAL  
TORPEDO  
HITS.**

Torpedoes Fired By	RUN	RUN	HITS
	IN DAY TIME	AT NIGHT	
BBs, CAs, CLs, DDs	Over 10,000	Over 6,000	None
	4,500-10,000	3,000-6,000	10%
	Under 4,500	Under 3,000	20%
Submarines	Under 3,100	Under 3,100	20%
Torpedo Planes	Under 3,600	Under 3,600	15%

(a) Above table applies when ships fired at do not dodge. If target maneuvers to evade torpedoes the responsible umpire may reduce the percentage of hits in accordance with his opinion of the effectiveness of the maneuver, but the reduction shall not exceed 50% of the percentage of hits given in the table.

(b) Any fraction of a hit will be treated as follows. Spin a coin: if heads the fraction is a whole hit; if tails the fraction is a miss.

**RULE 24.** The umpire who computes the total hits (rule 23) will distribute them by lot to the vessels of his unit in accordance with rules 4 and 5.

**RULE 25.** The ship umpire will take up torpedo hits assessed against his ship (rule 20(2) and 24) on his damage sheet in terms of percentage of the life of his ship as follows:—

Battleship	Each hit causes	18% damage.
Carrier	Each hit causes	19% damage
8" cruiser	Each hit causes	64% damage
6" cruiser	Each hit causes	81% damage
Destroyer	Each hit causes	100% damage
Merchant	Each hit causes	100% damage
Submarine	Each hit causes	100% damage

DISTRIBUTING  
TORPEDO HITS

TAKING UP  
TORPEDO HITS  
ON DAMAGE  
RECORD.

## GUN FIRE DAMAGE RULES

SEE SPECIAL RULES FOR:—

DESTROYERS, RULE 33  
SUBMARINES, RULE 34  
TUGS AND SWEEPERS, RULE 35  
AIRCRAFT, RULE 36

**RULE 26.** A ship simulating gun fire will make the searchlight signal to indicate the fact, as prescribed in U. S. Fleet Confidential Letter 11-31.

ACTION BY  
SHIP  
SIMULATING  
GUN FIRE.

**RULE 27.** All ships of a type are considered equal in offensive and defensive power.

WEIGHTS

**RULE 28.** (1) Tugs and sweepers that carry no guns in time of peace but which have a war allowance of guns are considered armed vessels.

AUXILIARY  
VESSELS.

(2) Vessels of the merchant type are considered armed with anti-submarine guns only. They can inflict no damage except as prescribed in rule 34.

**RULE 29.** For problem purposes vessels are considered to have an unlimited supply of gun ammunition. Ship umpires will keep account of expenditures and note in the chronological history every instance in which the service allowance is overexpended during a problem.

AMMUNITION  
ALLOWANCES.

**RULE 30.** A vessel is considered under fire when an enemy within range is making the searchlight signal indicating gun fire. Time starts when the searchlight signal is seen. At long ranges when searchlights are unlikely to be seen, and at all ranges when the enemy has no searchlights, a vessel will assume being under fire when the maneuvers of the enemy indicate he is engaging.

WHEN A  
SHIP IS  
CONSIDERED  
UNDER FIRE.

(a) A type group umpire when he perceives indications that one or more vessels in an enemy unit are firing on vessels in his unit will assume that all enemy vessels are firing upon his unit, unless it is obvious that part of the enemy fire is being diverted to another objective.

**RULE 31.** Type group umpires assess the total gun fire damage incurred by their groups. Damage will be computed by the formula:—

ASSESSING  
TOTAL GUN  
FIRE DAMAGE

**TOTAL DAMAGE IN N MINUTES IS  $D \times N \times E$ , where**

**D** is damage receivable per minute from gun fire damage tables, pages 21 to 24 inclusive.

**N** is time in minutes.

**E** is number of enemy ships.

(a) If the range varies materially during the action, divide the time into periods during which the range changes approximately 2,000 yards. Calculate the damage separately for each period.

(b) Use the best available means for determining the range, preferably the range finder range taken by the umpire's ship on that ship's target.

(c) Damage should be assessed at intervals as short as possible. In a single ship action the umpire should keep a running record and impose penalties as they are incurred. In the case of a group of ships under one umpire it will be possible to assess and distribute gun fire damage only at the end of an action or during a distinct lull in the action.

**RULE 32.** The umpire who computes the total damage to a type group (rule 31) will distribute the damage by lot to the vessels of his group in accordance with rules 4 and 5.

DISTRIBUTING  
GUN FIRE  
DAMAGE.

## SPECIAL DAMAGE RULES FOR DESTROYERS

**SPECIAL  
RULE FOR  
DESTROYERS.**

**RULE 33.** Destroyers will use the same gun fire damage rules as other vessels, except (1) when in a destroyer melee, and (2) during a torpedo attack in formation.

