The United States War College Naval Wargame 1936:

USN Wargaming

Chemical Warfare Rules

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Matrix Games Handbook: Professional applications from Education to Wargaming

Matrix Games for Modern Wargaming: Developments in Professional and Educational Wargames: Innovations in Wargaming Volume 2

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Andrew Wilson's The Bomb and the Computer: The History of Professional Wargaming 1780- 1968

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Acknowledgements

With thanks to

The History of Wargaming Project has now published 9 naval wargaming books, including books on the early Royal Navy Games, (The Game of Naval Tactics (1873) Captain Colomb R.N.: The Duel: A Naval Wargame (1879) Lieutenant H. Chamberlain R.N.: Game of Naval Blockade (1888) The Launch of the Fred Jane Naval Wargame at RUSI (1898) The First Edition of The Fred Jane Naval Wargame (1898) and the 1906 edition). So far I have only published one book on the USN efforts; The American Navy Coastal Wargame (1916).

Biographies of Editors

Chris Carlson (Editor) Christopher Carlson (Editor) is a retired U.S. Navy Reserve officer and Department of Defense naval systems engineer. He began his navy career as a submariner, and transitioned to the scientific and technical intelligence field in both his reserve capacity and in his civilian job. He is one of the co-designers, with Larry Bond, of the Admiralty Trilogy series of tactical naval wargames – Harpoon4, Command at Sea, Fear God & Dread Nought, and Dawn of the Battleship. He has also authored numerous articles in the Admiralty Trilogy's bi-annual journal, The Naval SITREP, on naval technology and combat modeling.

John Curry (Editor) is a senior lecturer in games development at Bath Spa University, UK. He has an international reputation in wargaming/ conflict simulations/ serious games and has worked with many of the key personalities in the field. As part of his ongoing work for the *History of Wargaming Project*[1], he has authored, co-authored, or edited over 75 books, ranging from second editions of hobby classics to innovative new works about gaming cyber-attack or emergency planning. He works with a number of organisations and currently is actively engaged in developing new models of gaming cyber-attack on the City of London and the UK in general[2]. When asked what he does, he normally says "I play strange games, with strange people in strange places".

[1] www.wargaming.co
[2] For example see http://www.anquangroup.com/

Introduction

These are the chemical warfare rules omitted from the History of Wargaming Project edition

Chemical Agents, When Used

Rule K-1

In maneuvers at the War College, unless specifically prohibited by the Staff, chemical agents may be used provided that:

a) Previous to the beginning of the maneuver, the Director is so notified.
b) The Student C-in-C authorises the use of chemical agents by his forces.
c) Each student commander at the start of the maneuver specifies the kind and quantity of chemical agents carried by the forces under his command. (Rules K-2, K-3, K-4)

Kinds of Chemical Agents

Rule K-2

The kinds of chemical agents that may be used are as follows:

Agent	Symbol	Characteristics	Purpose
1 Mustard	HS	Persistent. Vesicant. Action slow. Detected by odour. Not effective if temperature less than 57degrees	Casualty producing and making ships or land area untenable.
2 Lewisite	M1	Persistent. Vesicant. Action more rapid. Neutralised by water. Detected by odour. Not effective in rain or relative humidity	Casualty producing

		85 degrees or more	
3 Ethyl-di-chlorarsine	ED	Persistent. Vesicant. Action immediate. Detected by odour.	Casualty producing
4 CN solution	CNS	Persistent. Tear gas. Action immediate. Violent. Liquid. Non-detectable	Harassing
5 Chloracete-phenone	CN	Non-persistent. Mild. Tear gas. Action immediate. Non-detectable.	Harassing
6 Diphenylamine-chlorarsine	DM	Non-persistent. Irritant smoke. Severe. Sneeze gas Action immediate. Detected by colour by daylight	Complete temporary disability.
7 White Phosphorus	WP	Smoke. Incendiary. Action immediate. Detected by odour and colour	Incendiary action creating heavy smoke. Casualty producing.

Method of Use
Rule K3

These agents may be used in the following ways:

CN WP	By Shell fire (all kinds except star shell). CN replaces 10% of the bursting charge, without reducing the damage effect of the shell. WP shells contain no explosive except a small amount necessary to rupture shell. These may replace weight for weight all ammunition allowances.
CNS HS M1 ED WP	By aircraft bombs, all sizes. These bombs have no damage effect on material. They affect personnel only. Note: (WP will create smoke screen around ship struck such that nothing can be seen to leeward while target is so contaminated).
HS M1 ED CNS	By spraying from aircraft. Weight of loaded spray tank 500 lbs. Spray tank can be attached to any plane fitted with a bomb rack capable of carrying a 500lb bomb. Time to attach and detach – same as a 500lb bomb. On carriers and tenders these loaded spray tans may displace the bomb allowances in the 'FLEETS', weight for weight. Quantity of chemicals carried by shore bases will be enough for 3 flights of each plane so fitted, unless otherwise stated in the problem.
DM	By destroyers only. Laid in same manner as a smoke screen. Special apparatus to discharge through smoke pipes.
HS CNS	By shell fire (all kinds except star shell). These are special thin wall shells for use against shore objectives only. They may replace weight for weight all ammunition allowances. The effect will be determined by the Director.

