1682 YOUR RESPONSIBILITIES Empl-3

You are now embarking on a career in the Army of the United States. Even more important, you have chosen to pursue training leading to a commission and wings in a very important branch of that Army, the Army Air Forces. You have set a high objective for yourselves and must, in consequence, put out much effort if you are to reach that objective. The way will be far from easy. You will find a marked difference between your former life as a civilian and your life in the Army. In the Army, you are, of necessity, bound more rigidly by rules and regulations, discipline is stricter, you are less free to do as you please much of the time.

We cannot offer you an easy path toward your high objective. We can give you the opportunity; after that, it is up to you to succeed. What you get out of your career as cadets will depend almost entirely on what you yourselves put into it.

You are training to be an officer and a pilot. As such, your responsibilities will be great. To prepare you to meet these later responsibilities, you will take on certain responsibilities now. You are to be responsible for your conduct in classes and out; you are responsible for the work that is given you to do; you are responsible for your personal appearance, for the appearance of your living quarters and all property you may be issued for use. Above all you are expected to have a high code of honor. This means [illegible] suspicion of cheating in any form. Live up to these responsibilities now and you have a greater chance of succeeding in the future.

The objective of this Preflight School in which you are now starting your Army career is to prepare you for the intensive flight training which you will undergo as cadets. To reach this objective, you will take training in three departments, namely, the Tactical Department, the Ground School and the Physical Training Department.

Your Ground School consists, with other subjects, of twenty hours of mathematics. This mathematics course is not too difficult, provided you do the daily preparation as assigned by your instructor. During the course you will be given three examinations. To successfully complete the course, you must make an average of 70 on [illegible] three tests. If you average below 70 on the three mathematics [illegible]s, you will be given an additional hour of review and re-examined over the course. Remember that this course in mathematics is the basis for your advanced work at Primary, Basic and Advanced Schools.

$\frac{1}{4} = .25$

$\frac{1}{2} = .50$

$\frac{3}{4} = .75$

$\frac{1}{3} = .333$

$\frac{2}{3} = .667$

$\frac{1}{8} = .125$

$\frac{3}{8} = .375$

$\frac{5}{8} = .625$

$\frac{7}{8} = .875$

PREFACE

I. OBJECTIVE:

The fundamental purpose of this course is to prepare you to solve the problems which will confront you in primary, basic, and advanced flying schools.

II. SCOPE:

Starting with a review of arithmetic, the work builds up to a study of the simple algebraic equation, which is the foundation for stating and evaluating formulas. Formulas lead to graphs, maps, and charts, both reading and plotting. The last few lectures of this course will cover the theory and application of vectors.

III. USE OF THIS PUBLICATION:

This publication contains a series of question sheets. After each problem, space has been left for a solution. It is to be your work book. Assignments will be made which are to be prepared for the following class. At that time, an approved solution will be fully explained and all necessary corrections should be made in this work book. You should make sure that the principle involved in each problem is thoroughly understood, so that you will have no trouble in arriving at the correct answer for any similar problem. This book should be kept as a reference book for your advanced work.

1084

INDEX

1685

EXAMPLES FOR PRACTICE — MATHEMATICS FORM Q-1
FIRST HOUR

ADD

1. 100.001 + 9.098 + 5678.91 = 5788.009

100.001
9.098
5678.91
3788.009

2. 11.1111 miles + 66.667 miles + 1.222 miles + 125.125 miles + 375.375 miles = 580.5001

11.1111
66.667
1.222
125.125
375.375
599.5001

3. 78.908 + 202.202 + 62.501 + .003594 + 75 = 418.71694

78.908
202.202
62.501
.003594
75.
418.614594

4. 592.8137 + 8.02176 + 1376.5 + 27.14826 =

592.8137
8.02176
1376.5
27.14826
2004.48372

1686

EXAMPLES FOR PRACTICE MATHEMATICS FORM Q-2
FIRST HOUR

1. The inside diameter of a steel tubing is 6.64", the wall thickness is 0.034". What is the outside diameter?

0.034
2
0.064
6.64
6.708 outside diameter

2. The circumference of a circle can be found by multiplying the diameter by π (always use 3.1416 as π). What is the circumference of a circle whose diameter is 3.54"?