(1) In a destroyer melee in which A destroyers engage B destroyers for N minutes:—

$$A \text{ loses } \frac{N}{3} \times \frac{B^2}{A^2 + B^2} \text{ destroyers.}$$

$$B \text{ loses } \frac{N}{3} \times \frac{A^2}{A^2 + B^2} \text{ destroyers.}$$

(2) In a torpedo attack in formation each enemy ship will be counted as sinking the number of destroyers shown in the table below, half the losses occurring before and half after torpedoes are fired. In a divided attack each destroyer division commander will assume that the enemy is dividing fire equally among the destroyer divisions, any excess over an even division being directed at the van divisions.

Example: 6 destroyer divisions make a sector attack on 14 battleships. The two van destroyer divisions will assume that they are being fired on by three battleships each. The remaining destroyer divisions will each assume being fired on by two battleships.

MINIMUM RANGE REACHED DURING THE ATTACK.		NUMBER OF ATTACKING DESTROYERS SUNK FOR EACH	
DAY	NIGHT	BB, CA, CL, CV	AV or OCV
Above 20,000	Above 10,000	None	None
20,000 to 18,000	10,000 to 9,000	1/4	None
18,000 to 12,000	9,000 to 8,000	1/2	None
12,000 to 9,000	8,000 to 6,000	3/4	1/4
9,000 to 6,000	6,000 to 3,000	1	1/2
Below 6,000	Below 3,000	2	1

(a) In calculating losses from the above table, the unit umpire will estimate the minimum range reached by his unit during the attack.

(b) The unit umpire will calculate the total losses to the nearest whole number after retiring from the melee or torpedo attack, and inform the unit commander.

(c) The unit commander will choose at random the vessels to be put out of action and will notify them.

## SPECIAL DAMAGE RULES FOR SUBMARINES

**SPECIAL  
RULE FOR  
SUBMARINES.**

**RULE 34.** When fired at while on the surface by any type (including merchant type) enemy vessels, except enemy submarines, sweepers and tugs, submarines incur losses as follows:—

RANGE UNDER 3,000.....1 Submarine per 3 minutes for each enemy ship.

RANGE 3,000-6,000.....1 Submarine per 6 minutes for each enemy ship.

RANGE 6,000-9,000.....1 Submarine per 10 minutes for each enemy ship.

- RANGE 9,000-10,000 ..... 1 Submarine per 15 minutes for each enemy ship, except enemy destroyers which can inflict no damage at ranges above 9,000 yards.
- RANGE OVER 15,000 ..... No damage.

- (a) A submarine, for problem purposes, is not subject to damage when submerged.
- (b) Submarines are subject to bomb damage in accordance with rules 12 to 18.
- (c) Submarines on the surface engaging submarines, tugs or sweepers comply with rule 35(c).

### SPECIAL DAMAGE RULES FOR TUGS AND SWEEPERS

**RULE 35.** (a) Tugs and sweepers when fired at during daylight by any type enemy ship (except tugs, sweepers or submarines) at any range below 15,000 yards (9,000 yards if enemy vessels are destroyers) are all sunk, regardless of number of own and enemy ships, without damage to the enemy.

TUGS AND SWEEPERS.

(b) At night the same rule applies but the limiting range is 8,000 yards.

(c) Tugs, sweepers, and submarines on the surface are considered equal in power. They can not damage each other at ranges in excess of 6,000 yards. At ranges below 6,000 yards the loss on each side, both by day and by night, is 1% of the number of opposing ships per minute of action. Example:— 10 BLUE submarines engage 12 RED tugs at ranges below 6,000 yards for 34 minutes. BLUE loses 34% of 12 or 4 submarines. RED loses 34% of 10 or 3 tugs. These losses will be assessed by type group umpires after the action is finished.

### SPECIAL DAMAGE RULES FOR AIRCRAFT

**RULE 36.** Damage suffered by aircraft while in flight is assessed by aircraft umpires. No plane will fall out of formation during flight because of constructive damage. The damage will be assessed after return to carrier or base.

DAMAGE TO AIRCRAFT IN FLIGHT.

(a) If it becomes evident to the commander of an aircraft unit during a flight that his entire unit is constructively destroyed he should at once return to his carrier or base.

(b) Planes declared out of action will not fly again during the problem, except in emergencies such as search for lost aircraft.

**RULE 37.** (a) In attacks on or when coming within range of battleships, cruisers or carriers, 10% of all planes engaged will be considered destroyed in any one attack. Disregard fractional losses.

COMPUTING AIRCRAFT LOSSES INCURRED IN FLIGHT.

(b) If aircraft bomb destroyers, light mine layers, submarines on the surface, or tugs or sweepers; or fly within range (12,000 feet vertical, 4,000 yards horizontal) of such vessels, each such vessel will be assumed to have destroyed 1% of the planes. In case the computation results in the loss of any fraction of a plane, spin a coin. If heads, count the fraction as one plane lost. If tails, disregard the fraction.