Notification of Director

Rule K-4

Before the beginning of the maneuver, student commanders will notify the Director what percentage of the number of shells and aircraft bombs, which are allowed in the 'Fleets', are loaded with chemical agents or displaced with spray tanks or thin wall shells; the kind of chemical agents so used; and which destroyers are fitted with DM laying devices.

Specifying Use of Chemical Agents

Rule K-5

a) Student commanders will specify on their flight forms when chemical bombs or spray tanks are carried by planes and the kind of chemical agent with which they are loaded.

b) Student commanders will specify on their move blanks when CN shells or thin wall shells are being fired, and when DM screens are being laid.

Rule K-6

a) Shells loaded with CN will hit in accordance with the rules of gun fire. When these hits accumulate to the equivalent of .25 14" penetrative hits within the contamination period (Rule K-13), penalties for wearing masks will be applied in accordance with Rule K-10
b) Shells and bombs loaded only with chemical agents have no damaging effect on material, but will hit in accordance with rules of gunfire and aircraft bombing. When these hits accumulate to the equivalent of .10 14" penetrative hits within a single move, penalties for wearing masks will be applied in accordance with Rule K-10

Chemical Spray

Rule K-8

Chemical spray will hit under the following conditions:

a) Plane altitude must be 500 feet or less with wind force 4 0r less.
   Plane altitude must be 300 feet or less with wind force 5
   Above wind force 5, no chemical spray will be effective under any conditions.
b) On ship target at least two planes spraying approximately simultaneously are required to hit.
c) On shore targets one plane may hit with spray. In which case the area covered by one 500 lb. spray tank will be 100 yards by 800 yards. To completely deny this area will require five planes using HS, in which case the area will be denied in 10 days.

DM Screens

Rule K-9

DM screens laid by destroyers will be plotted on the maneuver board in the same manner as any smoke screen. The quantity of DM carried by

each destroyer is sufficient for 15 minute emission. An emission of less than 3 minutes or by less than 3 destroyers will be ineffective. The conditions, under which the screen will lie, are those given in Rules D-201 (a), D-202, D-203, D-204, D-205, D-206, D-207, D-208. If it meets these requirements, the screen will be effective. The personnel of destroyers laying DM screens are assumed to be protected by masks in which case they are subject to the penalties of Rule K-10.

Chemical Penalties, Effect of
Rule K-10

If the agent hits, as determined by Rules K-6, K-7, K-8 and K-9, the following will be the effect on the target during the contamination period (Rule K-13). It is assumed that all chemical agents, except DM at night, will give sufficient warning to permit individual protection by masks and clothing. DM at night or if part of a smoke screen will give no warning.

a) Gun Fire (main, secondary and A.A.) will be reduced by a second correction of two-tenths (.2) during first hour after being hit by gas; thereafter by four-tenths (.4) until contamination is removed. (See Rule K-13)
b) Maximum remaining individual speed will be reduced on a coal burning ship three-tenths (.3) during first hour; thereafter six-tenths (.6) until contamination is removed.
c) No speed reduction will be made on an oil burning ship. (See Rule K-13)
d) All messages sent or received will have their time of delivery doubled during the first hour, the quadrupled thereafter until contamination is removed. (See Rule K-13).
e) The times of plane handling on all ships will be doubled until contamination is removed.

DM Hitting at Night
Rule K-11

If DM hits occur at night, the effect on the target will be as specified in Rule K-10; except that in the case of a surprise attack, the penalties given in Rule K-10 will be doubled and the ship will be out of control for 9 minutes. Whether or not a surprise occurs will be at the discretion of the Director.

Increase of Fire Effect on a Contaminated Ship
Rule K-12 ----------

Time of Contamination

Rule K-13

Contamination on ships will be removed in the following times after the last gas hits:

HS	6 hours
M1	3 hours
ED	3 hours
CN	½ hour
DM	½ hour
CNS	3 hours
WP	3 minutes

Length of Masking

Rule K-14

Personnel cannot be continuously masked longer than twelve hours and a period of at least 4 hours must elapse before masks can again be worn

Simplification of handling Chemical Penalties

Rule K-15

When gunfire between two forces has been under way for such length of time that most ships on both sides have been subjected to the Chemical Penalty, the Director, at his discretion, may direct that individual records of chemical penalties be discontinued and that all ships on both sides be considered subject to the chemical penalty during the time they remain heavily engaged; or, he may alternatively direct that chemical effects on both sides cancel out, and that the chemical penalties will be discontinued during the time the forces continue heavily engaged.