3.54
3.1416
2124
354
1416
354
1062
11.12264 circumference

3. A certain steel plate is .36" thick. How many plates are in a stack 6 feet high?

6 Ft = 72 inch. 36 | 7200. Ans 200
200.
7200
7200

4. Fifteen bolts fit in a given box. How many bolts will it take to fill twenty-five boxes?

25
15
125
25
75 Bolts Ans.

EXAMPLES FOR PRACTICE
FIRST HOUR

1. The outside diameter of a steel tubing is 0.625"; the wall thickness is 0.042". What is the inside diameter?

0.042 × 2 = 0.084

0.625 − 0.084 = 0.541 ans.

2. The diameter of a circle is found by dividing the circumference by π. What is the diameter of a circle having a circumference of 20.0277 inches? Of 5.1051 inches?

3.1416 | 20.027700 = 6.375

188496
117810
93248
225620
219912
57080
7080

3.1416 | 5.1051 = 1.625

31416
196350
188496
78640
62832
158180
125664
32436

3. The outside diameter of a steel tubing is 1.546 inches. The inside diameter is 1.340 inches. What is the thickness of the steel in the tube?

1.546
1.340
2 | 0.206
0.103 ans.

4. One gallon of a certain grade gasoline weighs 5.876 lbs. If the maximum gas load of a plane is 1250 lbs., how many gallons of gasoline can the plane carry?

5.876 | 1250.000 = 212.73

11752
7480
5876
16040
11752
12880
11752
= 42180
41132

Fractions - indirect division

EXAMPLES FOR PRACTICE
SECOND HOUR

MATHEMATICS FORM Q-4

1. Reduce to improper fractions:

a. $4\frac{7}{8}$ $\frac{39}{8}$ b. $3\frac{4}{5}$ $\frac{19}{5}$ c. $15\frac{8}{9}$ $\frac{143}{9}$

2. Reduce to mixed number:

a. $\frac{9}{2}$ $4\frac{1}{2}$ b. $\frac{14}{6}$ $2\frac{1}{3}$ c. $\frac{39}{4}$ $9\frac{3}{4}$

3. Reduce complex fractions to common fractions:

a. $\frac{2/3}{6}$ $\frac{1}{9}$ b. $\frac{5}{3/8}$ $\frac{40}{3}$ c. $\frac{2/3}{5/6}$ $\frac{4}{5}$

$\frac{4}{36} = \frac{1}{9}$

4. Carry out indicated operations:

a. $\frac{7}{8} \times \frac{2}{14} \times \frac{2}{4} = \frac{1}{2}$ b. $\frac{2}{4} \times \frac{12}{9} \times \frac{6}{3} \times \frac{1}{8} = \frac{2}{3}$

c. $\frac{12}{9} \div \frac{8}{3} = \frac{1}{2}$ d. $\frac{9/16 \times 2/31}{11/12 \times 1/2} = \frac{9}{11}$

e. $\frac{2/3 \times 5/6}{3/4 + 7/9} = \frac{20}{21}$ $\frac{4}{11}$ f. $\frac{4\ 2/3 \times 6/7}{7 - 3\ 3/7}$

g. $\frac{3/4 - 1/2 + 3\ 5/8}{5/6 \times 1/5}$ $\frac{93}{4}$

1689 EXAMPLES FOR PRACTICE MATHEMATICS FORM Q-5
SECOND HOUR

1. A fuel tank of a plane holds 200 gallons. If the gauge shows 5/8 of the fuel used, how many gallons remain in the tank?

$\frac{5}{8} \times \frac{200}{1} = \frac{1000}{8} = \frac{125}{75}$ gals.

2. The distance, center to center, between the spars in an airplane wing is 31". If the front spar is 1 1/16" thick and the rear spar 15/16" thick, what is the distance inside to inside?

30"

$\frac{17}{32} + \frac{15}{32} = \frac{32}{32}$

3. Plane A flew a certain distance in 2 3/4 hours and plane B flew the same distance in 4 1/8 hours.

a. It took plane B how many hours longer than plane A to make the flight? $1\frac{3}{8}$

$\frac{11}{8} = 1\frac{3}{8}$

b. Plane A flew how many times as fast as plane B?