(c) In fights between planes each side will be assessed a loss equal to one third the number of opposing planes. Every type of plane has equal weight, except that each patrol plane will be counted as two planes.

- EXCEPTIONS:— (1) 1 plane vs 1 plane. Both destroyed.  
 (2) 1 VP vs 1 other type. Latter destroyed.  
 (3) 1 VP vs 2 other type. 2 other destroyed.  
 (4) 1 VP vs 3 other type. VP and two others destroyed.

- EXAMPLES:— (1) 8 RED VF fight 16 BLUE VT.  
 RED loses 16/3 equals 5 VFs.  
 BLUE loses 8/3 equals 2 VTs.  
 (2) 8 RED VP fight 18 BLUE VF.  
 RED loses 18/3x2 equals 3 VPs.  
 BLUE loses 8x2/3 equals 5 VFs.  
 (3) 2 RED VF fight 1 BLUE VF.  
 RED loses 1/3 equals no damage.  
 BLUE loses 2/3 equals 1 VF.  
 (4) 2 RED VF fight 2 BLUE VF.  
 Each loses 2/3 equals 1 VF.

DAMAGE TO  
 AIRCRAFT  
 ATTACHED TO  
 CARRIERS.

**RULE 38.** Aircraft squadrons (or smaller independent units) attached to a carrier shall not take off from the carrier with a percentage of the squadron planes greater than the remaining life of the carrier. For example, if a carrier is 50% damaged, no squadron will take off with more than half its planes. A squadron will fly less than half its planes if the damage by rule 37 exceeds 50% of the squadron strength, but even if previous damage by rule 37 is zero the squadron must leave behind as "out of action" half its planes when taking off from a carrier which has half its life remaining.

(a) The ship umpire of a carrier will keep the aircraft squadron commanders informed of the total damage to the carrier.

(b) Before flying off each squadron commander will declare out of action sufficient planes to reduce the strength of his squadron to the number of planes equivalent to the remaining life of the carrier, unless such reduction has already been brought about by rule 37 or by actual damage to planes.

(c) In applying the above rule, (1) take as the full strength of the squadron the number of planes that were attached when the problem started, and (2) neglect percentage of damage less than the equivalent of one plane. Example: A squadron begins a problem with 16 planes. The percentage of carrier damage equivalent to one plane is 100/16 or 6.25%. Consequently the number of planes of the squadron that may take off must not exceed 15 when the carrier damage is 7%, 14 when the carrier damage amounts to 13%, 13 when the total damage to the carrier becomes 19% and so on.

(d) Rule 38 applies to carrier based planes only. It does not apply to aircraft operating from tenders, battleships, cruisers or shore stations.

DAMAGE  
 TO  
 AIRSHIPS.

**RULE 39.** If airships (lighter than air) take part in a problem special damage rules for airships will be included in the statement of the problem.

## GUN FIRE DAMAGE TABLE NO. 1 — BATTLESHIP TARGET

Percent damage per minute, one ship of type indicated firing on one battleship.

RANGE	BB-14"	CA-8"	CL-6"	CV-8"
6 or less	7.0	1.9	1.0	1.7
8	7.0	1.2	.6	1.0
10	7.0	.8	.4	.6
12	5.0	.5	.3	.5
14	3.5	.4	.2	.3
16	2.5	.3	.2	.2
18	2.0	.2	.1	.2
20	1.0	.1	.1	.1
22	.6	.1	.1	.1
24	.5	.1	—	.1
26	.4	.1	—	.1
28	.7	.1	—	.1
30	.6	.1	—	—
32	.5	—	—	—
34	.5	—	—	—

NOTE: If action takes place at night take half the damage values given in the above table.

If S battleships engage E enemy ships for N minutes, the total damage to the S battleships is:  $D \times N \times E$ , where D is the damage receivable per minute from one ship from above table.

Example:— 3 battleships engage 8 heavy cruisers for 10 minutes at 10,000 yards range. The total damage to the battleships is  $0.8 \times 10 \times 8$  or 64%.

## GUN FIRE DAMAGE TABLE NO. 2 — CARRIER TARGET

Percent damage per minute, one ship of type indicated firing on one carrier

RANGE	BB-14"	CA-8"	CV-8"	CL-6"
6 or less	18.0	6.5	6.0	1.2
8	12.0	4.0	3.5	.7
10	8.0	2.5	2.3	.5
12	5.0	1.7	.5	.3
14	3.5	1.0	.3	.2
16	3.5	.5	.3	.2
18	3.0	.3	.2	.1
20	2.1	.2	.5	.2
22	1.6	.1	.3	.2
24	1.2	.3	.2	—
26	1.0	.2	.2	—
28	.8	.2	.2	—
30	.7	.1	.1	—
32	.6	.1	.1	—
34	.5	.1	.1	—

NOTE: If action takes place at night take half the damage values given in the above table.

If S carriers engage E enemy ships for N minutes, the total damage to the S carriers is:  $D \times N \times E$ , where D is damage from the above table.

Example:— 2 carriers engage 4 light cruisers for 7 minutes at 8,000 yards range. The total damage to the carriers is  $0.7 \times 7 \times 4$  or 19.6%.



### GUN FIRE DAMAGE TABLE NO. 3 — HEAVY CRUISER TARGET

Percent damage per minute, one ship of type indicated  
firing on one 8-inch cruiser.

RANGE	BB-14"	BB-5"	CA-8"	CL-6"	CV-8"	CV-5"	DD-4"
6 or less	35.0	2.0	12.0	9.0	11.0	1.3	.6
8	21.0	1.0	7.0	5.0	6.0	.6	.1
10	15.0	.4	5.0	3.5	4.0	.4	.1
12	12.0	.3	3.0	2.5	3.0	.2	.1
14	9.0	.2	2.0	1.5	2.5	.1	—
16	6.0	.1	1.5	1.2	1.5	—	—
18	4.5	—	1.3	.8	1.1	—	—
20	3.5	—	.8	.4	.8	—	—
22	2.5	—	.7	.3	.6	—	—
24	2.0	—	.5	—	.5	—	—
26	1.5	—	.3	—	.3	—	—
28	1.4	—	.2	—	.2	—	—
30	1.3	—	.2	—	.2	—	—
32	1.1	—	.1	—	—	—	—
34	.9	—	.1	—	—	—	—

NOTE: If action takes place at night take half the damage values given in the above table.

If S heavy cruisers engage E enemy ships for N minutes, the total damage to the S cruisers is:  $D \times N \times E$ , where D is unit damage from above table.

Example:— 4 heavy cruisers engage 6 light cruisers at 12,000 yards range for 20 minutes. The total damage to the heavy cruisers is:  $2.5 \times 20 \times 6$  or 300%.

### GUN FIRE DAMAGE TABLE NO. 4 — LIGHT CRUISER TARGET

Percent damage per minute, one ship of type indicated  
firing on one 6-inch cruiser

RANGE	BB-14"	BB-5"	CA-8"	CL-6"	CV-8"	CV-5"	DD-4"
4 or less	25.0	4.5	16.0	12.0	15.0	2.5	.8
6	25.0	2.0	12.0	8.0	11.0	1.5	.5
8	21.0	1.5	7.0	5.0	6.0	.8	.2
10	15.0	.3	5.0	3.0	4.0	.4	.1
12	10.0	.2	3.0	2.0	2.5	.2	.1
14	8.0	.1	2.0	.7	2.0	.1	—
16	6.0	.1	1.5	.5	1.5	—	—
18	5.0	—	1.0	.8	1.0	—	—
20	4.0	—	.9	.3	.8	—	—
22	3.0	—	.6	.2	.5	—	—
24	2.0	—	.5	—	.4	—	—
26	1.8	—	.3	—	.3	—	—
28	1.6	—	.2	—	.2	—	—
30	1.3	—	.2	—	.2	—	—
32	1.0	—	.2	—	—	—	—
34	1.0	—	.1	—	—	—	—

NOTE: If action takes place at night take half the damage values given in above table.

If S light cruisers engage E enemy ships of the type indicated for N minutes, the total damage to the S cruisers is;  $D \times N \times E$ , where D is unit damage from the above table.

Example:— 6 light cruisers engage 4 heavy cruisers at 12,000 yards range for 20 minutes. The total damage to the light cruisers is:  $3 \times 20 \times 4$  or 240%.

## GUN FIRE DAMAGE TABLE NO. 5 — DESTROYER TARGET

Percent damage per minute, one ship of type indicated  
firing on one destroyer

**BEFORE USING THIS TABLE CONSULT DAMAGE RULE 33.**

RANGE	BB-14"	BB-5"	CV-8"	CV-5"	CA-8"	CL-6"	DD-4"
2 or less	40.0	15.0	30.0	18.0	30.0	22.0	5.0
4	40.0	7.0	30.0	8.0	30.0	15.0	2.5
6	40.0	3.5	15.0	5.0	15.0	11.0	1.0
8	35.0	1.4	10.0	2.5	11.0	7.0	.4
10	20.0	.8	6.0	1.2	7.0	5.0	.2
12	14.0	.5	4.0	.6	4.5	3.0	.2
14	9.0	.3	2.4	.3	2.5	2.0	—
16	6.0	.1	1.5	—	1.8	1.7	—
18	4.0	—	1.0	—	1.1	.8	—
20	3.0	—	.6	—	.7	.3	—
22	2.0	—	.5	—	.5	.2	—
24	1.5	—	.4	—	.4	—	—
26	1.4	—	.3	—	.3	—	—
28	1.1	—	.2	—	.2	—	—
30	1.0	—	.1	—	.2	—	—
32	.8	—	.1	—	.1	—	—
34	.7	—	.1	—	.1	—	—

NOTE: If action takes place at night take half the damage values given in the above table.