$4\frac{1}{8} \div 2\frac{3}{4} = \frac{33}{8} \times \frac{4}{11} = \frac{3}{2} = 1\frac{1}{2}$

$1\frac{1}{2} \times 2\frac{3}{4}$

$\frac{3}{2} \times \frac{11}{4} = \frac{33}{8} = 4\frac{1}{8}$

4. A plane flew at an average rate of 162 2/3 m.p.h. for 4 1/2 hours. How far did it fly.

$162\frac{2}{3} \times 4\frac{1}{2} = 732$

$162\frac{4}{6} \times 4\frac{3}{6} = \frac{488}{6} \times \frac{27}{6} = \frac{4392}{6} = 732$

1. If a plane uses 40 gallons of fuel per hour, how many minutes will the pilot have to fly before exhausting the fuel supply if the gauge shows 25 gallons remain in the tank?

$40 : 60 = 25 : X$

$40X = 1500$

$X = 37.5$ min

2. If a plane uses 50 gallons of fuel per hour at a given speed:

a. How many gallons per minute will be consumed? $\frac{1}{5} = \frac{5}{60}$

b. How many gallons per second?

$\frac{1}{72}$

3. A BT-14 plane carries 100 gallons of gasoline. If the fuel consumption is 28 gallons per hour, how long can the ship stay aloft?

$3\frac{4}{7}$ hr.

PAGE(S)
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1. At 1000 r.p.m. a propeller uses 80% of the horsepower developed. If the engine develops 1500 horsepower at 1000 r.p.m., how many horsepower are used by the propeller?

2. If a plane is traveling at a speed of 215 m.p.h. and this is 86% of its maximum speed, find its maxium speed.

250
86 | 21500
172
430
430
0

3. If a pilot finds that he has 99 gallons of gas remaining in his tanks and the tanks have a capacity of 180 gallons, what percent of his total fuel capacity remains in the tank?

.55%
180 | 99.00
90 0
900
900

1. If the population of San Antonio was 380,000 in 1941 and increased 23% during that year, what was it in 1942?

2. Fifteen percent of a class of 2500 cadets take their primary training at Corsicana. How many train at Corsicana?

$15\% = \frac{15}{100} = \frac{3}{20} \times 2500 = 390$

3. The top speed of an aircraft at 7000 feet is 300 m.p.h. At 11,000 feet the top speed has increased 8%. What is the top speed of the aircraft at 11,000 feet?

EXAMPLES FOR PRACTICE
THIRD HOUR

MATHEMATICS FORM Q-11

1. At 15,000 feet altitude and a temperature of -10°C., the calibrated air speed is 230 m.p.h. The true air speed is 15 percent more than the calibrated air speed. Find the true air speed.

$15\% = \frac{3}{20} \times \frac{230}{1} = \frac{69}{2} = 34\frac{1}{2} + 230 = 264\frac{1}{2} = 264.5$

2. On a certain mission 15 planes were lost. This number was $7\frac{1}{2}\%$ of the total number used. How many planes were sent on the mission?

200 planes

3. A machine shop employing 225 men is forced to employ 36% more men. What is the increase in the number of employees?

$36\% = \frac{9}{25} \times \frac{9}{225} = 81$ men

1. If 1000 feet of wire weighs 58 pounds, how much will one mile of the same wire weigh?

$1000 : 58 = 5280 : X$

$1000X = 306240$

$X = 306.24$

2. If 0.75 inches on a map represents an actual distance of 270 miles, what is the distance between two places which are two inches apart on the map?

$.75 : 270 = 2 : X$

$.75X = 540$

3. A 9 inch pulley turning 160 r.p.m. drives a 20 inch pulley. Find the r.p.m. of the latter.

$9 : 160 = 20 : X$

$9X = 3200$

$X = 35$

4. A 26-tooth gear running at 210 r.p.m. is to drive a 14-tooth gear. Find the r.p.m. of the latter.

$\frac{26}{14} = \frac{X}{210} = 14X = 5460$

$X = 390$

1. If 2.65 gallons of airplane dope are needed to cover 600 square feet of fabric, how many gallons are needed for 850 square feet?