If S destroyers engage E enemy ships for N minutes, the total damage to the destroyers is:  $D \times N \times E$ , where D is unit damage from above table.

Example: 4 destroyers engage 2 light cruisers at night at 6,000 yards range for 5 minutes. The total damage to the destroyers is:  $5.5 \times 5 \times 2$  or 55%.

## GUN FIRE DAMAGE TABLE NO. 6 — MERCHANT SHIP TYPE

Percent damage per minute, one ship of type indicated firing on one ship of merchant type (includes tenders, minelayers, and train flagships).

RANGE	BB-14"	CV-8"	CA-8"	CL-6"	DD-4"
2 or less	50.0	40.0	40.0	35.0	5.0
4	50.0	40.0	40.0	35.0	4.0
6	45.0	30.0	30.0	25.0	1.5
8	40.0	15.0	15.0	10.0	.8
10	30.0	8.0	9.0	6.0	.5
12	20.0	5.0	6.0	4.0	.3
14	15.0	4.0	5.0	3.5	—
16	10.0	2.5	3.0	2.2	—
18	7.0	2.0	2.2	1.5	—
20	5.0	1.3	1.5	.6	—
22	4.0	1.0	1.2	.4	—
24	3.3	.7	.8	—	—
26	2.8	.5	.6	—	—
28	2.3	.3	.4	—	—
30	2.0	.3	.4	—	—
32	1.7	—	.3	—	—
34	1.4	—	.2	—	—

NOTE: If action takes place at night take half the damage values given in the above table.

If S merchant type ships engage E enemy ships for N minutes, the total damage to the S ships is:  $D \times N \times E$ , where D is unit damage from above table.

Example: 4 merchant type ships are fired on for 5 minutes by one light cruiser at 12,000 yards range and 4 destroyers at 6,000 yards range.

Damage from CL is  $4 \times 5 \times 1$  or 20%.

Damage from DDs is  $1.5 \times 5 \times 4$  or 30%.

**APPENDIX A**

**SAMPLE DAMAGE RECORDS**

**NOTE:** Reference to rules are included in the sample records for convenience of officers using the samples. References to rules need not be made in actual damage records.

**SAMPLE DAMAGE RECORD OF A BATTLESHIP**

**DAMAGE RECORD. U. S. F. Problem XXIII, BLACK**

Ship Umpire U. S. S. TEXAS, also  
Umpire Batdiv One, and  
Umpire BLACK Convoy.

**TOTAL  
DAMAGE TO  
TEXAS**

8 March.	0950. Convoy attacked by 14 BLUE VTs and 18 BLUE VFs. Assumed heavy bombers attacked train (rule 14b). Assessed 3 hits (rule 14). Distributed hits (rule 15) 1 to ARGONNE, 1 each to 2 constructive transports. So informed ComTrain. One VF dove on TEXAS but caused no damage (rule 17)	0%
	1630. 4 BLUE destroyers made formation torpedo attack on port bow of this division (TEXAS, NEW YORK, OKLAHOMA). This division turned 30 degrees away as torpedoes were fired in consequence of which reduced percentage of hits by 25% (rule 23a). Received from DD leader "24 TORPEDOES 7,000 YARDS". Assessed 2 hits (rule 23). Distributed both hits to NEW YORK (rule 24). TEXAS undamaged	0%
	1730. BLUE submarine S-4 surfaced close aboard and reported to TEXAS "3 TORPEDOES". Assessed TEXAS 1 hit (rule 23). Damage 18% (rule 25)	18%
	2130. Destroyer close aboard signalled TEXAS "4 TORPEDOES". No hits (rule 23)	18%
9 March.	0800 to 0830. This division engaged 5 BLUE BBs, as follows (rule 31):—	
	8 minutes range 24,000 Damage 20%	
	8 minutes range 26,000 Damage 16%	
	10 minutes range 28,000 Damage 35%	
		71%
	Assigned NEW YORK none, OKLAHOMA 23%	
	TEXAS 46% (rule 32)	64%
	TEXAS took penalty of loss of 50% of speed (rules 7, 8).	
10 March.	0100. Three BLUE destroyers close aboard each signalled to TEXAS "6 TORPEDOES". 18 shots, 3 hits (rule 23 and 23b). Damage 54% (rule 25)	118%
	TEXAS declared out of action. So informed fleet umpire. (Article 16a and rule 9c).	
11 March.	1200. Problem ended.	

## SAMPLE DAMAGE RECORD OF A BATTLESHIP

DAMAGE RECORD U. S. F. Problem XXIII, BLACK

Ship Umpire U. S. S. OKLAHOMA, also  
 Umpire Batdiv One from 0100 10 March.

TOTAL  
 DAMAGE TO  
 OKLAHOMA

- |           |  |     |
|-----------|--|-----|
| 8 March.  | 0950 Attacked by 14 BLUE VTs and 18 BLUE VFs. Formation umpire (in TEXAS) assessed no heavy bomb hits on OKL. One VF dove on OKLAHOMA. 2 bombs, 1 hit (rule 17). Damage 1% (rule 18) .....                               | 1%  |
|           | 1630. Batdiv One attacked by 4 BLUE destroyers. Unit umpire (in TEXAS) assessed OKL no hits. No damage .....   | 1%  |
|           | 1935. BLUE submarine S-5 surfaced close aboard and signalled to OKL. "3 TORPEDOES". Still daylight. Incurred 1 hit (rule 23). Damage 18% (rule 25) .....   | 19% |
| 9 March.  | 0800 to 0830. This division engaged 5 BLUE BBs. At 0845 signal from TEXAS assessed this ship 23% damage .....  | 42% |
| 10 March. | 0100. TEXAS fell out of formation. OKLAHOMA became flagship of Batdiv One. ARGONNE became umpire for BLACK Train.  |     |
| 11 March. | 0900. Batdiv One left convoy and joined Battle Line.<br>0940. BLUE CAs and CLs on starboard bow indicated firing on Battle Line. Battle Line umpire (in WVA) at 1010 informed OKL received 6% damage from cruisers ..... | 48% |
|           | 1100. Battle Line flagship opened fire, commencing major fleet engagement. Ceased assessment of penalties (rule 3) .....   | 48% |
|           | 1200. Problem ended.   |     |

**SAMPLE DAMAGE RECORD OF A DESTROYER**

DAMAGE RECORD

U. S. F. Problem XXIII, BLACK

Ship umpire U. S. S. LITCHFIELD, also  
Umpire Desron Two.

**TOTAL  
DAMAGE TO  
LITCHFIELD**

9 March. 0900. This squadron (15 DDs) came under fire of 2 BLUE CLs as follows:

5 minutes at 14,000 yards, damage 20%  
8 minutes at 16,000 yards, damage 27.2%  
(rules 33, 31) 47.2%

Assigned LITCHFIELD 3%, DENT 3%, TALBOT 3%,  
WATERS 3%, DORSEY 3%, ELLIOTT 6%, LEA 9%,  
ROPER 3%, HALE 6%, BUCHANAN 3%, WARD 3%  
others no damage. (rule 32) ..... 3%

10 March. 0100. Desdiv 5, LITCHFIELD leading, made formation torpedo attack on 4 BLUE BBs, ARIZONA flag. Estimated minimum range during attack 3,500 yards. Our loss 4 DDs (2 before and 2 after firing torpedoes) (rule 33-2). Of our 5 DDs, 2 were sunk before firing torpedoes. 3 fired 6 torpedoes each. Signalled ARIZONA "EIGHTEEN TORPEDOES THIRTY-FIVE HUNDRED YARDS" (rule 20-1-a). At 0130 informed DORSEY, ELLIOTT, LEA, ROPER they were out of action (rule 33b, c).

LITCHFIELD not damaged. Damage to date ..... 3%

1110. BLUE VFs made dive bombing attack. 1 dove on LITCHFIELD. 2 bombs, 1 hit (rule 17). Damage 15% (rule 18). Damage to date ..... 18%

1115 to 1145. 3 BLACK destroyer divisions attacked BLUE Battle Line, consisting of 5 BBs. LITCHFIELD led van division (5 DDs). Enroute engaged in melee with 3 BLUE DDs for 5 minutes. Our loss 5/3x9/36 equals 0.4 which counts zero (rule 33-1).

In attack this division came within 5,000 yards of enemy BBs. This division loses 2 destroyers before firing torpedoes and 2 destroyers after firing torpedoes (rule 33-2).

3 destroyers fired 6 torpedoes each. Signalled to flagship of BLUE BBs "EIGHTEEN TORPEDOES SIX THOUSAND YARDS" (rule 20). At 1215 informed DENT, RATHBURNE, TALBOT, WATERS they were out of action (rule 33b, c).

LITCHFIELD no damage, but all torpedoes expended (rule 19a). Damage to date ..... 18%

11 March. 0915. BLUE submarine S-7 surfaced close aboard and signalled "THREE TORPEDOES". 1 hit (rule 23, 23b). Damage 100% (rule 25) ..... 118%

LITCHFIELD declared out of action.