$2.65 : 600 = X : 850$

$600X = 2252.50$

$X = 3.754$

2. Find the number of teeth in a gear that makes 80 r.p.m. when driven by a 24-tooth gear that makes 60 r.p.m.

$\frac{80}{60} = \frac{24}{X}$ $80X = 1440$

$X = 18$

3. When a radio antenna tower casts a shadow 54 feet long, a fence post 5 feet tall casts a shadow 8 feet long. How tall is the antenna tower?

$54 : X = 5 : 8$

$8X = 270$

$X = 33.75$

4. A boy's height is $\frac{2}{5}$ the length of his shadow. If the boy's height is 4 feet, 6 inches, find the length of his shadow.

$4\frac{1}{2} \div \frac{2}{5} = \frac{9}{2} \times \frac{5}{2} = \frac{45}{4} = 11\frac{1}{4} = 11$ ft 3 inch.

5. Two triangles have their corresponding sides proportional. The sides of the largest triangle are 8, 12, and 16. If the longest side of the smaller triangle is 4, find the other sides.

1. If in an architect's drawing one inch represents 10 feet, what length in the building is represented by 2.75 inches?

2.75×10
27.50

2. The weight of a given volume of metal is proportional to the specific gravity (density) of the metal. If an iron casting for an automobile part weighs 60 pounds, what will be the weight of the casting if aluminum is used? Assume specific gravity of cast iron as 7.5 and that of aluminum as 2.6.

$60 : 35 = X : 26$
$7.5X = 156$
$X = 20.8$

3. On June 12, 1939, a pilot flew a glider plane across Lake Michigan a total distance of 93 miles in 52 minutes. He cut loose from the tow plane at 13,000 feet and descended only 5000 feet in crossing.

   a. At the same rate of descent, how much farther could he have glided?

$93 : 5000 = X : 8000$
$5,000X = 736,000$
$X = 147.5$

   b. How many more minutes would he have been in the air? Express answer in hours, minutes and seconds.

52 :

MATHEMATICS QUIZ FORM Q-5
HOURS 14 - 15

_____ WING:___ GROUP:___ SQD:___ FLIGHT:___
First Initial

_____ DATE:_____

(a) Angles are measured in degrees, minutes and seconds.

(b) There are 360° degrees in a circle.

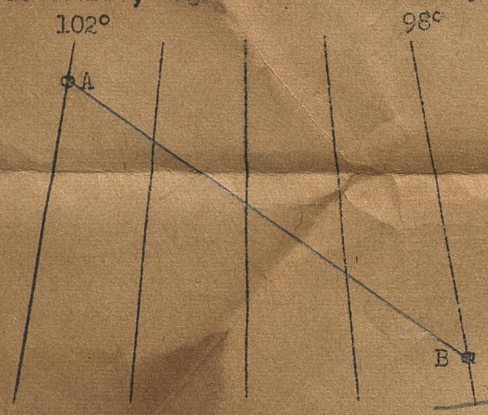
(c) A Protractor is a device for measuring angles.

(d) An angle of less than 90 degrees is called an acute angle.

2. (a) The complement of 35 degrees is 55°.

(b) The supplement of 79 degrees is 101°.

3. Find the true course, angle to be used in flying from A to B on the map below.



Ans. 124.5°

4. (a) Vector quantities have both magnitude and direction.

(b) A quantity of 250 m.p.h. is not a vector quantity, but is known as a Velocity quantity.

(c) The sum of two or more forces is called the resultant of these forces.