1200. Problem finished.

**SAMPLE DAMAGE RECORD OF A DESTROYER**

DAMAGE RECORD

U. S. F. Problem XXIII, BLACK

Ship Umpire U. S. S. TINGEY.

TOTAL  
DAMAGE TO  
TINGEY.

10 March. 2315. This ship in scouting line penetrated large formation of BLUE ships. Enemy vessels indicated firing on TINGEY as follows (rule 31).  
 2315-2318 one ship, apparently CL, range about 4,000 yards. Damage 22.5% ----- 23%  
 2317-2322 2 BLUE destroyers, range about 2,000 yards. Damage 25% ----- 48%  
 Took penalty speed reduced to 27 knots (rule 7).  
 2325-2326. One BLUE BB, range about 8,000 yards. Damage 17.5% ----- 66%  
 Took penalty speed reduced to 15 knots (rule 7).  
 2335-2340. One BLUE destroyer, range about 1,000 yards. Damage 12.5% ----- 79%  
 At 2340 got clear of enemy formation and commenced trailing rear BLUE ship which was a CA.

11 March. 0115. BLUE CA opened fire on TINGEY range about 2,000. At 0117 she had damaged TINGEY 30%, making total damage ----- 109%

TINGEY declared out of action. So informed Fleet umpire.

1200. Problem finished.

**SAMPLE DAMAGE RECORD OF A SUBMARINE**

**DAMAGE RECORD.**

U. S. F. Problem XXIII BLACK.

Ship Umpire U. S. S. BASS, also  
Umpire Subdiv 12.

**TOTAL  
DAMAGE TO  
BASS**

- |           |   |      |
|-----------|---|------|
| 9 March.  | 1130. Subdiv 12 (4 submarines) on surface encountered 3 BLUE sweepers. Engaged within 6,000 yards range for 6 minutes, when submerged. Our loss 6x3 equals 18% equals no damage (rule 35c) .....  | 0%   |
|           | 1630. BASS fired 4 torpedoes while submerged at 4 BLUE CLs, run about 3,000 (rules 19, 21). BASS came to surface to signal to enemy the number of torpedoes fired and average run (rules 20-1, 21). Was fired at while on surface but by rule 21 took no damage ..... | 0%   |
| 10 March. | 0900. While on surface one BLUE VF made dive attack on BASS. 2 bombs, 1 hit (rule 17). Damage 80% (rule 18) .....   | 80%  |
|           | BASS penalized loss of radio and maximum speed reduced to 5 knots. (rule 7).  |      |
|           | 1100. BLUE submarine S-4 surfaced close aboard and reported "SIX TORPEDOES". This ship was on surface. 1 hit (rule 23). Damage 100% (rule 25) .....   | 180% |
|           | BASS declared out of action. Because of radio silence made no report to fleet umpire until 0630 11 March when radio silence was lifted and fleet umpire was informed by "UMP" despatch that BASS was out of action.   |      |
| 11 March. | 1200. Problem ended.  |      |



**SAMPLE DAMAGE RECORD OF AN AIRCRAFT SQUADRON**

**DAMAGE RECORD**

U. S. F. Problem XXIII, BLACK.

Aircraft Umpire VT-2B (attached to SARATOGA)

Squadron strength at start of the problem  
18 T4M-1

**TOTAL  
DAMAGE TO  
SQUADRON**

- 9 March. 1100 to 1230. Flight to bomb BLUE Train. At start of flight total carrier damage was 9%, therefore (rule 38) declared 1 plane out of action and flew off 17 planes ----- 1 plane
- (1) Enroute passed within range of squadron of 14 destroyers. Our loss zero (rule 37b).
- (2) In attack on Train came within range of 4 battle-ships and 4 cruisers in train escort. Our loss 10% of 17 planes equals 1 plane (rule 37a).
- (3) During return were attacked by 9 BLUE VFs. Our loss 9/3 equals 3 planes. (rule 37c).
- Total loss during this flight (rule 36) 4 planes.  
Total loss to date ----- 5 planes
- 10 March. 1400. Flight to bomb enemy Battle Line. At start of flight carrier damage was 20%, equivalent to 3 planes but 5 planes had already been put out of action, therefore 13 planes took off (rule 38). At 1415 while enroute were attacked by about 40 VFs. Returned immediately to carrier (rule 36a) and declared entire squadron out of action. Loss in this operation 13 planes. Total loss to date ----- 18 planes
- 11 March. 1200. Problem ended.

**APPENDIX B**  
**USE OF DAMAGE RULES**

The following guide is provided to assist umpires in locating the rules that apply to a given situation.