(d) The two or more forces that produce this sum are called Vectors.

graphically: 20 lbs. at 80°
30 lbs. at 135°
10 lbs. at 28°

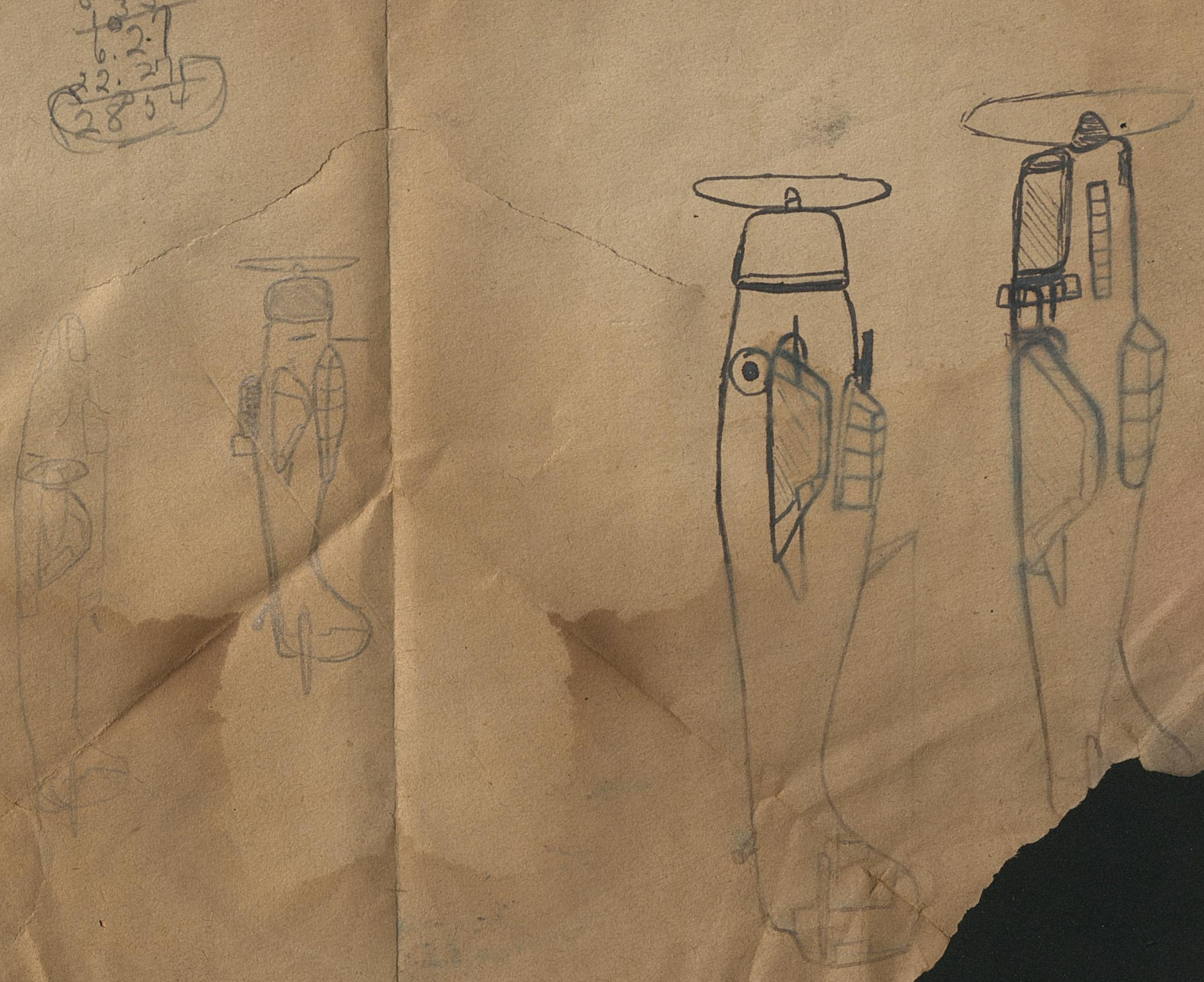
Ans._____lbs.
at _____degrees

30.5
33.2

GB 10080
1.33
[illegible]

(220 − 43.7)