<u>SITUATION</u>	<u>RULES THAT APPLY</u>
<b><u>ANY SITUATION:—</u></b>	
1. All umpires must be familiar with rules .....	1, 2, 3, 6, 7, 8, 9, 10.
<b><u>MINING ACTIVITIES:—</u></b>	
1. All mining activities are covered by rule .....	11.
<b><u>HIGH ALTITUDE BOMBING ATTACK:—</u></b>	
1. Commander of attacking aircraft computes remaining squadron strength before taking off from carrier .....	38.
2. Commander of attacking bombers indicates dropping bombs .....	13.
3. Commander of attacking bombers computes his losses after the attack is finished .....	36, 37.
4. Umpire on senior ship of formation attacked computes hits and informs ships which have been hit .....	14, 15.
5. Each ship umpire takes up damage .....	18, 6.
<b><u>DIVE BOMBING ATTACK:—</u></b>	
1. Commander of attacking aircraft computes remaining squadron strength before taking off from carrier .....	38.
2. Each dive bomber indicates dropping bombs .....	16.
3. Commander of attacking aircraft computes his losses after the attack is finished .....	36, 37.
4. Each ship umpire computes hits and takes up damage .....	17, 18, 6.
<b><u>BATTLESHIPS OR CRUISERS FIRE TORPEDOES:—</u></b>	
1. Ships indicate firing torpedoes .....	19.
2. Commander of firing unit informs enemy of number of torpedoes fired and average run .....	19(a), 19(b), 20.
3. Umpire of unit fired at computes hits and informs ships which have been hit .....	23, 24.
4. Ship umpires take up damage .....	25, 6.
<b><u>DESTROYERS MAKE FORMATION TORPEDO ATTACK:—</u></b>	
1. Each destroyer indicates firing torpedoes .....	19.
2. Commander(s) of attacking unit(s) informs enemy of number of torpedoes fired and average run .....	19(a), 19(b), 20(1).
3. Commander(s) of attacking unit(s) computes destroyer losses .....	33.
4. Umpire of unit attacked computes hits and informs ships which have been hit .....	23, 24.
5. Ship umpires take up damage .....	25, 6.
<b><u>DESTROYERS MAKE A DISPERSED TORPEDO ATTACK:—</u></b>	
1. Each destroyer indicates firing torpedoes .....	19.
2. Each destroyer informs ship(s) fired at of number of torpedoes fired .....	20(2).

3. Each destroyer umpire assesses gun damage received ..... 33, 31.
4. Umpires of ships fired at assess hits and take up damage ..... 23, 25, 6.

SUBMARINES FIRE TORPEDOES:—

1. Each submarine indicates firing torpedoes ..... 19.
2. Submarines inform enemy number torpedoes fired ..... 21.
3. (a) If torpedoes are fired at a unit, the unit umpire computes hits and informs ships which have been hit. Ship umpires take up damage ..... 23, 24, 25, 6.
- (b) If submarines fire at individual ships, rather than at the formation as a whole, the umpire of each ship fired at computes hits and takes up damage ..... 23, 25, 6.

AIRCRAFT FIRE TORPEDOES:—

1. Commander of attacking aircraft, if based on carrier, computes remaining strength of his squadron before taking off from the carrier ..... 38.
2. Commander of attacking aircraft indicates firing torpedoes ..... 22.
3. Commander of attacking aircraft after he returns to carrier or base computes losses suffered in the attack ..... 36, 37.
4. Umpire of unit attacked computes hits and informs ships which have been hit ..... 23, 24.
5. Ship umpires take up damage ..... 25, 6.

SHIPS ENGAGE IN GUN ACTION:—

1. Ships indicate firing guns ..... 26 to 30.
2. Type group umpires assess total damage, and inform ships of their type groups of damage each has incurred ..... 27 to 32.
3. Ship umpires take up damage ..... 6.

DESTROYERS ENGAGE IN DESTROYER MELEE:—

1. Type group umpires assess damage ..... 33(1), 33(b), 33(c).

DESTROYERS COME UNDER GUN FIRE WHILE MAKING FORMATION TORPEDO ATTACK:—

1. Type group umpires assess damage ..... 33.

SUBMARINES COME UNDER GUN FIRE:—

1. Enemy is any type except submarines, sweeper, tug ..... 34.
2. Enemy is submarine, sweep or tug type ..... 35(c).

TUGS OR SWEEPERS COME UNDER GUN FIRE:—

1. Covered by rules ..... 28(1), 35.

AIRCRAFT COME UNDER GUN FIRE OR ENGAGE OTHER

AIRCRAFT:—

1. Aircraft umpire assesses damage ..... 36, 37.

COMMANDING OFFICER OF SHIP IS NOTIFIED OF PENALTY  
BY UMPIRE:—

1. Covered by rules ..... 8, 9, 10.

VESSEL FLYING "OA" IS SIGHTED:—

1. See rule ..... 10(a).

AIRSHIPS (HEAVIER THAN AIR) ARE ENGAGED:—

1. Covered by rule ..... 39.