40 3.7
8 60
3.3
2.7
6.2.7
22.21
2854



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	CLASS	PAGE	FOREMAST	MAINMAST	STACKS No.	STACKS Shape & Altitude	S ns Per rret	S Type	OTHER FEATURES Deck line, bow & stern, etc.
18	Kaga	44	1 Fixed stick	4 Folding Sticks	1	Flat sided, horizontal on starboard side		None	Small island on starboard side forward
	[illegible]	60	Stick	Tripod	2	#1 Combination raking, #2 flat-sided	6	Singles	Wavy deck line; catapult forward #3 turret
	nugasa	59	Stick	Tripod	2	Raking, #1 combination, #2 single	3	Twins	Flush deck, wavy deck line
	ongo	36	Cluttered tower (tripod)	Tripod	2	Flat sided, #2 smaller	4	Twins	Low freeboard aft
	ng Island	41	Stick	Stick		Deisel exhaust vents to either side of flight deck		None	Flight deck ends short of bow & stern
	han	72	Stick	Very short stick	2	Round, slightly raking	2	Singles	Forecastle, 2 breaks in deck line
	Maryland	26	Cage	Cage	2	Round, vertical	4	Twins	Upper deck
25	Mayo	67	Stick	Very short stick	2	Oval, slightly raking	3-5	Singles	Forecastle, 2 breaks, divides in thirds
26	McCall	69	Stick	Very short stick	1	Flat sided trunked base	2	Singles	Forecastle, 2 breaks
27	Mogami	56	Slim tripod	Slim tripod	1	Combination	5	Triples or twins	Large central island; concave forward profile
28	Mutsu	33	Cluttered tripod or tower	Tripod	1	Flat sided vertical	4	Twins	Upper deck (low freeboard aft)
29	Nachi	58	Stick	Slim tripod	2	Raking, #1 combination, #2 small, single	5	Twins	Concave forward profile
30	Natori	63	Tripod	Slim tripod	3	Oval, vertical	7	Singles	Catapult forward of mainmast
31	New Mexico	28	Massive tower	Stick	1	Large, round, vertical	4	Triples	Upper deck, catapult on #3 turret

2702	CLASS	PAGE	FOREMAST	MAINMAST	STACKS No.	STACKS Shape & Altitude	TURRETS No.	TURRETS Guns Per Turret	OTHER FEATURES Deck line, bow & stern, etc.
32	New Orleans U.S. C.A	47	Stick	Stick	2	Oval, raking	3	Triples	Upper deck, (low freeboard aft)
33	Northampton U.S. C.A	49	Tripod	Tripod	2	Raking, #1 flat-sided, #2 oval	3	Triples	Broken deck, catapult between stacks
34	Oklahoma U.S. B.B.	30	Tripod	Tripod	1	Oval, vertical	4	2 Triples 2 Twins	Upper deck
35	Omaha U.S. C.L	54	Tripod	Stick	4?	Round, slightly raking	2	Twins	Upper deck (low freeboard aft)
36	Pennsylvania U.S. B.B.	29	Tripod	Tripod	1	Flat sided, vertical	4	Triples	Upper deck
37	Pensacola U.S. C.A	50	Tripod	Stick	2	Flat sided, raking	4	2 Triples 2 Twins	Flush deck
38	Porter U.S. DD.	73	Stick	Short Stick	2	Round, raking	4	Twins	Forecastle
39	Portland U.S. C.A.	48	Tripod	Slim tripod	2	Flat sided, raking	3	Triples	Broken deck
40	Ranger U.S. C.V.	38	Tripod	Movable sticks	6	Round, 3 on either side		None	Flight deck ends short of bow and stern
41	Ryujo JAP. C.V.	43	2 Folding sticks	2 Folding sticks	2	Raking, horizontal on starboard side		None	Flight deck ends short of bow
42	Saratoga U.S. C.V.	39	Stick	Very short stick abaft stack	1	Huge, flat sided on starboard side	4	Twins	Flight deck covers hull
43	Sims U.S. D.D	68	Stick	Very short stick	1	Flat sided, raking	4	Singles	Forecastle deck, one break
44	Soryu JAP. C.V	42	None	None	1	Round, vertical		None	Flight deck ends short of bow
45	South Dakota U.S. B.B	24	Massive tower	Stick	1	Flat sided, vertical	3	Triples	Flush deck
46	Tenryu JAP. C.L.	64	Tripod	Stick	3	Oval, vertical, odd sizes	4	Singles	2 deckwells (broken deck)
47	Texas U.S. BB	31	Tripod	Tripod	1	Round, vertical	5	Twins	Flush deck

2709	CLASS	PAGE	FOREMAST	MAINMAST	STACKS No.	STACKS Shape & Altitude	TURRETS No.	TURRETS Guns Per Turret	OTHER FEATURES Deck line, bow & stern, etc.
48	Tone JAP C.A.	55	Pylon (thin 4-legged)	Tripod	1	Combination, raking	4	Triples or Twins	Flush deck, airplane incline aft
49	Warrington U.S. D.D.	70	Stick	Very short	1	Round, raking	4	Twins	Forecastle deck
50	Washington U.S. B.B.	25	Slim tower	Stick	2	Flat sided	3	Triples	Flush deck
51	Wichita U.S.C.A.	46	Stick	Stick	2	Round, raking	3	Triples	Flush deck, square stern
52	Yubari JAP. C.L.	62	Tripod	Stick	1	Wide combination	4	2 Singles 2 Twins	Flush deck

CHEMICAL WARFARE AGENTS

SYMBOL	CN	FS	DA	WP	TH	CA	DM
NICKNAME	Cry Now	Fuming Spray	Dear Ache	White Phos	The Heat	Cry Always	Dirty Mixture
NAME	Chloracetophenone	Sulphur Trioxide	Diphenylchloracrosine	White Phosphorous	Thermit	Brombenzylcyanide	Adamsite
FORM	Solid	Smoke	Smoke	Smoke	Incendiary	Gas	Gas
COLOR BANDS	1 red	1 yellow	1 yellow	1 yellow	1 purple	1 red	1 red
ODOR	Apple blossoms	Burning matches	Shoe polish	Burning matches	---	Sour fruit	Coal smoke
PHYSIOLOGICAL EFFECT	Irritate eyes, mild skin reaction	Prickling of skin, flowing tears	Sick feeling, headache	Burning particles adhere to skin & Cloth	May cause severe burns	Smarting tearing eyes	Sneezing, sick & depressed feeling
PROTECTION	Gas Mask	Gas Mask	Gas Mask	None available	Cover withearth	Gas Mask	Gas Mask
FIRST AID	Wash eyes with boric acid or 2% bicarb	Wash with bicarb of soda sol.	Fresh air sniff CL from bleaching powder	Mud, wet clothsfor burning; 5% copper sulfate	Treat for burns	Wash eyes with boric acid or 2% bicarb	Fresh air keep warm & quiet
COLOR & STATE AS ATTACK AGENT	Brown powder	Clear liquid	White solid	Yellow solid	Metallic powder	Brown liquid	Yellow solid
	Cloud of particles	Dense white smoke	Vap. or fine smoke	Burns as whi. smoke	---	Slowly evaporates	Yellow smoke
PERSISTENCE	10 min.	5 to 10 minutes	10 min.	10 min.	5 min.	Several days to weeks	10 min.
FIELD NEUTRALIZATION	Strong hot sol. of sod. carbonate	Alkaline solution	Bleaching powder solution	Burns out	Cover with earth	Alcoholic sod.hydorx spray	Bleaching powder solution

Two harmless chemical smokes which are not listed above are:

(1) HC Mixture, nicknamed "Harmless Cloud", designated by one yellow color band and having a sharp, acrid odor. Loaded, it is a grey solid; released, it is a grey smoke. No field neutralization measures are needed, as it is harmless.

(2) FM (titanium tetrachloride), nicknamed "Floating Mantle", designated by one yellow color band and having an acrid odor. Loaded, it is a yellow liquid; released, it is a white smoke having a persistency of about 10 minutes. No field neatralization measures are needed, as it is harmless.

CHEMICAL WARFARE AGENTS

SYMBOL	HS	MI	HN_2	ED	PS	CL	CG
NICKNAME	Hot stuff	Mustard Imitator		Enemy's Delight	Puking stuff	Chlorine	Choky gas
NAME	Mustard	Lewisite	Nitrogen Mustard	Ethyldichlorarsine	Chloropicrin	Chlorine	Phosgene
FORM	Liquid	Liquid	Liquid	Gas	Liquid	Gas	Gas
COLOR BANDS	2 green	2 green	2 Green	2 Green	2 Green	1 Green	1 green
ODOR	Garlic Horseredish	Geraniums	fishy or soap like	Biting, stinging	Fly paper anise	Highly pungent	Musty hay, green corn
PHYSIOLOGICAL EFFECT	Delayed, irritates eyes, skin & lungs	Irritates eyes, nose & later, lungs, skin & system	Effects eyes more than irritation causes blindness 1 - 6 hrs.	Same as MI, but less severe	Irritates eyes, nose later lungs Causes vomiting	Like PS, but more rapid & powerful	Like PS PUT more rapid. Slower than CL
PROTECTION	Gas Mask protective clothing	Same as HS	Gas mask Protective clothing	Same as HS	Gas Mask	Gas Mask	Gas Mask
FIRST AID	Remove clothing, apply ointment or solvent. Wash eye with 2% bicarb	Like HS plus peroxide for eyes & skin.	Remove clothing apply ointment or solvent, Wash eyes bicarb	Like HS plus 10% NaOH in 30% glycerine in H_2O for skin	Wash eyes with boric acid. Keep warm & quiet. Hot drinks.	Same as PS	Same as PS
COLOR & STATE AS ATTACK AGENT	Dark, oily liquid	Dk. green oily liq.	Oily appear.	Clear oily liq.	Yellow oily liq.	Yellow liquid	Colorless liquid
	Slowly evaporate	Slowly evaporate	evap. more rapidly than HS	Evaporates at Med. rate	Colorless gas	Yellow green gas	Colorless gas
PERSISTENCE	1 day to all winter	1 day to one week	1 day to all winter	1 hour	6 to 12 hours	10 min.	10 to 30 minutes
FIELD NEUTRALIZATION	Cover with unslaked lime & earth. 3% NA_2SO_3.	Wash with H_2O, cover with earth & alcohol & NACH spray.	Cover with unslacked lime & earth. 3% NA_2SO_3.	Cover with earth & caustic NACH solution	Sodium sulphide alcohol solution	Alkaline solution	Alkali

DEFENSE AGAINST CHEMICAL ATTACK

RULES TO BE REMEMBERED.-- The following rules connected with defense against chemical attack should be impressed upon the individual.

1. Do not carry anything in your gas mask carrier but the mask.
2. Do not neglect the gas mask or allow it to receive rough handling.
3. Do not throw away your gas mask. You may need it later on and it will save your life in a gas attack.
4. Do not give a false gas alarm.
5. Do not breathe after the gas alarm is given until you are sure that the facepiece has been cleared of gas by blowing vigorously into the face piece while holding the outlet valve.
6. Do not remove your gas mask until permission to remove it is given by an officer or a gas non-commissioned officer.
7. Do not enter an unprotected dugout immediately after a chemical attack.
8. Do not talk or move about unnecessarily during a gas attack.
9. Do not become panicky; keep calm and remember your protective equipment is effective if properly used.
10. Do not fail to realize that the enemy uses many different kinds of gases, sometimes alone, or at other times mixed with other chemical agents, smokes, or high explosive.
11. Do not forget that clothing contaminated with mustard gas should be removed as soon as possible.
12. Do not remove anothers man's clothing or handle equipment that is contaminated with liquid mustard gas unless you are equipped with protective gloves.
13. Do not forget that mustard gas remains in an area for days.
14. Do not enter an area contaminated with mustard gas unless equiped with protective clothing and gas mask.
15. Do not remain for any length of time in an area contaminated with mustard gas, even if equipped with protective clothing and gas mask, unless required by the tactical situation.
16. Do not fail to post a gas sentry over sleeping men.
17. Do not forget that when the wind is blowing from the enemy between 3 to 12 miles per hour, a cloud chemical attack from the enemy may be expected.
18. Do not forget that during a calm, in foggy or cloudly weather, and at night, ideal conditions exist for a chemical attack. Be on the alert.
19. Do not allow men to drink water or eat food contaminated with chemical agents.
20. Do not forget that all gas cases require; first, rest; second, warmth; third, fresh air.
21. Do not permit men who are casualties from inhaling gas to walk, talk, or move about.
22. Do not bandage the eyes of a gas casualty.